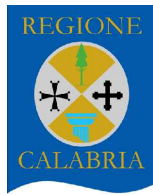


REGIONE CALABRIA



Comune di Squillace (CZ)



Comune di Borgia (CZ)



Comune di Maida (CZ)



Committente:

**RWE**

RWE RENEWABLES ITALIA S.R.L.  
via Andrea Doria, 41/G - 00192 Roma  
P.IVA/C.F. 06400370968

Titolo del Progetto:

**PARCO EOLICO "BOLINA"**

Documento:

**PROGETTO DEFINITIVO**

N° Documento:

**PEBO-P15.05**

ID PROGETTO:

**PEBO**

DISCIPLINA:

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FORMATO:

**A4**

Elaborato:

**RELAZIONE DI CALCOLO PRELIMINARE DELLE  
FONDAZIONI DELL'AEROGENERATORE G9**

FOGLIO:

SCALA:

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PEBO-P15.05\_RELAZIONE DI CALCOLO PRELIMINARE DELLE FONDAZIONI  
DELL'AEROGENERATORE G9

Progettazione:



**Ing. Saverio Pagliuso**

**Ing. Claudio Coscarella**

**Ing. Mario Francesco Perri**

**Ing. Giorgio Salatino**

Rev:	Data Revisione	Descrizione Revisione	Redatto	Controllato	Approvato
00	21/10/2019	PRIMA EMISSIONE	GEMSA	GEMSA	RWE



**Relazione di calcolo strutturale impostata e redatta secondo le modalità previste nel D.M. 17 Gennaio 2018 cap. 10 “Redazione dei progetti strutturali esecutivi e delle relazioni di calcolo”.**

2S.I. Software e Servizi per l'Ingegneria S.r.l.

Via Garibaldi, 90

44121 Ferrara FE ( Italy)

Tel. +39 0532 200091

[www.2si.it](http://www.2si.it)

[info@2si.it](mailto:info@2si.it)

D.M. 17/01/18 cap. 10.2 Affidabilità dei codici utilizzati

<https://www.2si.it/it/prodotti/affidabilita/>

## INTESTAZIONE E CONTENUTI DELLA RELAZIONE

Progetto

### **RELAZIONE DI CALCOLO PRELIMINARE DELLE FONDAZIONI DEGLI AEROGENERATORI G9 – G10 DA INSTALLARSI NEI COMUNI DI BORGIA (CZ) E SQUILLACE (CZ) E INERENTI IL PARCO EOLICO "BOLINA"**

Contenuti della relazione:

RELAZIONE DI CALCOLO STRUTTURALE

- *Origine e Caratteristiche dei Codici di Calcolo*
- *Affidabilità dei codici utilizzati*
- *Validazione dei codici*
- *Tipo di analisi svolta*
- *Modalità di presentazione dei risultati*
- *Informazioni generali sull'elaborazione*
- *Giudizio motivato di accettabilità dei risultati*

STAMPA DEI DATI DI INGRESSO

- *Normative prese a riferimento*
- *Criteri adottati per le misure di sicurezza*
- *Criteri seguiti nella schematizzazione della struttura, dei vincoli e delle sconessioni*
- *Interazione tra terreno e struttura*
- *Legami costitutivi adottati per la modellazione dei materiali e dei terreni*
- *Schematizzazione delle azioni, condizioni e combinazioni di carico*
- *Metodologie numeriche utilizzate per l'analisi strutturale*
- *Metodologie numeriche utilizzate per la progettazione e la verifica degli elementi strutturali*

STAMPA DEI RISULTATI

Il Progettista:

## Indice

<b>INTESTAZIONE E CONTENUTI DELLA RELAZIONE.....</b>	<b>2</b>
Progetto.....	2
<b>RELAZIONE DI CALCOLO STRUTTURALE .....</b>	<b>5</b>
Premessa .....	5
Descrizione generale dell’opera .....	5
Quadro normativo di riferimento adottato.....	6
Azioni di progetto sulla costruzione .....	7
Modello numerico .....	7
Modellazione delle azioni.....	9
Combinazioni e/o percorsi di carico.....	10
Verifiche agli stati limite ultimi.....	11
Verifiche agli stati limite di esercizio .....	11
RELAZIONE SUI MATERIALI .....	11
<b>NORMATIVA DI RIFERIMENTO .....</b>	<b>12</b>
<b>CARATTERISTICHE MATERIALI UTILIZZATI .....</b>	<b>13</b>
LEGENDA TABELLA DATI MATERIALI .....	13
<b>MODELLAZIONE DELLE SEZIONI.....</b>	<b>18</b>
LEGENDA TABELLA DATI SEZIONI .....	18
<b>MODELLAZIONE STRUTTURA: NODI.....</b>	<b>20</b>
LEGENDA TABELLA DATI NODI .....	20
TABELLA DATI NODI .....	20
<b>MODELLAZIONE STRUTTURA: ELEMENTI SHELL .....</b>	<b>23</b>
LEGENDA TABELLA DATI SHELL.....	23
<b>MODELLAZIONE DELLE AZIONI.....</b>	<b>30</b>
LEGENDA TABELLA DATI AZIONI.....	30
<b>SCHEMATIZZAZIONE DEI CASI DI CARICO.....</b>	<b>32</b>
LEGENDA TABELLA CASI DI CARICO .....	32
<b>DEFINIZIONE DELLE COMBINAZIONI .....</b>	<b>33</b>
LEGENDA TABELLA COMBINAZIONI DI CARICO .....	33
<b>AZIONE SISMICA .....</b>	<b>37</b>
VALUTAZIONE DELL’ AZIONE SISMICA.....	37
Parametri della struttura .....	37
<b>RISULTATI ANALISI SISMICHE.....</b>	<b>38</b>
LEGENDA TABELLA ANALISI SISMICHE.....	38

<b>RISULTATI NODALI .....</b>	<b>43</b>
LEGENDA RISULTATI NODALI.....	43
<b>RISULTATI OPERE DI FONDAZIONE.....</b>	<b>86</b>
LEGENDA RISULTATI OPERE DI FONDAZIONE.....	86
<b>RISULTATI ELEMENTI TIPO SHELL .....</b>	<b>94</b>
LEGENDA RISULTATI ELEMENTI TIPO SHELL.....	94
<b>VERIFICHE ELEMENTI PARETE E/O GUSCIO IN C.A. ....</b>	<b>268</b>
LEGENDA TABELLA VERIFICHE ELEMENTI PARETE E GUSCIO IN C.A. ....	268
PROGETTAZIONE DELLE FONDAZIONI .....	270
<b>STATI LIMITE D' ESERCIZIO .....</b>	<b>281</b>
LEGENDA TABELLA STATI LIMITE D' ESERCIZIO .....	281
<b>RELAZIONE GEOTECNICA E DELLE FONDAZIONI.....</b>	<b>287</b>
<b>RELAZIONE GEOTECNICA E DELLE FONDAZIONI SUPERFICIALI .....</b>	<b>300</b>
<b>VERIFICHE PALI DI FONDAZIONE.....</b>	<b>316</b>

## RELAZIONE DI CALCOLO STRUTTURALE

### Premessa

La presente relazione di calcolo strutturale preliminare, in conformità al §10.1 del DM 17/01/18, è comprensiva di una descrizione generale dell'opera e dei criteri generali di analisi e verifica. Segue inoltre le indicazioni fornite al §10.2 del DM stesso per quanto concerne analisi e verifiche svolte con l'ausilio di codici di calcolo. La seguente relazione descrive le analisi compiute per il dimensionamento preliminare delle strutture di fondazione di un aerogeneratore tipo Vestas V150 –5.0 MW da installare in numero pari a nei Comuni di Borgia (CZ) e Squillace (CZ). Il proponente è la società E.ON CLIMATE & RENEWABLES ITALIA S.R.L. con sede a via Andrea Doria, 41/G - 00192 Roma. Gli aerogeneratori, costituenti il parco eolico denominato "Bolina", saranno installati su 'area costituita da una serie di rilievi collinari posti tra i centri abitati di Borgia (a nord dell'area interessata dal parco) e di Squillace (a sud-est dell'area). Le quote sono comprese tra i 170 m s.l.m. del sito G10, in località Gironda ed i 315 m s.l.m. in corrispondenza dell'aerogeneratore G1, all'altezza del vertice nordovest dell'area del PE.

Nella presente parte sono riportati i principali elementi di inquadramento del progetto riguardante le strutture, in relazione agli strumenti urbanistici, al progetto architettonico, al progetto delle componenti tecnologiche in generale ed alle prestazioni attese dalla struttura.

I tabulati di calcolo sono stati concepiti tenendo conto

- delle valutazioni geologiche e geotecniche inerenti gli elaborati di merito redatti dal geol. Pasquale Greco e
- dei carichi applicati in fondazioni dedotti dall'elaborato di riferimento (Combine Tower loads V150 Mk3E HH105 IEC3B) rilasciato dalla Vestas che devono ritenersi parte integrante della presente.

A seguito di quanto riportato nella relazione geologica, le fondazioni di seguito calcolate sono di tipo profonde e più precisamente piastre su pali.

**Si precisa che l'elaborazione presente è da ritenersi PRELIMINARE, quindi passibile di variazioni in fase di progettazione esecutiva, soprattutto in relazione a eventuali scelte diverse relativamente agli aerogeneratori da utilizzare ed a una più diretta condivisione dei calcoli e di esigenze realizzative con i fornitori degli stessi. Inoltre dovranno essere fatte valutazioni più puntuali a seguito di indagini geologiche più accurate che potrebbero portare a valutazioni anche abbastanza diverse.**

### Descrizione generale dell'opera

La presente relazione è riferita al calcolo delle opere di fondazioni del tipo di aerogeneratori Vestas V150-5.0 MW che dovranno essere installati nel parco eolico Bolina. In particolare, si è ritenuto opportuno suddividere la relazione di calcolo in relazione alla classificazione del sottosuolo nell'area in funzione dei valori geotecnici dei terreni, identificate nella relazione geologica. La presente parte fa riferimento a 2 aerogeneratori denominati G9 e G10.

La singola piastra di fondazione sarà prevista di forma circolare (in fase esecutiva potrà essere ipotizzata anche di forma circolare tronco-conica ossia con un'altezza perimetrale inferiore a quella più interna) di diametro pari a 23,00 m e spessore pari a 2,20 m. Inoltre per le caratteristiche del terreno sono stati ipotizzati 24 pali di fondazione trivellati per ogni singolo aerogeneratore, di diametro pari a 0,60 m e profondità di infissione uguale a 9,00 m. Il calcolo si è avvalso dei carichi in fondazione comunicati dal produttore Vestas con un elaborato preliminare (Combine Tower loads V150 Mk3E HH105 IEC3B), passibili di variazione in fase esecutiva, che sono i seguenti:

- $F_x$ : 3570.18 [daN];
- $F_y$ : 3570.18 [daN];
- $F_z$ : -223721.0 [daN];
- $M_x$ : 569275200.0 [daN cm];
- $M_y$ : 569275200.0 [daN cm];
- $M_z$ : -4886500.0 [daN cm].

Descrizione generale dell'opera	
Fabbricato ad uso	
Ubicazione	Comune di SQUILLACE (CZ) (Regione CALABRIA)
	Località SQUILLACE (CZ)
	Longitudine 16.523, Latitudine 38.793
Numero di piani	
Numero vani scale	
Numero vani ascensore	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Tipo di fondazione	FONDAZIONE SU PALI
--------------------	--------------------

<b>Principali caratteristiche della struttura</b>	
Struttura regolare in pianta	SI
Struttura regolare in altezza	SI
Classe di duttilità	B
Travi: ricalate o in spessore	
Pilastrì	
Pilastrì in falso	
Tipo di fondazione	FONDAZIONE SU PALI
Condizioni per cui è necessario considerare la componente verticale del sisma	

<b>Parametri della struttura</b>			
Classe d'uso	Vita Vn [anni]	Coeff. Uso	Periodo Vr [anni]
IV	50.0	1.0	50.0

<b>Fattore di struttura/comportamento</b>
1

### Quadro normativo di riferimento adottato

Le norme ed i documenti assunti quale riferimento per la progettazione strutturale vengono indicati di seguito.

Nel capitolo "normativa di riferimento" è comunque presente l'elenco completo delle normative disponibili.

<b>Progetto-verifica degli elementi</b>	
Progetto cemento armato	D.M. 17-01-2018
Progetto acciaio	D.M. 17-01-2018
Progetto legno	D.M. 17-01-2018
Progetto muratura	D.M. 17-01-2018
<b>Azione sismica</b>	
Norma applicata per l'azione sismica	D.M. 17-01-2018

## Azioni di progetto sulla costruzione

Nei capitoli "modellazione delle azioni" e "schematizzazione dei casi di carico" sono indicate le azioni sulla costruzioni.

Nel prosieguo si indicano tipo di analisi strutturale condotta (statico,dinamico, lineare o non lineare) e il metodo adottato per la risoluzione del problema strutturale nonché le metodologie seguite per la verifica o per il progetto-verifica delle sezioni. Si riportano le combinazioni di carico adottate e, nel caso di calcoli non lineari, i percorsi di carico seguiti; le configurazioni studiate per la struttura in esame *sono risultate effettivamente esaustive per la progettazione-verifica.*

La verifica della sicurezza degli elementi strutturali avviene con i metodi della scienza delle costruzioni. L'analisi strutturale è condotta con il metodo degli spostamenti per la valutazione dello stato tensodeformativo indotto da carichi statici. L'analisi strutturale è condotta con il metodo dell'analisi modale e dello spettro di risposta in termini di accelerazione per la valutazione dello stato tensodeformativo indotto da carichi dinamici (tra cui quelli di tipo sismico).

L'analisi strutturale viene effettuata con il metodo degli elementi finiti. Il metodo sopraindicato si basa sulla schematizzazione della struttura in elementi connessi solo in corrispondenza di un numero prefissato di punti denominati nodi. I nodi sono definiti dalle tre coordinate cartesiane in un sistema di riferimento globale. Le incognite del problema (nell'ambito del metodo degli spostamenti) sono le componenti di spostamento dei nodi riferite al sistema di riferimento globale (traslazioni secondo X, Y, Z, rotazioni attorno X, Y, Z). La soluzione del problema si ottiene con un sistema di equazioni algebriche lineari i cui termini noti sono costituiti dai carichi agenti sulla struttura opportunamente concentrati ai nodi:

$$\mathbf{K} * \mathbf{u} = \mathbf{F} \quad \text{dove} \quad \mathbf{K} = \text{matrice di rigidezza}$$

$\mathbf{u}$  = vettore spostamenti nodali

$\mathbf{F}$  = vettore forze nodali

Dagli spostamenti ottenuti con la risoluzione del sistema vengono quindi dedotte le sollecitazioni e/o le tensioni di ogni elemento, riferite generalmente ad una terna locale all'elemento stesso.

Il sistema di riferimento utilizzato è costituito da una terna cartesiana destrorsa XYZ. Si assume l'asse Z verticale ed orientato verso l'alto.

Gli elementi utilizzati per la modellazione dello schema statico della struttura sono i seguenti:

Elemento tipo <b>TRUSS</b>	(biella-D2)
Elemento tipo <b>BEAM</b>	(trave-D2)
Elemento tipo <b>MEMBRANE</b>	(membrana-D3)
Elemento tipo <b>PLATE</b>	(piastra-guscio-D3)
Elemento tipo <b>BOUNDARY</b>	(molla)
Elemento tipo <b>STIFFNESS</b>	(matrice di rigidezza)
Elemento tipo <b>BRICK</b>	(elemento solido)
Elemento tipo <b>SOLAIO</b>	(macro elemento composto da più membrane)

## Modello numerico

In questa parte viene descritto il modello numerico utilizzato (o i modelli numerici utilizzati) per l'analisi della struttura. La presentazione delle informazioni deve essere, coerentemente con le prescrizioni del paragrafo 10.2 e relativi sottoparagrafi delle NTC-18, tale da garantirne la leggibilità, la corretta interpretazione e la riproducibilità



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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Tipo di analisi strutturale	
Carichi verticali	SI
Statica non lineare	NO
Sismica statica lineare	SI
Sismica dinamica lineare	NO
Sismica statica non lineare (prop. masse)	NO
Sismica statica non lineare (prop. modo)	NO
Sismica statica non lineare (triangolare)	NO
Non linearità geometriche (fattore P delta)	NO

Di seguito si indicano l'origine e le caratteristiche dei codici di calcolo utilizzati riportando titolo, produttore e distributore, versione, estremi della licenza d'uso:

Informazioni sul codice di calcolo	
Titolo:	PRO_SAP PROfessional Structural Analysis Program
Versione:	19.0.0
Produttore-Distributore:	2S.I. Software e Servizi per l'Ingegneria s.r.l., Ferrara
Dati utente finale:	Ing. Claudio Coscarella
Codice Utente:	Licenza gratuita
Codice Licenza:	START-UP (build 2019-01-184)

Un attento esame preliminare della documentazione a corredo del software **ha consentito di valutarne l'affidabilità e soprattutto l'idoneità al caso specifico**. La documentazione, fornita dal produttore e distributore del software, contiene una esauriente descrizione delle basi teoriche e degli algoritmi impiegati, l'individuazione dei campi d'impiego, nonché casi prova interamente risolti e commentati, corredati dei file di input necessari a riprodurre l'elaborazione:

Affidabilità dei codici utilizzati
2S.I. ha verificato l'affidabilità e la robustezza del codice di calcolo attraverso un numero significativo di casi prova in cui i risultati dell'analisi numerica sono stati confrontati con soluzioni teoriche.
E' possibile reperire la documentazione contenente alcuni dei più significativi casi trattati al seguente link: <a href="http://www.2si.it/Software/Affidabilità.htm">http://www.2si.it/Software/Affidabilità.htm</a>

Modellazione della geometria e proprietà meccaniche:	
nodi	338
elementi D2 (per aste, travi, pilastri...)	45

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

elementi D3 (per pareti, platee, gusci...)	320
elementi solaio	0
elementi solidi	0
<b>Dimensione del modello strutturale [cm]:</b>	
X min =	-1150.00
Xmax =	1150.00
Ymin =	-1150.00
Ymax =	1150.00
Zmin =	-110.00
Zmax =	-90.00
<b>Strutture verticali:</b>	
Elementi di tipo asta	NO
Pilastrini	SI
Pareti	NO
Setti (a comportamento membranale)	NO
<b>Strutture non verticali:</b>	
Elementi di tipo asta	NO
Travi	SI
Gusci	NO
Membrane	NO
<b>Orizzontamenti:</b>	
Solai con la proprietà piano rigido	NO
Solai senza la proprietà piano rigido	NO
<b>Tipo di vincoli:</b>	
Nodi vincolati rigidamente	NO
Nodi vincolati elasticamente	NO
Nodi con isolatori sismici	NO
Fondazioni puntuali (plinti/plinti su palo)	SI
Fondazioni di tipo trave	NO
Fondazioni di tipo platea	SI
Fondazioni con elementi solidi	NO

## Modellazione delle azioni

Si veda il capitolo **"Schematizzazione dei casi di carico"** per le informazioni necessarie alla comprensione ed alla ricostruzione delle azioni applicate al modello numerico, coerentemente con quanto indicato nella parte **"2.6. Azioni di progetto sulla costruzione"**.

## Combinazioni e/o percorsi di carico

Si veda il capitolo **"Definizione delle combinazioni"** in cui sono indicate le combinazioni di carico adottate e, nel caso di calcoli non lineari, i percorsi di carico seguiti.

<b>Combinazioni dei casi di carico</b>	
APPROCCIO PROGETTUALE	Approccio 2
Tensioni ammissibili	NO
SLU	SI
SLV (SLU con sisma)	SI
SLC	NO
SLD	SI
SLO	NO
SLU GEO A2 (per approccio 1)	NO
SLU EQU	SI
Combinazione caratteristica (rara)	SI
Combinazione frequente	NO
Combinazione quasi permanente (SLE)	NO
SLA (accidentale quale incendio)	NO

<b>Principali risultati</b>
<p>I risultati devono costituire una sintesi completa ed efficace, presentata in modo da riassumere il comportamento della struttura, per ogni tipo di analisi svolta.</p> <p>2.8.1. Risultati dell'analisi modale</p> <p>Viene riportato il tipo di analisi modale condotta, restituiti i risultati della stessa e valutate le informazioni desumibili in merito al comportamento della struttura.</p> <p>2.8.2. Deformate e sollecitazioni per condizioni di carico</p> <p>Vengono riportati i principali risultati atti a descrivere il comportamento della struttura, in termini di stati di sollecitazione e di deformazione generalizzata, distinti per condizione elementare di carico o per combinazioni omogenee delle stesse.</p> <p>2.8.3. Involuppo delle sollecitazioni maggiormente significative. L'analisi e la restituzione degli involuppi (nelle combinazioni considerate agli SLU e agli SLE) delle caratteristiche di sollecitazione devono essere finalizzate alla valutazione dello stato di sollecitazione nei diversi elementi della struttura.</p> <p>2.8.4. Reazioni vincolari</p> <p>Vengono riportate le reazioni dei vincoli nelle singole condizioni di carico e/o nelle combinazioni considerate.</p> <p>2.8.5. Altri risultati significativi</p> <p>Nella presente parte vengono riportati tutti gli altri risultati che il progettista ritiene di interesse per la descrizione e la comprensione del/i modello/i e del comportamento della struttura.</p>

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

La presente relazione, oltre ad illustrare in modo esaustivo i dati in ingresso ed i risultati delle analisi in forma tabellare, riporta una serie di immagini:

per i dati in ingresso:

- modello solido della struttura
- numerazione di nodi e ed elementi
- configurazioni di carico statiche
- configurazioni di carico sismiche con baricentri delle masse e eccentricità

per le combinazioni più significative (statisticamente più gravose per la struttura):

- configurazioni deformate
- diagrammi e involuipi delle azioni interne
- mappe delle tensioni
- reazioni vincolari
- mappe delle pressioni sul terreno

per il progetto-verifica degli elementi:

- diagrammi di armatura
- percentuali di sfruttamento
- mappe delle verifiche più significative per i vari stati limite

#### **Informazioni generali sull'elaborazione e giudizio motivato di accettabilità dei risultati.**

Il programma prevede una serie di controlli automatici (check) che consentono l'individuazione di errori di modellazione. Al termine dell'analisi un controllo automatico identifica la presenza di spostamenti o rotazioni abnormi. Si può pertanto asserire che l'elaborazione sia corretta e completa. I risultati delle elaborazioni sono stati sottoposti a controlli che ne comprovano l'attendibilità. Tale valutazione ha compreso il confronto con i risultati di semplici calcoli, eseguiti con metodi tradizionali e adottati, anche in fase di primo proporzionamento della struttura. Inoltre, sulla base di considerazioni riguardanti gli stati tensionali e deformativi determinati, si è valutata la validità delle scelte operate in sede di schematizzazione e di modellazione della struttura e delle azioni. Si allega al termine della presente relazione elenco sintetico dei controlli svolti (verifiche di equilibrio tra reazioni vincolari e carichi applicati, comparazioni tra i risultati delle analisi e quelli di valutazioni semplificate, etc.) .

## Verifiche agli stati limite ultimi

Nel capitolo relativo alla progettazione degli elementi strutturali agli SLU vengono indicate, con riferimento alla normativa adottata, le modalità ed i criteri seguiti per valutare la sicurezza della struttura nei confronti delle possibili situazioni di crisi ed i risultati delle valutazioni svolte. In via generale, oltre alle verifiche di resistenza e di spostamento, devono essere prese in considerazione verifiche nei confronti dei fenomeni di instabilità, locale e globale, di fatica, di duttilità, di degrado.

## Verifiche agli stati limite di esercizio

Nel capitolo relativo alla progettazione degli elementi strutturali agli SLU vengono indicate, con riferimento alla normativa adottata, le modalità seguite per valutare l'affidabilità della struttura nei confronti delle possibili situazioni di perdita di funzionalità (per eccessive deformazioni, fessurazioni, vibrazioni, etc.) ed i risultati delle valutazioni svolte.

## RELAZIONE SUI MATERIALI

Il capitolo Materiali riporta informazioni esaustive relative all'elenco dei materiali impiegati e loro modalità di posa in opera e ai valori di calcolo.

## NORMATIVA DI RIFERIMENTO

1. D.Min. Infrastrutture Min. Interni e Prot. Civile 17 Gennaio 2018 e allegate "Norme tecniche per le costruzioni".
2. D.Min. Infrastrutture Min. Interni e Prot. Civile 14 Gennaio 2008 e allegate "Norme tecniche per le costruzioni".
3. D.Min. Infrastrutture e trasporti 14 Settembre 2005 e allegate "Norme tecniche per le costruzioni".
4. D.M. LL.PP. 9 Gennaio 1996 "Norme tecniche per il calcolo, l'esecuzione ed il collaudo delle strutture in cemento armato, normale e precompresso e per le strutture metalliche".
5. D.M. LL.PP. 16 Gennaio 1996 "Norme tecniche relative ai <<Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi>>".
6. D.M. LL.PP. 16 Gennaio 1996 "Norme tecniche per le costruzioni in zone sismiche".
7. Circolare 4/07/96, n.156AA.GG./STC. istruzioni per l'applicazione delle "Norme tecniche relative ai <<Criteri generali per la verifica di sicurezza delle costruzioni e dei carichi e sovraccarichi>>" di cui al D.M. 16/01/96.
8. Circolare 10/04/97, n.65AA.GG. istruzioni per l'applicazione delle "Norme tecniche per le costruzioni in zone sismiche" di cui al D.M. 16/01/96.
9. D.M. LL.PP. 20 Novembre 1987 "Norme tecniche per la progettazione, esecuzione e collaudo degli edifici in muratura e per il loro consolidamento".
10. Circolare 4 Gennaio 1989 n. 30787 "Istruzioni in merito alle norme tecniche per la progettazione, esecuzione e collaudo degli edifici in muratura e per il loro consolidamento".
11. D.M. LL.PP. 11 Marzo 1988 "Norme tecniche riguardanti le indagini sui terreni e sulle rocce, la stabilità dei pendii naturali e delle scarpate, i criteri generali e le prescrizioni per la progettazione, l'esecuzione e il collaudo delle opere di sostegno delle terre e delle opere di fondazione".
12. D.M. LL.PP. 3 Dicembre 1987 "Norme tecniche per la progettazione, esecuzione e collaudo delle costruzioni prefabbricate".
13. UNI 9502 - Procedimento analitico per valutare la resistenza al fuoco degli elementi costruttivi di conglomerato cementizio armato, normale e precompresso - edizione maggio 2001
14. Ordinanza del Presidente del Consiglio dei Ministri n. 3274 del 20 marzo 2003 "Primi elementi in materia di criteri generali per la classificazione sismica del territorio nazionale e di normative tecniche per le costruzioni in zona sismica" e successive modificazioni e integrazioni.
15. UNI EN 1990:2006 13/04/2006 Eurocodice 0 - Criteri generali di progettazione strutturale.
16. UNI EN 1991-1-1:2004 01/08/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-1: Azioni in generale - Pesì per unità di volume, pesì propri e sovraccarichi per gli edifici.
17. UNI EN 1991-2:2005 01/03/2005 Eurocodice 1 - Azioni sulle strutture - Parte 2: Carichi da traffico sui ponti.
18. UNI EN 1991-1-3:2004 01/10/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-3: Azioni in generale - Carichi da neve.
19. UNI EN 1991-1-4:2005 01/07/2005 Eurocodice 1 - Azioni sulle strutture - Parte 1-4: Azioni in generale - Azioni del vento.
20. UNI EN 1991-1-5:2004 01/10/2004 Eurocodice 1 - Azioni sulle strutture - Parte 1-5: Azioni in generale - Azioni termiche.
21. UNI EN 1992-1-1:2005 24/11/2005 Eurocodice 2 - Progettazione delle strutture di calcestruzzo - Parte 1-1: Regole generali e regole per gli edifici.
22. UNI EN 1992-1-2:2005 01/04/2005 Eurocodice 2 - Progettazione delle strutture di calcestruzzo - Parte 1-2: Regole generali - Progettazione strutturale contro l'incendio.
23. UNI EN 1993-1-1:2005 01/08/2005 Eurocodice 3 - Progettazione delle strutture di acciaio - Parte 1-1: Regole generali e regole per gli edifici.
24. UNI EN 1993-1-8:2005 01/08/2005 Eurocodice 3 - Progettazione delle strutture di acciaio - Parte 1-8: Progettazione dei collegamenti.
25. UNI EN 1994-1-1:2005 01/03/2005 Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo - Parte 1-1: Regole generali e regole per gli edifici.
26. UNI EN 1994-2:2006 12/01/2006 Eurocodice 4 - Progettazione delle strutture composte acciaio-calcestruzzo - Parte 2: Regole generali e regole per i ponti.
27. UNI EN 1995-1-1:2005 01/02/2005 Eurocodice 5 - Progettazione delle strutture di legno - Parte 1-1: Regole generali – Regole comuni e regole per gli edifici.
28. UNI EN 1995-2:2005 01/01/2005 Eurocodice 5 - Progettazione delle strutture di legno - Parte 2: Ponti.
29. UNI EN 1996-1-1:2006 26/01/2006 Eurocodice 6 - Progettazione delle strutture di muratura - Parte 1-1: Regole generali per strutture di muratura armata e non armata.
30. UNI EN 1996-3:2006 09/03/2006 Eurocodice 6 - Progettazione delle strutture di muratura - Parte 3: Metodi di calcolo semplificato per strutture di muratura non armata.
31. UNI EN 1997-1:2005 01/02/2005 Eurocodice 7 - Progettazione geotecnica - Parte 1: Regole generali.
32. UNI EN 1998-1:2005 01/03/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 1: Regole generali, azioni sismiche e regole per gli edifici.
33. UNI EN 1998-3:2005 01/08/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 3: Valutazione e adeguamento degli edifici.
34. UNI EN 1998-5:2005 01/01/2005 Eurocodice 8 - Progettazione delle strutture per la resistenza sismica - Parte 5: Fondazioni, strutture di contenimento ed aspetti geotecnici.

NOTA sul capitolo "normativa di riferimento": riporta l'elenco delle normative implementate nel software. Le norme utilizzate per la struttura oggetto della presente relazione sono indicate nel precedente capitolo "RELAZIONE DI CALCOLO STRUTTURALE" "ANALISI E VERIFICHE SVOLTE CON L'AUSILIO DI CODICI DI CALCOLO". Laddove nei capitoli successivi vengano richiamate norme antecedenti al DM 17.01.08 è dovuto a o a progettazione simulata di edificio esistente.

## CARATTERISTICHE MATERIALI UTILIZZATI

### LEGENDA TABELLA DATI MATERIALI

Il programma consente l'uso di materiali diversi. Sono previsti i seguenti tipi di materiale:

1	materiale tipo cemento armato
2	materiale tipo acciaio
3	materiale tipo muratura
4	materiale tipo legno
5	materiale tipo generico

I materiali utilizzati nella modellazione sono individuati da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni materiale vengono riportati in tabella i seguenti dati:

Young	modulo di elasticità normale E
Poisson	coefficiente di contrazione trasversale $\nu$
G	modulo di elasticità tangenziale
Gamma	peso specifico
Alfa	coefficiente di dilatazione termica
Fattore di confidenza FC m	Fattore di confidenza specifico per materiale; (è riportato solo se diverso da quello globale della struttura)
Fattore di confidenza FC a	Fattore di confidenza specifico per l'armatura (è riportato solo se diverso da quello globale della struttura)
Elasto-plastico	Materiale elastico perfettamente plastico per aste non lineari
Massima compressione	Massima tensione di compressione per aste non lineari
Massima trazione	Massima tensione di trazione per aste non lineari
Fattore attrito	Coefficiente di attrito per aste non lineari
Rapporto HRDb	Rapporto di hardening a flessione
Rapporto HRDv	Rapporto di hardening a taglio

I dati soprariportati vengono utilizzati per la modellazione dello schema statico e per la determinazione dei carichi inerziali e termici. In relazione al tipo di materiale vengono riportati inoltre:

1	cemento armato	Resistenza Rc	resistenza a compressione cubica
		Resistenza fctm	resistenza media a trazione semplice
		Coefficiente ksb	Coefficiente di riduzione della resistenza a compressione da utilizzare nello stress block
2	acciaio	Tensione ft	Valore della tensione di rottura
		Tensione fy	Valore della tensione di snervamento
		Resistenza fd	Resistenza di calcolo per SL CNR-UNI 10011
		Resistenza fd (>40)	Resistenza di calcolo per SL CNR-UNI 10011 per spessori > 40mm
		Tensione ammissibile	Tensione ammissibile CNR-UNI 10011
		Tensione ammissibile (>40)	Tensione ammissibile CNR-UNI 10011 per spessori > 40mm
3	muratura	Muratura consolidata	Muratura per la quale si prevedono interventi di rinforzo"
		Incremento resistenza	Incremento conseguito in termini di resistenza
		Incremento rigidezza	Incremento conseguito in termini di rigidezza

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Resistenza f	Valore della resistenza a compressione
Resistenza fv0	Valore della resistenza a taglio in assenza di tensioni normali
Resistenza fh	Valore della resistenza a compressione orizzontale
Resistenza fb	Valore della resistenza a compressione dei blocchi
Resistenza fbh	Valore della resistenza a compressione dei blocchi in direzione orizzontale
Resistenza fv0h	Valore della resistenza a taglio in assenza di tensioni normali per le travi
Resistenza ft	Valore della resistenza a trazione per fessurazione diagonale
Resistenza fvlm	Valore della massima resistenza a taglio
Resistenza fbt	Valore della resistenza a trazione dei blocchi
Coefficiente mu	Coefficiente d'attrito utilizzato per la resistenza a taglio (tipicamente 0.4)
Coefficiente fi	Coefficiente d'ingranamento utilizzato per la resistenza a taglio
Coefficiente ksb	Coefficiente di riduzione della resistenza a compressione da utilizzare nello stress block
4 legno	
E0,05	Modulo di elasticità corrispondente ad un frattile del 5%
Resistenza fc0	Valore della resistenza a compressione parallela
Resistenza ft0	Valore della resistenza a trazione parallela
Resistenza fm	Valore della resistenza a flessione
Resistenza fv	Valore della resistenza a taglio
Resist. ft0k	Resistenza caratteristica (tensione amm. per REGLES) per trazione
Resist. fmk	Resistenza caratteristica (tensione amm. per REGLES) per flessione
Resist. fvk	Resistenza caratteristica (tensione amm. per REGLES) per taglio
Modulo E0,05	Modulo elastico parallelo caratteristico
Lamellare	lamellare o massiccio

Vengono inoltre riportate le tabelle contenenti il riassunto delle informazioni assegnate nei criteri di progetto in uso.

Con riferimento al **Documento di Affidabilità** "Test di validazione del software di calcolo PRO\_SAP e dei moduli aggiuntivi PRO\_SAP Modulo Geotecnico, PRO\_CAD nodi acciaio e PRO\_MST" - versione Maggio 2011, disponibile per il download sul sito [www.2si.it](http://www.2si.it), si segnalano i seguenti esempi applicativi:

Modellazione di strutture in c.a.

Test N°	Titolo
41	GERARCHIA DELLE RESISTENZE PER TRAVI IN C.A.
42	GERARCHIA DELLE RESISTENZE PER PILASTRI IN C.A.

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

43	VERIFICA ALLE TA DI STRUTTURE IN C.A.
44	VERIFICA AGLI SLU DI STRUTTURE IN C.A.
45	VERIFICA A PUNZONAMENTO ALLO SLU DI PIASTRE IN C.A.
46	VERIFICA A PUNZONAMENTO ALLO SLU DI TRAVI IN C.A.
47	PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 9/1/96
48	PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 14/1/2008
49	VERIFICA ALLO SLE (TENSIONI E FESSURAZIONE) DI STRUTTURE IN C.A.
50	VERIFICA ALLO SLE (DEFORMAZIONE) DI STRUTTURE IN C.A.
51	FATTORE DI STRUTTURA
52	SOVRARESISTENZE
53	DETTAGLI COSTRUTTIVI C.A.: LIMITI D'ARMATURA PILASTRI E NODI TRAVE-PILASTRO
54	PARETI IN C.A. SNELLE IN ZONA SISMICA
80	ANALISI PUSHOVER DI UN EDIFICIO IN C.A.
120	PROGETTO E VERIFICA DI TRAVI PREM

Modellazione di strutture in acciaio

Test N°	Titolo
55	VERIFICA DI STABILITA' DI ASTE COMPRESSE IN ACCIAIO – METODO OMEGA
56	LUCE LIBERA DI TRAVI E ASTE IN ACCIAIO
57	LUCE LIBERA DI COLONNE IN ACCIAIO
58	SVERGOLAMENTO DI TRAVI IN ACCIAIO
59	FATTORE DI STRUTTURA
60	ACCIAIO D.M.2008
61	ACCIAIO EC3
62	GERARCHIA RESISTENZE STRUTTURE IN ACCIAIO
63	STABILITA' DI ASTE COMPOSTE IN ACCIAIO
73	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA IRRIGIDIMENTI TRASVERSALI
74	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA DI UN PIATTO DI RINFORZO SALDATO ALL'ANIMA DELLA COLONNA
75	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO CON PRESENZA DI DUE PIATTI DI RINFORZO SALDATI ALL'ANIMA DELLA COLONNA
76	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO A DUE VIE SU ALI COLONNA
77	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO A UNA VIA CON DUE COMBINAZIONI DI CARICO
78	COLLEGAMENTI IN ACCIAIO: NODO TRAVE COLONNA FLANGIATO SU ANIMA SENZA RINFORZI A QUATTRO FILE DI BULLONI DI CUI UNA SU PIASTRA INFERIORE E UNA SU PIASTRA SUPERIORE
79	VERIFICA DELLA PIASTRA NODO TRAVE COLONNA
85	TELAIO ACCIAIO: CONTROVENTI CONCENTRICI

Modellazione di strutture in muratura

Test N°	Titolo
81	ANALISI PUSHOVER DI UNA STRUTTURA IN MURATURA
84	ANALISI ELASTO PLASTICA INCREMENTALE, PARETE IN MURATURA
86	VERIFICA NON SISMICA DELLE MURATURE (D.M. 87 TA)
87	VERIFICA NON SISMICA DELLE MURATURE (D.M. 2005 SL)
88	FATTORE DI STRUTTURA

Modellazione di strutture in legno



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Test N°	Titolo
17	SOLAIO: MISTO LEGNO-CALCESTRUZZO
89	VERIFICA ALLO SLU DI STRUTTURE IN LEGNO SECONDO EC5
90	VERIFICA ALLO SLE DI STRUTTURE IN LEGNO SECONDO EC5
91	FATTORE DI STRUTTURA
92	VERIFICHE EC5
93	SNELLEZZE EC5
94	VERIFICA AL FUOCO DI STRUTTURE IN LEGNO SECONDO EC5
117	PROGETTO E VERIFICA DI GUSCI IN MATERIALE XLAM
118	PROGETTO E VERIFICA DI PARETI IN MATERIALE XLAM E RELATIVI COLLEGAMENTI
119	PROGETTO E VERIFICA DI SOLAI IN MATERIALE XLAM

Id	Tipo / Note	V. caratt.	V. medio	Young	Poisson	G	Gamma	Alfa	Altri
		daN/cm2	daN/cm2	daN/cm2		daN/cm2	daN/cm3		
1	Calcestruzzo Classe C25/30			3.145e+05	0.20	1.310e+05	2.50e-03	1.00e-05	
	Resistenza Rc	300.0							
	Resistenza fctm		25.6						
	Coefficiente ksb								0.85
	Rapporto HRDb								1.00e-05
	Rapporto HRDv								1.00e-05
75	Materiale inf. rigido no peso E = 1.000e+09			1.000e+09	0.0	5.000e+08	0.0	1.20e-05	
	Rapporto HRDb								1.00e-05
	Rapporto HRDv								1.00e-05

Gusci c.a.	1/7/..	2/8/..	3/9/..	4/10/..	5/11/..	6/12/..
<b>Armatura</b>						
Inclinazione Ax [ gradi ]	0.0	0.0				
Angolo Ax-Ay [ gradi ]	90.00	90.00				
Minima tesa	0.31	0.31				
Massima tesa	0.78	0.78				
Maglia unica centrale	No	No				
Copriferro [ cm ]	2.00	3.00				
<b>Maglia x</b>						
diametro	10	24				
passo	20	20				
diametro aggiuntivi	12	12				
<b>Maglia y</b>						
diametro	10	24				
passo	20	20				
diametro aggiuntivi	12	12				
<b>Stati limite ultimi</b>						
Tensione fy [daN/cm2 ]	4500.00	4500.00				
Tipo acciaio	tipo C	tipo C				
Coefficiente gamma s	1.15	1.15				
Coefficiente gamma c	1.50	1.50				
Verifiche con N costante	Si	Si				
Applica SLU da DIN	No	No				
<b>Tensioni ammissibili</b>						
Tensione amm. cls [daN/cm2 ]	97.50	97.50				
Tensione amm. acciaio [daN/cm2 ]	2600.00	2600.00				
Rapporto omogeneizzazione N	15.00	15.00				
Massimo rapporto area compressa/tesa	1.00	1.00				
<b>Resistenza al fuoco</b>						
3- intradosso	No	No				
3+ estradosso	No	No				
Tempo di esposizione R	15	15				



## MODELLAZIONE DELLE SEZIONI

### LEGENDA TABELLA DATI SEZIONI

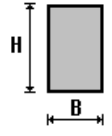
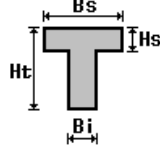
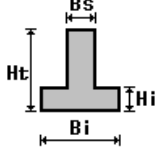
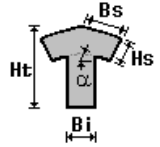
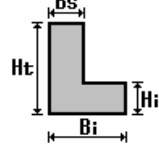
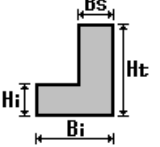
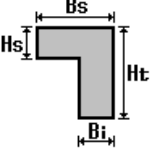
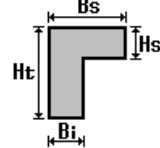
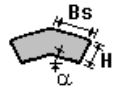
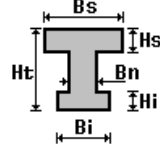
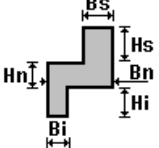
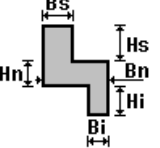
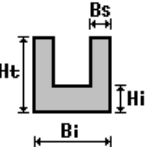
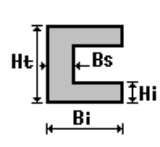
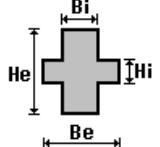
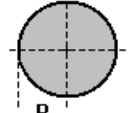
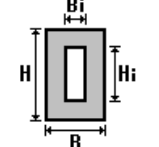
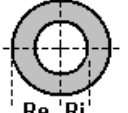
Il programma consente l'uso di sezioni diverse. Sono previsti i seguenti tipi di sezione:

1. sezione di tipo generico
2. profilati semplici
3. profilati accoppiati e speciali

Le sezioni utilizzate nella modellazione sono individuate da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni sezione vengono riportati in tabella i seguenti dati:

<b>Area</b>	area della sezione
<b>A V2</b>	area della sezione/fattore di taglio (per il taglio in direzione 2)
<b>A V3</b>	area della sezione/fattore di taglio (per il taglio in direzione 3)
<b>Jt</b>	fattore torsionale di rigidezza
<b>J2-2</b>	momento d'inerzia della sezione riferito all'asse 2
<b>J3-3</b>	momento d'inerzia della sezione riferito all'asse 3
<b>W2-2</b>	modulo di resistenza della sezione riferito all'asse 2
<b>W3-3</b>	modulo di resistenza della sezione riferito all'asse 3
<b>Wp2-2</b>	modulo di resistenza plastico della sezione riferito all'asse 2
<b>Wp3-3</b>	modulo di resistenza plastico della sezione riferito all'asse 3

I dati sopra riportati vengono utilizzati per la determinazione dei carichi inerziali e per la definizione delle rigidezze degli elementi strutturali; qualora il valore di Area V2 (e/o Area V3) sia nullo la deformabilità per taglio V2 (e/o V3) è trascurata. La valutazione delle caratteristiche inerziali delle sezioni è condotta nel riferimento 2-3 dell'elemento.

 rettangolare	 a T	 a T rovescia	 a T di colmo	 a L	 a L specchiata
 a L specchiata rovescia	 a L rovescia	 a L di colmo	 a doppio T	 a quattro specchiata	 a quattro
 a U	 a C	 a croce	 circolare	 rettangolare cava	 circolare cava

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Per quanto concerne i profilati semplici ed accoppiati l'asse 2 del riferimento coincide con l'asse x riportato nei più diffusi profilati.

Per quanto concerne le sezioni di tipo generico (tipo 1.):  
 i valori dimensionali con prefisso B sono riferiti all'asse 2  
 i valori dimensionali con prefisso H sono riferiti all'asse 3

Con riferimento al Documento di Affidabilità "Test di validazione del software di calcolo PRO\_SAP e dei moduli aggiuntivi PRO\_SAP Modulo Geotecnico, PRO\_CAD nodi acciaio e PRO\_MST" - versione Settembre 2014, disponibile per il download sul sito [www.2si.it](http://www.2si.it), si segnalano i seguenti esempi applicativi:

Test N°	Titolo
1	CARATTERISTICHE GEOMETRICHE E INERZIALI
45	VERIFICA AGLI SLU DI STRUTTURE IN C.A.
48	PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 9/1/96
49	PROGETTAZIONE A TAGLIO DI STRUTTURE IN C.A. SECONDO IL D.M. 14/1/2008
50	VERIFICA ALLO SLE (TENSIONI E FESSURAZIONE) DI STRUTTURE IN C.A.
51	VERIFICA ALLO SLE (DEFORMAZIONE) DI STRUTTURE IN C.A.
104	ANALISI DI RESISTENZA AL FUOCO

Id	Tipo	Area	A V2	A V3	Jt	J 2-2	J 3-3	W 2-2	W 3-3	Wp 2-2	Wp 3-3
		cm2	cm2	cm2	cm4	cm4	cm4	cm3	cm3	cm3	cm3
1	Rettangolare: b=30.00 h =30.00	900.00	750.00	750.00	1.139e+05	6.750e+04	6.750e+04	4500.00	4500.00	6750.00	6750.00
133	Circolare cava: re=225 ri=220	6990.04	0.0	0.0	3.461e+08	1.730e+08	1.730e+08	7.691e+05	7.691e+05	9.902e+05	9.902e+05

## MODELLAZIONE STRUTTURA: NODI

### LEGENDA TABELLA DATI NODI

Il programma utilizza per la modellazione nodi strutturali.

Ogni nodo è individuato dalle coordinate cartesiane nel sistema di riferimento globale (X Y Z).

Ad ogni nodo è eventualmente associato un codice di vincolamento rigido, un codice di fondazione speciale, ed un set di sei molle (tre per le traslazioni, tre per le rotazioni). Le tabelle sottoriportate riflettono le succitate possibilità. In particolare per ogni nodo viene indicato in tabella:

<b>Nodo</b>	numero del nodo.
<b>X</b>	valore della coordinata X
<b>Y</b>	valore della coordinata Y
<b>Z</b>	valore della coordinata Z

Per i nodi ai quali sia associato un codice di vincolamento rigido, un codice di fondazione speciale o un set di molle viene indicato in tabella:

<b>Nodo</b>	numero del nodo.
<b>X</b>	valore della coordinata X
<b>Y</b>	valore della coordinata Y
<b>Z</b>	valore della coordinata Z
<b>Note</b>	eventuale codice di vincolo (es. v=110010 sei valori relativi ai sei gradi di libertà previsti per il nodo TxTyTzRxRyRz, il valore 1 indica che lo spostamento o rotazione relativo è impedito, il valore 0 indica che lo spostamento o rotazione relativo è libero).
<b>Note</b>	(FS = 1, 2,...) eventuale codice del tipo di fondazione speciale (1, 2,... fanno riferimento alle tipologie: plinto, palo, plinto su pali,...) che è collegato al nodo. (ISO = "id SIGLA") indice e sigla identificativa dell' eventuale isolatore sismico assegnato al nodo
<b>Rig. TX</b>	valore della rigidezza dei vincoli elastici eventualmente applicati al nodo, nello specifico TX (idem per TY, TZ, RX, RY, RZ).

Per strutture sismicamente isolate viene inoltre inserita la tabella delle caratteristiche per gli isolatori utilizzati; le caratteristiche sono indicate in conformità al cap. 7.10 del D.M. 17/01/18

### TABELLA DATI NODI

Nodo	X	Y	Z	Nodo	X	Y	Z	Nodo	X	Y	Z
	cm	cm	cm		cm	cm	cm		cm	cm	cm
1	-287.5	-287.5	-110.0	2	-215.6	-287.5	-110.0	3	-215.6	-215.6	-110.0
4	-287.5	-215.6	-110.0	5	-215.6	-143.8	-110.0	6	-287.5	-143.8	-110.0
7	-215.6	-71.9	-110.0	8	-287.5	-71.9	-110.0	9	-215.6	0.0	-110.0
10	-287.5	0.0	-110.0	11	-215.6	71.9	-110.0	12	-287.5	71.9	-110.0
13	-215.6	143.8	-110.0	14	-287.5	143.8	-110.0	15	-215.6	215.6	-110.0
16	-287.5	215.6	-110.0	17	-215.6	287.5	-110.0	18	-287.5	287.5	-110.0
19	-143.8	-287.5	-110.0	20	-143.8	-215.6	-110.0	21	-143.8	-143.8	-110.0
22	-143.8	-71.9	-110.0	23	-143.8	0.0	-110.0	24	-143.8	71.9	-110.0
25	-143.8	143.8	-110.0	26	-143.8	215.6	-110.0	27	-143.8	287.5	-110.0
28	-71.9	-287.5	-110.0	29	-71.9	-215.6	-110.0	30	-71.9	-143.8	-110.0
31	-71.9	-71.9	-110.0	32	-71.9	0.0	-110.0	33	-71.9	71.9	-110.0
34	-71.9	143.8	-110.0	35	-71.9	215.6	-110.0	36	-71.9	287.5	-110.0
37	0.0	-287.5	-110.0	38	0.0	-215.6	-110.0	39	0.0	-143.8	-110.0
40	0.0	-71.9	-110.0	41	0.0	0.0	-110.0	42	0.0	71.9	-110.0
43	0.0	143.8	-110.0	44	0.0	215.6	-110.0	45	0.0	287.5	-110.0
46	71.9	-287.5	-110.0	47	71.9	-215.6	-110.0	48	71.9	-143.8	-110.0
49	71.9	-71.9	-110.0	50	71.9	0.0	-110.0	51	71.9	71.9	-110.0
52	71.9	143.8	-110.0	53	71.9	215.6	-110.0	54	71.9	287.5	-110.0
55	143.8	-287.5	-110.0	56	143.8	-215.6	-110.0	57	143.8	-143.8	-110.0
58	143.8	-71.9	-110.0	59	143.8	0.0	-110.0	60	143.8	71.9	-110.0
61	143.8	143.8	-110.0	62	143.8	215.6	-110.0	63	143.8	287.5	-110.0
64	215.6	-287.5	-110.0	65	215.6	-215.6	-110.0	66	215.6	-143.8	-110.0
67	215.6	-71.9	-110.0	68	215.6	0.0	-110.0	69	215.6	71.9	-110.0
70	215.6	143.8	-110.0	71	215.6	215.6	-110.0	72	215.6	287.5	-110.0
73	287.5	-287.5	-110.0	74	287.5	-215.6	-110.0	75	287.5	-143.8	-110.0
76	287.5	-71.9	-110.0	77	287.5	0.0	-110.0	78	287.5	71.9	-110.0
79	287.5	143.8	-110.0	80	287.5	215.6	-110.0	81	287.5	287.5	-110.0
82	395.3	0.0	-110.0	83	392.6	90.9	-110.0	84	503.1	0.0	-110.0
85	497.6	110.0	-110.0	86	610.9	0.0	-110.0	87	602.7	129.1	-110.0
88	718.8	0.0	-110.0	89	707.7	148.1	-110.0	90	826.6	0.0	-110.0
91	812.8	167.2	-110.0	93	917.8	186.2	-110.0	94	1042.2	0.0	-110.0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

95	1022.9	205.3	-110.0	96	1150.0	0.0	-110.0	97	1127.9	224.4	-110.0
98	384.4	180.8	-110.0	99	481.2	217.8	-110.0	100	578.1	254.9	-110.0
101	675.0	291.9	-110.0	102	771.9	329.0	-110.0	103	868.7	366.0	-110.0
104	965.6	403.0	-110.0	105	1062.5	440.1	-110.0	106	371.1	268.5	-110.0
107	454.7	321.4	-110.0	108	538.3	374.4	-110.0	109	621.8	427.3	-110.0
110	705.4	480.2	-110.0	111	789.0	533.1	-110.0	112	872.6	586.0	-110.0
113	956.2	638.9	-110.0	114	353.2	353.2	-110.0	115	418.9	418.9	-110.0
116	484.6	484.6	-110.0	117	550.3	550.3	-110.0	118	616.0	616.0	-110.0
120	747.5	747.5	-110.0	121	813.2	813.2	-110.0	122	268.5	371.1	-110.0
123	321.4	454.7	-110.0	124	374.4	538.3	-110.0	125	427.3	621.8	-110.0
126	480.2	705.4	-110.0	127	533.1	789.0	-110.0	128	586.0	872.6	-110.0
129	638.9	956.2	-110.0	130	180.8	384.4	-110.0	131	217.8	481.2	-110.0
132	254.9	578.1	-110.0	133	291.9	675.0	-110.0	134	329.0	771.9	-110.0
135	366.0	868.7	-110.0	136	403.0	965.6	-110.0	137	440.1	1062.5	-110.0
138	90.9	392.6	-110.0	139	110.0	497.6	-110.0	140	129.1	602.7	-110.0
141	148.1	707.7	-110.0	142	167.2	812.8	-110.0	143	186.2	917.8	-110.0
144	205.3	1022.9	-110.0	145	224.4	1127.9	-110.0	146	0.0	395.3	-110.0
147	0.0	503.1	-110.0	148	0.0	610.9	-110.0	149	0.0	718.8	-110.0
150	0.0	826.6	-110.0	152	0.0	1042.2	-110.0	153	0.0	1150.0	-110.0
154	-90.9	392.6	-110.0	155	-110.0	497.6	-110.0	156	-129.1	602.7	-110.0
157	-148.1	707.7	-110.0	158	-167.2	812.8	-110.0	159	-186.2	917.8	-110.0
160	-205.3	1022.9	-110.0	161	-224.4	1127.9	-110.0	162	-180.8	384.4	-110.0
163	-217.8	481.2	-110.0	164	-254.9	578.1	-110.0	165	-291.9	675.0	-110.0
166	-329.0	771.9	-110.0	167	-366.0	868.7	-110.0	168	-403.0	965.6	-110.0
169	-440.1	1062.5	-110.0	170	-268.5	371.1	-110.0	171	-321.4	454.7	-110.0
172	-374.4	538.3	-110.0	173	-427.3	621.8	-110.0	174	-480.2	705.4	-110.0
175	-533.1	789.0	-110.0	176	-586.0	872.6	-110.0	177	-638.9	956.2	-110.0
178	-353.2	353.2	-110.0	179	-418.9	418.9	-110.0	180	-484.6	484.6	-110.0
181	-550.3	550.3	-110.0	182	-616.0	616.0	-110.0	184	-747.5	747.5	-110.0
185	-813.2	813.2	-110.0	186	-371.1	268.5	-110.0	187	-454.7	321.4	-110.0
188	-538.3	374.4	-110.0	189	-621.8	427.3	-110.0	190	-705.4	480.2	-110.0
191	-789.0	533.1	-110.0	192	-872.6	586.0	-110.0	193	-956.2	638.9	-110.0
194	-384.4	180.8	-110.0	195	-481.2	217.8	-110.0	196	-578.1	254.9	-110.0
197	-675.0	291.9	-110.0	198	-771.9	329.0	-110.0	199	-868.7	366.0	-110.0
200	-965.6	403.0	-110.0	201	-1062.5	440.1	-110.0	202	-392.6	90.9	-110.0
203	-497.6	110.0	-110.0	204	-602.7	129.1	-110.0	205	-707.7	148.1	-110.0
206	-812.8	167.2	-110.0	207	-917.8	186.2	-110.0	208	-1022.9	205.3	-110.0
209	-1127.9	224.4	-110.0	210	-395.3	0.0	-110.0	211	-503.1	0.0	-110.0
212	-610.9	0.0	-110.0	213	-718.8	0.0	-110.0	214	-826.6	0.0	-110.0
216	-1042.2	0.0	-110.0	217	-1150.0	0.0	-110.0	218	-392.6	-90.9	-110.0
219	-497.6	-110.0	-110.0	220	-602.7	-129.1	-110.0	221	-707.7	-148.1	-110.0
222	-812.8	-167.2	-110.0	223	-917.8	-186.2	-110.0	224	-1022.9	-205.3	-110.0
225	-1127.9	-224.4	-110.0	226	-384.4	-180.8	-110.0	227	-481.2	-217.8	-110.0
228	-578.1	-254.9	-110.0	229	-675.0	-291.9	-110.0	230	-771.9	-329.0	-110.0
231	-868.7	-366.0	-110.0	232	-965.6	-403.0	-110.0	233	-1062.5	-440.1	-110.0
234	-371.1	-268.5	-110.0	235	-454.7	-321.4	-110.0	236	-538.3	-374.4	-110.0
237	-621.8	-427.3	-110.0	238	-705.4	-480.2	-110.0	239	-789.0	-533.1	-110.0
240	-872.6	-586.0	-110.0	241	-956.2	-638.9	-110.0	242	-353.2	-353.2	-110.0
243	-418.9	-418.9	-110.0	244	-484.6	-484.6	-110.0	245	-550.3	-550.3	-110.0
246	-616.0	-616.0	-110.0	248	-747.5	-747.5	-110.0	249	-813.2	-813.2	-110.0
250	-268.5	-371.1	-110.0	251	-321.4	-454.7	-110.0	252	-374.4	-538.3	-110.0
253	-427.3	-621.8	-110.0	254	-480.2	-705.4	-110.0	255	-533.1	-789.0	-110.0
256	-586.0	-872.6	-110.0	257	-638.9	-956.2	-110.0	258	-180.8	-384.4	-110.0
259	-217.8	-481.2	-110.0	260	-254.9	-578.1	-110.0	261	-291.9	-675.0	-110.0
262	-329.0	-771.9	-110.0	263	-366.0	-868.7	-110.0	264	-403.0	-965.6	-110.0
265	-440.1	-1062.5	-110.0	266	-90.9	-392.6	-110.0	267	-110.0	-497.6	-110.0
268	-129.1	-602.7	-110.0	269	-148.1	-707.7	-110.0	270	-167.2	-812.8	-110.0
271	-186.2	-917.8	-110.0	272	-205.3	-1022.9	-110.0	273	-224.4	-1127.9	-110.0
274	0.0	-395.3	-110.0	275	0.0	-503.1	-110.0	276	0.0	-610.9	-110.0
277	0.0	-718.8	-110.0	278	0.0	-826.6	-110.0	280	0.0	-1042.2	-110.0
281	0.0	-1150.0	-110.0	282	90.9	-392.6	-110.0	283	110.0	-497.6	-110.0
284	129.1	-602.7	-110.0	285	148.1	-707.7	-110.0	286	167.2	-812.8	-110.0
287	186.2	-917.8	-110.0	288	205.3	-1022.9	-110.0	289	224.4	-1127.9	-110.0
290	180.8	-384.4	-110.0	291	217.8	-481.2	-110.0	292	254.9	-578.1	-110.0
293	291.9	-675.0	-110.0	294	329.0	-771.9	-110.0	295	366.0	-868.7	-110.0
296	403.0	-965.6	-110.0	297	440.1	-1062.5	-110.0	298	268.5	-371.1	-110.0
299	321.4	-454.7	-110.0	300	374.4	-538.3	-110.0	301	427.3	-621.8	-110.0
302	480.2	-705.4	-110.0	303	533.1	-789.0	-110.0	304	586.0	-872.6	-110.0
305	638.9	-956.2	-110.0	306	353.2	-353.2	-110.0	307	418.9	-418.9	-110.0
308	484.6	-484.6	-110.0	309	550.3	-550.3	-110.0	310	616.0	-616.0	-110.0
312	747.5	-747.5	-110.0	313	813.2	-813.2	-110.0	314	371.1	-268.5	-110.0
315	454.7	-321.4	-110.0	316	538.3	-374.4	-110.0	317	621.8	-427.3	-110.0
318	705.4	-480.2	-110.0	319	789.0	-533.1	-110.0	320	872.6	-586.0	-110.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

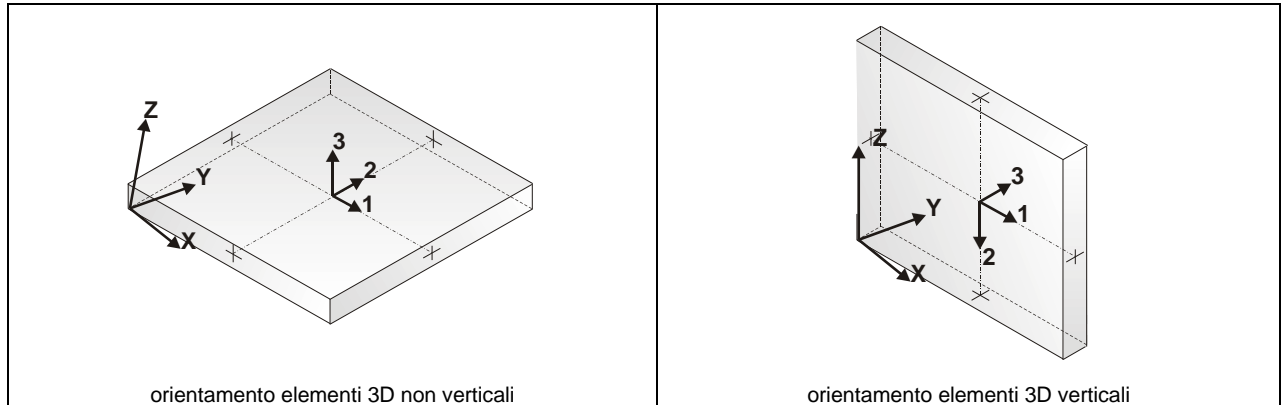
321	956.2	-638.9	-110.0	322	384.4	-180.8	-110.0	323	481.2	-217.8	-110.0
324	578.1	-254.9	-110.0	325	675.0	-291.9	-110.0	326	771.9	-329.0	-110.0
327	868.7	-366.0	-110.0	328	965.6	-403.0	-110.0	329	1062.5	-440.1	-110.0
330	392.6	-90.9	-110.0	331	497.6	-110.0	-110.0	332	602.7	-129.1	-110.0
333	707.7	-148.1	-110.0	334	812.8	-167.2	-110.0	335	917.8	-186.2	-110.0
336	1022.9	-205.3	-110.0	337	1127.9	-224.4	-110.0	338	0.0	0.0	-90.0

<b>Nodo</b>	<b>X</b> cm	<b>Y</b> cm	<b>Z</b> cm	<b>Note</b>	<b>Rig. TX</b> daN/cm	<b>Rig. TY</b> daN/cm	<b>Rig. TZ</b> daN/cm	<b>Rig. RX</b> daN cm/rad	<b>Rig. RY</b> daN cm/rad	<b>Rig. RZ</b> daN cm/rad
92	934.4	0.0	-110.0	FS=4						
119	681.8	681.8	-110.0	FS=4						
151	0.0	934.4	-110.0	FS=4						
183	-681.8	681.8	-110.0	FS=4						
215	-934.4	0.0	-110.0	FS=4						
247	-681.8	-681.8	-110.0	FS=4						
279	0.0	-934.4	-110.0	FS=4						
311	681.8	-681.8	-110.0	FS=4						

## MODELLAZIONE STRUTTURA: ELEMENTI SHELL

### LEGENDA TABELLA DATI SHELL

Il programma utilizza per la modellazione elementi a tre o quattro nodi denominati in generale shell.  
Ogni elemento shell è individuato dai nodi I, J, K, L (L=I per gli elementi a tre nodi).  
Ogni elemento è caratterizzato da un insieme di proprietà riportate in tabella che ne completano la modellazione.



In particolare per ogni elemento viene indicato in tabella:

<b>Elem.</b>	numero dell'elemento
<b>Note</b>	codice di comportamento: <i>Guscio</i> (elemento guscio in elevazione non verticale) <i>Guscio fond.</i> (elemento guscio su suolo elastico) <i>Setto</i> (elemento guscio in elevazione verticale) <i>Membrana</i> (elemento guscio con comportamento membranale)
<b>Nodo I (J, K, L)</b>	numero del nodo I (J, K, L)
<b>Mat.</b>	codice del materiale assegnato all'elemento
<b>Spessore</b>	spessore dell'elemento (costante)
<b>Wink V</b>	costante di sottofondo (coefficiente di Winkler) per la modellazione del suolo elastico verticale
<b>Wink O</b>	costante di sottofondo (coefficiente di Winkler) per la modellazione del suolo elastico orizzontale



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Con riferimento al **Documento di Affidabilità** "Test di validazione del software di calcolo PRO\_SAP e dei moduli aggiuntivi PRO\_SAP Modulo Geotecnico, PRO\_CAD nodi acciaio e PRO\_MST" - versione Maggio 2011, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

Test N°	Titolo
8	MENSOLE CON ELEMENTI PLATE E MATERIALE ORTOTROPO
10	PIASTRA CON ELEMENTI PLATE E MATERIALE ORTOTROPO
21	DRILLING
25	TENSIONI DI ELEMENTI PLATE
31	REALIZZAZIONE DI MESH PIANA SU GEOMETRIA CON PUNTI FISSI IMPORTATA DA FILE .DXF
32	REALIZZAZIONE DI MESH PIANA SU GEOMETRIA CON SEGMENTI E FORI INTERNI IMPORTATA DA FILE .DXF
33	REALIZZAZIONE DI MESH PIANE SU GEOMETRIE COSTRUITE IN PRO_SAP
34	ANALISI DI BUCKLING DI PIASTRA ISOTROPA
35	ANALISI DI BUCKLING DI UN CILINDRO COMPRESSO INCASTRATO ALLA BASE
36	ANALISI DI PARETI FORATE
37	BIMETALLIC STRIP (NAFEMS EXERCISE 6)
38	ANALISI ELASTICA DI PIASTRA CON INTAGLIO CIRCOLARE (FLAT BAR WITH EDGE NOTCHES-NAFEMS EXERCISE 9)
39	PLATEA NERVATA
45	VERIFICA A PUNZONAMENTO ALLO SLU DI PIASTRE IN C.A.
117	PROGETTO E VERIFICA DI GUSCI IN MATERIALE XLAM
118	PROGETTO E VERIFICA DI PARETI IN MATERIALE XLAM E RELATIVI COLLEGAMENTI

Elem.	Note	Nodo I	Nodo J	Nodo K	Nodo L	Mat.	Spessore cm	Svincolo	Wink V daN/cm3	Wink O daN/cm3
1	Guscio fond.	1	2	3	4	1	220.0		6.17	6.17
2	Guscio fond.	4	3	5	6	1	220.0		6.29	6.29
3	Guscio fond.	6	5	7	8	1	220.0		6.42	6.42
4	Guscio fond.	8	7	9	10	1	220.0		6.91	6.91
5	Guscio fond.	10	9	11	12	1	220.0		7.46	7.46
6	Guscio fond.	12	11	13	14	1	220.0		7.59	7.59
7	Guscio fond.	14	13	15	16	1	220.0		7.74	7.74
8	Guscio fond.	16	15	17	18	1	220.0		7.92	7.92
9	Guscio fond.	2	19	20	3	1	220.0		5.81	5.81
10	Guscio fond.	3	20	21	5	1	220.0		5.97	5.97
11	Guscio fond.	5	21	22	7	1	220.0		6.13	6.13

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

12	Guscio fond.	7	22	23	9	1	220.0	6.45	6.45
13	Guscio fond.	9	23	24	11	1	220.0	7.00	7.00
14	Guscio fond.	11	24	25	13	1	220.0	7.38	7.38
15	Guscio fond.	13	25	26	15	1	220.0	7.55	7.55
16	Guscio fond.	15	26	27	17	1	220.0	7.74	7.74
17	Guscio fond.	19	28	29	20	1	220.0	5.45	5.45
18	Guscio fond.	20	29	30	21	1	220.0	5.66	5.66
19	Guscio fond.	21	30	31	22	1	220.0	5.85	5.85
20	Guscio fond.	22	31	32	23	1	220.0	6.03	6.03
21	Guscio fond.	23	32	33	24	1	220.0	6.38	6.38
22	Guscio fond.	24	33	34	25	1	220.0	6.96	6.96
23	Guscio fond.	25	34	35	26	1	220.0	7.38	7.38
24	Guscio fond.	26	35	36	27	1	220.0	7.59	7.59
25	Guscio fond.	28	37	38	29	1	220.0	4.98	4.98
26	Guscio fond.	29	38	39	30	1	220.0	5.34	5.34
27	Guscio fond.	30	39	40	31	1	220.0	5.58	5.58
28	Guscio fond.	31	40	41	32	1	220.0	5.79	5.79
29	Guscio fond.	32	41	42	33	1	220.0	6.00	6.00
30	Guscio fond.	33	42	43	34	1	220.0	6.38	6.38
31	Guscio fond.	34	43	44	35	1	220.0	7.00	7.00
32	Guscio fond.	35	44	45	36	1	220.0	7.46	7.46
33	Guscio fond.	37	46	47	38	1	220.0	4.37	4.37
34	Guscio fond.	38	47	48	39	1	220.0	4.92	4.92
35	Guscio fond.	39	48	49	40	1	220.0	5.29	5.29
36	Guscio fond.	40	49	50	41	1	220.0	5.55	5.55
37	Guscio fond.	41	50	51	42	1	220.0	5.79	5.79
38	Guscio fond.	42	51	52	43	1	220.0	6.03	6.03
39	Guscio fond.	43	52	53	44	1	220.0	6.45	6.45
40	Guscio fond.	44	53	54	45	1	220.0	6.91	6.91
41	Guscio fond.	46	55	56	47	1	220.0	3.88	3.88
42	Guscio fond.	47	56	57	48	1	220.0	4.33	4.33
43	Guscio fond.	48	57	58	49	1	220.0	4.89	4.89
44	Guscio fond.	49	58	59	50	1	220.0	5.29	5.29
45	Guscio fond.	50	59	60	51	1	220.0	5.57	5.57
46	Guscio fond.	51	60	61	52	1	220.0	5.85	5.85
47	Guscio fond.	52	61	62	53	1	220.0	6.12	6.12
48	Guscio fond.	53	62	63	54	1	220.0	6.41	6.41
49	Guscio fond.	55	64	65	56	1	220.0	3.66	3.66
50	Guscio fond.	56	65	66	57	1	220.0	3.86	3.86
51	Guscio fond.	57	66	67	58	1	220.0	4.33	4.33
52	Guscio fond.	58	67	68	59	1	220.0	4.92	4.92
53	Guscio fond.	59	68	69	60	1	220.0	5.34	5.34
54	Guscio fond.	60	69	70	61	1	220.0	5.66	5.66
55	Guscio fond.	61	70	71	62	1	220.0	5.97	5.97
56	Guscio fond.	62	71	72	63	1	220.0	6.29	6.29
57	Guscio fond.	64	73	74	65	1	220.0	3.67	3.67
58	Guscio fond.	65	74	75	66	1	220.0	3.66	3.66
59	Guscio fond.	66	75	76	67	1	220.0	3.87	3.87
60	Guscio fond.	67	76	77	68	1	220.0	4.37	4.37
61	Guscio fond.	68	77	78	69	1	220.0	4.98	4.98
62	Guscio fond.	69	78	79	70	1	220.0	5.44	5.44
63	Guscio fond.	70	79	80	71	1	220.0	5.80	5.80
64	Guscio fond.	71	80	81	72	1	220.0	6.16	6.16
65	Guscio fond.	77	82	83	78	1	220.0	4.49	4.49
66	Guscio fond.	82	84	85	83	1	220.0	4.16	4.16
67	Guscio fond.	84	86	87	85	1	220.0	5.48	5.48
68	Guscio fond.	86	88	89	87	1	220.0	8.65	8.65
69	Guscio fond.	88	90	91	89	1	220.0	10.00	10.00
70	Guscio fond.	90	92	93	91	1	220.0	10.00	10.00
71	Guscio fond.	92	94	95	93	1	220.0	10.00	10.00
72	Guscio fond.	94	96	97	95	1	220.0	10.00	10.00
73	Guscio fond.	78	83	98	79	1	220.0	5.26	5.26
74	Guscio fond.	83	85	99	98	1	220.0	5.03	5.03
75	Guscio fond.	85	87	100	99	1	220.0	4.86	4.86
76	Guscio fond.	87	89	101	100	1	220.0	5.11	5.11
77	Guscio fond.	89	91	102	101	1	220.0	7.63	7.63
78	Guscio fond.	91	93	103	102	1	220.0	10.00	10.00
79	Guscio fond.	93	95	104	103	1	220.0	10.00	10.00
80	Guscio fond.	95	97	105	104	1	220.0	10.00	10.00
81	Guscio fond.	79	98	106	80	1	220.0	5.67	5.67
82	Guscio fond.	98	99	107	106	1	220.0	5.70	5.70
83	Guscio fond.	99	100	108	107	1	220.0	5.82	5.82
84	Guscio fond.	100	101	109	108	1	220.0	6.10	6.10

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

85	Guscio fond.	101	102	110	109	1	220.0	6.68	6.68
86	Guscio fond.	102	103	111	110	1	220.0	8.60	8.60
87	Guscio fond.	103	104	112	111	1	220.0	10.00	10.00
88	Guscio fond.	104	105	113	112	1	220.0	10.00	10.00
89	Guscio fond.	80	106	114	81	1	220.0	6.10	6.10
90	Guscio fond.	106	107	115	114	1	220.0	6.37	6.37
91	Guscio fond.	107	108	116	115	1	220.0	6.72	6.72
92	Guscio fond.	108	109	117	116	1	220.0	6.95	6.95
93	Guscio fond.	109	110	118	117	1	220.0	7.33	7.33
94	Guscio fond.	110	111	119	118	1	220.0	7.66	7.66
95	Guscio fond.	111	112	120	119	1	220.0	7.89	7.89
96	Guscio fond.	112	113	121	120	1	220.0	8.13	8.13
97	Guscio fond.	72	81	114	122	1	220.0	6.59	6.59
98	Guscio fond.	122	114	115	123	1	220.0	6.96	6.96
99	Guscio fond.	123	115	116	124	1	220.0	7.22	7.22
100	Guscio fond.	124	116	117	125	1	220.0	7.58	7.58
101	Guscio fond.	125	117	118	126	1	220.0	8.09	8.09
102	Guscio fond.	126	118	119	127	1	220.0	8.61	8.61
103	Guscio fond.	127	119	120	128	1	220.0	8.87	8.87
104	Guscio fond.	128	120	121	129	1	220.0	9.25	9.25
105	Guscio fond.	63	72	122	130	1	220.0	6.89	6.89
106	Guscio fond.	130	122	123	131	1	220.0	7.46	7.46
107	Guscio fond.	131	123	124	132	1	220.0	7.68	7.68
108	Guscio fond.	132	124	125	133	1	220.0	8.25	8.25
109	Guscio fond.	133	125	126	134	1	220.0	8.78	8.78
110	Guscio fond.	134	126	127	135	1	220.0	9.12	9.12
111	Guscio fond.	135	127	128	136	1	220.0	9.51	9.51
112	Guscio fond.	136	128	129	137	1	220.0	9.92	9.92
113	Guscio fond.	54	63	130	138	1	220.0	6.96	6.96
114	Guscio fond.	138	130	131	139	1	220.0	7.66	7.66
115	Guscio fond.	139	131	132	140	1	220.0	8.22	8.22
116	Guscio fond.	140	132	133	141	1	220.0	8.88	8.88
117	Guscio fond.	141	133	134	142	1	220.0	9.36	9.36
118	Guscio fond.	142	134	135	143	1	220.0	9.77	9.77
119	Guscio fond.	143	135	136	144	1	220.0	10.00	10.00
120	Guscio fond.	144	136	137	145	1	220.0	10.00	10.00
121	Guscio fond.	45	54	138	146	1	220.0	7.20	7.20
122	Guscio fond.	146	138	139	147	1	220.0	7.73	7.73
123	Guscio fond.	147	139	140	148	1	220.0	8.53	8.53
124	Guscio fond.	148	140	141	149	1	220.0	9.35	9.35
125	Guscio fond.	149	141	142	150	1	220.0	9.85	9.85
126	Guscio fond.	150	142	143	151	1	220.0	10.00	10.00
127	Guscio fond.	151	143	144	152	1	220.0	10.00	10.00
128	Guscio fond.	152	144	145	153	1	220.0	10.00	10.00
129	Guscio fond.	36	45	146	154	1	220.0	7.63	7.63
130	Guscio fond.	154	146	147	155	1	220.0	8.12	8.12
131	Guscio fond.	155	147	148	156	1	220.0	9.04	9.04
132	Guscio fond.	156	148	149	157	1	220.0	9.87	9.87
133	Guscio fond.	157	149	150	158	1	220.0	10.00	10.00
134	Guscio fond.	158	150	151	159	1	220.0	10.00	10.00
135	Guscio fond.	159	151	152	160	1	220.0	10.00	10.00
136	Guscio fond.	160	152	153	161	1	220.0	10.00	10.00
137	Guscio fond.	27	36	154	162	1	220.0	7.99	7.99
138	Guscio fond.	162	154	155	163	1	220.0	8.57	8.57
139	Guscio fond.	163	155	156	164	1	220.0	9.24	9.24
140	Guscio fond.	164	156	157	165	1	220.0	10.00	10.00
141	Guscio fond.	165	157	158	166	1	220.0	10.00	10.00
142	Guscio fond.	166	158	159	167	1	220.0	10.00	10.00
143	Guscio fond.	167	159	160	168	1	220.0	10.00	10.00
144	Guscio fond.	168	160	161	169	1	220.0	10.00	10.00
145	Guscio fond.	17	27	162	170	1	220.0	8.35	8.35
146	Guscio fond.	170	162	163	171	1	220.0	9.12	9.12
147	Guscio fond.	171	163	164	172	1	220.0	9.47	9.47
148	Guscio fond.	172	164	165	173	1	220.0	10.00	10.00
149	Guscio fond.	173	165	166	174	1	220.0	10.00	10.00
150	Guscio fond.	174	166	167	175	1	220.0	10.00	10.00
151	Guscio fond.	175	167	168	176	1	220.0	10.00	10.00
152	Guscio fond.	176	168	169	177	1	220.0	10.00	10.00
153	Guscio fond.	18	17	170	178	1	220.0	8.44	8.44
154	Guscio fond.	178	170	171	179	1	220.0	9.28	9.28
155	Guscio fond.	179	171	172	180	1	220.0	9.80	9.80
156	Guscio fond.	180	172	173	181	1	220.0	10.00	10.00
157	Guscio fond.	181	173	174	182	1	220.0	10.00	10.00

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

158	Guscio fond.	182	174	175	183	1	220.0	10.00	10.00
159	Guscio fond.	183	175	176	184	1	220.0	10.00	10.00
160	Guscio fond.	184	176	177	185	1	220.0	10.00	10.00
161	Guscio fond.	186	16	18	178	1	220.0	8.44	8.44
162	Guscio fond.	187	186	178	179	1	220.0	9.28	9.28
163	Guscio fond.	188	187	179	180	1	220.0	9.80	9.80
164	Guscio fond.	189	188	180	181	1	220.0	10.00	10.00
165	Guscio fond.	190	189	181	182	1	220.0	10.00	10.00
166	Guscio fond.	191	190	182	183	1	220.0	10.00	10.00
167	Guscio fond.	192	191	183	184	1	220.0	10.00	10.00
168	Guscio fond.	193	192	184	185	1	220.0	10.00	10.00
169	Guscio fond.	194	14	16	186	1	220.0	8.35	8.35
170	Guscio fond.	195	194	186	187	1	220.0	9.12	9.12
171	Guscio fond.	196	195	187	188	1	220.0	9.47	9.47
172	Guscio fond.	197	196	188	189	1	220.0	10.00	10.00
173	Guscio fond.	198	197	189	190	1	220.0	10.00	10.00
174	Guscio fond.	199	198	190	191	1	220.0	10.00	10.00
175	Guscio fond.	200	199	191	192	1	220.0	10.00	10.00
176	Guscio fond.	201	200	192	193	1	220.0	10.00	10.00
177	Guscio fond.	202	12	14	194	1	220.0	8.00	8.00
178	Guscio fond.	203	202	194	195	1	220.0	8.57	8.57
179	Guscio fond.	204	203	195	196	1	220.0	9.24	9.24
180	Guscio fond.	205	204	196	197	1	220.0	10.00	10.00
181	Guscio fond.	206	205	197	198	1	220.0	10.00	10.00
182	Guscio fond.	207	206	198	199	1	220.0	10.00	10.00
183	Guscio fond.	208	207	199	200	1	220.0	10.00	10.00
184	Guscio fond.	209	208	200	201	1	220.0	10.00	10.00
185	Guscio fond.	210	10	12	202	1	220.0	7.63	7.63
186	Guscio fond.	211	210	202	203	1	220.0	8.13	8.13
187	Guscio fond.	212	211	203	204	1	220.0	9.04	9.04
188	Guscio fond.	213	212	204	205	1	220.0	9.88	9.88
189	Guscio fond.	214	213	205	206	1	220.0	10.00	10.00
190	Guscio fond.	215	214	206	207	1	220.0	10.00	10.00
191	Guscio fond.	216	215	207	208	1	220.0	10.00	10.00
192	Guscio fond.	217	216	208	209	1	220.0	10.00	10.00
193	Guscio fond.	218	8	10	210	1	220.0	7.21	7.21
194	Guscio fond.	219	218	210	211	1	220.0	7.73	7.73
195	Guscio fond.	220	219	211	212	1	220.0	8.53	8.53
196	Guscio fond.	221	220	212	213	1	220.0	9.36	9.36
197	Guscio fond.	222	221	213	214	1	220.0	9.86	9.86
198	Guscio fond.	223	222	214	215	1	220.0	10.00	10.00
199	Guscio fond.	224	223	215	216	1	220.0	10.00	10.00
200	Guscio fond.	225	224	216	217	1	220.0	10.00	10.00
201	Guscio fond.	226	6	8	218	1	220.0	6.78	6.78
202	Guscio fond.	227	226	218	219	1	220.0	7.44	7.44
203	Guscio fond.	228	227	219	220	1	220.0	8.23	8.23
204	Guscio fond.	229	228	220	221	1	220.0	8.90	8.90
205	Guscio fond.	230	229	221	222	1	220.0	9.38	9.38
206	Guscio fond.	231	230	222	223	1	220.0	9.78	9.78
207	Guscio fond.	232	231	223	224	1	220.0	10.00	10.00
208	Guscio fond.	233	232	224	225	1	220.0	10.00	10.00
209	Guscio fond.	234	4	6	226	1	220.0	6.71	6.71
210	Guscio fond.	235	234	226	227	1	220.0	7.25	7.25
211	Guscio fond.	236	235	227	228	1	220.0	7.69	7.69
212	Guscio fond.	237	236	228	229	1	220.0	8.26	8.26
213	Guscio fond.	238	237	229	230	1	220.0	8.80	8.80
214	Guscio fond.	239	238	230	231	1	220.0	9.14	9.14
215	Guscio fond.	240	239	231	232	1	220.0	9.53	9.53
216	Guscio fond.	241	240	232	233	1	220.0	9.94	9.94
217	Guscio fond.	242	1	4	234	1	220.0	6.60	6.60
218	Guscio fond.	243	242	234	235	1	220.0	6.97	6.97
219	Guscio fond.	244	243	235	236	1	220.0	7.24	7.24
220	Guscio fond.	245	244	236	237	1	220.0	7.59	7.59
221	Guscio fond.	246	245	237	238	1	220.0	8.11	8.11
222	Guscio fond.	247	246	238	239	1	220.0	8.63	8.63
223	Guscio fond.	248	247	239	240	1	220.0	8.89	8.89
224	Guscio fond.	249	248	240	241	1	220.0	9.28	9.28
225	Guscio fond.	242	250	2	1	1	220.0	6.11	6.11
226	Guscio fond.	243	251	250	242	1	220.0	6.38	6.38
227	Guscio fond.	244	252	251	243	1	220.0	6.74	6.74
228	Guscio fond.	245	253	252	244	1	220.0	6.98	6.98
229	Guscio fond.	246	254	253	245	1	220.0	7.35	7.35
230	Guscio fond.	247	255	254	246	1	220.0	7.69	7.69

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

231	Guscio fond.	248	256	255	247	1	220.0	7.92	7.92
232	Guscio fond.	249	257	256	248	1	220.0	8.16	8.16
233	Guscio fond.	250	258	19	2	1	220.0	5.68	5.68
234	Guscio fond.	251	259	258	250	1	220.0	5.71	5.71
235	Guscio fond.	252	260	259	251	1	220.0	5.84	5.84
236	Guscio fond.	253	261	260	252	1	220.0	6.12	6.12
237	Guscio fond.	254	262	261	253	1	220.0	6.71	6.71
238	Guscio fond.	255	263	262	254	1	220.0	8.65	8.65
239	Guscio fond.	256	264	263	255	1	220.0	10.00	10.00
240	Guscio fond.	257	265	264	256	1	220.0	10.00	10.00
241	Guscio fond.	258	266	28	19	1	220.0	5.27	5.27
242	Guscio fond.	259	267	266	258	1	220.0	5.04	5.04
243	Guscio fond.	260	268	267	259	1	220.0	4.87	4.87
244	Guscio fond.	261	269	268	260	1	220.0	5.13	5.13
245	Guscio fond.	262	270	269	261	1	220.0	7.66	7.66
246	Guscio fond.	263	271	270	262	1	220.0	10.00	10.00
247	Guscio fond.	264	272	271	263	1	220.0	10.00	10.00
248	Guscio fond.	265	273	272	264	1	220.0	10.00	10.00
249	Guscio fond.	266	274	37	28	1	220.0	4.49	4.49
250	Guscio fond.	267	275	274	266	1	220.0	4.17	4.17
251	Guscio fond.	268	276	275	267	1	220.0	5.49	5.49
252	Guscio fond.	269	277	276	268	1	220.0	8.68	8.68
253	Guscio fond.	270	278	277	269	1	220.0	10.00	10.00
254	Guscio fond.	271	279	278	270	1	220.0	10.00	10.00
255	Guscio fond.	272	280	279	271	1	220.0	10.00	10.00
256	Guscio fond.	273	281	280	272	1	220.0	10.00	10.00
257	Guscio fond.	274	282	46	37	1	220.0	3.83	3.83
258	Guscio fond.	275	283	282	274	1	220.0	3.63	3.63
259	Guscio fond.	276	284	283	275	1	220.0	6.86	6.86
260	Guscio fond.	277	285	284	276	1	220.0	10.00	10.00
261	Guscio fond.	278	286	285	277	1	220.0	10.00	10.00
262	Guscio fond.	279	287	286	278	1	220.0	5.99	5.99
263	Guscio fond.	280	288	287	279	1	220.0	4.80	4.80
264	Guscio fond.	281	289	288	280	1	220.0	8.59	8.59
265	Guscio fond.	282	290	55	46	1	220.0	3.57	3.57
266	Guscio fond.	283	291	290	282	1	220.0	4.58	4.58
267	Guscio fond.	284	292	291	283	1	220.0	10.00	10.00
268	Guscio fond.	285	293	292	284	1	220.0	10.00	10.00
269	Guscio fond.	286	294	293	285	1	220.0	5.02	5.02
270	Guscio fond.	287	295	294	286	1	220.0	3.52	3.52
271	Guscio fond.	288	296	295	287	1	220.0	3.24	3.24
272	Guscio fond.	289	297	296	288	1	220.0	5.97	5.97
273	Guscio fond.	290	298	64	55	1	220.0	4.69	4.69
274	Guscio fond.	291	299	298	290	1	220.0	10.00	10.00
275	Guscio fond.	292	300	299	291	1	220.0	10.00	10.00
276	Guscio fond.	293	301	300	292	1	220.0	6.06	6.06
277	Guscio fond.	294	302	301	293	1	220.0	3.56	3.56
278	Guscio fond.	295	303	302	294	1	220.0	2.68	2.68
279	Guscio fond.	296	304	303	295	1	220.0	2.60	2.60
280	Guscio fond.	297	305	304	296	1	220.0	4.71	4.71
281	Guscio fond.	298	306	73	64	1	220.0	6.98	6.98
282	Guscio fond.	299	307	306	298	1	220.0	10.00	10.00
283	Guscio fond.	300	308	307	299	1	220.0	9.10	9.10
284	Guscio fond.	301	309	308	300	1	220.0	4.44	4.44
285	Guscio fond.	302	310	309	301	1	220.0	3.04	3.04
286	Guscio fond.	303	311	310	302	1	220.0	2.43	2.43
287	Guscio fond.	304	312	311	303	1	220.0	2.40	2.40
288	Guscio fond.	305	313	312	304	1	220.0	4.26	4.26
289	Guscio fond.	73	306	314	74	1	220.0	6.98	6.98
290	Guscio fond.	306	307	315	314	1	220.0	10.00	10.00
291	Guscio fond.	307	308	316	315	1	220.0	9.10	9.10
292	Guscio fond.	308	309	317	316	1	220.0	4.44	4.44
293	Guscio fond.	309	310	318	317	1	220.0	3.04	3.04
294	Guscio fond.	310	311	319	318	1	220.0	2.43	2.43
295	Guscio fond.	311	312	320	319	1	220.0	2.40	2.40
296	Guscio fond.	312	313	321	320	1	220.0	4.26	4.26
297	Guscio fond.	74	314	322	75	1	220.0	4.68	4.68
298	Guscio fond.	314	315	323	322	1	220.0	10.00	10.00
299	Guscio fond.	315	316	324	323	1	220.0	10.00	10.00
300	Guscio fond.	316	317	325	324	1	220.0	6.06	6.06
301	Guscio fond.	317	318	326	325	1	220.0	3.56	3.56
302	Guscio fond.	318	319	327	326	1	220.0	2.68	2.68
303	Guscio fond.	319	320	328	327	1	220.0	2.60	2.60

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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304	Guscio fond.	320	321	329	328	1	220.0	4.71	4.71
305	Guscio fond.	75	322	330	76	1	220.0	3.57	3.57
306	Guscio fond.	322	323	331	330	1	220.0	4.57	4.57
307	Guscio fond.	323	324	332	331	1	220.0	10.00	10.00
308	Guscio fond.	324	325	333	332	1	220.0	10.00	10.00
309	Guscio fond.	325	326	334	333	1	220.0	5.02	5.02
310	Guscio fond.	326	327	335	334	1	220.0	3.52	3.52
311	Guscio fond.	327	328	336	335	1	220.0	3.24	3.24
312	Guscio fond.	328	329	337	336	1	220.0	5.96	5.96
313	Guscio fond.	76	330	82	77	1	220.0	3.83	3.83
314	Guscio fond.	330	331	84	82	1	220.0	3.63	3.63
315	Guscio fond.	331	332	86	84	1	220.0	6.85	6.85
316	Guscio fond.	332	333	88	86	1	220.0	10.00	10.00
317	Guscio fond.	333	334	90	88	1	220.0	10.00	10.00
318	Guscio fond.	334	335	92	90	1	220.0	5.99	5.99
319	Guscio fond.	335	336	94	92	1	220.0	4.80	4.80
320	Guscio fond.	336	337	96	94	1	220.0	8.58	8.58

## MODELLAZIONE DELLE AZIONI

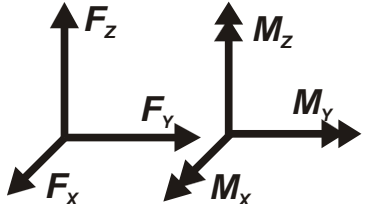
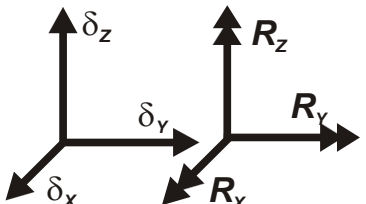
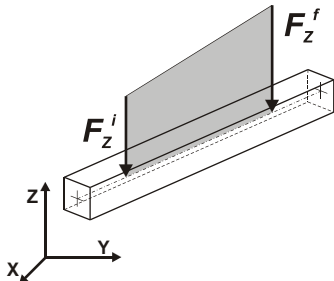
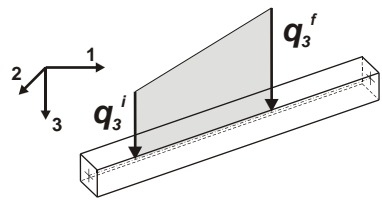
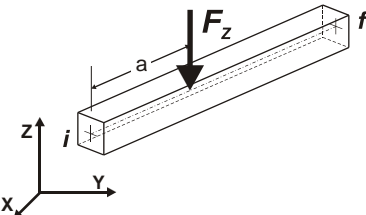
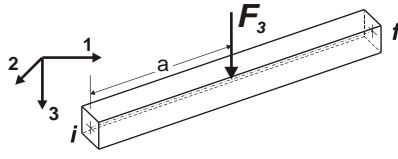
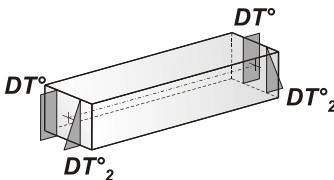
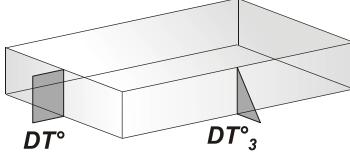
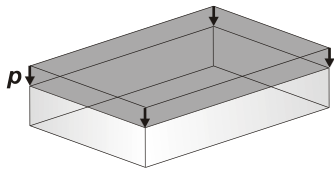
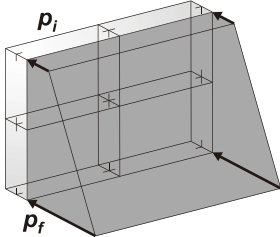
### LEGENDA TABELLA DATI AZIONI

Il programma consente l'uso di diverse tipologie di carico (azioni). Le azioni utilizzate nella modellazione sono individuate da una sigla identificativa ed un codice numerico (gli elementi strutturali richiamano quest'ultimo nella propria descrizione). Per ogni azione applicata alla struttura viene di riportato il codice, il tipo e la sigla identificativa. Le tabelle successive dettagliano i valori caratteristici di ogni azione in relazione al tipo. Le tabelle riportano infatti i seguenti dati in relazione al tipo:

<b>1</b>	<b>carico concentrato nodale</b> 6 dati (forza $F_x$ , $F_y$ , $F_z$ , momento $M_x$ , $M_y$ , $M_z$ )
<b>2</b>	<b>spostamento nodale impresso</b> 6 dati (spostamento $T_x$ , $T_y$ , $T_z$ , rotazione $R_x$ , $R_y$ , $R_z$ )
<b>3</b>	<b>carico distribuito globale su elemento tipo trave</b> 7 dati ( $f_x$ , $f_y$ , $f_z$ , $m_x$ , $m_y$ , $m_z$ , ascissa di inizio carico) 7 dati ( $f_x$ , $f_y$ , $f_z$ , $m_x$ , $m_y$ , $m_z$ , ascissa di fine carico)
<b>4</b>	<b>carico distribuito locale su elemento tipo trave</b> 7 dati ( $f_1$ , $f_2$ , $f_3$ , $m_1$ , $m_2$ , $m_3$ , ascissa di inizio carico) 7 dati ( $f_1$ , $f_2$ , $f_3$ , $m_1$ , $m_2$ , $m_3$ , ascissa di fine carico)
<b>5</b>	<b>carico concentrato globale su elemento tipo trave</b> 7 dati ( $F_x$ , $F_y$ , $F_z$ , $M_x$ , $M_y$ , $M_z$ , ascissa di carico)
<b>6</b>	<b>carico concentrato locale su elemento tipo trave</b> 7 dati ( $F_1$ , $F_2$ , $F_3$ , $M_1$ , $M_2$ , $M_3$ , ascissa di carico)
<b>7</b>	<b>variazione termica applicata ad elemento tipo trave</b> 7 dati (variazioni termiche: uniforme, media e differenza in altezza e larghezza al nodo iniziale e finale)
<b>8</b>	<b>carico di pressione uniforme su elemento tipo piastra</b> 1 dato (pressione)
<b>9</b>	<b>carico di pressione variabile su elemento tipo piastra</b> 4 dati (pressione, quota, pressione, quota)
<b>10</b>	<b>variazione termica applicata ad elemento tipo piastra</b> 2 dati (variazioni termiche: media e differenza nello spessore)
<b>11</b>	<b>carico variabile generale su elementi tipo trave e piastra</b> 1 dato descrizione della tipologia 4 dati per segmento (posizione, valore, posizione, valore) la tipologia precisa l'ascissa di definizione, la direzione del carico, la modalità di carico e la larghezza d'influenza per gli elementi tipo trave
<b>12</b>	<b>gruppo di carichi con impronta su piastra</b> 9 dati (numero di ripetizioni in direzione X e Y, valore di ciascun carico, posizione centrale del primo, dimensioni dell'impronta, interasse tra i carichi)



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

 <p>Carico concentrato nodale</p>	 <p>Spostamento impresso</p>
 <p>Carico distribuito globale</p>	 <p>Carico distribuito locale</p>
 <p>Carico concentrato globale</p>	 <p>Carico concentrato locale</p>
 <p>Carico termico 2D</p>	 <p>Carico termico 3D</p>
 <p>Carico pressione uniforme</p>	 <p>Carico pressione variabile</p>

**Tipo carico concentrato nodale**

Id	Tipo	Fx	Fy	Fz	Mx	My	Mz
		daN	daN	daN	daN cm	daN cm	daN cm
13	Carichi in fondazione V150-CN: Fx=3570.18 Fy=3570.18 Fz=-2.237e+05 Mx= 5.693e+08 My= 5.693e+08 Mz=-4.887e+06	3570.18	3570.18	-2.237e+05	5.693e+08	5.693e+08	-4.887e+06



## SCHEMATIZZAZIONE DEI CASI DI CARICO

### LEGENDA TABELLA CASI DI CARICO

Il programma consente l'applicazione di diverse tipologie di casi di carico.  
Sono previsti i seguenti 11 tipi di casi di carico:

	<b>Sigla</b>	<b>Tipo</b>	<b>Descrizione</b>
1	<b>Ggk</b>	A	caso di carico comprensivo del peso proprio struttura
2	<b>Gk</b>	NA	caso di carico con azioni permanenti
3	<b>Qk</b>	NA	caso di carico con azioni variabili
4	<b>Gsk</b>	A	caso di carico comprensivo dei carichi permanenti sui solai e sulle coperture
5	<b>Qsk</b>	A	caso di carico comprensivo dei carichi variabili sui solai
6	<b>Qnk</b>	A	caso di carico comprensivo dei carichi di neve sulle coperture
7	<b>Qtk</b>	SA	caso di carico comprensivo di una variazione termica agente sulla struttura
8	<b>Qvk</b>	NA	caso di carico comprensivo di azioni da vento sulla struttura
9	<b>Esk</b>	SA	caso di carico sismico con analisi statica equivalente
10	<b>Edk</b>	SA	caso di carico sismico con analisi dinamica
11	<b>Etk</b>	NA	caso di carico comprensivo di azioni derivanti dall' incremento di spinta delle terre in condizione sismica
12	<b>Pk</b>	NA	caso di carico comprensivo di azioni derivanti da coazioni, cedimenti e precompressioni

Sono di tipo automatico A (ossia non prevedono introduzione dati da parte dell'utente) i seguenti casi di carico: 1-Ggk; 4-Gsk; 5-Qsk; 6-Qnk.

Sono di tipo semi-automatico SA (ossia prevedono una minima introduzione dati da parte dell'utente) i seguenti casi di carico:  
7-Qtk, in quanto richiede solo il valore della variazione termica;

9-Esk e 10-Edk, in quanto richiedono il valore dell'angolo di ingresso del sisma e l'individuazione dei casi di carico partecipanti alla definizione delle masse.

Sono di tipo non automatico NA ossia prevedono la diretta applicazione di carichi generici agli elementi strutturali (si veda il precedente punto Modellazione delle Azioni) i restanti casi di carico.

Nella tabella successiva vengono riportati i casi di carico agenti sulla struttura, con l'indicazione dei dati relativi al caso di carico stesso:  
*Numero Tipo e Sigla identificativa, Valore di riferimento del caso di carico (se previsto).*

In successione, per i casi di carico non automatici, viene riportato l'elenco di nodi ed elementi direttamente caricati con la sigla identificativa del carico.

Per i casi di carico di tipo sismico (9-Esk e 10-Edk), viene riportata la tabella di definizione delle masse: per ogni caso di carico partecipante alla definizione delle masse viene indicata la relativa aliquota (partecipazione) considerata. Si precisa che per i caso di carico 5-Qsk e 6-Qnk la partecipazione è prevista localmente per ogni elemento solaio o copertura presente nel modello (si confronti il valore Sksol nel capitolo relativo agli elementi solaio) e pertanto la loro partecipazione è di norma pari a uno.

CDC	Tipo	Sigla Id	Note
1	Ggk	CDC=Ggk (peso proprio della struttura)	
2	Esk	CDC=Es (statico SLU) alfa=0.0 (ecc. +)	partecipazione:1.00 per 1 CDC=Ggk (peso proprio della struttura)
			partecipazione:1.00 per 10 CDC=G1k (permanente generico) .....
3	Esk	CDC=Es (statico SLU) alfa=0.0 (ecc. -)	come precedente CDC sismico
4	Esk	CDC=Es (statico SLU) alfa=90.00 (ecc. +)	come precedente CDC sismico
5	Esk	CDC=Es (statico SLU) alfa=90.00 (ecc. -)	come precedente CDC sismico
6	Esk	CDC=Es (statico SLD) alfa=0.0 (ecc. +)	come precedente CDC sismico
7	Esk	CDC=Es (statico SLD) alfa=0.0 (ecc. -)	come precedente CDC sismico
8	Esk	CDC=Es (statico SLD) alfa=90.00 (ecc. +)	come precedente CDC sismico
9	Esk	CDC=Es (statico SLD) alfa=90.00 (ecc. -)	come precedente CDC sismico
10	Gk	CDC=G1k (permanente generico) .....	Nodo: 338 Azione : Carichi in fondazione V150-CN:Fx=3570.18 Fy=3570.18 Fz=-2.237e+05 Mx= 5.693e+08 My= 5.693e+08 Mz=-4.887e+06

## DEFINIZIONE DELLE COMBINAZIONI

### LEGENDA TABELLA COMBINAZIONI DI CARICO

Il programma combina i diversi tipi di casi di carico (CDC) secondo le regole previste dalla normativa vigente.

Le combinazioni previste sono destinate al controllo di sicurezza della struttura ed alla verifica degli spostamenti e delle sollecitazioni.

La prima tabella delle combinazioni riportata di seguito comprende le seguenti informazioni: Numero, Tipo, Sigla identificativa. Una seconda tabella riporta il peso nella combinazione assunto per ogni caso di carico.

Ai fini delle verifiche degli stati limite si definiscono le seguenti combinazioni delle azioni:

**Combinazione fondamentale SLU**

$$\gamma G1 \cdot G1 + \gamma G2 \cdot G2 + \gamma P \cdot P + \gamma Q1 \cdot Qk1 + \gamma Q2 \cdot \psi 02 \cdot Qk2 + \gamma Q3 \cdot \psi 03 \cdot Qk3 + \dots$$

**Combinazione caratteristica (rara) SLE**

$$G1 + G2 + P + Qk1 + \psi 02 \cdot Qk2 + \psi 03 \cdot Qk3 + \dots$$

**Combinazione frequente SLE**

$$G1 + G2 + P + \psi 11 \cdot Qk1 + \psi 22 \cdot Qk2 + \psi 23 \cdot Qk3 + \dots$$

**Combinazione quasi permanente SLE**

$$G1 + G2 + P + \psi 21 \cdot Qk1 + \psi 22 \cdot Qk2 + \psi 23 \cdot Qk3 + \dots$$

**Combinazione sismica, impiegata per gli stati limite ultimi e di esercizio connessi all'azione sismica E**

$$E + G1 + G2 + P + \psi 21 \cdot Qk1 + \psi 22 \cdot Qk2 + \dots$$

**Combinazione eccezionale, impiegata per gli stati limite connessi alle azioni eccezionali**

$$G1 + G2 + Ad + P + \psi 21 \cdot Qk1 + \psi 22 \cdot Qk2 + \dots$$

Dove:

NTC 2018 Tabella 2.5.I

Destinazione d'uso/azione	$\psi 0$	$\psi 1$	$\psi 2$
Categoria A residenziali	0,70	0,50	0,30
Categoria B uffici	0,70	0,50	0,30
Categoria C ambienti suscettibili di affollamento	0,70	0,70	0,60
Categoria D ambienti ad uso commerciale	0,70	0,70	0,60
Categoria E biblioteche, archivi, magazzini, ...	1,00	0,90	0,80
Categoria F Rimesse e parcheggi (autoveicoli $\leq 30kN$ )	0,70	0,70	0,60
Categoria G Rimesse e parcheggi (autoveicoli $> 30kN$ )	0,70	0,50	0,30
Categoria H Coperture	0,00	0,00	0,00
Vento	0,60	0,20	0,00
Neve a quota $\leq 1000 m$	0,50	0,20	0,00
Neve a quota $> 1000 m$	0,70	0,50	0,20
Variazioni Termiche	0,60	0,50	0,00

Nelle verifiche possono essere adottati in alternativa due diversi approcci progettuali:

- per l'approccio 1 si considerano due diverse combinazioni di gruppi di coefficienti di sicurezza parziali per le azioni, per i materiali e per la resistenza globale (combinazione 1 con coefficienti A1 e combinazione 2 con coefficienti A2),
- per l'approccio 2 si definisce un'unica combinazione per le azioni, per la resistenza dei materiali e per la resistenza globale (con coefficienti A1).

NTC 2018 Tabella 2.6.I

		Coefficiente	EQU	A1	A2
		$\gamma f$			
Carichi permanenti	Favorevoli	$\gamma G1$	0,9	1,0	1,0
	Sfavorevoli		1,1	1,3	1,0
Carichi permanenti non strutturali (Non compiutamente definiti)	Favorevoli	$\gamma G2$	0,8	0,8	0,8
	Sfavorevoli		1,5	1,5	1,3
Carichi variabili	Favorevoli	$\gamma Qi$	0,0	0,0	0,0
	Sfavorevoli		1,5	1,5	1,3

Cmb	Tipo	Sigla Id	effetto P-delta
1	SLU	Comb. SLU A1 1	
2	SLU	Comb. SLU A1 2	
3	SLU (Terr. G)	Comb. SLU TIPO EQU 3	
4	SLU (Terr. G)	Comb. SLU TIPO EQU 4	

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

<b>Cmb</b>	<b>Tipo</b>	<b>Sigla Id</b>	<b>effetto P-delta</b>
5	SLU	Comb. SLU A1 (SLV sism.) 5	
6	SLU	Comb. SLU A1 (SLV sism.) 6	
7	SLU	Comb. SLU A1 (SLV sism.) 7	
8	SLU	Comb. SLU A1 (SLV sism.) 8	
9	SLU	Comb. SLU A1 (SLV sism.) 9	
10	SLU	Comb. SLU A1 (SLV sism.) 10	
11	SLU	Comb. SLU A1 (SLV sism.) 11	
12	SLU	Comb. SLU A1 (SLV sism.) 12	
13	SLU	Comb. SLU A1 (SLV sism.) 13	
14	SLU	Comb. SLU A1 (SLV sism.) 14	
15	SLU	Comb. SLU A1 (SLV sism.) 15	
16	SLU	Comb. SLU A1 (SLV sism.) 16	
17	SLU	Comb. SLU A1 (SLV sism.) 17	
18	SLU	Comb. SLU A1 (SLV sism.) 18	
19	SLU	Comb. SLU A1 (SLV sism.) 19	
20	SLU	Comb. SLU A1 (SLV sism.) 20	
21	SLU	Comb. SLU A1 (SLV sism.) 21	
22	SLU	Comb. SLU A1 (SLV sism.) 22	
23	SLU	Comb. SLU A1 (SLV sism.) 23	
24	SLU	Comb. SLU A1 (SLV sism.) 24	
25	SLU	Comb. SLU A1 (SLV sism.) 25	
26	SLU	Comb. SLU A1 (SLV sism.) 26	
27	SLU	Comb. SLU A1 (SLV sism.) 27	
28	SLU	Comb. SLU A1 (SLV sism.) 28	
29	SLU	Comb. SLU A1 (SLV sism.) 29	
30	SLU	Comb. SLU A1 (SLV sism.) 30	
31	SLU	Comb. SLU A1 (SLV sism.) 31	
32	SLU	Comb. SLU A1 (SLV sism.) 32	
33	SLU	Comb. SLU A1 (SLV sism.) 33	
34	SLU	Comb. SLU A1 (SLV sism.) 34	
35	SLU	Comb. SLU A1 (SLV sism.) 35	
36	SLU	Comb. SLU A1 (SLV sism.) 36	
37	SLD(sis)	Comb. SLE (SLD Danno sism.) 37	
38	SLD(sis)	Comb. SLE (SLD Danno sism.) 38	
39	SLD(sis)	Comb. SLE (SLD Danno sism.) 39	
40	SLD(sis)	Comb. SLE (SLD Danno sism.) 40	
41	SLD(sis)	Comb. SLE (SLD Danno sism.) 41	
42	SLD(sis)	Comb. SLE (SLD Danno sism.) 42	
43	SLD(sis)	Comb. SLE (SLD Danno sism.) 43	
44	SLD(sis)	Comb. SLE (SLD Danno sism.) 44	
45	SLD(sis)	Comb. SLE (SLD Danno sism.) 45	
46	SLD(sis)	Comb. SLE (SLD Danno sism.) 46	
47	SLD(sis)	Comb. SLE (SLD Danno sism.) 47	
48	SLD(sis)	Comb. SLE (SLD Danno sism.) 48	
49	SLD(sis)	Comb. SLE (SLD Danno sism.) 49	
50	SLD(sis)	Comb. SLE (SLD Danno sism.) 50	
51	SLD(sis)	Comb. SLE (SLD Danno sism.) 51	
52	SLD(sis)	Comb. SLE (SLD Danno sism.) 52	
53	SLD(sis)	Comb. SLE (SLD Danno sism.) 53	
54	SLD(sis)	Comb. SLE (SLD Danno sism.) 54	
55	SLD(sis)	Comb. SLE (SLD Danno sism.) 55	
56	SLD(sis)	Comb. SLE (SLD Danno sism.) 56	
57	SLD(sis)	Comb. SLE (SLD Danno sism.) 57	
58	SLD(sis)	Comb. SLE (SLD Danno sism.) 58	
59	SLD(sis)	Comb. SLE (SLD Danno sism.) 59	
60	SLD(sis)	Comb. SLE (SLD Danno sism.) 60	
61	SLD(sis)	Comb. SLE (SLD Danno sism.) 61	
62	SLD(sis)	Comb. SLE (SLD Danno sism.) 62	
63	SLD(sis)	Comb. SLE (SLD Danno sism.) 63	
64	SLD(sis)	Comb. SLE (SLD Danno sism.) 64	
65	SLD(sis)	Comb. SLE (SLD Danno sism.) 65	
66	SLD(sis)	Comb. SLE (SLD Danno sism.) 66	
67	SLD(sis)	Comb. SLE (SLD Danno sism.) 67	
68	SLD(sis)	Comb. SLE (SLD Danno sism.) 68	
69	SLE(r)	Comb. SLE(rara) 69	

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Cmb	CDC 1/15...	CDC 2/16...	CDC 3/17...	CDC 4/18...	CDC 5/19...	CDC 6/20...	CDC 7/21...	CDC 8/22...	CDC 9/23...	CDC 10/24...	CDC 11/25...	CDC 12/26...	CDC 13/27...	CDC 14/28...
1	1.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.30				
2	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00				
3	1.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.10				
4	0.90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90				
5	1.00	-1.00	0.0	-0.30	0.0	0.0	0.0	0.0	0.0	1.00				
6	1.00	-1.00	0.0	0.30	0.0	0.0	0.0	0.0	0.0	1.00				
7	1.00	1.00	0.0	-0.30	0.0	0.0	0.0	0.0	0.0	1.00				
8	1.00	1.00	0.0	0.30	0.0	0.0	0.0	0.0	0.0	1.00				
9	1.00	-1.00	0.0	0.0	-0.30	0.0	0.0	0.0	0.0	1.00				
10	1.00	-1.00	0.0	0.0	0.30	0.0	0.0	0.0	0.0	1.00				
11	1.00	1.00	0.0	0.0	-0.30	0.0	0.0	0.0	0.0	1.00				
12	1.00	1.00	0.0	0.0	0.30	0.0	0.0	0.0	0.0	1.00				
13	1.00	0.0	-1.00	-0.30	0.0	0.0	0.0	0.0	0.0	1.00				
14	1.00	0.0	-1.00	0.30	0.0	0.0	0.0	0.0	0.0	1.00				
15	1.00	0.0	1.00	-0.30	0.0	0.0	0.0	0.0	0.0	1.00				
16	1.00	0.0	1.00	0.30	0.0	0.0	0.0	0.0	0.0	1.00				
17	1.00	0.0	-1.00	0.0	-0.30	0.0	0.0	0.0	0.0	1.00				
18	1.00	0.0	-1.00	0.0	0.30	0.0	0.0	0.0	0.0	1.00				
19	1.00	0.0	1.00	0.0	-0.30	0.0	0.0	0.0	0.0	1.00				
20	1.00	0.0	1.00	0.0	0.30	0.0	0.0	0.0	0.0	1.00				
21	1.00	-0.30	0.0	-1.00	0.0	0.0	0.0	0.0	0.0	1.00				
22	1.00	-0.30	0.0	1.00	0.0	0.0	0.0	0.0	0.0	1.00				
23	1.00	0.30	0.0	-1.00	0.0	0.0	0.0	0.0	0.0	1.00				
24	1.00	0.30	0.0	1.00	0.0	0.0	0.0	0.0	0.0	1.00				
25	1.00	0.0	-0.30	-1.00	0.0	0.0	0.0	0.0	0.0	1.00				
26	1.00	0.0	-0.30	1.00	0.0	0.0	0.0	0.0	0.0	1.00				
27	1.00	0.0	0.30	-1.00	0.0	0.0	0.0	0.0	0.0	1.00				
28	1.00	0.0	0.30	1.00	0.0	0.0	0.0	0.0	0.0	1.00				
29	1.00	-0.30	0.0	0.0	-1.00	0.0	0.0	0.0	0.0	1.00				
30	1.00	-0.30	0.0	0.0	1.00	0.0	0.0	0.0	0.0	1.00				
31	1.00	0.30	0.0	0.0	-1.00	0.0	0.0	0.0	0.0	1.00				
32	1.00	0.30	0.0	0.0	1.00	0.0	0.0	0.0	0.0	1.00				
33	1.00	0.0	-0.30	0.0	-1.00	0.0	0.0	0.0	0.0	1.00				
34	1.00	0.0	-0.30	0.0	1.00	0.0	0.0	0.0	0.0	1.00				
35	1.00	0.0	0.30	0.0	-1.00	0.0	0.0	0.0	0.0	1.00				
36	1.00	0.0	0.30	0.0	1.00	0.0	0.0	0.0	0.0	1.00				
37	1.00	0.0	0.0	0.0	0.0	-1.00	0.0	-0.30	0.0	1.00				
38	1.00	0.0	0.0	0.0	0.0	-1.00	0.0	0.30	0.0	1.00				
39	1.00	0.0	0.0	0.0	0.0	1.00	0.0	-0.30	0.0	1.00				
40	1.00	0.0	0.0	0.0	0.0	1.00	0.0	0.30	0.0	1.00				
41	1.00	0.0	0.0	0.0	0.0	-1.00	0.0	0.0	-0.30	1.00				
42	1.00	0.0	0.0	0.0	0.0	-1.00	0.0	0.0	0.30	1.00				
43	1.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	-0.30	1.00				
44	1.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.30	1.00				
45	1.00	0.0	0.0	0.0	0.0	0.0	-1.00	-0.30	0.0	1.00				
46	1.00	0.0	0.0	0.0	0.0	0.0	-1.00	0.30	0.0	1.00				
47	1.00	0.0	0.0	0.0	0.0	0.0	1.00	-0.30	0.0	1.00				
48	1.00	0.0	0.0	0.0	0.0	0.0	1.00	0.30	0.0	1.00				
49	1.00	0.0	0.0	0.0	0.0	0.0	-1.00	0.0	-0.30	1.00				
50	1.00	0.0	0.0	0.0	0.0	0.0	-1.00	0.0	0.30	1.00				
51	1.00	0.0	0.0	0.0	0.0	0.0	1.00	0.0	-0.30	1.00				
52	1.00	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.30	1.00				
53	1.00	0.0	0.0	0.0	0.0	-0.30	0.0	-1.00	0.0	1.00				
54	1.00	0.0	0.0	0.0	0.0	-0.30	0.0	1.00	0.0	1.00				
55	1.00	0.0	0.0	0.0	0.0	0.30	0.0	-1.00	0.0	1.00				
56	1.00	0.0	0.0	0.0	0.0	0.30	0.0	1.00	0.0	1.00				
57	1.00	0.0	0.0	0.0	0.0	0.0	-0.30	-1.00	0.0	1.00				
58	1.00	0.0	0.0	0.0	0.0	0.0	-0.30	1.00	0.0	1.00				
59	1.00	0.0	0.0	0.0	0.0	0.0	0.30	-1.00	0.0	1.00				
60	1.00	0.0	0.0	0.0	0.0	0.0	0.30	1.00	0.0	1.00				
61	1.00	0.0	0.0	0.0	0.0	-0.30	0.0	0.0	-1.00	1.00				
62	1.00	0.0	0.0	0.0	0.0	-0.30	0.0	0.0	1.00	1.00				
63	1.00	0.0	0.0	0.0	0.0	0.30	0.0	0.0	-1.00	1.00				
64	1.00	0.0	0.0	0.0	0.0	0.30	0.0	0.0	1.00	1.00				
65	1.00	0.0	0.0	0.0	0.0	0.0	-0.30	0.0	-1.00	1.00				
66	1.00	0.0	0.0	0.0	0.0	0.0	-0.30	0.0	1.00	1.00				
67	1.00	0.0	0.0	0.0	0.0	0.0	0.30	0.0	-1.00	1.00				
68	1.00	0.0	0.0	0.0	0.0	0.0	0.30	0.0	1.00	1.00				
69	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00				



## AZIONE SISMICA

### VALUTAZIONE DELL' AZIONE SISMICA

L'azione sismica sulle costruzioni è valutata a partire dalla "pericolosità sismica di base", in condizioni ideali di sito di riferimento rigido con superficie topografica orizzontale.

Allo stato attuale, la pericolosità sismica su reticolo di riferimento nell'intervallo di riferimento è fornita dai dati pubblicati sul sito <http://esse1.mi.ingv.it/>. Per punti non coincidenti con il reticolo di riferimento e periodi di ritorno non contemplati direttamente si opera come indicato nell' allegato alle NTC (rispettivamente media pesata e interpolazione).

L' azione sismica viene definita in relazione ad un periodo di riferimento  $V_r$  che si ricava, per ciascun tipo di costruzione, moltiplicandone la vita nominale per il coefficiente d'uso (vedi tabella Parametri della struttura). Fissato il periodo di riferimento  $V_r$  e la probabilità di superamento  $P_{ver}$  associata a ciascuno degli stati limite considerati, si ottiene il periodo di ritorno  $T_r$  e i relativi parametri di pericolosità sismica (vedi tabella successiva):

ag: accelerazione orizzontale massima del terreno;

Fo: valore massimo del fattore di amplificazione dello spettro in accelerazione orizzontale;

T\*c: periodo di inizio del tratto a velocità costante dello spettro in accelerazione orizzontale;

Parametri della struttura					
Classe d'uso	Vita $V_n$ [anni]	Coeff. Uso	Periodo $V_r$ [anni]	Tipo di suolo	Categoria topografica
IV	50.0	1.0	50.0	C	T1

Individuati su reticolo di riferimento i parametri di pericolosità sismica si valutano i parametri spettrali riportati in tabella:

S è il coefficiente che tiene conto della categoria di sottosuolo e delle condizioni topografiche mediante la relazione seguente  $S = S_s \cdot S_t$  (3.2.3)

Fo è il fattore che quantifica l'amplificazione spettrale massima, su sito di riferimento rigido orizzontale

Fv è il fattore che quantifica l'amplificazione spettrale massima verticale, in termini di accelerazione orizzontale massima del terreno ag su sito di riferimento rigido orizzontale

Tb è il periodo corrispondente all'inizio del tratto dello spettro ad accelerazione costante.

Tc è il periodo corrispondente all'inizio del tratto dello spettro a velocità costante.

Td è il periodo corrispondente all'inizio del tratto dello spettro a spostamento costante.

Id nodo	Longitudine	Latitudine	Distanza
			Km
Loc.	16.523	38.793	
42338	16.499	38.744	5.849
42339	16.562	38.742	6.601
42117	16.565	38.792	3.616
42116	16.501	38.794	1.917

SL	P <sub>ver</sub>	T <sub>r</sub>	ag	Fo	T*c
		Anni	g		sec
SLO	81.0	30.0	0.060	2.350	0.280
SLD	63.0	50.0	0.079	2.320	0.310
SLV	10.0	475.0	0.225	2.430	0.370
SLC	5.0	975.0	0.299	2.450	0.390

SL	ag	S	Fo	Fv	Tb	Tc	Td
	g				sec	sec	sec
SLO	0.060	1.500	2.350	0.775	0.149	0.447	1.839
SLD	0.079	1.500	2.320	0.878	0.160	0.479	1.914
SLV	0.225	1.372	2.430	1.555	0.180	0.539	2.499
SLC	0.299	1.261	2.450	1.808	0.186	0.559	2.795

## RISULTATI ANALISI SISMICHE

### LEGENDA TABELLA ANALISI SISMICHE

Il programma consente l'analisi di diverse configurazioni sismiche.

Sono previsti, infatti, i seguenti casi di carico:

- |                |  |
|----------------|--|
| <b>9. Esk</b>  | caso di carico sismico con analisi statica equivalente |
| <b>10. Edk</b> | caso di carico sismico con analisi dinamica            |

Ciascun caso di carico è caratterizzato da un angolo di ingresso e da una configurazione di masse determinante la forza sismica complessiva (si rimanda al capitolo relativo ai casi di carico per chiarimenti inerenti questo aspetto).

Nella colonna Note, in funzione della norma in uso sono riportati i parametri fondamentali che caratterizzano l'azione sismica: in particolare possono essere presenti i seguenti valori:

<b>Angolo di ingresso</b>	Angolo di ingresso dell'azione sismica orizzontale
<b>Fattore di importanza</b>	Fattore di importanza dell'edificio, in base alla categoria di appartenenza
<b>Zona sismica</b>	Zona sismica
<b>Accelerazione ag</b>	Accelerazione orizzontale massima sul suolo
<b>Categoria suolo</b>	Categoria di profilo stratigrafico del suolo di fondazione
<b>Fattore q</b>	Fattore di struttura/di comportamento. Dipendente dalla tipologia strutturale
<b>Fattore di sito S</b>	Fattore dipendente dalla stratigrafia e dal profilo topografico
<b>Classe di duttilità CD</b>	Classe di duttilità della struttura – "A" duttilità alta, "B" duttilità bassa
<b>Fattore riduz. SLD</b>	Fattore di riduzione dello spettro elastico per lo stato limite di danno
<b>Periodo proprio T1</b>	Periodo proprio di vibrazione della struttura
<b>Coefficiente Lambda</b>	Coefficiente dipendente dal periodo proprio T1 e dal numero di piani della struttura
<b>Ordinata spettro Sd(T1)</b>	Valore delle ordinate dello spettro di progetto per lo stato limite ultimo, componente orizzontale (verticale Svd)
<b>Ordinata spettro Se(T1)</b>	Valore delle ordinate dello spettro elastico ridotta del fattore SLD per lo stato limite di danno, componente orizzontale (verticale Sve)
<b>Ordinata spettro S (Tb-Tc)</b>	Valore dell' ordinata dello spettro in uso nel tratto costante
<b>numero di modi considerati</b>	Numero di modi di vibrare della struttura considerati nell'analisi dinamica

Per ciascun caso di carico sismico viene riportato l'insieme di dati sotto riportati (le masse sono espresse in unità di forza):

- a) **analisi sismica statica equivalente:**
  - quota, posizione del centro di applicazione e azione orizzontale risultante, posizione del baricentro delle rigidezze, rapporto  $r/Ls$  (per strutture a nucleo), indici di regolarità  $e/r$  secondo EC8 4.2.3.2
  - azione sismica complessiva
- b) **analisi sismica dinamica con spettro di risposta:**
  - quota, posizione del centro di massa e massa risultante, posizione del baricentro delle rigidezze, rapporto  $r/Ls$  (per strutture a nucleo), indici di regolarità  $e/r$  secondo EC8 4.2.3.2
  - frequenza, periodo, accelerazione spettrale, massa eccitata nelle tre direzioni globali per tutti i modi
  - massa complessiva ed aliquota di massa complessiva eccitata.

Per ciascuna combinazione sismica definita SLD o SLO viene riportato il livello di deformazione  $\epsilon_{dT}$  (dr) degli elementi strutturali verticali. Per semplicità di consultazione il livello è espresso anche in unità  $1000 \cdot \epsilon_{dT}/h$  da confrontare direttamente con i valori forniti nella norma (es. 5 per edifici con tamponamenti collegati rigidamente alla struttura, 10.0 per edifici con tamponamenti collegati elasticamente, 3 per edifici in muratura ordinaria, 4 per edifici in muratura armata).

Qualora si applichi il D.M. 96 (vedi NOTA sul capitolo "normativa di riferimento") l'analisi sismica dinamica può essere comprensiva di sollecitazione verticale contemporanea a quella orizzontale, nel qual caso è effettuata una sovrapposizione degli effetti in ragione della radice dei quadrati degli effetti stessi. Per ciascuna combinazione sismica - analisi effettuate con il D.M. 96 (vedi NOTA sul capitolo "normativa di riferimento") - viene riportato il livello di deformazione  $\epsilon_{dT}$ ,  $\epsilon_{tP}$  e  $\epsilon_{tD}$  degli elementi strutturali verticali. Per semplicità di consultazione il livello è espresso in unità  $1000 \cdot \epsilon_{dT}/h$  da confrontare direttamente con il valore 2 o 4 per la verifica.

Per gli edifici sismicamente isolati si riportano di seguito le verifiche condotte sui dispositivi di isolamento. Le verifiche sono effettuate secondo la circolare 619/2009 del C.S.LL.PP nelle combinazioni in SLC come previsto dal DM 17-01-2018. Per ogni combinazione è riportato il codice di verifica ed i valori utilizzati per la verifica: spostamento  $dE$ , area ridotta e dimensione  $A2$ , azione verticale, deformazioni di taglio dell'elastomero e tensioni nell'acciaio.

Qualora si applichi l'Ordinanza 3274 e s.m.i. le verifiche sono eseguite in accordo con l'allegato 10.A.

In particolare la tabella, per ogni combinazione di calcolo, riporta:

<b>Nodo</b>	Nodo di appoggio dell' isolatore
<b>Cmb</b>	Combinazione oggetto della verifica
<b>Verif.</b>	Codice di verifica ok – verifica positiva , NV – verifica negativa, ND – verifica non completata

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

<b>dE</b>	Spostamento relativo tra le due facce (amplificato del 20% per Ordinanza 3274 e smi) combinato con la regola del 30%
<b>Ang fi</b>	Angolo utilizzato per il calcolo dell' area ridotta Ar (per dispositivi circolari)
<b>V</b>	Azione verticale agente
<b>Ar</b>	Area ridotta efficace
<b>Dim A2</b>	Dimensione utile per il calcolo della deformazione per rotazione
<b>Sig s</b>	Tensione nell' inserto in acciaio
<b>Gam c(a,s,t)</b>	Deformazioni di taglio dell' elastomero
<b>Vcr</b>	Carico critico per instabilità

Affinché la verifica sia positiva deve essere:

- 1)  $V > 0$
- 2)  $Sig s < fyk$
- 3)  $Gam t < 5$
- 4)  $Gam s < Gam * (caratteristica dell' elastomero)$
- 5)  $Gam s < 2$
- 6)  $V < 0.5 Vcr$

Con riferimento al **Documento di Affidabilità** "Test di validazione del software di calcolo PRO\_SAP e dei moduli aggiuntivi PRO\_SAP Modulo Geotecnico, PRO\_CAD nodi acciaio e PRO\_MST" - versione Maggio 2011, disponibile per il download sul sito [www.2si.it](http://www.2si.it), si segnalano i seguenti esempi applicativi:

Test N°	Titolo
23	DM 2008: SPETTRO
29	SISMICA 1000/H, SOMMA V, EFFETTO P-δ
30	ANALISI DI UN EDIFICIO CON ISOLATORI SISMICI
70	MASSE SISMICHE
75	PROGETTO DI ISOLATORI ELASTOMERICI
76	VERIFICA DI ISOLATORI ELASTOMERICI
77	VERIFICA DI ISOLATORI FRICTION PENDULUM

CDC	Tipo	Sigla Id	Note
2	Esk	CDC=Es (statico SLU) alfa=0.0 (ecc. +)	
			categoria suolo: C
			fattore di sito S = 1.372
			ordinata spettro (tratto Tb-Tc) = 0.749 g
			angolo di ingresso:0.0
			eccentricità aggiuntiva: positiva
			periodo proprio T1: 0.300 sec.
			fattore q: 1.000
			fattore per spost. mu d: 1.000
			classe di duttilità CD: DCH
			coefficiente Lambda: 1.000
			ordinata spettro Sd(T1): 0.749

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	1.677e+05	1.677e+05	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	1.677e+05		2.238e+05									

CDC	Tipo	Sigla Id	Note
3	Esk	CDC=Es (statico SLU) alfa=0.0 (ecc. -)	
			categoria suolo: C
			fattore di sito S = 1.372
			ordinata spettro (tratto Tb-Tc) = 0.749 g



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

CDC	Tipo	Sigla Id	Note
			angolo di ingresso:0.0
			eccentricità aggiuntiva: negativa
			periodo proprio T1: 0.300 sec.
			fattore q: 1.000
			fattore per spost. mu d: 1.000
			classe di duttilità CD: DCH
			coefficiente Lambda: 1.000
			ordinata spettro Sd(T1): 0.749

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	1.677e+05	1.677e+05	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	1.677e+05		2.238e+05									

CDC	Tipo	Sigla Id	Note
4	Esk	CDC=Es (statico SLU) alfa=90.00 (ecc. +)	
			categoria suolo: C
			fattore di sito S = 1.372
			ordinata spettro (tratto Tb-Tc) = 0.749 g
			angolo di ingresso:90.00
			eccentricità aggiuntiva: positiva
			periodo proprio T1: 0.300 sec.
			fattore q: 1.000
			fattore per spost. mu d: 1.000
			classe di duttilità CD: DCH
			coefficiente Lambda: 1.000
			ordinata spettro Sd(T1): 0.749

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	1.677e+05	1.677e+05	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	1.677e+05		2.238e+05									

CDC	Tipo	Sigla Id	Note
5	Esk	CDC=Es (statico SLU) alfa=90.00 (ecc. -)	
			categoria suolo: C
			fattore di sito S = 1.372
			ordinata spettro (tratto Tb-Tc) = 0.749 g
			angolo di ingresso:90.00
			eccentricità aggiuntiva: negativa
			periodo proprio T1: 0.300 sec.
			fattore q: 1.000
			fattore per spost. mu d: 1.000
			classe di duttilità CD: DCH
			coefficiente Lambda: 1.000
			ordinata spettro Sd(T1): 0.749

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
-90.00	1.677e+05	1.677e+05	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	1.677e+05		2.238e+05									

CDC	Tipo	Sigla Id	Note
6	Esk	CDC=Es (statico SLD) alfa=0.0 (ecc. +)	
			categoria suolo: C
			fattore di sito S = 1.500
			ordinata spettro (tratto Tb-Tc) = 0.273 g
			angolo di ingresso:0.0
			eccentricità aggiuntiva: positiva
			periodo proprio T1: 0.300 sec.
			coefficiente Lambda: 1.000
			ordinata spettro Se(T1): 0.273

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	6.113e+04	6.113e+04	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	6.113e+04		2.238e+05									

CDC	Tipo	Sigla Id	Note
7	Esk	CDC=Es (statico SLD) alfa=0.0 (ecc. -)	
			categoria suolo: C
			fattore di sito S = 1.500
			ordinata spettro (tratto Tb-Tc) = 0.273 g
			angolo di ingresso:0.0
			eccentricità aggiuntiva: negativa
			periodo proprio T1: 0.300 sec.
			coefficiente Lambda: 1.000
			ordinata spettro Se(T1): 0.273

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	6.113e+04	6.113e+04	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	6.113e+04		2.238e+05									

CDC	Tipo	Sigla Id	Note
8	Esk	CDC=Es (statico SLD) alfa=90.00 (ecc. +)	
			categoria suolo: C
			fattore di sito S = 1.500
			ordinata spettro (tratto Tb-Tc) = 0.273 g
			angolo di ingresso:90.00
			eccentricità aggiuntiva: positiva
			periodo proprio T1: 0.300 sec.
			coefficiente Lambda: 1.000
			ordinata spettro Se(T1): 0.273

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	6.113e+04	6.113e+04	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	6.113e+04		2.238e+05									

CDC	Tipo	Sigla Id	Note
9	Esk	CDC=Es (statico SLD) alfa=90.00 (ecc. -)	
			categoria suolo: C
			fattore di sito S = 1.500
			ordinata spettro (tratto Tb-Tc) = 0.273 g
			angolo di ingresso:90.00
			eccentricità aggiuntiva: negativa
			periodo proprio T1: 0.300 sec.
			coefficiente Lambda: 1.000
			ordinata spettro Se(T1): 0.273

Quota	Forza Sismica	Tot. parziale	M Sismica x g	Pos. GX	Pos. GY	E agg. X-X	E agg. Y-Y	Pos. KX	Pos. KY	(r/Ls)^2	rapp. ex/rx	rapp. ey/ry
cm	daN	daN	daN	cm	cm	cm	cm	cm	cm			
-90.00	6.113e+04	6.113e+04	2.238e+05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risulta	6.113e+04		2.238e+05									

Cmb	Pilas. 1000 etaT/h	etaT cm	inter. h cm	Pilas. 1000 etaT/h	etaT cm	inter. h cm	Pilas. 1000 etaT/h	etaT cm	inter. h cm
37	29	0.377.41e-03	20.0						
38	29	0.377.41e-03	20.0						
39	29	0.377.43e-03	20.0						
40	29	0.377.42e-03	20.0						
41	29	0.377.41e-03	20.0						
42	29	0.377.41e-03	20.0						
43	29	0.377.43e-03	20.0						
44	29	0.377.42e-03	20.0						
45	29	0.377.41e-03	20.0						
46	29	0.377.41e-03	20.0						
47	29	0.377.43e-03	20.0						
48	29	0.377.42e-03	20.0						
49	29	0.377.41e-03	20.0						
50	29	0.377.41e-03	20.0						
51	29	0.377.43e-03	20.0						
52	29	0.377.42e-03	20.0						
53	29	0.377.42e-03	20.0						
54	29	0.377.41e-03	20.0						
55	29	0.377.43e-03	20.0						
56	29	0.377.41e-03	20.0						
57	29	0.377.42e-03	20.0						
58	29	0.377.41e-03	20.0						
59	29	0.377.43e-03	20.0						
60	29	0.377.41e-03	20.0						
61	29	0.377.42e-03	20.0						
62	29	0.377.41e-03	20.0						
63	29	0.377.43e-03	20.0						
64	29	0.377.41e-03	20.0						
65	29	0.377.42e-03	20.0						
66	29	0.377.41e-03	20.0						
67	29	0.377.43e-03	20.0						
68	29	0.377.41e-03	20.0						

Cmb                    1000 etaT/h  
0.37



## RISULTATI NODALI

### LEGENDA RISULTATI NODALI

Il controllo dei risultati delle analisi condotte, per quanto concerne i nodi strutturali, è possibile in relazione alle tabelle sottoriportate.

Una prima tabella riporta infatti per ogni nodo e per ogni combinazione (o caso di carico) gli spostamenti nodali.

Una seconda tabella riporta per ogni nodo a cui sia associato un vincolo rigido e/o elastico o una fondazione speciale e per ogni combinazione (o caso di carico) i valori delle azioni esercitate dalla struttura sui vincoli (reazioni vincolari cambiate di segno).

Una terza tabella, infine riassume per ogni nodo le sei combinazioni in cui si attingono i valori minimi e massimi della reazione Fz, della reazione Mx e della reazione My.

Nodo	Cmb	Traslazione X cm	Traslazione Y cm	Traslazione Z cm	Rotazione X	Rotazione Y	Rotazione Z
1	1	1.18e-04	1.56e-04	-0.12	1.48e-04	2.10e-04	0.0
1	3	9.95e-05	1.32e-04	-0.11	1.25e-04	1.77e-04	0.0
1	8	5.81e-03	1.73e-03	-0.10	1.14e-04	1.62e-04	0.0
1	21	-1.89e-03	-5.22e-03	-0.10	1.14e-04	1.61e-04	0.0
1	24	2.07e-03	5.46e-03	-0.10	1.14e-04	1.61e-04	0.0
1	40	2.17e-03	7.05e-04	-0.10	1.14e-04	1.61e-04	0.0
1	53	-6.33e-04	-1.83e-03	-0.10	1.14e-04	1.61e-04	0.0
1	56	8.13e-04	2.06e-03	-0.10	1.14e-04	1.61e-04	0.0
1	69	9.04e-05	1.20e-04	-0.10	1.14e-04	1.61e-04	0.0
2	1	1.12e-04	1.38e-04	-0.14	1.58e-04	2.38e-04	0.0
2	3	9.50e-05	1.17e-04	-0.12	1.34e-04	2.01e-04	0.0
2	8	5.83e-03	1.83e-03	-0.11	1.22e-04	1.83e-04	0.0
2	21	-1.90e-03	-5.43e-03	-0.11	1.22e-04	1.83e-04	0.0
2	24	2.07e-03	5.64e-03	-0.11	1.21e-04	1.83e-04	0.0
2	40	2.18e-03	7.34e-04	-0.11	1.22e-04	1.83e-04	0.0
2	53	-6.37e-04	-1.91e-03	-0.11	1.22e-04	1.83e-04	0.0
2	56	8.10e-04	2.13e-03	-0.11	1.22e-04	1.83e-04	0.0
2	69	8.63e-05	1.06e-04	-0.11	1.22e-04	1.83e-04	0.0
3	1	1.31e-04	1.48e-04	-0.13	2.29e-04	2.65e-04	0.0
3	3	1.11e-04	1.26e-04	-0.11	1.94e-04	2.25e-04	0.0
3	8	5.92e-03	1.80e-03	-0.10	1.76e-04	2.05e-04	0.0
3	21	-1.87e-03	-5.41e-03	-0.10	1.77e-04	2.04e-04	-1.40e-06
3	24	2.08e-03	5.64e-03	-0.10	1.75e-04	2.04e-04	1.04e-06
3	40	2.22e-03	7.29e-04	-0.10	1.76e-04	2.04e-04	0.0
3	53	-6.19e-04	-1.90e-03	-0.10	1.76e-04	2.04e-04	0.0
3	56	8.21e-04	2.13e-03	-0.10	1.76e-04	2.04e-04	0.0
3	69	1.01e-04	1.14e-04	-0.10	1.76e-04	2.04e-04	0.0
4	1	1.43e-04	1.62e-04	-0.11	1.87e-04	2.14e-04	0.0
4	3	1.21e-04	1.37e-04	-0.09	1.58e-04	1.81e-04	0.0
4	5	-5.71e-03	-1.48e-03	-0.09	1.44e-04	1.64e-04	0.0
4	8	5.93e-03	1.73e-03	-0.09	1.44e-04	1.65e-04	0.0
4	22	-1.32e-03	5.48e-03	-0.09	1.43e-04	1.64e-04	0.0
4	37	-2.01e-03	-4.61e-04	-0.09	1.44e-04	1.64e-04	0.0
4	40	2.23e-03	7.10e-04	-0.09	1.44e-04	1.64e-04	0.0
4	54	-4.11e-04	2.08e-03	-0.09	1.44e-04	1.64e-04	0.0
4	69	1.10e-04	1.24e-04	-0.09	1.44e-04	1.64e-04	0.0
5	1	1.52e-04	1.53e-04	-0.11	2.28e-04	2.41e-04	0.0
5	3	1.29e-04	1.30e-04	-0.10	1.93e-04	2.04e-04	0.0
5	5	-5.68e-03	-1.52e-03	-0.09	1.76e-04	1.85e-04	0.0
5	8	5.92e-03	1.76e-03	-0.09	1.76e-04	1.86e-04	0.0
5	22	-1.44e-03	5.62e-03	-0.09	1.75e-04	1.85e-04	0.0
5	37	-2.00e-03	-4.80e-04	-0.09	1.76e-04	1.85e-04	0.0
5	40	2.23e-03	7.15e-04	-0.09	1.76e-04	1.86e-04	0.0
5	54	-4.50e-04	2.12e-03	-0.09	1.75e-04	1.85e-04	0.0
5	69	1.17e-04	1.18e-04	-0.09	1.76e-04	1.85e-04	0.0
6	1	1.61e-04	1.69e-04	-0.10	2.44e-04	2.32e-04	0.0
6	3	1.36e-04	1.43e-04	-0.08	2.06e-04	1.96e-04	0.0
6	5	-5.69e-03	-1.48e-03	-0.07	1.88e-04	1.78e-04	0.0
6	8	5.94e-03	1.74e-03	-0.07	1.87e-04	1.79e-04	0.0
6	22	-1.40e-03	5.52e-03	-0.07	1.87e-04	1.78e-04	1.34e-06
6	37	-2.00e-03	-4.57e-04	-0.07	1.88e-04	1.78e-04	0.0
6	40	2.24e-03	7.17e-04	-0.07	1.88e-04	1.79e-04	0.0
6	54	-4.33e-04	2.10e-03	-0.07	1.87e-04	1.78e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

6	69	1.24e-04	1.30e-04	-0.07	1.88e-04	1.79e-04	0.0
7	1	1.82e-04	1.58e-04	-0.09	2.42e-04	2.27e-04	0.0
7	3	1.54e-04	1.34e-04	-0.08	2.05e-04	1.92e-04	0.0
7	5	-5.63e-03	-1.50e-03	-0.07	1.86e-04	1.74e-04	0.0
7	8	5.91e-03	1.75e-03	-0.07	1.86e-04	1.76e-04	0.0
7	22	-1.49e-03	5.64e-03	-0.07	1.85e-04	1.75e-04	0.0
7	37	-1.96e-03	-4.71e-04	-0.07	1.86e-04	1.75e-04	0.0
7	40	2.24e-03	7.15e-04	-0.07	1.86e-04	1.75e-04	0.0
7	54	-4.53e-04	2.13e-03	-0.07	1.86e-04	1.75e-04	0.0
7	69	1.40e-04	1.22e-04	-0.07	1.86e-04	1.75e-04	0.0
8	1	1.79e-04	1.69e-04	-0.08	2.23e-04	1.90e-04	0.0
8	3	1.51e-04	1.43e-04	-0.07	1.88e-04	1.61e-04	0.0
8	5	-5.63e-03	-1.42e-03	-0.06	1.71e-04	1.46e-04	0.0
8	8	5.91e-03	1.68e-03	-0.06	1.71e-04	1.47e-04	0.0
8	22	-1.49e-03	5.52e-03	-0.06	1.70e-04	1.46e-04	0.0
8	37	-1.97e-03	-4.33e-04	-0.06	1.71e-04	1.46e-04	0.0
8	40	2.24e-03	6.94e-04	-0.06	1.71e-04	1.46e-04	0.0
8	54	-4.57e-04	2.10e-03	-0.06	1.71e-04	1.46e-04	0.0
8	69	1.37e-04	1.30e-04	-0.06	1.71e-04	1.46e-04	0.0
9	1	2.12e-04	1.56e-04	-0.08	2.45e-04	2.16e-04	0.0
9	3	1.79e-04	1.32e-04	-0.06	2.07e-04	1.83e-04	0.0
9	5	-5.59e-03	-1.44e-03	-0.06	1.89e-04	1.65e-04	-1.14e-06
9	8	5.92e-03	1.68e-03	-0.06	1.88e-04	1.67e-04	0.0
9	22	-1.54e-03	5.65e-03	-0.06	1.87e-04	1.66e-04	1.27e-06
9	37	-1.93e-03	-4.49e-04	-0.06	1.89e-04	1.66e-04	0.0
9	40	2.26e-03	6.89e-04	-0.06	1.88e-04	1.66e-04	0.0
9	54	-4.57e-04	2.13e-03	-0.06	1.88e-04	1.66e-04	0.0
9	69	1.63e-04	1.20e-04	-0.06	1.89e-04	1.66e-04	0.0
10	1	2.12e-04	1.71e-04	-0.06	2.32e-04	1.99e-04	0.0
10	3	1.79e-04	1.45e-04	-0.05	1.97e-04	1.68e-04	0.0
10	5	-5.59e-03	-1.36e-03	-0.05	1.79e-04	1.52e-04	-1.15e-06
10	8	5.92e-03	1.62e-03	-0.05	1.78e-04	1.54e-04	0.0
10	22	-1.54e-03	5.55e-03	-0.05	1.78e-04	1.53e-04	1.33e-06
10	37	-1.93e-03	-4.12e-04	-0.05	1.79e-04	1.53e-04	0.0
10	40	2.26e-03	6.75e-04	-0.05	1.79e-04	1.53e-04	0.0
10	54	-4.57e-04	2.11e-03	-0.05	1.78e-04	1.53e-04	0.0
10	69	1.63e-04	1.32e-04	-0.05	1.79e-04	1.53e-04	0.0
11	1	2.40e-04	1.55e-04	-0.06	2.21e-04	1.91e-04	0.0
11	3	2.03e-04	1.31e-04	-0.05	1.87e-04	1.62e-04	0.0
11	6	-5.49e-03	1.92e-03	-0.05	1.70e-04	1.46e-04	0.0
11	7	5.86e-03	-1.68e-03	-0.05	1.70e-04	1.48e-04	0.0
11	22	-1.57e-03	5.67e-03	-0.05	1.69e-04	1.47e-04	0.0
11	38	-1.89e-03	7.77e-04	-0.05	1.70e-04	1.47e-04	0.0
11	39	2.25e-03	-5.38e-04	-0.05	1.70e-04	1.47e-04	0.0
11	54	-4.54e-04	2.14e-03	-0.05	1.70e-04	1.47e-04	0.0
11	69	1.85e-04	1.19e-04	-0.05	1.70e-04	1.47e-04	0.0
12	1	2.43e-04	1.66e-04	-0.05	2.01e-04	1.52e-04	0.0
12	3	2.06e-04	1.41e-04	-0.04	1.70e-04	1.29e-04	0.0
12	6	-5.49e-03	1.92e-03	-0.04	1.55e-04	1.17e-04	0.0
12	7	5.87e-03	-1.66e-03	-0.04	1.55e-04	1.18e-04	0.0
12	22	-1.56e-03	5.55e-03	-0.04	1.54e-04	1.17e-04	0.0
12	38	-1.88e-03	7.81e-04	-0.04	1.55e-04	1.17e-04	0.0
12	39	2.26e-03	-5.25e-04	-0.04	1.55e-04	1.17e-04	0.0
12	54	-4.50e-04	2.10e-03	-0.04	1.54e-04	1.17e-04	0.0
12	69	1.87e-04	1.28e-04	-0.04	1.55e-04	1.17e-04	0.0
13	1	2.68e-04	1.49e-04	-0.04	1.95e-04	1.76e-04	0.0
13	3	2.27e-04	1.26e-04	-0.04	1.65e-04	1.49e-04	0.0
13	6	-5.43e-03	1.93e-03	-0.03	1.50e-04	1.35e-04	0.0
13	7	5.84e-03	-1.70e-03	-0.03	1.50e-04	1.36e-04	0.0
13	22	-1.60e-03	5.66e-03	-0.03	1.49e-04	1.36e-04	0.0
13	38	-1.85e-03	7.76e-04	-0.03	1.50e-04	1.35e-04	0.0
13	39	2.26e-03	-5.47e-04	-0.03	1.50e-04	1.36e-04	0.0
13	54	-4.52e-04	2.14e-03	-0.03	1.49e-04	1.36e-04	0.0
13	69	2.06e-04	1.15e-04	-0.03	1.50e-04	1.36e-04	0.0
14	1	2.60e-04	1.63e-04	-0.03	2.00e-04	1.61e-04	0.0
14	3	2.20e-04	1.38e-04	-0.03	1.69e-04	1.36e-04	0.0
14	6	-5.45e-03	1.98e-03	-0.02	1.54e-04	1.23e-04	0.0
14	7	5.85e-03	-1.73e-03	-0.02	1.54e-04	1.25e-04	0.0
14	22	-1.64e-03	5.58e-03	-0.02	1.53e-04	1.24e-04	1.08e-06
14	38	-1.86e-03	8.03e-04	-0.02	1.54e-04	1.24e-04	0.0
14	39	2.26e-03	-5.52e-04	-0.02	1.54e-04	1.24e-04	0.0
14	54	-4.70e-04	2.11e-03	-0.02	1.54e-04	1.24e-04	0.0
14	69	2.00e-04	1.25e-04	-0.02	1.54e-04	1.24e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

15	1	2.87e-04	1.42e-04	-0.03	1.84e-04	1.84e-04	0.0
15	3	2.43e-04	1.20e-04	-0.02	1.56e-04	1.56e-04	0.0
15	6	-5.36e-03	1.97e-03	-0.02	1.42e-04	1.41e-04	-1.08e-06
15	7	5.80e-03	-1.76e-03	-0.02	1.42e-04	1.43e-04	0.0
15	22	-1.65e-03	5.68e-03	-0.02	1.41e-04	1.42e-04	0.0
15	38	-1.81e-03	7.89e-04	-0.02	1.42e-04	1.42e-04	0.0
15	39	2.25e-03	-5.71e-04	-0.02	1.42e-04	1.42e-04	0.0
15	54	-4.60e-04	2.14e-03	-0.02	1.41e-04	1.42e-04	0.0
15	69	2.21e-04	1.09e-04	-0.02	1.42e-04	1.42e-04	0.0
16	1	2.75e-04	1.55e-04	-0.02	1.35e-04	1.15e-04	0.0
16	3	2.33e-04	1.31e-04	-0.02	1.14e-04	9.73e-05	0.0
16	6	-5.37e-03	1.97e-03	-0.02	1.03e-04	8.80e-05	0.0
16	7	5.80e-03	-1.73e-03	-0.02	1.03e-04	8.89e-05	0.0
16	22	-1.69e-03	5.54e-03	-0.02	1.03e-04	8.85e-05	0.0
16	38	-1.82e-03	7.93e-04	-0.02	1.03e-04	8.83e-05	0.0
16	39	2.25e-03	-5.55e-04	-0.02	1.03e-04	8.86e-05	0.0
16	54	-4.83e-04	2.10e-03	-0.02	1.03e-04	8.84e-05	0.0
16	69	2.11e-04	1.19e-04	-0.02	1.03e-04	8.84e-05	0.0
17	1	2.99e-04	1.30e-04	-0.02	1.15e-04	1.35e-04	0.0
17	3	2.53e-04	1.10e-04	-0.02	9.72e-05	1.14e-04	0.0
17	7	5.65e-03	-1.80e-03	-0.02	8.84e-05	1.04e-04	0.0
17	22	-1.62e-03	5.69e-03	-0.02	8.79e-05	1.04e-04	0.0
17	39	2.21e-03	-5.94e-04	-0.02	8.84e-05	1.04e-04	0.0
17	54	-4.44e-04	2.14e-03	-0.02	8.82e-05	1.04e-04	0.0
17	69	2.30e-04	1.00e-04	-0.02	8.84e-05	1.04e-04	0.0
18	1	2.93e-04	1.49e-04	-0.02	9.49e-05	9.50e-05	0.0
18	3	2.48e-04	1.26e-04	-0.02	8.03e-05	8.04e-05	0.0
18	6	-5.17e-03	1.96e-03	-0.01	7.30e-05	7.26e-05	0.0
18	7	5.62e-03	-1.73e-03	-0.01	7.29e-05	7.35e-05	0.0
18	22	-1.62e-03	5.51e-03	-0.01	7.26e-05	7.31e-05	0.0
18	38	-1.74e-03	7.88e-04	-0.01	7.30e-05	7.29e-05	0.0
18	39	2.19e-03	-5.59e-04	-0.01	7.30e-05	7.32e-05	0.0
18	54	-4.48e-04	2.08e-03	-0.01	7.28e-05	7.31e-05	0.0
18	69	2.25e-04	1.14e-04	-0.01	7.30e-05	7.31e-05	0.0
19	1	1.05e-04	1.20e-04	-0.16	1.90e-04	2.76e-04	0.0
19	3	8.92e-05	1.02e-04	-0.14	1.61e-04	2.33e-04	0.0
19	8	5.86e-03	1.82e-03	-0.12	1.46e-04	2.13e-04	0.0
19	21	-1.91e-03	-5.53e-03	-0.12	1.47e-04	2.12e-04	-1.06e-06
19	24	2.07e-03	5.72e-03	-0.12	1.46e-04	2.12e-04	0.0
19	40	2.19e-03	7.23e-04	-0.12	1.46e-04	2.13e-04	0.0
19	53	-6.45e-04	-1.96e-03	-0.12	1.47e-04	2.12e-04	0.0
19	56	8.07e-04	2.14e-03	-0.12	1.46e-04	2.12e-04	0.0
19	69	8.11e-05	9.24e-05	-0.12	1.46e-04	2.12e-04	0.0
20	1	1.23e-04	1.27e-04	-0.15	2.03e-04	2.62e-04	0.0
20	3	1.04e-04	1.08e-04	-0.12	1.71e-04	2.21e-04	0.0
20	8	5.88e-03	1.80e-03	-0.11	1.56e-04	2.02e-04	0.0
20	21	-1.83e-03	-5.51e-03	-0.11	1.57e-04	2.01e-04	0.0
20	24	2.02e-03	5.71e-03	-0.11	1.55e-04	2.01e-04	0.0
20	40	2.21e-03	7.17e-04	-0.11	1.56e-04	2.02e-04	0.0
20	53	-6.08e-04	-1.95e-03	-0.11	1.56e-04	2.01e-04	0.0
20	56	7.97e-04	2.14e-03	-0.11	1.56e-04	2.01e-04	0.0
20	69	9.48e-05	9.78e-05	-0.11	1.56e-04	2.01e-04	0.0
21	1	1.48e-04	1.31e-04	-0.13	2.51e-04	2.80e-04	0.0
21	3	1.25e-04	1.11e-04	-0.11	2.12e-04	2.37e-04	0.0
21	8	5.92e-03	1.80e-03	-0.10	1.93e-04	2.16e-04	0.0
21	21	-1.78e-03	-5.51e-03	-0.10	1.94e-04	2.15e-04	-1.38e-06
21	24	2.00e-03	5.71e-03	-0.10	1.92e-04	2.16e-04	0.0
21	40	2.23e-03	7.19e-04	-0.10	1.93e-04	2.16e-04	0.0
21	53	-5.75e-04	-1.95e-03	-0.10	1.93e-04	2.15e-04	0.0
21	56	8.02e-04	2.15e-03	-0.10	1.93e-04	2.15e-04	0.0
21	69	1.14e-04	1.01e-04	-0.10	1.93e-04	2.15e-04	0.0
22	1	1.79e-04	1.34e-04	-0.11	2.83e-04	2.72e-04	0.0
22	3	1.51e-04	1.13e-04	-0.10	2.39e-04	2.30e-04	0.0
22	5	-5.65e-03	-1.57e-03	-0.09	2.18e-04	2.08e-04	0.0
22	8	5.93e-03	1.77e-03	-0.09	2.17e-04	2.10e-04	0.0
22	22	-1.50e-03	5.71e-03	-0.09	2.16e-04	2.08e-04	0.0
22	37	-1.97e-03	-5.05e-04	-0.09	2.18e-04	2.09e-04	0.0
22	40	2.25e-03	7.11e-04	-0.09	2.18e-04	2.09e-04	0.0
22	54	-4.58e-04	2.15e-03	-0.09	2.17e-04	2.09e-04	0.0
22	69	1.38e-04	1.03e-04	-0.09	2.18e-04	2.09e-04	0.0
23	1	2.12e-04	1.39e-04	-0.09	2.66e-04	2.45e-04	0.0
23	3	1.79e-04	1.17e-04	-0.08	2.25e-04	2.07e-04	0.0
23	5	-5.59e-03	-1.52e-03	-0.07	2.05e-04	1.88e-04	-1.15e-06

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

23	8	5.92e-03	1.74e-03	-0.07	2.04e-04	1.89e-04	0.0
23	22	-1.54e-03	5.73e-03	-0.07	2.03e-04	1.88e-04	1.01e-06
23	37	-1.93e-03	-4.88e-04	-0.07	2.05e-04	1.88e-04	0.0
23	40	2.26e-03	7.01e-04	-0.07	2.04e-04	1.89e-04	0.0
23	54	-4.57e-04	2.16e-03	-0.07	2.04e-04	1.88e-04	0.0
23	69	1.63e-04	1.07e-04	-0.07	2.05e-04	1.88e-04	0.0
24	1	2.44e-04	1.32e-04	-0.07	2.49e-04	2.21e-04	0.0
24	3	2.06e-04	1.11e-04	-0.06	2.11e-04	1.87e-04	0.0
24	6	-5.51e-03	1.87e-03	-0.06	1.91e-04	1.69e-04	0.0
24	7	5.89e-03	-1.67e-03	-0.06	1.92e-04	1.71e-04	0.0
24	22	-1.57e-03	5.73e-03	-0.06	1.90e-04	1.70e-04	0.0
24	38	-1.89e-03	7.47e-04	-0.06	1.91e-04	1.70e-04	0.0
24	39	2.27e-03	-5.44e-04	-0.06	1.92e-04	1.70e-04	0.0
24	54	-4.52e-04	2.15e-03	-0.06	1.91e-04	1.70e-04	0.0
24	69	1.88e-04	1.01e-04	-0.06	1.91e-04	1.70e-04	0.0
25	1	2.73e-04	1.28e-04	-0.06	2.13e-04	2.13e-04	0.0
25	3	2.31e-04	1.08e-04	-0.05	1.80e-04	1.80e-04	0.0
25	6	-5.43e-03	1.90e-03	-0.04	1.64e-04	1.63e-04	-1.06e-06
25	7	5.85e-03	-1.70e-03	-0.04	1.64e-04	1.65e-04	0.0
25	22	-1.59e-03	5.74e-03	-0.04	1.63e-04	1.64e-04	0.0
25	38	-1.85e-03	7.54e-04	-0.04	1.64e-04	1.64e-04	0.0
25	39	2.27e-03	-5.57e-04	-0.04	1.64e-04	1.64e-04	0.0
25	54	-4.46e-04	2.16e-03	-0.04	1.64e-04	1.64e-04	0.0
25	69	2.10e-04	9.84e-05	-0.04	1.64e-04	1.64e-04	0.0
26	1	2.94e-04	1.23e-04	-0.04	1.76e-04	1.95e-04	0.0
26	3	2.48e-04	1.04e-04	-0.04	1.49e-04	1.65e-04	0.0
26	7	5.77e-03	-1.71e-03	-0.03	1.36e-04	1.51e-04	0.0
26	22	-1.59e-03	5.73e-03	-0.03	1.35e-04	1.50e-04	0.0
26	39	2.25e-03	-5.63e-04	-0.03	1.36e-04	1.50e-04	0.0
26	54	-4.36e-04	2.15e-03	-0.03	1.35e-04	1.50e-04	0.0
26	69	2.26e-04	9.48e-05	-0.03	1.36e-04	1.50e-04	0.0
27	1	3.08e-04	1.15e-04	-0.03	1.61e-04	2.00e-04	0.0
27	3	2.60e-04	9.72e-05	-0.03	1.36e-04	1.69e-04	0.0
27	7	5.69e-03	-1.75e-03	-0.02	1.24e-04	1.55e-04	1.08e-06
27	22	-1.62e-03	5.74e-03	-0.02	1.23e-04	1.54e-04	0.0
27	39	2.23e-03	-5.81e-04	-0.02	1.24e-04	1.54e-04	0.0
27	54	-4.41e-04	2.15e-03	-0.02	1.24e-04	1.54e-04	0.0
27	69	2.37e-04	8.84e-05	-0.02	1.24e-04	1.54e-04	0.0
28	1	1.02e-04	1.00e-04	-0.18	1.46e-04	2.52e-04	0.0
28	3	8.63e-05	8.48e-05	-0.15	1.23e-04	2.13e-04	0.0
28	8	5.83e-03	1.79e-03	-0.14	1.12e-04	1.95e-04	0.0
28	21	-1.85e-03	-5.60e-03	-0.14	1.13e-04	1.94e-04	0.0
28	24	2.01e-03	5.75e-03	-0.14	1.12e-04	1.94e-04	0.0
28	40	2.18e-03	7.03e-04	-0.14	1.12e-04	1.94e-04	0.0
28	53	-6.26e-04	-1.99e-03	-0.14	1.12e-04	1.94e-04	0.0
28	56	7.83e-04	2.15e-03	-0.14	1.12e-04	1.94e-04	0.0
28	69	7.84e-05	7.71e-05	-0.14	1.12e-04	1.94e-04	0.0
29	1	1.18e-04	9.73e-05	-0.17	1.93e-04	2.66e-04	0.0
29	3	9.97e-05	8.23e-05	-0.14	1.63e-04	2.25e-04	0.0
29	8	5.89e-03	1.80e-03	-0.13	1.48e-04	2.06e-04	0.0
29	21	-1.83e-03	-5.60e-03	-0.13	1.49e-04	2.05e-04	0.0
29	24	2.01e-03	5.75e-03	-0.13	1.48e-04	2.05e-04	0.0
29	40	2.20e-03	7.03e-04	-0.13	1.48e-04	2.05e-04	0.0
29	53	-6.08e-04	-1.99e-03	-0.13	1.49e-04	2.05e-04	0.0
29	56	7.90e-04	2.14e-03	-0.13	1.48e-04	2.05e-04	0.0
29	69	9.06e-05	7.48e-05	-0.13	1.48e-04	2.05e-04	0.0
30	1	1.44e-04	1.01e-04	-0.15	2.44e-04	3.03e-04	0.0
30	3	1.22e-04	8.54e-05	-0.13	2.07e-04	2.56e-04	0.0
30	8	5.90e-03	1.80e-03	-0.12	1.88e-04	2.34e-04	0.0
30	21	-1.75e-03	-5.61e-03	-0.12	1.89e-04	2.33e-04	-1.14e-06
30	24	1.97e-03	5.77e-03	-0.12	1.87e-04	2.33e-04	0.0
30	40	2.22e-03	7.07e-04	-0.12	1.88e-04	2.33e-04	0.0
30	53	-5.68e-04	-2.00e-03	-0.12	1.88e-04	2.33e-04	0.0
30	56	7.90e-04	2.15e-03	-0.12	1.88e-04	2.33e-04	0.0
30	69	1.11e-04	7.77e-05	-0.12	1.88e-04	2.33e-04	0.0
31	1	1.70e-04	1.09e-04	-0.13	2.87e-04	3.04e-04	0.0
31	3	1.44e-04	9.21e-05	-0.11	2.43e-04	2.57e-04	0.0
31	8	5.92e-03	1.79e-03	-0.10	2.21e-04	2.35e-04	0.0
31	21	-1.68e-03	-5.61e-03	-0.10	2.22e-04	2.34e-04	-1.33e-06
31	24	1.94e-03	5.78e-03	-0.10	2.20e-04	2.34e-04	0.0
31	40	2.24e-03	7.07e-04	-0.10	2.21e-04	2.34e-04	0.0
31	53	-5.28e-04	-1.99e-03	-0.10	2.22e-04	2.34e-04	0.0
31	56	7.91e-04	2.16e-03	-0.10	2.21e-04	2.34e-04	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

31	69	1.31e-04	8.37e-05	-0.10	2.21e-04	2.34e-04	0.0
32	1	2.12e-04	1.12e-04	-0.11	2.94e-04	2.85e-04	0.0
32	3	1.79e-04	9.49e-05	-0.09	2.49e-04	2.41e-04	0.0
32	5	-5.59e-03	-1.61e-03	-0.09	2.27e-04	2.18e-04	-1.20e-06
32	8	5.92e-03	1.78e-03	-0.09	2.26e-04	2.21e-04	0.0
32	22	-1.54e-03	5.79e-03	-0.09	2.25e-04	2.19e-04	0.0
32	37	-1.93e-03	-5.31e-04	-0.09	2.26e-04	2.19e-04	0.0
32	40	2.26e-03	7.04e-04	-0.09	2.26e-04	2.20e-04	0.0
32	54	-4.57e-04	2.16e-03	-0.09	2.26e-04	2.19e-04	0.0
32	69	1.63e-04	8.63e-05	-0.09	2.26e-04	2.19e-04	0.0
33	1	2.53e-04	1.08e-04	-0.09	2.64e-04	2.65e-04	0.0
33	3	2.14e-04	9.13e-05	-0.08	2.24e-04	2.24e-04	0.0
33	6	-5.51e-03	1.82e-03	-0.07	2.03e-04	2.02e-04	-1.01e-06
33	7	5.90e-03	-1.66e-03	-0.07	2.04e-04	2.05e-04	0.0
33	22	-1.55e-03	5.78e-03	-0.07	2.02e-04	2.03e-04	0.0
33	38	-1.88e-03	7.17e-04	-0.07	2.03e-04	2.03e-04	0.0
33	39	2.27e-03	-5.51e-04	-0.07	2.03e-04	2.04e-04	0.0
33	54	-4.40e-04	2.16e-03	-0.07	2.03e-04	2.03e-04	0.0
33	69	1.94e-04	8.30e-05	-0.07	2.03e-04	2.03e-04	0.0
34	1	2.76e-04	9.91e-05	-0.07	2.21e-04	2.49e-04	0.0
34	3	2.34e-04	8.39e-05	-0.06	1.87e-04	2.11e-04	0.0
34	7	5.84e-03	-1.68e-03	-0.06	1.70e-04	1.93e-04	0.0
34	22	-1.56e-03	5.78e-03	-0.06	1.69e-04	1.91e-04	0.0
34	39	2.26e-03	-5.63e-04	-0.06	1.70e-04	1.92e-04	0.0
34	54	-4.33e-04	2.15e-03	-0.06	1.70e-04	1.91e-04	0.0
34	69	2.13e-04	7.63e-05	-0.06	1.70e-04	1.92e-04	0.0
35	1	3.00e-04	9.52e-05	-0.06	1.91e-04	2.21e-04	0.0
35	3	2.54e-04	8.06e-05	-0.05	1.62e-04	1.87e-04	0.0
35	7	5.78e-03	-1.68e-03	-0.05	1.47e-04	1.71e-04	0.0
35	22	-1.57e-03	5.75e-03	-0.05	1.46e-04	1.70e-04	0.0
35	39	2.25e-03	-5.65e-04	-0.05	1.47e-04	1.71e-04	0.0
35	54	-4.27e-04	2.14e-03	-0.05	1.47e-04	1.70e-04	0.0
35	69	2.31e-04	7.32e-05	-0.05	1.47e-04	1.70e-04	0.0
36	1	3.11e-04	9.84e-05	-0.05	1.52e-04	2.01e-04	0.0
36	3	2.63e-04	8.33e-05	-0.04	1.29e-04	1.70e-04	0.0
36	7	5.66e-03	-1.67e-03	-0.04	1.17e-04	1.56e-04	0.0
36	22	-1.55e-03	5.76e-03	-0.04	1.17e-04	1.55e-04	0.0
36	39	2.22e-03	-5.61e-04	-0.04	1.17e-04	1.55e-04	0.0
36	54	-4.14e-04	2.15e-03	-0.04	1.17e-04	1.55e-04	0.0
36	69	2.39e-04	7.57e-05	-0.04	1.17e-04	1.55e-04	0.0
37	1	9.74e-05	6.72e-05	-0.20	1.67e-04	2.49e-04	0.0
37	3	8.24e-05	5.69e-05	-0.17	1.41e-04	2.11e-04	0.0
37	8	5.82e-03	1.80e-03	-0.15	1.28e-04	1.93e-04	0.0
37	23	1.61e-03	-5.69e-03	-0.15	1.29e-04	1.92e-04	0.0
37	24	1.96e-03	5.81e-03	-0.15	1.28e-04	1.92e-04	0.0
37	40	2.17e-03	6.89e-04	-0.15	1.28e-04	1.92e-04	0.0
37	55	6.35e-04	-2.04e-03	-0.15	1.29e-04	1.92e-04	0.0
37	56	7.61e-04	2.15e-03	-0.15	1.28e-04	1.92e-04	0.0
37	69	7.49e-05	5.17e-05	-0.15	1.28e-04	1.92e-04	0.0
38	1	1.16e-04	6.72e-05	-0.19	1.88e-04	2.59e-04	0.0
38	3	9.83e-05	5.69e-05	-0.16	1.59e-04	2.19e-04	0.0
38	8	5.86e-03	1.80e-03	-0.14	1.44e-04	2.00e-04	0.0
38	23	1.67e-03	-5.69e-03	-0.14	1.45e-04	2.00e-04	0.0
38	24	1.95e-03	5.81e-03	-0.14	1.44e-04	2.00e-04	0.0
38	40	2.19e-03	6.89e-04	-0.14	1.44e-04	2.00e-04	0.0
38	55	6.67e-04	-2.04e-03	-0.14	1.45e-04	1.99e-04	0.0
38	56	7.66e-04	2.15e-03	-0.14	1.44e-04	1.99e-04	0.0
38	69	8.94e-05	5.17e-05	-0.14	1.44e-04	1.99e-04	0.0
39	1	1.37e-04	6.72e-05	-0.17	2.24e-04	2.76e-04	0.0
39	3	1.16e-04	5.69e-05	-0.15	1.89e-04	2.33e-04	0.0
39	8	5.90e-03	1.80e-03	-0.13	1.72e-04	2.13e-04	0.0
39	23	1.73e-03	-5.69e-03	-0.13	1.73e-04	2.12e-04	0.0
39	24	1.93e-03	5.81e-03	-0.13	1.71e-04	2.12e-04	0.0
39	40	2.22e-03	6.89e-04	-0.13	1.72e-04	2.13e-04	0.0
39	55	6.99e-04	-2.04e-03	-0.13	1.73e-04	2.12e-04	0.0
39	56	7.72e-04	2.15e-03	-0.13	1.72e-04	2.12e-04	0.0
39	69	1.05e-04	5.17e-05	-0.13	1.72e-04	2.12e-04	0.0
40	1	1.66e-04	6.72e-05	-0.16	2.73e-04	2.99e-04	0.0
40	3	1.41e-04	5.69e-05	-0.13	2.31e-04	2.53e-04	0.0
40	8	5.92e-03	1.80e-03	-0.12	2.10e-04	2.31e-04	0.0
40	23	1.80e-03	-5.69e-03	-0.12	2.11e-04	2.31e-04	0.0
40	24	1.92e-03	5.81e-03	-0.12	2.09e-04	2.31e-04	0.0
40	40	2.24e-03	6.89e-04	-0.12	2.10e-04	2.31e-04	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

40	55	7.37e-04	-2.04e-03	-0.12	2.11e-04	2.30e-04	0.0
40	56	7.82e-04	2.15e-03	-0.12	2.10e-04	2.30e-04	0.0
40	69	1.28e-04	5.17e-05	-0.12	2.10e-04	2.30e-04	0.0
41	1	2.12e-04	6.72e-05	-0.13	3.41e-04	3.41e-04	0.0
41	3	1.79e-04	5.69e-05	-0.11	2.88e-04	2.88e-04	0.0
41	8	5.92e-03	1.80e-03	-0.10	2.62e-04	2.64e-04	0.0
41	23	1.86e-03	-5.69e-03	-0.10	2.64e-04	2.63e-04	0.0
41	24	1.91e-03	5.81e-03	-0.10	2.61e-04	2.63e-04	0.0
41	40	2.26e-03	6.89e-04	-0.10	2.62e-04	2.63e-04	0.0
41	55	7.83e-04	-2.04e-03	-0.10	2.63e-04	2.62e-04	0.0
41	56	8.00e-04	2.15e-03	-0.10	2.62e-04	2.62e-04	0.0
41	69	1.63e-04	5.17e-05	-0.10	2.62e-04	2.62e-04	0.0
42	1	2.57e-04	6.72e-05	-0.11	2.85e-04	2.94e-04	0.0
42	3	2.17e-04	5.69e-05	-0.09	2.41e-04	2.49e-04	0.0
42	7	5.90e-03	-1.65e-03	-0.09	2.20e-04	2.28e-04	0.0
42	24	1.89e-03	5.81e-03	-0.09	2.18e-04	2.27e-04	0.0
42	39	2.28e-03	-5.68e-04	-0.09	2.19e-04	2.27e-04	0.0
42	56	8.15e-04	2.15e-03	-0.09	2.19e-04	2.27e-04	0.0
42	69	1.98e-04	5.17e-05	-0.09	2.19e-04	2.26e-04	0.0
43	1	2.84e-04	6.72e-05	-0.09	2.45e-04	2.66e-04	0.0
43	3	2.40e-04	5.69e-05	-0.08	2.07e-04	2.25e-04	0.0
43	7	5.84e-03	-1.65e-03	-0.07	1.89e-04	2.06e-04	1.01e-06
43	24	1.85e-03	5.81e-03	-0.07	1.87e-04	2.05e-04	0.0
43	39	2.27e-03	-5.68e-04	-0.07	1.89e-04	2.05e-04	0.0
43	56	8.13e-04	2.15e-03	-0.07	1.88e-04	2.05e-04	0.0
43	69	2.18e-04	5.17e-05	-0.07	1.88e-04	2.05e-04	0.0
44	1	3.01e-04	6.72e-05	-0.08	2.16e-04	2.45e-04	0.0
44	3	2.55e-04	5.69e-05	-0.06	1.82e-04	2.07e-04	0.0
44	7	5.76e-03	-1.65e-03	-0.06	1.66e-04	1.90e-04	1.26e-06
44	24	1.79e-03	5.81e-03	-0.06	1.65e-04	1.89e-04	0.0
44	39	2.25e-03	-5.68e-04	-0.06	1.66e-04	1.89e-04	0.0
44	56	8.01e-04	2.15e-03	-0.06	1.66e-04	1.89e-04	0.0
44	69	2.32e-04	5.17e-05	-0.06	1.66e-04	1.89e-04	0.0
45	1	3.16e-04	6.72e-05	-0.06	1.99e-04	2.32e-04	0.0
45	3	2.67e-04	5.69e-05	-0.05	1.68e-04	1.97e-04	0.0
45	7	5.66e-03	-1.65e-03	-0.05	1.53e-04	1.80e-04	1.33e-06
45	24	1.73e-03	5.81e-03	-0.05	1.52e-04	1.79e-04	0.0
45	39	2.22e-03	-5.68e-04	-0.05	1.53e-04	1.79e-04	0.0
45	56	7.86e-04	2.15e-03	-0.05	1.53e-04	1.79e-04	0.0
45	69	2.43e-04	5.17e-05	-0.05	1.53e-04	1.79e-04	0.0
46	1	9.87e-05	3.21e-05	-0.22	1.20e-04	2.14e-04	0.0
46	3	8.35e-05	2.72e-05	-0.18	1.02e-04	1.81e-04	0.0
46	8	5.80e-03	1.78e-03	-0.17	9.24e-05	1.65e-04	0.0
46	23	1.66e-03	-5.71e-03	-0.17	9.32e-05	1.65e-04	0.0
46	24	1.90e-03	5.78e-03	-0.17	9.20e-05	1.65e-04	0.0
46	40	2.16e-03	6.65e-04	-0.17	9.25e-05	1.65e-04	0.0
46	55	6.55e-04	-2.07e-03	-0.17	9.28e-05	1.64e-04	0.0
46	56	7.42e-04	2.12e-03	-0.17	9.24e-05	1.64e-04	0.0
46	69	7.59e-05	2.47e-05	-0.17	9.26e-05	1.64e-04	0.0
47	1	1.14e-04	3.49e-05	-0.21	1.68e-04	2.27e-04	0.0
47	3	9.67e-05	2.95e-05	-0.17	1.43e-04	1.92e-04	0.0
47	8	5.85e-03	1.78e-03	-0.16	1.29e-04	1.76e-04	0.0
47	23	1.73e-03	-5.71e-03	-0.16	1.30e-04	1.75e-04	0.0
47	24	1.89e-03	5.78e-03	-0.16	1.29e-04	1.75e-04	0.0
47	40	2.19e-03	6.65e-04	-0.16	1.29e-04	1.75e-04	0.0
47	55	6.87e-04	-2.06e-03	-0.16	1.30e-04	1.75e-04	0.0
47	56	7.45e-04	2.12e-03	-0.16	1.29e-04	1.75e-04	0.0
47	69	8.79e-05	2.68e-05	-0.16	1.30e-04	1.75e-04	0.0
48	1	1.42e-04	3.21e-05	-0.19	2.06e-04	2.49e-04	0.0
48	3	1.20e-04	2.72e-05	-0.16	1.74e-04	2.10e-04	0.0
48	8	5.88e-03	1.78e-03	-0.15	1.58e-04	1.92e-04	0.0
48	23	1.77e-03	-5.73e-03	-0.15	1.60e-04	1.91e-04	0.0
48	24	1.90e-03	5.80e-03	-0.15	1.58e-04	1.92e-04	0.0
48	40	2.21e-03	6.65e-04	-0.15	1.58e-04	1.92e-04	0.0
48	55	7.16e-04	-2.07e-03	-0.15	1.59e-04	1.91e-04	0.0
48	56	7.61e-04	2.13e-03	-0.15	1.58e-04	1.91e-04	0.0
48	69	1.09e-04	2.47e-05	-0.15	1.59e-04	1.91e-04	0.0
49	1	1.69e-04	2.47e-05	-0.18	2.59e-04	2.59e-04	0.0
49	3	1.43e-04	2.09e-05	-0.15	2.19e-04	2.19e-04	0.0
49	7	5.89e-03	-1.67e-03	-0.14	1.99e-04	2.00e-04	0.0
49	8	5.91e-03	1.80e-03	-0.14	1.99e-04	2.00e-04	0.0
49	24	1.91e-03	5.80e-03	-0.14	1.98e-04	2.00e-04	0.0
49	39	2.23e-03	-5.96e-04	-0.14	1.99e-04	2.00e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

49	40	2.24e-03	6.66e-04	-0.14	1.99e-04	2.00e-04	0.0
49	56	7.78e-04	2.13e-03	-0.14	1.99e-04	1.99e-04	0.0
49	69	1.30e-04	1.90e-05	-0.14	1.99e-04	1.99e-04	0.0
50	1	2.12e-04	2.14e-05	-0.16	2.99e-04	2.74e-04	0.0
50	3	1.79e-04	1.81e-05	-0.13	2.53e-04	2.31e-04	0.0
50	7	5.90e-03	-1.65e-03	-0.12	2.31e-04	2.12e-04	0.0
50	8	5.92e-03	1.81e-03	-0.12	2.30e-04	2.12e-04	0.0
50	24	1.91e-03	5.81e-03	-0.12	2.29e-04	2.11e-04	0.0
50	39	2.26e-03	-5.92e-04	-0.12	2.30e-04	2.11e-04	0.0
50	40	2.26e-03	6.70e-04	-0.12	2.30e-04	2.11e-04	0.0
50	56	8.00e-04	2.13e-03	-0.12	2.30e-04	2.11e-04	0.0
50	69	1.63e-04	1.64e-05	-0.12	2.30e-04	2.10e-04	0.0
51	1	2.54e-04	2.55e-05	-0.13	3.04e-04	2.88e-04	0.0
51	3	2.15e-04	2.16e-05	-0.11	2.57e-04	2.43e-04	0.0
51	8	5.89e-03	1.83e-03	-0.10	2.34e-04	2.22e-04	0.0
51	24	1.91e-03	5.81e-03	-0.10	2.33e-04	2.21e-04	0.0
51	40	2.27e-03	6.79e-04	-0.10	2.34e-04	2.22e-04	0.0
51	56	8.19e-04	2.13e-03	-0.10	2.33e-04	2.21e-04	0.0
51	69	1.95e-04	1.96e-05	-0.10	2.34e-04	2.21e-04	0.0
52	1	2.79e-04	3.38e-05	-0.11	2.71e-04	2.83e-04	0.0
52	3	2.36e-04	2.86e-05	-0.10	2.30e-04	2.40e-04	0.0
52	7	5.82e-03	-1.61e-03	-0.09	2.09e-04	2.19e-04	0.0
52	24	1.88e-03	5.81e-03	-0.09	2.08e-04	2.18e-04	0.0
52	39	2.26e-03	-5.69e-04	-0.09	2.09e-04	2.18e-04	0.0
52	56	8.23e-04	2.14e-03	-0.09	2.08e-04	2.18e-04	0.0
52	69	2.15e-04	2.60e-05	-0.09	2.09e-04	2.18e-04	0.0
53	1	3.04e-04	3.66e-05	-0.09	2.27e-04	2.42e-04	0.0
53	3	2.57e-04	3.09e-05	-0.08	1.92e-04	2.05e-04	0.0
53	7	5.75e-03	-1.60e-03	-0.07	1.75e-04	1.87e-04	0.0
53	24	1.86e-03	5.80e-03	-0.07	1.74e-04	1.87e-04	0.0
53	39	2.25e-03	-5.64e-04	-0.07	1.75e-04	1.87e-04	0.0
53	56	8.26e-04	2.13e-03	-0.07	1.75e-04	1.86e-04	0.0
53	69	2.34e-04	2.81e-05	-0.07	1.75e-04	1.86e-04	0.0
54	1	3.14e-04	3.36e-05	-0.08	1.90e-04	2.23e-04	0.0
54	3	2.66e-04	2.84e-05	-0.07	1.61e-04	1.88e-04	0.0
54	7	5.64e-03	-1.60e-03	-0.06	1.46e-04	1.72e-04	0.0
54	24	1.79e-03	5.80e-03	-0.06	1.46e-04	1.72e-04	0.0
54	39	2.21e-03	-5.69e-04	-0.06	1.46e-04	1.72e-04	0.0
54	56	8.05e-04	2.13e-03	-0.06	1.46e-04	1.71e-04	0.0
54	69	2.42e-04	2.58e-05	-0.06	1.46e-04	1.71e-04	0.0
55	1	9.87e-05	1.05e-05	-0.23	1.39e-04	2.02e-04	0.0
55	3	8.35e-05	8.86e-06	-0.20	1.18e-04	1.71e-04	0.0
55	8	5.80e-03	1.74e-03	-0.18	1.07e-04	1.57e-04	0.0
55	23	1.72e-03	-5.75e-03	-0.18	1.08e-04	1.56e-04	0.0
55	24	1.85e-03	5.77e-03	-0.18	1.06e-04	1.56e-04	0.0
55	40	2.16e-03	6.39e-04	-0.18	1.07e-04	1.56e-04	0.0
55	55	6.76e-04	-2.09e-03	-0.18	1.07e-04	1.56e-04	0.0
55	56	7.23e-04	2.11e-03	-0.18	1.07e-04	1.56e-04	0.0
55	69	7.59e-05	8.05e-06	-0.18	1.07e-04	1.56e-04	0.0
56	1	1.19e-04	3.40e-06	-0.22	1.60e-04	1.93e-04	0.0
56	3	1.01e-04	2.88e-06	-0.19	1.36e-04	1.63e-04	0.0
56	8	5.84e-03	1.76e-03	-0.17	1.23e-04	1.49e-04	0.0
56	23	1.75e-03	-5.75e-03	-0.17	1.24e-04	1.49e-04	0.0
56	24	1.88e-03	5.77e-03	-0.17	1.22e-04	1.49e-04	0.0
56	40	2.19e-03	6.44e-04	-0.17	1.23e-04	1.49e-04	0.0
56	55	6.95e-04	-2.09e-03	-0.17	1.23e-04	1.48e-04	0.0
56	56	7.42e-04	2.11e-03	-0.17	1.23e-04	1.48e-04	0.0
56	69	9.14e-05	2.62e-06	-0.17	1.23e-04	1.48e-04	0.0
57	1	1.44e-04	0.0	-0.21	2.04e-04	2.05e-04	0.0
57	3	1.22e-04	0.0	-0.18	1.73e-04	1.73e-04	0.0
57	7	5.86e-03	-1.69e-03	-0.16	1.57e-04	1.58e-04	0.0
57	8	5.89e-03	1.77e-03	-0.16	1.57e-04	1.58e-04	0.0
57	21	-1.66e-03	-5.78e-03	-0.16	1.58e-04	1.57e-04	0.0
57	39	2.21e-03	-6.17e-04	-0.16	1.57e-04	1.58e-04	0.0
57	40	2.22e-03	6.44e-04	-0.16	1.57e-04	1.58e-04	0.0
57	53	-5.34e-04	-2.11e-03	-0.16	1.58e-04	1.57e-04	0.0
57	69	1.11e-04	0.0	-0.16	1.57e-04	1.57e-04	0.0
58	1	1.77e-04	-3.72e-06	-0.19	2.48e-04	2.06e-04	0.0
58	3	1.50e-04	-3.15e-06	-0.16	2.10e-04	1.75e-04	0.0
58	7	5.89e-03	-1.67e-03	-0.15	1.91e-04	1.60e-04	0.0
58	8	5.91e-03	1.79e-03	-0.15	1.91e-04	1.60e-04	0.0
58	21	-1.62e-03	-5.78e-03	-0.15	1.92e-04	1.58e-04	0.0
58	39	2.23e-03	-6.10e-04	-0.15	1.91e-04	1.59e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

58	40	2.24e-03	6.49e-04	-0.15	1.91e-04	1.59e-04	0.0
58	53	-5.05e-04	-2.11e-03	-0.15	1.92e-04	1.59e-04	0.0
58	69	1.36e-04	-2.86e-06	-0.15	1.91e-04	1.59e-04	0.0
59	1	2.12e-04	-8.33e-06	-0.17	2.76e-04	2.24e-04	0.0
59	3	1.79e-04	-7.05e-06	-0.15	2.33e-04	1.90e-04	0.0
59	7	5.90e-03	-1.64e-03	-0.13	2.12e-04	1.73e-04	0.0
59	8	5.92e-03	1.82e-03	-0.13	2.12e-04	1.73e-04	0.0
59	21	-1.58e-03	-5.80e-03	-0.13	2.13e-04	1.72e-04	0.0
59	39	2.26e-03	-6.01e-04	-0.13	2.12e-04	1.73e-04	0.0
59	40	2.26e-03	6.60e-04	-0.13	2.12e-04	1.73e-04	0.0
59	53	-4.74e-04	-2.12e-03	-0.13	2.12e-04	1.72e-04	0.0
59	69	1.63e-04	-6.41e-06	-0.13	2.12e-04	1.72e-04	0.0
60	1	2.46e-04	-1.79e-06	-0.15	3.03e-04	2.45e-04	0.0
60	3	2.08e-04	-1.52e-06	-0.13	2.56e-04	2.07e-04	0.0
60	8	5.88e-03	1.86e-03	-0.12	2.33e-04	1.89e-04	0.0
60	21	-1.54e-03	-5.80e-03	-0.12	2.34e-04	1.88e-04	0.0
60	40	2.26e-03	6.78e-04	-0.12	2.33e-04	1.88e-04	0.0
60	53	-4.40e-04	-2.11e-03	-0.12	2.33e-04	1.88e-04	0.0
60	69	1.89e-04	-1.38e-06	-0.12	2.33e-04	1.88e-04	0.0
61	1	2.77e-04	2.52e-06	-0.13	2.80e-04	2.51e-04	0.0
61	3	2.34e-04	2.13e-06	-0.11	2.37e-04	2.13e-04	0.0
61	8	5.83e-03	1.89e-03	-0.10	2.15e-04	1.94e-04	0.0
61	24	1.91e-03	5.81e-03	-0.10	2.14e-04	1.93e-04	0.0
61	40	2.26e-03	6.91e-04	-0.10	2.15e-04	1.94e-04	0.0
61	56	8.30e-04	2.12e-03	-0.10	2.15e-04	1.93e-04	0.0
61	69	2.13e-04	1.94e-06	-0.10	2.15e-04	1.93e-04	0.0
62	1	2.99e-04	6.78e-06	-0.11	2.41e-04	2.29e-04	0.0
62	3	2.53e-04	5.73e-06	-0.10	2.04e-04	1.93e-04	0.0
62	7	5.73e-03	-1.55e-03	-0.09	1.86e-04	1.77e-04	0.0
62	24	1.87e-03	5.81e-03	-0.09	1.85e-04	1.76e-04	0.0
62	39	2.24e-03	-5.62e-04	-0.09	1.86e-04	1.76e-04	0.0
62	56	8.27e-04	2.12e-03	-0.09	1.85e-04	1.76e-04	0.0
62	69	2.30e-04	5.21e-06	-0.09	1.85e-04	1.76e-04	0.0
63	1	3.15e-04	1.53e-05	-0.10	2.32e-04	2.44e-04	0.0
63	3	2.67e-04	1.29e-05	-0.08	1.96e-04	2.06e-04	0.0
63	7	5.63e-03	-1.52e-03	-0.07	1.79e-04	1.89e-04	1.34e-06
63	24	1.85e-03	5.82e-03	-0.07	1.78e-04	1.88e-04	0.0
63	39	2.21e-03	-5.45e-04	-0.07	1.79e-04	1.88e-04	0.0
63	56	8.29e-04	2.13e-03	-0.07	1.78e-04	1.88e-04	0.0
63	69	2.43e-04	1.17e-05	-0.07	1.79e-04	1.88e-04	0.0
64	1	1.05e-04	-1.09e-05	-0.24	9.82e-05	1.33e-04	0.0
64	3	8.86e-05	-9.23e-06	-0.20	8.31e-05	1.13e-04	0.0
64	8	5.77e-03	1.70e-03	-0.18	7.52e-05	1.03e-04	0.0
64	23	1.72e-03	-5.76e-03	-0.18	7.60e-05	1.02e-04	0.0
64	40	2.16e-03	6.15e-04	-0.18	7.54e-05	1.03e-04	0.0
64	55	6.80e-04	-2.10e-03	-0.18	7.57e-05	1.02e-04	0.0
64	69	8.06e-05	-8.39e-06	-0.18	7.55e-05	1.02e-04	0.0
65	1	1.24e-04	-2.10e-05	-0.24	1.75e-04	1.75e-04	0.0
65	3	1.05e-04	-1.77e-05	-0.20	1.48e-04	1.48e-04	0.0
65	7	5.84e-03	-1.72e-03	-0.18	1.35e-04	1.35e-04	0.0
65	8	5.85e-03	1.73e-03	-0.18	1.34e-04	1.35e-04	0.0
65	21	-1.65e-03	-5.77e-03	-0.18	1.35e-04	1.34e-04	0.0
65	39	2.19e-03	-6.36e-04	-0.18	1.34e-04	1.35e-04	0.0
65	40	2.19e-03	6.21e-04	-0.18	1.34e-04	1.35e-04	0.0
65	53	-5.42e-04	-2.11e-03	-0.18	1.35e-04	1.34e-04	0.0
65	69	9.52e-05	-1.61e-05	-0.18	1.34e-04	1.35e-04	0.0
66	1	1.48e-04	-2.70e-05	-0.22	1.93e-04	1.60e-04	0.0
66	3	1.25e-04	-2.28e-05	-0.19	1.63e-04	1.36e-04	0.0
66	7	5.86e-03	-1.68e-03	-0.17	1.48e-04	1.24e-04	0.0
66	8	5.88e-03	1.76e-03	-0.17	1.48e-04	1.24e-04	0.0
66	21	-1.64e-03	-5.77e-03	-0.17	1.49e-04	1.23e-04	0.0
66	39	2.21e-03	-6.24e-04	-0.17	1.48e-04	1.24e-04	0.0
66	40	2.22e-03	6.30e-04	-0.17	1.48e-04	1.24e-04	0.0
66	53	-5.27e-04	-2.12e-03	-0.17	1.49e-04	1.23e-04	0.0
66	69	1.14e-04	-2.08e-05	-0.17	1.48e-04	1.23e-04	0.0
67	1	1.79e-04	-3.15e-05	-0.21	2.27e-04	1.69e-04	0.0
67	3	1.52e-04	-2.66e-05	-0.17	1.92e-04	1.43e-04	0.0
67	7	5.87e-03	-1.67e-03	-0.16	1.75e-04	1.30e-04	0.0
67	8	5.89e-03	1.78e-03	-0.16	1.74e-04	1.31e-04	0.0
67	21	-1.61e-03	-5.79e-03	-0.16	1.76e-04	1.29e-04	0.0
67	39	2.23e-03	-6.24e-04	-0.16	1.75e-04	1.30e-04	0.0
67	40	2.24e-03	6.33e-04	-0.16	1.75e-04	1.30e-04	0.0
67	53	-5.00e-04	-2.13e-03	-0.16	1.75e-04	1.30e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

67	69	1.38e-04	-2.42e-05	-0.16	1.75e-04	1.30e-04	0.0
68	1	2.12e-04	-3.00e-05	-0.19	2.59e-04	1.88e-04	0.0
68	3	1.79e-04	-2.54e-05	-0.16	2.19e-04	1.59e-04	0.0
68	7	5.90e-03	-1.61e-03	-0.14	2.00e-04	1.45e-04	0.0
68	8	5.92e-03	1.83e-03	-0.14	1.99e-04	1.45e-04	0.0
68	21	-1.58e-03	-5.80e-03	-0.14	2.00e-04	1.44e-04	0.0
68	39	2.26e-03	-6.01e-04	-0.14	1.99e-04	1.45e-04	0.0
68	40	2.26e-03	6.54e-04	-0.14	1.99e-04	1.45e-04	0.0
68	53	-4.74e-04	-2.13e-03	-0.14	2.00e-04	1.44e-04	0.0
68	69	1.63e-04	-2.31e-05	-0.14	1.99e-04	1.45e-04	0.0
69	1	2.42e-04	-2.84e-05	-0.17	2.66e-04	1.93e-04	0.0
69	3	2.05e-04	-2.41e-05	-0.14	2.25e-04	1.63e-04	0.0
69	8	5.86e-03	1.90e-03	-0.13	2.05e-04	1.49e-04	0.0
69	21	-1.54e-03	-5.82e-03	-0.13	2.06e-04	1.48e-04	0.0
69	40	2.25e-03	6.77e-04	-0.13	2.05e-04	1.49e-04	0.0
69	53	-4.41e-04	-2.14e-03	-0.13	2.05e-04	1.48e-04	0.0
69	69	1.86e-04	-2.19e-05	-0.13	2.05e-04	1.49e-04	0.0
70	1	2.73e-04	-2.73e-05	-0.15	2.62e-04	2.03e-04	0.0
70	3	2.31e-04	-1.97e-05	-0.13	2.21e-04	1.72e-04	0.0
70	8	5.82e-03	1.91e-03	-0.11	2.01e-04	1.57e-04	0.0
70	21	-1.49e-03	-5.81e-03	-0.11	2.02e-04	1.56e-04	0.0
70	40	2.25e-03	6.85e-04	-0.11	2.01e-04	1.56e-04	0.0
70	53	-4.10e-04	-2.13e-03	-0.11	2.02e-04	1.56e-04	0.0
70	69	2.10e-04	-1.79e-05	-0.11	2.01e-04	1.56e-04	0.0
71	1	2.94e-04	-1.51e-05	-0.13	2.65e-04	2.29e-04	0.0
71	3	2.49e-04	-1.28e-05	-0.11	2.24e-04	1.94e-04	0.0
71	8	5.75e-03	1.96e-03	-0.10	2.04e-04	1.77e-04	1.04e-06
71	21	-1.46e-03	-5.83e-03	-0.10	2.05e-04	1.76e-04	0.0
71	40	2.24e-03	7.08e-04	-0.10	2.04e-04	1.76e-04	0.0
71	53	-3.88e-04	-2.13e-03	-0.10	2.04e-04	1.76e-04	0.0
71	69	2.26e-04	-1.16e-05	-0.10	2.04e-04	1.76e-04	0.0
72	1	3.07e-04	-3.53e-06	-0.11	2.14e-04	1.87e-04	0.0
72	3	2.60e-04	-2.99e-06	-0.09	1.81e-04	1.59e-04	0.0
72	7	5.60e-03	-1.43e-03	-0.09	1.65e-04	1.45e-04	0.0
72	21	-1.37e-03	-5.82e-03	-0.09	1.65e-04	1.44e-04	0.0
72	24	1.84e-03	5.82e-03	-0.09	1.64e-04	1.44e-04	0.0
72	39	2.19e-03	-5.23e-04	-0.09	1.64e-04	1.44e-04	0.0
72	53	-3.49e-04	-2.13e-03	-0.09	1.64e-04	1.44e-04	0.0
72	56	8.22e-04	2.12e-03	-0.09	1.64e-04	1.44e-04	0.0
72	69	2.36e-04	-2.72e-06	-0.09	1.64e-04	1.44e-04	0.0
73	1	1.09e-04	-3.69e-05	-0.24	8.75e-05	8.77e-05	0.0
73	3	9.24e-05	-3.12e-05	-0.21	7.41e-05	7.42e-05	0.0
73	7	5.72e-03	-1.67e-03	-0.19	6.73e-05	6.79e-05	0.0
73	8	5.75e-03	1.72e-03	-0.19	6.70e-05	6.80e-05	0.0
73	21	-1.66e-03	-5.69e-03	-0.19	6.79e-05	6.71e-05	0.0
73	39	2.14e-03	-6.29e-04	-0.19	6.73e-05	6.76e-05	0.0
73	40	2.15e-03	6.07e-04	-0.19	6.72e-05	6.77e-05	0.0
73	53	-5.52e-04	-2.09e-03	-0.19	6.75e-05	6.73e-05	0.0
73	69	8.40e-05	-2.84e-05	-0.19	6.73e-05	6.75e-05	0.0
74	1	1.33e-04	-4.16e-05	-0.24	1.33e-04	9.83e-05	0.0
74	3	1.12e-04	-3.52e-05	-0.20	1.12e-04	8.32e-05	0.0
74	7	5.85e-03	-1.68e-03	-0.18	1.02e-04	7.62e-05	0.0
74	21	-1.61e-03	-5.72e-03	-0.18	1.03e-04	7.53e-05	0.0
74	39	2.20e-03	-6.32e-04	-0.18	1.02e-04	7.58e-05	0.0
74	53	-5.22e-04	-2.11e-03	-0.18	1.02e-04	7.55e-05	0.0
74	69	1.02e-04	-3.20e-05	-0.18	1.02e-04	7.56e-05	0.0
75	1	1.54e-04	-4.79e-05	-0.23	2.02e-04	1.39e-04	0.0
75	3	1.31e-04	-4.05e-05	-0.20	1.71e-04	1.18e-04	0.0
75	7	5.88e-03	-1.68e-03	-0.18	1.56e-04	1.08e-04	0.0
75	8	5.88e-03	1.74e-03	-0.18	1.55e-04	1.08e-04	0.0
75	21	-1.61e-03	-5.76e-03	-0.18	1.56e-04	1.07e-04	0.0
75	39	2.22e-03	-6.37e-04	-0.18	1.55e-04	1.07e-04	0.0
75	40	2.22e-03	6.10e-04	-0.18	1.55e-04	1.07e-04	0.0
75	53	-5.13e-04	-2.12e-03	-0.18	1.56e-04	1.07e-04	0.0
75	69	1.19e-04	-3.68e-05	-0.18	1.55e-04	1.07e-04	0.0
76	1	1.77e-04	-4.84e-05	-0.22	2.14e-04	1.21e-04	0.0
76	3	1.50e-04	-4.10e-05	-0.18	1.81e-04	1.02e-04	0.0
76	7	5.87e-03	-1.63e-03	-0.17	1.64e-04	9.33e-05	0.0
76	8	5.89e-03	1.79e-03	-0.17	1.64e-04	9.34e-05	0.0
76	21	-1.62e-03	-5.76e-03	-0.17	1.65e-04	9.25e-05	0.0
76	39	2.23e-03	-6.16e-04	-0.17	1.64e-04	9.30e-05	0.0
76	40	2.23e-03	6.28e-04	-0.17	1.64e-04	9.30e-05	0.0
76	53	-5.04e-04	-2.12e-03	-0.17	1.65e-04	9.27e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

76	69	1.36e-04	-3.73e-05	-0.17	1.64e-04	9.28e-05	0.0
77	1	2.12e-04	-4.98e-05	-0.20	2.49e-04	1.67e-04	0.0
77	3	1.79e-04	-4.21e-05	-0.17	2.11e-04	1.41e-04	0.0
77	7	5.90e-03	-1.57e-03	-0.15	1.92e-04	1.29e-04	0.0
77	8	5.92e-03	1.84e-03	-0.15	1.91e-04	1.29e-04	0.0
77	21	-1.58e-03	-5.79e-03	-0.15	1.93e-04	1.28e-04	0.0
77	39	2.26e-03	-5.98e-04	-0.15	1.92e-04	1.29e-04	0.0
77	40	2.26e-03	6.48e-04	-0.15	1.92e-04	1.29e-04	0.0
77	53	-4.74e-04	-2.13e-03	-0.15	1.92e-04	1.28e-04	0.0
77	69	1.63e-04	-3.83e-05	-0.15	1.92e-04	1.28e-04	0.0
78	1	2.45e-04	-4.57e-05	-0.18	2.52e-04	1.46e-04	0.0
78	3	2.07e-04	-3.87e-05	-0.15	2.13e-04	1.23e-04	0.0
78	8	5.86e-03	1.90e-03	-0.14	1.94e-04	1.13e-04	0.0
78	21	-1.53e-03	-5.79e-03	-0.14	1.95e-04	1.12e-04	0.0
78	40	2.26e-03	6.69e-04	-0.14	1.94e-04	1.12e-04	0.0
78	53	-4.38e-04	-2.13e-03	-0.14	1.94e-04	1.12e-04	0.0
78	69	1.89e-04	-3.51e-05	-0.14	1.94e-04	1.12e-04	0.0
79	1	2.66e-04	-4.22e-05	-0.16	2.76e-04	1.90e-04	0.0
79	3	2.25e-04	-3.57e-05	-0.14	2.33e-04	1.61e-04	0.0
79	8	5.83e-03	1.96e-03	-0.12	2.12e-04	1.47e-04	0.0
79	21	-1.52e-03	-5.81e-03	-0.12	2.13e-04	1.46e-04	0.0
79	40	2.25e-03	6.94e-04	-0.12	2.12e-04	1.47e-04	0.0
79	53	-4.26e-04	-2.14e-03	-0.12	2.12e-04	1.46e-04	0.0
79	69	2.05e-04	-3.25e-05	-0.12	2.12e-04	1.46e-04	0.0
80	1	2.85e-04	-3.61e-05	-0.14	2.37e-04	1.59e-04	0.0
80	3	2.41e-04	-3.06e-05	-0.12	2.01e-04	1.34e-04	0.0
80	8	5.76e-03	1.96e-03	-0.11	1.83e-04	1.22e-04	0.0
80	21	-1.50e-03	-5.77e-03	-0.11	1.83e-04	1.22e-04	0.0
80	40	2.24e-03	6.96e-04	-0.11	1.83e-04	1.22e-04	0.0
80	53	-4.08e-04	-2.12e-03	-0.11	1.83e-04	1.22e-04	0.0
80	69	2.19e-04	-2.78e-05	-0.11	1.83e-04	1.22e-04	0.0
81	1	3.01e-04	-3.15e-05	-0.12	2.10e-04	1.48e-04	0.0
81	3	2.55e-04	-2.67e-05	-0.11	1.77e-04	1.26e-04	0.0
81	8	5.57e-03	1.96e-03	-0.10	1.61e-04	1.15e-04	0.0
81	21	-1.37e-03	-5.74e-03	-0.10	1.62e-04	1.14e-04	0.0
81	40	2.18e-03	6.99e-04	-0.10	1.61e-04	1.14e-04	0.0
81	53	-3.53e-04	-2.11e-03	-0.10	1.61e-04	1.14e-04	0.0
81	69	2.32e-04	-2.42e-05	-0.10	1.61e-04	1.14e-04	0.0
82	1	2.07e-04	-7.37e-05	-0.21	2.04e-04	6.28e-05	0.0
82	3	1.75e-04	-6.23e-05	-0.17	1.73e-04	5.32e-05	0.0
82	7	5.74e-03	-1.51e-03	-0.16	1.57e-04	4.87e-05	0.0
82	8	5.75e-03	1.85e-03	-0.16	1.57e-04	4.86e-05	0.0
82	21	-1.54e-03	-5.72e-03	-0.16	1.58e-04	4.83e-05	0.0
82	39	2.19e-03	-5.87e-04	-0.16	1.57e-04	4.85e-05	0.0
82	40	2.20e-03	6.38e-04	-0.16	1.57e-04	4.85e-05	0.0
82	53	-4.61e-04	-2.12e-03	-0.16	1.57e-04	4.83e-05	0.0
82	69	1.59e-04	-5.67e-05	-0.16	1.57e-04	4.83e-05	0.0
83	1	2.40e-04	-6.86e-05	-0.18	2.21e-04	8.09e-05	0.0
83	3	2.03e-04	-5.80e-05	-0.16	1.87e-04	6.85e-05	0.0
83	8	5.75e-03	1.97e-03	-0.14	1.70e-04	6.25e-05	0.0
83	21	-1.52e-03	-5.76e-03	-0.14	1.70e-04	6.23e-05	0.0
83	40	2.21e-03	6.83e-04	-0.14	1.70e-04	6.24e-05	0.0
83	53	-4.36e-04	-2.13e-03	-0.14	1.70e-04	6.23e-05	0.0
83	69	1.85e-04	-5.27e-05	-0.14	1.70e-04	6.23e-05	0.0
84	1	2.04e-04	-9.83e-05	-0.21	1.82e-04	1.45e-05	0.0
84	3	1.72e-04	-8.32e-05	-0.17	1.54e-04	1.23e-05	0.0
84	7	5.62e-03	-1.45e-03	-0.16	1.41e-04	1.13e-05	0.0
84	8	5.64e-03	1.85e-03	-0.16	1.40e-04	1.13e-05	0.0
84	21	-1.51e-03	-5.66e-03	-0.16	1.41e-04	1.11e-05	0.0
84	39	2.15e-03	-5.77e-04	-0.16	1.40e-04	1.12e-05	0.0
84	40	2.15e-03	6.27e-04	-0.16	1.40e-04	1.12e-05	0.0
84	53	-4.51e-04	-2.11e-03	-0.16	1.40e-04	1.12e-05	0.0
84	69	1.57e-04	-7.56e-05	-0.16	1.40e-04	1.12e-05	0.0
85	1	2.38e-04	-9.46e-05	-0.18	2.00e-04	3.34e-05	0.0
85	3	2.02e-04	-8.01e-05	-0.16	1.69e-04	2.82e-05	0.0
85	8	5.60e-03	1.91e-03	-0.14	1.54e-04	2.58e-05	0.0
85	21	-1.47e-03	-5.68e-03	-0.14	1.54e-04	2.57e-05	0.0
85	40	2.16e-03	6.51e-04	-0.14	1.54e-04	2.57e-05	0.0
85	53	-4.18e-04	-2.12e-03	-0.14	1.54e-04	2.57e-05	0.0
85	69	1.83e-04	-7.28e-05	-0.14	1.54e-04	2.57e-05	0.0
86	1	2.01e-04	-1.24e-04	-0.20	1.69e-04	-1.18e-05	0.0
86	3	1.70e-04	-1.05e-04	-0.17	1.43e-04	-9.96e-06	0.0
86	7	5.54e-03	-1.40e-03	-0.16	1.30e-04	-9.03e-06	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

86	8	5.55e-03	1.86e-03	-0.16	1.30e-04	-9.03e-06	0.0
86	21	-1.49e-03	-5.63e-03	-0.16	1.30e-04	-9.05e-06	0.0
86	39	2.12e-03	-5.70e-04	-0.16	1.30e-04	-9.05e-06	0.0
86	40	2.12e-03	6.19e-04	-0.16	1.30e-04	-9.05e-06	0.0
86	53	-4.45e-04	-2.11e-03	-0.16	1.30e-04	-9.06e-06	0.0
86	69	1.55e-04	-9.51e-05	-0.16	1.30e-04	-9.06e-06	0.0
87	1	2.39e-04	-1.19e-04	-0.18	1.84e-04	5.46e-06	0.0
87	3	2.02e-04	-1.01e-04	-0.15	1.56e-04	4.62e-06	0.0
87	8	5.50e-03	1.92e-03	-0.14	1.42e-04	4.20e-06	0.0
87	21	-1.43e-03	-5.64e-03	-0.14	1.42e-04	4.29e-06	0.0
87	40	2.12e-03	6.42e-04	-0.14	1.42e-04	4.20e-06	0.0
87	53	-4.06e-04	-2.11e-03	-0.14	1.42e-04	4.23e-06	0.0
87	69	1.84e-04	-9.19e-05	-0.14	1.42e-04	4.20e-06	0.0
88	1	1.99e-04	-1.50e-04	-0.20	1.60e-04	-2.48e-05	0.0
88	3	1.68e-04	-1.27e-04	-0.17	1.36e-04	-2.09e-05	0.0
88	7	5.46e-03	-1.35e-03	-0.15	1.24e-04	-1.90e-05	0.0
88	8	5.48e-03	1.89e-03	-0.15	1.23e-04	-1.91e-05	0.0
88	21	-1.47e-03	-5.62e-03	-0.15	1.24e-04	-1.90e-05	0.0
88	39	2.09e-03	-5.65e-04	-0.15	1.23e-04	-1.90e-05	0.0
88	40	2.10e-03	6.14e-04	-0.15	1.23e-04	-1.90e-05	0.0
88	53	-4.40e-04	-2.12e-03	-0.15	1.23e-04	-1.90e-05	0.0
88	69	1.53e-04	-1.16e-04	-0.15	1.23e-04	-1.90e-05	0.0
89	1	2.40e-04	-1.45e-04	-0.17	1.72e-04	-1.05e-05	0.0
89	3	2.03e-04	-1.23e-04	-0.15	1.45e-04	-8.88e-06	0.0
89	8	5.42e-03	1.95e-03	-0.13	1.32e-04	-8.12e-06	0.0
89	21	-1.41e-03	-5.63e-03	-0.13	1.33e-04	-7.98e-06	0.0
89	40	2.09e-03	6.38e-04	-0.13	1.32e-04	-8.09e-06	0.0
89	53	-3.95e-04	-2.12e-03	-0.13	1.32e-04	-8.04e-06	0.0
89	69	1.85e-04	-1.12e-04	-0.13	1.32e-04	-8.08e-06	0.0
90	1	1.96e-04	-1.79e-04	-0.19	1.55e-04	-3.01e-05	0.0
90	3	1.66e-04	-1.52e-04	-0.16	1.31e-04	-2.55e-05	0.0
90	7	5.41e-03	-1.30e-03	-0.15	1.19e-04	-2.32e-05	0.0
90	8	5.43e-03	1.92e-03	-0.15	1.19e-04	-2.32e-05	0.0
90	21	-1.46e-03	-5.64e-03	-0.15	1.20e-04	-2.32e-05	0.0
90	39	2.07e-03	-5.63e-04	-0.15	1.19e-04	-2.32e-05	0.0
90	40	2.08e-03	6.10e-04	-0.15	1.19e-04	-2.32e-05	0.0
90	53	-4.37e-04	-2.14e-03	-0.15	1.19e-04	-2.32e-05	0.0
90	69	1.51e-04	-1.38e-04	-0.15	1.19e-04	-2.32e-05	0.0
91	1	2.42e-04	-1.73e-04	-0.17	1.62e-04	-1.89e-05	0.0
91	3	2.05e-04	-1.46e-04	-0.14	1.37e-04	-1.60e-05	0.0
91	8	5.35e-03	1.98e-03	-0.13	1.25e-04	-1.46e-05	0.0
91	21	-1.38e-03	-5.64e-03	-0.13	1.25e-04	-1.44e-05	0.0
91	40	2.07e-03	6.36e-04	-0.13	1.25e-04	-1.45e-05	0.0
91	53	-3.85e-04	-2.14e-03	-0.13	1.25e-04	-1.45e-05	0.0
91	69	1.86e-04	-1.33e-04	-0.13	1.25e-04	-1.45e-05	0.0
92	1	1.93e-04	-2.18e-04	-0.19	1.51e-04	-3.16e-05	0.0
92	3	1.64e-04	-1.84e-04	-0.16	1.28e-04	-2.68e-05	0.0
92	7	5.37e-03	-1.27e-03	-0.15	1.17e-04	-2.43e-05	0.0
92	8	5.39e-03	1.94e-03	-0.15	1.16e-04	-2.43e-05	0.0
92	21	-1.46e-03	-5.67e-03	-0.15	1.17e-04	-2.43e-05	0.0
92	39	2.05e-03	-5.68e-04	-0.15	1.16e-04	-2.43e-05	0.0
92	40	2.06e-03	6.02e-04	-0.15	1.16e-04	-2.43e-05	0.0
92	53	-4.37e-04	-2.17e-03	-0.15	1.16e-04	-2.43e-05	0.0
92	69	1.49e-04	-1.67e-04	-0.15	1.16e-04	-2.43e-05	0.0
93	1	2.45e-04	-2.00e-04	-0.16	1.54e-04	-2.28e-05	0.0
93	3	2.07e-04	-1.69e-04	-0.14	1.31e-04	-1.93e-05	0.0
93	8	5.30e-03	2.01e-03	-0.13	1.19e-04	-1.76e-05	0.0
93	21	-1.36e-03	-5.66e-03	-0.12	1.19e-04	-1.75e-05	0.0
93	40	2.05e-03	6.36e-04	-0.12	1.19e-04	-1.76e-05	0.0
93	53	-3.77e-04	-2.16e-03	-0.12	1.19e-04	-1.75e-05	0.0
93	69	1.88e-04	-1.54e-04	-0.12	1.19e-04	-1.76e-05	0.0
94	1	1.94e-04	-2.34e-04	-0.19	1.50e-04	-3.19e-05	0.0
94	3	1.64e-04	-1.98e-04	-0.16	1.27e-04	-2.70e-05	0.0
94	7	5.35e-03	-1.21e-03	-0.14	1.16e-04	-2.45e-05	0.0
94	8	5.37e-03	2.00e-03	-0.14	1.15e-04	-2.45e-05	0.0
94	21	-1.45e-03	-5.70e-03	-0.14	1.16e-04	-2.45e-05	0.0
94	39	2.04e-03	-5.57e-04	-0.14	1.15e-04	-2.45e-05	0.0
94	40	2.05e-03	6.13e-04	-0.14	1.15e-04	-2.45e-05	0.0
94	53	-4.35e-04	-2.19e-03	-0.14	1.15e-04	-2.45e-05	0.0
94	69	1.49e-04	-1.80e-04	-0.14	1.15e-04	-2.45e-05	0.0
95	1	2.48e-04	-2.26e-04	-0.16	1.49e-04	-2.47e-05	0.0
95	3	2.10e-04	-1.92e-04	-0.13	1.26e-04	-2.09e-05	0.0
95	8	5.26e-03	2.06e-03	-0.12	1.15e-04	-1.91e-05	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

95	21	-1.35e-03	-5.70e-03	-0.12	1.15e-04	-1.90e-05	0.0
95	40	2.04e-03	6.39e-04	-0.12	1.15e-04	-1.90e-05	0.0
95	53	-3.70e-04	-2.19e-03	-0.12	1.15e-04	-1.90e-05	0.0
95	69	1.91e-04	-1.74e-04	-0.12	1.15e-04	-1.90e-05	0.0
96	1	1.94e-04	-2.60e-04	-0.18	1.50e-04	-3.24e-05	0.0
96	3	1.64e-04	-2.20e-04	-0.16	1.27e-04	-2.74e-05	0.0
96	7	5.33e-03	-1.17e-03	-0.14	1.15e-04	-2.49e-05	0.0
96	8	5.36e-03	2.04e-03	-0.14	1.15e-04	-2.49e-05	0.0
96	21	-1.45e-03	-5.74e-03	-0.14	1.16e-04	-2.49e-05	0.0
96	39	2.04e-03	-5.52e-04	-0.14	1.15e-04	-2.49e-05	0.0
96	40	2.05e-03	6.18e-04	-0.14	1.15e-04	-2.49e-05	0.0
96	53	-4.34e-04	-2.22e-03	-0.14	1.15e-04	-2.49e-05	0.0
96	69	1.49e-04	-2.00e-04	-0.14	1.15e-04	-2.49e-05	0.0
97	1	2.52e-04	-2.54e-04	-0.15	1.50e-04	-2.58e-05	0.0
97	3	2.13e-04	-2.15e-04	-0.13	1.27e-04	-2.18e-05	0.0
97	8	5.24e-03	2.10e-03	-0.12	1.15e-04	-1.99e-05	0.0
97	21	-1.33e-03	-5.74e-03	-0.12	1.16e-04	-1.98e-05	0.0
97	40	2.03e-03	6.42e-04	-0.12	1.15e-04	-1.99e-05	0.0
97	53	-3.63e-04	-2.22e-03	-0.12	1.15e-04	-1.98e-05	0.0
97	69	1.94e-04	-1.95e-04	-0.12	1.15e-04	-1.99e-05	0.0
98	1	2.68e-04	-6.85e-05	-0.16	2.22e-04	9.71e-05	0.0
98	3	2.27e-04	-5.80e-05	-0.14	1.88e-04	8.22e-05	0.0
98	8	5.65e-03	1.96e-03	-0.12	1.71e-04	7.50e-05	0.0
98	21	-1.45e-03	-5.76e-03	-0.12	1.72e-04	7.48e-05	0.0
98	40	2.19e-03	6.80e-04	-0.12	1.71e-04	7.48e-05	0.0
98	53	-3.97e-04	-2.13e-03	-0.12	1.71e-04	7.47e-05	0.0
98	69	2.06e-04	-5.27e-05	-0.12	1.71e-04	7.47e-05	0.0
99	1	2.70e-04	-8.71e-05	-0.16	2.02e-04	5.52e-05	0.0
99	3	2.28e-04	-7.37e-05	-0.13	1.71e-04	4.67e-05	0.0
99	8	5.53e-03	1.95e-03	-0.12	1.55e-04	4.26e-05	0.0
99	21	-1.41e-03	-5.68e-03	-0.12	1.56e-04	4.26e-05	0.0
99	40	2.15e-03	6.69e-04	-0.12	1.55e-04	4.25e-05	0.0
99	53	-3.83e-04	-2.11e-03	-0.12	1.56e-04	4.25e-05	0.0
99	69	2.07e-04	-6.70e-05	-0.12	1.55e-04	4.25e-05	0.0
100	1	2.73e-04	-1.10e-04	-0.15	1.86e-04	2.85e-05	0.0
100	3	2.31e-04	-9.29e-05	-0.13	1.57e-04	2.41e-05	0.0
100	8	5.42e-03	1.97e-03	-0.12	1.43e-04	2.20e-05	0.0
100	21	-1.37e-03	-5.64e-03	-0.12	1.43e-04	2.21e-05	0.0
100	40	2.11e-03	6.64e-04	-0.12	1.43e-04	2.19e-05	0.0
100	53	-3.65e-04	-2.11e-03	-0.12	1.43e-04	2.20e-05	0.0
100	69	2.10e-04	-8.45e-05	-0.12	1.43e-04	2.19e-05	0.0
101	1	2.79e-04	-1.34e-04	-0.15	1.71e-04	1.10e-05	0.0
101	3	2.36e-04	-1.13e-04	-0.13	1.45e-04	9.33e-06	0.0
101	8	5.33e-03	1.99e-03	-0.11	1.32e-04	8.45e-06	0.0
101	21	-1.33e-03	-5.64e-03	-0.11	1.32e-04	8.62e-06	0.0
101	40	2.08e-03	6.62e-04	-0.11	1.32e-04	8.47e-06	0.0
101	53	-3.48e-04	-2.12e-03	-0.11	1.32e-04	8.53e-06	0.0
101	69	2.14e-04	-1.03e-04	-0.11	1.32e-04	8.48e-06	0.0
102	1	2.85e-04	-1.58e-04	-0.14	1.59e-04	0.0	0.0
102	3	2.41e-04	-1.34e-04	-0.12	1.35e-04	0.0	0.0
102	8	5.25e-03	2.02e-03	-0.11	1.22e-04	0.0	0.0
102	21	-1.29e-03	-5.64e-03	-0.11	1.23e-04	0.0	0.0
102	40	2.05e-03	6.61e-04	-0.11	1.22e-04	0.0	0.0
102	53	-3.32e-04	-2.13e-03	-0.11	1.22e-04	0.0	0.0
102	69	2.19e-04	-1.22e-04	-0.11	1.22e-04	0.0	0.0
103	1	2.92e-04	-1.83e-04	-0.14	1.49e-04	-6.98e-06	0.0
103	3	2.47e-04	-1.55e-04	-0.11	1.26e-04	-5.91e-06	0.0
103	7	5.19e-03	-1.14e-03	-0.10	1.15e-04	-5.34e-06	0.0
103	8	5.19e-03	2.06e-03	-0.10	1.14e-04	-5.41e-06	0.0
103	21	-1.26e-03	-5.66e-03	-0.10	1.15e-04	-5.26e-06	0.0
103	39	2.04e-03	-5.07e-04	-0.10	1.14e-04	-5.36e-06	0.0
103	40	2.03e-03	6.62e-04	-0.10	1.14e-04	-5.38e-06	0.0
103	53	-3.16e-04	-2.15e-03	-0.10	1.14e-04	-5.33e-06	0.0
103	69	2.25e-04	-1.41e-04	-0.10	1.14e-04	-5.37e-06	0.0
104	1	3.01e-04	-2.08e-04	-0.13	1.42e-04	-1.10e-05	0.0
104	3	2.54e-04	-1.76e-04	-0.11	1.20e-04	-9.29e-06	0.0
104	7	5.15e-03	-1.10e-03	-0.10	1.09e-04	-8.42e-06	0.0
104	8	5.14e-03	2.10e-03	-0.10	1.09e-04	-8.48e-06	0.0
104	21	-1.23e-03	-5.70e-03	-0.10	1.09e-04	-8.35e-06	0.0
104	39	2.03e-03	-5.03e-04	-0.10	1.09e-04	-8.44e-06	0.0
104	40	2.02e-03	6.65e-04	-0.10	1.09e-04	-8.46e-06	0.0
104	53	-3.02e-04	-2.18e-03	-0.10	1.09e-04	-8.41e-06	0.0
104	69	2.31e-04	-1.60e-04	-0.10	1.09e-04	-8.45e-06	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

105	1	3.10e-04	-2.33e-04	-0.12	1.43e-04	-1.17e-05	0.0
105	3	2.62e-04	-1.97e-04	-0.10	1.21e-04	-9.90e-06	0.0
105	7	5.12e-03	-1.06e-03	-0.09	1.10e-04	-8.98e-06	0.0
105	8	5.11e-03	2.15e-03	-0.09	1.10e-04	-9.03e-06	0.0
105	21	-1.21e-03	-5.74e-03	-0.09	1.10e-04	-8.90e-06	0.0
105	39	2.02e-03	-5.00e-04	-0.09	1.10e-04	-8.99e-06	0.0
105	40	2.01e-03	6.68e-04	-0.09	1.10e-04	-9.01e-06	0.0
105	53	-2.88e-04	-2.21e-03	-0.09	1.10e-04	-8.96e-06	0.0
105	69	2.38e-04	-1.79e-04	-0.09	1.10e-04	-9.00e-06	0.0
106	1	2.93e-04	-5.88e-05	-0.14	2.09e-04	1.07e-04	0.0
106	3	2.48e-04	-4.98e-05	-0.12	1.77e-04	9.09e-05	0.0
106	8	5.58e-03	1.94e-03	-0.11	1.61e-04	8.29e-05	0.0
106	21	-1.40e-03	-5.71e-03	-0.11	1.61e-04	8.28e-05	0.0
106	40	2.18e-03	6.80e-04	-0.11	1.61e-04	8.27e-05	0.0
106	53	-3.68e-04	-2.11e-03	-0.11	1.61e-04	8.27e-05	0.0
106	69	2.25e-04	-4.53e-05	-0.11	1.61e-04	8.26e-05	0.0
107	1	2.96e-04	-7.60e-05	-0.14	1.90e-04	7.49e-05	0.0
107	3	2.50e-04	-6.43e-05	-0.11	1.61e-04	6.34e-05	0.0
107	8	5.42e-03	1.97e-03	-0.10	1.47e-04	5.78e-05	0.0
107	21	-1.33e-03	-5.66e-03	-0.10	1.47e-04	5.78e-05	0.0
107	40	2.12e-03	6.83e-04	-0.10	1.47e-04	5.77e-05	0.0
107	53	-3.41e-04	-2.10e-03	-0.10	1.47e-04	5.77e-05	0.0
107	69	2.28e-04	-5.84e-05	-0.10	1.47e-04	5.76e-05	0.0
108	1	3.03e-04	-9.60e-05	-0.13	1.75e-04	5.14e-05	0.0
108	3	2.57e-04	-8.13e-05	-0.11	1.48e-04	4.35e-05	0.0
108	7	5.30e-03	-1.27e-03	-0.10	1.35e-04	3.97e-05	0.0
108	8	5.30e-03	1.99e-03	-0.10	1.35e-04	3.96e-05	0.0
108	21	-1.28e-03	-5.64e-03	-0.10	1.35e-04	3.97e-05	0.0
108	39	2.08e-03	-5.08e-04	-0.10	1.34e-04	3.96e-05	0.0
108	40	2.08e-03	6.80e-04	-0.10	1.34e-04	3.96e-05	0.0
108	53	-3.19e-04	-2.10e-03	-0.10	1.34e-04	3.96e-05	0.0
108	69	2.33e-04	-7.39e-05	-0.10	1.34e-04	3.96e-05	0.0
109	1	3.13e-04	-1.17e-04	-0.12	1.60e-04	3.42e-05	0.0
109	3	2.64e-04	-9.93e-05	-0.11	1.36e-04	2.89e-05	0.0
109	7	5.22e-03	-1.22e-03	-0.10	1.24e-04	2.64e-05	0.0
109	8	5.21e-03	2.02e-03	-0.10	1.23e-04	2.63e-05	0.0
109	21	-1.23e-03	-5.63e-03	-0.10	1.23e-04	2.64e-05	0.0
109	39	2.06e-03	-5.01e-04	-0.10	1.23e-04	2.63e-05	0.0
109	40	2.05e-03	6.78e-04	-0.10	1.23e-04	2.63e-05	0.0
109	53	-2.96e-04	-2.11e-03	-0.10	1.23e-04	2.63e-05	0.0
109	69	2.40e-04	-9.02e-05	-0.10	1.23e-04	2.63e-05	0.0
110	1	3.23e-04	-1.39e-04	-0.12	1.48e-04	2.16e-05	0.0
110	3	2.74e-04	-1.18e-04	-0.10	1.25e-04	1.83e-05	0.0
110	7	5.15e-03	-1.17e-03	-0.09	1.14e-04	1.67e-05	0.0
110	8	5.13e-03	2.05e-03	-0.09	1.14e-04	1.66e-05	0.0
110	21	-1.19e-03	-5.64e-03	-0.09	1.14e-04	1.67e-05	0.0
110	39	2.03e-03	-4.96e-04	-0.09	1.14e-04	1.66e-05	0.0
110	40	2.03e-03	6.78e-04	-0.09	1.14e-04	1.66e-05	0.0
110	53	-2.74e-04	-2.12e-03	-0.09	1.14e-04	1.67e-05	0.0
110	69	2.49e-04	-1.07e-04	-0.09	1.14e-04	1.66e-05	0.0
111	1	3.35e-04	-1.61e-04	-0.11	1.37e-04	1.26e-05	0.0
111	3	2.84e-04	-1.36e-04	-0.09	1.16e-04	1.07e-05	0.0
111	7	5.09e-03	-1.13e-03	-0.09	1.06e-04	9.81e-06	0.0
111	8	5.06e-03	2.08e-03	-0.09	1.05e-04	9.72e-06	0.0
111	21	-1.14e-03	-5.66e-03	-0.09	1.05e-04	9.84e-06	0.0
111	39	2.02e-03	-4.91e-04	-0.09	1.05e-04	9.75e-06	0.0
111	40	2.01e-03	6.80e-04	-0.09	1.05e-04	9.72e-06	0.0
111	53	-2.52e-04	-2.14e-03	-0.09	1.05e-04	9.76e-06	0.0
111	69	2.58e-04	-1.24e-04	-0.09	1.05e-04	9.72e-06	0.0
112	1	3.47e-04	-1.81e-04	-0.11	1.30e-04	7.04e-06	0.0
112	3	2.94e-04	-1.53e-04	-0.09	1.10e-04	5.96e-06	0.0
112	7	5.04e-03	-1.09e-03	-0.08	1.00e-04	5.49e-06	0.0
112	8	5.01e-03	2.12e-03	-0.08	9.99e-05	5.42e-06	0.0
112	21	-1.10e-03	-5.69e-03	-0.08	9.99e-05	5.53e-06	0.0
112	39	2.01e-03	-4.86e-04	-0.08	9.98e-05	5.44e-06	0.0
112	40	1.99e-03	6.85e-04	-0.08	9.98e-05	5.42e-06	0.0
112	53	-2.32e-04	-2.16e-03	-0.08	9.98e-05	5.46e-06	0.0
112	69	2.67e-04	-1.39e-04	-0.08	9.97e-05	5.41e-06	0.0
113	1	3.60e-04	-2.02e-04	-0.10	1.31e-04	7.20e-06	0.0
113	3	3.05e-04	-1.71e-04	-0.08	1.11e-04	6.10e-06	0.0
113	7	5.01e-03	-1.05e-03	-0.08	1.01e-04	5.62e-06	0.0
113	8	4.96e-03	2.16e-03	-0.08	1.01e-04	5.55e-06	0.0
113	21	-1.06e-03	-5.73e-03	-0.08	1.01e-04	5.65e-06	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

113	39	2.00e-03	-4.82e-04	-0.08	1.01e-04	5.57e-06	0.0
113	40	1.98e-03	6.90e-04	-0.08	1.01e-04	5.54e-06	0.0
113	53	-2.12e-04	-2.19e-03	-0.08	1.01e-04	5.58e-06	0.0
113	69	2.77e-04	-1.55e-04	-0.08	1.01e-04	5.54e-06	0.0
114	1	3.10e-04	-4.75e-05	-0.12	1.87e-04	1.14e-04	0.0
114	3	2.62e-04	-4.02e-05	-0.10	1.58e-04	9.66e-05	0.0
114	7	5.42e-03	-1.37e-03	-0.09	1.44e-04	8.82e-05	0.0
114	8	5.41e-03	1.96e-03	-0.09	1.44e-04	8.81e-05	0.0
114	21	-1.30e-03	-5.68e-03	-0.09	1.44e-04	8.79e-05	0.0
114	39	2.13e-03	-5.21e-04	-0.09	1.44e-04	8.80e-05	0.0
114	40	2.13e-03	6.91e-04	-0.09	1.44e-04	8.79e-05	0.0
114	53	-3.23e-04	-2.09e-03	-0.09	1.44e-04	8.79e-05	0.0
114	69	2.38e-04	-3.65e-05	-0.09	1.44e-04	8.78e-05	0.0
115	1	3.19e-04	-6.26e-05	-0.11	1.69e-04	8.92e-05	0.0
115	3	2.70e-04	-5.30e-05	-0.10	1.43e-04	7.55e-05	0.0
115	7	5.30e-03	-1.31e-03	-0.09	1.31e-04	6.89e-05	0.0
115	8	5.28e-03	1.97e-03	-0.09	1.30e-04	6.88e-05	0.0
115	21	-1.24e-03	-5.64e-03	-0.09	1.30e-04	6.88e-05	0.0
115	39	2.09e-03	-5.09e-04	-0.09	1.30e-04	6.87e-05	0.0
115	40	2.08e-03	6.89e-04	-0.09	1.30e-04	6.87e-05	0.0
115	53	-2.96e-04	-2.09e-03	-0.09	1.30e-04	6.87e-05	0.0
115	69	2.45e-04	-4.81e-05	-0.09	1.30e-04	6.86e-05	0.0
116	1	3.29e-04	-7.88e-05	-0.11	1.54e-04	6.95e-05	0.0
116	3	2.79e-04	-6.67e-05	-0.09	1.30e-04	5.88e-05	0.0
116	7	5.20e-03	-1.26e-03	-0.08	1.19e-04	5.37e-05	0.0
116	8	5.17e-03	1.99e-03	-0.08	1.19e-04	5.36e-05	0.0
116	21	-1.18e-03	-5.61e-03	-0.08	1.19e-04	5.36e-05	0.0
116	39	2.06e-03	-5.00e-04	-0.08	1.19e-04	5.36e-05	0.0
116	40	2.05e-03	6.87e-04	-0.08	1.19e-04	5.35e-05	0.0
116	53	-2.69e-04	-2.08e-03	-0.08	1.19e-04	5.35e-05	0.0
116	69	2.53e-04	-6.06e-05	-0.08	1.19e-04	5.35e-05	0.0
117	1	3.42e-04	-9.61e-05	-0.10	1.41e-04	5.38e-05	0.0
117	3	2.89e-04	-8.13e-05	-0.09	1.19e-04	4.55e-05	0.0
117	7	5.11e-03	-1.22e-03	-0.08	1.09e-04	4.16e-05	0.0
117	8	5.07e-03	2.01e-03	-0.08	1.09e-04	4.15e-05	0.0
117	21	-1.12e-03	-5.61e-03	-0.08	1.09e-04	4.15e-05	0.0
117	39	2.03e-03	-4.93e-04	-0.08	1.09e-04	4.15e-05	0.0
117	40	2.02e-03	6.86e-04	-0.08	1.08e-04	4.14e-05	0.0
117	53	-2.41e-04	-2.09e-03	-0.08	1.08e-04	4.14e-05	0.0
117	69	2.63e-04	-7.39e-05	-0.08	1.08e-04	4.14e-05	0.0
118	1	3.56e-04	-1.15e-04	-0.10	1.29e-04	4.13e-05	0.0
118	3	3.01e-04	-9.72e-05	-0.08	1.10e-04	3.50e-05	0.0
118	7	5.04e-03	-1.19e-03	-0.07	9.99e-05	3.20e-05	0.0
118	8	4.99e-03	2.03e-03	-0.07	9.98e-05	3.19e-05	0.0
118	21	-1.06e-03	-5.61e-03	-0.07	9.97e-05	3.19e-05	0.0
118	39	2.01e-03	-4.89e-04	-0.07	9.97e-05	3.18e-05	0.0
118	40	1.99e-03	6.85e-04	-0.07	9.97e-05	3.18e-05	0.0
118	53	-2.14e-04	-2.10e-03	-0.07	9.96e-05	3.18e-05	0.0
118	69	2.74e-04	-8.83e-05	-0.07	9.96e-05	3.18e-05	0.0
119	1	3.73e-04	-1.40e-04	-0.09	1.20e-04	3.16e-05	0.0
119	3	3.16e-04	-1.18e-04	-0.08	1.01e-04	2.67e-05	0.0
119	7	4.98e-03	-1.16e-03	-0.07	9.24e-05	2.45e-05	0.0
119	8	4.91e-03	2.06e-03	-0.07	9.23e-05	2.44e-05	0.0
119	21	-1.01e-03	-5.63e-03	-0.07	9.23e-05	2.44e-05	0.0
119	39	2.00e-03	-4.90e-04	-0.07	9.22e-05	2.44e-05	0.0
119	40	1.97e-03	6.82e-04	-0.07	9.22e-05	2.43e-05	0.0
119	53	-1.85e-04	-2.12e-03	-0.07	9.22e-05	2.43e-05	0.0
119	69	2.87e-04	-1.07e-04	-0.07	9.21e-05	2.43e-05	0.0
120	1	3.85e-04	-1.49e-04	-0.08	1.14e-04	2.56e-05	0.0
120	3	3.26e-04	-1.26e-04	-0.07	9.64e-05	2.17e-05	0.0
120	7	4.93e-03	-1.12e-03	-0.07	8.79e-05	1.99e-05	0.0
120	8	4.85e-03	2.10e-03	-0.07	8.78e-05	1.98e-05	0.0
120	21	-9.56e-04	-5.65e-03	-0.06	8.78e-05	1.98e-05	0.0
120	39	1.98e-03	-4.80e-04	-0.07	8.78e-05	1.98e-05	0.0
120	40	1.96e-03	6.91e-04	-0.07	8.77e-05	1.97e-05	0.0
120	53	-1.60e-04	-2.13e-03	-0.07	8.77e-05	1.98e-05	0.0
120	69	2.96e-04	-1.15e-04	-0.07	8.77e-05	1.97e-05	0.0
121	1	4.01e-04	-1.65e-04	-0.08	1.15e-04	2.67e-05	0.0
121	3	3.39e-04	-1.39e-04	-0.07	9.73e-05	2.26e-05	0.0
121	7	4.88e-03	-1.08e-03	-0.06	8.87e-05	2.07e-05	0.0
121	21	-9.06e-04	-5.69e-03	-0.06	8.85e-05	2.06e-05	0.0
121	24	1.52e-03	5.43e-03	-0.06	8.83e-05	2.05e-05	0.0
121	39	1.98e-03	-4.75e-04	-0.06	8.85e-05	2.06e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

121	53	-1.34e-04	-2.15e-03	-0.06	8.85e-05	2.06e-05	0.0
121	56	7.51e-04	1.90e-03	-0.06	8.84e-05	2.05e-05	0.0
121	69	3.08e-04	-1.27e-04	-0.06	8.84e-05	2.05e-05	0.0
122	1	3.20e-04	-2.21e-05	-0.10	1.78e-04	1.44e-04	0.0
122	3	2.71e-04	-1.87e-05	-0.09	1.50e-04	1.22e-04	0.0
122	7	5.44e-03	-1.41e-03	-0.08	1.37e-04	1.11e-04	0.0
122	21	-1.26e-03	-5.72e-03	-0.08	1.37e-04	1.11e-04	0.0
122	24	1.75e-03	5.69e-03	-0.08	1.36e-04	1.11e-04	0.0
122	39	2.14e-03	-5.24e-04	-0.08	1.37e-04	1.11e-04	0.0
122	53	-3.02e-04	-2.10e-03	-0.08	1.37e-04	1.11e-04	0.0
122	56	7.94e-04	2.06e-03	-0.08	1.37e-04	1.11e-04	0.0
122	69	2.46e-04	-1.70e-05	-0.08	1.37e-04	1.11e-04	0.0
123	1	3.30e-04	-3.42e-05	-0.10	1.54e-04	1.16e-04	0.0
123	3	2.80e-04	-2.89e-05	-0.08	1.31e-04	9.85e-05	0.0
123	7	5.28e-03	-1.36e-03	-0.07	1.19e-04	8.99e-05	0.0
123	21	-1.19e-03	-5.63e-03	-0.07	1.19e-04	8.96e-05	0.0
123	24	1.70e-03	5.57e-03	-0.07	1.19e-04	8.94e-05	0.0
123	39	2.09e-03	-5.12e-04	-0.07	1.19e-04	8.97e-05	0.0
123	53	-2.72e-04	-2.07e-03	-0.07	1.19e-04	8.96e-05	0.0
123	56	7.81e-04	2.01e-03	-0.07	1.19e-04	8.95e-05	0.0
123	69	2.54e-04	-2.63e-05	-0.07	1.19e-04	8.95e-05	0.0
124	1	3.44e-04	-4.71e-05	-0.09	1.36e-04	9.44e-05	0.0
124	3	2.91e-04	-3.99e-05	-0.08	1.15e-04	7.99e-05	0.0
124	7	5.16e-03	-1.31e-03	-0.07	1.05e-04	7.30e-05	0.0
124	21	-1.11e-03	-5.58e-03	-0.07	1.05e-04	7.27e-05	0.0
124	24	1.64e-03	5.51e-03	-0.07	1.05e-04	7.25e-05	0.0
124	39	2.05e-03	-5.02e-04	-0.07	1.05e-04	7.27e-05	0.0
124	53	-2.36e-04	-2.06e-03	-0.07	1.05e-04	7.27e-05	0.0
124	56	7.65e-04	1.98e-03	-0.07	1.05e-04	7.26e-05	0.0
124	69	2.64e-04	-3.63e-05	-0.07	1.05e-04	7.26e-05	0.0
125	1	3.59e-04	-6.07e-05	-0.08	1.22e-04	7.62e-05	0.0
125	3	3.04e-04	-5.14e-05	-0.07	1.03e-04	6.45e-05	0.0
125	7	5.05e-03	-1.27e-03	-0.06	9.39e-05	5.89e-05	0.0
125	21	-1.03e-03	-5.56e-03	-0.06	9.36e-05	5.87e-05	0.0
125	24	1.58e-03	5.46e-03	-0.07	9.36e-05	5.85e-05	0.0
125	39	2.02e-03	-4.94e-04	-0.06	9.37e-05	5.87e-05	0.0
125	53	-2.00e-04	-2.06e-03	-0.06	9.36e-05	5.87e-05	0.0
125	56	7.53e-04	1.96e-03	-0.06	9.36e-05	5.86e-05	0.0
125	69	2.76e-04	-4.67e-05	-0.06	9.36e-05	5.86e-05	0.0
126	1	3.77e-04	-7.48e-05	-0.08	1.10e-04	6.13e-05	0.0
126	3	3.19e-04	-6.33e-05	-0.07	9.31e-05	5.18e-05	0.0
126	7	4.97e-03	-1.24e-03	-0.06	8.49e-05	4.74e-05	0.0
126	21	-9.54e-04	-5.55e-03	-0.06	8.46e-05	4.72e-05	0.0
126	24	1.53e-03	5.43e-03	-0.06	8.46e-05	4.70e-05	0.0
126	39	1.99e-03	-4.89e-04	-0.06	8.47e-05	4.72e-05	0.0
126	53	-1.64e-04	-2.06e-03	-0.06	8.46e-05	4.72e-05	0.0
126	56	7.43e-04	1.94e-03	-0.06	8.46e-05	4.71e-05	0.0
126	69	2.90e-04	-5.75e-05	-0.06	8.46e-05	4.71e-05	0.0
127	1	3.96e-04	-8.96e-05	-0.07	1.01e-04	4.94e-05	0.0
127	3	3.35e-04	-7.58e-05	-0.06	8.55e-05	4.18e-05	0.0
127	7	4.89e-03	-1.21e-03	-0.06	7.80e-05	3.82e-05	0.0
127	21	-8.80e-04	-5.56e-03	-0.06	7.77e-05	3.81e-05	0.0
127	24	1.49e-03	5.42e-03	-0.06	7.77e-05	3.79e-05	0.0
127	39	1.98e-03	-4.84e-04	-0.06	7.78e-05	3.81e-05	0.0
127	53	-1.27e-04	-2.07e-03	-0.06	7.77e-05	3.80e-05	0.0
127	56	7.36e-04	1.93e-03	-0.06	7.77e-05	3.80e-05	0.0
127	69	3.04e-04	-6.89e-05	-0.06	7.77e-05	3.80e-05	0.0
128	1	4.15e-04	-1.03e-04	-0.07	9.52e-05	4.15e-05	0.0
128	3	3.51e-04	-8.75e-05	-0.06	8.06e-05	3.52e-05	0.0
128	7	4.83e-03	-1.18e-03	-0.05	7.34e-05	3.21e-05	0.0
128	21	-8.08e-04	-5.57e-03	-0.05	7.32e-05	3.20e-05	0.0
128	24	1.45e-03	5.41e-03	-0.05	7.32e-05	3.19e-05	0.0
128	39	1.96e-03	-4.80e-04	-0.05	7.33e-05	3.20e-05	0.0
128	53	-9.17e-05	-2.08e-03	-0.05	7.32e-05	3.20e-05	0.0
128	56	7.30e-04	1.92e-03	-0.05	7.32e-05	3.19e-05	0.0
128	69	3.19e-04	-7.95e-05	-0.05	7.32e-05	3.20e-05	0.0
129	1	4.36e-04	-1.17e-04	-0.06	9.55e-05	4.26e-05	0.0
129	3	3.69e-04	-9.94e-05	-0.05	8.08e-05	3.60e-05	0.0
129	7	4.77e-03	-1.15e-03	-0.05	7.36e-05	3.29e-05	0.0
129	21	-7.36e-04	-5.60e-03	-0.05	7.34e-05	3.28e-05	0.0
129	24	1.41e-03	5.42e-03	-0.05	7.34e-05	3.27e-05	0.0
129	39	1.95e-03	-4.77e-04	-0.05	7.35e-05	3.28e-05	0.0
129	53	-5.55e-05	-2.10e-03	-0.05	7.34e-05	3.28e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

129	56	7.26e-04	1.92e-03	-0.05	7.34e-05	3.27e-05	0.0
129	69	3.35e-04	-9.04e-05	-0.05	7.34e-05	3.28e-05	0.0
130	1	3.32e-04	3.25e-06	-0.09	1.63e-04	1.68e-04	0.0
130	3	2.81e-04	2.75e-06	-0.07	1.38e-04	1.42e-04	0.0
130	7	5.48e-03	-1.48e-03	-0.07	1.25e-04	1.30e-04	0.0
130	24	1.76e-03	5.68e-03	-0.07	1.25e-04	1.29e-04	0.0
130	39	2.16e-03	-5.37e-04	-0.07	1.25e-04	1.29e-04	0.0
130	56	8.03e-04	2.07e-03	-0.07	1.25e-04	1.29e-04	0.0
130	69	2.56e-04	2.50e-06	-0.07	1.25e-04	1.29e-04	0.0
131	1	3.39e-04	-4.30e-06	-0.08	1.32e-04	1.36e-04	0.0
131	3	2.87e-04	-3.64e-06	-0.07	1.11e-04	1.15e-04	0.0
131	7	5.27e-03	-1.42e-03	-0.06	1.01e-04	1.05e-04	0.0
131	21	-1.13e-03	-5.59e-03	-0.06	1.01e-04	1.05e-04	0.0
131	24	1.65e-03	5.58e-03	-0.06	1.01e-04	1.05e-04	0.0
131	39	2.09e-03	-5.20e-04	-0.06	1.01e-04	1.05e-04	0.0
131	53	-2.47e-04	-2.04e-03	-0.06	1.01e-04	1.05e-04	0.0
131	56	7.68e-04	2.03e-03	-0.06	1.01e-04	1.05e-04	0.0
131	69	2.61e-04	-3.31e-06	-0.06	1.01e-04	1.05e-04	0.0
132	1	3.54e-04	-1.37e-05	-0.07	1.11e-04	1.12e-04	0.0
132	3	2.99e-04	-1.16e-05	-0.06	9.36e-05	9.46e-05	0.0
132	7	5.13e-03	-1.38e-03	-0.06	8.53e-05	8.64e-05	0.0
132	21	-1.03e-03	-5.52e-03	-0.06	8.50e-05	8.61e-05	0.0
132	24	1.57e-03	5.50e-03	-0.06	8.50e-05	8.60e-05	0.0
132	39	2.04e-03	-5.10e-04	-0.06	8.51e-05	8.62e-05	0.0
132	53	-2.03e-04	-2.02e-03	-0.06	8.50e-05	8.60e-05	0.0
132	56	7.47e-04	2.00e-03	-0.06	8.50e-05	8.60e-05	0.0
132	69	2.72e-04	-1.05e-05	-0.06	8.50e-05	8.60e-05	0.0
133	1	3.71e-04	-2.34e-05	-0.07	9.57e-05	9.15e-05	0.0
133	3	3.14e-04	-1.98e-05	-0.06	8.09e-05	7.75e-05	0.0
133	7	5.01e-03	-1.35e-03	-0.05	7.38e-05	7.08e-05	0.0
133	21	-9.35e-04	-5.48e-03	-0.05	7.35e-05	7.05e-05	0.0
133	24	1.51e-03	5.44e-03	-0.05	7.36e-05	7.04e-05	0.0
133	39	2.01e-03	-5.02e-04	-0.05	7.37e-05	7.05e-05	0.0
133	53	-1.59e-04	-2.01e-03	-0.05	7.36e-05	7.04e-05	0.0
133	56	7.30e-04	1.97e-03	-0.05	7.36e-05	7.04e-05	0.0
133	69	2.86e-04	-1.80e-05	-0.05	7.36e-05	7.04e-05	0.0
134	1	3.91e-04	-3.32e-05	-0.06	8.51e-05	7.46e-05	0.0
134	3	3.31e-04	-2.81e-05	-0.05	7.20e-05	6.32e-05	0.0
134	7	4.91e-03	-1.32e-03	-0.05	6.56e-05	5.77e-05	0.0
134	21	-8.42e-04	-5.46e-03	-0.05	6.54e-05	5.74e-05	0.0
134	24	1.44e-03	5.41e-03	-0.05	6.55e-05	5.74e-05	0.0
134	39	1.98e-03	-4.96e-04	-0.05	6.55e-05	5.75e-05	0.0
134	53	-1.16e-04	-2.01e-03	-0.05	6.54e-05	5.74e-05	0.0
134	56	7.18e-04	1.95e-03	-0.05	6.55e-05	5.74e-05	0.0
134	69	3.01e-04	-2.55e-05	-0.05	6.54e-05	5.74e-05	0.0
135	1	4.12e-04	-4.30e-05	-0.06	7.77e-05	6.10e-05	0.0
135	3	3.49e-04	-3.64e-05	-0.05	6.58e-05	5.17e-05	0.0
135	7	4.83e-03	-1.29e-03	-0.04	6.00e-05	4.72e-05	0.0
135	21	-7.52e-04	-5.45e-03	-0.04	5.97e-05	4.70e-05	0.0
135	24	1.39e-03	5.38e-03	-0.04	5.99e-05	4.69e-05	0.0
135	39	1.96e-03	-4.92e-04	-0.04	5.99e-05	4.70e-05	0.0
135	53	-7.27e-05	-2.01e-03	-0.04	5.98e-05	4.70e-05	0.0
135	56	7.07e-04	1.94e-03	-0.04	5.98e-05	4.70e-05	0.0
135	69	3.17e-04	-3.31e-05	-0.04	5.98e-05	4.70e-05	0.0
136	1	4.35e-04	-5.27e-05	-0.05	7.33e-05	5.18e-05	0.0
136	3	3.68e-04	-4.46e-05	-0.04	6.20e-05	4.38e-05	0.0
136	7	4.76e-03	-1.27e-03	-0.04	5.65e-05	4.01e-05	0.0
136	21	-6.63e-04	-5.45e-03	-0.04	5.63e-05	3.99e-05	0.0
136	24	1.33e-03	5.37e-03	-0.04	5.64e-05	3.98e-05	0.0
136	39	1.95e-03	-4.88e-04	-0.04	5.64e-05	3.99e-05	0.0
136	53	-2.93e-05	-2.01e-03	-0.04	5.63e-05	3.99e-05	0.0
136	56	6.98e-04	1.93e-03	-0.04	5.64e-05	3.98e-05	0.0
136	69	3.34e-04	-4.06e-05	-0.04	5.64e-05	3.99e-05	0.0
137	1	4.58e-04	-6.25e-05	-0.05	7.32e-05	5.25e-05	0.0
137	3	3.88e-04	-5.29e-05	-0.04	6.20e-05	4.44e-05	0.0
137	7	4.69e-03	-1.25e-03	-0.04	5.65e-05	4.06e-05	0.0
137	21	-5.75e-04	-5.47e-03	-0.03	5.63e-05	4.04e-05	0.0
137	24	1.28e-03	5.38e-03	-0.04	5.64e-05	4.04e-05	0.0
137	39	1.94e-03	-4.85e-04	-0.04	5.64e-05	4.05e-05	0.0
137	53	1.46e-05	-2.03e-03	-0.04	5.63e-05	4.04e-05	0.0
137	56	6.91e-04	1.93e-03	-0.04	5.63e-05	4.04e-05	0.0
137	69	3.53e-04	-4.81e-05	-0.04	5.63e-05	4.04e-05	0.0
138	1	3.32e-04	3.36e-05	-0.07	1.41e-04	1.76e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

138	3	2.81e-04	2.84e-05	-0.06	1.19e-04	1.49e-04	0.0
138	7	5.46e-03	-1.53e-03	-0.05	1.08e-04	1.36e-04	0.0
138	24	1.76e-03	5.69e-03	-0.05	1.08e-04	1.36e-04	0.0
138	39	2.15e-03	-5.43e-04	-0.05	1.08e-04	1.36e-04	0.0
138	56	8.03e-04	2.09e-03	-0.05	1.08e-04	1.35e-04	0.0
138	69	2.55e-04	2.58e-05	-0.05	1.08e-04	1.35e-04	0.0
139	1	3.43e-04	2.64e-05	-0.06	1.03e-04	1.43e-04	0.0
139	3	2.90e-04	2.23e-05	-0.05	8.74e-05	1.21e-04	0.0
139	7	5.27e-03	-1.49e-03	-0.05	7.96e-05	1.11e-04	0.0
139	24	1.59e-03	5.55e-03	-0.05	7.94e-05	1.10e-04	0.0
139	39	2.09e-03	-5.32e-04	-0.05	7.95e-05	1.10e-04	0.0
139	56	7.48e-04	2.04e-03	-0.05	7.94e-05	1.10e-04	0.0
139	69	2.64e-04	2.03e-05	-0.05	7.94e-05	1.10e-04	0.0
140	1	3.59e-04	2.06e-05	-0.05	8.04e-05	1.17e-04	0.0
140	3	3.03e-04	1.74e-05	-0.05	6.81e-05	9.93e-05	0.0
140	7	5.11e-03	-1.46e-03	-0.04	6.20e-05	9.07e-05	0.0
140	24	1.50e-03	5.46e-03	-0.04	6.19e-05	9.03e-05	0.0
140	39	2.04e-03	-5.22e-04	-0.04	6.19e-05	9.04e-05	0.0
140	56	7.22e-04	2.00e-03	-0.04	6.19e-05	9.03e-05	0.0
140	69	2.76e-04	1.58e-05	-0.04	6.19e-05	9.03e-05	0.0
141	1	3.77e-04	1.47e-05	-0.05	6.63e-05	9.61e-05	0.0
141	3	3.19e-04	1.24e-05	-0.04	5.61e-05	8.13e-05	0.0
141	7	4.99e-03	-1.43e-03	-0.04	5.11e-05	7.43e-05	0.0
141	24	1.42e-03	5.39e-03	-0.04	5.10e-05	7.40e-05	0.0
141	39	2.00e-03	-5.15e-04	-0.04	5.10e-05	7.41e-05	0.0
141	56	7.03e-04	1.97e-03	-0.04	5.10e-05	7.39e-05	0.0
141	69	2.90e-04	1.13e-05	-0.04	5.10e-05	7.39e-05	0.0
142	1	3.99e-04	8.83e-06	-0.05	5.77e-05	7.86e-05	0.0
142	3	3.37e-04	7.47e-06	-0.04	4.89e-05	6.65e-05	0.0
142	7	4.88e-03	-1.41e-03	-0.03	4.45e-05	6.08e-05	0.0
142	24	1.35e-03	5.34e-03	-0.04	4.45e-05	6.05e-05	0.0
142	39	1.97e-03	-5.09e-04	-0.03	4.45e-05	6.06e-05	0.0
142	56	6.88e-04	1.95e-03	-0.03	4.44e-05	6.05e-05	0.0
142	69	3.07e-04	6.79e-06	-0.03	4.44e-05	6.04e-05	0.0
143	1	4.22e-04	3.41e-06	-0.04	5.29e-05	6.46e-05	0.0
143	3	3.57e-04	2.89e-06	-0.03	4.48e-05	5.47e-05	0.0
143	7	4.79e-03	-1.39e-03	-0.03	4.08e-05	5.00e-05	0.0
143	24	1.29e-03	5.31e-03	-0.03	4.08e-05	4.97e-05	0.0
143	39	1.95e-03	-5.05e-04	-0.03	4.08e-05	4.98e-05	0.0
143	56	6.75e-04	1.94e-03	-0.03	4.08e-05	4.97e-05	0.0
143	69	3.24e-04	2.63e-06	-0.03	4.07e-05	4.97e-05	0.0
144	1	4.45e-04	-1.58e-06	-0.04	5.06e-05	5.51e-05	0.0
144	3	3.77e-04	-1.34e-06	-0.03	4.28e-05	4.66e-05	0.0
144	7	4.72e-03	-1.38e-03	-0.03	3.90e-05	4.26e-05	0.0
144	21	-5.38e-04	-5.29e-03	-0.03	3.89e-05	4.23e-05	0.0
144	24	1.22e-03	5.29e-03	-0.03	3.90e-05	4.24e-05	0.0
144	39	1.94e-03	-5.02e-04	-0.03	3.90e-05	4.25e-05	0.0
144	53	2.17e-05	-1.93e-03	-0.03	3.89e-05	4.24e-05	0.0
144	56	6.63e-04	1.93e-03	-0.03	3.90e-05	4.24e-05	0.0
144	69	3.42e-04	-1.22e-06	-0.03	3.89e-05	4.24e-05	0.0
145	1	4.70e-04	-6.67e-06	-0.03	5.06e-05	5.55e-05	0.0
145	3	3.98e-04	-5.64e-06	-0.03	4.28e-05	4.69e-05	0.0
145	7	4.65e-03	-1.36e-03	-0.03	3.90e-05	4.29e-05	0.0
145	21	-4.37e-04	-5.30e-03	-0.03	3.88e-05	4.26e-05	0.0
145	24	1.16e-03	5.29e-03	-0.03	3.90e-05	4.27e-05	0.0
145	39	1.93e-03	-5.00e-04	-0.03	3.89e-05	4.28e-05	0.0
145	53	7.02e-05	-1.93e-03	-0.03	3.89e-05	4.27e-05	0.0
145	56	6.53e-04	1.92e-03	-0.03	3.89e-05	4.27e-05	0.0
145	69	3.62e-04	-5.13e-06	-0.03	3.89e-05	4.27e-05	0.0
146	1	3.29e-04	6.21e-05	-0.05	1.14e-04	1.70e-04	0.0
146	3	2.78e-04	5.26e-05	-0.04	9.66e-05	1.44e-04	0.0
146	7	5.46e-03	-1.60e-03	-0.04	8.80e-05	1.31e-04	0.0
146	24	1.63e-03	5.62e-03	-0.04	8.76e-05	1.31e-04	0.0
146	39	2.15e-03	-5.53e-04	-0.04	8.79e-05	1.31e-04	0.0
146	56	7.54e-04	2.08e-03	-0.04	8.78e-05	1.31e-04	0.0
146	69	2.53e-04	4.78e-05	-0.04	8.79e-05	1.31e-04	0.0
147	1	3.42e-04	5.84e-05	-0.04	7.41e-05	1.35e-04	0.0
147	3	2.90e-04	4.94e-05	-0.04	6.27e-05	1.14e-04	0.0
147	7	5.27e-03	-1.57e-03	-0.03	5.71e-05	1.05e-04	0.0
147	24	1.52e-03	5.49e-03	-0.03	5.69e-05	1.04e-04	0.0
147	39	2.09e-03	-5.42e-04	-0.03	5.70e-05	1.04e-04	0.0
147	56	7.23e-04	2.03e-03	-0.03	5.70e-05	1.04e-04	0.0
147	69	2.63e-04	4.49e-05	-0.03	5.70e-05	1.04e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

148	1	3.58e-04	5.55e-05	-0.04	5.11e-05	1.09e-04	0.0
148	3	3.03e-04	4.70e-05	-0.03	4.32e-05	9.26e-05	0.0
148	7	5.12e-03	-1.54e-03	-0.03	3.93e-05	8.47e-05	0.0
148	24	1.43e-03	5.39e-03	-0.03	3.93e-05	8.44e-05	0.0
148	39	2.04e-03	-5.35e-04	-0.03	3.93e-05	8.44e-05	0.0
148	56	6.97e-04	1.99e-03	-0.03	3.93e-05	8.43e-05	0.0
148	69	2.76e-04	4.27e-05	-0.03	3.93e-05	8.42e-05	0.0
149	1	3.78e-04	5.31e-05	-0.03	3.85e-05	8.89e-05	0.0
149	3	3.19e-04	4.49e-05	-0.03	3.26e-05	7.53e-05	0.0
149	7	4.99e-03	-1.52e-03	-0.03	2.96e-05	6.88e-05	0.0
149	24	1.35e-03	5.31e-03	-0.03	2.97e-05	6.85e-05	0.0
149	39	2.00e-03	-5.29e-04	-0.03	2.96e-05	6.86e-05	0.0
149	56	6.76e-04	1.96e-03	-0.03	2.96e-05	6.85e-05	0.0
149	69	2.90e-04	4.08e-05	-0.03	2.96e-05	6.84e-05	0.0
150	1	3.99e-04	5.07e-05	-0.03	3.24e-05	7.26e-05	0.0
150	3	3.38e-04	4.29e-05	-0.03	2.75e-05	6.14e-05	0.0
150	7	4.88e-03	-1.51e-03	-0.02	2.50e-05	5.62e-05	0.0
150	24	1.27e-03	5.25e-03	-0.02	2.50e-05	5.60e-05	0.0
150	39	1.97e-03	-5.24e-04	-0.02	2.50e-05	5.60e-05	0.0
150	56	6.59e-04	1.94e-03	-0.02	2.50e-05	5.59e-05	0.0
150	69	3.07e-04	3.90e-05	-0.02	2.50e-05	5.59e-05	0.0
151	1	4.26e-04	4.76e-05	-0.03	3.02e-05	5.98e-05	0.0
151	3	3.61e-04	4.02e-05	-0.02	2.56e-05	5.06e-05	0.0
151	7	4.79e-03	-1.50e-03	-0.02	2.33e-05	4.63e-05	0.0
151	24	1.20e-03	5.20e-03	-0.02	2.33e-05	4.61e-05	0.0
151	39	1.96e-03	-5.22e-04	-0.02	2.33e-05	4.61e-05	0.0
151	56	6.47e-04	1.92e-03	-0.02	2.33e-05	4.60e-05	0.0
151	69	3.28e-04	3.66e-05	-0.02	2.33e-05	4.60e-05	0.0
152	1	4.47e-04	4.81e-05	-0.03	3.02e-05	5.15e-05	0.0
152	3	3.78e-04	4.07e-05	-0.02	2.55e-05	4.36e-05	0.0
152	7	4.72e-03	-1.49e-03	-0.02	2.32e-05	3.99e-05	0.0
152	22	-1.41e-03	5.17e-03	-0.02	2.33e-05	3.96e-05	0.0
152	24	1.13e-03	5.18e-03	-0.02	2.33e-05	3.97e-05	0.0
152	39	1.94e-03	-5.19e-04	-0.02	2.32e-05	3.97e-05	0.0
152	54	-2.95e-04	1.91e-03	-0.02	2.32e-05	3.96e-05	0.0
152	56	6.31e-04	1.91e-03	-0.02	2.32e-05	3.97e-05	0.0
152	69	3.44e-04	3.70e-05	-0.02	2.32e-05	3.96e-05	0.0
153	1	4.71e-04	4.78e-05	-0.02	3.03e-05	5.18e-05	0.0
153	3	3.99e-04	4.04e-05	-0.02	2.57e-05	4.39e-05	0.0
153	7	4.65e-03	-1.48e-03	-0.02	2.34e-05	4.01e-05	0.0
153	22	-1.41e-03	5.15e-03	-0.02	2.34e-05	3.98e-05	0.0
153	24	1.06e-03	5.16e-03	-0.02	2.34e-05	4.00e-05	0.0
153	39	1.93e-03	-5.17e-04	-0.02	2.34e-05	4.00e-05	0.0
153	54	-2.85e-04	1.90e-03	-0.02	2.34e-05	3.99e-05	0.0
153	56	6.18e-04	1.91e-03	-0.02	2.34e-05	3.99e-05	0.0
153	69	3.63e-04	3.68e-05	-0.02	2.33e-05	3.99e-05	0.0
154	1	3.24e-04	9.15e-05	-0.03	8.98e-05	1.49e-04	0.0
154	3	2.74e-04	7.75e-05	-0.03	7.60e-05	1.26e-04	0.0
154	7	5.51e-03	-1.68e-03	-0.03	6.91e-05	1.15e-04	0.0
154	22	-1.60e-03	5.63e-03	-0.03	6.88e-05	1.14e-04	0.0
154	39	2.17e-03	-5.66e-04	-0.03	6.91e-05	1.15e-04	0.0
154	54	-4.25e-04	2.10e-03	-0.03	6.90e-05	1.14e-04	0.0
154	69	2.49e-04	7.04e-05	-0.03	6.91e-05	1.15e-04	0.0
155	1	3.38e-04	9.00e-05	-0.03	5.00e-05	1.15e-04	0.0
155	3	2.86e-04	7.62e-05	-0.02	4.23e-05	9.69e-05	0.0
155	7	5.29e-03	-1.63e-03	-0.02	3.84e-05	8.86e-05	0.0
155	22	-1.51e-03	5.47e-03	-0.02	3.84e-05	8.80e-05	0.0
155	39	2.10e-03	-5.52e-04	-0.02	3.85e-05	8.83e-05	0.0
155	54	-3.85e-04	2.04e-03	-0.02	3.84e-05	8.81e-05	0.0
155	69	2.60e-04	6.93e-05	-0.02	3.85e-05	8.81e-05	0.0
156	1	3.53e-04	8.97e-05	-0.02	2.81e-05	9.02e-05	0.0
156	3	2.99e-04	7.59e-05	-0.02	2.38e-05	7.63e-05	0.0
156	7	5.14e-03	-1.62e-03	-0.02	2.16e-05	6.97e-05	0.0
156	22	-1.49e-03	5.36e-03	-0.02	2.17e-05	6.93e-05	0.0
156	39	2.05e-03	-5.45e-04	-0.02	2.16e-05	6.95e-05	0.0
156	54	-3.70e-04	2.00e-03	-0.02	2.17e-05	6.93e-05	0.0
156	69	2.72e-04	6.90e-05	-0.02	2.17e-05	6.94e-05	0.0
157	1	3.72e-04	9.08e-05	-0.02	1.74e-05	7.21e-05	0.0
157	3	3.14e-04	7.68e-05	-0.02	1.47e-05	6.10e-05	0.0
157	7	5.01e-03	-1.60e-03	-0.02	1.33e-05	5.58e-05	0.0
157	22	-1.48e-03	5.28e-03	-0.02	1.34e-05	5.55e-05	0.0
157	39	2.01e-03	-5.40e-04	-0.02	1.33e-05	5.56e-05	0.0
157	54	-3.58e-04	1.97e-03	-0.02	1.34e-05	5.55e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

157	69	2.86e-04	6.98e-05	-0.02	1.34e-05	5.55e-05	0.0
158	1	3.92e-04	9.28e-05	-0.02	1.34e-05	5.87e-05	0.0
158	3	3.32e-04	7.85e-05	-0.02	1.13e-05	4.97e-05	0.0
158	7	4.91e-03	-1.59e-03	-0.02	1.02e-05	4.54e-05	0.0
158	22	-1.48e-03	5.22e-03	-0.02	1.04e-05	4.51e-05	0.0
158	39	1.98e-03	-5.36e-04	-0.02	1.03e-05	4.52e-05	0.0
158	54	-3.47e-04	1.95e-03	-0.02	1.03e-05	4.51e-05	0.0
158	69	3.02e-04	7.13e-05	-0.02	1.03e-05	4.51e-05	0.0
159	1	4.15e-04	9.52e-05	-0.02	1.33e-05	4.89e-05	0.0
159	3	3.51e-04	8.05e-05	-0.02	1.12e-05	4.13e-05	0.0
159	7	4.83e-03	-1.59e-03	-0.01	1.01e-05	3.78e-05	0.0
159	22	-1.48e-03	5.17e-03	-0.01	1.03e-05	3.76e-05	0.0
159	39	1.96e-03	-5.33e-04	-0.01	1.02e-05	3.77e-05	0.0
159	54	-3.37e-04	1.93e-03	-0.01	1.02e-05	3.76e-05	0.0
159	69	3.19e-04	7.32e-05	-0.01	1.02e-05	3.76e-05	0.0
160	1	4.38e-04	9.84e-05	-0.02	1.47e-05	4.26e-05	0.0
160	3	3.71e-04	8.33e-05	-0.01	1.24e-05	3.61e-05	0.0
160	7	4.76e-03	-1.59e-03	-0.01	1.12e-05	3.30e-05	0.0
160	22	-1.49e-03	5.14e-03	-0.01	1.13e-05	3.28e-05	0.0
160	39	1.95e-03	-5.32e-04	-0.01	1.13e-05	3.28e-05	0.0
160	54	-3.28e-04	1.92e-03	-0.01	1.13e-05	3.28e-05	0.0
160	69	3.37e-04	7.57e-05	-0.01	1.13e-05	3.28e-05	0.0
161	1	4.63e-04	1.02e-04	-0.01	1.50e-05	4.30e-05	0.0
161	3	3.91e-04	8.66e-05	-0.01	1.27e-05	3.64e-05	0.0
161	7	4.69e-03	-1.59e-03	-0.01	1.15e-05	3.33e-05	0.0
161	22	-1.49e-03	5.12e-03	-0.01	1.16e-05	3.31e-05	0.0
161	39	1.94e-03	-5.31e-04	-0.01	1.15e-05	3.32e-05	0.0
161	54	-3.19e-04	1.92e-03	-0.01	1.15e-05	3.31e-05	0.0
161	69	3.56e-04	7.87e-05	-0.01	1.15e-05	3.31e-05	0.0
162	1	3.25e-04	1.18e-04	-0.02	7.37e-05	1.21e-04	0.0
162	3	2.75e-04	9.95e-05	-0.02	6.23e-05	1.02e-04	0.0
162	7	5.53e-03	-1.70e-03	-0.02	5.66e-05	9.33e-05	0.0
162	22	-1.59e-03	5.56e-03	-0.02	5.64e-05	9.27e-05	0.0
162	39	2.17e-03	-5.61e-04	-0.02	5.66e-05	9.29e-05	0.0
162	54	-4.21e-04	2.08e-03	-0.02	5.66e-05	9.27e-05	0.0
162	69	2.50e-04	9.05e-05	-0.02	5.67e-05	9.28e-05	0.0
163	1	3.31e-04	1.18e-04	-0.02	3.54e-05	8.61e-05	0.0
163	3	2.80e-04	9.98e-05	-0.02	2.99e-05	7.28e-05	0.0
163	7	5.32e-03	-1.69e-03	-0.01	2.71e-05	6.66e-05	0.0
163	22	-1.56e-03	5.43e-03	-0.01	2.71e-05	6.63e-05	0.0
163	39	2.10e-03	-5.58e-04	-0.01	2.72e-05	6.64e-05	0.0
163	54	-4.07e-04	2.04e-03	-0.01	2.72e-05	6.62e-05	0.0
163	69	2.54e-04	9.07e-05	-0.01	2.72e-05	6.62e-05	0.0
164	1	3.44e-04	1.21e-04	-0.02	1.55e-05	6.46e-05	0.0
164	3	2.91e-04	1.02e-04	-0.01	1.31e-05	5.47e-05	0.0
164	7	5.17e-03	-1.68e-03	-0.01	1.18e-05	5.00e-05	0.0
164	22	-1.55e-03	5.32e-03	-0.01	1.19e-05	4.97e-05	0.0
164	39	2.05e-03	-5.52e-04	-0.01	1.18e-05	4.98e-05	0.0
164	54	-3.96e-04	2.00e-03	-0.01	1.19e-05	4.97e-05	0.0
164	69	2.65e-04	9.31e-05	-0.01	1.19e-05	4.97e-05	0.0
165	1	3.61e-04	1.26e-04	-0.01	6.15e-06	5.02e-05	0.0
165	3	3.05e-04	1.06e-04	-0.01	5.21e-06	4.25e-05	0.0
165	7	5.06e-03	-1.67e-03	-0.01	4.60e-06	3.89e-05	0.0
165	22	-1.54e-03	5.23e-03	-0.01	4.77e-06	3.87e-05	0.0
165	39	2.02e-03	-5.47e-04	-0.01	4.68e-06	3.87e-05	0.0
165	54	-3.86e-04	1.97e-03	-0.01	4.75e-06	3.86e-05	0.0
165	69	2.77e-04	9.66e-05	-0.01	4.73e-06	3.86e-05	0.0
166	1	3.79e-04	1.31e-04	-0.01	3.24e-06	4.05e-05	0.0
166	3	3.21e-04	1.11e-04	-0.01	2.74e-06	3.43e-05	0.0
166	7	4.97e-03	-1.66e-03	-9.63e-03	2.37e-06	3.14e-05	0.0
166	22	-1.54e-03	5.17e-03	-0.01	2.54e-06	3.12e-05	0.0
166	39	2.00e-03	-5.43e-04	-9.73e-03	2.45e-06	3.13e-05	0.0
166	54	-3.77e-04	1.95e-03	-9.89e-03	2.51e-06	3.12e-05	0.0
166	69	2.92e-04	1.01e-04	-9.79e-03	2.49e-06	3.12e-05	0.0
167	1	3.99e-04	1.38e-04	-0.01	3.88e-06	3.42e-05	0.0
167	3	3.38e-04	1.17e-04	-9.93e-03	3.28e-06	2.89e-05	0.0
167	7	4.89e-03	-1.67e-03	-8.87e-03	2.87e-06	2.65e-05	0.0
167	22	-1.55e-03	5.12e-03	-9.27e-03	3.03e-06	2.64e-05	0.0
167	39	1.98e-03	-5.40e-04	-8.97e-03	2.94e-06	2.64e-05	0.0
167	54	-3.70e-04	1.93e-03	-9.12e-03	3.00e-06	2.63e-05	0.0
167	69	3.07e-04	1.06e-04	-9.03e-03	2.98e-06	2.63e-05	0.0
168	1	4.20e-04	1.46e-04	-0.01	5.73e-06	3.06e-05	0.0
168	3	3.56e-04	1.23e-04	-8.85e-03	4.85e-06	2.59e-05	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

168	7	4.82e-03	-1.67e-03	-7.89e-03	4.31e-06	2.37e-05	0.0
168	22	-1.56e-03	5.09e-03	-8.28e-03	4.45e-06	2.36e-05	0.0
168	39	1.96e-03	-5.39e-04	-7.99e-03	4.37e-06	2.36e-05	0.0
168	54	-3.63e-04	1.93e-03	-8.13e-03	4.42e-06	2.35e-05	0.0
168	69	3.23e-04	1.12e-04	-8.04e-03	4.41e-06	2.35e-05	0.0
169	1	4.43e-04	1.54e-04	-8.85e-03	6.03e-06	3.11e-05	0.0
169	3	3.75e-04	1.30e-04	-7.49e-03	5.10e-06	2.63e-05	0.0
169	7	4.77e-03	-1.68e-03	-6.66e-03	4.55e-06	2.41e-05	0.0
169	22	-1.57e-03	5.07e-03	-7.04e-03	4.69e-06	2.40e-05	0.0
169	39	1.96e-03	-5.39e-04	-6.76e-03	4.61e-06	2.40e-05	0.0
169	54	-3.57e-04	1.92e-03	-6.90e-03	4.66e-06	2.40e-05	0.0
169	69	3.41e-04	1.18e-04	-6.81e-03	4.64e-06	2.40e-05	0.0
170	1	3.12e-04	1.39e-04	-0.02	6.14e-05	8.58e-05	0.0
170	3	2.64e-04	1.18e-04	-0.01	5.19e-05	7.26e-05	0.0
170	7	5.48e-03	-1.74e-03	-0.01	4.71e-05	6.64e-05	0.0
170	22	-1.58e-03	5.51e-03	-0.01	4.70e-05	6.61e-05	0.0
170	39	2.15e-03	-5.66e-04	-0.01	4.72e-05	6.62e-05	0.0
170	54	-4.24e-04	2.08e-03	-0.01	4.71e-05	6.61e-05	0.0
170	69	2.40e-04	1.07e-04	-0.01	4.72e-05	6.60e-05	0.0
171	1	3.20e-04	1.42e-04	-0.01	3.04e-05	5.69e-05	0.0
171	3	2.71e-04	1.20e-04	-9.93e-03	2.57e-05	4.81e-05	0.0
171	7	5.34e-03	-1.71e-03	-8.80e-03	2.32e-05	4.40e-05	0.0
171	22	-1.59e-03	5.35e-03	-9.30e-03	2.33e-05	4.39e-05	0.0
171	39	2.10e-03	-5.55e-04	-8.94e-03	2.33e-05	4.39e-05	0.0
171	54	-4.24e-04	2.02e-03	-9.12e-03	2.33e-05	4.38e-05	0.0
171	69	2.46e-04	1.09e-04	-9.03e-03	2.34e-05	4.38e-05	0.0
172	1	3.31e-04	1.49e-04	-9.68e-03	1.35e-05	3.93e-05	0.0
172	3	2.80e-04	1.26e-04	-8.19e-03	1.14e-05	3.33e-05	0.0
172	7	5.22e-03	-1.71e-03	-7.23e-03	1.02e-05	3.04e-05	0.0
172	22	-1.59e-03	5.24e-03	-7.71e-03	1.03e-05	3.04e-05	0.0
172	39	2.06e-03	-5.49e-04	-7.37e-03	1.03e-05	3.03e-05	0.0
172	54	-4.16e-04	1.98e-03	-7.54e-03	1.04e-05	3.03e-05	0.0
172	69	2.55e-04	1.14e-04	-7.44e-03	1.04e-05	3.03e-05	0.0
173	1	3.46e-04	1.57e-04	-8.71e-03	5.30e-06	2.88e-05	0.0
173	3	2.92e-04	1.33e-04	-7.37e-03	4.49e-06	2.43e-05	0.0
173	7	5.12e-03	-1.70e-03	-6.49e-03	3.92e-06	2.23e-05	0.0
173	22	-1.59e-03	5.16e-03	-6.95e-03	4.07e-06	2.23e-05	0.0
173	39	2.03e-03	-5.45e-04	-6.62e-03	4.02e-06	2.22e-05	0.0
173	54	-4.09e-04	1.96e-03	-6.79e-03	4.08e-06	2.22e-05	0.0
173	69	2.66e-04	1.21e-04	-6.70e-03	4.08e-06	2.21e-05	0.0
174	1	3.61e-04	1.66e-04	-8.12e-03	2.48e-06	2.27e-05	0.0
174	3	3.06e-04	1.41e-04	-6.87e-03	2.10e-06	1.92e-05	0.0
174	7	5.04e-03	-1.71e-03	-6.05e-03	1.76e-06	1.76e-05	0.0
174	22	-1.59e-03	5.09e-03	-6.49e-03	1.91e-06	1.76e-05	0.0
174	39	2.01e-03	-5.41e-04	-6.18e-03	1.85e-06	1.75e-05	0.0
174	54	-4.03e-04	1.94e-03	-6.34e-03	1.91e-06	1.75e-05	0.0
174	69	2.78e-04	1.28e-04	-6.25e-03	1.91e-06	1.75e-05	0.0
175	1	3.78e-04	1.76e-04	-7.49e-03	2.69e-06	1.96e-05	0.0
175	3	3.20e-04	1.49e-04	-6.34e-03	2.28e-06	1.66e-05	0.0
175	7	4.97e-03	-1.71e-03	-5.57e-03	1.94e-06	1.52e-05	0.0
175	22	-1.60e-03	5.04e-03	-6.00e-03	2.07e-06	1.52e-05	0.0
175	39	2.00e-03	-5.39e-04	-5.69e-03	2.02e-06	1.51e-05	0.0
175	54	-3.98e-04	1.92e-03	-5.85e-03	2.07e-06	1.51e-05	0.0
175	69	2.91e-04	1.36e-04	-5.76e-03	2.07e-06	1.51e-05	0.0
176	1	3.96e-04	1.87e-04	-6.58e-03	4.01e-06	1.83e-05	0.0
176	3	3.35e-04	1.58e-04	-5.57e-03	3.39e-06	1.55e-05	0.0
176	7	4.92e-03	-1.72e-03	-4.88e-03	2.97e-06	1.42e-05	0.0
176	22	-1.61e-03	5.00e-03	-5.29e-03	3.09e-06	1.42e-05	0.0
176	39	1.99e-03	-5.37e-04	-4.99e-03	3.04e-06	1.41e-05	0.0
176	54	-3.94e-04	1.92e-03	-5.14e-03	3.09e-06	1.41e-05	0.0
176	69	3.05e-04	1.44e-04	-5.06e-03	3.08e-06	1.41e-05	0.0
177	1	4.15e-04	1.99e-04	-5.36e-03	4.25e-06	1.89e-05	0.0
177	3	3.51e-04	1.68e-04	-4.54e-03	3.59e-06	1.60e-05	0.0
177	7	4.87e-03	-1.74e-03	-3.95e-03	3.15e-06	1.46e-05	0.0
177	22	-1.63e-03	4.98e-03	-4.35e-03	3.27e-06	1.46e-05	0.0
177	39	1.98e-03	-5.37e-04	-4.06e-03	3.22e-06	1.45e-05	0.0
177	54	-3.91e-04	1.91e-03	-4.21e-03	3.27e-06	1.45e-05	0.0
177	69	3.19e-04	1.53e-04	-4.13e-03	3.27e-06	1.45e-05	0.0
178	1	3.00e-04	1.56e-04	-0.01	5.62e-05	5.62e-05	0.0
178	3	2.54e-04	1.32e-04	-0.01	4.75e-05	4.76e-05	0.0
178	6	-5.01e-03	1.96e-03	-9.77e-03	4.33e-05	4.30e-05	0.0
178	7	5.47e-03	-1.72e-03	-9.26e-03	4.31e-05	4.35e-05	0.0
178	22	-1.61e-03	5.36e-03	-9.77e-03	4.29e-05	4.34e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

178	38	-1.68e-03	7.90e-04	-9.61e-03	4.32e-05	4.32e-05	0.0
178	39	2.14e-03	-5.49e-04	-9.42e-03	4.32e-05	4.33e-05	0.0
178	54	-4.39e-04	2.03e-03	-9.61e-03	4.31e-05	4.33e-05	0.0
178	69	2.30e-04	1.20e-04	-9.51e-03	4.32e-05	4.33e-05	0.0
179	1	3.07e-04	1.64e-04	-9.28e-03	3.31e-05	3.32e-05	0.0
179	3	2.60e-04	1.39e-04	-7.85e-03	2.80e-05	2.81e-05	0.0
179	6	-4.88e-03	1.97e-03	-7.39e-03	2.56e-05	2.54e-05	0.0
179	7	5.35e-03	-1.71e-03	-6.89e-03	2.53e-05	2.57e-05	0.0
179	22	-1.60e-03	5.24e-03	-7.39e-03	2.53e-05	2.57e-05	0.0
179	38	-1.63e-03	7.97e-04	-7.23e-03	2.55e-05	2.55e-05	0.0
179	39	2.10e-03	-5.44e-04	-7.05e-03	2.54e-05	2.56e-05	0.0
179	54	-4.35e-04	1.99e-03	-7.23e-03	2.54e-05	2.56e-05	0.0
179	69	2.36e-04	1.26e-04	-7.14e-03	2.55e-05	2.55e-05	0.0
180	1	3.16e-04	1.73e-04	-7.78e-03	1.97e-05	1.97e-05	0.0
180	3	2.67e-04	1.47e-04	-6.58e-03	1.67e-05	1.67e-05	0.0
180	6	-4.77e-03	1.98e-03	-6.22e-03	1.53e-05	1.51e-05	0.0
180	7	5.26e-03	-1.71e-03	-5.74e-03	1.50e-05	1.53e-05	0.0
180	22	-1.60e-03	5.15e-03	-6.22e-03	1.50e-05	1.53e-05	0.0
180	38	-1.58e-03	8.06e-04	-6.07e-03	1.52e-05	1.51e-05	0.0
180	39	2.07e-03	-5.39e-04	-5.89e-03	1.51e-05	1.52e-05	0.0
180	54	-4.30e-04	1.96e-03	-6.07e-03	1.51e-05	1.52e-05	0.0
180	69	2.43e-04	1.33e-04	-5.98e-03	1.51e-05	1.52e-05	0.0
181	1	3.27e-04	1.84e-04	-7.06e-03	1.25e-05	1.25e-05	0.0
181	3	2.77e-04	1.56e-04	-5.97e-03	1.06e-05	1.06e-05	0.0
181	6	-4.67e-03	2.00e-03	-5.66e-03	9.75e-06	9.55e-06	0.0
181	7	5.18e-03	-1.71e-03	-5.20e-03	9.44e-06	9.70e-06	0.0
181	22	-1.61e-03	5.06e-03	-5.66e-03	9.52e-06	9.78e-06	0.0
181	38	-1.54e-03	8.18e-04	-5.51e-03	9.65e-06	9.60e-06	0.0
181	39	2.05e-03	-5.35e-04	-5.35e-03	9.54e-06	9.65e-06	0.0
181	54	-4.25e-04	1.94e-03	-5.51e-03	9.57e-06	9.68e-06	0.0
181	69	2.51e-04	1.42e-04	-5.43e-03	9.59e-06	9.62e-06	0.0
182	1	3.39e-04	1.96e-04	-6.60e-03	9.26e-06	9.29e-06	0.0
182	3	2.87e-04	1.66e-04	-5.58e-03	7.83e-06	7.86e-06	0.0
182	6	-4.59e-03	2.02e-03	-5.30e-03	7.26e-06	7.08e-06	0.0
182	7	5.11e-03	-1.72e-03	-4.85e-03	6.99e-06	7.22e-06	0.0
182	22	-1.61e-03	5.00e-03	-5.30e-03	7.05e-06	7.28e-06	0.0
182	38	-1.51e-03	8.33e-04	-5.16e-03	7.17e-06	7.12e-06	0.0
182	39	2.03e-03	-5.31e-04	-4.99e-03	7.07e-06	7.17e-06	0.0
182	54	-4.21e-04	1.92e-03	-5.16e-03	7.10e-06	7.20e-06	0.0
182	69	2.61e-04	1.51e-04	-5.07e-03	7.12e-06	7.15e-06	0.0
183	1	3.52e-04	2.09e-04	-6.05e-03	8.41e-06	8.44e-06	0.0
183	3	2.98e-04	1.77e-04	-5.12e-03	7.11e-06	7.15e-06	0.0
183	6	-4.51e-03	2.05e-03	-4.87e-03	6.57e-06	6.38e-06	0.0
183	7	5.05e-03	-1.73e-03	-4.44e-03	6.37e-06	6.62e-06	0.0
183	22	-1.62e-03	4.94e-03	-4.87e-03	6.35e-06	6.59e-06	0.0
183	38	-1.47e-03	8.49e-04	-4.73e-03	6.50e-06	6.45e-06	0.0
183	39	2.01e-03	-5.28e-04	-4.58e-03	6.43e-06	6.54e-06	0.0
183	54	-4.18e-04	1.90e-03	-4.73e-03	6.42e-06	6.53e-06	0.0
183	69	2.71e-04	1.60e-04	-4.66e-03	6.47e-06	6.50e-06	0.0
184	1	3.66e-04	2.23e-04	-5.26e-03	8.72e-06	8.75e-06	0.0
184	3	3.10e-04	1.89e-04	-4.45e-03	7.38e-06	7.40e-06	0.0
184	6	-4.45e-03	2.08e-03	-4.25e-03	6.81e-06	6.67e-06	0.0
184	7	5.01e-03	-1.74e-03	-3.83e-03	6.61e-06	6.79e-06	0.0
184	22	-1.63e-03	4.90e-03	-4.25e-03	6.65e-06	6.83e-06	0.0
184	38	-1.44e-03	8.68e-04	-4.12e-03	6.75e-06	6.71e-06	0.0
184	39	2.01e-03	-5.25e-04	-3.97e-03	6.67e-06	6.75e-06	0.0
184	54	-4.16e-04	1.90e-03	-4.12e-03	6.69e-06	6.77e-06	0.0
184	69	2.81e-04	1.71e-04	-4.04e-03	6.71e-06	6.73e-06	0.0
185	1	3.80e-04	2.37e-04	-4.20e-03	9.05e-06	9.08e-06	0.0
185	3	3.22e-04	2.01e-04	-3.55e-03	7.66e-06	7.68e-06	0.0
185	6	-4.40e-03	2.12e-03	-3.43e-03	7.07e-06	6.92e-06	0.0
185	7	4.98e-03	-1.76e-03	-3.02e-03	6.86e-06	7.04e-06	0.0
185	22	-1.65e-03	4.87e-03	-3.43e-03	6.90e-06	7.09e-06	0.0
185	38	-1.42e-03	8.89e-04	-3.30e-03	7.00e-06	6.96e-06	0.0
185	39	2.00e-03	-5.24e-04	-3.15e-03	6.93e-06	7.00e-06	0.0
185	54	-4.15e-04	1.89e-03	-3.30e-03	6.94e-06	7.02e-06	0.0
185	69	2.93e-04	1.83e-04	-3.23e-03	6.96e-06	6.98e-06	0.0
186	1	2.83e-04	1.68e-04	-0.02	8.58e-05	6.14e-05	0.0
186	3	2.40e-04	1.42e-04	-0.01	7.26e-05	5.20e-05	0.0
186	6	-5.18e-03	1.95e-03	-0.01	6.60e-05	4.70e-05	0.0
186	7	5.62e-03	-1.69e-03	-0.01	6.59e-05	4.75e-05	0.0
186	22	-1.63e-03	5.37e-03	-0.01	6.56e-05	4.74e-05	0.0
186	38	-1.75e-03	7.93e-04	-0.01	6.60e-05	4.72e-05	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

186	39	2.19e-03	-5.34e-04	-0.01	6.59e-05	4.73e-05	0.0
186	54	-4.56e-04	2.04e-03	-0.01	6.58e-05	4.73e-05	0.0
186	69	2.18e-04	1.30e-04	-0.01	6.60e-05	4.73e-05	0.0
187	1	2.85e-04	1.76e-04	-0.01	5.68e-05	3.05e-05	0.0
187	3	2.41e-04	1.49e-04	-9.92e-03	4.81e-05	2.58e-05	0.0
187	6	-5.02e-03	1.97e-03	-9.29e-03	4.38e-05	2.33e-05	0.0
187	7	5.46e-03	-1.70e-03	-8.75e-03	4.36e-05	2.35e-05	0.0
187	22	-1.60e-03	5.23e-03	-9.24e-03	4.34e-05	2.36e-05	0.0
187	38	-1.69e-03	8.05e-04	-9.12e-03	4.37e-05	2.34e-05	0.0
187	39	2.13e-03	-5.34e-04	-8.92e-03	4.37e-05	2.35e-05	0.0
187	54	-4.46e-04	1.99e-03	-9.10e-03	4.36e-05	2.35e-05	0.0
187	69	2.19e-04	1.36e-04	-9.02e-03	4.37e-05	2.34e-05	0.0
188	1	2.91e-04	1.88e-04	-9.67e-03	3.93e-05	1.36e-05	0.0
188	3	2.46e-04	1.59e-04	-8.18e-03	3.32e-05	1.15e-05	0.0
188	6	-4.90e-03	1.99e-03	-7.70e-03	3.03e-05	1.04e-05	0.0
188	7	5.35e-03	-1.70e-03	-7.17e-03	3.01e-05	1.05e-05	0.0
188	22	-1.60e-03	5.10e-03	-7.65e-03	3.00e-05	1.06e-05	0.0
188	38	-1.65e-03	8.16e-04	-7.53e-03	3.02e-05	1.04e-05	0.0
188	39	2.09e-03	-5.26e-04	-7.34e-03	3.02e-05	1.04e-05	0.0
188	54	-4.40e-04	1.95e-03	-7.52e-03	3.01e-05	1.05e-05	0.0
188	69	2.24e-04	1.45e-04	-7.44e-03	3.02e-05	1.04e-05	0.0
189	1	2.99e-04	2.02e-04	-8.70e-03	2.87e-05	5.34e-06	0.0
189	3	2.53e-04	1.71e-04	-7.36e-03	2.43e-05	4.52e-06	0.0
189	6	-4.81e-03	2.01e-03	-6.94e-03	2.22e-05	4.10e-06	0.0
189	7	5.27e-03	-1.70e-03	-6.44e-03	2.20e-05	4.11e-06	0.0
189	22	-1.60e-03	5.00e-03	-6.90e-03	2.19e-05	4.27e-06	0.0
189	38	-1.61e-03	8.30e-04	-6.78e-03	2.21e-05	4.10e-06	0.0
189	39	2.07e-03	-5.19e-04	-6.60e-03	2.20e-05	4.11e-06	0.0
189	54	-4.36e-04	1.92e-03	-6.77e-03	2.20e-05	4.17e-06	0.0
189	69	2.30e-04	1.55e-04	-6.69e-03	2.21e-05	4.11e-06	0.0
190	1	3.08e-04	2.17e-04	-8.11e-03	2.27e-05	2.50e-06	0.0
190	3	2.60e-04	1.84e-04	-6.87e-03	1.92e-05	2.12e-06	0.0
190	6	-4.73e-03	2.03e-03	-6.49e-03	1.76e-05	1.93e-06	0.0
190	7	5.20e-03	-1.70e-03	-6.00e-03	1.73e-05	1.92e-06	0.0
190	22	-1.60e-03	4.92e-03	-6.44e-03	1.73e-05	2.07e-06	0.0
190	38	-1.57e-03	8.47e-04	-6.33e-03	1.75e-05	1.93e-06	0.0
190	39	2.05e-03	-5.14e-04	-6.15e-03	1.74e-05	1.92e-06	0.0
190	54	-4.33e-04	1.90e-03	-6.31e-03	1.74e-05	1.98e-06	0.0
190	69	2.37e-04	1.67e-04	-6.24e-03	1.74e-05	1.93e-06	0.0
191	1	3.17e-04	2.33e-04	-7.48e-03	1.95e-05	2.71e-06	0.0
191	3	2.69e-04	1.97e-04	-6.33e-03	1.65e-05	2.29e-06	0.0
191	6	-4.66e-03	2.07e-03	-5.99e-03	1.51e-05	2.09e-06	0.0
191	7	5.15e-03	-1.71e-03	-5.52e-03	1.49e-05	2.08e-06	0.0
191	22	-1.61e-03	4.86e-03	-5.95e-03	1.49e-05	2.21e-06	0.0
191	38	-1.54e-03	8.68e-04	-5.84e-03	1.51e-05	2.09e-06	0.0
191	39	2.03e-03	-5.09e-04	-5.67e-03	1.50e-05	2.08e-06	0.0
191	54	-4.30e-04	1.88e-03	-5.82e-03	1.50e-05	2.13e-06	0.0
191	69	2.44e-04	1.79e-04	-5.76e-03	1.50e-05	2.08e-06	0.0
192	1	3.28e-04	2.51e-04	-6.57e-03	1.83e-05	4.02e-06	0.0
192	3	2.78e-04	2.12e-04	-5.56e-03	1.55e-05	3.41e-06	0.0
192	6	-4.61e-03	2.11e-03	-5.28e-03	1.41e-05	3.10e-06	0.0
192	7	5.11e-03	-1.72e-03	-4.83e-03	1.40e-05	3.09e-06	0.0
192	22	-1.62e-03	4.80e-03	-5.24e-03	1.40e-05	3.21e-06	0.0
192	38	-1.52e-03	8.90e-04	-5.14e-03	1.41e-05	3.10e-06	0.0
192	39	2.02e-03	-5.05e-04	-4.97e-03	1.40e-05	3.09e-06	0.0
192	54	-4.29e-04	1.87e-03	-5.12e-03	1.40e-05	3.14e-06	0.0
192	69	2.52e-04	1.93e-04	-5.06e-03	1.41e-05	3.10e-06	0.0
193	1	3.40e-04	2.69e-04	-5.36e-03	1.88e-05	4.26e-06	0.0
193	3	2.87e-04	2.28e-04	-4.53e-03	1.59e-05	3.61e-06	0.0
193	6	-4.56e-03	2.15e-03	-4.34e-03	1.46e-05	3.28e-06	0.0
193	7	5.09e-03	-1.74e-03	-3.90e-03	1.44e-05	3.27e-06	0.0
193	22	-1.63e-03	4.76e-03	-4.30e-03	1.44e-05	3.39e-06	0.0
193	38	-1.50e-03	9.16e-04	-4.20e-03	1.45e-05	3.28e-06	0.0
193	39	2.02e-03	-5.02e-04	-4.04e-03	1.44e-05	3.28e-06	0.0
193	54	-4.29e-04	1.87e-03	-4.19e-03	1.44e-05	3.32e-06	0.0
193	69	2.61e-04	2.07e-04	-4.12e-03	1.45e-05	3.28e-06	0.0
194	1	2.61e-04	1.80e-04	-0.02	1.20e-04	7.37e-05	0.0
194	3	2.21e-04	1.53e-04	-0.02	1.02e-04	6.24e-05	0.0
194	6	-5.27e-03	1.98e-03	-0.02	9.27e-05	5.65e-05	0.0
194	7	5.67e-03	-1.70e-03	-0.02	9.27e-05	5.70e-05	0.0
194	22	-1.59e-03	5.41e-03	-0.02	9.21e-05	5.68e-05	0.0
194	38	-1.79e-03	8.09e-04	-0.02	9.27e-05	5.66e-05	0.0
194	39	2.19e-03	-5.32e-04	-0.02	9.27e-05	5.68e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

194	54	-4.51e-04	2.06e-03	-0.02	9.25e-05	5.67e-05	0.0
194	69	2.01e-04	1.39e-04	-0.02	9.27e-05	5.67e-05	0.0
195	1	2.61e-04	1.87e-04	-0.02	8.60e-05	3.54e-05	0.0
195	3	2.21e-04	1.58e-04	-0.02	7.28e-05	3.00e-05	0.0
195	6	-5.14e-03	1.96e-03	-0.01	6.62e-05	2.72e-05	0.0
195	7	5.54e-03	-1.67e-03	-0.01	6.61e-05	2.73e-05	0.0
195	22	-1.58e-03	5.21e-03	-0.01	6.58e-05	2.74e-05	0.0
195	38	-1.75e-03	8.04e-04	-0.01	6.62e-05	2.72e-05	0.0
195	39	2.15e-03	-5.17e-04	-0.01	6.61e-05	2.73e-05	0.0
195	54	-4.48e-04	1.99e-03	-0.01	6.60e-05	2.73e-05	0.0
195	69	2.01e-04	1.44e-04	-0.01	6.62e-05	2.72e-05	0.0
196	1	2.64e-04	2.00e-04	-0.02	6.45e-05	1.55e-05	0.0
196	3	2.23e-04	1.69e-04	-0.01	5.46e-05	1.31e-05	0.0
196	6	-5.02e-03	1.96e-03	-0.01	4.97e-05	1.19e-05	0.0
196	7	5.43e-03	-1.66e-03	-0.01	4.96e-05	1.19e-05	0.0
196	22	-1.57e-03	5.06e-03	-0.01	4.93e-05	1.21e-05	0.0
196	38	-1.70e-03	8.13e-04	-0.01	4.96e-05	1.19e-05	0.0
196	39	2.11e-03	-5.06e-04	-0.01	4.96e-05	1.19e-05	0.0
196	54	-4.42e-04	1.94e-03	-0.01	4.95e-05	1.20e-05	0.0
196	69	2.03e-04	1.54e-04	-0.01	4.96e-05	1.19e-05	0.0
197	1	2.68e-04	2.15e-04	-0.01	5.01e-05	6.18e-06	0.0
197	3	2.27e-04	1.82e-04	-0.01	4.24e-05	5.23e-06	0.0
197	6	-4.93e-03	1.98e-03	-0.01	3.86e-05	4.79e-06	0.0
197	7	5.34e-03	-1.65e-03	-0.01	3.85e-05	4.71e-06	0.0
197	22	-1.56e-03	4.95e-03	-0.01	3.83e-05	4.89e-06	0.0
197	38	-1.67e-03	8.28e-04	-0.01	3.86e-05	4.77e-06	0.0
197	39	2.08e-03	-4.97e-04	-0.01	3.85e-05	4.74e-06	0.0
197	54	-4.37e-04	1.91e-03	-0.01	3.85e-05	4.80e-06	0.0
197	69	2.06e-04	1.66e-04	-0.01	3.86e-05	4.75e-06	0.0
198	1	2.73e-04	2.33e-04	-0.01	4.05e-05	3.26e-06	0.0
198	3	2.31e-04	1.97e-04	-0.01	3.42e-05	2.76e-06	0.0
198	6	-4.86e-03	2.01e-03	-0.01	3.12e-05	2.56e-06	0.0
198	7	5.28e-03	-1.65e-03	-9.52e-03	3.11e-05	2.45e-06	0.0
198	22	-1.56e-03	4.85e-03	-9.94e-03	3.09e-05	2.63e-06	0.0
198	38	-1.64e-03	8.47e-04	-9.87e-03	3.12e-05	2.53e-06	0.0
198	39	2.06e-03	-4.90e-04	-9.69e-03	3.11e-05	2.49e-06	0.0
198	54	-4.34e-04	1.88e-03	-9.84e-03	3.11e-05	2.55e-06	0.0
198	69	2.10e-04	1.79e-04	-9.78e-03	3.11e-05	2.51e-06	0.0
199	1	2.80e-04	2.51e-04	-0.01	3.41e-05	3.89e-06	0.0
199	3	2.37e-04	2.12e-04	-9.92e-03	2.89e-05	3.29e-06	0.0
199	6	-4.80e-03	2.05e-03	-9.26e-03	2.63e-05	3.04e-06	0.0
199	7	5.23e-03	-1.66e-03	-8.77e-03	2.62e-05	2.94e-06	0.0
199	22	-1.56e-03	4.77e-03	-9.17e-03	2.61e-05	3.10e-06	0.0
199	38	-1.61e-03	8.69e-04	-9.10e-03	2.63e-05	3.01e-06	0.0
199	39	2.04e-03	-4.83e-04	-8.92e-03	2.62e-05	2.97e-06	0.0
199	54	-4.32e-04	1.86e-03	-9.07e-03	2.62e-05	3.03e-06	0.0
199	69	2.15e-04	1.93e-04	-9.01e-03	2.63e-05	2.99e-06	0.0
200	1	2.87e-04	2.71e-04	-0.01	3.05e-05	5.74e-06	0.0
200	3	2.43e-04	2.29e-04	-8.83e-03	2.58e-05	4.85e-06	0.0
200	6	-4.76e-03	2.09e-03	-8.27e-03	2.35e-05	4.46e-06	0.0
200	7	5.20e-03	-1.67e-03	-7.79e-03	2.34e-05	4.37e-06	0.0
200	22	-1.57e-03	4.71e-03	-8.18e-03	2.33e-05	4.51e-06	0.0
200	38	-1.59e-03	8.94e-04	-8.12e-03	2.35e-05	4.43e-06	0.0
200	39	2.03e-03	-4.77e-04	-7.94e-03	2.35e-05	4.40e-06	0.0
200	54	-4.30e-04	1.85e-03	-8.09e-03	2.34e-05	4.45e-06	0.0
200	69	2.21e-04	2.08e-04	-8.03e-03	2.35e-05	4.41e-06	0.0
201	1	2.95e-04	2.92e-04	-8.84e-03	3.11e-05	6.04e-06	0.0
201	3	2.49e-04	2.47e-04	-7.48e-03	2.63e-05	5.11e-06	0.0
201	6	-4.72e-03	2.13e-03	-7.03e-03	2.40e-05	4.69e-06	0.0
201	7	5.18e-03	-1.69e-03	-6.57e-03	2.39e-05	4.60e-06	0.0
201	22	-1.58e-03	4.65e-03	-6.95e-03	2.38e-05	4.74e-06	0.0
201	38	-1.58e-03	9.21e-04	-6.88e-03	2.39e-05	4.66e-06	0.0
201	39	2.03e-03	-4.72e-04	-6.72e-03	2.39e-05	4.63e-06	0.0
201	54	-4.31e-04	1.84e-03	-6.85e-03	2.38e-05	4.68e-06	0.0
201	69	2.27e-04	2.24e-04	-6.80e-03	2.39e-05	4.65e-06	0.0
202	1	2.36e-04	1.80e-04	-0.03	1.49e-04	8.99e-05	0.0
202	3	2.00e-04	1.52e-04	-0.03	1.26e-04	7.60e-05	0.0
202	6	-5.38e-03	1.99e-03	-0.03	1.14e-04	6.89e-05	0.0
202	7	5.74e-03	-1.71e-03	-0.03	1.15e-04	6.94e-05	0.0
202	22	-1.56e-03	5.40e-03	-0.03	1.14e-04	6.91e-05	0.0
202	38	-1.85e-03	8.12e-04	-0.03	1.14e-04	6.90e-05	0.0
202	39	2.21e-03	-5.35e-04	-0.03	1.14e-04	6.92e-05	0.0
202	54	-4.55e-04	2.06e-03	-0.03	1.14e-04	6.91e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

202	69	1.82e-04	1.38e-04	-0.03	1.14e-04	6.91e-05	0.0
203	1	2.34e-04	1.93e-04	-0.03	1.14e-04	5.01e-05	0.0
203	3	1.98e-04	1.64e-04	-0.02	9.68e-05	4.24e-05	0.0
203	6	-5.22e-03	1.92e-03	-0.02	8.79e-05	3.84e-05	0.0
203	7	5.58e-03	-1.62e-03	-0.02	8.81e-05	3.86e-05	0.0
203	22	-1.52e-03	5.18e-03	-0.02	8.75e-05	3.86e-05	0.0
203	38	-1.79e-03	7.93e-04	-0.02	8.80e-05	3.85e-05	0.0
203	39	2.15e-03	-4.95e-04	-0.02	8.80e-05	3.85e-05	0.0
203	54	-4.41e-04	1.98e-03	-0.02	8.78e-05	3.85e-05	0.0
203	69	1.80e-04	1.49e-04	-0.02	8.80e-05	3.85e-05	0.0
204	1	2.34e-04	2.08e-04	-0.02	9.01e-05	2.82e-05	0.0
204	3	1.98e-04	1.76e-04	-0.02	7.62e-05	2.38e-05	0.0
204	6	-5.12e-03	1.92e-03	-0.02	6.92e-05	2.17e-05	0.0
204	7	5.47e-03	-1.60e-03	-0.02	6.93e-05	2.17e-05	0.0
204	22	-1.51e-03	5.02e-03	-0.02	6.89e-05	2.17e-05	0.0
204	38	-1.75e-03	8.01e-04	-0.02	6.93e-05	2.17e-05	0.0
204	39	2.11e-03	-4.81e-04	-0.02	6.93e-05	2.17e-05	0.0
204	54	-4.35e-04	1.93e-03	-0.02	6.91e-05	2.17e-05	0.0
204	69	1.80e-04	1.60e-04	-0.02	6.93e-05	2.17e-05	0.0
205	1	2.35e-04	2.24e-04	-0.02	7.20e-05	1.74e-05	0.0
205	3	1.98e-04	1.90e-04	-0.02	6.09e-05	1.47e-05	0.0
205	6	-5.03e-03	1.94e-03	-0.02	5.54e-05	1.34e-05	0.0
205	7	5.39e-03	-1.59e-03	-0.02	5.54e-05	1.33e-05	0.0
205	22	-1.49e-03	4.90e-03	-0.02	5.51e-05	1.34e-05	0.0
205	38	-1.72e-03	8.16e-04	-0.02	5.54e-05	1.34e-05	0.0
205	39	2.08e-03	-4.71e-04	-0.02	5.54e-05	1.34e-05	0.0
205	54	-4.30e-04	1.89e-03	-0.02	5.53e-05	1.34e-05	0.0
205	69	1.80e-04	1.73e-04	-0.02	5.54e-05	1.34e-05	0.0
206	1	2.37e-04	2.42e-04	-0.02	5.86e-05	1.34e-05	0.0
206	3	2.00e-04	2.05e-04	-0.02	4.96e-05	1.13e-05	0.0
206	6	-4.97e-03	1.96e-03	-0.02	4.51e-05	1.04e-05	0.0
206	7	5.33e-03	-1.59e-03	-0.02	4.51e-05	1.02e-05	0.0
206	22	-1.48e-03	4.79e-03	-0.02	4.48e-05	1.04e-05	0.0
206	38	-1.70e-03	8.35e-04	-0.02	4.51e-05	1.03e-05	0.0
206	39	2.06e-03	-4.62e-04	-0.02	4.51e-05	1.03e-05	0.0
206	54	-4.26e-04	1.87e-03	-0.02	4.50e-05	1.03e-05	0.0
206	69	1.82e-04	1.86e-04	-0.02	4.51e-05	1.03e-05	0.0
207	1	2.40e-04	2.62e-04	-0.02	4.88e-05	1.33e-05	0.0
207	3	2.03e-04	2.21e-04	-0.02	4.13e-05	1.12e-05	0.0
207	6	-4.92e-03	2.00e-03	-0.01	3.75e-05	1.03e-05	0.0
207	7	5.29e-03	-1.60e-03	-0.01	3.75e-05	1.01e-05	0.0
207	22	-1.48e-03	4.71e-03	-0.01	3.73e-05	1.03e-05	0.0
207	38	-1.68e-03	8.56e-04	-0.01	3.75e-05	1.02e-05	0.0
207	39	2.04e-03	-4.54e-04	-0.01	3.75e-05	1.02e-05	0.0
207	54	-4.22e-04	1.84e-03	-0.01	3.74e-05	1.02e-05	0.0
207	69	1.84e-04	2.01e-04	-0.01	3.75e-05	1.02e-05	0.0
208	1	2.43e-04	2.83e-04	-0.02	4.25e-05	1.47e-05	0.0
208	3	2.06e-04	2.40e-04	-0.01	3.60e-05	1.24e-05	0.0
208	6	-4.88e-03	2.04e-03	-0.01	3.27e-05	1.13e-05	0.0
208	7	5.25e-03	-1.60e-03	-0.01	3.27e-05	1.12e-05	0.0
208	22	-1.48e-03	4.63e-03	-0.01	3.25e-05	1.13e-05	0.0
208	38	-1.66e-03	8.82e-04	-0.01	3.27e-05	1.13e-05	0.0
208	39	2.03e-03	-4.46e-04	-0.01	3.27e-05	1.13e-05	0.0
208	54	-4.21e-04	1.83e-03	-0.01	3.26e-05	1.13e-05	0.0
208	69	1.87e-04	2.18e-04	-0.01	3.27e-05	1.13e-05	0.0
209	1	2.47e-04	3.06e-04	-0.01	4.29e-05	1.50e-05	0.0
209	3	2.09e-04	2.59e-04	-0.01	3.63e-05	1.27e-05	0.0
209	6	-4.86e-03	2.08e-03	-0.01	3.30e-05	1.16e-05	0.0
209	7	5.24e-03	-1.61e-03	-0.01	3.30e-05	1.15e-05	0.0
209	22	-1.48e-03	4.57e-03	-0.01	3.28e-05	1.15e-05	0.0
209	38	-1.65e-03	9.09e-04	-0.01	3.30e-05	1.15e-05	0.0
209	39	2.03e-03	-4.38e-04	-0.01	3.30e-05	1.15e-05	0.0
209	54	-4.20e-04	1.82e-03	-0.01	3.29e-05	1.15e-05	0.0
209	69	1.90e-04	2.35e-04	-0.01	3.30e-05	1.15e-05	0.0
210	1	2.07e-04	1.84e-04	-0.05	1.70e-04	1.14e-04	0.0
210	3	1.75e-04	1.56e-04	-0.04	1.44e-04	9.67e-05	0.0
210	5	-5.41e-03	-1.23e-03	-0.04	1.31e-04	8.76e-05	0.0
210	8	5.73e-03	1.52e-03	-0.04	1.30e-04	8.82e-05	0.0
210	22	-1.49e-03	5.35e-03	-0.04	1.30e-04	8.78e-05	0.0
210	37	-1.87e-03	-3.59e-04	-0.04	1.31e-04	8.78e-05	0.0
210	40	2.19e-03	6.42e-04	-0.04	1.31e-04	8.80e-05	0.0
210	54	-4.41e-04	2.04e-03	-0.04	1.30e-04	8.79e-05	0.0
210	69	1.59e-04	1.42e-04	-0.04	1.31e-04	8.79e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

211	1	2.04e-04	1.97e-04	-0.04	1.35e-04	7.41e-05	0.0
211	3	1.72e-04	1.67e-04	-0.04	1.14e-04	6.27e-05	0.0
211	5	-5.28e-03	-1.11e-03	-0.03	1.04e-04	5.70e-05	0.0
211	8	5.60e-03	1.41e-03	-0.03	1.04e-04	5.71e-05	0.0
211	22	-1.45e-03	5.16e-03	-0.03	1.03e-04	5.70e-05	0.0
211	37	-1.83e-03	-3.08e-04	-0.03	1.04e-04	5.70e-05	0.0
211	40	2.14e-03	6.11e-04	-0.03	1.04e-04	5.71e-05	0.0
211	54	-4.30e-04	1.98e-03	-0.03	1.04e-04	5.70e-05	0.0
211	69	1.57e-04	1.52e-04	-0.03	1.04e-04	5.70e-05	0.0
212	1	2.01e-04	2.12e-04	-0.04	1.09e-04	5.11e-05	0.0
212	3	1.70e-04	1.79e-04	-0.03	9.25e-05	4.33e-05	0.0
212	5	-5.19e-03	-9.93e-04	-0.03	8.43e-05	3.93e-05	0.0
212	8	5.50e-03	1.32e-03	-0.03	8.40e-05	3.93e-05	0.0
212	22	-1.43e-03	5.00e-03	-0.03	8.37e-05	3.93e-05	0.0
212	37	-1.79e-03	-2.58e-04	-0.03	8.42e-05	3.93e-05	0.0
212	40	2.10e-03	5.84e-04	-0.03	8.41e-05	3.93e-05	0.0
212	54	-4.22e-04	1.93e-03	-0.03	8.39e-05	3.93e-05	0.0
212	69	1.55e-04	1.63e-04	-0.03	8.41e-05	3.93e-05	0.0
213	1	2.00e-04	2.28e-04	-0.03	8.88e-05	3.85e-05	0.0
213	3	1.69e-04	1.93e-04	-0.03	7.52e-05	3.26e-05	0.0
213	5	-5.12e-03	-8.82e-04	-0.03	6.85e-05	2.97e-05	0.0
213	8	5.42e-03	1.23e-03	-0.03	6.82e-05	2.96e-05	0.0
213	22	-1.41e-03	4.87e-03	-0.03	6.80e-05	2.96e-05	0.0
213	37	-1.77e-03	-2.10e-04	-0.03	6.84e-05	2.97e-05	0.0
213	40	2.08e-03	5.61e-04	-0.03	6.83e-05	2.96e-05	0.0
213	54	-4.16e-04	1.89e-03	-0.03	6.82e-05	2.96e-05	0.0
213	69	1.54e-04	1.76e-04	-0.03	6.83e-05	2.96e-05	0.0
214	1	1.99e-04	2.46e-04	-0.03	7.25e-05	3.25e-05	0.0
214	3	1.68e-04	2.08e-04	-0.03	6.13e-05	2.75e-05	0.0
214	5	-5.06e-03	-7.76e-04	-0.02	5.59e-05	2.50e-05	0.0
214	8	5.37e-03	1.15e-03	-0.02	5.57e-05	2.49e-05	0.0
214	22	-1.39e-03	4.76e-03	-0.02	5.55e-05	2.50e-05	0.0
214	37	-1.75e-03	-1.62e-04	-0.02	5.58e-05	2.50e-05	0.0
214	40	2.05e-03	5.41e-04	-0.02	5.57e-05	2.49e-05	0.0
214	54	-4.10e-04	1.86e-03	-0.02	5.57e-05	2.50e-05	0.0
214	69	1.53e-04	1.89e-04	-0.02	5.58e-05	2.50e-05	0.0
215	1	2.00e-04	2.62e-04	-0.03	5.96e-05	3.03e-05	0.0
215	3	1.69e-04	2.21e-04	-0.02	5.05e-05	2.56e-05	0.0
215	5	-5.01e-03	-6.74e-04	-0.02	4.60e-05	2.33e-05	0.0
215	8	5.32e-03	1.08e-03	-0.02	4.58e-05	2.33e-05	0.0
215	22	-1.38e-03	4.66e-03	-0.02	4.56e-05	2.32e-05	0.0
215	37	-1.73e-03	-1.18e-04	-0.02	4.59e-05	2.33e-05	0.0
215	40	2.04e-03	5.20e-04	-0.02	4.58e-05	2.33e-05	0.0
215	54	-4.05e-04	1.83e-03	-0.02	4.58e-05	2.33e-05	0.0
215	69	1.54e-04	2.01e-04	-0.02	4.59e-05	2.33e-05	0.0
216	1	1.98e-04	2.88e-04	-0.03	5.14e-05	3.02e-05	0.0
216	3	1.67e-04	2.44e-04	-0.02	4.35e-05	2.55e-05	0.0
216	6	-4.98e-03	1.97e-03	-0.02	3.95e-05	2.33e-05	0.0
216	8	5.29e-03	1.01e-03	-0.02	3.95e-05	2.32e-05	0.0
216	22	-1.37e-03	4.59e-03	-0.02	3.93e-05	2.32e-05	0.0
216	38	-1.72e-03	8.59e-04	-0.02	3.95e-05	2.32e-05	0.0
216	40	2.03e-03	5.09e-04	-0.02	3.95e-05	2.32e-05	0.0
216	54	-4.04e-04	1.82e-03	-0.02	3.95e-05	2.32e-05	0.0
216	69	1.52e-04	2.22e-04	-0.02	3.95e-05	2.32e-05	0.0
217	1	1.97e-04	3.12e-04	-0.02	5.17e-05	3.03e-05	0.0
217	3	1.67e-04	2.64e-04	-0.02	4.38e-05	2.57e-05	0.0
217	6	-4.97e-03	2.01e-03	-0.02	3.97e-05	2.34e-05	0.0
217	8	5.28e-03	9.43e-04	-0.02	3.97e-05	2.33e-05	0.0
217	22	-1.37e-03	4.53e-03	-0.02	3.95e-05	2.33e-05	0.0
217	38	-1.71e-03	8.86e-04	-0.02	3.98e-05	2.34e-05	0.0
217	40	2.02e-03	4.97e-04	-0.02	3.97e-05	2.33e-05	0.0
217	54	-4.03e-04	1.80e-03	-0.02	3.97e-05	2.33e-05	0.0
217	69	1.52e-04	2.40e-04	-0.02	3.98e-05	2.33e-05	0.0
218	1	1.79e-04	1.86e-04	-0.07	1.76e-04	1.41e-04	0.0
218	3	1.52e-04	1.57e-04	-0.06	1.49e-04	1.19e-04	0.0
218	5	-5.53e-03	-1.36e-03	-0.05	1.35e-04	1.08e-04	0.0
218	8	5.81e-03	1.65e-03	-0.05	1.35e-04	1.09e-04	0.0
218	22	-1.42e-03	5.34e-03	-0.05	1.35e-04	1.08e-04	0.0
218	37	-1.93e-03	-4.05e-04	-0.05	1.35e-04	1.08e-04	0.0
218	40	2.20e-03	6.91e-04	-0.05	1.35e-04	1.08e-04	0.0
218	54	-4.31e-04	2.04e-03	-0.05	1.35e-04	1.08e-04	0.0
218	69	1.38e-04	1.43e-04	-0.05	1.35e-04	1.08e-04	0.0
219	1	1.73e-04	1.97e-04	-0.06	1.43e-04	1.03e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

219	3	1.47e-04	1.66e-04	-0.05	1.21e-04	8.74e-05	0.0
219	5	-5.40e-03	-1.18e-03	-0.05	1.10e-04	7.94e-05	0.0
219	8	5.66e-03	1.48e-03	-0.05	1.10e-04	7.95e-05	0.0
219	22	-1.38e-03	5.15e-03	-0.05	1.09e-04	7.93e-05	0.0
219	37	-1.88e-03	-3.34e-04	-0.05	1.10e-04	7.94e-05	0.0
219	40	2.15e-03	6.36e-04	-0.05	1.10e-04	7.95e-05	0.0
219	54	-4.19e-04	1.98e-03	-0.05	1.10e-04	7.94e-05	0.0
219	69	1.33e-04	1.51e-04	-0.05	1.10e-04	7.95e-05	0.0
220	1	1.69e-04	2.11e-04	-0.05	1.17e-04	8.05e-05	0.0
220	3	1.43e-04	1.78e-04	-0.05	9.92e-05	6.81e-05	0.0
220	5	-5.32e-03	-1.06e-03	-0.04	9.02e-05	6.19e-05	0.0
220	8	5.57e-03	1.39e-03	-0.04	9.01e-05	6.19e-05	0.0
220	22	-1.34e-03	5.00e-03	-0.04	8.97e-05	6.18e-05	0.0
220	37	-1.86e-03	-2.85e-04	-0.04	9.02e-05	6.19e-05	0.0
220	40	2.11e-03	6.09e-04	-0.04	9.01e-05	6.19e-05	0.0
220	54	-4.08e-04	1.92e-03	-0.04	9.00e-05	6.18e-05	0.0
220	69	1.30e-04	1.62e-04	-0.04	9.02e-05	6.19e-05	0.0
221	1	1.64e-04	2.27e-04	-0.05	9.60e-05	6.63e-05	0.0
221	3	1.39e-04	1.92e-04	-0.04	8.12e-05	5.61e-05	0.0
221	5	-5.25e-03	-9.59e-04	-0.04	7.39e-05	5.11e-05	0.0
221	8	5.51e-03	1.31e-03	-0.04	7.38e-05	5.09e-05	0.0
221	22	-1.32e-03	4.87e-03	-0.04	7.34e-05	5.09e-05	0.0
221	37	-1.84e-03	-2.39e-04	-0.04	7.38e-05	5.10e-05	0.0
221	40	2.09e-03	5.88e-04	-0.04	7.38e-05	5.10e-05	0.0
221	54	-3.99e-04	1.89e-03	-0.04	7.37e-05	5.10e-05	0.0
221	69	1.26e-04	1.75e-04	-0.04	7.38e-05	5.10e-05	0.0
222	1	1.60e-04	2.45e-04	-0.05	7.84e-05	5.78e-05	0.0
222	3	1.35e-04	2.07e-04	-0.04	6.64e-05	4.89e-05	0.0
222	5	-5.21e-03	-8.59e-04	-0.04	6.04e-05	4.45e-05	0.0
222	8	5.46e-03	1.23e-03	-0.03	6.03e-05	4.43e-05	0.0
222	22	-1.29e-03	4.76e-03	-0.03	6.00e-05	4.43e-05	0.0
222	37	-1.82e-03	-1.94e-04	-0.03	6.03e-05	4.45e-05	0.0
222	40	2.07e-03	5.70e-04	-0.03	6.03e-05	4.44e-05	0.0
222	54	-3.93e-04	1.85e-03	-0.03	6.02e-05	4.44e-05	0.0
222	69	1.23e-04	1.88e-04	-0.03	6.03e-05	4.44e-05	0.0
223	1	1.55e-04	2.64e-04	-0.04	6.45e-05	5.30e-05	0.0
223	3	1.31e-04	2.23e-04	-0.03	5.45e-05	4.48e-05	0.0
223	5	-5.19e-03	-7.60e-04	-0.03	4.96e-05	4.08e-05	0.0
223	8	5.43e-03	1.17e-03	-0.03	4.95e-05	4.07e-05	0.0
223	22	-1.27e-03	4.67e-03	-0.03	4.93e-05	4.06e-05	0.0
223	37	-1.82e-03	-1.48e-04	-0.03	4.96e-05	4.08e-05	0.0
223	40	2.05e-03	5.54e-04	-0.03	4.96e-05	4.07e-05	0.0
223	54	-3.88e-04	1.83e-03	-0.03	4.95e-05	4.07e-05	0.0
223	69	1.19e-04	2.03e-04	-0.03	4.96e-05	4.07e-05	0.0
224	1	1.50e-04	2.85e-04	-0.04	5.49e-05	5.06e-05	0.0
224	3	1.27e-04	2.42e-04	-0.03	4.65e-05	4.28e-05	0.0
224	5	-5.18e-03	-6.62e-04	-0.03	4.23e-05	3.90e-05	0.0
224	8	5.41e-03	1.10e-03	-0.03	4.22e-05	3.89e-05	0.0
224	22	-1.26e-03	4.59e-03	-0.03	4.20e-05	3.89e-05	0.0
224	37	-1.81e-03	-1.02e-04	-0.03	4.23e-05	3.90e-05	0.0
224	40	2.05e-03	5.41e-04	-0.03	4.22e-05	3.89e-05	0.0
224	54	-3.85e-04	1.81e-03	-0.03	4.22e-05	3.89e-05	0.0
224	69	1.15e-04	2.20e-04	-0.03	4.23e-05	3.89e-05	0.0
225	1	1.46e-04	3.08e-04	-0.03	5.53e-05	5.06e-05	0.0
225	3	1.23e-04	2.61e-04	-0.03	4.68e-05	4.28e-05	0.0
225	5	-5.18e-03	-5.63e-04	-0.03	4.26e-05	3.90e-05	0.0
225	8	5.40e-03	1.04e-03	-0.03	4.25e-05	3.88e-05	0.0
225	22	-1.24e-03	4.52e-03	-0.03	4.23e-05	3.88e-05	0.0
225	37	-1.82e-03	-5.47e-05	-0.03	4.26e-05	3.89e-05	0.0
225	40	2.04e-03	5.29e-04	-0.03	4.25e-05	3.89e-05	0.0
225	54	-3.83e-04	1.80e-03	-0.03	4.25e-05	3.89e-05	0.0
225	69	1.12e-04	2.37e-04	-0.03	4.26e-05	3.89e-05	0.0
226	1	1.51e-04	1.86e-04	-0.09	1.68e-04	1.63e-04	0.0
226	3	1.27e-04	1.58e-04	-0.07	1.42e-04	1.38e-04	0.0
226	5	-5.56e-03	-1.36e-03	-0.07	1.29e-04	1.25e-04	0.0
226	8	5.79e-03	1.65e-03	-0.07	1.29e-04	1.25e-04	0.0
226	22	-1.36e-03	5.36e-03	-0.07	1.28e-04	1.25e-04	0.0
226	37	-1.95e-03	-4.04e-04	-0.07	1.29e-04	1.25e-04	0.0
226	40	2.18e-03	6.91e-04	-0.07	1.29e-04	1.25e-04	0.0
226	54	-4.23e-04	2.05e-03	-0.07	1.29e-04	1.25e-04	0.0
226	69	1.16e-04	1.43e-04	-0.07	1.29e-04	1.25e-04	0.0
227	1	1.45e-04	1.92e-04	-0.08	1.36e-04	1.32e-04	0.0
227	3	1.23e-04	1.63e-04	-0.07	1.15e-04	1.11e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

227	5	-5.48e-03	-1.24e-03	-0.06	1.04e-04	1.01e-04	0.0
227	8	5.70e-03	1.54e-03	-0.06	1.05e-04	1.01e-04	0.0
227	22	-1.31e-03	5.16e-03	-0.06	1.04e-04	1.01e-04	0.0
227	37	-1.93e-03	-3.60e-04	-0.06	1.04e-04	1.01e-04	0.0
227	40	2.15e-03	6.56e-04	-0.06	1.05e-04	1.01e-04	0.0
227	54	-4.05e-04	1.97e-03	-0.06	1.04e-04	1.01e-04	0.0
227	69	1.11e-04	1.48e-04	-0.06	1.05e-04	1.01e-04	0.0
228	1	1.38e-04	2.05e-04	-0.07	1.12e-04	1.11e-04	0.0
228	3	1.16e-04	1.74e-04	-0.06	9.45e-05	9.36e-05	0.0
228	5	-5.41e-03	-1.15e-03	-0.06	8.58e-05	8.51e-05	0.0
228	8	5.62e-03	1.46e-03	-0.06	8.59e-05	8.51e-05	0.0
228	22	-1.26e-03	5.01e-03	-0.06	8.55e-05	8.48e-05	0.0
228	37	-1.90e-03	-3.17e-04	-0.06	8.59e-05	8.51e-05	0.0
228	40	2.12e-03	6.33e-04	-0.06	8.59e-05	8.51e-05	0.0
228	54	-3.93e-04	1.93e-03	-0.06	8.57e-05	8.50e-05	0.0
228	69	1.06e-04	1.58e-04	-0.06	8.59e-05	8.51e-05	0.0
229	1	1.30e-04	2.21e-04	-0.07	9.14e-05	9.57e-05	0.0
229	3	1.10e-04	1.87e-04	-0.06	7.73e-05	8.10e-05	0.0
229	5	-5.36e-03	-1.05e-03	-0.05	7.02e-05	7.36e-05	0.0
229	8	5.56e-03	1.39e-03	-0.05	7.03e-05	7.36e-05	0.0
229	22	-1.23e-03	4.89e-03	-0.05	6.99e-05	7.34e-05	0.0
229	37	-1.89e-03	-2.76e-04	-0.05	7.03e-05	7.36e-05	0.0
229	40	2.09e-03	6.15e-04	-0.05	7.03e-05	7.36e-05	0.0
229	54	-3.84e-04	1.89e-03	-0.05	7.02e-05	7.35e-05	0.0
229	69	9.99e-05	1.70e-04	-0.05	7.03e-05	7.36e-05	0.0
230	1	1.22e-04	2.37e-04	-0.06	7.45e-05	8.51e-05	0.0
230	3	1.03e-04	2.01e-04	-0.05	6.30e-05	7.20e-05	0.0
230	5	-5.34e-03	-9.62e-04	-0.05	5.72e-05	6.55e-05	0.0
230	8	5.52e-03	1.33e-03	-0.05	5.73e-05	6.54e-05	0.0
230	22	-1.20e-03	4.79e-03	-0.05	5.70e-05	6.53e-05	0.0
230	37	-1.89e-03	-2.35e-04	-0.05	5.73e-05	6.55e-05	0.0
230	40	2.07e-03	6.00e-04	-0.05	5.73e-05	6.54e-05	0.0
230	54	-3.76e-04	1.86e-03	-0.05	5.72e-05	6.54e-05	0.0
230	69	9.39e-05	1.82e-04	-0.05	5.73e-05	6.54e-05	0.0
231	1	1.14e-04	2.55e-04	-0.06	6.09e-05	7.77e-05	0.0
231	3	9.66e-05	2.16e-04	-0.05	5.15e-05	6.58e-05	0.0
231	5	-5.33e-03	-8.74e-04	-0.04	4.68e-05	5.99e-05	0.0
231	8	5.50e-03	1.27e-03	-0.04	4.68e-05	5.97e-05	0.0
231	22	-1.17e-03	4.70e-03	-0.04	4.66e-05	5.96e-05	0.0
231	37	-1.89e-03	-1.94e-04	-0.04	4.68e-05	5.98e-05	0.0
231	40	2.06e-03	5.87e-04	-0.04	4.68e-05	5.98e-05	0.0
231	54	-3.70e-04	1.84e-03	-0.04	4.67e-05	5.97e-05	0.0
231	69	8.78e-05	1.96e-04	-0.04	4.68e-05	5.98e-05	0.0
232	1	1.06e-04	2.75e-04	-0.05	5.16e-05	7.33e-05	0.0
232	3	8.97e-05	2.32e-04	-0.04	4.37e-05	6.20e-05	0.0
232	5	-5.33e-03	-7.88e-04	-0.04	3.97e-05	5.64e-05	0.0
232	8	5.49e-03	1.21e-03	-0.04	3.97e-05	5.63e-05	0.0
232	22	-1.14e-03	4.63e-03	-0.04	3.95e-05	5.62e-05	0.0
232	37	-1.89e-03	-1.53e-04	-0.04	3.97e-05	5.64e-05	0.0
232	40	2.05e-03	5.76e-04	-0.04	3.97e-05	5.64e-05	0.0
232	54	-3.65e-04	1.82e-03	-0.04	3.96e-05	5.63e-05	0.0
232	69	8.15e-05	2.11e-04	-0.04	3.97e-05	5.64e-05	0.0
233	1	9.78e-05	2.95e-04	-0.05	5.23e-05	7.32e-05	0.0
233	3	8.27e-05	2.50e-04	-0.04	4.43e-05	6.20e-05	0.0
233	5	-5.35e-03	-7.02e-04	-0.04	4.02e-05	5.64e-05	0.0
233	8	5.50e-03	1.16e-03	-0.03	4.03e-05	5.63e-05	0.0
233	22	-1.12e-03	4.57e-03	-0.04	4.00e-05	5.62e-05	0.0
233	37	-1.90e-03	-1.12e-04	-0.04	4.02e-05	5.63e-05	0.0
233	40	2.05e-03	5.66e-04	-0.04	4.03e-05	5.63e-05	0.0
233	54	-3.61e-04	1.81e-03	-0.04	4.02e-05	5.63e-05	0.0
233	69	7.52e-05	2.27e-04	-0.04	4.03e-05	5.63e-05	0.0
234	1	1.27e-04	1.75e-04	-0.10	1.44e-04	1.78e-04	0.0
234	3	1.07e-04	1.48e-04	-0.09	1.22e-04	1.50e-04	0.0
234	5	-5.60e-03	-1.37e-03	-0.08	1.11e-04	1.36e-04	0.0
234	8	5.80e-03	1.64e-03	-0.08	1.11e-04	1.37e-04	0.0
234	22	-1.29e-03	5.32e-03	-0.08	1.10e-04	1.36e-04	0.0
234	37	-1.98e-03	-4.14e-04	-0.08	1.11e-04	1.37e-04	0.0
234	40	2.18e-03	6.82e-04	-0.08	1.11e-04	1.37e-04	0.0
234	54	-4.09e-04	2.03e-03	-0.08	1.10e-04	1.37e-04	0.0
234	69	9.75e-05	1.34e-04	-0.08	1.11e-04	1.37e-04	0.0
235	1	1.18e-04	1.84e-04	-0.10	1.16e-04	1.54e-04	0.0
235	3	9.98e-05	1.56e-04	-0.08	9.83e-05	1.31e-04	0.0
235	5	-5.51e-03	-1.30e-03	-0.07	8.93e-05	1.19e-04	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

235	8	5.69e-03	1.59e-03	-0.07	8.95e-05	1.19e-04	0.0
235	22	-1.24e-03	5.17e-03	-0.07	8.90e-05	1.18e-04	0.0
235	37	-1.95e-03	-3.85e-04	-0.07	8.93e-05	1.19e-04	0.0
235	40	2.13e-03	6.68e-04	-0.07	8.94e-05	1.19e-04	0.0
235	54	-3.94e-04	1.97e-03	-0.07	8.92e-05	1.19e-04	0.0
235	69	9.08e-05	1.41e-04	-0.07	8.94e-05	1.19e-04	0.0
236	1	1.08e-04	1.96e-04	-0.09	9.42e-05	1.36e-04	0.0
236	3	9.15e-05	1.66e-04	-0.08	7.97e-05	1.15e-04	0.0
236	5	-5.46e-03	-1.22e-03	-0.07	7.24e-05	1.05e-04	0.0
236	8	5.63e-03	1.52e-03	-0.07	7.26e-05	1.05e-04	0.0
236	22	-1.19e-03	5.04e-03	-0.07	7.22e-05	1.05e-04	0.0
236	37	-1.94e-03	-3.51e-04	-0.07	7.24e-05	1.05e-04	0.0
236	40	2.10e-03	6.51e-04	-0.07	7.25e-05	1.05e-04	0.0
236	54	-3.82e-04	1.93e-03	-0.07	7.24e-05	1.05e-04	0.0
236	69	8.32e-05	1.50e-04	-0.07	7.25e-05	1.05e-04	0.0
237	1	9.79e-05	2.09e-04	-0.08	7.60e-05	1.22e-04	0.0
237	3	8.28e-05	1.77e-04	-0.07	6.43e-05	1.03e-04	0.0
237	5	-5.43e-03	-1.15e-03	-0.07	5.84e-05	9.36e-05	0.0
237	8	5.58e-03	1.47e-03	-0.06	5.86e-05	9.36e-05	0.0
237	22	-1.15e-03	4.94e-03	-0.06	5.82e-05	9.33e-05	0.0
237	37	-1.93e-03	-3.16e-04	-0.06	5.85e-05	9.36e-05	0.0
237	40	2.08e-03	6.38e-04	-0.06	5.85e-05	9.36e-05	0.0
237	54	-3.72e-04	1.90e-03	-0.06	5.84e-05	9.35e-05	0.0
237	69	7.53e-05	1.61e-04	-0.06	5.85e-05	9.36e-05	0.0
238	1	8.76e-05	2.24e-04	-0.08	6.11e-05	1.10e-04	0.0
238	3	7.42e-05	1.89e-04	-0.07	5.17e-05	8.91e-05	0.0
238	5	-5.42e-03	-1.07e-03	-0.06	4.69e-05	8.47e-05	0.0
238	8	5.56e-03	1.42e-03	-0.06	4.71e-05	8.47e-05	0.0
238	22	-1.11e-03	4.85e-03	-0.06	4.68e-05	8.44e-05	0.0
238	37	-1.93e-03	-2.82e-04	-0.06	4.70e-05	8.47e-05	0.0
238	40	2.07e-03	6.26e-04	-0.06	4.70e-05	8.47e-05	0.0
238	54	-3.63e-04	1.88e-03	-0.06	4.69e-05	8.46e-05	0.0
238	69	6.74e-05	1.72e-04	-0.06	4.70e-05	8.47e-05	0.0
239	1	7.77e-05	2.39e-04	-0.07	4.92e-05	1.01e-04	0.0
239	3	6.57e-05	2.02e-04	-0.06	4.16e-05	8.55e-05	0.0
239	5	-5.43e-03	-1.00e-03	-0.06	3.78e-05	7.77e-05	0.0
239	8	5.55e-03	1.37e-03	-0.06	3.79e-05	7.78e-05	0.0
239	22	-1.08e-03	4.77e-03	-0.06	3.77e-05	7.75e-05	0.0
239	37	-1.94e-03	-2.48e-04	-0.06	3.78e-05	7.77e-05	0.0
239	40	2.06e-03	6.16e-04	-0.06	3.79e-05	7.77e-05	0.0
239	54	-3.55e-04	1.86e-03	-0.06	3.78e-05	7.77e-05	0.0
239	69	5.98e-05	1.84e-04	-0.06	3.79e-05	7.77e-05	0.0
240	1	6.63e-05	2.56e-04	-0.07	4.14e-05	9.52e-05	0.0
240	3	5.61e-05	2.17e-04	-0.06	3.50e-05	8.06e-05	0.0
240	5	-5.44e-03	-9.31e-04	-0.05	3.17e-05	7.33e-05	0.0
240	8	5.54e-03	1.33e-03	-0.05	3.19e-05	7.32e-05	0.0
240	22	-1.05e-03	4.70e-03	-0.05	3.16e-05	7.30e-05	0.0
240	37	-1.95e-03	-2.14e-04	-0.05	3.18e-05	7.33e-05	0.0
240	40	2.05e-03	6.08e-04	-0.05	3.18e-05	7.32e-05	0.0
240	54	-3.49e-04	1.84e-03	-0.05	3.17e-05	7.32e-05	0.0
240	69	5.10e-05	1.97e-04	-0.05	3.18e-05	7.32e-05	0.0
241	1	5.49e-05	2.74e-04	-0.06	4.24e-05	9.55e-05	0.0
241	3	4.64e-05	2.32e-04	-0.05	3.59e-05	8.08e-05	0.0
241	5	-5.47e-03	-8.62e-04	-0.05	3.25e-05	7.34e-05	0.0
241	8	5.55e-03	1.28e-03	-0.05	3.27e-05	7.35e-05	0.0
241	22	-1.02e-03	4.65e-03	-0.05	3.24e-05	7.32e-05	0.0
241	37	-1.97e-03	-1.80e-04	-0.05	3.26e-05	7.34e-05	0.0
241	40	2.05e-03	6.02e-04	-0.05	3.26e-05	7.35e-05	0.0
241	54	-3.44e-04	1.83e-03	-0.05	3.25e-05	7.34e-05	0.0
241	69	4.22e-05	2.11e-04	-0.05	3.26e-05	7.34e-05	0.0
242	1	1.05e-04	1.64e-04	-0.12	1.14e-04	1.87e-04	0.0
242	3	8.86e-05	1.39e-04	-0.10	9.64e-05	1.58e-04	0.0
242	8	5.72e-03	1.67e-03	-0.09	8.78e-05	1.44e-04	0.0
242	21	-1.92e-03	-5.05e-03	-0.09	8.79e-05	1.44e-04	0.0
242	22	-1.25e-03	5.31e-03	-0.09	8.73e-05	1.43e-04	0.0
242	40	2.14e-03	6.88e-04	-0.09	8.77e-05	1.44e-04	0.0
242	53	-6.47e-04	-1.76e-03	-0.09	8.78e-05	1.44e-04	0.0
242	54	-4.04e-04	2.02e-03	-0.09	8.75e-05	1.44e-04	0.0
242	69	8.06e-05	1.26e-04	-0.09	8.77e-05	1.44e-04	0.0
243	1	9.33e-05	1.72e-04	-0.11	8.90e-05	1.69e-04	0.0
243	3	7.89e-05	1.46e-04	-0.10	7.53e-05	1.43e-04	0.0
243	8	5.66e-03	1.62e-03	-0.09	6.86e-05	1.30e-04	0.0
243	21	-1.95e-03	-4.90e-03	-0.09	6.86e-05	1.31e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

243	22	-1.19e-03	5.19e-03	-0.09	6.82e-05	1.30e-04	0.0
243	40	2.11e-03	6.74e-04	-0.09	6.85e-05	1.30e-04	0.0
243	53	-6.65e-04	-1.70e-03	-0.09	6.85e-05	1.30e-04	0.0
243	54	-3.88e-04	1.97e-03	-0.09	6.84e-05	1.30e-04	0.0
243	69	7.18e-05	1.32e-04	-0.09	6.85e-05	1.30e-04	0.0
244	1	8.12e-05	1.82e-04	-0.11	6.94e-05	1.54e-04	0.0
244	3	6.87e-05	1.54e-04	-0.09	5.87e-05	1.31e-04	0.0
244	8	5.61e-03	1.57e-03	-0.08	5.35e-05	1.19e-04	0.0
244	21	-1.99e-03	-4.78e-03	-0.08	5.35e-05	1.19e-04	0.0
244	22	-1.14e-03	5.08e-03	-0.08	5.31e-05	1.18e-04	0.0
244	40	2.09e-03	6.62e-04	-0.08	5.34e-05	1.19e-04	0.0
244	53	-6.85e-04	-1.65e-03	-0.08	5.34e-05	1.19e-04	0.0
244	54	-3.76e-04	1.94e-03	-0.08	5.33e-05	1.19e-04	0.0
244	69	6.25e-05	1.40e-04	-0.08	5.33e-05	1.19e-04	0.0
245	1	6.90e-05	1.93e-04	-0.10	5.36e-05	1.41e-04	0.0
245	3	5.84e-05	1.63e-04	-0.09	4.54e-05	1.19e-04	0.0
245	8	5.58e-03	1.53e-03	-0.08	4.14e-05	1.09e-04	0.0
245	21	-2.03e-03	-4.66e-03	-0.08	4.13e-05	1.09e-04	0.0
245	22	-1.10e-03	5.00e-03	-0.08	4.11e-05	1.08e-04	0.0
245	40	2.07e-03	6.53e-04	-0.08	4.13e-05	1.08e-04	0.0
245	53	-7.07e-04	-1.60e-03	-0.08	4.13e-05	1.09e-04	0.0
245	54	-3.66e-04	1.92e-03	-0.08	4.12e-05	1.08e-04	0.0
245	69	5.31e-05	1.48e-04	-0.08	4.12e-05	1.08e-04	0.0
246	1	5.76e-05	2.04e-04	-0.10	4.11e-05	1.30e-04	0.0
246	3	4.87e-05	1.73e-04	-0.08	3.48e-05	1.10e-04	0.0
246	8	5.56e-03	1.49e-03	-0.07	3.18e-05	9.97e-05	0.0
246	21	-2.08e-03	-4.56e-03	-0.07	3.17e-05	9.98e-05	0.0
246	22	-1.05e-03	4.92e-03	-0.07	3.15e-05	9.94e-05	0.0
246	40	2.06e-03	6.45e-04	-0.07	3.17e-05	9.97e-05	0.0
246	53	-7.30e-04	-1.56e-03	-0.07	3.17e-05	9.97e-05	0.0
246	54	-3.56e-04	1.89e-03	-0.07	3.16e-05	9.95e-05	0.0
246	69	4.43e-05	1.57e-04	-0.07	3.16e-05	9.96e-05	0.0
247	1	5.15e-05	2.14e-04	-0.09	3.14e-05	1.20e-04	0.0
247	3	4.36e-05	1.81e-04	-0.08	2.66e-05	1.01e-04	0.0
247	8	5.56e-03	1.46e-03	-0.07	2.43e-05	9.23e-05	0.0
247	21	-2.13e-03	-4.46e-03	-0.07	2.43e-05	9.23e-05	0.0
247	22	-1.01e-03	4.85e-03	-0.07	2.39e-05	9.19e-05	0.0
247	40	2.05e-03	6.36e-04	-0.07	2.42e-05	9.22e-05	0.0
247	53	-7.50e-04	-1.52e-03	-0.07	2.42e-05	9.22e-05	0.0
247	54	-3.42e-04	1.87e-03	-0.07	2.41e-05	9.21e-05	0.0
247	69	3.96e-05	1.65e-04	-0.07	2.42e-05	9.22e-05	0.0
248	1	2.98e-05	2.31e-04	-0.08	2.55e-05	1.14e-04	0.0
248	3	2.53e-05	1.95e-04	-0.07	2.15e-05	9.65e-05	0.0
248	8	5.56e-03	1.43e-03	-0.06	1.97e-05	8.78e-05	0.0
248	21	-2.19e-03	-4.38e-03	-0.07	1.97e-05	8.79e-05	0.0
248	22	-9.78e-04	4.81e-03	-0.06	1.94e-05	8.75e-05	0.0
248	40	2.04e-03	6.35e-04	-0.06	1.96e-05	8.77e-05	0.0
248	53	-7.84e-04	-1.48e-03	-0.07	1.96e-05	8.78e-05	0.0
248	54	-3.42e-04	1.86e-03	-0.06	1.95e-05	8.76e-05	0.0
248	69	2.30e-05	1.78e-04	-0.06	1.96e-05	8.77e-05	0.0
249	1	1.34e-05	2.46e-04	-0.08	2.65e-05	1.15e-04	0.0
249	3	1.13e-05	2.08e-04	-0.07	2.24e-05	9.73e-05	0.0
249	5	-5.55e-03	-1.03e-03	-0.06	2.03e-05	8.84e-05	0.0
249	8	5.57e-03	1.40e-03	-0.06	2.05e-05	8.85e-05	0.0
249	22	-9.43e-04	4.76e-03	-0.06	2.03e-05	8.82e-05	0.0
249	37	-2.02e-03	-2.53e-04	-0.06	2.04e-05	8.84e-05	0.0
249	40	2.04e-03	6.32e-04	-0.06	2.04e-05	8.85e-05	0.0
249	54	-3.37e-04	1.86e-03	-0.06	2.04e-05	8.84e-05	0.0
249	69	1.03e-05	1.89e-04	-0.06	2.04e-05	8.85e-05	0.0
250	1	9.30e-05	1.47e-04	-0.14	1.07e-04	2.09e-04	0.0
250	3	7.87e-05	1.24e-04	-0.12	9.08e-05	1.77e-04	0.0
250	8	5.73e-03	1.74e-03	-0.11	8.26e-05	1.61e-04	0.0
250	21	-1.92e-03	-5.24e-03	-0.11	8.28e-05	1.61e-04	0.0
250	24	2.06e-03	5.47e-03	-0.11	8.23e-05	1.60e-04	0.0
250	40	2.14e-03	7.06e-04	-0.11	8.26e-05	1.61e-04	0.0
250	53	-6.53e-04	-1.84e-03	-0.11	8.26e-05	1.61e-04	0.0
250	56	7.96e-04	2.06e-03	-0.11	8.24e-05	1.61e-04	0.0
250	69	7.15e-05	1.13e-04	-0.11	8.25e-05	1.61e-04	0.0
251	1	8.01e-05	1.50e-04	-0.14	7.47e-05	1.91e-04	0.0
251	3	6.78e-05	1.27e-04	-0.11	6.32e-05	1.61e-04	0.0
251	8	5.67e-03	1.68e-03	-0.10	5.76e-05	1.47e-04	0.0
251	21	-1.97e-03	-5.07e-03	-0.10	5.76e-05	1.47e-04	0.0
251	24	2.09e-03	5.30e-03	-0.10	5.74e-05	1.46e-04	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

251	40	2.10e-03	6.85e-04	-0.10	5.75e-05	1.47e-04	0.0
251	53	-6.80e-04	-1.78e-03	-0.10	5.75e-05	1.47e-04	0.0
251	56	8.03e-04	2.01e-03	-0.10	5.74e-05	1.47e-04	0.0
251	69	6.16e-05	1.16e-04	-0.10	5.75e-05	1.47e-04	0.0
252	1	6.49e-05	1.57e-04	-0.13	5.13e-05	1.75e-04	0.0
252	3	5.49e-05	1.33e-04	-0.11	4.34e-05	1.48e-04	0.0
252	8	5.61e-03	1.64e-03	-0.10	3.96e-05	1.35e-04	0.0
252	21	-2.02e-03	-4.95e-03	-0.10	3.95e-05	1.35e-04	0.0
252	22	-1.14e-03	5.19e-03	-0.10	3.92e-05	1.34e-04	0.0
252	40	2.08e-03	6.73e-04	-0.10	3.95e-05	1.34e-04	0.0
252	53	-7.04e-04	-1.73e-03	-0.10	3.94e-05	1.34e-04	0.0
252	54	-3.84e-04	1.97e-03	-0.10	3.94e-05	1.34e-04	0.0
252	69	5.00e-05	1.21e-04	-0.10	3.94e-05	1.34e-04	0.0
253	1	4.90e-05	1.65e-04	-0.12	3.40e-05	1.60e-04	0.0
253	3	4.14e-05	1.40e-04	-0.11	2.88e-05	1.36e-04	0.0
253	8	5.58e-03	1.60e-03	-0.10	2.63e-05	1.24e-04	0.0
253	21	-2.07e-03	-4.84e-03	-0.10	2.62e-05	1.24e-04	0.0
253	22	-1.09e-03	5.10e-03	-0.10	2.60e-05	1.23e-04	0.0
253	40	2.06e-03	6.64e-04	-0.10	2.62e-05	1.23e-04	0.0
253	53	-7.31e-04	-1.68e-03	-0.10	2.62e-05	1.23e-04	0.0
253	54	-3.73e-04	1.94e-03	-0.10	2.61e-05	1.23e-04	0.0
253	69	3.77e-05	1.27e-04	-0.10	2.62e-05	1.23e-04	0.0
254	1	3.24e-05	1.74e-04	-0.12	2.14e-05	1.48e-04	0.0
254	3	2.75e-05	1.47e-04	-0.10	1.81e-05	1.25e-04	0.0
254	8	5.55e-03	1.57e-03	-0.09	1.66e-05	1.14e-04	0.0
254	21	-2.13e-03	-4.74e-03	-0.09	1.65e-05	1.14e-04	0.0
254	22	-1.04e-03	5.03e-03	-0.09	1.64e-05	1.13e-04	0.0
254	40	2.04e-03	6.57e-04	-0.09	1.65e-05	1.14e-04	0.0
254	53	-7.61e-04	-1.64e-03	-0.09	1.65e-05	1.14e-04	0.0
254	54	-3.63e-04	1.92e-03	-0.09	1.64e-05	1.13e-04	0.0
254	69	2.50e-05	1.34e-04	-0.09	1.65e-05	1.14e-04	0.0
255	1	1.48e-05	1.83e-04	-0.11	1.25e-05	1.37e-04	0.0
255	3	1.25e-05	1.55e-04	-0.09	1.06e-05	1.16e-04	0.0
255	8	5.54e-03	1.54e-03	-0.09	9.73e-06	1.06e-04	0.0
255	21	-2.19e-03	-4.66e-03	-0.09	9.61e-06	1.06e-04	0.0
255	22	-9.94e-04	4.97e-03	-0.09	9.51e-06	1.05e-04	0.0
255	40	2.03e-03	6.51e-04	-0.09	9.65e-06	1.05e-04	0.0
255	53	-7.93e-04	-1.61e-03	-0.09	9.60e-06	1.05e-04	0.0
255	54	-3.55e-04	1.90e-03	-0.09	9.57e-06	1.05e-04	0.0
255	69	1.14e-05	1.41e-04	-0.09	9.60e-06	1.05e-04	0.0
256	1	-5.21e-06	1.94e-04	-0.11	6.89e-06	1.30e-04	0.0
256	3	-4.41e-06	1.64e-04	-0.09	5.83e-06	1.10e-04	0.0
256	5	-5.55e-03	-1.22e-03	-0.08	5.19e-06	9.96e-05	0.0
256	21	-2.26e-03	-4.59e-03	-0.08	5.30e-06	9.99e-05	0.0
256	22	-9.52e-04	4.92e-03	-0.08	5.22e-06	9.95e-05	0.0
256	37	-2.03e-03	-3.50e-04	-0.08	5.26e-06	9.97e-05	0.0
256	53	-8.28e-04	-1.58e-03	-0.08	5.30e-06	9.98e-05	0.0
256	54	-3.50e-04	1.89e-03	-0.08	5.27e-06	9.97e-05	0.0
256	69	-4.01e-06	1.49e-04	-0.08	5.30e-06	9.98e-05	0.0
257	1	-2.56e-05	2.06e-04	-0.10	7.05e-06	1.31e-04	0.0
257	3	-2.16e-05	1.75e-04	-0.08	5.97e-06	1.11e-04	0.0
257	5	-5.59e-03	-1.18e-03	-0.08	5.32e-06	1.00e-04	0.0
257	21	-2.34e-03	-4.53e-03	-0.08	5.43e-06	1.01e-04	0.0
257	22	-9.12e-04	4.89e-03	-0.08	5.35e-06	1.00e-04	0.0
257	37	-2.05e-03	-3.30e-04	-0.08	5.38e-06	1.01e-04	0.0
257	53	-8.66e-04	-1.55e-03	-0.08	5.43e-06	1.01e-04	0.0
257	54	-3.45e-04	1.88e-03	-0.08	5.40e-06	1.01e-04	0.0
257	69	-1.97e-05	1.59e-04	-0.08	5.42e-06	1.01e-04	0.0
258	1	8.21e-05	1.23e-04	-0.16	9.69e-05	2.23e-04	0.0
258	3	6.94e-05	1.04e-04	-0.14	8.20e-05	1.88e-04	0.0
258	8	5.77e-03	1.75e-03	-0.12	7.46e-05	1.72e-04	0.0
258	21	-1.95e-03	-5.35e-03	-0.12	7.48e-05	1.71e-04	0.0
258	24	2.07e-03	5.54e-03	-0.12	7.43e-05	1.71e-04	0.0
258	40	2.14e-03	6.98e-04	-0.12	7.46e-05	1.71e-04	0.0
258	53	-6.70e-04	-1.89e-03	-0.12	7.47e-05	1.71e-04	0.0
258	56	7.96e-04	2.08e-03	-0.12	7.45e-05	1.71e-04	0.0
258	69	6.31e-05	9.47e-05	-0.12	7.46e-05	1.71e-04	0.0
259	1	6.89e-05	1.25e-04	-0.16	5.50e-05	2.02e-04	0.0
259	3	5.83e-05	1.05e-04	-0.13	4.66e-05	1.71e-04	0.0
259	8	5.66e-03	1.71e-03	-0.12	4.25e-05	1.56e-04	0.0
259	21	-1.97e-03	-5.23e-03	-0.12	4.24e-05	1.56e-04	0.0
259	24	2.07e-03	5.42e-03	-0.12	4.22e-05	1.55e-04	0.0
259	40	2.10e-03	6.86e-04	-0.12	4.24e-05	1.56e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

259	53	-6.84e-04	-1.84e-03	-0.12	4.24e-05	1.55e-04	0.0
259	56	7.90e-04	2.04e-03	-0.12	4.23e-05	1.55e-04	0.0
259	69	5.30e-05	9.58e-05	-0.12	4.23e-05	1.55e-04	0.0
260	1	5.11e-05	1.28e-04	-0.15	2.84e-05	1.86e-04	0.0
260	3	4.33e-05	1.08e-04	-0.13	2.40e-05	1.57e-04	0.0
260	8	5.60e-03	1.68e-03	-0.12	2.20e-05	1.43e-04	0.0
260	21	-2.02e-03	-5.11e-03	-0.12	2.18e-05	1.43e-04	0.0
260	24	2.09e-03	5.30e-03	-0.12	2.18e-05	1.43e-04	0.0
260	40	2.07e-03	6.74e-04	-0.12	2.19e-05	1.43e-04	0.0
260	53	-7.10e-04	-1.80e-03	-0.12	2.18e-05	1.43e-04	0.0
260	56	7.88e-04	2.00e-03	-0.12	2.18e-05	1.43e-04	0.0
260	69	3.93e-05	9.84e-05	-0.12	2.18e-05	1.43e-04	0.0
261	1	3.21e-05	1.33e-04	-0.15	1.09e-05	1.72e-04	0.0
261	3	2.72e-05	1.12e-04	-0.13	9.20e-06	1.45e-04	0.0
261	8	5.56e-03	1.64e-03	-0.11	8.51e-06	1.32e-04	0.0
261	21	-2.07e-03	-5.01e-03	-0.11	8.34e-06	1.32e-04	0.0
261	24	2.12e-03	5.21e-03	-0.11	8.39e-06	1.32e-04	0.0
261	40	2.04e-03	6.64e-04	-0.11	8.42e-06	1.32e-04	0.0
261	53	-7.40e-04	-1.76e-03	-0.11	8.35e-06	1.32e-04	0.0
261	56	7.89e-04	1.97e-03	-0.11	8.37e-06	1.32e-04	0.0
261	69	2.47e-05	1.02e-04	-0.11	8.36e-06	1.32e-04	0.0
262	1	1.22e-05	1.38e-04	-0.14	0.0	1.59e-04	0.0
262	3	1.03e-05	1.17e-04	-0.12	0.0	1.35e-04	0.0
262	8	5.53e-03	1.62e-03	-0.11	0.0	1.23e-04	0.0
262	21	-2.14e-03	-4.92e-03	-0.11	0.0	1.23e-04	0.0
262	24	2.16e-03	5.14e-03	-0.11	0.0	1.22e-04	0.0
262	40	2.02e-03	6.57e-04	-0.11	0.0	1.22e-04	0.0
262	53	-7.73e-04	-1.73e-03	-0.11	0.0	1.22e-04	0.0
262	56	7.92e-04	1.94e-03	-0.11	0.0	1.22e-04	0.0
262	69	9.35e-06	1.06e-04	-0.11	0.0	1.22e-04	0.0
263	1	-9.01e-06	1.45e-04	-0.14	-7.11e-06	1.49e-04	0.0
263	3	-7.63e-06	1.23e-04	-0.11	-6.01e-06	1.26e-04	0.0
263	5	-5.53e-03	-1.37e-03	-0.10	-5.58e-06	1.14e-04	0.0
263	21	-2.21e-03	-4.85e-03	-0.10	-5.51e-06	1.15e-04	0.0
263	22	-1.01e-03	5.08e-03	-0.10	-5.49e-06	1.14e-04	0.0
263	37	-2.02e-03	-4.30e-04	-0.10	-5.51e-06	1.14e-04	0.0
263	53	-8.10e-04	-1.70e-03	-0.10	-5.48e-06	1.14e-04	0.0
263	54	-3.72e-04	1.92e-03	-0.10	-5.48e-06	1.14e-04	0.0
263	69	-6.93e-06	1.12e-04	-0.10	-5.47e-06	1.14e-04	0.0
264	1	-3.14e-05	1.53e-04	-0.13	-1.11e-05	1.42e-04	0.0
264	3	-2.65e-05	1.29e-04	-0.11	-9.40e-06	1.20e-04	0.0
264	5	-5.56e-03	-1.34e-03	-0.10	-8.64e-06	1.09e-04	0.0
264	21	-2.29e-03	-4.79e-03	-0.10	-8.58e-06	1.09e-04	0.0
264	22	-9.63e-04	5.04e-03	-0.10	-8.56e-06	1.09e-04	0.0
264	37	-2.04e-03	-4.16e-04	-0.10	-8.58e-06	1.09e-04	0.0
264	53	-8.49e-04	-1.67e-03	-0.10	-8.55e-06	1.09e-04	0.0
264	54	-3.66e-04	1.91e-03	-0.10	-8.55e-06	1.09e-04	0.0
264	69	-2.41e-05	1.17e-04	-0.10	-8.54e-06	1.09e-04	0.0
265	1	-5.44e-05	1.61e-04	-0.12	-1.18e-05	1.43e-04	0.0
265	3	-4.60e-05	1.36e-04	-0.10	-1.00e-05	1.21e-04	0.0
265	5	-5.60e-03	-1.32e-03	-0.09	-9.19e-06	1.10e-04	0.0
265	21	-2.37e-03	-4.75e-03	-0.09	-9.13e-06	1.10e-04	0.0
265	22	-9.20e-04	5.01e-03	-0.09	-9.12e-06	1.09e-04	0.0
265	37	-2.07e-03	-4.03e-04	-0.09	-9.13e-06	1.10e-04	0.0
265	53	-8.90e-04	-1.65e-03	-0.09	-9.11e-06	1.10e-04	0.0
265	54	-3.62e-04	1.90e-03	-0.09	-9.10e-06	1.10e-04	0.0
265	69	-4.19e-05	1.24e-04	-0.09	-9.09e-06	1.10e-04	0.0
266	1	8.19e-05	9.54e-05	-0.18	8.08e-05	2.21e-04	0.0
266	3	6.93e-05	8.08e-05	-0.16	6.83e-05	1.87e-04	0.0
266	8	5.77e-03	1.78e-03	-0.14	6.21e-05	1.71e-04	0.0
266	21	-1.96e-03	-5.49e-03	-0.14	6.24e-05	1.70e-04	0.0
266	24	2.08e-03	5.64e-03	-0.14	6.19e-05	1.70e-04	0.0
266	40	2.14e-03	6.94e-04	-0.14	6.21e-05	1.70e-04	0.0
266	53	-6.73e-04	-1.96e-03	-0.14	6.22e-05	1.70e-04	0.0
266	56	7.99e-04	2.10e-03	-0.14	6.20e-05	1.70e-04	0.0
266	69	6.30e-05	7.34e-05	-0.14	6.21e-05	1.70e-04	0.0
267	1	6.09e-05	9.45e-05	-0.18	3.32e-05	2.00e-04	0.0
267	3	5.16e-05	8.00e-05	-0.15	2.81e-05	1.69e-04	0.0
267	8	5.65e-03	1.72e-03	-0.14	2.56e-05	1.54e-04	0.0
267	21	-1.94e-03	-5.34e-03	-0.14	2.56e-05	1.54e-04	0.0
267	24	2.03e-03	5.49e-03	-0.14	2.55e-05	1.54e-04	0.0
267	40	2.09e-03	6.74e-04	-0.14	2.56e-05	1.54e-04	0.0
267	53	-6.77e-04	-1.90e-03	-0.14	2.56e-05	1.54e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

267	56	7.70e-04	2.05e-03	-0.14	2.55e-05	1.54e-04	0.0
267	69	4.69e-05	7.27e-05	-0.14	2.56e-05	1.54e-04	0.0
268	1	4.11e-05	9.49e-05	-0.18	5.31e-06	1.84e-04	0.0
268	3	3.47e-05	8.03e-05	-0.15	4.49e-06	1.56e-04	0.0
268	8	5.58e-03	1.69e-03	-0.14	4.17e-06	1.42e-04	0.0
268	21	-1.98e-03	-5.24e-03	-0.14	4.08e-06	1.42e-04	0.0
268	24	2.05e-03	5.39e-03	-0.14	4.08e-06	1.42e-04	0.0
268	40	2.05e-03	6.63e-04	-0.14	4.12e-06	1.42e-04	0.0
268	53	-7.03e-04	-1.86e-03	-0.14	4.08e-06	1.42e-04	0.0
268	56	7.66e-04	2.01e-03	-0.14	4.08e-06	1.42e-04	0.0
268	69	3.16e-05	7.30e-05	-0.14	4.08e-06	1.42e-04	0.0
269	1	2.04e-05	9.63e-05	-0.17	-1.06e-05	1.72e-04	0.0
269	3	1.73e-05	8.15e-05	-0.15	-9.00e-06	1.46e-04	0.0
269	8	5.53e-03	1.66e-03	-0.13	-8.09e-06	1.33e-04	0.0
269	21	-2.04e-03	-5.16e-03	-0.13	-8.22e-06	1.32e-04	0.0
269	24	2.07e-03	5.31e-03	-0.13	-8.14e-06	1.32e-04	0.0
269	40	2.03e-03	6.54e-04	-0.13	-8.15e-06	1.32e-04	0.0
269	53	-7.35e-04	-1.83e-03	-0.13	-8.20e-06	1.32e-04	0.0
269	56	7.66e-04	1.98e-03	-0.13	-8.17e-06	1.32e-04	0.0
269	69	1.57e-05	7.41e-05	-0.13	-8.18e-06	1.32e-04	0.0
270	1	0.0	9.85e-05	-0.17	-1.90e-05	1.62e-04	0.0
270	3	0.0	8.34e-05	-0.14	-1.61e-05	1.37e-04	0.0
270	5	-5.50e-03	-1.49e-03	-0.13	-1.47e-05	1.24e-04	0.0
270	21	-2.11e-03	-5.09e-03	-0.13	-1.47e-05	1.25e-04	0.0
270	24	2.11e-03	5.24e-03	-0.13	-1.46e-05	1.25e-04	0.0
270	37	-2.01e-03	-4.96e-04	-0.13	-1.47e-05	1.25e-04	0.0
270	53	-7.69e-04	-1.81e-03	-0.13	-1.46e-05	1.25e-04	0.0
270	56	7.68e-04	1.96e-03	-0.13	-1.46e-05	1.25e-04	0.0
270	69	0.0	7.58e-05	-0.13	-1.46e-05	1.25e-04	0.0
271	1	-2.28e-05	1.02e-04	-0.16	-2.30e-05	1.54e-04	0.0
271	3	-1.93e-05	8.65e-05	-0.14	-1.94e-05	1.31e-04	0.0
271	5	-5.52e-03	-1.47e-03	-0.12	-1.77e-05	1.19e-04	0.0
271	21	-2.18e-03	-5.03e-03	-0.13	-1.77e-05	1.19e-04	0.0
271	24	2.15e-03	5.19e-03	-0.12	-1.76e-05	1.19e-04	0.0
271	37	-2.02e-03	-4.87e-04	-0.12	-1.77e-05	1.19e-04	0.0
271	53	-8.08e-04	-1.78e-03	-0.12	-1.77e-05	1.19e-04	0.0
271	56	7.73e-04	1.94e-03	-0.12	-1.76e-05	1.19e-04	0.0
271	69	-1.76e-05	7.86e-05	-0.12	-1.77e-05	1.19e-04	0.0
272	1	-4.80e-05	1.06e-04	-0.16	-2.48e-05	1.49e-04	0.0
272	3	-4.06e-05	9.00e-05	-0.13	-2.10e-05	1.26e-04	0.0
272	5	-5.56e-03	-1.46e-03	-0.12	-1.92e-05	1.15e-04	0.0
272	21	-2.27e-03	-4.99e-03	-0.12	-1.91e-05	1.15e-04	0.0
272	24	2.19e-03	5.15e-03	-0.12	-1.91e-05	1.15e-04	0.0
272	37	-2.05e-03	-4.79e-04	-0.12	-1.91e-05	1.15e-04	0.0
272	53	-8.50e-04	-1.77e-03	-0.12	-1.91e-05	1.15e-04	0.0
272	56	7.76e-04	1.93e-03	-0.12	-1.91e-05	1.15e-04	0.0
272	69	-3.69e-05	8.18e-05	-0.12	-1.91e-05	1.15e-04	0.0
273	1	-7.38e-05	1.11e-04	-0.15	-2.59e-05	1.50e-04	0.0
273	3	-6.24e-05	9.35e-05	-0.13	-2.19e-05	1.27e-04	0.0
273	5	-5.60e-03	-1.44e-03	-0.12	-2.00e-05	1.15e-04	0.0
273	21	-2.36e-03	-4.96e-03	-0.12	-2.00e-05	1.15e-04	0.0
273	24	2.24e-03	5.13e-03	-0.12	-1.99e-05	1.15e-04	0.0
273	37	-2.08e-03	-4.72e-04	-0.12	-2.00e-05	1.15e-04	0.0
273	53	-8.95e-04	-1.75e-03	-0.12	-2.00e-05	1.15e-04	0.0
273	56	7.81e-04	1.92e-03	-0.12	-1.99e-05	1.15e-04	0.0
273	69	-5.68e-05	8.50e-05	-0.12	-1.99e-05	1.15e-04	0.0
274	1	7.68e-05	6.33e-05	-0.21	6.27e-05	2.04e-04	0.0
274	3	6.50e-05	5.36e-05	-0.17	5.30e-05	1.73e-04	0.0
274	8	5.73e-03	1.75e-03	-0.16	4.81e-05	1.58e-04	0.0
274	23	1.51e-03	-5.53e-03	-0.16	4.85e-05	1.57e-04	0.0
274	24	1.96e-03	5.64e-03	-0.16	4.79e-05	1.57e-04	0.0
274	40	2.12e-03	6.69e-04	-0.16	4.82e-05	1.57e-04	0.0
274	55	5.89e-04	-1.99e-03	-0.16	4.83e-05	1.57e-04	0.0
274	56	7.54e-04	2.09e-03	-0.16	4.81e-05	1.57e-04	0.0
274	69	5.91e-05	4.87e-05	-0.16	4.82e-05	1.57e-04	0.0
275	1	5.66e-05	6.05e-05	-0.21	1.44e-05	1.82e-04	0.0
275	3	4.79e-05	5.12e-05	-0.17	1.22e-05	1.54e-04	0.0
275	8	5.63e-03	1.71e-03	-0.16	1.10e-05	1.41e-04	0.0
275	23	1.42e-03	-5.42e-03	-0.16	1.12e-05	1.41e-04	0.0
275	24	1.97e-03	5.53e-03	-0.16	1.09e-05	1.41e-04	0.0
275	40	2.08e-03	6.55e-04	-0.16	1.10e-05	1.41e-04	0.0
275	55	5.45e-04	-1.95e-03	-0.16	1.11e-05	1.40e-04	0.0
275	56	7.46e-04	2.04e-03	-0.16	1.10e-05	1.40e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

275	69	4.35e-05	4.66e-05	-0.16	1.10e-05	1.40e-04	0.0
276	1	3.59e-05	5.86e-05	-0.20	-1.19e-05	1.69e-04	0.0
276	3	3.04e-05	4.96e-05	-0.17	-1.01e-05	1.43e-04	0.0
276	8	5.56e-03	1.69e-03	-0.16	-9.17e-06	1.30e-04	0.0
276	23	1.33e-03	-5.34e-03	-0.16	-9.14e-06	1.30e-04	0.0
276	24	1.99e-03	5.44e-03	-0.16	-9.20e-06	1.30e-04	0.0
276	40	2.04e-03	6.44e-04	-0.16	-9.17e-06	1.30e-04	0.0
276	55	5.02e-04	-1.92e-03	-0.16	-9.16e-06	1.30e-04	0.0
276	56	7.42e-04	2.01e-03	-0.16	-9.18e-06	1.30e-04	0.0
276	69	2.76e-05	4.50e-05	-0.16	-9.17e-06	1.30e-04	0.0
277	1	1.46e-05	5.71e-05	-0.20	-2.49e-05	1.60e-04	0.0
277	3	1.24e-05	4.83e-05	-0.17	-2.11e-05	1.36e-04	0.0
277	8	5.52e-03	1.67e-03	-0.15	-1.91e-05	1.24e-04	0.0
277	23	1.24e-03	-5.27e-03	-0.15	-1.92e-05	1.24e-04	0.0
277	24	2.01e-03	5.37e-03	-0.15	-1.91e-05	1.23e-04	0.0
277	40	2.02e-03	6.37e-04	-0.15	-1.91e-05	1.24e-04	0.0
277	55	4.60e-04	-1.89e-03	-0.15	-1.92e-05	1.23e-04	0.0
277	56	7.41e-04	1.99e-03	-0.15	-1.91e-05	1.23e-04	0.0
277	69	1.13e-05	4.39e-05	-0.15	-1.91e-05	1.23e-04	0.0
278	1	-6.30e-06	5.64e-05	-0.19	-3.03e-05	1.55e-04	0.0
278	3	-5.33e-06	4.77e-05	-0.16	-2.56e-05	1.31e-04	0.0
278	5	-5.50e-03	-1.57e-03	-0.15	-2.33e-05	1.19e-04	0.0
278	23	1.16e-03	-5.22e-03	-0.15	-2.33e-05	1.20e-04	0.0
278	24	2.05e-03	5.32e-03	-0.15	-2.33e-05	1.19e-04	0.0
278	37	-2.01e-03	-5.45e-04	-0.15	-2.33e-05	1.19e-04	0.0
278	55	4.19e-04	-1.87e-03	-0.15	-2.33e-05	1.19e-04	0.0
278	56	7.44e-04	1.97e-03	-0.15	-2.33e-05	1.19e-04	0.0
278	69	-4.85e-06	4.34e-05	-0.15	-2.33e-05	1.19e-04	0.0
279	1	-1.96e-05	5.72e-05	-0.19	-3.18e-05	1.51e-04	0.0
279	3	-1.66e-05	4.84e-05	-0.16	-2.69e-05	1.28e-04	0.0
279	5	-5.51e-03	-1.56e-03	-0.15	-2.44e-05	1.16e-04	0.0
279	23	1.08e-03	-5.18e-03	-0.15	-2.44e-05	1.17e-04	0.0
279	24	2.10e-03	5.29e-03	-0.15	-2.45e-05	1.16e-04	0.0
279	37	-2.02e-03	-5.42e-04	-0.15	-2.44e-05	1.16e-04	0.0
279	55	3.85e-04	-1.86e-03	-0.15	-2.44e-05	1.16e-04	0.0
279	56	7.55e-04	1.96e-03	-0.15	-2.44e-05	1.16e-04	0.0
279	69	-1.51e-05	4.40e-05	-0.15	-2.44e-05	1.16e-04	0.0
280	1	-5.62e-05	5.49e-05	-0.19	-3.20e-05	1.50e-04	0.0
280	3	-4.76e-05	4.64e-05	-0.16	-2.71e-05	1.27e-04	0.0
280	5	-5.56e-03	-1.56e-03	-0.14	-2.46e-05	1.15e-04	0.0
280	23	9.87e-04	-5.15e-03	-0.14	-2.46e-05	1.16e-04	0.0
280	24	2.13e-03	5.26e-03	-0.14	-2.46e-05	1.15e-04	0.0
280	37	-2.05e-03	-5.42e-04	-0.14	-2.46e-05	1.15e-04	0.0
280	55	3.32e-04	-1.85e-03	-0.14	-2.46e-05	1.15e-04	0.0
280	56	7.50e-04	1.95e-03	-0.14	-2.46e-05	1.15e-04	0.0
280	69	-4.32e-05	4.22e-05	-0.14	-2.46e-05	1.15e-04	0.0
281	1	-8.54e-05	5.40e-05	-0.18	-3.26e-05	1.50e-04	0.0
281	3	-7.23e-05	4.57e-05	-0.16	-2.75e-05	1.27e-04	0.0
281	5	-5.61e-03	-1.56e-03	-0.14	-2.50e-05	1.15e-04	0.0
281	23	8.98e-04	-5.14e-03	-0.14	-2.50e-05	1.16e-04	0.0
281	24	2.18e-03	5.25e-03	-0.14	-2.50e-05	1.15e-04	0.0
281	37	-2.09e-03	-5.42e-04	-0.14	-2.50e-05	1.15e-04	0.0
281	55	2.86e-04	-1.85e-03	-0.14	-2.50e-05	1.15e-04	0.0
281	56	7.53e-04	1.94e-03	-0.14	-2.50e-05	1.15e-04	0.0
281	69	-6.57e-05	4.15e-05	-0.14	-2.50e-05	1.15e-04	0.0
282	1	7.51e-05	3.17e-05	-0.22	4.84e-05	1.74e-04	0.0
282	3	6.35e-05	2.69e-05	-0.19	4.10e-05	1.47e-04	0.0
282	8	5.71e-03	1.73e-03	-0.17	3.71e-05	1.34e-04	0.0
282	23	1.63e-03	-5.62e-03	-0.17	3.75e-05	1.34e-04	0.0
282	24	1.86e-03	5.68e-03	-0.17	3.69e-05	1.34e-04	0.0
282	40	2.12e-03	6.47e-04	-0.17	3.72e-05	1.34e-04	0.0
282	55	6.31e-04	-2.03e-03	-0.17	3.74e-05	1.34e-04	0.0
282	56	7.13e-04	2.09e-03	-0.17	3.71e-05	1.34e-04	0.0
282	69	5.77e-05	2.44e-05	-0.17	3.72e-05	1.34e-04	0.0
283	1	5.66e-05	2.59e-05	-0.22	4.14e-06	1.52e-04	0.0
283	3	4.79e-05	2.19e-05	-0.19	3.50e-06	1.29e-04	0.0
283	8	5.62e-03	1.70e-03	-0.17	3.06e-06	1.18e-04	0.0
283	23	1.48e-03	-5.50e-03	-0.17	3.31e-06	1.17e-04	0.0
283	24	1.91e-03	5.56e-03	-0.17	3.01e-06	1.17e-04	0.0
283	40	2.08e-03	6.34e-04	-0.17	3.14e-06	1.17e-04	0.0
283	55	5.68e-04	-1.99e-03	-0.17	3.23e-06	1.17e-04	0.0
283	56	7.24e-04	2.04e-03	-0.17	3.12e-06	1.17e-04	0.0
283	69	4.36e-05	1.99e-05	-0.17	3.19e-06	1.17e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

284	1	3.64e-05	2.10e-05	-0.22	-1.82e-05	1.41e-04	0.0
284	3	3.08e-05	1.78e-05	-0.19	-1.54e-05	1.20e-04	0.0
284	8	5.55e-03	1.68e-03	-0.17	-1.41e-05	1.09e-04	0.0
284	23	1.39e-03	-5.43e-03	-0.17	-1.40e-05	1.09e-04	0.0
284	24	1.93e-03	5.48e-03	-0.17	-1.41e-05	1.09e-04	0.0
284	40	2.04e-03	6.23e-04	-0.17	-1.40e-05	1.09e-04	0.0
284	55	5.26e-04	-1.97e-03	-0.17	-1.40e-05	1.09e-04	0.0
284	56	7.21e-04	2.01e-03	-0.17	-1.40e-05	1.09e-04	0.0
284	69	2.80e-05	1.62e-05	-0.17	-1.40e-05	1.09e-04	0.0
285	1	1.51e-05	1.61e-05	-0.22	-2.78e-05	1.37e-04	0.0
285	3	1.27e-05	1.36e-05	-0.19	-2.35e-05	1.16e-04	0.0
285	8	5.52e-03	1.67e-03	-0.17	-2.15e-05	1.06e-04	0.0
285	23	1.31e-03	-5.38e-03	-0.17	-2.14e-05	1.06e-04	0.0
285	24	1.95e-03	5.42e-03	-0.17	-2.14e-05	1.06e-04	0.0
285	40	2.02e-03	6.17e-04	-0.17	-2.14e-05	1.06e-04	0.0
285	55	4.87e-04	-1.95e-03	-0.17	-2.14e-05	1.06e-04	0.0
285	56	7.19e-04	1.99e-03	-0.17	-2.14e-05	1.06e-04	0.0
285	69	1.16e-05	1.24e-05	-0.17	-2.14e-05	1.05e-04	0.0
286	1	-6.90e-06	1.10e-05	-0.22	-3.10e-05	1.36e-04	0.0
286	3	-5.84e-06	9.30e-06	-0.19	-2.62e-05	1.15e-04	0.0
286	5	-5.51e-03	-1.65e-03	-0.17	-2.38e-05	1.04e-04	0.0
286	23	1.24e-03	-5.35e-03	-0.17	-2.38e-05	1.05e-04	0.0
286	24	1.99e-03	5.39e-03	-0.17	-2.38e-05	1.05e-04	0.0
286	37	-2.01e-03	-5.95e-04	-0.17	-2.38e-05	1.05e-04	0.0
286	55	4.48e-04	-1.94e-03	-0.17	-2.38e-05	1.05e-04	0.0
286	56	7.20e-04	1.97e-03	-0.17	-2.38e-05	1.05e-04	0.0
286	69	-5.31e-06	8.45e-06	-0.17	-2.38e-05	1.05e-04	0.0
287	1	-3.03e-05	5.03e-06	-0.22	-3.13e-05	1.37e-04	0.0
287	3	-2.57e-05	4.26e-06	-0.19	-2.65e-05	1.16e-04	0.0
287	5	-5.53e-03	-1.65e-03	-0.17	-2.40e-05	1.05e-04	0.0
287	23	1.16e-03	-5.33e-03	-0.17	-2.40e-05	1.05e-04	0.0
287	24	2.02e-03	5.37e-03	-0.17	-2.41e-05	1.05e-04	0.0
287	37	-2.03e-03	-6.01e-04	-0.17	-2.40e-05	1.05e-04	0.0
287	55	4.08e-04	-1.94e-03	-0.17	-2.40e-05	1.05e-04	0.0
287	56	7.22e-04	1.96e-03	-0.17	-2.41e-05	1.05e-04	0.0
287	69	-2.33e-05	3.87e-06	-0.17	-2.40e-05	1.05e-04	0.0
288	1	-5.70e-05	-1.26e-06	-0.22	-3.03e-05	1.38e-04	0.0
288	3	-4.83e-05	-1.07e-06	-0.18	-2.56e-05	1.17e-04	0.0
288	5	-5.57e-03	-1.66e-03	-0.17	-2.32e-05	1.06e-04	0.0
288	21	-2.15e-03	-5.36e-03	-0.17	-2.32e-05	1.06e-04	0.0
288	23	1.08e-03	-5.32e-03	-0.17	-2.33e-05	1.06e-04	0.0
288	37	-2.06e-03	-6.07e-04	-0.17	-2.33e-05	1.06e-04	0.0
288	53	-8.11e-04	-1.95e-03	-0.17	-2.33e-05	1.06e-04	0.0
288	55	3.65e-04	-1.94e-03	-0.17	-2.33e-05	1.06e-04	0.0
288	69	-4.39e-05	0.0	-0.17	-2.33e-05	1.06e-04	0.0
289	1	-8.46e-05	-6.95e-06	-0.22	-2.91e-05	1.38e-04	0.0
289	3	-7.16e-05	-5.88e-06	-0.18	-2.46e-05	1.17e-04	0.0
289	5	-5.61e-03	-1.67e-03	-0.17	-2.23e-05	1.06e-04	0.0
289	21	-2.23e-03	-5.36e-03	-0.17	-2.24e-05	1.06e-04	0.0
289	23	9.95e-04	-5.32e-03	-0.17	-2.24e-05	1.07e-04	0.0
289	37	-2.09e-03	-6.13e-04	-0.17	-2.24e-05	1.06e-04	0.0
289	53	-8.55e-04	-1.96e-03	-0.17	-2.24e-05	1.06e-04	0.0
289	55	3.21e-04	-1.94e-03	-0.17	-2.24e-05	1.06e-04	0.0
289	69	-6.51e-05	-5.35e-06	-0.17	-2.24e-05	1.06e-04	0.0
290	1	7.49e-05	0.0	-0.24	4.43e-05	1.36e-04	0.0
290	3	6.34e-05	0.0	-0.20	3.75e-05	1.15e-04	0.0
290	8	5.72e-03	1.72e-03	-0.18	3.38e-05	1.05e-04	0.0
290	21	-1.74e-03	-5.65e-03	-0.18	3.45e-05	1.04e-04	0.0
290	23	1.63e-03	-5.63e-03	-0.18	3.44e-05	1.05e-04	0.0
290	40	2.12e-03	6.27e-04	-0.18	3.40e-05	1.05e-04	0.0
290	53	-5.99e-04	-2.06e-03	-0.18	3.42e-05	1.04e-04	0.0
290	55	6.31e-04	-2.05e-03	-0.18	3.42e-05	1.05e-04	0.0
290	69	5.76e-05	0.0	-0.18	3.41e-05	1.05e-04	0.0
291	1	6.11e-05	-7.29e-06	-0.24	6.06e-06	1.14e-04	0.0
291	3	5.17e-05	-6.17e-06	-0.20	5.13e-06	9.63e-05	0.0
291	8	5.61e-03	1.69e-03	-0.18	4.46e-06	8.81e-05	0.0
291	21	-1.77e-03	-5.57e-03	-0.18	4.90e-06	8.73e-05	0.0
291	23	1.54e-03	-5.55e-03	-0.18	4.82e-06	8.76e-05	0.0
291	40	2.08e-03	6.13e-04	-0.18	4.59e-06	8.77e-05	0.0
291	53	-6.15e-04	-2.03e-03	-0.18	4.75e-06	8.74e-05	0.0
291	55	5.92e-04	-2.03e-03	-0.18	4.72e-06	8.76e-05	0.0
291	69	4.70e-05	-5.61e-06	-0.18	4.66e-06	8.75e-05	0.0
292	1	4.22e-05	-1.60e-05	-0.24	-1.12e-05	1.06e-04	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

292	3	3.57e-05	-1.35e-05	-0.20	-9.48e-06	8.96e-05	0.0
292	8	5.56e-03	1.68e-03	-0.18	-8.79e-06	8.19e-05	0.0
292	21	-1.81e-03	-5.52e-03	-0.18	-8.46e-06	8.12e-05	0.0
292	23	1.47e-03	-5.49e-03	-0.19	-8.54e-06	8.15e-05	0.0
292	40	2.05e-03	6.03e-04	-0.18	-8.68e-06	8.16e-05	0.0
292	53	-6.40e-04	-2.02e-03	-0.18	-8.56e-06	8.13e-05	0.0
292	55	5.55e-04	-2.01e-03	-0.18	-8.59e-06	8.14e-05	0.0
292	69	3.24e-05	-1.23e-05	-0.18	-8.62e-06	8.14e-05	0.0
293	1	2.17e-05	-2.52e-05	-0.24	-1.79e-05	1.04e-04	0.0
293	3	1.83e-05	-2.13e-05	-0.20	-1.52e-05	8.84e-05	0.0
293	8	5.53e-03	1.67e-03	-0.19	-1.39e-05	8.08e-05	0.0
293	21	-1.86e-03	-5.49e-03	-0.19	-1.37e-05	8.02e-05	0.0
293	23	1.40e-03	-5.46e-03	-0.19	-1.37e-05	8.04e-05	0.0
293	40	2.03e-03	5.97e-04	-0.19	-1.38e-05	8.05e-05	0.0
293	53	-6.69e-04	-2.01e-03	-0.19	-1.37e-05	8.03e-05	0.0
293	55	5.20e-04	-2.00e-03	-0.19	-1.38e-05	8.04e-05	0.0
293	69	1.67e-05	-1.93e-05	-0.19	-1.38e-05	8.03e-05	0.0
294	1	0.0	-3.48e-05	-0.24	-1.97e-05	1.06e-04	0.0
294	3	0.0	-2.94e-05	-0.21	-1.67e-05	8.97e-05	0.0
294	5	-5.51e-03	-1.73e-03	-0.19	-1.50e-05	8.12e-05	0.0
294	21	-1.92e-03	-5.48e-03	-0.19	-1.51e-05	8.14e-05	0.0
294	23	1.33e-03	-5.44e-03	-0.19	-1.51e-05	8.16e-05	0.0
294	37	-2.01e-03	-6.46e-04	-0.19	-1.51e-05	8.14e-05	0.0
294	53	-7.01e-04	-2.02e-03	-0.19	-1.51e-05	8.15e-05	0.0
294	55	4.85e-04	-2.00e-03	-0.19	-1.51e-05	8.16e-05	0.0
294	69	0.0	-2.67e-05	-0.19	-1.52e-05	8.16e-05	0.0
295	1	-2.31e-05	-4.48e-05	-0.24	-1.91e-05	1.09e-04	0.0
295	3	-1.95e-05	-3.79e-05	-0.21	-1.62e-05	9.21e-05	0.0
295	5	-5.54e-03	-1.74e-03	-0.19	-1.46e-05	8.34e-05	0.0
295	21	-1.99e-03	-5.49e-03	-0.19	-1.46e-05	8.37e-05	0.0
295	23	1.26e-03	-5.44e-03	-0.19	-1.47e-05	8.39e-05	0.0
295	37	-2.03e-03	-6.57e-04	-0.19	-1.47e-05	8.36e-05	0.0
295	53	-7.36e-04	-2.02e-03	-0.19	-1.47e-05	8.37e-05	0.0
295	55	4.49e-04	-2.00e-03	-0.19	-1.47e-05	8.38e-05	0.0
295	69	-1.77e-05	-3.45e-05	-0.19	-1.47e-05	8.38e-05	0.0
296	1	-4.74e-05	-5.50e-05	-0.25	-1.72e-05	1.12e-04	0.0
296	3	-4.01e-05	-4.65e-05	-0.21	-1.45e-05	9.48e-05	0.0
296	5	-5.57e-03	-1.76e-03	-0.19	-1.31e-05	8.59e-05	0.0
296	21	-2.05e-03	-5.49e-03	-0.19	-1.31e-05	8.61e-05	0.0
296	23	1.20e-03	-5.44e-03	-0.19	-1.32e-05	8.63e-05	0.0
296	37	-2.05e-03	-6.69e-04	-0.19	-1.32e-05	8.61e-05	0.0
296	53	-7.72e-04	-2.03e-03	-0.19	-1.32e-05	8.62e-05	0.0
296	55	4.13e-04	-2.01e-03	-0.19	-1.32e-05	8.63e-05	0.0
296	69	-3.64e-05	-4.23e-05	-0.19	-1.32e-05	8.62e-05	0.0
297	1	-7.25e-05	-6.52e-05	-0.25	-1.44e-05	1.13e-04	0.0
297	3	-6.13e-05	-5.51e-05	-0.21	-1.22e-05	9.60e-05	0.0
297	5	-5.60e-03	-1.78e-03	-0.19	-1.10e-05	8.69e-05	0.0
297	21	-2.12e-03	-5.51e-03	-0.19	-1.10e-05	8.72e-05	0.0
297	23	1.13e-03	-5.45e-03	-0.19	-1.10e-05	8.74e-05	0.0
297	37	-2.08e-03	-6.80e-04	-0.19	-1.10e-05	8.71e-05	0.0
297	53	-8.09e-04	-2.04e-03	-0.19	-1.10e-05	8.72e-05	0.0
297	55	3.76e-04	-2.02e-03	-0.19	-1.11e-05	8.73e-05	0.0
297	69	-5.58e-05	-5.01e-05	-0.19	-1.11e-05	8.73e-05	0.0
298	1	8.53e-05	-2.75e-05	-0.24	4.55e-05	9.27e-05	0.0
298	3	7.22e-05	-2.32e-05	-0.21	3.85e-05	7.84e-05	0.0
298	8	5.69e-03	1.70e-03	-0.19	3.47e-05	7.18e-05	0.0
298	21	-1.72e-03	-5.67e-03	-0.19	3.54e-05	7.10e-05	0.0
298	23	1.64e-03	-5.65e-03	-0.19	3.53e-05	7.13e-05	0.0
298	40	2.11e-03	6.07e-04	-0.19	3.49e-05	7.15e-05	0.0
298	53	-5.84e-04	-2.08e-03	-0.19	3.52e-05	7.12e-05	0.0
298	55	6.38e-04	-2.07e-03	-0.19	3.51e-05	7.13e-05	0.0
298	69	6.56e-05	-2.11e-05	-0.19	3.50e-05	7.13e-05	0.0
299	1	6.99e-05	-3.86e-05	-0.25	1.91e-05	7.45e-05	0.0
299	3	5.92e-05	-3.27e-05	-0.21	1.62e-05	6.30e-05	0.0
299	8	5.61e-03	1.69e-03	-0.19	1.44e-05	5.77e-05	0.0
299	21	-1.72e-03	-5.59e-03	-0.19	1.50e-05	5.70e-05	0.0
299	23	1.59e-03	-5.56e-03	-0.19	1.49e-05	5.72e-05	0.0
299	40	2.08e-03	5.96e-04	-0.19	1.46e-05	5.74e-05	0.0
299	53	-5.94e-04	-2.06e-03	-0.19	1.48e-05	5.72e-05	0.0
299	55	6.14e-04	-2.05e-03	-0.19	1.48e-05	5.73e-05	0.0
299	69	5.38e-05	-2.97e-05	-0.19	1.47e-05	5.73e-05	0.0
300	1	5.29e-05	-5.13e-05	-0.25	7.62e-06	6.82e-05	0.0
300	3	4.47e-05	-4.34e-05	-0.21	6.44e-06	5.77e-05	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

300	8	5.57e-03	1.68e-03	-0.19	5.63e-06	5.29e-05	0.0
300	21	-1.76e-03	-5.56e-03	-0.19	6.11e-06	5.22e-05	0.0
300	23	1.53e-03	-5.52e-03	-0.19	6.01e-06	5.24e-05	0.0
300	40	2.06e-03	5.88e-04	-0.19	5.78e-06	5.26e-05	0.0
300	53	-6.14e-04	-2.05e-03	-0.19	5.95e-06	5.24e-05	0.0
300	55	5.85e-04	-2.04e-03	-0.19	5.91e-06	5.25e-05	0.0
300	69	4.07e-05	-3.94e-05	-0.19	5.86e-06	5.25e-05	0.0
301	1	3.47e-05	-6.45e-05	-0.25	3.59e-06	6.77e-05	0.0
301	3	2.94e-05	-5.46e-05	-0.21	3.04e-06	5.73e-05	0.0
301	8	5.54e-03	1.68e-03	-0.20	2.57e-06	5.25e-05	0.0
301	21	-1.80e-03	-5.55e-03	-0.20	2.97e-06	5.19e-05	0.0
301	23	1.48e-03	-5.50e-03	-0.20	2.88e-06	5.21e-05	0.0
301	40	2.04e-03	5.82e-04	-0.20	2.69e-06	5.22e-05	0.0
301	53	-6.39e-04	-2.06e-03	-0.20	2.84e-06	5.20e-05	0.0
301	55	5.55e-04	-2.04e-03	-0.20	2.81e-06	5.21e-05	0.0
301	69	2.67e-05	-4.96e-05	-0.20	2.76e-06	5.21e-05	0.0
302	1	1.55e-05	-7.81e-05	-0.26	3.13e-06	6.98e-05	0.0
302	3	1.31e-05	-6.61e-05	-0.22	2.65e-06	5.91e-05	0.0
302	8	5.53e-03	1.69e-03	-0.20	2.24e-06	5.40e-05	0.0
302	21	-1.85e-03	-5.56e-03	-0.20	2.60e-06	5.35e-05	0.0
302	23	1.42e-03	-5.50e-03	-0.20	2.52e-06	5.37e-05	0.0
302	40	2.02e-03	5.77e-04	-0.20	2.35e-06	5.38e-05	0.0
302	53	-6.66e-04	-2.07e-03	-0.20	2.48e-06	5.36e-05	0.0
302	55	5.26e-04	-2.04e-03	-0.20	2.45e-06	5.37e-05	0.0
302	69	1.20e-05	-6.01e-05	-0.20	2.41e-06	5.37e-05	0.0
303	1	-4.63e-06	-9.22e-05	-0.26	4.55e-06	7.32e-05	0.0
303	3	-3.92e-06	-7.80e-05	-0.22	3.85e-06	6.19e-05	0.0
303	5	-5.53e-03	-1.83e-03	-0.20	3.65e-06	5.60e-05	0.0
303	21	-1.90e-03	-5.57e-03	-0.20	3.68e-06	5.61e-05	0.0
303	23	1.37e-03	-5.50e-03	-0.20	3.61e-06	5.63e-05	0.0
303	37	-2.02e-03	-7.13e-04	-0.20	3.56e-06	5.62e-05	0.0
303	53	-6.94e-04	-2.08e-03	-0.20	3.56e-06	5.62e-05	0.0
303	55	4.98e-04	-2.05e-03	-0.20	3.54e-06	5.63e-05	0.0
303	69	-3.56e-06	-7.09e-05	-0.20	3.50e-06	5.63e-05	0.0
304	1	-2.60e-05	-1.06e-04	-0.26	7.20e-06	7.70e-05	0.0
304	3	-2.20e-05	-9.00e-05	-0.22	6.09e-06	6.51e-05	0.0
304	5	-5.56e-03	-1.86e-03	-0.20	5.68e-06	5.89e-05	0.0
304	21	-1.95e-03	-5.59e-03	-0.20	5.71e-06	5.91e-05	0.0
304	23	1.32e-03	-5.51e-03	-0.20	5.65e-06	5.92e-05	0.0
304	37	-2.04e-03	-7.30e-04	-0.20	5.59e-06	5.91e-05	0.0
304	53	-7.23e-04	-2.09e-03	-0.20	5.60e-06	5.92e-05	0.0
304	55	4.69e-04	-2.06e-03	-0.20	5.58e-06	5.92e-05	0.0
304	69	-2.00e-05	-8.18e-05	-0.20	5.54e-06	5.92e-05	0.0
305	1	-4.82e-05	-1.21e-04	-0.27	1.05e-05	7.96e-05	0.0
305	3	-4.08e-05	-1.02e-04	-0.23	8.89e-06	6.73e-05	0.0
305	5	-5.59e-03	-1.89e-03	-0.21	8.22e-06	6.09e-05	0.0
305	21	-2.00e-03	-5.61e-03	-0.21	8.26e-06	6.11e-05	0.0
305	23	1.27e-03	-5.52e-03	-0.21	8.20e-06	6.12e-05	0.0
305	37	-2.06e-03	-7.46e-04	-0.21	8.13e-06	6.11e-05	0.0
305	53	-7.53e-04	-2.11e-03	-0.21	8.15e-06	6.12e-05	0.0
305	55	4.41e-04	-2.07e-03	-0.21	8.13e-06	6.12e-05	0.0
305	69	-3.71e-05	-9.29e-05	-0.21	8.08e-06	6.12e-05	0.0
306	1	9.50e-05	-5.25e-05	-0.25	5.49e-05	5.51e-05	0.0
306	3	8.04e-05	-4.45e-05	-0.21	4.65e-05	4.66e-05	0.0
306	7	5.63e-03	-1.64e-03	-0.19	4.22e-05	4.27e-05	0.0
306	8	5.67e-03	1.70e-03	-0.19	4.19e-05	4.28e-05	0.0
306	21	-1.67e-03	-5.64e-03	-0.19	4.27e-05	4.21e-05	0.0
306	39	2.10e-03	-6.24e-04	-0.19	4.22e-05	4.25e-05	0.0
306	40	2.11e-03	5.95e-04	-0.19	4.21e-05	4.25e-05	0.0
306	53	-5.63e-04	-2.08e-03	-0.19	4.24e-05	4.23e-05	0.0
306	69	7.31e-05	-4.04e-05	-0.19	4.23e-05	4.24e-05	0.0
307	1	8.17e-05	-6.76e-05	-0.25	3.98e-05	4.00e-05	0.0
307	3	6.92e-05	-5.72e-05	-0.21	3.37e-05	3.39e-05	0.0
307	7	5.56e-03	-1.62e-03	-0.19	3.06e-05	3.10e-05	0.0
307	8	5.61e-03	1.69e-03	-0.19	3.04e-05	3.12e-05	0.0
307	21	-1.68e-03	-5.60e-03	-0.19	3.10e-05	3.05e-05	0.0
307	39	2.07e-03	-6.23e-04	-0.19	3.06e-05	3.09e-05	0.0
307	40	2.09e-03	5.85e-04	-0.19	3.06e-05	3.09e-05	0.0
307	53	-5.74e-04	-2.07e-03	-0.19	3.08e-05	3.07e-05	0.0
307	69	6.29e-05	-5.20e-05	-0.19	3.07e-05	3.08e-05	0.0
308	1	6.77e-05	-8.36e-05	-0.25	3.42e-05	3.43e-05	0.0
308	3	5.73e-05	-7.08e-05	-0.22	2.89e-05	2.90e-05	0.0
308	7	5.51e-03	-1.60e-03	-0.20	2.62e-05	2.66e-05	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

308	8	5.58e-03	1.70e-03	-0.20	2.60e-05	2.67e-05	0.0
308	21	-1.71e-03	-5.59e-03	-0.20	2.66e-05	2.62e-05	0.0
308	39	2.04e-03	-6.24e-04	-0.20	2.62e-05	2.65e-05	0.0
308	40	2.07e-03	5.77e-04	-0.20	2.62e-05	2.65e-05	0.0
308	53	-5.90e-04	-2.08e-03	-0.20	2.64e-05	2.63e-05	0.0
308	69	5.21e-05	-6.43e-05	-0.20	2.63e-05	2.64e-05	0.0
309	1	5.32e-05	-1.00e-04	-0.26	3.31e-05	3.32e-05	0.0
309	3	4.50e-05	-8.50e-05	-0.22	2.80e-05	2.81e-05	0.0
309	7	5.47e-03	-1.58e-03	-0.20	2.54e-05	2.58e-05	0.0
309	8	5.56e-03	1.70e-03	-0.20	2.52e-05	2.59e-05	0.0
309	21	-1.74e-03	-5.59e-03	-0.20	2.57e-05	2.54e-05	0.0
309	39	2.02e-03	-6.26e-04	-0.20	2.54e-05	2.56e-05	0.0
309	40	2.05e-03	5.72e-04	-0.20	2.54e-05	2.57e-05	0.0
309	53	-6.08e-04	-2.09e-03	-0.20	2.55e-05	2.55e-05	0.0
309	69	4.09e-05	-7.72e-05	-0.20	2.54e-05	2.56e-05	0.0
310	1	3.85e-05	-1.18e-04	-0.26	3.43e-05	3.44e-05	0.0
310	3	3.26e-05	-9.98e-05	-0.22	2.90e-05	2.91e-05	0.0
310	7	5.45e-03	-1.57e-03	-0.20	2.63e-05	2.67e-05	0.0
310	8	5.55e-03	1.71e-03	-0.20	2.62e-05	2.68e-05	0.0
310	21	-1.77e-03	-5.61e-03	-0.20	2.66e-05	2.63e-05	0.0
310	39	2.01e-03	-6.30e-04	-0.20	2.63e-05	2.66e-05	0.0
310	40	2.04e-03	5.67e-04	-0.20	2.63e-05	2.66e-05	0.0
310	53	-6.28e-04	-2.10e-03	-0.20	2.65e-05	2.64e-05	0.0
310	69	2.96e-05	-9.07e-05	-0.20	2.64e-05	2.65e-05	0.0
311	1	2.46e-05	-1.37e-04	-0.27	3.67e-05	3.69e-05	0.0
311	3	2.08e-05	-1.16e-04	-0.23	3.11e-05	3.12e-05	0.0
311	7	5.43e-03	-1.56e-03	-0.21	2.82e-05	2.86e-05	0.0
311	8	5.54e-03	1.72e-03	-0.21	2.80e-05	2.87e-05	0.0
311	21	-1.81e-03	-5.63e-03	-0.21	2.86e-05	2.82e-05	0.0
311	39	1.99e-03	-6.36e-04	-0.21	2.82e-05	2.82e-05	0.0
311	40	2.03e-03	5.60e-04	-0.20	2.82e-05	2.85e-05	0.0
311	53	-6.47e-04	-2.12e-03	-0.20	2.84e-05	2.83e-05	0.0
311	69	1.89e-05	-1.05e-04	-0.20	2.82e-05	2.84e-05	0.0
312	1	6.44e-06	-1.53e-04	-0.27	4.01e-05	4.03e-05	0.0
312	3	5.45e-06	-1.29e-04	-0.23	3.39e-05	3.41e-05	0.0
312	7	5.41e-03	-1.55e-03	-0.21	3.08e-05	3.12e-05	0.0
312	8	5.54e-03	1.73e-03	-0.21	3.07e-05	3.12e-05	0.0
312	21	-1.84e-03	-5.65e-03	-0.21	3.11e-05	3.08e-05	0.0
312	39	1.98e-03	-6.41e-04	-0.21	3.08e-05	3.10e-05	0.0
312	40	2.02e-03	5.56e-04	-0.21	3.08e-05	3.11e-05	0.0
312	53	-6.69e-04	-2.14e-03	-0.21	3.09e-05	3.09e-05	0.0
312	69	4.95e-06	-1.17e-04	-0.21	3.08e-05	3.10e-05	0.0
313	1	-1.09e-05	-1.70e-04	-0.28	4.32e-05	4.33e-05	0.0
313	3	-9.19e-06	-1.44e-04	-0.23	3.65e-05	3.67e-05	0.0
313	5	-5.56e-03	-2.00e-03	-0.21	3.34e-05	3.31e-05	0.0
313	7	5.40e-03	-1.55e-03	-0.21	3.32e-05	3.35e-05	0.0
313	21	-1.88e-03	-5.68e-03	-0.21	3.35e-05	3.32e-05	0.0
313	37	-2.03e-03	-8.12e-04	-0.21	3.33e-05	3.32e-05	0.0
313	39	1.96e-03	-6.47e-04	-0.21	3.32e-05	3.34e-05	0.0
313	53	-6.91e-04	-2.15e-03	-0.21	3.33e-05	3.33e-05	0.0
313	69	-8.36e-06	-1.31e-04	-0.21	3.32e-05	3.33e-05	0.0
314	1	1.18e-04	-6.32e-05	-0.24	9.25e-05	4.57e-05	0.0
314	3	9.94e-05	-5.35e-05	-0.21	7.83e-05	3.87e-05	0.0
314	7	5.72e-03	-1.62e-03	-0.19	7.11e-05	3.55e-05	0.0
314	8	5.74e-03	1.73e-03	-0.19	7.08e-05	3.56e-05	0.0
314	21	-1.63e-03	-5.67e-03	-0.19	7.17e-05	3.49e-05	0.0
314	39	2.14e-03	-6.22e-04	-0.19	7.12e-05	3.53e-05	0.0
314	40	2.15e-03	6.01e-04	-0.19	7.10e-05	3.53e-05	0.0
314	53	-5.38e-04	-2.10e-03	-0.19	7.14e-05	3.50e-05	0.0
314	69	9.04e-05	-4.86e-05	-0.19	7.12e-05	3.51e-05	0.0
315	1	1.08e-04	-8.11e-05	-0.25	7.43e-05	1.93e-05	0.0
315	3	9.10e-05	-6.86e-05	-0.21	6.29e-05	1.63e-05	0.0
315	7	5.61e-03	-1.60e-03	-0.19	5.71e-05	1.50e-05	0.0
315	8	5.64e-03	1.71e-03	-0.19	5.69e-05	1.51e-05	0.0
315	21	-1.63e-03	-5.62e-03	-0.19	5.76e-05	1.46e-05	0.0
315	39	2.10e-03	-6.23e-04	-0.19	5.71e-05	1.49e-05	0.0
315	40	2.11e-03	5.85e-04	-0.19	5.70e-05	1.49e-05	0.0
315	53	-5.43e-04	-2.09e-03	-0.19	5.73e-05	1.47e-05	0.0
315	69	8.27e-05	-6.23e-05	-0.19	5.71e-05	1.48e-05	0.0
316	1	9.61e-05	-1.01e-04	-0.25	6.81e-05	7.78e-06	0.0
316	3	8.13e-05	-8.54e-05	-0.21	5.76e-05	6.58e-06	0.0
316	7	5.55e-03	-1.57e-03	-0.19	5.23e-05	6.13e-06	0.0
316	8	5.60e-03	1.72e-03	-0.19	5.21e-05	6.23e-06	0.0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

316	21	-1.65e-03	-5.61e-03	-0.19	5.28e-05	5.76e-06	0.0
316	39	2.07e-03	-6.22e-04	-0.19	5.23e-05	6.04e-06	0.0
316	40	2.09e-03	5.77e-04	-0.19	5.23e-05	6.08e-06	0.0
316	53	-5.53e-04	-2.09e-03	-0.19	5.25e-05	5.90e-06	0.0
316	69	7.39e-05	-7.77e-05	-0.19	5.23e-05	5.99e-06	0.0
317	1	8.41e-05	-1.22e-04	-0.25	6.75e-05	3.76e-06	0.0
317	3	7.12e-05	-1.03e-04	-0.21	5.72e-05	3.18e-06	0.0
317	7	5.52e-03	-1.55e-03	-0.20	5.19e-05	3.01e-06	0.0
317	8	5.57e-03	1.73e-03	-0.20	5.17e-05	3.10e-06	0.0
317	21	-1.67e-03	-5.61e-03	-0.20	5.23e-05	2.69e-06	0.0
317	39	2.05e-03	-6.23e-04	-0.20	5.20e-05	2.93e-06	0.0
317	40	2.07e-03	5.72e-04	-0.20	5.19e-05	2.97e-06	0.0
317	53	-5.67e-04	-2.11e-03	-0.20	5.21e-05	2.82e-06	0.0
317	69	6.47e-05	-9.38e-05	-0.20	5.20e-05	2.89e-06	0.0
318	1	7.17e-05	-1.43e-04	-0.26	6.96e-05	3.29e-06	0.0
318	3	6.07e-05	-1.21e-04	-0.22	5.89e-05	2.79e-06	0.0
318	7	5.49e-03	-1.52e-03	-0.20	5.36e-05	2.64e-06	0.0
318	8	5.55e-03	1.75e-03	-0.20	5.34e-05	2.72e-06	0.0
318	21	-1.69e-03	-5.63e-03	-0.20	5.39e-05	2.36e-06	0.0
318	39	2.04e-03	-6.25e-04	-0.20	5.36e-05	2.57e-06	0.0
318	40	2.06e-03	5.67e-04	-0.20	5.35e-05	2.60e-06	0.0
318	53	-5.82e-04	-2.12e-03	-0.20	5.37e-05	2.47e-06	0.0
318	69	5.52e-05	-1.10e-04	-0.20	5.36e-05	2.53e-06	0.0
319	1	5.91e-05	-1.65e-04	-0.26	7.30e-05	4.71e-06	0.0
319	3	5.00e-05	-1.39e-04	-0.22	6.18e-05	3.99e-06	0.0
319	7	5.47e-03	-1.50e-03	-0.20	5.62e-05	3.74e-06	0.0
319	8	5.55e-03	1.77e-03	-0.20	5.60e-05	3.80e-06	0.0
319	21	-1.72e-03	-5.65e-03	-0.20	5.65e-05	3.47e-06	0.0
319	39	2.02e-03	-6.29e-04	-0.20	5.62e-05	3.67e-06	0.0
319	40	2.05e-03	5.63e-04	-0.20	5.61e-05	3.69e-06	0.0
319	53	-5.97e-04	-2.14e-03	-0.20	5.63e-05	3.57e-06	0.0
319	69	4.55e-05	-1.27e-04	-0.20	5.61e-05	3.62e-06	0.0
320	1	4.60e-05	-1.86e-04	-0.26	7.68e-05	7.36e-06	0.0
320	3	3.89e-05	-1.57e-04	-0.22	6.50e-05	6.23e-06	0.0
320	7	5.46e-03	-1.49e-03	-0.20	5.91e-05	5.77e-06	0.0
320	8	5.54e-03	1.78e-03	-0.20	5.89e-05	5.83e-06	0.0
320	21	-1.74e-03	-5.68e-03	-0.20	5.94e-05	5.52e-06	0.0
320	39	2.01e-03	-6.33e-04	-0.20	5.91e-05	5.70e-06	0.0
320	40	2.04e-03	5.60e-04	-0.20	5.90e-05	5.72e-06	0.0
320	53	-6.13e-04	-2.16e-03	-0.20	5.92e-05	5.61e-06	0.0
320	69	3.54e-05	-1.43e-04	-0.20	5.91e-05	5.66e-06	0.0
321	1	3.28e-05	-2.07e-04	-0.27	7.94e-05	1.07e-05	0.0
321	3	2.77e-05	-1.75e-04	-0.23	6.72e-05	9.03e-06	0.0
321	7	5.45e-03	-1.47e-03	-0.21	6.11e-05	8.33e-06	0.0
321	8	5.55e-03	1.80e-03	-0.21	6.09e-05	8.38e-06	0.0
321	21	-1.77e-03	-5.71e-03	-0.21	6.14e-05	8.07e-06	0.0
321	39	2.00e-03	-6.38e-04	-0.21	6.11e-05	8.25e-06	0.0
321	40	2.04e-03	5.56e-04	-0.21	6.10e-05	8.27e-06	0.0
321	53	-6.29e-04	-2.18e-03	-0.21	6.12e-05	8.16e-06	0.0
321	69	2.52e-05	-1.59e-04	-0.21	6.11e-05	8.21e-06	0.0
322	1	1.44e-04	-7.35e-05	-0.24	1.36e-04	4.45e-05	0.0
322	3	1.22e-04	-6.22e-05	-0.20	1.15e-04	3.76e-05	0.0
322	7	5.74e-03	-1.63e-03	-0.18	1.04e-04	3.45e-05	0.0
322	8	5.76e-03	1.75e-03	-0.18	1.04e-04	3.46e-05	0.0
322	21	-1.61e-03	-5.72e-03	-0.18	1.05e-04	3.40e-05	0.0
322	39	2.16e-03	-6.30e-04	-0.18	1.04e-04	3.43e-05	0.0
322	40	2.17e-03	6.01e-04	-0.18	1.04e-04	3.43e-05	0.0
322	53	-5.16e-04	-2.12e-03	-0.18	1.05e-04	3.41e-05	0.0
322	69	1.11e-04	-5.65e-05	-0.18	1.04e-04	3.42e-05	0.0
323	1	1.37e-04	-9.14e-05	-0.24	1.14e-04	6.23e-06	0.0
323	3	1.16e-04	-7.73e-05	-0.20	9.62e-05	5.27e-06	0.0
323	7	5.65e-03	-1.57e-03	-0.18	8.75e-05	4.94e-06	0.0
323	8	5.67e-03	1.75e-03	-0.18	8.71e-05	5.03e-06	0.0
323	21	-1.59e-03	-5.64e-03	-0.18	8.80e-05	4.58e-06	0.0
323	39	2.13e-03	-6.16e-04	-0.18	8.74e-05	4.84e-06	0.0
323	40	2.13e-03	5.92e-04	-0.18	8.73e-05	4.88e-06	0.0
323	53	-5.13e-04	-2.10e-03	-0.18	8.76e-05	4.71e-06	0.0
323	69	1.05e-04	-7.03e-05	-0.18	8.74e-05	4.79e-06	0.0
324	1	1.28e-04	-1.14e-04	-0.24	1.06e-04	-1.10e-05	0.0
324	3	1.08e-04	-9.64e-05	-0.20	8.94e-05	-9.35e-06	0.0
324	7	5.58e-03	-1.52e-03	-0.19	8.13e-05	-8.42e-06	0.0
324	8	5.60e-03	1.76e-03	-0.18	8.11e-05	-8.33e-06	0.0
324	21	-1.59e-03	-5.61e-03	-0.18	8.18e-05	-8.67e-06	0.0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

324	39	2.10e-03	-6.11e-04	-0.18	8.13e-05	-8.47e-06	0.0
324	40	2.11e-03	5.84e-04	-0.18	8.12e-05	-8.44e-06	0.0
324	53	-5.17e-04	-2.10e-03	-0.18	8.15e-05	-8.56e-06	0.0
324	69	9.85e-05	-8.76e-05	-0.18	8.13e-05	-8.50e-06	0.0
325	1	1.19e-04	-1.38e-04	-0.24	1.04e-04	-1.78e-05	0.0
325	3	1.01e-04	-1.17e-04	-0.20	8.82e-05	-1.50e-05	0.0
325	7	5.53e-03	-1.49e-03	-0.19	8.03e-05	-1.36e-05	0.0
325	8	5.56e-03	1.77e-03	-0.19	8.00e-05	-1.36e-05	0.0
325	21	-1.60e-03	-5.62e-03	-0.19	8.06e-05	-1.38e-05	0.0
325	39	2.07e-03	-6.10e-04	-0.19	8.02e-05	-1.37e-05	0.0
325	40	2.09e-03	5.79e-04	-0.19	8.02e-05	-1.36e-05	0.0
325	53	-5.25e-04	-2.12e-03	-0.19	8.04e-05	-1.37e-05	0.0
325	69	9.17e-05	-1.06e-04	-0.19	8.02e-05	-1.37e-05	0.0
326	1	1.10e-04	-1.63e-04	-0.24	1.06e-04	-1.95e-05	0.0
326	3	9.33e-05	-1.38e-04	-0.21	8.96e-05	-1.65e-05	0.0
326	7	5.50e-03	-1.46e-03	-0.19	8.15e-05	-1.50e-05	0.0
326	8	5.54e-03	1.80e-03	-0.19	8.13e-05	-1.49e-05	0.0
326	21	-1.61e-03	-5.64e-03	-0.19	8.18e-05	-1.52e-05	0.0
326	39	2.06e-03	-6.11e-04	-0.19	8.15e-05	-1.50e-05	0.0
326	40	2.07e-03	5.76e-04	-0.19	8.14e-05	-1.50e-05	0.0
326	53	-5.35e-04	-2.14e-03	-0.19	8.16e-05	-1.51e-05	0.0
326	69	8.48e-05	-1.25e-04	-0.19	8.14e-05	-1.50e-05	0.0
327	1	1.01e-04	-1.87e-04	-0.24	1.09e-04	-1.90e-05	0.0
327	3	8.58e-05	-1.58e-04	-0.21	9.20e-05	-1.61e-05	0.0
327	7	5.48e-03	-1.43e-03	-0.19	8.37e-05	-1.46e-05	0.0
327	8	5.53e-03	1.82e-03	-0.19	8.35e-05	-1.45e-05	0.0
327	21	-1.63e-03	-5.67e-03	-0.19	8.40e-05	-1.47e-05	0.0
327	39	2.05e-03	-6.12e-04	-0.19	8.37e-05	-1.46e-05	0.0
327	40	2.06e-03	5.74e-04	-0.19	8.36e-05	-1.46e-05	0.0
327	53	-5.45e-04	-2.16e-03	-0.19	8.38e-05	-1.46e-05	0.0
327	69	7.80e-05	-1.44e-04	-0.19	8.37e-05	-1.46e-05	0.0
328	1	9.22e-05	-2.12e-04	-0.25	1.12e-04	-1.70e-05	0.0
328	3	7.81e-05	-1.79e-04	-0.21	9.47e-05	-1.44e-05	0.0
328	7	5.47e-03	-1.40e-03	-0.19	8.62e-05	-1.30e-05	0.0
328	8	5.52e-03	1.85e-03	-0.19	8.60e-05	-1.30e-05	0.0
328	21	-1.65e-03	-5.70e-03	-0.19	8.64e-05	-1.32e-05	0.0
328	39	2.04e-03	-6.13e-04	-0.19	8.61e-05	-1.31e-05	0.0
328	40	2.06e-03	5.72e-04	-0.19	8.61e-05	-1.31e-05	0.0
328	53	-5.56e-04	-2.18e-03	-0.19	8.62e-05	-1.31e-05	0.0
328	69	7.10e-05	-1.63e-04	-0.19	8.61e-05	-1.31e-05	0.0
329	1	8.28e-05	-2.36e-04	-0.25	1.13e-04	-1.42e-05	0.0
329	3	7.01e-05	-2.00e-04	-0.21	9.58e-05	-1.20e-05	0.0
329	7	5.46e-03	-1.37e-03	-0.19	8.72e-05	-1.09e-05	0.0
329	8	5.52e-03	1.88e-03	-0.19	8.70e-05	-1.09e-05	0.0
329	21	-1.66e-03	-5.73e-03	-0.19	8.75e-05	-1.11e-05	0.0
329	39	2.03e-03	-6.15e-04	-0.19	8.72e-05	-1.09e-05	0.0
329	40	2.05e-03	5.71e-04	-0.19	8.71e-05	-1.09e-05	0.0
329	53	-5.66e-04	-2.21e-03	-0.19	8.73e-05	-1.10e-05	0.0
329	69	6.37e-05	-1.82e-04	-0.19	8.71e-05	-1.10e-05	0.0
330	1	1.75e-04	-7.43e-05	-0.22	1.73e-04	4.86e-05	0.0
330	3	1.48e-04	-6.29e-05	-0.19	1.47e-04	4.11e-05	0.0
330	7	5.78e-03	-1.63e-03	-0.17	1.34e-04	3.77e-05	0.0
330	8	5.79e-03	1.74e-03	-0.17	1.33e-04	3.77e-05	0.0
330	21	-1.57e-03	-5.71e-03	-0.17	1.34e-04	3.72e-05	0.0
330	39	2.19e-03	-6.31e-04	-0.17	1.34e-04	3.75e-05	0.0
330	40	2.20e-03	5.98e-04	-0.17	1.33e-04	3.75e-05	0.0
330	53	-4.88e-04	-2.12e-03	-0.17	1.34e-04	3.73e-05	0.0
330	69	1.35e-04	-5.72e-05	-0.17	1.33e-04	3.74e-05	0.0
331	1	1.69e-04	-9.72e-05	-0.22	1.52e-04	4.30e-06	0.0
331	3	1.43e-04	-8.23e-05	-0.19	1.29e-04	3.64e-06	0.0
331	7	5.65e-03	-1.52e-03	-0.17	1.17e-04	3.43e-06	0.0
331	8	5.67e-03	1.79e-03	-0.17	1.17e-04	3.48e-06	0.0
331	21	-1.55e-03	-5.65e-03	-0.17	1.17e-04	3.19e-06	0.0
331	39	2.14e-03	-6.00e-04	-0.17	1.17e-04	3.35e-06	0.0
331	40	2.15e-03	6.06e-04	-0.17	1.17e-04	3.37e-06	0.0
331	53	-4.84e-04	-2.11e-03	-0.17	1.17e-04	3.26e-06	0.0
331	69	1.30e-04	-7.48e-05	-0.17	1.17e-04	3.31e-06	0.0
332	1	1.63e-04	-1.22e-04	-0.22	1.41e-04	-1.80e-05	0.0
332	3	1.38e-04	-1.03e-04	-0.19	1.20e-04	-1.53e-05	0.0
332	7	5.57e-03	-1.46e-03	-0.17	1.09e-04	-1.38e-05	0.0
332	8	5.59e-03	1.81e-03	-0.17	1.08e-04	-1.38e-05	0.0
332	21	-1.54e-03	-5.62e-03	-0.17	1.09e-04	-1.40e-05	0.0
332	39	2.11e-03	-5.92e-04	-0.17	1.09e-04	-1.39e-05	0.0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

332	40	2.12e-03	5.99e-04	-0.17	1.09e-04	-1.38e-05	0.0
332	53	-4.82e-04	-2.11e-03	-0.17	1.09e-04	-1.39e-05	0.0
332	69	1.26e-04	-9.36e-05	-0.17	1.09e-04	-1.39e-05	0.0
333	1	1.58e-04	-1.48e-04	-0.22	1.37e-04	-2.77e-05	0.0
333	3	1.33e-04	-1.25e-04	-0.19	1.16e-04	-2.34e-05	0.0
333	7	5.51e-03	-1.42e-03	-0.17	1.06e-04	-2.13e-05	0.0
333	8	5.53e-03	1.83e-03	-0.17	1.05e-04	-2.12e-05	0.0
333	21	-1.54e-03	-5.62e-03	-0.17	1.06e-04	-2.14e-05	0.0
333	39	2.09e-03	-5.90e-04	-0.17	1.05e-04	-2.13e-05	0.0
333	40	2.09e-03	5.94e-04	-0.17	1.05e-04	-2.13e-05	0.0
333	53	-4.83e-04	-2.12e-03	-0.17	1.06e-04	-2.13e-05	0.0
333	69	1.21e-04	-1.14e-04	-0.17	1.05e-04	-2.13e-05	0.0
334	1	1.52e-04	-1.75e-04	-0.22	1.36e-04	-2.13e-05	0.0
334	3	1.29e-04	-1.48e-04	-0.19	1.15e-04	-2.61e-05	0.0
334	7	5.47e-03	-1.38e-03	-0.17	1.05e-04	-2.37e-05	0.0
334	8	5.50e-03	1.85e-03	-0.17	1.05e-04	-2.37e-05	0.0
334	21	-1.54e-03	-5.64e-03	-0.17	1.05e-04	-2.38e-05	0.0
334	39	2.07e-03	-5.89e-04	-0.17	1.05e-04	-2.37e-05	0.0
334	40	2.08e-03	5.91e-04	-0.17	1.05e-04	-2.37e-05	0.0
334	53	-4.87e-04	-2.14e-03	-0.17	1.05e-04	-2.37e-05	0.0
334	69	1.17e-04	-1.35e-04	-0.17	1.05e-04	-2.37e-05	0.0
335	1	1.47e-04	-2.03e-04	-0.22	1.37e-04	-3.11e-05	0.0
335	3	1.25e-04	-1.72e-04	-0.19	1.16e-04	-2.63e-05	0.0
335	7	5.44e-03	-1.34e-03	-0.17	1.05e-04	-2.39e-05	0.0
335	8	5.48e-03	1.89e-03	-0.17	1.05e-04	-2.39e-05	0.0
335	21	-1.55e-03	-5.67e-03	-0.17	1.06e-04	-2.39e-05	0.0
335	39	2.06e-03	-5.88e-04	-0.17	1.05e-04	-2.39e-05	0.0
335	40	2.07e-03	5.89e-04	-0.17	1.05e-04	-2.39e-05	0.0
335	53	-4.91e-04	-2.17e-03	-0.17	1.05e-04	-2.40e-05	0.0
335	69	1.13e-04	-1.56e-04	-0.17	1.05e-04	-2.39e-05	0.0
336	1	1.43e-04	-2.28e-04	-0.22	1.38e-04	-3.01e-05	0.0
336	3	1.21e-04	-1.93e-04	-0.18	1.17e-04	-2.55e-05	0.0
336	7	5.43e-03	-1.30e-03	-0.17	1.06e-04	-2.32e-05	0.0
336	8	5.46e-03	1.93e-03	-0.17	1.06e-04	-2.31e-05	0.0
336	21	-1.55e-03	-5.70e-03	-0.17	1.06e-04	-2.32e-05	0.0
336	39	2.05e-03	-5.86e-04	-0.17	1.06e-04	-2.32e-05	0.0
336	40	2.06e-03	5.91e-04	-0.17	1.06e-04	-2.32e-05	0.0
336	53	-4.96e-04	-2.19e-03	-0.17	1.06e-04	-2.32e-05	0.0
336	69	1.10e-04	-1.76e-04	-0.17	1.06e-04	-2.32e-05	0.0
337	1	1.38e-04	-2.54e-04	-0.22	1.38e-04	-2.90e-05	0.0
337	3	1.17e-04	-2.15e-04	-0.18	1.17e-04	-2.45e-05	0.0
337	7	5.42e-03	-1.26e-03	-0.17	1.06e-04	-2.23e-05	0.0
337	8	5.46e-03	1.97e-03	-0.17	1.06e-04	-2.22e-05	0.0
337	21	-1.56e-03	-5.74e-03	-0.17	1.07e-04	-2.23e-05	0.0
337	39	2.04e-03	-5.83e-04	-0.17	1.06e-04	-2.23e-05	0.0
337	40	2.06e-03	5.93e-04	-0.17	1.06e-04	-2.23e-05	0.0
337	53	-5.01e-04	-2.22e-03	-0.17	1.06e-04	-2.23e-05	0.0
337	69	1.06e-04	-1.96e-04	-0.17	1.06e-04	-2.23e-05	0.0
338	1	7.03e-03	-6.75e-03	-0.13	3.41e-04	3.41e-04	0.0
338	3	5.95e-03	-5.71e-03	-0.11	2.88e-04	2.89e-04	0.0
338	8	0.01	-3.44e-03	-0.10	2.62e-04	2.64e-04	0.0
338	21	3.65e-03	-0.01	-0.10	2.64e-04	2.62e-04	-1.27e-06
338	23	7.12e-03	-0.01	-0.10	2.64e-04	2.63e-04	0.0
338	40	7.52e-03	-4.55e-03	-0.10	2.62e-04	2.63e-04	0.0
338	53	4.77e-03	-7.30e-03	-0.10	2.63e-04	2.62e-04	0.0
338	55	6.03e-03	-7.29e-03	-0.10	2.63e-04	2.62e-04	0.0
338	69	5.41e-03	-5.19e-03	-0.10	2.62e-04	2.62e-04	0.0

Nodo	Traslazione X	Traslazione Y	Traslazione Z	Rotazione X	Rotazione Y	Rotazione Z
	-5.71e-03	-0.01	-0.28	-3.26e-05	-3.24e-05	-1.40e-06
	0.01	5.82e-03	-3.02e-03	3.41e-04	3.41e-04	1.34e-06

Nodo	Cmb	Azione X daN	Azione Y daN	Azione Z daN	Azione RX daN cm	Azione RY daN cm	Azione RZ daN cm
92	1	204.13	921.02	-3028.18	2.367e+05	-5.098e+04	0.0
92	2	157.02	708.48	-2329.37	1.820e+05	-3.921e+04	0.0
92	3	172.72	779.32	-2562.30	2.002e+05	-4.314e+04	0.0
92	4	141.32	637.63	-2096.43	1.638e+05	-3.529e+04	0.0
92	6	-93.15	759.74	-2324.14	1.884e+05	-7122.02	0.0
92	7	407.20	657.21	-2334.60	1.756e+05	-7.131e+04	0.0
92	8	408.27	809.49	-2334.25	1.950e+05	-7.145e+04	0.0
92	24	234.02	969.75	-2330.31	2.153e+05	-4.910e+04	0.0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

92	38	65.82	727.17	-2327.46	1.844e+05	-2.751e+04	0.0
92	39	248.22	689.79	-2331.27	1.797e+05	-5.091e+04	0.0
92	40	248.61	745.30	-2331.15	1.868e+05	-5.096e+04	0.0
92	56	185.09	803.72	-2329.71	1.942e+05	-4.282e+04	0.0
92	69	157.02	708.48	-2329.37	1.820e+05	-3.921e+04	0.0
119	1	-176.80	731.43	-1434.11	1.877e+05	4.745e+04	0.0
119	2	-136.00	562.64	-1103.16	1.444e+05	3.650e+04	0.0
119	3	-149.60	618.90	-1213.48	1.589e+05	4.015e+04	0.0
119	4	-122.40	506.38	-992.85	1.300e+05	3.285e+04	0.0
119	5	-357.23	457.90	-1099.30	1.308e+05	6.481e+04	0.0
119	6	-359.71	611.27	-1101.03	1.504e+05	6.506e+04	0.0
119	8	85.23	667.37	-1107.03	1.580e+05	8183.27	0.0
119	24	-73.39	826.67	-1106.94	1.782e+05	2.838e+04	0.0
119	37	-216.65	524.46	-1101.76	1.395e+05	4.682e+04	0.0
119	38	-217.55	580.37	-1102.39	1.466e+05	4.691e+04	0.0
119	40	-55.35	600.82	-1104.57	1.494e+05	2.618e+04	0.0
119	56	-113.17	658.89	-1104.54	1.567e+05	3.354e+04	0.0
119	69	-136.00	562.64	-1103.16	1.444e+05	3.650e+04	0.0
151	1	-347.96	188.63	-456.29	4.791e+04	9.151e+04	0.0
151	2	-267.66	145.10	-350.99	3.685e+04	7.039e+04	0.0
151	3	-294.43	159.61	-386.09	4.054e+04	7.743e+04	0.0
151	4	-240.90	130.59	-315.89	3.317e+04	6.335e+04	0.0
151	6	-479.83	218.41	-352.11	4.624e+04	9.738e+04	0.0
151	21	-308.90	-102.84	-347.14	5007.05	7.560e+04	0.0
151	24	-226.42	393.04	-354.84	6.870e+04	6.518e+04	0.0
151	38	-345.01	171.83	-351.40	4.028e+04	8.023e+04	0.0
151	53	-282.70	54.71	-349.59	2.524e+04	7.229e+04	0.0
151	56	-252.63	235.49	-352.40	4.846e+04	6.849e+04	0.0
151	69	-267.66	145.10	-350.99	3.685e+04	7.039e+04	0.0
183	1	-35.14	61.81	-95.97	1.452e+04	1.113e+04	0.0
183	2	-27.03	47.55	-73.83	1.117e+04	8558.32	0.0
183	3	-29.73	52.30	-81.21	1.229e+04	9414.15	0.0
183	4	-24.33	42.79	-66.44	1.005e+04	7702.49	0.0
183	6	-255.77	138.74	-77.24	2.296e+04	3.784e+04	0.0
183	7	201.71	-43.65	-70.41	-620.86	-2.073e+04	0.0
183	22	-118.30	276.21	-77.24	4.045e+04	2.036e+04	0.0
183	38	-110.42	80.79	-75.07	1.547e+04	1.923e+04	0.0
183	39	56.36	14.30	-72.58	6871.93	-2118.21	0.0
183	54	-60.30	130.91	-75.07	2.184e+04	1.286e+04	0.0
183	69	-27.03	47.55	-73.83	1.117e+04	8558.32	0.0
215	1	-176.85	380.16	-455.49	9.554e+04	4.640e+04	0.0
215	2	-136.04	292.43	-350.38	7.349e+04	3.569e+04	0.0
215	3	-149.64	321.67	-385.42	8.084e+04	3.926e+04	0.0
215	4	-122.43	263.19	-315.34	6.614e+04	3.213e+04	0.0
215	5	-383.97	251.13	-354.23	6.827e+04	6.754e+04	0.0
215	8	111.89	333.73	-346.53	7.871e+04	3851.37	0.0
215	22	-209.34	504.49	-351.50	1.005e+05	4.508e+04	0.0
215	37	-226.42	277.37	-351.78	7.159e+04	4.730e+04	0.0
215	40	-45.65	307.49	-348.98	7.539e+04	2.409e+04	0.0
215	54	-162.76	369.74	-350.79	8.333e+04	3.912e+04	0.0
215	69	-136.04	292.43	-350.38	7.349e+04	3.569e+04	0.0
247	1	-735.86	203.80	-1431.48	5.077e+04	1.883e+05	0.0
247	2	-566.05	156.77	-1101.14	3.905e+04	1.449e+05	0.0
247	3	-622.65	172.45	-1211.26	4.296e+04	1.594e+05	0.0
247	4	-509.44	141.09	-991.03	3.515e+04	1.304e+05	0.0
247	5	-830.00	94.12	-1104.92	3.093e+04	1.787e+05	0.0
247	21	-670.81	-64.41	-1105.00	1.074e+04	1.584e+05	0.0
247	22	-614.59	380.39	-1099.01	6.761e+04	1.509e+05	0.0
247	24	-461.28	377.95	-1097.29	6.736e+04	1.313e+05	0.0
247	37	-662.27	133.93	-1102.52	3.609e+04	1.572e+05	0.0
247	53	-604.24	76.14	-1102.55	2.873e+04	1.498e+05	0.0
247	54	-583.74	238.29	-1100.37	4.946e+04	1.471e+05	0.0
247	56	-527.85	237.40	-1099.74	4.937e+04	1.399e+05	0.0
247	69	-566.05	156.77	-1101.14	3.905e+04	1.449e+05	0.0
279	1	-933.12	-192.92	-3025.93	-4.964e+04	2.383e+05	0.0
279	2	-717.79	-148.40	-2327.64	-3.819e+04	1.833e+05	0.0
279	3	-789.57	-163.24	-2560.40	-4.200e+04	2.016e+05	0.0
279	4	-646.01	-133.56	-2094.87	-3.437e+04	1.650e+05	0.0
279	5	-978.98	-225.41	-2328.58	-4.807e+04	2.165e+05	0.0
279	21	-818.86	-399.66	-2332.52	-7.042e+04	1.963e+05	0.0
279	22	-768.94	101.77	-2322.41	-6094.03	1.897e+05	0.0
279	23	-666.64	-398.58	-2332.86	-7.028e+04	1.769e+05	0.0
279	37	-813.00	-176.48	-2327.98	-4.179e+04	1.954e+05	0.0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

279	53	-754.63	-240.00	-2329.42	-4.994e+04	1.880e+05	0.0
279	54	-736.43	-57.20	-2325.73	-2.649e+04	1.856e+05	0.0
279	55	-699.14	-239.61	-2329.54	-4.989e+04	1.810e+05	0.0
279	69	-717.79	-148.40	-2327.64	-3.819e+04	1.833e+05	0.0
311	1	-226.10	219.71	-4223.89	5.697e+04	5.792e+04	0.0
311	2	-173.92	169.00	-3249.15	4.382e+04	4.455e+04	0.0
311	3	-191.32	185.91	-3574.06	4.821e+04	4.901e+04	0.0
311	4	-156.53	152.10	-2924.23	3.944e+04	4.010e+04	0.0
311	5	-436.74	82.67	-3245.93	3.289e+04	7.805e+04	0.0
311	6	-431.77	238.91	-3243.17	5.281e+04	7.746e+04	0.0
311	7	83.92	99.10	-3255.12	3.483e+04	1.165e+04	0.0
311	24	-87.55	431.88	-3245.93	7.733e+04	3.361e+04	0.0
311	37	-269.73	137.53	-3247.97	3.984e+04	5.676e+04	0.0
311	38	-267.92	194.49	-3246.97	4.710e+04	5.655e+04	0.0
311	39	-79.93	143.52	-3251.32	4.055e+04	3.256e+04	0.0
311	56	-142.44	264.84	-3247.97	5.604e+04	4.057e+04	0.0
311	69	-173.92	169.00	-3249.15	4.382e+04	4.455e+04	0.0
<b>Nodo</b>		<b>Azione X</b>	<b>Azione Y</b>	<b>Azione Z</b>	<b>Azione RX</b>	<b>Azione RY</b>	<b>Azione RZ</b>
		-978.98	-399.66	-4223.89	-7.042e+04	-7.145e+04	0.0
		408.27	969.75	-66.44	2.367e+05	2.383e+05	0.0
<b>Nodo</b>	<b>Cmb</b>	<b>Azione X</b>	<b>Azione Y</b>	<b>Azione Z</b>	<b>Azione RX</b>	<b>Azione RY</b>	<b>Azione RZ</b>
		daN	daN	daN	daN cm	daN cm	daN cm
92	1	204.13	921.02	-3028.18	2.367e+05	-5.098e+04	0.0
	4	141.32	637.63	-2096.43	1.638e+05	-3.529e+04	0.0
	21	80.02	447.20	-2328.42	1.488e+05	-2.933e+04	0.0
	1	204.13	921.02	-3028.18	2.367e+05	-5.098e+04	0.0
	8	408.27	809.49	-2334.25	1.950e+05	-7.145e+04	0.0
	5	-94.22	607.46	-2324.48	1.691e+05	-6980.92	0.0
119	1	-176.80	731.43	-1434.11	1.877e+05	4.745e+04	0.0
	4	-122.40	506.38	-992.85	1.300e+05	3.285e+04	0.0
	21	-198.61	298.61	-1099.38	1.106e+05	4.461e+04	0.0
	1	-176.80	731.43	-1434.11	1.877e+05	4.745e+04	0.0
	7	87.71	514.01	-1105.30	1.384e+05	7933.11	0.0
	6	-359.71	611.27	-1101.03	1.504e+05	6.506e+04	0.0
151	1	-347.96	188.63	-456.29	4.791e+04	9.151e+04	0.0
	4	-240.90	130.59	-315.89	3.317e+04	6.335e+04	0.0
	21	-308.90	-102.84	-347.14	5007.05	7.560e+04	0.0
	24	-226.42	393.04	-354.84	6.870e+04	6.518e+04	0.0
	7	-55.50	71.79	-349.87	2.746e+04	4.340e+04	0.0
	6	-479.83	218.41	-352.11	4.624e+04	9.738e+04	0.0
183	1	-35.14	61.81	-95.97	1.452e+04	1.113e+04	0.0
	4	-24.33	42.79	-66.44	1.005e+04	7702.49	0.0
	23	64.24	-181.12	-70.41	-1.811e+04	-3242.60	0.0
	22	-118.30	276.21	-77.24	4.045e+04	2.036e+04	0.0
	7	201.71	-43.65	-70.41	-620.86	-2.073e+04	0.0
	6	-255.77	138.74	-77.24	2.296e+04	3.784e+04	0.0
215	1	-176.85	380.16	-455.49	9.554e+04	4.640e+04	0.0
	4	-122.43	263.19	-315.34	6.614e+04	3.213e+04	0.0
	23	-62.73	80.37	-349.26	4.651e+04	2.630e+04	0.0
	22	-209.34	504.49	-351.50	1.005e+05	4.508e+04	0.0
	8	111.89	333.73	-346.53	7.871e+04	3851.37	0.0
	5	-383.97	251.13	-354.23	6.827e+04	6.754e+04	0.0
247	1	-735.86	203.80	-1431.48	5.077e+04	1.883e+05	0.0
	4	-509.44	141.09	-991.03	3.515e+04	1.304e+05	0.0
	23	-517.50	-66.85	-1103.27	1.050e+04	1.389e+05	0.0
	22	-614.59	380.39	-1099.01	6.761e+04	1.509e+05	0.0
	8	-302.09	219.43	-1097.36	4.717e+04	1.111e+05	0.0
	1	-735.86	203.80	-1431.48	5.077e+04	1.883e+05	0.0
279	1	-933.12	-192.92	-3025.93	-4.964e+04	2.383e+05	0.0
	4	-646.01	-133.56	-2094.87	-3.437e+04	1.650e+05	0.0
	21	-818.86	-399.66	-2332.52	-7.042e+04	1.963e+05	0.0
	24	-616.71	102.85	-2322.75	-5952.73	1.704e+05	0.0
	8	-456.60	-71.40	-2326.69	-2.830e+04	1.501e+05	0.0
	1	-933.12	-192.92	-3025.93	-4.964e+04	2.383e+05	0.0
311	1	-226.10	219.71	-4223.89	5.697e+04	5.792e+04	0.0
	4	-156.53	152.10	-2924.23	3.944e+04	4.010e+04	0.0
	21	-260.30	-93.87	-3252.36	1.032e+04	5.550e+04	0.0
	24	-87.55	431.88	-3245.93	7.733e+04	3.361e+04	0.0
	8	88.89	255.34	-3252.36	5.476e+04	1.106e+04	0.0
	5	-436.74	82.67	-3245.93	3.289e+04	7.805e+04	0.0



## RISULTATI OPERE DI FONDAZIONE

### LEGENDA RISULTATI OPERE DI FONDAZIONE

Il controllo dei risultati delle analisi condotte, per quanto concerne le opere di fondazione, è possibile in relazione alle tabelle sotto riportate.

La prima tabella è riferita alle fondazioni tipo palo e plinto su pali.

Per questo tipo di fondazione vengono riportate le sei componenti di sollecitazione (espresse nel riferimento globale della struttura) per ogni palo componente l'opera.

In particolare viene riportato:

<b>Nodo</b>	numero del nodo a cui è applicato il plinto
<b>Tipo</b>	codice corrispondente al nome assegnato al tipo di plinto di fondazione: 3) palo singolo ( <i>PALO</i> ) 4) plinto su palo 5) plinto su due pali ( <i>PL.2P</i> ) 6) plinto su tre pali ( <i>PL.3P</i> ) 7) plinto su quattro pali ( <i>PL.4P</i> ) 8) plinto rettangolare su cinque pali ( <i>PL.5P.R</i> ) 9) plinto pentagonale su cinque pali ( <i>PL.5P</i> ) 10) plinto su sei pali ( <i>PL.6P</i> )
<b>Palo</b>	numero del palo
<b>Comb.</b>	combinazione di carico in cui si verificano le sei componenti di sollecitazione.
<b>Quota</b>	quota assoluta della sezione del palo per cui si riportano le sei componenti di sollecitazione.

L'azione  $F_z$  ( corrispondente allo sforzo normale nel palo) è costante poiché il peso del palo stesso non è considerato nella modellazione.

La seconda tabella è riferita alle fondazioni tipo plinto su suolo elastico.

Per questo tipo di fondazione vengono riportate le pressioni nei quattro vertici dell'impronta sul terreno.

In particolare viene riportato:

<b>Nodo</b>	numero del nodo a cui è applicato il plinto	
<b>Tipo</b>	Codice identificativo del nome assegnato al plinto	
<b>area</b>	area dell'impronta del plinto	
<b>Wink O</b>	<b>Wink V</b>	coefficienti di Winkler (orizzontale e verticale) adottati
<b>Comb</b>	Combinazione di carico in cui si verificano i valori riportati	
<b>Pt (P1 P2 P3 P4)</b>	valori di pressione nei vertici	

La terza tabella è riferita alle fondazioni tipo platea su suolo elastico.

Per questo tipo di fondazione vengono riportate le pressioni in ogni vertice (nodo) degli elementi costituenti la platea.

La quarta tabella è riferita alle fondazioni tipo trave su suolo elastico.

Per questo tipo di fondazione vengono riportate le pressioni alle estremità dell'elemento e la massima (in valore assoluto) pressione lungo lo sviluppo dell'elemento.

Vengono inoltre riportati, con funzione statistica, i valori massimo e minimo delle pressioni che compaiono nella tabella.



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Con riferimento al **Documento di Affidabilità** "Test di validazione del software di calcolo PRO\_SAP e dei moduli aggiuntivi PRO\_SAP Modulo Geotecnico, PRO\_CAD nodi acciaio e PRO\_MST" - versione Settembre 2014, disponibile per il download sul sito **www.2si.it**, si segnalano i seguenti esempi applicativi:

Test N°	Titolo
105	PLINTO SUPERFICIALE
106	PLINTO SUPERFICIALE
107	PLINTO SUPERFICIALE
108	PLINTO SUPERFICIALE
109	PLINTO SUPERFICIALE
110	PLINTO SUPERFICIALE
111	PLINTO SUPERFICIALE
112	PLINTO SUPERFICIALE
113	PLINTO SUPERFICIALE
114	PLINTO SUPERFICIALE
115	PLINTO SUPERFICIALE
116	PLINTO SUPERFICIALE
117	PLINTO SUPERFICIALE
118	PLINTO SUPERFICIALE
119	PLINTO SUPERFICIALE
120	PLINTO SUPERFICIALE
121	PLINTO SUPERFICIALE
122	PLINTO SUPERFICIALE
123	PLINTO SUPERFICIALE
124	FONDAZIONE NASTRIFORME
125	CALCOLO DEI K DI WINKLER

Nodo	Tipo	Palo	Cmb	Quota	Fx	Fy	Fz	Mx	My	Mz			
				cm	daN	daN	daN	daN cm	daN cm	daN cm			
92	PALO D 60.00	1	1	-110.00	204.13	921.02	-3028.18	-2.367e+05	-5.098e+04	0.0			
			2	-110.00	157.02	708.48	-2329.37	-1.820e+05	-3.921e+04	0.0			
			3	-110.00	172.72	779.32	-2562.30	-2.002e+05	-4.314e+04	0.0			
			4	-110.00	141.32	637.63	-2096.43	-1.638e+05	-3.529e+04	0.0			
			6	-110.00	-93.15	759.74	-2324.14	-1.884e+05	-7122.02	0.0			
			7	-110.00	407.20	657.21	-2334.60	-1.756e+05	-7.131e+04	0.0			
			8	-110.00	408.27	809.49	-2334.25	-1.950e+05	-7.145e+04	0.0			
			24	-110.00	234.02	969.75	-2330.31	-2.153e+05	-4.910e+04	0.0			
			38	-110.00	65.82	727.17	-2327.46	-1.844e+05	-2.751e+04	0.0			
			39	-110.00	248.22	689.79	-2331.27	-1.797e+05	-5.091e+04	0.0			
			40	-110.00	248.61	745.30	-2331.15	-1.868e+05	-5.096e+04	0.0			
			56	-110.00	185.09	803.72	-2329.71	-1.942e+05	-4.282e+04	0.0			
			69	-110.00	157.02	708.48	-2329.37	-1.820e+05	-3.921e+04	0.0			
			119	PALO D 60.00	1	1	-110.00	-176.80	731.43	-1434.11	-1.877e+05	4.745e+04	0.0
						2	-110.00	-136.00	562.64	-1103.16	-1.444e+05	3.650e+04	0.0
						3	-110.00	-149.60	618.90	-1213.48	-1.589e+05	4.015e+04	0.0
4	-110.00	-122.40				506.38	-992.85	-1.300e+05	3.285e+04	0.0			
5	-110.00	-357.23				457.90	-1099.30	-1.308e+05	6.481e+04	0.0			
6	-110.00	-359.71				611.27	-1101.03	-1.504e+05	6.506e+04	0.0			
8	-110.00	85.23				667.37	-1107.03	-1.580e+05	8183.27	0.0			
24	-110.00	-73.39				826.67	-1106.94	-1.782e+05	2.838e+04	0.0			
37	-110.00	-216.65				524.46	-1101.76	-1.395e+05	4.682e+04	0.0			
38	-110.00	-217.55				580.37	-1102.39	-1.466e+05	4.691e+04	0.0			
40	-110.00	-55.35				600.82	-1104.57	-1.494e+05	2.618e+04	0.0			
56	-110.00	-113.17				658.89	-1104.54	-1.567e+05	3.354e+04	0.0			
69	-110.00	-136.00				562.64	-1103.16	-1.444e+05	3.650e+04	0.0			
151	PALO D 60.00	1				1	-110.00	-347.96	188.63	-456.29	-4.791e+04	9.151e+04	0.0
						2	-110.00	-267.66	145.10	-350.99	-3.685e+04	7.039e+04	0.0



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Nodo	Tipo	Palo	Cmb	Quota	Fx	Fy	Fz	Mx	My	Mz
		1	3	-110.00	-294.43	159.61	-386.09	-4.054e+04	7.743e+04	0.0
		1	4	-110.00	-240.90	130.59	-315.89	-3.317e+04	6.335e+04	0.0
		1	6	-110.00	-479.83	218.41	-352.11	-4.624e+04	9.738e+04	0.0
		1	21	-110.00	-308.90	-102.84	-347.14	-5007.05	7.560e+04	0.0
		1	24	-110.00	-226.42	393.04	-354.84	-6.870e+04	6.518e+04	0.0
		1	38	-110.00	-345.01	171.83	-351.40	-4.028e+04	8.023e+04	0.0
		1	53	-110.00	-282.70	54.71	-349.59	-2.524e+04	7.229e+04	0.0
		1	56	-110.00	-252.63	235.49	-352.40	-4.846e+04	6.849e+04	0.0
		1	69	-110.00	-267.66	145.10	-350.99	-3.685e+04	7.039e+04	0.0
183	PALO D 60.00	1	1	-110.00	-35.14	61.81	-95.97	-1.452e+04	1.113e+04	0.0
		1	2	-110.00	-27.03	47.55	-73.83	-1.117e+04	8558.32	0.0
		1	3	-110.00	-29.73	52.30	-81.21	-1.229e+04	9414.15	0.0
		1	4	-110.00	-24.33	42.79	-66.44	-1.005e+04	7702.49	0.0
		1	6	-110.00	-255.77	138.74	-77.24	-2.296e+04	3.784e+04	0.0
		1	7	-110.00	201.71	-43.65	-70.41	620.86	-2.073e+04	0.0
		1	22	-110.00	-118.30	276.21	-77.24	-4.045e+04	2.036e+04	0.0
		1	38	-110.00	-110.42	80.79	-75.07	-1.547e+04	1.923e+04	0.0
		1	39	-110.00	56.36	14.30	-72.58	-6871.93	-2118.21	0.0
		1	54	-110.00	-60.30	130.91	-75.07	-2.184e+04	1.286e+04	0.0
		1	69	-110.00	-27.03	47.55	-73.83	-1.117e+04	8558.32	0.0
215	PALO D 60.00	1	1	-110.00	-176.85	380.16	-455.49	-9.554e+04	4.640e+04	0.0
		1	2	-110.00	-136.04	292.43	-350.38	-7.349e+04	3.569e+04	0.0
		1	3	-110.00	-149.64	321.67	-385.42	-8.084e+04	3.926e+04	0.0
		1	4	-110.00	-122.43	263.19	-315.34	-6.614e+04	3.213e+04	0.0
		1	5	-110.00	-383.97	251.13	-354.23	-6.827e+04	6.754e+04	0.0
		1	8	-110.00	111.89	333.73	-346.53	-7.871e+04	3851.37	0.0
		1	22	-110.00	-209.34	504.49	-351.50	-1.005e+05	4.508e+04	0.0
		1	37	-110.00	-226.42	277.37	-351.78	-7.159e+04	4.730e+04	0.0
		1	40	-110.00	-45.65	307.49	-348.98	-7.539e+04	2.409e+04	0.0
		1	54	-110.00	-162.76	369.74	-350.79	-8.333e+04	3.912e+04	0.0
		1	69	-110.00	-136.04	292.43	-350.38	-7.349e+04	3.569e+04	0.0
247	PALO D 60.00	1	1	-110.00	-735.86	203.80	-1431.48	-5.077e+04	1.883e+05	0.0
		1	2	-110.00	-566.05	156.77	-1101.14	-3.905e+04	1.449e+05	0.0
		1	3	-110.00	-622.65	172.45	-1211.26	-4.296e+04	1.594e+05	0.0
		1	4	-110.00	-509.44	141.09	-991.03	-3.515e+04	1.304e+05	0.0
		1	5	-110.00	-830.00	94.12	-1104.92	-3.093e+04	1.787e+05	0.0
		1	21	-110.00	-670.81	-64.41	-1105.00	-1.074e+04	1.584e+05	0.0
		1	22	-110.00	-614.59	380.39	-1099.01	-6.761e+04	1.509e+05	0.0
		1	24	-110.00	-461.28	377.95	-1097.29	-6.736e+04	1.313e+05	0.0
		1	37	-110.00	-662.27	133.93	-1102.52	-3.609e+04	1.572e+05	0.0
		1	53	-110.00	-604.24	76.14	-1102.55	-2.873e+04	1.498e+05	0.0
		1	54	-110.00	-583.74	238.29	-1100.37	-4.946e+04	1.471e+05	0.0
		1	56	-110.00	-527.85	237.40	-1099.74	-4.937e+04	1.399e+05	0.0
		1	69	-110.00	-566.05	156.77	-1101.14	-3.905e+04	1.449e+05	0.0
279	PALO D 60.00	1	1	-110.00	-933.12	-192.92	-3025.93	4.964e+04	2.383e+05	0.0
		1	2	-110.00	-717.79	-148.40	-2327.64	3.819e+04	1.833e+05	0.0
		1	3	-110.00	-789.57	-163.24	-2560.40	4.200e+04	2.016e+05	0.0
		1	4	-110.00	-646.01	-133.56	-2094.87	3.437e+04	1.650e+05	0.0
		1	5	-110.00	-978.98	-225.41	-2328.58	4.807e+04	2.165e+05	0.0
		1	21	-110.00	-818.86	-399.66	-2332.52	7.042e+04	1.963e+05	0.0
		1	22	-110.00	-768.94	101.77	-2322.41	6094.03	1.897e+05	0.0
		1	23	-110.00	-666.64	-398.58	-2332.86	7.028e+04	1.769e+05	0.0
		1	37	-110.00	-813.00	-176.48	-2327.98	4.179e+04	1.954e+05	0.0
		1	53	-110.00	-754.63	-240.00	-2329.42	4.994e+04	1.880e+05	0.0
		1	54	-110.00	-736.43	-57.20	-2325.73	2.649e+04	1.856e+05	0.0
		1	55	-110.00	-699.14	-239.61	-2329.54	4.989e+04	1.810e+05	0.0
		1	69	-110.00	-717.79	-148.40	-2327.64	3.819e+04	1.833e+05	0.0
311	PALO D 60.00	1	1	-110.00	-226.10	219.71	-4223.89	-5.697e+04	5.792e+04	0.0
		1	2	-110.00	-173.92	169.00	-3249.15	-4.382e+04	4.455e+04	0.0
		1	3	-110.00	-191.32	185.91	-3574.06	-4.821e+04	4.901e+04	0.0
		1	4	-110.00	-156.53	152.10	-2924.23	-3.944e+04	4.010e+04	0.0
		1	5	-110.00	-436.74	82.67	-3245.93	-3.289e+04	7.805e+04	0.0
		1	6	-110.00	-431.77	238.91	-3243.17	-5.281e+04	7.746e+04	0.0
		1	7	-110.00	83.92	99.10	-3255.12	-3.483e+04	1.165e+04	0.0
		1	24	-110.00	-87.55	431.88	-3245.93	-7.733e+04	3.361e+04	0.0
		1	37	-110.00	-269.73	137.53	-3247.97	-3.984e+04	5.676e+04	0.0
		1	38	-110.00	-267.92	194.49	-3246.97	-4.710e+04	5.655e+04	0.0
		1	39	-110.00	-79.93	143.52	-3251.32	-4.055e+04	3.256e+04	0.0
		1	56	-110.00	-142.44	264.84	-3247.97	-5.604e+04	4.057e+04	0.0
		1	69	-110.00	-173.92	169.00	-3249.15	-4.382e+04	4.455e+04	0.0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Nodo	Tipo	Palo	Cmb	Quota	Fx	Fy	Fz	Mx	My	Mz
Nodo					Fx	Fy	Fz	Mx	My	Mz
					-978.98	-399.66	-4223.89	-2.367e+05	-7.145e+04	0.0
					408.27	969.75	-66.44	7.042e+04	2.383e+05	0.0

Nodo (G)	Pt 1/12 daN/cm2	Pt 2/13 daN/cm2	Pt 3... daN/cm2	Pt 4... daN/cm2	daN/cm2	daN/cm2	daN/cm2	daN/cm2	daN/cm2	daN/cm2
1	-0.82	-0.69	-0.63	-0.63	-0.63					
2	-0.87	-0.74	-0.67	-0.67	-0.67					
3	-0.81	-0.69	-0.63	-0.62	-0.62					
4	-0.75	-0.63	-0.58	-0.58	-0.57					
5	-0.72	-0.61	-0.56	-0.56	-0.55					
6	-0.65	-0.55	-0.50	-0.50	-0.50					
7	-0.65	-0.55	-0.50	-0.50	-0.50					
8	-0.57	-0.48	-0.44	-0.44	-0.44					
9	-0.57	-0.48	-0.44	-0.44	-0.44					
10	-0.47	-0.39	-0.36	-0.36	-0.36					
11	-0.45	-0.38	-0.35	-0.34	-0.34					
12	-0.38	-0.32	-0.29	-0.29	-0.29					
13	-0.34	-0.28	-0.26	-0.26	-0.26					
14	-0.26	-0.22	-0.20	-0.20	-0.20					
15	-0.22	-0.19	-0.17	-0.17	-0.17					
16	-0.20	-0.17	-0.16	-0.16	-0.15					
17	-0.20	-0.17	-0.16	-0.16	-0.15					
18	-0.15	-0.13	-0.12	-0.12	-0.12					
19	-0.94	-0.80	-0.73	-0.72	-0.72					
20	-0.88	-0.75	-0.68	-0.68	-0.68					
21	-0.80	-0.68	-0.62	-0.62	-0.62					
22	-0.72	-0.61	-0.56	-0.56	-0.56					
23	-0.65	-0.55	-0.50	-0.50	-0.50					
24	-0.54	-0.46	-0.42	-0.42	-0.42					
25	-0.43	-0.36	-0.33	-0.33	-0.33					
26	-0.34	-0.28	-0.26	-0.26	-0.26					
27	-0.26	-0.22	-0.20	-0.20	-0.20					
28	-0.98	-0.83	-0.76	-0.75	-0.75					
29	-0.95	-0.80	-0.73	-0.73	-0.73					
30	-0.89	-0.75	-0.69	-0.68	-0.68					
31	-0.80	-0.68	-0.62	-0.62	-0.62					
32	-0.71	-0.60	-0.55	-0.55	-0.55					
33	-0.63	-0.53	-0.49	-0.49	-0.48					
34	-0.54	-0.46	-0.42	-0.42	-0.42					
35	-0.45	-0.38	-0.35	-0.34	-0.34					
36	-0.38	-0.32	-0.29	-0.29	-0.29					
37	-1.00	-0.85	-0.77	-0.77	-0.77					
38	-1.00	-0.85	-0.77	-0.77	-0.77					
39	-0.97	-0.82	-0.74	-0.74	-0.74					
40	-0.90	-0.76	-0.69	-0.69	-0.69					
41	-0.80	-0.68	-0.62	-0.62	-0.62					
42	-0.71	-0.60	-0.55	-0.55	-0.55					
43	-0.65	-0.55	-0.50	-0.50	-0.50					
44	-0.57	-0.48	-0.44	-0.44	-0.44					
45	-0.47	-0.39	-0.36	-0.36	-0.36					
46	-0.94	-0.80	-0.72	-0.72	-0.72					
47	-1.01	-0.86	-0.78	-0.78	-0.78					
48	-1.02	-0.86	-0.79	-0.79	-0.79					
49	-0.98	-0.83	-0.75	-0.75	-0.75					
50	-0.90	-0.76	-0.69	-0.69	-0.69					
51	-0.80	-0.68	-0.62	-0.62	-0.62					
52	-0.72	-0.61	-0.56	-0.56	-0.56					
53	-0.65	-0.55	-0.50	-0.50	-0.50					
54	-0.57	-0.48	-0.44	-0.44	-0.44					
55	-1.09	-0.92	-0.84	-0.84	-0.84					
56	-0.96	-0.81	-0.74	-0.74	-0.74					
57	-1.02	-0.87	-0.79	-0.79	-0.79					
58	-1.02	-0.86	-0.79	-0.79	-0.78					
59	-0.97	-0.82	-0.74	-0.74	-0.74					
60	-0.89	-0.75	-0.69	-0.68	-0.68					
61	-0.80	-0.68	-0.62	-0.62	-0.62					

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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62	-0.72	-0.61	-0.56	-0.56	-0.55
63	-0.66	-0.56	-0.51	-0.51	-0.51
64	-1.67	-1.41	-1.29	-1.28	-1.28
65	-0.91	-0.77	-0.70	-0.70	-0.70
66	-0.96	-0.81	-0.74	-0.74	-0.74
67	-1.01	-0.86	-0.78	-0.78	-0.78
68	-1.00	-0.85	-0.77	-0.77	-0.77
69	-0.95	-0.80	-0.73	-0.73	-0.73
70	-0.88	-0.75	-0.68	-0.68	-0.68
71	-0.81	-0.69	-0.63	-0.62	-0.62
72	-0.77	-0.65	-0.59	-0.59	-0.59
73	-1.70	-1.44	-1.31	-1.31	-1.31
74	-1.67	-1.41	-1.29	-1.28	-1.28
75	-1.09	-0.92	-0.84	-0.84	-0.84
76	-0.94	-0.80	-0.72	-0.72	-0.72
77	-1.00	-0.85	-0.77	-0.77	-0.77
78	-0.98	-0.83	-0.75	-0.75	-0.75
79	-0.94	-0.80	-0.73	-0.72	-0.72
80	-0.87	-0.74	-0.67	-0.67	-0.67
81	-0.82	-0.69	-0.63	-0.63	-0.63
82	-0.92	-0.78	-0.71	-0.71	-0.71
83	-0.97	-0.82	-0.75	-0.75	-0.75
84	-1.41	-1.19	-1.09	-1.08	-1.08
85	-1.00	-0.85	-0.77	-0.77	-0.77
86	-2.03	-1.72	-1.57	-1.56	-1.56
87	-1.55	-1.31	-1.20	-1.19	-1.19
88	-1.99	-1.68	-1.53	-1.53	-1.53
89	-1.74	-1.47	-1.34	-1.34	-1.34
90	-1.95	-1.65	-1.50	-1.50	-1.50
91	-1.68	-1.42	-1.30	-1.30	-1.29
92	-1.91	-1.62	-1.47	-1.47	-1.47
93	-1.62	-1.37	-1.25	-1.25	-1.25
94	-1.87	-1.58	-1.44	-1.44	-1.44
95	-1.57	-1.33	-1.21	-1.21	-1.20
96	-1.84	-1.55	-1.42	-1.41	-1.41
97	-1.51	-1.28	-1.16	-1.16	-1.16
98	-0.92	-0.78	-0.71	-0.71	-0.71
99	-0.93	-0.78	-0.71	-0.71	-0.71
100	-0.94	-0.80	-0.73	-0.73	-0.73
101	-1.14	-0.96	-0.88	-0.87	-0.87
102	-1.42	-1.21	-1.10	-1.10	-1.10
103	-1.36	-1.15	-1.05	-1.05	-1.04
104	-1.29	-1.09	-1.00	-1.00	-0.99
105	-1.23	-1.04	-0.95	-0.95	-0.95
106	-0.89	-0.75	-0.69	-0.68	-0.68
107	-0.91	-0.77	-0.70	-0.70	-0.70
108	-0.91	-0.77	-0.70	-0.70	-0.70
109	-0.91	-0.77	-0.70	-0.70	-0.70
110	-1.02	-0.86	-0.79	-0.78	-0.78
111	-1.12	-0.95	-0.86	-0.86	-0.86
112	-1.06	-0.89	-0.81	-0.81	-0.81
113	-0.99	-0.84	-0.77	-0.76	-0.76
114	-0.83	-0.70	-0.64	-0.64	-0.64
115	-0.82	-0.70	-0.63	-0.63	-0.63
116	-0.82	-0.69	-0.63	-0.63	-0.63
117	-0.83	-0.70	-0.64	-0.64	-0.64
118	-0.83	-0.70	-0.64	-0.64	-0.64
119	-0.80	-0.68	-0.62	-0.62	-0.62
120	-0.78	-0.66	-0.60	-0.60	-0.60
121	-0.73	-0.62	-0.56	-0.56	-0.56
122	-0.78	-0.66	-0.60	-0.60	-0.60
123	-0.74	-0.63	-0.58	-0.57	-0.57
124	-0.75	-0.63	-0.58	-0.57	-0.57
125	-0.74	-0.63	-0.57	-0.57	-0.57
126	-0.71	-0.60	-0.55	-0.55	-0.55
127	-0.69	-0.58	-0.53	-0.53	-0.53
128	-0.66	-0.56	-0.51	-0.51	-0.51
129	-0.61	-0.51	-0.47	-0.47	-0.47
130	-0.66	-0.56	-0.51	-0.51	-0.51
131	-0.65	-0.55	-0.50	-0.50	-0.50
132	-0.64	-0.54	-0.50	-0.49	-0.49
133	-0.62	-0.53	-0.48	-0.48	-0.48
134	-0.60	-0.51	-0.46	-0.46	-0.46

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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135	-0.56	-0.47	-0.43	-0.43	-0.43
136	-0.51	-0.43	-0.39	-0.39	-0.39
137	-0.46	-0.39	-0.35	-0.35	-0.35
138	-0.52	-0.44	-0.41	-0.40	-0.40
139	-0.51	-0.43	-0.40	-0.40	-0.39
140	-0.51	-0.43	-0.39	-0.39	-0.39
141	-0.49	-0.41	-0.38	-0.38	-0.37
142	-0.45	-0.38	-0.35	-0.35	-0.35
143	-0.41	-0.35	-0.32	-0.32	-0.32
144	-0.37	-0.31	-0.29	-0.29	-0.29
145	-0.33	-0.28	-0.26	-0.26	-0.25
146	-0.41	-0.35	-0.32	-0.32	-0.31
147	-0.39	-0.33	-0.30	-0.30	-0.30
148	-0.38	-0.32	-0.29	-0.29	-0.29
149	-0.34	-0.29	-0.27	-0.27	-0.27
150	-0.32	-0.27	-0.25	-0.24	-0.24
151	-0.29	-0.24	-0.22	-0.22	-0.22
152	-0.26	-0.22	-0.20	-0.20	-0.20
153	-0.23	-0.19	-0.18	-0.18	-0.17
154	-0.30	-0.25	-0.23	-0.23	-0.23
155	-0.26	-0.22	-0.20	-0.20	-0.20
156	-0.25	-0.21	-0.19	-0.19	-0.19
157	-0.22	-0.19	-0.17	-0.17	-0.17
158	-0.21	-0.17	-0.16	-0.16	-0.16
159	-0.19	-0.16	-0.15	-0.15	-0.15
160	-0.17	-0.14	-0.13	-0.13	-0.13
161	-0.15	-0.12	-0.11	-0.11	-0.11
162	-0.21	-0.18	-0.16	-0.16	-0.16
163	-0.17	-0.14	-0.13	-0.13	-0.13
164	-0.15	-0.13	-0.12	-0.12	-0.12
165	-0.14	-0.12	-0.11	-0.11	-0.11
166	-0.13	-0.11	-0.10	-0.10	-0.10
167	-0.12	-0.10	-0.09	-0.09	-0.09
168	-0.10	-0.09	-0.08	-0.08	-0.08
169	-0.09	-0.07	-0.07	-0.07	-0.07
170	-0.15	-0.12	-0.12	-0.11	-0.11
171	-0.11	-0.10	-0.09	-0.09	-0.09
172	-0.10	-0.08	-0.08	-0.08	-0.07
173	-0.09	-0.07	-0.07	-0.07	-0.07
174	-0.08	-0.07	-0.06	-0.06	-0.06
175	-0.07	-0.06	-0.06	-0.06	-0.06
176	-0.07	-0.06	-0.05	-0.05	-0.05
177	-0.05	-0.05	-0.04	-0.04	-0.04
178	-0.11	-0.10	-0.09	-0.09	-0.09
179	-0.09	-0.08	-0.07	-0.07	-0.07
180	-0.08	-0.07	-0.06	-0.06	-0.06
181	-0.07	-0.06	-0.06	-0.06	-0.05
182	-0.07	-0.06	-0.05	-0.05	-0.05
183	-0.06	-0.05	-0.05	-0.05	-0.05
184	-0.05	-0.04	-0.04	-0.04	-0.04
185	-0.04	-0.04	-0.03	-0.03	-0.03
186	-0.15	-0.12	-0.12	-0.11	-0.11
187	-0.11	-0.10	-0.09	-0.09	-0.09
188	-0.10	-0.08	-0.08	-0.08	-0.07
189	-0.09	-0.07	-0.07	-0.07	-0.07
190	-0.08	-0.07	-0.06	-0.06	-0.06
191	-0.07	-0.06	-0.06	-0.06	-0.06
192	-0.07	-0.06	-0.05	-0.05	-0.05
193	-0.05	-0.05	-0.04	-0.04	-0.04
194	-0.21	-0.18	-0.16	-0.16	-0.16
195	-0.17	-0.14	-0.13	-0.13	-0.13
196	-0.15	-0.13	-0.12	-0.12	-0.12
197	-0.14	-0.12	-0.11	-0.11	-0.11
198	-0.13	-0.11	-0.10	-0.10	-0.10
199	-0.12	-0.10	-0.09	-0.09	-0.09
200	-0.10	-0.09	-0.08	-0.08	-0.08
201	-0.09	-0.07	-0.07	-0.07	-0.07
202	-0.30	-0.25	-0.23	-0.23	-0.23
203	-0.26	-0.22	-0.20	-0.20	-0.20
204	-0.25	-0.21	-0.19	-0.19	-0.19
205	-0.22	-0.19	-0.17	-0.17	-0.17
206	-0.21	-0.17	-0.16	-0.16	-0.16
207	-0.19	-0.16	-0.15	-0.15	-0.14

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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208	-0.17	-0.14	-0.13	-0.13	-0.13
209	-0.15	-0.12	-0.11	-0.11	-0.11
210	-0.41	-0.35	-0.32	-0.31	-0.31
211	-0.39	-0.33	-0.30	-0.30	-0.30
212	-0.38	-0.32	-0.29	-0.29	-0.29
213	-0.34	-0.29	-0.27	-0.27	-0.27
214	-0.32	-0.27	-0.25	-0.24	-0.24
215	-0.29	-0.24	-0.22	-0.22	-0.22
216	-0.26	-0.22	-0.20	-0.20	-0.20
217	-0.23	-0.19	-0.18	-0.17	-0.17
218	-0.52	-0.44	-0.41	-0.40	-0.40
219	-0.51	-0.43	-0.40	-0.40	-0.39
220	-0.51	-0.43	-0.39	-0.39	-0.39
221	-0.49	-0.41	-0.38	-0.38	-0.37
222	-0.45	-0.38	-0.35	-0.35	-0.35
223	-0.41	-0.35	-0.32	-0.32	-0.32
224	-0.37	-0.31	-0.29	-0.29	-0.29
225	-0.33	-0.28	-0.26	-0.25	-0.25
226	-0.64	-0.54	-0.50	-0.49	-0.49
227	-0.65	-0.55	-0.50	-0.50	-0.50
228	-0.64	-0.54	-0.50	-0.49	-0.49
229	-0.62	-0.53	-0.48	-0.48	-0.48
230	-0.60	-0.50	-0.46	-0.46	-0.46
231	-0.56	-0.47	-0.43	-0.43	-0.43
232	-0.51	-0.43	-0.39	-0.39	-0.39
233	-0.46	-0.39	-0.35	-0.35	-0.35
234	-0.75	-0.64	-0.58	-0.58	-0.58
235	-0.75	-0.63	-0.58	-0.57	-0.57
236	-0.75	-0.63	-0.58	-0.58	-0.57
237	-0.74	-0.63	-0.57	-0.57	-0.57
238	-0.71	-0.60	-0.55	-0.55	-0.55
239	-0.69	-0.58	-0.53	-0.53	-0.53
240	-0.66	-0.56	-0.51	-0.51	-0.51
241	-0.61	-0.51	-0.47	-0.47	-0.47
242	-0.83	-0.70	-0.64	-0.64	-0.64
243	-0.82	-0.70	-0.64	-0.63	-0.63
244	-0.82	-0.69	-0.63	-0.63	-0.63
245	-0.83	-0.70	-0.64	-0.64	-0.64
246	-0.83	-0.70	-0.64	-0.64	-0.64
247	-0.80	-0.68	-0.62	-0.62	-0.62
248	-0.78	-0.66	-0.60	-0.60	-0.60
249	-0.73	-0.62	-0.56	-0.56	-0.56
250	-0.89	-0.75	-0.69	-0.69	-0.68
251	-0.91	-0.77	-0.70	-0.70	-0.70
252	-0.91	-0.77	-0.70	-0.70	-0.70
253	-0.91	-0.77	-0.71	-0.70	-0.70
254	-1.02	-0.86	-0.79	-0.79	-0.79
255	-1.12	-0.95	-0.86	-0.86	-0.86
256	-1.05	-0.89	-0.81	-0.81	-0.81
257	-0.99	-0.84	-0.76	-0.76	-0.76
258	-0.92	-0.78	-0.71	-0.71	-0.71
259	-0.93	-0.79	-0.72	-0.72	-0.71
260	-0.95	-0.80	-0.73	-0.73	-0.73
261	-1.14	-0.96	-0.88	-0.88	-0.88
262	-1.42	-1.20	-1.10	-1.10	-1.09
263	-1.36	-1.15	-1.05	-1.04	-1.04
264	-1.29	-1.09	-1.00	-0.99	-0.99
265	-1.23	-1.04	-0.95	-0.94	-0.94
266	-0.97	-0.82	-0.75	-0.75	-0.75
267	-1.01	-0.85	-0.78	-0.77	-0.77
268	-1.56	-1.32	-1.20	-1.20	-1.20
269	-1.74	-1.47	-1.34	-1.34	-1.34
270	-1.68	-1.42	-1.30	-1.29	-1.29
271	-1.62	-1.37	-1.25	-1.25	-1.25
272	-1.56	-1.32	-1.21	-1.20	-1.20
273	-1.51	-1.28	-1.16	-1.16	-1.16
274	-0.92	-0.78	-0.71	-0.71	-0.71
275	-1.41	-1.19	-1.09	-1.09	-1.09
276	-2.03	-1.72	-1.56	-1.56	-1.56
277	-1.99	-1.68	-1.53	-1.53	-1.53
278	-1.95	-1.65	-1.50	-1.50	-1.50
279	-1.91	-1.61	-1.47	-1.47	-1.47
280	-1.87	-1.58	-1.44	-1.44	-1.44

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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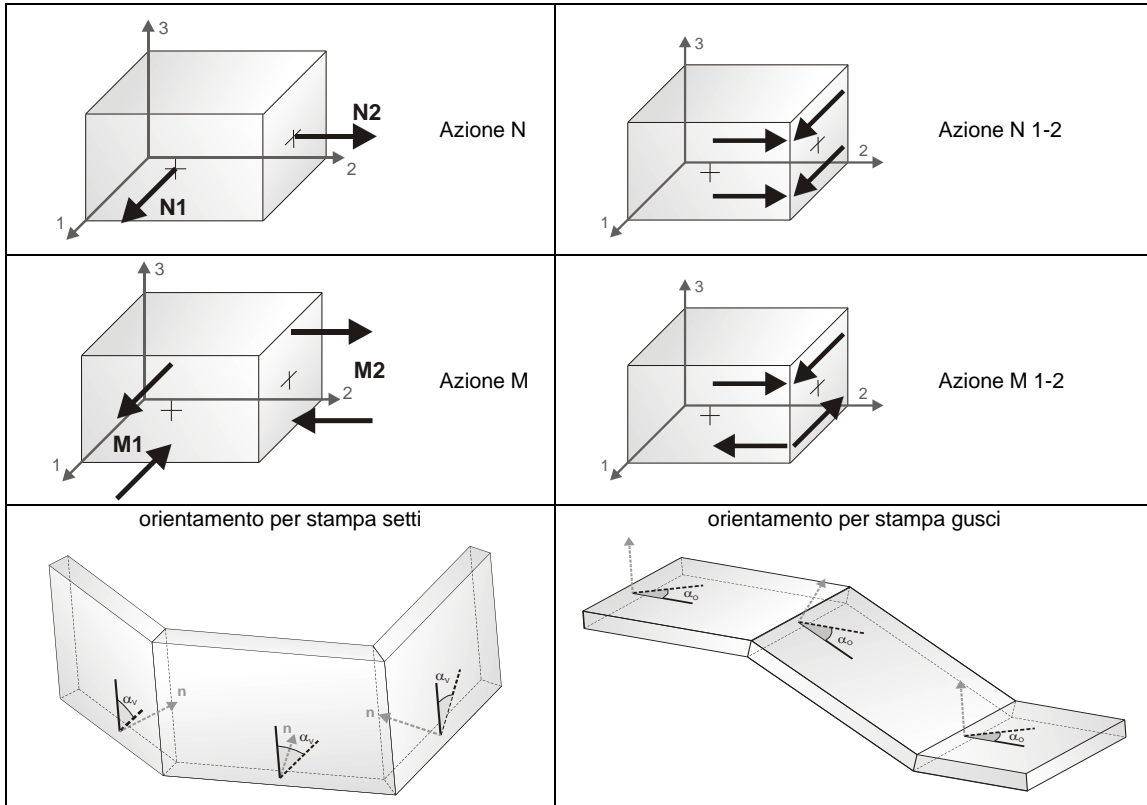
281	-1.83	-1.55	-1.41	-1.41	-1.41
282	-1.02	-0.86	-0.79	-0.79	-0.79
283	-2.25	-1.90	-1.73	-1.73	-1.73
284	-2.24	-1.89	-1.72	-1.72	-1.72
285	-2.22	-1.88	-1.71	-1.71	-1.71
286	-2.21	-1.87	-1.70	-1.70	-1.70
287	-1.32	-1.11	-1.01	-1.01	-1.01
288	-1.88	-1.59	-1.45	-1.44	-1.44
289	-1.87	-1.58	-1.44	-1.44	-1.44
290	-2.37	-2.00	-1.83	-1.82	-1.82
291	-2.39	-2.02	-1.84	-1.84	-1.84
292	-2.40	-2.03	-1.85	-1.85	-1.85
293	-2.41	-2.04	-1.86	-1.86	-1.85
294	-1.22	-1.03	-0.94	-0.94	-0.94
295	-0.86	-0.73	-0.66	-0.66	-0.66
296	-1.47	-1.24	-1.13	-1.13	-1.13
297	-1.48	-1.25	-1.14	-1.14	-1.14
298	-2.45	-2.07	-1.89	-1.88	-1.88
299	-2.48	-2.10	-1.91	-1.91	-1.91
300	-2.51	-2.12	-1.93	-1.93	-1.93
301	-1.54	-1.30	-1.19	-1.18	-1.18
302	-0.91	-0.77	-0.70	-0.70	-0.70
303	-0.70	-0.59	-0.54	-0.54	-0.54
304	-1.24	-1.05	-0.96	-0.96	-0.96
305	-1.27	-1.07	-0.98	-0.97	-0.97
306	-2.49	-2.10	-1.92	-1.91	-1.91
307	-2.52	-2.13	-1.94	-1.94	-1.94
308	-2.32	-1.96	-1.79	-1.79	-1.78
309	-1.15	-0.97	-0.88	-0.88	-0.88
310	-0.80	-0.67	-0.61	-0.61	-0.61
311	-0.65	-0.55	-0.50	-0.50	-0.50
312	-1.16	-0.98	-0.89	-0.89	-0.89
313	-1.18	-1.00	-0.91	-0.91	-0.91
314	-2.45	-2.07	-1.89	-1.89	-1.88
315	-2.48	-2.10	-1.91	-1.91	-1.91
316	-2.51	-2.12	-1.93	-1.93	-1.93
317	-1.54	-1.30	-1.18	-1.18	-1.18
318	-0.91	-0.77	-0.70	-0.70	-0.70
319	-0.70	-0.59	-0.54	-0.54	-0.54
320	-1.24	-1.05	-0.96	-0.96	-0.96
321	-1.27	-1.07	-0.98	-0.97	-0.97
322	-2.37	-2.00	-1.83	-1.82	-1.82
323	-2.39	-2.02	-1.84	-1.84	-1.84
324	-2.40	-2.03	-1.85	-1.85	-1.85
325	-2.41	-2.04	-1.86	-1.86	-1.85
326	-1.22	-1.03	-0.94	-0.94	-0.94
327	-0.86	-0.73	-0.66	-0.66	-0.66
328	-1.47	-1.24	-1.13	-1.13	-1.13
329	-1.48	-1.25	-1.14	-1.14	-1.14
330	-1.02	-0.86	-0.79	-0.79	-0.79
331	-2.25	-1.90	-1.73	-1.73	-1.73
332	-2.24	-1.89	-1.73	-1.72	-1.72
333	-2.22	-1.88	-1.71	-1.71	-1.71
334	-2.21	-1.87	-1.70	-1.70	-1.70
335	-1.31	-1.11	-1.01	-1.01	-1.01
336	-1.87	-1.59	-1.45	-1.44	-1.44
337	-1.87	-1.58	-1.44	-1.44	-1.44

Nodo (G)	Pt 1/12	Pt 2/13	Pt 3...	Pt 4...
	-2.52			
	-0.03			

## RISULTATI ELEMENTI TIPO SHELL

### LEGENDA RISULTATI ELEMENTI TIPO SHELL

Il controllo dei risultati delle analisi condotte, per quanto concerne gli elementi tipo shell, è possibile in relazione alle tabelle sottoriportate. Per ogni elemento, e per ogni combinazione (o caso di carico) vengono riportati i risultati più significativi.



In particolare vengono riportati in ogni nodo di un elemento per ogni combinazione:

<b>tensione di Von Mises</b>	(valore riassuntivo del complessivo stato di sollecitazione)	
<b>N max</b>	sforzo membranale principale massimo	
<b>N min</b>	sforzo membranale principale minimo	
<b>M max</b>	sforzo flessionale principale massimo	
<b>M min</b>	sforzo flessionale principale minimo	
<b>N1</b>	<b>N2</b>	sforzi membranali e flessionali in direzione locale 1 e 2 dell'elemento (lo sforzo 2-1 è uguale allo sforzo 1-2 per la reciprocità delle tensioni tangenziali)
<b>N1-2</b>	<b>M1</b>	
<b>M2</b>	<b>M1-2</b>	

I suddetti risultati possono a scelta del progettista essere preceduti o sostituiti da valori di sollecitazione non più riferiti al sistema locale dell'elemento ma al sistema globale.

In questo caso gli elementi vengono raggruppati in gruppi (M, S: macro gusci o macro setti, raggruppati per materiale, spessore, e posizione fisica) per la valutazione dei valori mediati ai nodi appartenenti agli elementi dei gruppi stessi.

I valori di sollecitazione sono, in questo caso, riferiti ad una terna specifica del gruppo ruotata di  $\alpha_0$  attorno all'asse Z per i gusci e ruotata di  $\alpha_v$  attorno alla normale (che per definizione è orizzontale) al piano del setto.

Per i setti, in particolare, se  $\alpha_v$  è zero, l'asse '1-1 rappresenta la verticale e l'asse '2-2 l'orizzontale contenuta nel setto.

Le azioni sui setti possono essere espresse anche con formato macro, cioè riferite all'intero macroelemento.

In particolare vengono riportati per ogni quota Z dei nodi e per ogni combinazione i seguenti valori:

<b>N memb.</b>	Azione membranale complessiva agente sulla parete in direzione Z
<b>V memb.</b>	Azione complessiva di taglio agente nel piano del macroelemento
<b>V orto</b>	Azione complessiva di taglio agente in direzione perpendicolare al macroelemento
<b>M memb.</b>	Azione flessionale complessiva agente nel piano del macroelemento
<b>M orto</b>	Azione flessionale complessiva agente in direzione perpendicolare al macroelemento
<b>T</b>	Azione torsionale complessiva agente nel piano orizzontale

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Macro	Tipo	Angolo 1-X (gradi)
1	Guscio	0.0

M_G	Cmb	Nodo	N max daN/cm	N min daN/cm	N 1 daN/cm	N 2 daN/cm	N 1-2 daN/cm	M max daN	M min daN	M 1 daN	M 2 daN	M 1-2 daN
1	1	1	3.88	-2.71	-2.44	3.61	1.31	7.686e+04	-1.273e+05	7.629e+04	-1.268e+05	-1.082e+04
1	1	2	4.98	-5.01	-4.99	4.96	0.45	8.050e+04	-1.926e+05	7.991e+04	-1.920e+05	1.270e+04
1	1	3	6.13	-6.33	-6.22	6.02	1.18	6.283e+04	-1.229e+05	6.225e+04	-1.224e+05	-1.038e+04
1	1	4	5.25	-4.00	-3.62	4.87	1.83	1.417e+05	-1.336e+05	1.391e+05	-1.311e+05	-2.638e+04
1	1	5	4.52	-5.26	-4.74	4.00	2.19	8.526e+04	-5.620e+04	7.666e+04	-4.761e+04	-3.379e+04
1	1	6	6.37	-6.57	-4.13	3.92	5.07	1.547e+05	-5.438e+04	1.371e+05	-3.673e+04	-5.813e+04
1	1	7	4.74	-4.40	-0.98	1.32	4.43	1.526e+05	-3.256e+04	1.462e+05	-2.615e+04	-3.386e+04
1	1	8	5.78	-5.44	-0.90	1.25	5.50	1.840e+05	-1.312e+04	1.443e+05	2.654e+04	-7.902e+04
1	1	9	5.74	-7.07	-0.22	-1.11	6.39	1.788e+05	3.045e+04	1.178e+05	9.147e+04	-7.300e+04
1	1	10	6.58	-6.03	1.89	-1.33	6.10	2.559e+05	4.193e+04	2.088e+05	8.912e+04	-8.873e+04
1	1	11	3.85	-5.62	1.69	-3.46	3.98	1.955e+05	8.955e+04	1.651e+05	1.200e+05	-4.794e+04
1	1	12	5.73	-5.65	2.95	-2.87	4.90	2.428e+05	6.239e+04	1.887e+05	1.165e+05	-8.268e+04
1	1	13	5.47	-5.56	5.31	-5.40	1.32	2.557e+05	8.078e+04	1.798e+05	1.567e+05	-8.670e+04
1	1	14	7.74	-6.55	6.28	-5.09	4.32	2.722e+05	1.376e+05	2.049e+05	2.049e+05	-6.728e+04
1	1	15	7.05	-6.84	7.04	-6.84	-0.10	2.988e+05	1.514e+05	2.252e+05	2.251e+05	-7.371e+04
1	1	16	5.70	-5.61	5.66	-5.57	0.70	2.303e+05	1.445e+05	1.934e+05	1.814e+05	-4.250e+04
1	1	17	5.92	-5.40	5.85	-5.33	-0.91	2.303e+05	1.445e+05	1.814e+05	1.934e+05	-4.251e+04
1	1	18	4.01	-3.60	4.01	-3.60	-0.12	2.505e+05	1.142e+05	1.824e+05	1.824e+05	-6.815e+04
1	1	19	6.28	-5.54	-4.69	5.42	-3.06	-1.406e+04	-1.991e+05	-2.251e+04	-1.906e+05	3.862e+04
1	1	20	4.51	-5.39	-5.36	4.48	-0.53	2553.74	-1.256e+05	1602.30	-1.246e+05	1.100e+04
1	1	21	3.26	-4.08	-4.07	3.26	0.26	7.760e+04	-1.208e+05	7.746e+04	-1.207e+05	-5268.88
1	1	22	5.85	-4.60	-3.37	4.62	3.37	1.116e+05	-4.000e+04	1.062e+05	-3.452e+04	-2.830e+04
1	1	23	4.96	-5.86	-0.12	-0.79	5.40	1.854e+05	4.099e+04	1.506e+05	7.581e+04	-6.177e+04
1	1	24	4.40	-6.89	3.72	-6.22	2.68	2.271e+05	9.341e+04	1.775e+05	1.430e+05	-6.459e+04
1	1	25	4.22	-4.17	4.22	-4.17	-7.53e-04	2.077e+05	1.116e+05	1.597e+05	1.596e+05	-4.806e+04
1	1	26	5.69	-5.39	5.50	-5.19	-1.45	2.557e+05	8.077e+04	1.567e+05	1.798e+05	-8.671e+04
1	1	27	6.91	-7.67	5.35	-6.11	-4.51	2.721e+05	1.376e+05	2.049e+05	2.048e+05	-6.730e+04
1	1	28	4.56	-4.92	-2.86	2.50	-3.90	-4.844e+04	-2.158e+05	-6.994e+04	-1.943e+05	5.601e+04
1	1	29	2.99	-5.20	-3.52	1.31	-3.31	-1.410e+04	-1.929e+05	-1.671e+04	-1.903e+05	2.145e+04
1	1	30	3.63	-6.51	-6.09	3.21	-2.02	-1.042e+04	-1.526e+05	-1.173e+04	-1.513e+05	1.360e+04
1	1	31	5.22	-5.87	-5.85	5.20	0.41	4.693e+04	-9.624e+04	4.652e+04	-9.583e+04	-7611.17
1	1	32	1.96	-2.43	-8.70e-02	-0.39	2.19	1.926e+05	1.777e+04	1.802e+05	3.014e+04	-4.483e+04
1	1	33	6.04	-6.00	6.04	-6.00	8.40e-03	2.685e+05	8.004e+04	1.743e+05	1.743e+05	-9.424e+04
1	1	34	6.97	-4.35	6.28	-3.66	-2.70	2.271e+05	9.340e+04	1.431e+05	1.774e+05	-6.460e+04
1	1	35	5.74	-3.81	3.58	-1.65	-3.99	1.955e+05	8.954e+04	1.200e+05	1.650e+05	-4.795e+04
1	1	36	5.98	-5.78	3.07	-2.87	-5.08	2.428e+05	6.236e+04	1.165e+05	1.887e+05	-8.269e+04
1	1	37	5.37	-5.35	-1.47	1.49	-5.15	-1.092e+05	-2.890e+05	-1.354e+05	-2.628e+05	6.341e+04
1	1	38	4.84	-6.33	-1.25	-0.24	-5.56	-8.894e+04	-2.003e+05	-1.395e+05	-1.498e+05	5.546e+04
1	1	39	4.21	-5.25	-0.89	-0.15	-4.72	-1.006e+05	-2.144e+05	-1.234e+05	-1.917e+05	4.553e+04
1	1	40	1.52	-2.07	-0.45	-9.99e-02	-1.79	-7.535e+04	-2.362e+05	-8.040e+04	-2.312e+05	2.803e+04
1	1	41	9.65e-03	-8.11e-03	4.87e-04	1.05e-03	8.87e-03	-2.216e+04	-3.916e+04	-3.063e+04	-3.068e+04	-8498.51
1	1	42	2.49	-1.92	0.46	0.10	-2.20	1.925e+05	1.778e+04	3.016e+04	1.802e+05	-4.484e+04
1	1	43	6.00	-4.89	0.95	0.16	-5.43	1.853e+05	4.096e+04	7.581e+04	1.505e+05	-6.179e+04
1	1	44	7.29	-5.67	1.35	0.27	-6.46	1.788e+05	3.041e+04	9.147e+04	1.177e+05	-7.303e+04
1	1	45	6.31	-6.67	1.61	-1.97	-6.24	2.559e+05	4.189e+04	8.912e+04	2.087e+05	-8.876e+04
1	1	46	4.57	-4.69	0.85	-0.97	-4.54	-1.239e+05	-2.610e+05	-1.531e+05	-2.317e+05	5.616e+04
1	1	47	4.11	-3.82	1.19	-0.90	-3.82	-1.399e+05	-2.226e+05	-1.553e+05	-2.071e+05	3.222e+04
1	1	48	5.25	-3.95	4.32	-3.01	-2.78	-1.531e+05	-2.529e+05	-1.861e+05	-2.199e+05	4.695e+04
1	1	49	4.93	-5.09	4.93	-5.09	-5.02e-02	-1.457e+05	-2.976e+05	-2.216e+05	-2.217e+05	7.592e+04
1	1	50	1.93	-1.49	7.87e-02	0.36	1.70	-7.541e+04	-2.362e+05	-2.312e+05	-8.045e+04	2.803e+04
1	1	51	5.84	-5.11	-5.09	5.82	-0.46	4.684e+04	-9.624e+04	-9.583e+04	4.643e+04	-7631.46
1	1	52	4.70	-5.75	-4.39	3.35	-3.51	1.116e+05	-4.000e+04	-3.451e+04	1.061e+05	-2.832e+04
1	1	53	4.62	-4.68	-1.05	0.99	-4.54	1.526e+05	-3.256e+04	-2.614e+04	1.461e+05	-3.388e+04
1	1	54	5.72	-5.97	-0.98	0.73	-5.78	1.839e+05	-1.313e+04	2.656e+04	1.443e+05	-7.903e+04
1	1	55	4.97	-5.62	3.11	-3.76	-4.03	-2.014e+05	-2.865e+05	-2.429e+05	-2.450e+05	4.256e+04
1	1	56	3.91	-4.48	3.62	-4.19	-1.54	-1.413e+05	-2.706e+05	-1.948e+05	-2.171e+05	6.370e+04
1	1	57	2.97	-3.32	2.97	-3.32	-8.06e-02	-1.727e+05	-2.291e+05	-2.009e+05	-2.009e+05	2.821e+04
1	1	58	3.61	-5.38	2.86	-4.62	2.49	-1.531e+05	-2.529e+05	-2.199e+05	-1.861e+05	4.695e+04
1	1	59	4.94	-4.13	0.10	0.70	4.52	-1.007e+05	-2.145e+05	-1.917e+05	-1.234e+05	4.553e+04
1	1	60	6.39	-3.56	-3.22	6.05	1.82	-1.050e+04	-1.526e+05	-1.513e+05	-1.181e+04	1.359e+04
1	1	61	4.09	-3.14	-3.12	4.08	-0.33	7.752e+04	-1.208e+05	-1.207e+05	7.738e+04	-5277.94
1	1	62	5.34	-4.43	-3.74	4.64	-2.51	8.519e+04	-5.620e+04	-4.760e+04	7.659e+04	-3.380e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	1	63	6.67	-6.66	-3.82	3.83	-5.45	1.547e+05	-5.437e+04	-3.671e+04	1.370e+05	-5.814e+04
1	1	64	3.95	-3.55	3.79	-3.40	-1.07	-2.033e+05	-2.338e+05	-2.102e+05	-2.269e+05	1.276e+04
1	1	65	4.97	-5.44	4.96	-5.42	-0.40	-2.078e+05	-3.157e+05	-2.617e+05	-2.617e+05	5.397e+04
1	1	66	3.91	-4.27	3.76	-4.13	1.10	-1.413e+05	-2.706e+05	-2.171e+05	-1.949e+05	6.369e+04
1	1	67	3.24	-4.12	0.66	-1.54	3.51	-1.399e+05	-2.226e+05	-2.071e+05	-1.554e+05	3.222e+04
1	1	68	5.86	-4.69	0.20	0.97	5.26	-8.898e+04	-2.004e+05	-1.498e+05	-1.395e+05	5.545e+04
1	1	69	4.93	-2.92	-1.43	3.44	3.08	-1.417e+04	-1.929e+05	-1.903e+05	-1.678e+04	2.145e+04
1	1	70	5.27	-4.40	-4.40	5.27	0.20	2480.21	-1.256e+05	-1.246e+05	1529.32	1.099e+04
1	1	71	6.14	-6.13	-5.88	5.89	-1.76	6.274e+04	-1.229e+05	-1.223e+05	6.216e+04	-1.038e+04
1	1	72	3.78	-5.51	-4.81	3.07	-2.46	1.416e+05	-1.336e+05	-1.310e+05	1.390e+05	-2.638e+04
1	1	73	2.18	-2.51	2.10	-2.43	-0.60	-1.744e+05	-2.428e+05	-2.086e+05	-2.086e+05	3.417e+04
1	1	74	3.02	-4.27	3.02	-4.27	5.58e-02	-2.033e+05	-2.338e+05	-2.269e+05	-2.103e+05	1.276e+04
1	1	75	4.48	-4.68	3.28	-3.48	3.09	-2.014e+05	-2.865e+05	-2.450e+05	-2.429e+05	4.256e+04
1	1	76	3.72	-4.31	0.57	-1.16	3.92	-1.239e+05	-2.610e+05	-2.317e+05	-1.531e+05	5.616e+04
1	1	77	4.46	-5.27	-1.95	1.14	4.62	-1.093e+05	-2.890e+05	-2.628e+05	-1.355e+05	6.341e+04
1	1	78	4.05	-4.33	-2.72	2.44	3.30	-4.850e+04	-2.159e+05	-1.944e+05	-7.000e+04	5.601e+04
1	1	79	4.75	-6.02	-5.49	4.22	2.33	-1.414e+04	-1.991e+05	-1.906e+05	-2.259e+04	3.862e+04
1	1	80	4.63	-5.35	-5.22	4.50	-1.14	8.041e+04	-1.925e+05	-1.919e+05	7.982e+04	1.271e+04
1	1	81	2.51	-4.63	-3.94	1.81	-2.11	7.680e+04	-1.273e+05	-1.267e+05	7.623e+04	-1.080e+04
1	1	82	3.75	-4.98	-2.26	1.03	4.04	-7.886e+04	-1.878e+05	-1.641e+05	-1.025e+05	4.492e+04
1	1	83	2.52	-4.86	-3.81	1.47	2.58	-4.171e+04	-2.152e+05	-1.915e+05	-6.539e+04	5.957e+04
1	1	84	2.11	-3.41	-1.74	0.44	2.53	-5.897e+04	-1.321e+05	-1.068e+05	-8.431e+04	3.480e+04
1	1	85	2.18	-4.67	-3.92	1.43	2.14	-2.486e+04	-1.291e+05	-1.104e+05	-4.361e+04	4.004e+04
1	1	86	1.27	-2.44	-1.53	0.36	1.59	-3.582e+04	-8.239e+04	-5.833e+04	-5.988e+04	2.328e+04
1	1	87	1.42	-2.95	-2.71	1.18	1.01	-8848.17	-8.654e+04	-6.778e+04	-2.762e+04	3.326e+04
1	1	88	0.72	-1.67	-1.33	0.39	0.83	-1.766e+04	-4.886e+04	-2.784e+04	-3.867e+04	1.463e+04
1	1	89	1.08	-1.94	-1.88	1.03	0.40	2781.54	-5.504e+04	-3.841e+04	-1.385e+04	2.618e+04
1	1	90	0.59	-1.39	-1.30	0.51	0.41	-6287.74	-2.800e+04	-1.123e+04	-2.306e+04	9104.97
1	1	91	1.56	-1.37	-1.35	1.54	-0.23	1.066e+04	-3.251e+04	-1.917e+04	-2678.70	1.995e+04
1	1	92	0.33	-0.71	-0.71	0.32	-3.95e-02	123.37	-1.506e+04	-2842.58	-1.209e+04	6018.74
1	1	93	1.11	-1.53	-1.53	1.10	-5.83e-02	1.464e+04	-1.777e+04	-8347.07	5218.18	1.472e+04
1	1	94	0.28	-0.22	-6.97e-02	0.13	0.23	1409.57	-7276.17	-434.36	-5432.24	3551.87
1	1	95	1.88	-0.83	-0.70	1.76	0.57	1.363e+04	-9029.20	-4052.55	8649.50	9379.80
1	1	96	-3.64e-02	-0.25	-0.14	-0.15	0.11	-1124.83	-4840.33	-1181.53	-4783.63	455.47
1	1	97	0.60	-0.20	-0.18	0.58	0.14	4335.57	-1310.35	-1309.90	4335.13	-50.07
1	1	98	1.71	-4.49	-4.47	1.69	0.34	7105.61	-1.427e+05	-1.409e+05	5253.09	1.656e+04
1	1	99	1.80	-4.54	-4.54	1.79	0.18	1.008e+04	-1.151e+05	-1.065e+05	1510.88	3.161e+04
1	1	100	1.46	-3.04	-3.03	1.46	-0.18	1.689e+04	-8.420e+04	-7.412e+04	6811.70	3.028e+04
1	1	101	1.15	-2.11	-2.08	1.12	-0.33	2.158e+04	-5.962e+04	-4.987e+04	1.183e+04	2.639e+04
1	1	102	1.01	-1.47	-1.43	0.97	-0.33	2.430e+04	-4.030e+04	-3.178e+04	1.579e+04	2.185e+04
1	1	103	1.04	-0.99	-0.96	1.01	-0.22	2.436e+04	-2.619e+04	-1.963e+04	1.780e+04	1.699e+04
1	1	104	1.06	-0.46	-0.44	1.04	-0.20	2.019e+04	-1.592e+04	-1.208e+04	1.635e+04	1.113e+04
1	1	105	1.17	-0.18	-0.13	1.12	-0.26	4470.41	-1181.00	-1134.44	4423.85	-510.88
1	1	106	3.26	-5.14	-4.96	3.08	-1.22	3.937e+04	-1.224e+05	-1.214e+05	3.837e+04	1.270e+04
1	1	107	2.52	-3.99	-3.76	2.29	-1.20	3.840e+04	-9.670e+04	-9.471e+04	3.640e+04	1.631e+04
1	1	108	1.66	-3.00	-2.67	1.33	-1.20	3.739e+04	-7.519e+04	-7.268e+04	3.488e+04	1.661e+04
1	1	109	1.13	-2.16	-1.70	0.67	-1.14	3.562e+04	-5.766e+04	-5.494e+04	3.290e+04	1.569e+04
1	1	110	0.19	-1.21	-0.84	-0.18	-0.61	3.304e+04	-4.340e+04	-4.076e+04	3.040e+04	1.396e+04
1	1	111	0.94	-0.60	-0.43	0.77	-0.49	2.892e+04	-3.200e+04	-2.970e+04	2.662e+04	1.162e+04
1	1	112	0.58	-0.59	-0.54	0.53	-0.25	2.194e+04	-2.139e+04	-1.983e+04	2.039e+04	8052.91
1	1	113	1.30	-0.13	0.12	1.05	-0.54	2153.43	-1760.25	-1724.70	2117.88	371.28
1	1	114	3.67	-5.88	-5.18	2.98	-2.47	6.317e+04	-9.591e+04	-9.575e+04	6.301e+04	-5049.88
1	1	115	2.48	-3.95	-3.24	1.77	-2.02	5.628e+04	-7.794e+04	-7.788e+04	5.622e+04	-2784.39
1	1	116	1.95	-2.99	-2.10	1.06	-1.89	4.999e+04	-6.358e+04	-6.357e+04	4.998e+04	-1280.64
1	1	117	1.68	-2.42	-1.32	0.58	-1.82	4.374e+04	-5.145e+04	-5.145e+04	4.374e+04	-283.44
1	1	118	1.72	-2.40	-0.88	0.20	-1.99	3.755e+04	-4.119e+04	-4.118e+04	3.755e+04	375.34
1	1	119	1.25	-1.21	2.47e-02	1.56e-02	-1.23	3.116e+04	-3.225e+04	-3.225e+04	3.115e+04	619.96
1	1	120	1.06	-5.54e-02	0.14	0.87	-0.42	2.187e+04	-2.272e+04	-2.272e+04	2.186e+04	460.88
1	1	121	0.49	-0.16	2.23e-02	0.31	-0.29	1740.85	-2305.21	-2271.13	1706.77	369.77
1	1	122	4.38	-6.34	-4.61	2.66	-3.94	8.904e+04	-8.426e+04	-7.968e+04	8.446e+04	-2.782e+04
1	1	123	3.10	-4.91	-3.16	1.35	-3.30	7.662e+04	-6.850e+04	-6.423e+04	7.235e+04	-2.453e+04
1	1	124	2.31	-3.26	-1.76	0.82	-2.47	6.410e+04	-5.709e+04	-5.317e+04	6.017e+04	-2.146e+04
1	1	125	1.94	-2.30	-0.91	0.55	-2.00	5.284e+04	-4.744e+04	-4.395e+04	4.935e+04	-1.837e+04
1	1	126	1.99	-1.52	5.85e-02	0.41	-1.75	4.281e+04	-3.912e+04	-3.612e+04	3.982e+04	-1.537e+04
1	1	127	1.63	-1.46	0.22	-4.79e-02	-1.54	3.374e+04	-3.144e+04	-2.895e+04	3.125e+04	-1.248e+04
1	1	128	2.44	-0.83	0.45	1.15	-1.60	2.341e+04	-2.232e+04	-2.051e+04	2.159e+04	-8925.79
1	1	129	1.56	-0.10	0.74	0.72	-0.83	2675.93	-1732.56	-1407.08	2350.45	-1152.80
1	1	130	1.83	-4.41	-2.38	-0.20	-2.93	1.107e+05	-5.379e+04	-4.705e+04	1.040e+05	-3.261e+04
1	1	131	2.90	-4.52	-1.93	0.30	-3.54	9.927e+04	-4.782e+04	-3.276e+04	8.422e+04	-4.459e+04
1	1	132	2.44	-3.19	-0.93	0.18	-2.76	7.871e+04	-4.337e+04	-2.809e+04	6.342e+04	-4.040e+04
1	1	133	1.95	-2.18	-0.30	6.39e-02	-2.06	6.140e+04	-3.843e+04	-2.441e+04	4.738e+04	-3.469e+04
1	1	134	1.70	-1.45	0.19	5.77e-02	-1.57	4.722e+04	-3.335e+04	-2.103e+04	3.491e+04	-2.900e+04
1	1	135	1.61	-0.91	0.59	0.10	-1.24	3.557e+04	-2.797e+04	-1.761e+04	2.521e+04	-2.347e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	1	136	1.63	-0.34	1.01	0.28	-0.92	2.452e+04	-2.047e+04	-1.271e+04	1.675e+04	-1.700e+04
1	1	137	1.77	-0.14	1.25	0.39	-0.85	4390.50	-969.59	1200.20	2220.72	-2631.02
1	1	138	4.68	-5.67	-0.28	-0.70	-5.17	1.913e+05	-1.860e+04	2.193e+04	1.508e+05	-8.286e+04
1	1	139	4.51	-4.64	-0.19	6.43e-02	-4.57	1.215e+05	-2.028e+04	1.206e+04	8.916e+04	-5.949e+04
1	1	140	2.76	-3.22	2.41e-02	-0.48	-2.98	9.050e+04	-2.452e+04	6696.92	5.928e+04	-5.114e+04
1	1	141	1.95	-2.16	0.37	-0.58	-2.00	6.734e+04	-2.579e+04	2820.11	3.874e+04	-4.296e+04
1	1	142	1.16	-1.24	0.34	-0.42	-1.14	4.959e+04	-2.513e+04	-3.53	2.446e+04	-3.530e+04
1	1	143	1.47	-0.70	0.83	-5.80e-02	-0.99	3.583e+04	-2.283e+04	-1826.85	1.483e+04	-2.812e+04
1	1	144	1.24	-0.44	0.88	-7.83e-02	-0.69	2.433e+04	-1.737e+04	-1635.68	8594.76	-2.022e+04
1	1	145	1.56	-0.12	1.32	0.12	-0.58	6288.68	-432.03	4547.52	1309.13	-2944.52
1	1	146	6.15	-6.82	1.64	-2.32	-6.18	1.746e+05	2.187e+04	6.586e+04	1.306e+05	-6.916e+04
1	1	147	4.37	-5.00	1.08	-1.72	-4.47	1.344e+05	8561.07	5.557e+04	8.740e+04	-6.088e+04
1	1	148	3.12	-3.54	1.08	-1.49	-3.07	9.656e+04	-3423.26	4.179e+04	5.135e+04	-4.976e+04
1	1	149	2.28	-2.40	1.17	-1.28	-1.99	6.915e+04	-1.125e+04	2.991e+04	2.799e+04	-4.019e+04
1	1	150	1.84	-1.75	1.32	-1.23	-1.26	4.900e+04	-1.544e+04	2.052e+04	1.304e+04	-3.200e+04
1	1	151	1.42	-0.86	1.21	-0.65	-0.65	3.440e+04	-1.647e+04	1.363e+04	4291.01	-2.500e+04
1	1	152	1.22	-0.16	1.09	-3.60e-02	-0.40	2.292e+04	-1.351e+04	9060.66	347.81	-1.768e+04
1	1	153	1.03	-0.13	0.96	-5.75e-02	-0.28	8120.45	-41.13	7686.30	393.02	-1831.62
1	1	154	4.73	-5.88	2.23	-3.38	-4.51	2.146e+05	6.193e+04	1.233e+05	1.532e+05	-7.483e+04
1	1	155	4.32	-5.83	2.27	-3.78	-4.07	1.376e+05	3.697e+04	9.069e+04	8.383e+04	-5.017e+04
1	1	156	3.09	-3.53	2.02	-2.46	-2.44	9.523e+04	1.735e+04	6.748e+04	4.510e+04	-3.730e+04
1	1	157	2.34	-2.29	1.75	-1.70	-1.54	6.610e+04	3424.09	4.888e+04	2.064e+04	-2.797e+04
1	1	158	1.95	-1.36	1.73	-1.14	-0.82	4.549e+04	-5457.80	3.444e+04	5590.15	-2.100e+04
1	1	159	1.55	-1.01	1.48	-0.95	-0.39	3.109e+04	-9746.52	2.379e+04	-2443.38	-1.565e+04
1	1	160	1.75	-0.50	1.68	-0.43	-0.37	2.054e+04	-9007.31	1.609e+04	-4551.28	-1.057e+04
1	1	161	1.25	-7.46e-02	1.25	-6.95e-02	-8.19e-02	9813.83	224.44	9793.43	244.84	441.82
1	1	162	3.63	-4.02	3.09	-3.48	-1.95	1.825e+05	8.944e+04	1.381e+05	1.339e+05	-4.649e+04
1	1	163	3.67	-4.45	3.12	-3.89	-2.05	1.276e+05	5.967e+04	1.050e+05	8.227e+04	-3.201e+04
1	1	164	2.87	-3.02	2.51	-2.66	-1.42	8.605e+04	3.490e+04	7.668e+04	4.427e+04	-1.978e+04
1	1	165	2.19	-1.99	2.00	-1.80	-0.87	5.839e+04	1.641e+04	5.464e+04	2.016e+04	-1.198e+04
1	1	166	1.73	-1.24	1.66	-1.17	-0.46	3.957e+04	3838.43	3.812e+04	5287.38	-7047.94
1	1	167	1.40	-0.71	1.39	-0.70	-0.14	2.676e+04	-3204.00	2.619e+04	-2642.84	-4061.63
1	1	168	1.22	-0.21	1.21	-0.20	0.12	1.799e+04	-4654.12	1.783e+04	-4485.84	-1944.95
1	1	169	1.31	-5.22e-02	1.27	-1.61e-02	0.22	1.141e+04	381.28	1.041e+04	1383.49	3170.68
1	1	170	5.44	-5.26	5.22	-5.04	-1.52	1.826e+05	9.656e+04	1.457e+05	1.335e+05	-4.259e+04
1	1	171	4.21	-3.71	4.05	-3.55	-1.13	1.094e+05	7.135e+04	9.951e+04	8.123e+04	-1.668e+04
1	1	172	2.80	-2.56	2.73	-2.48	-0.62	7.058e+04	4.663e+04	6.926e+04	4.795e+04	-5468.59
1	1	173	2.03	-1.67	2.00	-1.65	-0.30	4.752e+04	2.573e+04	4.750e+04	2.575e+04	664.86
1	1	174	1.51	-1.01	1.51	-1.01	-9.17e-02	3.251e+04	1.068e+04	3.182e+04	1.137e+04	3813.37
1	1	175	1.19	-0.57	1.18	-0.56	0.11	2.229e+04	1834.41	2.101e+04	3111.00	4948.19
1	1	176	0.94	-0.14	0.85	-5.13e-02	0.29	1.564e+04	-1263.14	1.412e+04	259.69	4840.19
1	1	177	1.01	-2.59e-02	0.91	7.09e-02	0.30	1.255e+04	433.63	9231.42	3748.33	5400.19
1	1	178	5.71	-5.27	5.71	-5.27	-0.10	1.412e+05	9.339e+04	1.173e+05	1.173e+05	-2.390e+04
1	1	179	3.75	-3.32	3.75	-3.32	-3.01e-04	8.720e+04	7.102e+04	7.913e+04	7.909e+04	-8091.72
1	1	180	2.64	-2.20	2.64	-2.20	8.48e-02	5.315e+04	5.146e+04	5.232e+04	5.229e+04	843.25
1	1	181	1.92	-1.48	1.91	-1.47	0.18	3.884e+04	2.762e+04	3.324e+04	3.322e+04	5611.06
1	1	182	1.39	-0.98	1.35	-0.94	0.30	2.780e+04	1.225e+04	2.004e+04	2.001e+04	7774.13
1	1	183	1.01	-0.51	0.97	-0.47	0.25	1.975e+04	3451.40	1.161e+04	1.159e+04	8149.53
1	1	184	0.70	-6.84e-02	0.65	-1.95e-02	0.19	1.457e+04	-31.57	7274.63	7260.28	7299.02
1	1	185	0.61	-6.98e-02	0.52	1.29e-02	0.22	1.297e+04	408.98	6691.35	6690.63	6282.01
1	1	186	5.57	-4.96	5.42	-4.81	1.25	1.826e+05	9.658e+04	1.335e+05	1.457e+05	-4.258e+04
1	1	187	4.10	-3.76	3.96	-3.63	1.04	1.094e+05	7.137e+04	8.126e+04	9.948e+04	-1.668e+04
1	1	188	2.99	-2.37	2.89	-2.28	0.72	7.055e+04	4.666e+04	4.798e+04	6.922e+04	-5465.62
1	1	189	2.15	-1.60	2.07	-1.52	0.56	4.749e+04	2.576e+04	2.578e+04	4.747e+04	667.12
1	1	190	1.52	-1.05	1.46	-0.99	0.41	3.249e+04	1.069e+04	1.138e+04	3.180e+04	3815.64
1	1	191	0.99	-0.53	0.91	-0.45	0.33	2.227e+04	1844.37	3123.75	2.099e+04	4948.88
1	1	192	0.62	-0.19	0.53	-0.11	0.25	1.563e+04	-1254.14	272.59	1.410e+04	4841.70
1	1	193	0.55	-5.28e-02	0.41	8.74e-02	0.26	1.254e+04	433.92	3746.59	9223.04	5395.88
1	1	194	4.36	-3.20	3.88	-2.73	1.83	1.825e+05	8.945e+04	1.339e+05	1.380e+05	-4.649e+04
1	1	195	4.78	-3.24	4.25	-2.71	1.99	1.276e+05	5.969e+04	8.230e+04	1.050e+05	-3.201e+04
1	1	196	3.38	-2.44	2.96	-2.03	1.49	8.602e+04	3.492e+04	4.429e+04	7.664e+04	-1.978e+04
1	1	197	2.38	-1.69	2.07	-1.38	1.09	5.836e+04	1.642e+04	2.018e+04	5.460e+04	-1.197e+04
1	1	198	1.62	-1.08	1.38	-0.84	0.76	3.953e+04	3849.67	5299.93	3.808e+04	-7046.18
1	1	199	0.99	-0.60	0.81	-0.43	0.50	2.672e+04	-3195.37	-2633.60	2.616e+04	-4060.80
1	1	200	0.54	-0.17	0.44	-7.20e-02	0.24	1.796e+04	-4648.33	-4479.56	1.779e+04	-1946.19
1	1	201	0.44	-6.19e-02	0.29	8.94e-02	0.23	1.139e+04	381.69	1381.01	1.039e+04	3162.56
1	1	202	5.95	-4.32	3.54	-1.91	4.35	2.146e+05	6.196e+04	1.533e+05	1.232e+05	-7.481e+04
1	1	203	5.93	-3.92	3.88	-1.88	4.00	1.375e+05	3.698e+04	8.386e+04	9.066e+04	-5.017e+04
1	1	204	3.71	-2.69	2.51	-1.50	2.49	9.521e+04	1.735e+04	4.512e+04	6.744e+04	-3.730e+04
1	1	205	2.54	-1.88	1.71	-1.05	1.73	6.607e+04	3421.61	2.065e+04	4.884e+04	-2.797e+04
1	1	206	1.86	-1.21	1.13	-0.48	1.30	4.546e+04	-5462.94	5597.59	3.439e+04	-2.100e+04
1	1	207	0.93	-0.85	0.41	-0.34	0.81	3.106e+04	-9749.23	-2437.68	2.375e+04	-1.565e+04
1	1	208	0.26	0.14	0.21	0.19	6.14e-02	2.050e+04	-9012.02	-4548.38	1.604e+04	-1.057e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	1	209	0.25	-0.23	0.21	-0.18	0.14	9776.77	224.56	244.42	9756.91	435.09
1	1	210	6.68	-5.80	2.17	-1.29	6.00	1.746e+05	2.187e+04	1.306e+05	6.584e+04	-6.915e+04
1	1	211	4.94	-4.08	1.53	-0.68	4.37	1.344e+05	8542.83	8.742e+04	5.553e+04	-6.088e+04
1	1	212	3.57	-2.92	1.18	-0.53	3.13	9.656e+04	-3445.64	5.136e+04	4.175e+04	-4.977e+04
1	1	213	2.45	-2.11	0.77	-0.42	2.20	6.913e+04	-1.127e+04	2.800e+04	2.986e+04	-4.019e+04
1	1	214	1.54	-1.54	0.26	-0.26	1.52	4.897e+04	-1.546e+04	1.305e+04	2.047e+04	-3.200e+04
1	1	215	1.08	-1.14	0.30	-0.35	1.06	3.437e+04	-1.649e+04	4294.63	1.358e+04	-2.500e+04
1	1	216	0.59	-0.63	0.42	-0.46	0.42	2.289e+04	-1.352e+04	351.70	9012.08	-1.768e+04
1	1	217	0.19	-0.62	0.11	-0.54	0.24	8079.41	-42.86	393.82	7642.73	-1831.97
1	1	218	5.34	-4.50	0.31	0.53	4.92	1.913e+05	-1.862e+04	1.508e+05	2.189e+04	-8.285e+04
1	1	219	4.45	-4.45	-0.56	0.56	4.41	1.215e+05	-2.033e+04	8.917e+04	1.200e+04	-5.949e+04
1	1	220	3.19	-2.82	-9.20e-02	0.47	2.99	9.050e+04	-2.456e+04	5.930e+04	6641.11	-5.115e+04
1	1	221	2.34	-2.22	-3.11e-02	0.15	2.28	6.734e+04	-2.582e+04	3.876e+04	2769.64	-4.296e+04
1	1	222	1.72	-2.08	6.69e-02	-0.42	1.88	4.958e+04	-2.515e+04	2.448e+04		-49.83
1	1	223	1.06	-1.07	0.31	-0.32	1.02	3.581e+04	-2.286e+04	1.483e+04	-1874.53	-2.812e+04
1	1	224	0.30	-0.82	9.35e-02	-0.62	0.43	2.431e+04	-1.739e+04	8597.99	-1678.53	-2.021e+04
1	1	225	0.23	-0.32	5.78e-02	-0.17	0.24	6253.62	-435.37	1309.23	4509.01	-2937.01
1	1	226	3.92	-2.04	-0.53	2.41	2.59	1.107e+05	-5.387e+04	1.040e+05	-4.713e+04	-3.261e+04
1	1	227	4.05	-3.06	-1.13	2.12	3.17	9.926e+04	-4.788e+04	8.421e+04	-3.284e+04	-4.458e+04
1	1	228	2.90	-2.47	-0.83	1.25	2.48	7.872e+04	-4.341e+04	6.344e+04	-2.813e+04	-4.040e+04
1	1	229	2.04	-1.91	-0.55	0.68	1.88	6.141e+04	-3.845e+04	4.740e+04	-2.444e+04	-3.468e+04
1	1	230	1.36	-1.43	-0.34	0.27	1.36	4.723e+04	-3.337e+04	3.493e+04	-2.106e+04	-2.899e+04
1	1	231	0.75	-1.00	-0.19	-5.62e-02	0.88	3.557e+04	-2.799e+04	2.522e+04	-1.764e+04	-2.347e+04
1	1	232	0.40	-0.62	1.48e-02	-0.24	0.49	2.451e+04	-2.049e+04	1.676e+04	-1.274e+04	-1.700e+04
1	1	233	0.17	-0.34	-3.37e-02	-0.14	0.25	4374.12	-974.21	2218.90	1181.01	-2623.33
1	1	234	5.64	-4.40	-3.33	4.56	3.11	8.905e+04	-8.431e+04	8.446e+04	-7.973e+04	-2.782e+04
1	1	235	4.23	-3.12	-2.14	3.25	2.50	7.663e+04	-6.853e+04	7.236e+04	-6.426e+04	-2.453e+04
1	1	236	2.63	-2.27	-1.54	1.89	1.75	6.412e+04	-5.710e+04	6.019e+04	-5.318e+04	-2.146e+04
1	1	237	1.73	-1.72	-1.13	1.14	1.30	5.287e+04	-4.744e+04	4.938e+04	-4.396e+04	-1.837e+04
1	1	238	1.30	-1.19	-0.86	0.96	0.85	4.284e+04	-3.912e+04	3.985e+04	-3.612e+04	-1.537e+04
1	1	239	0.33	-1.23	-1.05	0.15	0.50	3.376e+04	-3.144e+04	3.127e+04	-2.895e+04	-1.249e+04
1	1	240	0.35	-0.41	0.35	-0.41	-4.05e-02	2.342e+04	-2.232e+04	2.161e+04	-2.050e+04	-8934.59
1	1	241	0.18	-0.78	-0.19	-0.41	0.47	2683.24	-1727.88	2354.41	-1399.06	-1158.61
1	1	242	5.36	-4.21	-3.98	5.13	1.46	6.321e+04	-9.591e+04	6.305e+04	-9.575e+04	-5064.98
1	1	243	3.42	-2.89	-2.72	3.25	1.01	5.631e+04	-7.793e+04	5.625e+04	-7.787e+04	-2794.09
1	1	244	2.29	-2.24	-2.10	2.14	0.79	5.003e+04	-6.356e+04	5.001e+04	-6.354e+04	-1287.91
1	1	245	1.47	-1.92	-1.85	1.39	0.50	4.378e+04	-5.142e+04	4.378e+04	-5.142e+04	-293.50
1	1	246	0.64	-1.76	-1.76	0.64	2.66e-02	3.758e+04	-4.115e+04	3.758e+04	-4.115e+04	358.35
1	1	247	0.65	-1.74	-1.64	0.55	0.49	3.119e+04	-3.222e+04	3.118e+04	-3.221e+04	597.61
1	1	248	0.65	-1.46	-0.55	-0.25	1.04	2.190e+04	-2.269e+04	2.189e+04	-2.269e+04	435.08
1	1	249	5.22e-02	-1.98	-1.11	-0.82	1.00	1759.56	-2278.20	1729.91	-2248.55	344.73
1	1	250	4.83	-4.02	-4.02	4.83	5.97e-02	3.943e+04	-1.224e+05	3.843e+04	-1.214e+05	1.269e+04
1	1	251	3.64	-3.32	-3.32	3.64	1.19e-02	3.845e+04	-9.667e+04	3.646e+04	-9.468e+04	1.629e+04
1	1	252	2.69	-2.55	-2.55	2.69	4.07e-02	3.744e+04	-7.514e+04	3.494e+04	-7.264e+04	1.659e+04
1	1	253	1.98	-2.40	-2.40	1.98	0.11	3.567e+04	-5.760e+04	3.295e+04	-5.489e+04	1.567e+04
1	1	254	1.59	-2.83	-2.74	1.50	0.61	3.309e+04	-4.333e+04	3.045e+04	-4.070e+04	1.394e+04
1	1	255	1.01	-1.63	-1.43	0.81	0.70	2.895e+04	-3.195e+04	2.666e+04	-2.966e+04	1.159e+04
1	1	256	0.20	-1.92	-1.38	-0.34	0.92	2.196e+04	-2.134e+04	2.042e+04	-1.980e+04	8020.21
1	1	257	9.75e-02	-1.18	-0.84	-0.24	0.57	2185.46	-1739.31	2154.75	-1708.60	345.83
1	1	258	4.01	-2.62	-2.43	3.81	-1.12	7179.32	-1.427e+05	5331.35	-1.409e+05	1.654e+04
1	1	259	4.35	-2.94	-2.72	4.14	-1.24	1.014e+04	-1.150e+05	1581.39	-1.064e+05	3.160e+04
1	1	260	3.03	-2.63	-2.49	2.90	-0.87	1.694e+04	-8.413e+04	6878.63	-7.407e+04	3.027e+04
1	1	261	2.14	-2.24	-2.17	2.06	-0.55	2.164e+04	-5.955e+04	1.190e+04	-4.981e+04	2.638e+04
1	1	262	1.37	-1.86	-1.85	1.35	-0.22	2.434e+04	-4.024e+04	1.584e+04	-3.173e+04	2.184e+04
1	1	263	0.69	-1.47	-1.46	0.69	0.14	2.439e+04	-2.616e+04	1.784e+04	-1.960e+04	1.698e+04
1	1	264	0.31	-1.28	-1.17	0.21	0.39	2.020e+04	-1.589e+04	1.638e+04	-1.207e+04	1.112e+04
1	1	265	9.83e-02	-1.15	-1.01	-4.29e-02	0.40	4494.58	-1176.81	4446.60	-1128.83	-519.42
1	1	266	4.89	-3.72	-2.01	3.18	-3.43	-4.165e+04	-2.152e+05	-6.532e+04	-1.915e+05	5.957e+04
1	1	267	4.93	-3.58	-2.14	3.49	-3.19	-2.480e+04	-1.291e+05	-4.354e+04	-1.103e+05	4.003e+04
1	1	268	3.14	-2.80	-2.02	2.36	-2.00	-8791.53	-8.648e+04	-2.755e+04	-6.772e+04	3.325e+04
1	1	269	2.21	-2.29	-1.76	1.68	-1.45	2834.35	-5.499e+04	-1.379e+04	-3.836e+04	2.617e+04
1	1	270	1.75	-1.62	-0.96	1.09	-1.34	1.070e+04	-3.248e+04	-2640.52	-1.914e+04	1.995e+04
1	1	271	0.23	-1.45	-1.21	-1.33e-02	-0.59	1.466e+04	-1.776e+04	5241.69	-8338.98	1.472e+04
1	1	272	0.35	-0.73	-0.40	1.87e-02	0.50	1.364e+04	-9030.20	8661.16	-4052.83	9383.84
1	1	273	0.11	-1.54	-1.48	5.47e-02	0.29	4344.83	-1307.87	4344.37	-1307.40	-51.20
1	1	274	5.34	-5.16	-1.53	1.71	-4.99	-7.881e+04	-1.877e+05	-1.025e+05	-1.641e+05	4.492e+04
1	1	275	3.85	-3.76	-1.07	1.16	-3.64	-5.892e+04	-1.321e+05	-8.426e+04	-1.067e+05	3.480e+04
1	1	276	2.78	-2.98	-1.07	0.88	-2.71	-3.577e+04	-8.235e+04	-5.983e+04	-5.829e+04	2.328e+04
1	1	277	1.88	-2.48	-1.13	0.52	-2.02	-1.761e+04	-4.883e+04	-3.863e+04	-2.781e+04	1.464e+04
1	1	278	1.03	-2.10	-1.12	4.85e-02	-1.45	-6256.87	-2.799e+04	-2.303e+04	-1.122e+04	9120.45
1	1	279	0.81	-2.02	-1.38	0.17	-1.18	145.51	-1.505e+04	-1.207e+04	-2836.53	6034.87
1	1	280	0.43	-1.69	-1.64	0.38	-0.33	1425.52	-7271.44	-5413.68	-432.24	3564.49
1	1	281	2.35e-02	-1.89	-1.88	1.14e-02	-0.15	-1124.23	-4824.46	-4767.36	-1181.34	456.12

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	1	282	4.01	-4.15	4.69e-02	-0.18	-4.08	-1.258e+05	-2.192e+05	-1.586e+05	-1.864e+05	4.461e+04
1	1	283	3.35	-4.20	4.21e-02	-0.89	-3.75	-8.889e+04	-1.271e+05	-1.153e+05	-1.008e+05	1.770e+04
1	1	284	2.40	-3.01	-0.11	-0.49	-2.70	-5.218e+04	-8.340e+04	-8.297e+04	-5.261e+04	3661.79
1	1	285	1.77	-2.76	-0.56	-0.44	-2.26	-2.536e+04	-6.004e+04	-5.965e+04	-2.574e+04	-3625.88
1	1	286	1.43	-3.33	-1.69	-0.22	-2.26	-1.148e+04	-4.554e+04	-4.428e+04	-1.274e+04	-6428.54
1	1	287	1.05	-2.03	-1.48	0.50	-1.18	-4701.82	-3.590e+04	-3.406e+04	-6550.92	-7367.35
1	1	288	0.12	-2.34	-2.30	7.33e-02	-0.33	-238.52	-2.801e+04	-2.586e+04	-2378.89	-7406.07
1	1	289	-1.57e-02	-1.49	-1.42	-8.23e-02	-0.31	-507.47	-2.413e+04	-2.324e+04	-1400.62	-4505.72
1	1	290	2.66	-2.24	1.52	-1.10	-2.07	-1.460e+05	-1.775e+05	-1.657e+05	-1.577e+05	1.523e+04
1	1	291	2.93	-3.14	1.31	-1.52	-2.69	-9.598e+04	-1.255e+05	-1.246e+05	-9.690e+04	-5132.65
1	1	292	2.18	-2.73	0.61	-1.16	-2.28	-4.790e+04	-9.901e+04	-9.187e+04	-5.504e+04	-1.772e+04
1	1	293	1.56	-2.38	1.33e-02	-0.84	-1.92	-2.312e+04	-8.126e+04	-7.101e+04	-3.337e+04	-2.215e+04
1	1	294	1.01	-2.08	-0.49	-0.58	-1.54	-1.107e+04	-6.865e+04	-5.749e+04	-2.223e+04	-2.276e+04
1	1	295	0.60	-1.75	-0.90	-0.25	-1.13	-3947.27	-5.889e+04	-4.750e+04	-1.534e+04	-2.227e+04
1	1	296	0.13	-1.64	-1.22	-0.29	-0.75	694.92	-5.110e+04	-4.025e+04	-1.016e+04	-2.108e+04
1	1	297	-1.61e-02	-1.65	-1.39	-0.27	-0.60	132.52	-4.458e+04	-3.791e+04	-6538.70	-1.593e+04
1	1	298	3.87	-3.86	3.17	-3.17	-2.21	-1.518e+05	-1.702e+05	-1.682e+05	-1.538e+05	5636.18
1	1	299	3.00	-2.98	2.15	-2.13	-2.08	-8.042e+04	-1.308e+05	-1.159e+05	-9.532e+04	-2.299e+04
1	1	300	2.00	-2.41	1.15	-1.56	-1.74	-3.987e+04	-1.094e+05	-8.616e+04	-6.309e+04	-3.279e+04
1	1	301	1.50	-2.03	0.64	-1.18	-1.51	-2.022e+04	-9.404e+04	-6.869e+04	-4.557e+04	-3.505e+04
1	1	302	1.01	-1.64	0.32	-0.95	-1.16	-9541.72	-8.244e+04	-5.708e+04	-3.490e+04	-3.472e+04
1	1	303	0.57	-1.39	-0.31	-0.51	-0.37	-3064.82	-7.336e+04	-4.855e+04	-2.787e+04	-3.359e+04
1	1	304	0.33	-1.35	-0.41	-0.61	-0.83	1234.61	-6.563e+04	-4.225e+04	-2.214e+04	-3.188e+04
1	1	305	-4.30e-02	-1.24	-0.83	-0.46	-0.57	385.11	-5.827e+04	-4.004e+04	-1.784e+04	-2.714e+04
1	1	306	3.34	-3.66	3.23	-3.55	-0.87	-1.201e+05	-1.504e+05	-1.353e+05	-1.353e+05	-1.514e+04
1	1	307	2.13	-2.52	1.93	-2.32	-0.95	-6.241e+04	-1.261e+05	-9.425e+04	-3.184e+04	-3.184e+04
1	1	308	1.55	-1.94	1.19	-1.59	-1.05	-3.229e+04	-1.085e+05	-7.040e+04	-7.039e+04	-3.811e+04
1	1	309	1.31	-1.64	0.76	-1.09	-1.15	-1.718e+04	-9.546e+04	-5.632e+04	-5.632e+04	-3.914e+04
1	1	310	1.46	-1.55	0.56	-0.65	-1.37	-8275.84	-8.505e+04	-4.667e+04	-4.666e+04	-3.839e+04
1	1	311	0.69	-1.10	0.17	-0.58	-0.81	-1519.75	-7.633e+04	-3.892e+04	-3.892e+04	-3.740e+04
1	1	312	-0.19	-0.72	-0.27	-0.64	-0.19	1462.60	-6.968e+04	-3.411e+04	-3.411e+04	-3.557e+04
1	1	313	2.39e-02	-0.19	-4.08e-02	-0.13	-9.85e-02	408.62	-6.271e+04	-3.115e+04	-3.115e+04	-3.156e+04
1	1	314	2.73	-3.51	2.66	-3.44	0.66	-1.518e+05	-1.702e+05	-1.538e+05	-1.682e+05	5634.71
1	1	315	1.72	-2.56	1.71	-2.54	0.22	-8.043e+04	-1.308e+05	-9.533e+04	-1.159e+05	-2.300e+04
1	1	316	1.12	-1.63	1.11	-1.61	-0.22	-3.987e+04	-1.094e+05	-6.310e+04	-8.617e+04	-3.279e+04
1	1	317	0.74	-1.17	0.63	-1.07	-0.44	-2.022e+04	-9.405e+04	-4.558e+04	-6.869e+04	-3.506e+04
1	1	318	0.40	-0.81	0.27	-0.68	-0.38	-9543.35	-8.245e+04	-3.491e+04	-5.708e+04	-3.473e+04
1	1	319	0.41	-0.90	0.28	-0.77	-0.40	-3065.81	-7.338e+04	-2.788e+04	-4.856e+04	-3.360e+04
1	1	320	0.14	-0.76	-0.16	-0.45	-0.43	1234.81	-6.564e+04	-2.214e+04	-4.226e+04	-3.189e+04
1	1	321	-5.34e-02	-0.73	-0.22	-0.56	-0.29	385.22	-5.828e+04	-1.784e+04	-4.005e+04	-2.715e+04
1	1	322	1.22	-2.21	0.85	-1.85	1.06	-1.460e+05	-1.775e+05	-1.577e+05	-1.657e+05	1.522e+04
1	1	323	1.60	-2.21	1.16	-1.76	1.22	-9.599e+04	-1.255e+05	-9.692e+04	-1.246e+05	-5137.16
1	1	324	0.79	-1.42	0.63	-1.27	0.57	-4.791e+04	-9.903e+04	-5.505e+04	-9.188e+04	-1.772e+04
1	1	325	0.36	-1.02	0.35	-1.01	0.13	-2.313e+04	-8.128e+04	-3.339e+04	-7.103e+04	-2.216e+04
1	1	326	0.20	-0.88	0.20	-0.87	-7.07e-02	-1.107e+04	-6.867e+04	-2.224e+04	-5.750e+04	-2.278e+04
1	1	327	0.25	-0.80	0.25	-0.79	-8.15e-02	-3948.57	-5.891e+04	-1.535e+04	-4.751e+04	-2.228e+04
1	1	328	2.07e-02	-0.72	1.81e-02	-0.72	-4.38e-02	695.32	-5.112e+04	-1.016e+04	-4.226e+04	-2.109e+04
1	1	329	-3.03e-02	-0.65	-6.72e-02	-0.62	-0.15	132.91	-4.461e+04	-6541.84	-3.793e+04	-1.594e+04
1	1	330	2.70	-3.51	-0.24	-0.57	3.10	-1.258e+05	-2.192e+05	-1.864e+05	-1.586e+05	4.460e+04
1	1	331	2.31	-2.67	0.26	-0.62	2.45	-8.893e+04	-1.272e+05	-1.008e+05	-1.153e+05	1.769e+04
1	1	332	0.87	-1.69	-0.24	-0.57	1.27	-5.220e+04	-8.343e+04	-5.264e+04	-8.299e+04	3652.96
1	1	333	3.16e-02	-0.97	-0.45	-0.49	0.50	-2.538e+04	-6.006e+04	-2.576e+04	-5.968e+04	-3640.43
1	1	334	-0.18	-1.29	-0.30	-1.16	-0.35	-1.149e+04	-4.558e+04	-1.276e+04	-4.431e+04	-6445.43
1	1	335	0.41	-0.60	0.40	-0.59	0.10	-4704.32	-3.594e+04	-6560.56	-3.408e+04	-7384.49
1	1	336	0.17	-1.27	1.81e-02	-1.12	0.45	-237.51	-2.804e+04	-2383.46	-2.589e+04	-7420.01
1	1	337	7.98e-02	-0.23	-3.05e-02	-0.12	0.15	-506.05	-2.416e+04	-1400.55	-2.326e+04	-4511.90
1	3	1	3.28	-2.30	-2.07	3.05	1.11	6.504e+04	-1.078e+05	6.455e+04	-1.073e+05	-9151.68
1	3	2	4.21	-4.24	-4.22	4.20	0.38	6.811e+04	-1.629e+05	6.761e+04	-1.624e+05	1.075e+04
1	3	3	5.19	-5.36	-5.26	5.09	1.00	5.317e+04	-1.040e+05	5.267e+04	-1.035e+05	-8785.92
1	3	4	4.44	-3.38	-3.06	4.12	1.55	1.199e+05	-1.131e+05	1.177e+05	-1.109e+05	-2.232e+04
1	3	5	3.83	-4.45	-4.01	3.39	1.85	7.214e+04	-4.756e+04	6.487e+04	-4.029e+04	-2.859e+04
1	3	6	5.39	-5.56	-3.49	3.32	4.29	1.309e+05	-4.601e+04	1.160e+05	-3.108e+04	-4.919e+04
1	3	7	4.01	-3.73	-0.83	1.11	3.75	1.291e+05	-2.755e+04	1.237e+05	-2.213e+04	-2.865e+04
1	3	8	4.89	-4.60	-0.76	1.05	4.66	1.557e+05	-1.110e+04	1.221e+05	-2.246e+04	-6.686e+04
1	3	9	4.85	-5.98	-0.19	-0.94	5.40	1.513e+05	2.576e+04	9.966e+04	7.740e+04	-6.177e+04
1	3	10	5.57	-5.10	1.60	-1.13	5.16	2.166e+05	3.548e+04	1.766e+05	7.541e+04	-7.508e+04
1	3	11	3.26	-4.76	1.43	-2.93	3.36	1.654e+05	7.577e+04	1.397e+05	1.015e+05	-4.057e+04
1	3	12	4.85	-4.78	2.49	-2.43	4.14	2.055e+05	5.279e+04	1.597e+05	9.856e+04	-6.995e+04
1	3	13	4.63	-4.70	4.49	-4.57	1.12	2.164e+05	6.836e+04	1.521e+05	1.326e+05	-7.336e+04
1	3	14	6.55	-5.54	5.32	-4.31	3.66	2.303e+05	1.164e+05	1.734e+05	1.734e+05	-5.693e+04
1	3	15	5.96	-5.78	5.96	-5.78	-8.81e-02	2.529e+05	1.281e+05	1.905e+05	1.905e+05	-6.237e+04
1	3	16	4.82	-4.75	4.79	-4.71	0.59	1.949e+05	1.222e+05	1.637e+05	1.535e+05	-3.596e+04
1	3	17	5.01	-4.57	4.95	-4.51	-0.77	1.949e+05	1.222e+05	1.535e+05	1.636e+05	-3.597e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	3	18	3.40	-3.05	3.39	-3.04	-9.88e-02	2.120e+05	9.666e+04	1.544e+05	1.543e+05	-5.767e+04
1	3	19	5.31	-4.69	-3.97	4.59	-2.59	-1.190e+04	-1.684e+05	-1.905e+04	-1.613e+05	3.268e+04
1	3	20	3.82	-4.56	-4.54	3.79	-0.45	2160.85	-1.062e+05	1355.79	-1.054e+05	9307.06
1	3	21	2.76	-3.45	-3.44	2.75	0.22	6.566e+04	-1.022e+05	6.555e+04	-1.021e+05	-4458.29
1	3	22	4.95	-3.89	-2.85	3.91	2.85	9.446e+04	-3.384e+04	8.982e+04	-2.921e+04	-2.395e+04
1	3	23	4.19	-4.96	-0.10	-0.67	4.57	1.569e+05	3.468e+04	1.274e+05	6.415e+04	-5.227e+04
1	3	24	3.72	-5.83	3.15	-5.26	2.27	1.922e+05	7.904e+04	1.502e+05	1.210e+05	-5.466e+04
1	3	25	3.57	-3.53	3.57	-3.53	-6.37e-04	1.757e+05	9.440e+04	1.351e+05	1.350e+05	-4.067e+04
1	3	26	4.81	-4.56	4.65	-4.39	-1.23	2.164e+05	6.835e+04	1.326e+05	1.521e+05	-7.337e+04
1	3	27	5.85	-6.49	4.53	-5.17	-3.81	2.303e+05	1.164e+05	1.734e+05	1.733e+05	-5.694e+04
1	3	28	3.86	-4.16	-2.42	2.12	-3.30	-4.099e+04	-1.826e+05	-5.918e+04	-1.644e+05	4.740e+04
1	3	29	2.53	-4.40	-2.98	1.11	-2.80	-1.193e+04	-1.632e+05	-1.414e+04	-1.610e+05	1.815e+04
1	3	30	3.07	-5.51	-5.15	2.71	-1.71	-8815.32	-1.291e+05	-9926.06	-1.280e+05	1.151e+04
1	3	31	4.41	-4.97	-4.95	4.40	0.34	3.971e+04	-8.143e+04	3.937e+04	-8.109e+04	-6440.22
1	3	32	1.65	-2.06	-7.36e-02	-0.33	1.85	1.630e+05	1.504e+04	1.525e+05	2.550e+04	-3.793e+04
1	3	33	5.11	-5.08	5.11	-5.08	7.11e-03	2.272e+05	6.773e+04	1.475e+05	1.475e+05	-7.974e+04
1	3	34	5.90	-3.68	5.31	-3.10	-2.29	1.922e+05	7.903e+04	1.211e+05	1.501e+05	-5.466e+04
1	3	35	4.85	-3.22	3.03	-1.40	-3.38	1.654e+05	7.577e+04	1.016e+05	1.396e+05	-4.058e+04
1	3	36	5.06	-4.89	2.59	-2.43	-4.30	2.054e+05	5.277e+04	9.857e+04	1.596e+05	-6.997e+04
1	3	37	4.54	-4.53	-1.25	1.26	-4.36	-9.242e+04	-2.445e+05	-1.146e+05	-2.224e+05	5.366e+04
1	3	38	4.10	-5.35	-1.05	-0.20	-4.71	-7.526e+04	-1.695e+05	-1.180e+05	-1.268e+05	4.693e+04
1	3	39	3.57	-4.44	-0.75	-0.13	-3.99	-8.513e+04	-1.815e+05	-1.044e+05	-1.622e+05	3.853e+04
1	3	40	1.29	-1.75	-0.38	-8.45e-02	-1.51	-6.376e+04	-1.999e+05	-6.803e+04	-1.956e+05	2.372e+04
1	3	41	8.16e-03	-6.86e-03	4.12e-04	8.89e-04	7.51e-03	-1.875e+04	-3.313e+04	-2.592e+04	-2.596e+04	-7191.05
1	3	42	2.11	-1.63	0.39	8.84e-02	-1.86	1.629e+05	1.504e+04	2.552e+04	1.524e+05	-3.794e+04
1	3	43	5.08	-4.14	0.80	0.14	-4.60	1.568e+05	3.466e+04	6.415e+04	1.273e+05	-5.228e+04
1	3	44	6.17	-4.80	1.14	0.23	-5.47	1.513e+05	2.573e+04	7.740e+04	9.962e+04	-6.179e+04
1	3	45	5.34	-5.65	1.36	-1.67	-5.28	2.165e+05	3.545e+04	7.541e+04	1.766e+05	-7.510e+04
1	3	46	3.87	-3.97	0.72	-0.82	-3.84	-1.048e+05	-2.208e+05	-1.296e+05	-1.961e+05	4.752e+04
1	3	47	3.48	-3.23	1.01	-0.76	-3.24	-1.184e+05	-1.883e+05	-1.314e+05	-1.752e+05	2.727e+04
1	3	48	4.44	-3.34	3.65	-2.55	-2.35	-1.295e+05	-2.140e+05	-1.575e+05	-1.861e+05	3.973e+04
1	3	49	4.17	-4.30	4.17	-4.30	-4.24e-02	-1.233e+05	-2.518e+05	-1.875e+05	-1.876e+05	6.424e+04
1	3	50	1.63	-1.26	6.66e-02	0.30	1.44	-6.381e+04	-1.999e+05	-1.956e+05	-6.807e+04	2.371e+04
1	3	51	4.94	-4.32	-4.31	4.92	-0.39	3.963e+04	-8.143e+04	-8.109e+04	3.929e+04	-6457.39
1	3	52	3.98	-4.86	-3.72	2.83	-2.97	9.440e+04	-3.385e+04	-2.920e+04	8.976e+04	-2.396e+04
1	3	53	3.91	-3.96	-0.88	0.83	-3.84	1.291e+05	-2.755e+04	-2.212e+04	1.237e+05	-2.867e+04
1	3	54	4.84	-5.05	-0.83	0.62	-4.89	1.556e+05	-1.111e+04	2.248e+04	1.221e+05	-6.688e+04
1	3	55	4.20	-4.76	2.63	-3.18	-3.41	-1.704e+05	-2.424e+05	-2.055e+05	-2.073e+05	3.602e+04
1	3	56	3.31	-3.79	3.06	-3.54	-1.30	-1.196e+05	-2.290e+05	-1.649e+05	-1.837e+05	5.390e+04
1	3	57	2.51	-2.81	2.51	-2.81	-6.82e-02	-1.461e+05	-1.939e+05	-1.700e+05	-1.700e+05	2.387e+04
1	3	58	3.06	-4.55	2.42	-3.91	2.11	-1.296e+05	-2.140e+05	-1.861e+05	-1.575e+05	3.973e+04
1	3	59	4.18	-3.50	8.88e-02	0.59	3.83	-8.518e+04	-1.815e+05	-1.622e+05	-1.044e+05	3.852e+04
1	3	60	5.41	-3.02	-2.72	5.12	1.54	-8883.11	-1.291e+05	-1.280e+05	-9993.22	1.150e+04
1	3	61	3.46	-2.65	-2.64	3.45	-0.28	6.559e+04	-1.022e+05	-1.021e+05	6.547e+04	-4465.95
1	3	62	4.51	-3.75	-3.16	3.93	-2.13	7.209e+04	-4.755e+04	-4.027e+04	6.481e+04	-2.860e+04
1	3	63	5.64	-5.63	-3.23	3.24	-4.62	1.309e+05	-4.601e+04	-3.106e+04	1.159e+05	-4.919e+04
1	3	64	3.34	-3.00	3.21	-2.87	-0.90	-1.721e+05	-1.979e+05	-1.779e+05	-1.920e+05	1.080e+04
1	3	65	4.21	-4.60	4.19	-4.59	-0.34	-1.758e+05	-2.671e+05	-2.215e+05	-2.215e+05	4.567e+04
1	3	66	3.31	-3.62	3.18	-3.49	0.93	-1.196e+05	-2.290e+05	-1.837e+05	-1.649e+05	5.389e+04
1	3	67	2.74	-3.49	0.56	-1.30	2.97	-1.184e+05	-1.883e+05	-1.752e+05	-1.315e+05	2.726e+04
1	3	68	4.96	-3.97	0.17	0.82	4.45	-7.529e+04	-1.695e+05	-1.268e+05	-1.181e+05	4.692e+04
1	3	69	4.17	-2.47	-1.21	2.91	2.61	-1.199e+04	-1.632e+05	-1.610e+05	-1.420e+04	1.815e+04
1	3	70	4.46	-3.73	-3.72	4.46	0.17	2098.64	-1.062e+05	-1.054e+05	1294.04	9301.76
1	3	71	5.20	-5.19	-4.97	4.98	-1.49	5.309e+04	-1.040e+05	-1.035e+05	5.260e+04	-8786.78
1	3	72	3.20	-4.66	-4.07	2.60	-2.08	1.198e+05	-1.130e+05	-1.109e+05	1.176e+05	-2.232e+04
1	3	73	1.85	-2.12	1.78	-2.06	-0.50	-1.476e+05	-2.054e+05	-1.765e+05	-1.765e+05	2.892e+04
1	3	74	2.55	-3.61	2.55	-3.61	4.72e-02	-1.721e+05	-1.979e+05	-1.920e+05	-1.779e+05	1.080e+04
1	3	75	3.79	-3.96	2.77	-2.95	2.62	-1.704e+05	-2.425e+05	-2.073e+05	-2.055e+05	3.601e+04
1	3	76	3.15	-3.65	0.48	-0.98	3.32	-1.048e+05	-2.208e+05	-1.961e+05	-1.296e+05	4.752e+04
1	3	77	3.78	-4.46	-1.65	0.96	3.91	-9.247e+04	-2.445e+05	-2.224e+05	-1.146e+05	5.365e+04
1	3	78	3.43	-3.66	-2.30	2.07	2.79	-4.104e+04	-1.827e+05	-1.645e+05	-5.923e+04	4.739e+04
1	3	79	4.02	-5.09	-4.64	3.57	1.98	-1.197e+04	-1.684e+05	-1.613e+05	-1.912e+04	3.268e+04
1	3	80	3.92	-4.53	-4.42	3.81	-0.96	6.804e+04	-1.629e+05	-1.624e+05	6.754e+04	1.076e+04
1	3	81	2.12	-3.92	-3.33	1.54	-1.79	6.498e+04	-1.077e+05	-1.072e+05	6.450e+04	-9142.60
1	3	82	3.17	-4.21	-1.91	0.87	3.42	-6.673e+04	-1.589e+05	-1.389e+05	-8.675e+04	3.801e+04
1	3	83	2.14	-4.12	-3.22	1.24	2.19	-3.529e+04	-1.821e+05	-1.621e+05	-5.533e+04	5.040e+04
1	3	84	1.79	-2.88	-1.47	0.37	2.14	-4.989e+04	-1.118e+05	-9.033e+04	-7.134e+04	2.945e+04
1	3	85	1.85	-3.95	-3.31	1.21	1.81	-2.104e+04	-1.093e+05	-9.340e+04	-3.690e+04	3.388e+04
1	3	86	1.07	-2.06	-1.29	0.30	1.35	-3.031e+04	-6.972e+04	-4.936e+04	-5.066e+04	1.969e+04
1	3	87	1.20	-2.50	-2.29	1.00	0.85	-7486.91	-7.323e+04	-5.735e+04	-2.337e+04	2.814e+04
1	3	88	0.61	-1.41	-1.13	0.33	0.70	-1.494e+04	-4.134e+04	-2.356e+04	-3.272e+04	1.238e+04
1	3	89	0.92	-1.64	-1.59	0.87	0.34	2353.61	-4.658e+04	-3.250e+04	-1.172e+04	2.215e+04
1	3	90	0.50	-1.18	-1.10	0.43	0.35	-5320.40	-2.369e+04	-9503.72	-1.951e+04	7704.21



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	3	91	1.32	-1.16	-1.14	1.30	-0.20	9021.67	-2.751e+04	-1.622e+04	-2266.59	1.688e+04
1	3	92	0.28	-0.60	-0.60	0.27	-3.34e-02	104.39	-1.274e+04	-2405.26	-1.023e+04	5092.78
1	3	93	0.94	-1.30	-1.30	0.93	-4.94e-02	1.239e+04	-1.503e+04	-7062.90	4415.38	1.245e+04
1	3	94	0.24	-0.19	-5.90e-02	0.11	0.20	1192.71	-6156.76	-367.54	-4596.51	3005.43
1	3	95	1.59	-0.70	-0.60	1.49	0.48	1.153e+04	-7640.09	-3429.08	7318.81	7936.75
1	3	96	-3.08e-02	-0.21	-0.12	-0.12	9.12e-02	-951.78	-4095.66	-999.76	-4047.68	385.40
1	3	97	0.51	-0.17	-0.15	0.49	0.12	3668.56	-1108.75	-1108.38	3668.19	-42.37
1	3	98	1.44	-3.80	-3.78	1.43	0.29	6012.44	-1.208e+05	-1.192e+05	4444.92	1.401e+04
1	3	99	1.52	-3.85	-3.84	1.52	0.16	8533.05	-9.735e+04	-9.010e+04	1278.44	2.675e+04
1	3	100	1.24	-2.57	-2.56	1.23	-0.15	1.429e+04	-7.125e+04	-6.272e+04	5763.74	2.562e+04
1	3	101	0.98	-1.79	-1.76	0.95	-0.28	1.826e+04	-5.045e+04	-4.220e+04	1.001e+04	2.233e+04
1	3	102	0.86	-1.25	-1.21	0.82	-0.28	2.056e+04	-3.410e+04	-2.689e+04	1.336e+04	1.849e+04
1	3	103	0.88	-0.84	-0.81	0.86	-0.19	2.062e+04	-2.216e+04	-1.661e+04	1.506e+04	1.438e+04
1	3	104	0.90	-0.39	-0.37	0.88	-0.17	1.709e+04	-1.347e+04	-1.022e+04	1.384e+04	9417.00
1	3	105	0.99	-0.15	-0.11	0.94	-0.22	3782.66	-999.31	-959.91	3743.25	-432.29
1	3	106	2.76	-4.35	-4.19	2.61	-1.03	3.331e+04	-1.036e+05	-1.027e+05	3.247e+04	1.075e+04
1	3	107	2.13	-3.38	-3.18	1.93	-1.02	3.249e+04	-8.183e+04	-8.014e+04	3.080e+04	1.380e+04
1	3	108	1.41	-2.54	-2.26	1.12	-1.02	3.164e+04	-6.362e+04	-6.150e+04	2.952e+04	1.405e+04
1	3	109	0.96	-1.83	-1.44	0.57	-0.97	3.014e+04	-4.879e+04	-4.649e+04	2.784e+04	1.327e+04
1	3	110	0.16	-1.02	-0.71	-0.15	-0.52	2.796e+04	-3.672e+04	-3.449e+04	2.573e+04	1.181e+04
1	3	111	0.80	-0.51	-0.36	0.65	-0.41	2.447e+04	-2.708e+04	-2.513e+04	2.252e+04	9832.37
1	3	112	0.49	-0.50	-0.45	0.45	-0.21	1.856e+04	-1.810e+04	-1.678e+04	1.722e+04	6814.00
1	3	113	1.10	-0.11	9.85e-02	0.89	-0.45	1822.13	-1489.44	-1459.37	1792.06	314.16
1	3	114	3.10	-4.97	-4.39	2.52	-2.09	5.345e+04	-8.115e+04	-8.102e+04	5.332e+04	-4272.98
1	3	115	2.10	-3.35	-2.75	1.50	-1.71	4.762e+04	-6.595e+04	-6.590e+04	4.757e+04	-2356.02
1	3	116	1.65	-2.53	-1.78	0.90	-1.60	4.230e+04	-5.380e+04	-5.379e+04	4.229e+04	-1083.62
1	3	117	1.42	-2.05	-1.12	0.49	-1.54	3.701e+04	-4.354e+04	-4.354e+04	3.701e+04	-239.84
1	3	118	1.46	-2.03	-0.74	0.17	-1.69	3.177e+04	-3.485e+04	-3.485e+04	3.177e+04	317.59
1	3	119	1.05	-1.02	2.09e-02	1.32e-02	-1.04	2.636e+04	-2.729e+04	-2.728e+04	2.636e+04	524.58
1	3	120	0.89	-4.69e-02	0.11	0.73	-0.35	1.850e+04	-1.923e+04	-1.922e+04	1.850e+04	389.98
1	3	121	0.41	-0.14	1.88e-02	0.26	-0.25	1473.03	-1950.56	-1921.72	1444.19	312.89
1	3	122	3.71	-5.36	-3.90	2.25	-3.33	7.534e+04	-7.130e+04	-6.742e+04	7.146e+04	-2.354e+04
1	3	123	2.62	-4.15	-2.68	1.15	-2.80	6.484e+04	-5.796e+04	-5.435e+04	6.122e+04	-2.076e+04
1	3	124	1.96	-2.75	-1.49	0.69	-2.09	5.423e+04	-4.831e+04	-4.499e+04	5.091e+04	-1.816e+04
1	3	125	1.64	-1.95	-0.77	0.46	-1.69	4.471e+04	-4.014e+04	-3.719e+04	4.176e+04	-1.554e+04
1	3	126	1.68	-1.29	4.95e-02	0.35	-1.48	3.622e+04	-3.310e+04	-3.057e+04	3.369e+04	-1.300e+04
1	3	127	1.38	-1.24	0.19	-4.06e-02	-1.30	2.855e+04	-2.660e+04	-2.450e+04	2.645e+04	-1.056e+04
1	3	128	2.06	-0.70	0.38	0.98	-1.35	1.981e+04	-1.889e+04	-1.735e+04	1.827e+04	-7552.59
1	3	129	1.32	-8.86e-02	0.63	0.61	-0.71	2264.25	-1466.01	-1190.61	1988.84	-975.44
1	3	130	1.55	-3.73	-2.01	-0.17	-2.48	9.370e+04	-4.552e+04	-3.981e+04	8.799e+04	-2.759e+04
1	3	131	2.45	-3.83	-1.63	0.26	-3.00	8.400e+04	-4.046e+04	-2.772e+04	7.126e+04	-3.773e+04
1	3	132	2.06	-2.70	-0.78	0.15	-2.33	6.660e+04	-3.670e+04	-2.376e+04	5.366e+04	-3.419e+04
1	3	133	1.65	-1.84	-0.25	5.41e-02	-1.74	5.195e+04	-3.252e+04	-2.065e+04	4.009e+04	-2.935e+04
1	3	134	1.44	-1.23	0.16	4.89e-02	-1.33	3.996e+04	-2.822e+04	-1.780e+04	2.954e+04	-2.454e+04
1	3	135	1.36	-0.77	0.50	8.82e-02	-1.05	3.010e+04	-2.367e+04	-1.490e+04	2.133e+04	-1.986e+04
1	3	136	1.38	-0.29	0.85	0.24	-0.78	2.074e+04	-1.732e+04	-1.075e+04	1.417e+04	-1.438e+04
1	3	137	1.50	-0.12	1.05	0.33	-0.72	3715.04	-820.42	1015.55	1879.07	-2226.25
1	3	138	3.96	-4.79	-0.24	-0.59	-4.38	1.619e+05	-1.574e+04	1.856e+04	1.276e+05	-7.011e+04
1	3	139	3.82	-3.92	-0.16	5.44e-02	-3.87	1.028e+05	-1.716e+04	1.020e+04	7.544e+04	-5.033e+04
1	3	140	2.34	-2.72	2.04e-02	-0.40	-2.52	7.657e+04	-2.074e+04	5666.63	5.016e+04	-4.327e+04
1	3	141	1.65	-1.83	0.31	-0.49	-1.69	5.698e+04	-2.182e+04	2386.25	3.278e+04	-3.635e+04
1	3	142	0.98	-1.05	0.29	-0.36	-0.96	4.196e+04	-2.126e+04	-2.98	2.070e+04	-2.987e+04
1	3	143	1.24	-0.59	0.70	-4.91e-02	-0.84	3.032e+04	-1.932e+04	-1545.79	1.255e+04	-2.380e+04
1	3	144	1.05	-0.37	0.74	-6.63e-02	-0.58	2.059e+04	-1.470e+04	-1384.03	7272.49	-1.711e+04
1	3	145	1.32	-9.84e-02	1.12	0.10	-0.49	5321.19	-365.56	3847.90	1107.73	-2491.51
1	3	146	5.20	-5.77	1.39	-1.96	-5.23	1.477e+05	1.851e+04	5.573e+04	1.105e+05	-5.852e+04
1	3	147	3.69	-4.23	0.91	-1.46	-3.78	1.137e+05	7243.98	4.702e+04	7.396e+04	-5.151e+04
1	3	148	2.64	-3.00	0.91	-1.26	-2.60	8.171e+04	-2896.61	3.536e+04	4.345e+04	-4.211e+04
1	3	149	1.93	-2.03	0.99	-1.09	-1.68	5.851e+04	-9521.91	2.530e+04	2.368e+04	-3.401e+04
1	3	150	1.56	-1.48	1.12	-1.04	-1.07	4.146e+04	-1.306e+04	1.736e+04	1.103e+04	-2.708e+04
1	3	151	1.20	-0.73	1.02	-0.55	-0.55	2.910e+04	-1.394e+04	1.153e+04	3630.85	-2.116e+04
1	3	152	1.03	-0.14	0.92	-3.05e-02	-0.33	1.939e+04	-1.143e+04	7666.71	294.30	-1.496e+04
1	3	153	0.87	-0.11	0.81	-4.87e-02	-0.23	6871.15	-34.80	6503.80	332.55	-1549.83
1	3	154	4.01	-4.98	1.89	-2.86	-3.81	1.815e+05	5.240e+04	1.043e+05	1.297e+05	-6.332e+04
1	3	155	3.66	-4.93	1.92	-3.20	-3.45	1.164e+05	3.128e+04	7.674e+04	7.093e+04	-4.246e+04
1	3	156	2.62	-2.99	1.71	-2.08	-2.06	8.058e+04	1.468e+04	5.710e+04	3.816e+04	-3.156e+04
1	3	157	1.98	-1.94	1.48	-1.44	-1.31	5.593e+04	2897.31	4.136e+04	1.746e+04	-2.367e+04
1	3	158	1.65	-1.15	1.47	-0.96	-0.69	3.849e+04	-4618.14	2.914e+04	4730.13	-1.777e+04
1	3	159	1.31	-0.85	1.26	-0.80	-0.33	2.631e+04	-8247.06	2.013e+04	-2067.47	-1.324e+04
1	3	160	1.48	-0.42	1.42	-0.37	-0.32	1.738e+04	-7621.57	1.361e+04	-3851.08	-8947.43
1	3	161	1.06	-6.31e-02	1.06	-5.88e-02	-6.93e-02	8304.01	189.91	8286.75	207.18	373.85
1	3	162	3.07	-3.40	2.62	-2.95	-1.65	1.544e+05	7.568e+04	1.168e+05	1.133e+05	-3.934e+04
1	3	163	3.11	-3.76	2.64	-3.29	-1.74	1.080e+05	5.049e+04	8.887e+04	6.961e+04	-2.709e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	3	164	2.43	-2.56	2.12	-2.25	-1.20	7.281e+04	2.953e+04	6.488e+04	3.746e+04	-1.674e+04
1	3	165	1.86	-1.68	1.70	-1.52	-0.74	4.941e+04	1.389e+04	4.623e+04	1.706e+04	-1.013e+04
1	3	166	1.46	-1.05	1.40	-0.99	-0.39	3.348e+04	3247.90	3.226e+04	4473.94	-5963.64
1	3	167	1.19	-0.60	1.18	-0.59	-0.12	2.264e+04	-2711.08	2.216e+04	-2236.25	-3436.77
1	3	168	1.03	-0.18	1.03	-0.17	9.81e-02	1.523e+04	-3938.10	1.508e+04	-3795.71	-1645.73
1	3	169	1.10	-4.42e-02	1.07	-1.36e-02	0.18	9658.41	322.62	8810.38	1170.65	2682.88
1	3	170	4.60	-4.45	4.42	-4.27	-1.28	1.545e+05	8.171e+04	1.233e+05	1.129e+05	-3.604e+04
1	3	171	3.56	-3.14	3.42	-3.00	-0.95	9.257e+04	6.037e+04	8.420e+04	6.873e+04	-1.412e+04
1	3	172	2.37	-2.16	2.31	-2.10	-0.53	5.972e+04	3.946e+04	5.860e+04	4.058e+04	-4627.27
1	3	173	1.71	-1.41	1.69	-1.39	-0.26	4.021e+04	2.177e+04	4.019e+04	2.179e+04	562.57
1	3	174	1.28	-0.86	1.28	-0.85	-7.76e-02	2.751e+04	9035.37	2.693e+04	9617.33	3226.70
1	3	175	1.01	-0.48	1.00	-0.48	9.18e-02	1.886e+04	1552.20	1.778e+04	2632.38	4186.93
1	3	176	0.79	-0.12	0.72	-4.34e-02	0.25	1.324e+04	-1068.81	1.195e+04	219.74	4095.54
1	3	177	0.85	-2.19e-02	0.77	6.00e-02	0.26	1.062e+04	366.92	7811.20	3171.66	4569.39
1	3	178	4.83	-4.46	4.83	-4.46	-8.64e-02	1.195e+05	7.902e+04	9.926e+04	9.922e+04	-2.022e+04
1	3	179	3.17	-2.81	3.17	-2.81	-2.55e-04	7.378e+04	6.009e+04	6.695e+04	6.692e+04	-6846.84
1	3	180	2.23	-1.86	2.23	-1.86	7.18e-02	4.497e+04	4.355e+04	4.427e+04	4.425e+04	713.52
1	3	181	1.62	-1.25	1.61	-1.24	0.15	3.287e+04	2.337e+04	2.813e+04	2.811e+04	4747.82
1	3	182	1.17	-0.83	1.14	-0.80	0.26	2.352e+04	1.037e+04	1.695e+04	1.693e+04	6578.11
1	3	183	0.85	-0.43	0.82	-0.40	0.22	1.671e+04	2920.41	9823.46	9808.88	6895.75
1	3	184	0.59	-5.79e-02	0.55	-1.65e-02	0.16	1.233e+04	-26.71	6155.46	6143.31	6176.09
1	3	185	0.51	-5.91e-02	0.44	1.09e-02	0.19	1.098e+04	346.06	5661.91	5661.30	5315.54
1	3	186	4.72	-4.19	4.59	-4.07	1.06	1.545e+05	8.172e+04	1.130e+05	1.233e+05	-3.603e+04
1	3	187	3.47	-3.19	3.35	-3.07	0.88	9.255e+04	6.039e+04	6.876e+04	8.417e+04	-1.411e+04
1	3	188	2.53	-2.01	2.45	-1.93	0.61	5.969e+04	3.948e+04	4.060e+04	5.857e+04	-4624.76
1	3	189	1.82	-1.36	1.75	-1.28	0.47	4.018e+04	2.179e+04	2.181e+04	4.016e+04	564.49
1	3	190	1.29	-0.89	1.23	-0.84	0.34	2.749e+04	9048.89	9632.70	2.690e+04	3228.62
1	3	191	0.84	-0.44	0.77	-0.38	0.28	1.884e+04	1560.62	2643.17	1.776e+04	4187.52
1	3	192	0.52	-0.16	0.45	-8.95e-02	0.21	1.322e+04	-1061.20	230.65	1.193e+04	4096.82
1	3	193	0.47	-4.47e-02	0.35	7.40e-02	0.22	1.061e+04	367.16	3170.20	7804.11	4565.74
1	3	194	3.69	-2.71	3.29	-2.31	1.55	1.544e+05	7.569e+04	1.133e+05	1.168e+05	-3.934e+04
1	3	195	4.04	-2.74	3.59	-2.29	1.69	1.080e+05	5.050e+04	6.964e+04	8.884e+04	-2.708e+04
1	3	196	2.86	-2.07	2.51	-1.72	1.26	7.278e+04	2.954e+04	3.748e+04	6.485e+04	-1.673e+04
1	3	197	2.01	-1.43	1.75	-1.16	0.92	4.938e+04	1.390e+04	1.707e+04	4.620e+04	-1.013e+04
1	3	198	1.37	-0.91	1.17	-0.71	0.65	3.345e+04	3257.42	4484.56	3.222e+04	-5962.15
1	3	199	0.84	-0.51	0.69	-0.36	0.42	2.261e+04	-2703.78	-2228.43	2.213e+04	-3436.06
1	3	200	0.46	-0.14	0.37	-6.09e-02	0.20	1.520e+04	-3933.20	-3790.39	1.506e+04	-1646.78
1	3	201	0.37	-5.23e-02	0.25	7.56e-02	0.20	9637.34	322.97	1168.55	8791.77	2676.01
1	3	202	5.04	-3.66	3.00	-1.62	3.68	1.816e+05	5.243e+04	1.297e+05	1.043e+05	-6.330e+04
1	3	203	5.01	-3.32	3.28	-1.59	3.38	1.164e+05	3.129e+04	7.096e+04	7.671e+04	-4.245e+04
1	3	204	3.14	-2.28	2.13	-1.27	2.11	8.056e+04	1.468e+04	3.818e+04	5.706e+04	-3.156e+04
1	3	205	2.15	-1.59	1.44	-0.89	1.46	5.590e+04	2895.21	1.747e+04	4.133e+04	-2.367e+04
1	3	206	1.57	-1.02	0.96	-0.41	1.10	3.846e+04	-4622.49	4736.42	2.910e+04	-1.777e+04
1	3	207	0.79	-0.72	0.35	-0.28	0.69	2.628e+04	-8249.35	-2062.66	2.009e+04	-1.324e+04
1	3	208	0.22	0.12	0.17	0.16	5.19e-02	1.735e+04	-7625.56	-3848.63	1.357e+04	-8947.87
1	3	209	0.21	-0.19	0.18	-0.16	0.12	8272.65	190.01	206.82	8255.85	368.15
1	3	210	5.65	-4.91	1.84	-1.09	5.07	1.477e+05	1.851e+04	1.105e+05	5.571e+04	-5.851e+04
1	3	211	4.18	-3.45	1.30	-0.57	3.70	1.137e+05	7228.54	7.397e+04	4.699e+04	-5.151e+04
1	3	212	3.02	-2.47	1.00	-0.45	2.65	8.170e+04	-2915.54	4.346e+04	3.533e+04	-4.211e+04
1	3	213	2.08	-1.78	0.65	-0.36	1.86	5.849e+04	-9538.56	2.369e+04	2.526e+04	-3.401e+04
1	3	214	1.30	-1.31	0.22	-0.22	1.29	4.144e+04	-1.308e+04	1.104e+04	1.732e+04	-2.708e+04
1	3	215	0.92	-0.97	0.25	-0.30	0.90	2.908e+04	-1.395e+04	3633.91	1.149e+04	-2.116e+04
1	3	216	0.50	-0.53	0.36	-0.39	0.35	1.937e+04	-1.144e+04	297.60	7625.61	-1.496e+04
1	3	217	0.16	-0.53	9.46e-02	-0.46	0.20	6836.43	-36.27	333.23	6466.93	-1550.13
1	3	218	4.51	-3.81	0.26	0.45	4.16	1.619e+05	-1.576e+04	1.276e+05	1.852e+04	-7.011e+04
1	3	219	3.76	-3.76	-0.48	0.48	3.73	1.028e+05	-1.720e+04	7.545e+04	1.015e+04	-5.034e+04
1	3	220	2.70	-2.39	-7.78e-02	0.39	2.53	7.658e+04	-2.078e+04	5.018e+04	5619.40	-4.328e+04
1	3	221	1.98	-1.88	-2.63e-02	0.13	1.93	5.698e+04	-2.184e+04	3.279e+04	2343.54	-3.635e+04
1	3	222	1.46	-1.76	5.66e-02	-0.36	1.59	4.195e+04	-2.128e+04	2.071e+04	-42.16	-2.987e+04
1	3	223	0.90	-0.91	0.26	-0.27	0.86	3.030e+04	-1.934e+04	1.255e+04	-1586.14	-2.379e+04
1	3	224	0.25	-0.70	7.91e-02	-0.52	0.37	2.057e+04	-1.472e+04	7275.22	-1420.30	-1.710e+04
1	3	225	0.17	-0.27	4.89e-02	-0.15	0.20	5291.52	-368.39	1107.81	3815.32	-2485.16
1	3	226	3.31	-1.73	-0.45	2.04	2.19	9.368e+04	-4.558e+04	8.798e+04	-3.988e+04	-2.759e+04
1	3	227	3.43	-2.59	-0.95	1.79	2.68	8.399e+04	-4.052e+04	7.126e+04	-2.778e+04	-3.773e+04
1	3	228	2.45	-2.09	-0.70	1.06	2.10	6.661e+04	-3.673e+04	5.368e+04	-2.381e+04	-3.418e+04
1	3	229	1.73	-1.62	-0.47	0.58	1.59	5.196e+04	-3.254e+04	4.011e+04	-2.068e+04	-2.935e+04
1	3	230	1.15	-1.21	-0.29	0.22	1.15	3.997e+04	-2.824e+04	2.955e+04	-1.782e+04	-2.453e+04
1	3	231	0.64	-0.85	-0.16	-4.76e-02	0.74	3.010e+04	-2.369e+04	2.134e+04	-1.493e+04	-1.986e+04
1	3	232	0.33	-0.52	1.25e-02	-0.20	0.42	2.074e+04	-1.734e+04	1.418e+04	-1.078e+04	-1.438e+04
1	3	233	0.15	-0.29	-2.86e-02	-0.12	0.21	3701.18	-824.33	1877.53	999.32	-2219.74
1	3	234	4.77	-3.73	-2.81	3.86	2.63	7.535e+04	-7.134e+04	7.147e+04	-6.746e+04	-2.354e+04
1	3	235	3.58	-2.64	-1.81	2.75	2.12	6.484e+04	-5.799e+04	6.123e+04	-5.437e+04	-2.076e+04
1	3	236	2.22	-1.92	-1.30	1.60	1.48	5.425e+04	-4.832e+04	5.093e+04	-4.500e+04	-1.815e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	3	237	1.47	-1.46	-0.95	0.97	1.10	4.473e+04	-4.014e+04	4.178e+04	-3.719e+04	-1.554e+04
1	3	238	1.10	-1.01	-0.72	0.81	0.72	3.625e+04	-3.310e+04	3.372e+04	-3.057e+04	-1.300e+04
1	3	239	0.28	-1.04	-0.89	0.13	0.42	2.857e+04	-2.660e+04	2.646e+04	-2.450e+04	-1.057e+04
1	3	240	0.30	-0.35	0.29	-0.35	-3.43e-02	1.982e+04	-1.889e+04	1.828e+04	-1.735e+04	-7560.04
1	3	241	0.15	-0.66	-0.16	-0.35	0.39	2270.43	-1462.06	1992.19	-1183.82	-980.36
1	3	242	4.54	-3.56	-3.37	4.34	1.23	5.349e+04	-8.116e+04	5.335e+04	-8.102e+04	-4285.75
1	3	243	2.89	-2.44	-2.30	2.75	0.86	4.765e+04	-6.594e+04	4.760e+04	-6.589e+04	-2364.23
1	3	244	1.93	-1.89	-1.77	1.81	0.67	4.233e+04	-5.378e+04	4.232e+04	-5.377e+04	-1089.77
1	3	245	1.24	-1.63	-1.56	1.18	0.43	3.704e+04	-4.351e+04	3.704e+04	-4.351e+04	-248.34
1	3	246	0.54	-1.49	-1.49	0.54	2.25e-02	3.180e+04	-3.482e+04	3.180e+04	-3.482e+04	303.22
1	3	247	0.55	-1.48	-1.39	0.46	0.42	2.639e+04	-2.726e+04	2.639e+04	-2.726e+04	505.67
1	3	248	0.55	-1.23	-0.47	-0.21	0.88	1.853e+04	-1.920e+04	1.852e+04	-1.920e+04	368.14
1	3	249	4.41e-02	-1.67	-0.94	-0.69	0.85	1488.86	-1927.71	1463.77	-1902.62	291.69
1	3	250	4.08	-3.40	-3.40	4.08	5.05e-02	3.337e+04	-1.036e+05	3.252e+04	-1.027e+05	1.073e+04
1	3	251	3.08	-2.81	-2.81	3.08	1.01e-02	3.253e+04	-8.180e+04	3.085e+04	-8.011e+04	1.378e+04
1	3	252	2.28	-2.16	-2.16	2.28	3.44e-02	3.168e+04	-6.358e+04	2.956e+04	-6.146e+04	1.404e+04
1	3	253	1.67	-2.03	-2.03	1.67	9.08e-02	3.018e+04	-4.874e+04	2.788e+04	-4.644e+04	1.326e+04
1	3	254	1.34	-2.39	-2.32	1.27	0.52	2.800e+04	-3.667e+04	2.577e+04	-3.444e+04	1.179e+04
1	3	255	0.85	-1.38	-1.21	0.68	0.59	2.450e+04	-2.703e+04	2.256e+04	-2.509e+04	9808.79
1	3	256	0.17	-1.63	-1.17	-0.29	0.78	1.858e+04	-1.806e+04	1.728e+04	-1.676e+04	6786.33
1	3	257	8.25e-02	-1.00	-0.71	-0.21	0.48	1849.24	-1471.73	1823.25	-1445.74	292.62
1	3	258	3.39	-2.22	-2.06	3.23	-0.95	6074.81	-1.207e+05	4511.14	-1.192e+05	1.400e+04
1	3	259	3.68	-2.48	-2.30	3.50	-1.05	8584.01	-9.732e+04	1338.10	-9.007e+04	2.674e+04
1	3	260	2.57	-2.22	-2.11	2.45	-0.74	1.434e+04	-7.119e+04	5820.38	-6.267e+04	2.561e+04
1	3	261	1.81	-1.89	-1.83	1.75	-0.47	1.831e+04	-5.039e+04	1.007e+04	-4.214e+04	2.232e+04
1	3	262	1.16	-1.57	-1.56	1.14	-0.19	2.060e+04	-3.405e+04	1.340e+04	-2.685e+04	1.848e+04
1	3	263	0.59	-1.24	-1.24	0.58	0.12	2.064e+04	-2.213e+04	1.509e+04	-1.659e+04	1.437e+04
1	3	264	0.26	-1.08	-0.99	0.18	0.33	1.710e+04	-1.345e+04	1.386e+04	-1.021e+04	9405.23
1	3	265	8.31e-02	-0.97	-0.85	-3.63e-02	0.33	3803.11	-995.76	3762.51	-955.17	-439.51
1	3	266	4.13	-3.14	-1.70	2.69	-2.90	-3.524e+04	-1.821e+05	-5.527e+04	-1.621e+05	5.040e+04
1	3	267	4.17	-3.03	-1.81	2.96	-2.70	-2.099e+04	-1.092e+05	-3.684e+04	-9.336e+04	3.387e+04
1	3	268	2.66	-2.37	-1.71	2.00	-1.69	-7438.99	-7.318e+04	-2.331e+04	-5.730e+04	2.813e+04
1	3	269	1.87	-1.94	-1.49	1.42	-1.22	2398.29	-4.653e+04	-1.167e+04	-3.246e+04	2.215e+04
1	3	270	1.48	-1.37	-0.81	0.92	-1.13	9054.37	-2.748e+04	-2234.28	-1.620e+04	1.688e+04
1	3	271	0.19	-1.23	-1.02	-1.12e-02	-0.50	1.241e+04	-1.503e+04	4435.28	-7056.06	1.246e+04
1	3	272	0.30	-0.62	-0.34	1.58e-02	0.42	1.154e+04	-7640.94	7328.68	-3429.32	7940.17
1	3	273	9.04e-02	-1.30	-1.26	4.63e-02	0.24	3676.40	-1106.66	3676.00	-1106.26	-43.32
1	3	274	4.52	-4.36	-1.30	1.45	-4.22	-6.669e+04	-1.589e+05	-8.671e+04	-1.388e+05	3.801e+04
1	3	275	3.26	-3.18	-0.91	0.98	-3.08	-4.986e+04	-1.117e+05	-7.129e+04	-9.030e+04	2.945e+04
1	3	276	2.36	-2.52	-0.91	0.74	-2.29	-3.026e+04	-6.968e+04	-5.062e+04	-4.932e+04	1.970e+04
1	3	277	1.59	-2.10	-0.95	0.44	-1.71	-1.490e+04	-4.132e+04	-3.269e+04	-2.353e+04	1.239e+04
1	3	278	0.87	-1.77	-0.95	4.10e-02	-1.23	-5294.28	-2.368e+04	-1.948e+04	-9491.29	7717.30
1	3	279	0.69	-1.71	-1.17	0.15	-1.00	123.12	-1.273e+04	-1.021e+04	-2400.14	5106.43
1	3	280	0.37	-1.43	-1.39	0.32	-0.28	1206.21	-6152.76	-4580.80	-365.74	3016.11
1	3	281	1.98e-02	-1.60	-1.59	9.61e-03	-0.13	-951.27	-4082.24	-4033.92	-999.59	385.95
1	3	282	3.40	-3.51	3.97e-02	-0.15	-3.45	-1.064e+05	-1.855e+05	-1.342e+05	-1.577e+05	3.774e+04
1	3	283	2.84	-3.56	3.56e-02	-0.75	-3.17	-7.522e+04	-1.076e+05	-9.753e+04	-8.526e+04	1.497e+04
1	3	284	2.03	-2.55	-9.32e-02	-0.42	-2.28	-4.415e+04	-7.057e+04	-7.020e+04	-4.452e+04	3098.44
1	3	285	1.50	-2.34	-0.47	-0.37	-1.92	-2.146e+04	-5.080e+04	-5.048e+04	-2.178e+04	-3068.05
1	3	286	1.21	-2.82	-1.43	-0.18	-1.91	-9717.63	-3.854e+04	-3.747e+04	-1.078e+04	-5439.53
1	3	287	0.89	-1.72	-1.25	0.42	-1.00	-3978.47	-3.038e+04	-2.882e+04	-5543.09	-6233.92
1	3	288	9.95e-02	-1.98	-1.95	6.20e-02	-0.28	-201.82	-2.370e+04	-2.189e+04	-2012.91	-6266.67
1	3	289	-1.33e-02	-1.26	-1.20	-6.96e-02	-0.26	-429.40	-2.042e+04	-1.966e+04	-1185.14	-3812.53
1	3	290	2.25	-1.89	1.29	-0.93	-1.75	-1.235e+05	-1.502e+05	-1.402e+05	-1.335e+05	1.288e+04
1	3	291	2.48	-2.66	1.11	-1.28	-2.28	-8.121e+04	-1.062e+05	-1.054e+05	-8.199e+04	-4343.01
1	3	292	1.84	-2.31	0.52	-0.99	-1.93	-4.053e+04	-8.378e+04	-7.774e+04	-4.657e+04	-1.499e+04
1	3	293	1.32	-2.01	1.12e-02	-0.71	-1.63	-1.957e+04	-6.876e+04	-6.009e+04	-2.824e+04	-1.874e+04
1	3	294	0.85	-1.76	-0.42	-0.49	-1.31	-9363.23	-5.809e+04	-4.864e+04	-1.881e+04	-1.926e+04
1	3	295	0.51	-1.48	-0.76	-0.21	-0.96	-3339.99	-4.983e+04	-4.019e+04	-1.298e+04	-1.885e+04
1	3	296	0.11	-1.39	-1.03	-0.24	-0.64	588.01	-4.324e+04	-3.406e+04	-8594.30	-1.784e+04
1	3	297	-1.36e-02	-1.40	-1.18	-0.23	-0.50	112.14	-3.773e+04	-3.208e+04	-5532.74	-1.348e+04
1	3	298	3.27	-3.27	2.68	-2.68	-1.87	-1.285e+05	-1.440e+05	-1.423e+05	-1.301e+05	4769.07
1	3	299	2.53	-2.52	1.82	-1.81	-1.76	-6.805e+04	-1.107e+05	-9.808e+04	-8.065e+04	-1.945e+04
1	3	300	1.69	-2.04	0.97	-1.32	-1.47	-3.373e+04	-9.255e+04	-7.290e+04	-5.338e+04	-2.774e+04
1	3	301	1.27	-1.72	0.54	-0.99	-1.28	-1.711e+04	-7.957e+04	-5.812e+04	-3.856e+04	-2.966e+04
1	3	302	0.85	-1.38	0.27	-0.80	-0.98	-8073.76	-6.976e+04	-4.830e+04	-2.953e+04	-2.938e+04
1	3	303	0.48	-1.17	-0.26	-0.43	-0.82	-2593.31	-6.208e+04	-4.108e+04	-2.359e+04	-2.843e+04
1	3	304	0.28	-1.14	-0.35	-0.52	-0.71	1044.67	-5.553e+04	-3.575e+04	-1.873e+04	-2.698e+04
1	3	305	-3.64e-02	-1.05	-0.70	-0.39	-0.48	325.86	-4.930e+04	-3.388e+04	-1.510e+04	-2.297e+04
1	3	306	2.83	-3.10	2.73	-3.00	-0.73	-1.017e+05	-1.273e+05	-1.145e+05	-1.145e+05	-1.281e+04
1	3	307	1.80	-2.14	1.63	-1.97	-0.80	-5.281e+04	-1.067e+05	-7.975e+04	-7.975e+04	-2.694e+04
1	3	308	1.31	-1.64	1.01	-1.34	-0.89	-2.732e+04	-9.181e+04	-5.957e+04	-5.956e+04	-3.224e+04
1	3	309	1.11	-1.38	0.65	-0.92	-0.97	-1.454e+04	-8.078e+04	-4.766e+04	-4.766e+04	-3.312e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	3	310	1.23	-1.31	0.47	-0.55	-1.16	-7002.63	-7.197e+04	-3.949e+04	-3.948e+04	-3.248e+04
1	3	311	0.58	-0.93	0.15	-0.49	-0.69	-1285.94	-6.458e+04	-3.294e+04	-3.293e+04	-3.165e+04
1	3	312	-0.16	-0.61	-0.23	-0.54	-0.16	1237.59	-5.896e+04	-2.886e+04	-2.886e+04	-3.010e+04
1	3	313	2.02e-02	-0.16	-3.45e-02	-0.11	-8.34e-02	345.76	-5.306e+04	-2.636e+04	-2.636e+04	-2.670e+04
1	3	314	2.31	-2.97	2.25	-2.91	0.56	-1.285e+05	-1.440e+05	-1.301e+05	-1.424e+05	4767.83
1	3	315	1.46	-2.16	1.45	-2.15	0.18	-6.805e+04	-1.107e+05	-8.066e+04	-9.808e+04	-1.946e+04
1	3	316	0.95	-1.38	0.94	-1.36	-0.19	-3.374e+04	-9.256e+04	-5.339e+04	-7.291e+04	-2.775e+04
1	3	317	0.62	-0.99	0.53	-0.90	-0.37	-1.711e+04	-7.958e+04	-3.857e+04	-5.813e+04	-2.967e+04
1	3	318	0.34	-0.69	0.23	-0.58	-0.32	-8075.15	-6.977e+04	-2.954e+04	-4.830e+04	-2.938e+04
1	3	319	0.35	-0.77	0.24	-0.65	-0.34	-2594.15	-6.209e+04	-2.359e+04	-4.109e+04	-2.843e+04
1	3	320	0.12	-0.64	-0.14	-0.38	-0.36	1044.84	-5.554e+04	-1.874e+04	-3.576e+04	-2.698e+04
1	3	321	-4.52e-02	-0.62	-0.19	-0.48	-0.25	325.96	-4.931e+04	-1.510e+04	-3.389e+04	-2.297e+04
1	3	322	1.03	-1.87	0.72	-1.57	0.89	-1.235e+05	-1.502e+05	-1.335e+05	-1.402e+05	1.288e+04
1	3	323	1.36	-1.87	0.98	-1.49	1.03	-8.123e+04	-1.062e+05	-8.201e+04	-1.054e+05	-4346.83
1	3	324	0.67	-1.20	0.53	-1.07	0.48	-4.054e+04	-8.379e+04	-4.658e+04	-7.775e+04	-1.500e+04
1	3	325	0.31	-0.87	0.30	-0.86	0.11	-1.957e+04	-6.878e+04	-2.825e+04	-6.010e+04	-1.875e+04
1	3	326	0.17	-0.74	0.17	-0.74	-5.98e-02	-9366.80	-5.811e+04	-1.882e+04	-4.866e+04	-1.927e+04
1	3	327	0.21	-0.68	0.21	-0.67	-6.90e-02	-3341.09	-4.985e+04	-1.299e+04	-4.020e+04	-1.886e+04
1	3	328	1.75e-02	-0.61	1.53e-02	-0.61	-3.71e-02	588.34	-4.326e+04	-8599.31	-3.407e+04	-1.784e+04
1	3	329	-2.57e-02	-0.55	-5.69e-02	-0.52	-0.12	112.46	-3.774e+04	-5535.40	-3.210e+04	-1.349e+04
1	3	330	2.28	-2.97	-0.20	-0.48	2.62	-1.064e+05	-1.855e+05	-1.577e+05	-1.342e+05	3.774e+04
1	3	331	1.96	-2.26	0.22	-0.52	2.08	-7.524e+04	-1.076e+05	-8.529e+04	-9.756e+04	-1.497e+04
1	3	332	0.74	-1.43	-0.20	-0.49	1.07	-4.417e+04	-7.059e+04	-4.454e+04	-7.023e+04	3090.97
1	3	333	2.67e-02	-0.82	-0.38	-0.41	0.42	-2.147e+04	-5.082e+04	-2.180e+04	-5.050e+04	-3080.36
1	3	334	-0.15	-1.09	-0.26	-0.98	-0.30	-9725.63	-3.856e+04	-1.080e+04	-3.749e+04	-5453.82
1	3	335	0.35	-0.51	0.34	-0.50	8.52e-02	-3980.58	-3.041e+04	-5551.24	-2.884e+04	-6248.41
1	3	336	0.15	-1.08	1.53e-02	-0.95	0.38	-200.97	-2.373e+04	-2016.78	-2.191e+04	-6278.47
1	3	337	6.75e-02	-0.19	-2.58e-02	-9.78e-02	0.12	-428.20	-2.044e+04	-1185.08	-1.969e+04	-3817.76
1	7	1	39.09	-11.89	29.96	-2.75	19.55	5.971e+04	-9.793e+04	5.928e+04	-9.750e+04	-8250.96
1	7	2	28.69	-19.54	19.35	-10.21	19.06	6.254e+04	-1.483e+05	6.208e+04	-1.478e+05	9859.80
1	7	3	25.17	-21.81	17.51	-14.14	17.36	4.897e+04	-9.444e+04	4.853e+04	-9.400e+04	-7898.64
1	7	4	42.11	-16.17	38.38	-12.44	14.26	1.098e+05	-1.028e+05	1.078e+05	-1.008e+05	-2.032e+04
1	7	5	15.82	-26.13	11.93	-22.23	12.17	6.614e+04	-4.298e+04	5.958e+04	-3.642e+04	-2.595e+04
1	7	6	42.03	-21.72	41.14	-20.83	7.47	1.198e+05	-4.150e+04	1.063e+05	-2.792e+04	-4.479e+04
1	7	7	15.02	-38.55	14.09	-37.61	7.01	1.182e+05	-2.483e+04	1.133e+05	-1.991e+04	-2.608e+04
1	7	8	39.83	-30.32	39.16	-29.66	6.81	1.423e+05	-9728.12	1.118e+05	2.077e+04	-6.089e+04
1	7	9	-8.35	-42.02	-8.41	-41.96	-1.37	1.382e+05	2.388e+04	9.121e+04	7.089e+04	-5.626e+04
1	7	10	72.92	-49.83	72.81	-49.72	-3.72	1.979e+05	3.278e+04	1.616e+05	6.907e+04	-6.838e+04
1	7	11	15.15	-44.96	13.22	-43.04	-10.58	1.512e+05	6.933e+04	1.278e+05	9.270e+05	-3.697e+04
1	7	12	44.67	-34.68	40.56	-30.57	-17.58	1.876e+05	4.848e+04	1.460e+05	9.008e+04	-6.371e+04
1	7	13	21.43	-40.49	10.89	-29.95	-23.28	1.975e+05	6.253e+04	1.391e+05	1.210e+05	-6.690e+04
1	7	14	50.55	-27.58	42.82	-19.86	-23.32	2.102e+05	1.065e+05	1.585e+05	1.583e+05	-5.186e+04
1	7	15	41.75	-39.15	17.55	-14.95	-37.05	2.308e+05	1.170e+05	1.741e+05	1.737e+05	-5.690e+04
1	7	16	61.45	-27.17	44.66	-10.38	-34.73	1.779e+05	1.117e+05	1.497e+05	1.399e+05	-3.276e+04
1	7	17	52.26	-27.09	19.64	5.52	-39.04	1.778e+05	1.116e+05	1.403e+05	1.491e+05	-3.283e+04
1	7	18	69.40	-20.29	37.15	11.97	-43.04	1.935e+05	8.827e+04	1.411e+05	1.407e+05	-5.260e+04
1	7	19	27.54	-26.12	17.72	-16.31	20.74	-1.037e+04	-1.533e+05	-1.694e+04	-1.467e+05	2.992e+04
1	7	20	12.91	-16.55	7.51	-11.15	11.39	2343.74	-9.659e+04	1584.98	-9.583e+04	8630.82
1	7	21	5.77	-14.50	5.20	-13.94	3.33	6.027e+04	-9.295e+04	6.017e+04	-9.285e+04	-4004.61
1	7	22	9.56	-29.24	6.33	-26.01	10.72	8.655e+04	-3.052e+04	8.235e+04	-2.632e+04	-2.176e+04
1	7	23	-4.67	-29.75	-4.68	-29.74	-0.65	1.434e+05	3.198e+04	1.166e+05	5.877e+04	-4.760e+04
1	7	24	12.39	-39.69	6.86	-34.16	-16.04	1.755e+05	7.230e+04	1.373e+05	1.105e+05	-4.983e+04
1	7	25	2.45	-21.87	0.25	-19.67	-6.98	1.604e+05	8.622e+04	1.235e+05	1.231e+05	-3.710e+04
1	7	26	19.20	-34.34	-1.68	-13.46	-26.11	1.975e+05	6.236e+04	1.211e+05	1.387e+05	-6.698e+04
1	7	27	46.23	-35.83	12.32	-1.91	-40.41	2.101e+05	1.061e+05	1.583e+05	1.579e+05	-5.203e+04
1	7	28	21.27	-19.12	12.78	-10.63	16.46	-3.702e+04	-1.664e+05	-5.372e+04	-1.497e+05	4.338e+04
1	7	29	13.08	-9.47	9.75	-6.15	8.00	-1.058e+04	-1.486e+05	-1.262e+04	-1.466e+05	1.664e+04
1	7	30	10.85	-9.90	7.55	-6.61	7.58	-7693.11	-1.175e+05	-8726.00	-1.164e+05	1.060e+04
1	7	31	5.40	-13.25	3.64	-11.49	5.45	3.661e+04	-7.391e+04	3.631e+04	-7.361e+04	-5734.34
1	7	32	-3.22	-14.86	-3.30	-14.79	-0.94	1.491e+05	1.394e+04	1.396e+05	2.344e+04	-3.455e+04
1	7	33	7.27	-22.82	3.25	-18.80	-10.24	2.074e+05	6.189e+04	1.348e+05	1.345e+05	-7.276e+04
1	7	34	15.64	-26.11	-1.79	-8.68	-20.59	1.753e+05	7.210e+04	1.106e+05	1.369e+05	-4.991e+04
1	7	35	15.04	-26.35	-9.71	-1.60	-20.30	1.508e+05	6.910e+04	9.274e+04	1.272e+05	-3.706e+04
1	7	36	37.11	-31.45	-1.43	7.10	-34.02	1.874e+05	4.799e+04	8.994e+04	1.455e+05	-6.394e+04
1	7	37	22.82	-24.70	15.47	-17.36	17.18	-8.396e+04	-2.228e+05	-1.043e+05	-2.025e+05	4.911e+04
1	7	38	21.12	-5.81	12.80	2.51	12.44	-6.830e+04	-1.545e+05	-1.074e+05	-1.154e+05	4.294e+04
1	7	39	15.61	-5.16	8.95	1.51	9.70	-7.736e+04	-1.653e+05	-9.504e+04	-1.477e+05	3.526e+04
1	7	40	9.18	-3.81	4.37	0.99	6.27	-5.799e+04	-1.820e+05	-6.191e+04	-1.781e+05	2.171e+04
1	7	41	7.87e-02	-0.10	-1.79e-02	-7.27e-03	9.11e-02	-1.703e+04	-3.013e+04	-2.356e+04	-2.360e+04	-6553.28
1	7	42	7.63	-12.19	-3.74	-0.81	-9.80	1.485e+05	1.368e+04	2.328e+04	1.389e+05	-3.467e+04
1	7	43	14.70	-23.04	-7.25	-1.09	-18.62	1.430e+05	3.145e+04	5.846e+04	1.160e+05	-4.779e+04
1	7	44	17.85	-29.89	-10.02	-2.01	-23.54	1.380e+05	2.325e+04	7.053e+04	9.074e+04	-5.648e+04
1	7	45	36.81	-28.63	-11.58	19.76	-28.73	1.974e+05	3.211e+04	6.872e+04	1.608e+05	-6.864e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	7	46	23.65	-23.84	7.63	-7.82	22.45	-9.535e+04	-2.013e+05	-1.181e+05	-1.786e+05	4.349e+04
1	7	47	22.02	-7.33	14.28	0.41	12.93	-1.079e+05	-1.716e+05	-1.199e+05	-1.596e+05	2.494e+04
1	7	48	22.28	-8.04	10.35	3.90	14.81	-1.181e+05	-1.951e+05	-1.436e+05	-1.696e+05	3.630e+04
1	7	49	17.45	-2.24	5.44	9.77	9.60	-1.124e+05	-2.297e+05	-1.712e+05	-1.710e+05	5.864e+04
1	7	50	15.64	2.29	3.26	14.67	3.47	-5.827e+04	-1.826e+05	-1.788e+05	-6.214e+04	2.159e+04
1	7	51	21.49	-11.88	-10.82	20.43	-5.85	3.594e+04	-7.456e+04	-7.423e+04	3.561e+04	-6021.95
1	7	52	18.15	-18.81	-13.04	12.39	-13.41	8.593e+04	-3.111e+04	-2.683e+04	8.166e+04	-2.195e+04
1	7	53	18.06	-18.68	-9.89	9.27	-15.68	1.176e+05	-2.532e+04	-2.033e+04	1.126e+05	-2.622e+04
1	7	54	31.65	-28.69	-11.65	14.61	-27.17	1.419e+05	-1.039e+04	-1.699e+05	-1.436e+05	-6.113e+04
1	7	55	26.19	-31.14	-1.49	-3.46	28.65	-1.552e+05	-2.211e+05	-1.875e+05	-1.889e+05	3.296e+04
1	7	56	28.62	-12.18	9.49	6.94	20.36	-1.090e+05	-2.089e+05	-1.504e+05	-1.674e+05	4.923e+04
1	7	57	16.93	2.10	5.82	13.22	6.43	-1.333e+05	-1.769e+05	-1.552e+05	-1.549e+05	2.180e+04
1	7	58	33.51	-10.02	-0.59	24.09	17.93	-1.182e+05	-1.953e+05	-1.699e+05	-1.436e+05	3.623e+04
1	7	59	30.97	2.81	4.73	29.05	7.11	-7.790e+04	-1.657e+05	-1.482e+05	-9.540e+04	3.508e+04
1	7	60	35.90	-11.23	-9.89	34.56	-7.83	-8319.15	-1.181e+05	-1.171e+05	-9316.21	1.041e+04
1	7	61	21.64	-8.62	-8.00	21.01	-4.31	5.963e+04	-9.351e+04	-9.340e+04	5.952e+04	-4136.38
1	7	62	27.09	-17.33	-10.39	20.14	-16.13	6.559e+04	-4.365e+04	-3.695e+04	5.889e+04	-2.620e+04
1	7	63	41.07	-36.07	-19.68	24.68	-31.55	1.192e+05	-4.230e+04	-2.861e+04	1.055e+05	-4.497e+04
1	7	64	23.43	-38.62	-7.51	-7.68	31.02	-1.570e+05	-1.804e+05	-1.624e+05	-1.749e+05	9910.62
1	7	65	32.24	-30.11	-5.09	7.22	30.56	-1.603e+05	-2.437e+05	-2.022e+05	-2.019e+05	4.168e+04
1	7	66	34.32	-14.66	-1.97	21.64	21.46	-1.091e+05	-2.090e+05	-1.677e+05	-1.504e+05	4.916e+04
1	7	67	40.97	-13.37	-9.14	36.73	14.57	-1.081e+05	-1.720e+05	-1.601e+05	-1.199e+05	2.485e+04
1	7	68	42.84	5.94	8.00	40.78	8.47	-6.893e+04	-1.547e+05	-1.158e+05	-1.079e+05	4.272e+04
1	7	69	41.10	-13.28	-13.15	40.97	-2.58	-1.112e+04	-1.492e+05	-1.472e+05	-1.312e+04	1.651e+04
1	7	70	34.27	-18.46	-15.37	31.18	-12.38	1683.33	-9.716e+04	-9.645e+04	967.50	8381.28
1	7	71	33.25	-30.60	-22.45	25.10	-21.31	4.815e+04	-9.522e+04	-9.476e+04	4.769e+04	-8108.15
1	7	72	29.34	-33.94	-21.79	17.19	-24.92	1.091e+05	-1.034e+05	-1.014e+05	1.071e+05	-2.042e+04
1	7	73	17.99	-52.76	-24.22	-10.55	34.70	-1.346e+05	-1.874e+05	-1.612e+05	-1.609e+05	2.641e+04
1	7	74	21.93	-46.16	-29.88	5.65	29.05	-1.569e+05	-1.806e+05	-1.754e+05	-1.621e+05	9846.68
1	7	75	25.40	-39.79	-29.47	15.09	23.80	-1.556e+05	-2.212e+05	-1.875e+05	-1.875e+05	3.280e+04
1	7	76	33.54	-37.93	-32.11	27.72	19.54	-9.579e+04	-2.016e+05	-1.791e+05	-1.183e+05	4.327e+04
1	7	77	48.84	-64.40	-63.72	48.16	8.73	-8.459e+04	-2.233e+05	-2.032e+05	-1.047e+05	4.885e+04
1	7	78	32.98	-36.58	-36.44	32.84	-3.09	-3.768e+04	-1.668e+05	-1.503e+05	-5.420e+04	4.315e+04
1	7	79	28.76	-43.01	-42.40	28.16	-6.57	-1.123e+04	-1.539e+05	-1.474e+05	-1.772e+04	2.974e+04
1	7	80	26.70	-44.79	-39.71	21.63	-18.36	6.183e+04	-1.489e+05	-1.484e+05	6.138e+04	9768.81
1	7	81	20.76	-42.49	-30.03	8.30	-25.15	5.906e+04	-9.854e+04	-9.809e+04	5.861e+04	-8420.53
1	7	82	47.82	-74.55	-73.91	47.18	8.82	-6.105e+04	-1.451e+05	-1.269e+05	-7.925e+04	3.461e+04
1	7	83	28.52	-66.48	-66.38	28.41	-3.13	-3.243e+04	-1.663e+05	-1.481e+05	-5.066e+04	4.591e+04
1	7	84	28.00	-54.66	-54.20	27.55	6.09	-4.567e+04	-1.020e+05	-8.252e+04	-6.517e+04	2.681e+04
1	7	85	28.27	-60.32	-60.29	28.24	-1.50	-1.935e+04	-9.975e+04	-8.531e+04	-3.379e+04	3.087e+04
1	7	86	25.47	-45.21	-45.03	25.30	3.51	-2.775e+04	-6.362e+04	-4.508e+04	-4.629e+04	1.793e+04
1	7	87	25.54	-46.57	-46.23	25.20	-4.98	-6939.28	-6.684e+04	-5.236e+04	-2.142e+04	2.565e+04
1	7	88	25.52	-34.73	-34.68	25.47	1.81	-1.368e+04	-3.772e+04	-2.150e+04	-2.991e+04	1.126e+04
1	7	89	25.08	-35.47	-34.88	24.48	-5.96	2075.61	-4.250e+04	-2.966e+04	-1.077e+04	2.019e+04
1	7	90	25.86	-25.30	-25.28	25.84	0.91	-4844.76	-2.163e+04	-8620.77	-1.785e+04	7007.86
1	7	91	25.16	-25.79	-25.09	24.45	-5.96	8181.67	-2.508e+04	-1.479e+04	-2117.05	1.538e+04
1	7	92	25.48	-16.19	-16.19	25.48	0.23	93.99	-1.164e+04	-2168.66	-9372.52	4628.12
1	7	93	24.45	-17.33	-16.62	23.74	-5.39	1.127e+04	-1.372e+04	-6427.23	3977.07	1.136e+04
1	7	94	24.99	-7.99	-7.99	24.99	0.16	1054.43	-5639.14	-356.16	-4228.55	2729.85
1	7	95	24.20	-8.64	-8.07	23.63	-4.29	1.048e+04	-6959.11	-3113.36	6631.29	7229.47
1	7	96	22.88	-3.75	-3.73	22.86	0.73	-864.55	-3766.11	-907.36	-3723.30	349.84
1	7	97	21.64	-3.59	-3.09	21.14	-3.51	3310.77	-1013.27	-1013.00	3310.50	-34.20
1	7	98	13.69	-60.17	-58.66	12.18	-10.45	5287.85	-1.103e+05	-1.089e+05	3867.54	1.274e+04
1	7	99	21.19	-60.90	-56.99	17.27	-17.50	7631.38	-8.891e+04	-8.230e+04	1021.20	2.438e+04
1	7	100	24.15	-43.92	-40.13	20.36	-15.61	1.293e+04	-6.504e+04	-5.726e+04	5149.47	2.337e+04
1	7	101	23.19	-32.78	-29.27	19.68	-13.58	1.659e+04	-4.604e+04	-3.851e+04	9053.46	2.038e+04
1	7	102	22.35	-23.65	-20.40	19.11	-11.78	1.871e+04	-3.111e+04	-2.453e+04	1.212e+04	1.687e+04
1	7	103	21.77	-15.38	-12.40	18.79	-10.10	1.877e+04	-2.022e+04	-1.514e+04	1.369e+04	1.312e+04
1	7	104	21.45	-7.67	-4.72	18.50	-8.78	1.556e+04	-1.229e+04	-9318.32	1.259e+04	8594.95
1	7	105	20.88	-3.11	-0.75	18.52	-7.14	3420.87	-914.53	-880.24	3386.59	-384.01
1	7	106	27.41	-54.10	-40.93	14.24	-30.01	3.019e+04	-9.466e+04	-9.389e+04	2.943e+04	9765.44
1	7	107	25.96	-46.40	-35.57	15.12	-25.82	2.951e+04	-7.475e+04	-7.321e+04	2.797e+04	1.258e+04
1	7	108	21.97	-35.69	-27.14	13.42	-20.49	2.877e+04	-5.809e+04	-5.616e+04	2.683e+04	1.283e+04
1	7	109	20.23	-26.70	-19.17	12.70	-17.23	2.743e+04	-4.453e+04	-4.243e+04	2.533e+04	1.213e+04
1	7	110	18.60	-18.79	-12.10	11.92	-14.33	2.546e+04	-3.351e+04	-3.147e+04	2.341e+04	1.079e+04
1	7	111	18.50	-12.06	-5.97	12.41	-12.21	2.229e+04	-2.469e+04	-2.290e+04	2.050e+04	8986.10
1	7	112	18.15	-6.05	-8.72e-02	12.19	-10.43	1.691e+04	-1.654e+04	-1.533e+04	1.570e+04	6244.37
1	7	113	18.94	-2.01	2.93	14.00	-8.89	1639.24	-1375.71	-1344.78	1608.31	303.79
1	7	114	27.49	-49.97	-37.07	14.58	-28.86	4.862e+04	-7.419e+04	-7.406e+04	4.849e+04	-3918.70
1	7	115	21.43	-34.94	-23.98	10.47	-22.31	4.334e+04	-6.026e+04	-6.021e+04	4.329e+04	-2149.05
1	7	116	19.32	-27.05	-16.29	8.56	-19.57	3.852e+04	-4.913e+04	-4.912e+04	3.851e+04	-976.47
1	7	117	17.62	-20.47	-10.41	7.56	-16.79	3.372e+04	-3.974e+04	-3.974e+04	3.372e+04	-198.54
1	7	118	16.48	-15.12	-5.47	6.83	-14.56	2.897e+04	-3.179e+04	-3.179e+04	2.896e+04	324.52

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	7	119	15.22	-9.18	-0.54	6.58	-11.67	2.402e+04	-2.488e+04	-2.488e+04	2.402e+04	500.51
1	7	120	14.64	-3.84	3.69	7.11	-9.08	1.685e+04	-1.755e+04	-1.754e+04	1.685e+04	361.03
1	7	121	14.22	-1.51	4.61	8.09	-7.67	1334.04	-1786.69	-1758.42	1305.78	295.64
1	7	122	31.96	-43.78	-27.98	16.16	-30.77	6.858e+04	-6.525e+04	-6.170e+04	6.503e+04	-2.152e+04
1	7	123	24.16	-35.22	-20.31	9.25	-25.75	5.905e+04	-5.301e+04	-4.970e+04	5.575e+04	-1.896e+04
1	7	124	18.78	-24.24	-12.03	6.56	-19.40	4.942e+04	-4.415e+04	-4.112e+04	4.638e+04	-1.657e+04
1	7	125	15.76	-17.29	-6.63	5.10	-15.45	4.075e+04	-3.666e+04	-3.397e+04	3.806e+04	-1.417e+04
1	7	126	13.56	-11.65	-2.29	4.19	-12.18	3.303e+04	-3.019e+04	-2.789e+04	3.072e+04	-1.186e+04
1	7	127	11.81	-7.30	1.37	3.15	-9.51	2.603e+04	-2.428e+04	-2.237e+04	2.412e+04	-9626.40
1	7	128	11.23	-3.52	4.28	3.43	-7.36	1.808e+04	-1.722e+04	-1.582e+04	1.667e+04	-6889.89
1	7	129	10.43	-1.65	4.16	4.62	-6.04	2061.56	-1340.62	-1090.47	1811.42	-887.96
1	7	130	17.35	-27.97	-16.01	5.39	-19.98	8.533e+04	-4.173e+04	-3.650e+04	8.011e+04	-2.523e+04
1	7	131	21.32	-26.73	-13.58	8.17	-21.42	7.655e+04	-3.707e+04	-2.542e+04	6.491e+04	-3.446e+04
1	7	132	18.62	-19.96	-8.16	6.82	-17.78	6.071e+04	-3.358e+04	-2.177e+04	4.890e+04	-3.121e+04
1	7	133	14.39	-13.87	-4.42	4.94	-13.33	4.737e+04	-2.973e+04	-1.890e+04	3.654e+04	-2.679e+04
1	7	134	10.93	-9.04	-1.59	3.48	-9.66	3.644e+04	-2.578e+04	-1.627e+04	2.693e+04	-2.239e+04
1	7	135	8.12	-5.15	0.67	2.29	-6.59	2.745e+04	-2.161e+04	-1.362e+04	1.946e+04	-1.812e+04
1	7	136	5.96	-1.97	2.61	1.38	-3.91	1.892e+04	-1.581e+04	-9824.87	1.293e+04	-1.312e+04
1	7	137	5.91	-1.69	1.96	2.26	-3.80	3381.94	-751.74	917.62	1712.58	-2028.26
1	7	138	33.18	-27.53	-9.64	15.30	-27.68	1.476e+05	-1.460e+04	1.678e+04	1.162e+05	-6.407e+04
1	7	139	33.61	-25.48	-8.45	16.58	-26.76	9.374e+04	-1.581e+04	9202.20	6.872e+04	-4.599e+04
1	7	140	21.61	-17.44	-6.07	10.24	-17.74	6.983e+04	-1.904e+04	5092.54	4.570e+04	-3.953e+04
1	7	141	15.11	-12.06	-4.20	7.25	-12.32	5.197e+04	-1.998e+04	2119.92	2.987e+04	-3.319e+04
1	7	142	10.08	-8.08	-3.03	5.04	-8.14	3.826e+04	-1.945e+04	-57.44	1.886e+04	-2.726e+04
1	7	143	6.10	-5.03	-2.13	3.20	-4.89	2.766e+04	-1.765e+04	-1432.15	1.144e+04	-2.172e+04
1	7	144	2.55	-2.53	-1.49	1.52	-2.05	1.878e+04	-1.344e+04	-1296.27	6633.08	-1.562e+04
1	7	145	2.57	-3.20	-1.95	1.33	-2.38	4842.03	-335.89	3495.68	1010.46	-2271.26
1	7	146	43.79	-31.79	-10.52	22.52	-33.99	1.347e+05	1.671e+04	5.078e+04	1.007e+05	-5.348e+04
1	7	147	35.87	-24.19	-4.63	16.32	-28.14	1.037e+05	6457.09	4.284e+04	6.735e+04	-4.707e+04
1	7	148	26.06	-16.81	-4.09	13.34	-19.58	7.454e+04	-2755.96	3.223e+04	3.956e+04	-3.848e+04
1	7	149	18.18	-12.44	-4.51	10.25	-13.41	5.338e+04	-8767.67	2.306e+04	2.155e+04	-3.107e+04
1	7	150	11.99	-9.73	-5.07	7.33	-8.92	3.783e+04	-1.198e+04	1.583e+04	1.003e+04	-2.474e+04
1	7	151	7.08	-7.94	-5.71	4.84	-5.35	2.656e+04	-1.274e+04	1.052e+04	3295.17	-1.932e+04
1	7	152	3.19	-6.90	-6.30	2.59	-2.39	1.770e+04	-1.044e+04	6992.63	273.38	-1.366e+04
1	7	153	1.89	-7.44	-6.57	1.01	-2.72	6267.33	-33.17	5932.58	301.58	-1413.17
1	7	154	48.77	-23.02	0.48	25.28	-33.69	1.656e+05	4.762e+04	9.517e+04	1.181e+05	-5.788e+04
1	7	155	41.69	-23.46	-0.39	18.62	-31.15	1.062e+05	2.841e+04	7.003e+04	6.459e+04	-3.880e+04
1	7	156	31.74	-16.72	-1.75	16.77	-22.39	7.355e+04	1.329e+04	5.211e+04	3.473e+04	-2.885e+04
1	7	157	23.02	-14.51	-4.32	12.83	-16.69	5.106e+04	2563.61	3.772e+04	1.587e+04	-2.164e+04
1	7	158	15.71	-13.08	-6.57	9.20	-12.04	3.515e+04	-4258.84	2.662e+04	4277.72	-1.623e+04
1	7	159	9.58	-12.24	-8.52	5.85	-8.21	2.402e+04	-7560.96	1.838e+04	-1916.20	-1.210e+04
1	7	160	4.59	-11.92	-10.18	2.85	-5.07	1.591e+04	-6976.23	1.246e+04	-3525.56	-8188.45
1	7	161	2.16	-12.23	-10.31	0.24	-4.88	7590.26	172.61	7574.56	188.31	340.92
1	7	162	54.04	-4.28	18.08	31.68	-28.36	1.409e+05	6.900e+04	1.067e+05	1.032e+05	-3.592e+04
1	7	163	53.90	-15.61	12.12	26.16	-34.04	9.857e+04	4.597e+04	8.115e+04	6.339e+04	-2.476e+04
1	7	164	39.48	-19.03	3.24	17.22	-28.41	6.648e+04	2.685e+04	5.925e+04	3.408e+04	-1.531e+04
1	7	165	28.43	-17.83	-1.70	12.30	-22.05	4.513e+04	1.259e+04	4.223e+04	1.549e+04	-9273.08
1	7	166	19.58	-16.99	-5.62	8.21	-16.92	3.059e+04	2903.85	2.946e+04	4027.01	-5461.83
1	7	167	12.20	-16.65	-9.02	4.58	-12.72	2.069e+04	-2514.86	2.025e+04	-2078.20	-3152.99
1	7	168	6.00	-16.76	-12.06	1.30	-9.21	1.392e+04	-3613.90	1.378e+04	-3481.84	-1515.75
1	7	169	2.52	-16.92	-12.39	-2.01	-8.22	8819.46	294.12	8046.11	1067.46	2448.47
1	7	170	73.74	-34.15	31.43	8.16	-52.67	1.410e+05	7.453e+04	1.126e+05	1.029e+05	-3.289e+04
1	7	171	60.63	-26.80	21.22	12.61	-43.50	8.451e+04	5.503e+04	7.693e+04	6.261e+04	-1.289e+04
1	7	172	43.61	-22.06	11.27	10.27	-32.83	5.456e+04	3.592e+04	5.355e+04	3.693e+04	-4223.99
1	7	173	31.92	-20.98	4.17	6.76	-26.42	3.674e+04	1.979e+04	3.672e+04	1.980e+04	514.46
1	7	174	22.31	-20.40	-1.38	3.28	-21.23	2.512e+04	8189.93	2.459e+04	8716.71	2939.51
1	7	175	14.15	-20.51	-6.49	0.13	-17.01	1.725e+04	1368.33	1.627e+04	2348.60	3821.91
1	7	176	7.15	-20.80	-10.74	-2.90	-13.42	1.209e+04	-996.97	1.092e+04	175.74	3738.14
1	7	177	2.81	-21.04	-12.07	-6.17	-11.55	9697.79	336.18	7136.88	2897.09	4173.24
1	7	178	77.07	-27.44	42.41	7.22	-49.20	1.090e+05	7.216e+04	9.072e+04	9.045e+04	-1.842e+04
1	7	179	55.08	-22.96	27.60	4.52	-37.27	6.731e+04	5.487e+04	6.120e+04	6.098e+04	-6217.51
1	7	180	43.49	-23.36	18.22	1.91	-32.42	4.107e+04	3.970e+04	4.048e+04	4.030e+04	682.62
1	7	181	32.97	-23.32	10.62	-0.97	-27.54	3.002e+04	2.128e+04	2.572e+04	2.558e+04	4367.60
1	7	182	23.89	-23.48	4.15	-3.73	-23.36	2.150e+04	9378.27	1.550e+04	1.538e+04	6058.77
1	7	183	15.37	-23.59	-1.67	-6.56	-19.33	1.527e+04	2624.29	8987.93	8907.24	6323.16
1	7	184	7.60	-23.96	-7.16	-9.19	-15.75	1.127e+04	-2.69	5665.97	5600.84	5636.00
1	7	185	2.89	-23.70	-9.20	-11.61	-13.24	1.003e+04	311.23	5173.68	5170.72	4860.97
1	7	186	80.76	-32.00	45.90	2.86	-52.11	1.410e+05	7.471e+04	1.033e+05	1.124e+05	-3.282e+04
1	7	187	68.72	-29.39	42.14	-2.81	-43.61	8.439e+04	5.524e+04	6.288e+04	7.676e+04	-1.282e+04
1	7	188	51.71	-25.44	32.05	-5.78	-33.62	5.440e+04	3.614e+04	3.714e+04	5.340e+04	-4158.92
1	7	189	38.31	-25.09	21.95	-8.73	-27.74	3.662e+04	1.995e+04	1.997e+04	3.660e+04	572.46
1	7	190	27.07	-25.16	13.22	-11.31	-23.05	2.506e+04	8286.96	8839.26	2.451e+04	2993.17
1	7	191	17.53	-25.51	5.72	-13.70	-19.20	1.720e+04	1421.21	2431.34	1.618e+04	3861.77

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	7	192	8.89	-26.24	-1.44	-15.91	-16.01	1.208e+04	-950.90	257.83	1.087e+04	3779.54
1	7	193	3.25	-26.18	-5.18	-17.76	-13.30	9710.15	337.34	2908.16	7139.32	4181.71
1	7	194	80.19	-7.55	74.06	-1.42	-22.36	1.410e+05	6.924e+04	1.036e+05	1.066e+05	-3.584e+04
1	7	195	80.16	-19.97	68.98	-8.80	-31.52	9.850e+04	4.627e+04	6.369e+04	8.108e+04	-2.463e+04
1	7	196	57.39	-25.95	47.35	-15.91	-27.13	6.637e+04	2.710e+04	3.429e+04	5.213e+04	-1.519e+04
1	7	197	41.85	-25.91	33.46	-17.52	-22.31	4.502e+04	1.277e+04	1.563e+04	4.216e+04	-9169.34
1	7	198	29.33	-25.87	22.29	-18.83	-18.41	3.050e+04	3028.84	4125.17	2.940e+04	-5376.82
1	7	199	18.72	-26.18	12.81	-20.27	-15.18	2.061e+04	-2430.73	-2010.22	2.019e+04	-3084.35
1	7	200	9.44	-26.82	4.47	-21.85	-12.48	1.386e+04	-3559.17	-3434.37	1.374e+04	-1469.21
1	7	201	3.58	-26.75	-0.70	-22.46	-10.56	8819.12	296.35	1073.10	8042.38	2452.90
1	7	202	81.33	-27.71	78.45	-24.83	-17.47	1.658e+05	4.817e+04	1.187e+05	9.529e+04	-5.763e+04
1	7	203	70.85	-27.31	68.60	-25.06	-14.69	1.062e+05	2.878e+04	6.491e+04	7.009e+04	-3.864e+04
1	7	204	55.38	-25.12	52.83	-22.57	-14.10	7.350e+04	1.356e+04	3.492e+04	5.213e+04	-2.871e+04
1	7	205	41.46	-25.11	39.06	-22.71	-12.40	5.098e+04	2746.72	1.598e+04	3.775e+04	-2.152e+04
1	7	206	29.35	-25.08	27.35	-23.07	-10.26	3.507e+04	-4153.46	4331.40	2.659e+04	-1.615e+04
1	7	207	18.80	-25.67	17.09	-23.96	-8.54	2.395e+04	-7475.75	-1884.80	1.836e+04	-1.202e+04
1	7	208	9.58	-26.10	8.21	-24.73	-6.86	1.585e+04	-6933.77	-3511.77	1.242e+04	-8138.86
1	7	209	3.69	-25.94	2.43	-24.68	-5.98	7585.49	176.64	192.68	7569.45	344.36
1	7	210	84.51	-48.28	84.22	-48.00	-6.15	1.350e+05	1.720e+04	1.011e+05	5.103e+04	-5.329e+04
1	7	211	61.72	-26.47	61.29	-26.03	-6.16	1.038e+05	6846.44	6.766e+04	4.304e+04	-4.691e+04
1	7	212	50.67	-23.52	50.39	-23.24	-4.56	7.457e+04	-2484.57	3.973e+04	3.236e+04	-3.835e+04
1	7	213	39.01	-23.53	38.83	-23.35	-3.38	5.336e+04	-8591.67	2.163e+04	2.314e+04	-3.097e+04
1	7	214	28.28	-24.00	28.17	-23.89	-2.40	3.778e+04	-1.188e+04	1.002e+04	1.588e+04	-2.466e+04
1	7	215	18.25	-24.34	18.20	-24.29	-1.47	2.651e+04	-1.269e+04	3284.21	1.054e+04	-1.926e+04
1	7	216	9.11	-24.71	9.09	-24.70	-0.74	1.767e+04	-1.038e+04	290.33	7001.15	-1.362e+04
1	7	217	3.65	-24.16	3.62	-24.13	-0.90	6272.37	-32.81	300.34	5939.21	-1410.53
1	7	218	71.70	-25.61	71.48	-25.39	4.64	1.479e+05	-1.400e+04	1.168e+05	1.719e+04	-6.386e+04
1	7	219	63.58	-25.10	63.56	-25.08	1.44	9.392e+04	-1.543e+04	6.900e+04	9481.63	-4.587e+04
1	7	220	48.70	-22.18	48.50	-21.98	3.83	6.992e+04	-1.878e+04	4.585e+04	5291.59	-3.944e+04
1	7	221	36.58	-21.84	36.23	-21.49	4.49	5.200e+04	-1.981e+04	2.993e+04	2257.98	-3.314e+04
1	7	222	26.15	-22.08	25.70	-21.63	4.65	3.826e+04	-1.934e+04	1.888e+04	36.77	-2.722e+04
1	7	223	17.06	-22.33	16.51	-21.79	4.61	2.765e+04	-1.760e+04	1.143e+04	-1379.40	-2.170e+04
1	7	224	8.59	-22.91	7.96	-22.28	4.41	1.876e+04	-1.339e+04	6616.34	-1244.35	-1.558e+04
1	7	225	3.41	-22.42	2.92	-21.93	3.53	4861.86	-327.33	1013.24	3521.29	-2271.41
1	7	226	61.38	-8.33	60.27	-7.22	8.74	8.574e+04	-4.126e+04	8.056e+04	-3.609e+04	-2.512e+04
1	7	227	61.11	-15.87	57.74	-12.49	15.76	7.679e+04	-3.672e+04	6.518e+04	-2.511e+04	-3.439e+04
1	7	228	43.99	-19.31	41.09	-16.41	13.24	6.086e+04	-3.334e+04	4.906e+04	-2.154e+04	-3.118e+04
1	7	229	32.42	-19.11	29.81	-16.50	11.30	4.746e+04	-2.957e+04	3.662e+04	-1.874e+04	-2.678e+04
1	7	230	22.97	-19.09	20.47	-16.59	9.95	3.648e+04	-2.569e+04	2.696e+04	-1.679e+04	-2.239e+04
1	7	231	14.78	-19.39	12.25	-16.87	8.94	2.747e+04	-2.156e+04	1.946e+04	-1.355e+04	-1.813e+04
1	7	232	7.51	-19.95	4.78	-17.22	8.21	1.894e+04	-1.578e+04	1.293e+04	-9779.12	-1.313e+04
1	7	233	3.06	-20.14	0.92	-18.00	6.71	3412.30	-739.43	1719.74	953.13	-2040.17
1	7	234	52.00	-18.78	40.63	-7.41	25.99	6.902e+04	-6.477e+04	6.549e+04	-6.124e+04	-2.143e+04
1	7	235	44.48	-18.04	36.08	-9.64	21.32	5.933e+04	-5.269e+04	5.603e+04	-4.939e+04	-1.894e+04
1	7	236	34.22	-15.61	28.09	-9.48	16.36	4.960e+04	-4.393e+04	4.656e+04	-4.089e+04	-1.659e+04
1	7	237	25.58	-15.31	20.25	-9.99	13.76	4.087e+04	-3.652e+04	3.817e+04	-3.382e+04	-1.421e+04
1	7	238	18.19	-15.21	13.26	-10.28	11.84	3.311e+04	-3.011e+04	3.078e+04	-2.679e+04	-1.190e+04
1	7	239	11.47	-15.69	6.64	-10.87	10.38	2.607e+04	-2.422e+04	2.413e+04	-2.228e+04	-9676.96
1	7	240	5.91	-16.20	1.07	-11.36	9.14	1.813e+04	-1.720e+04	1.671e+04	-1.577e+04	-6943.40
1	7	241	2.42	-17.29	-1.75	-13.12	8.05	2112.49	-1304.87	1840.16	-1032.54	-925.46
1	7	242	44.86	-17.39	35.73	-8.26	22.02	4.905e+04	-7.379e+04	4.892e+04	-7.367e+04	-3895.26
1	7	243	31.74	-12.93	24.74	-5.93	16.24	4.364e+04	-5.998e+04	4.359e+04	-5.994e+04	-2171.68
1	7	244	24.63	-12.05	17.93	-5.36	14.17	3.873e+04	-4.894e+04	3.872e+04	-4.893e+04	-1025.92
1	7	245	18.42	-11.65	12.19	-5.42	12.18	3.386e+04	-3.961e+04	3.386e+04	-3.961e+04	-269.37
1	7	246	12.81	-11.53	6.95	-5.67	10.40	2.904e+04	-3.172e+04	2.904e+04	-3.172e+04	217.71
1	7	247	8.20	-11.82	2.05	-5.68	9.23	2.408e+04	-2.482e+04	2.408e+04	-2.482e+04	415.59
1	7	248	4.35	-12.63	-2.22	-6.06	8.27	1.693e+04	-1.747e+04	1.693e+04	-1.747e+04	309.19
1	7	249	1.50	-14.02	-4.34	-8.18	7.52	1376.48	-1723.93	1358.22	-1705.67	237.24
1	7	250	36.68	-19.89	26.58	-9.79	21.67	3.077e+04	-9.422e+04	2.998e+04	-9.344e+04	9847.64
1	7	251	29.70	-13.94	21.29	-5.52	17.21	2.990e+04	-7.445e+04	2.836e+04	-7.291e+04	1.258e+04
1	7	252	21.10	-10.53	14.58	-4.01	12.79	2.905e+04	-5.789e+04	2.712e+04	-5.596e+04	1.279e+04
1	7	253	15.29	-9.15	9.44	-3.30	10.42	2.762e+04	-4.439e+04	2.553e+04	-4.230e+04	1.207e+04
1	7	254	10.56	-8.54	4.78	-2.76	8.78	2.557e+04	-3.341e+04	2.355e+04	-3.138e+04	1.074e+04
1	7	255	6.69	-7.95	1.18	-2.44	7.09	2.239e+04	-2.463e+04	2.063e+04	-2.287e+04	8918.80
1	7	256	3.02	-8.15	-2.67	-2.45	5.59	1.696e+04	-1.647e+04	1.578e+04	-1.529e+04	6175.54
1	7	257	1.70	-8.56	-2.89	-3.96	5.10	1709.86	-1328.16	1688.93	-1307.24	251.26
1	7	258	23.56	-9.54	17.34	-3.32	12.93	5864.30	-1.099e+05	4423.45	-1.085e+05	1.283e+04
1	7	259	22.12	-12.27	16.13	-6.27	13.05	8084.75	-8.863e+04	1457.79	-8.200e+04	2.443e+04
1	7	260	17.31	-10.54	12.03	-5.26	10.92	1.326e+04	-6.485e+04	5485.10	-5.708e+04	2.338e+04
1	7	261	12.72	-8.02	8.58	-3.88	8.29	1.682e+04	-4.591e+04	9309.03	-3.840e+04	2.037e+04
1	7	262	8.87	-6.04	5.66	-2.83	6.13	1.887e+04	-3.103e+04	1.231e+04	-2.448e+04	1.685e+04
1	7	263	5.41	-4.34	3.02	-1.94	4.20	1.887e+04	-2.018e+04	1.382e+04	-1.514e+04	1.310e+04
1	7	264	2.28	-2.70	0.52	-0.94	2.38	1.563e+04	-1.227e+04	1.268e+04	-9319.90	8576.44



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	7	265	2.87	-3.81	1.03	-1.98	2.98	3496.90	-905.29	3458.48	-866.87	-409.48
1	7	266	21.84	-20.92	13.64	-12.71	16.84	-3.178e+04	-1.659e+05	-5.014e+04	-1.475e+05	4.611e+04
1	7	267	21.09	-21.66	13.16	-13.74	16.62	-1.888e+04	-9.952e+04	-3.339e+04	-8.500e+04	3.098e+04
1	7	268	15.70	-13.54	11.13	-8.97	10.62	-6588.39	-6.670e+04	-2.110e+04	-5.218e+04	2.573e+04
1	7	269	12.46	-9.33	9.84	-6.71	7.09	2326.96	-4.242e+04	-1.053e+04	-2.957e+04	2.025e+04
1	7	270	10.38	-6.34	9.18	-5.14	4.32	8355.70	-2.505e+04	-1937.47	-1.476e+04	1.542e+04
1	7	271	8.34	-4.41	7.86	-3.93	2.43	1.137e+04	-1.372e+04	4096.78	-6446.82	1.139e+04
1	7	272	6.95	-2.04	6.81	-1.90	1.13	1.059e+04	-6980.06	6742.20	-3134.11	7264.66
1	7	273	6.27	-1.90	5.63	-1.26	2.19	3383.54	-1008.34	3383.14	-1007.93	-42.37
1	7	274	25.52	-30.08	15.93	-20.49	21.00	-6.054e+04	-1.448e+05	-7.892e+04	-1.264e+05	3.479e+04
1	7	275	19.70	-23.91	10.75	-14.95	17.62	-4.522e+04	-1.019e+05	-6.489e+04	-8.221e+04	2.697e+04
1	7	276	15.84	-17.46	10.97	-12.59	11.77	-2.741e+04	-6.355e+04	-4.607e+04	-4.489e+04	1.806e+04
1	7	277	14.64	-12.62	12.26	-10.24	7.68	-1.346e+04	-3.769e+04	-2.974e+04	-2.141e+04	1.138e+04
1	7	278	14.43	-9.31	13.32	-8.20	5.01	-4731.08	-2.161e+04	-1.772e+04	-8621.73	7108.78
1	7	279	13.63	-6.00	13.13	-5.50	3.08	163.13	-1.162e+04	-9275.90	-2176.78	4699.62
1	7	280	12.47	-2.80	12.28	-2.60	1.70	1126.24	-5617.60	-4151.38	-339.98	2781.75
1	7	281	10.92	-1.72	10.65	-0.95	3.02	-864.51	-3700.09	-3365.50	-909.10	352.79
1	7	282	18.36	-35.25	6.19	-23.09	22.45	-9.677e+04	-1.691e+05	-1.223e+05	-1.436e+05	3.458e+04
1	7	283	19.04	-29.49	8.13	-18.58	20.26	-6.837e+04	-9.814e+04	-8.890e+04	-7.761e+04	1.378e+04
1	7	284	17.03	-22.47	10.66	-16.10	14.53	-4.014e+04	-6.435e+04	-6.399e+04	-4.050e+04	2933.09
1	7	285	17.46	-16.15	13.65	-12.34	10.65	-1.952e+04	-4.628e+04	-4.601e+04	-1.980e+04	-2706.74
1	7	286	17.32	-10.87	15.10	-8.64	7.59	-8845.72	-3.511e+04	-3.416e+04	-9791.33	-4892.82
1	7	287	17.94	-6.87	16.26	-5.19	6.24	-3613.97	-2.765e+04	-2.625e+04	-5014.35	-5630.42
1	7	288	17.51	-3.90	16.26	-2.64	5.03	-194.79	-2.158e+04	-1.996e+04	-1815.50	-5660.01
1	7	289	16.77	-1.41	15.06	0.30	5.30	-391.97	-1.859e+04	-1.791e+04	-1078.24	-3466.94
1	7	290	4.96	-40.70	-8.14	-27.60	20.65	-1.125e+05	-1.370e+05	-1.279e+05	-1.216e+05	1.183e+04
1	7	291	14.42	-39.83	-1.37	-24.04	24.64	-7.397e+04	-9.682e+04	-9.614e+04	-7.464e+04	-3862.84
1	7	292	19.15	-27.54	7.26	-15.65	20.34	-3.694e+04	-7.634e+04	-7.091e+04	-4.236e+04	-1.358e+04
1	7	293	19.82	-18.76	11.76	-10.69	15.69	-1.783e+04	-6.263e+04	-5.480e+04	-2.567e+04	-1.702e+04
1	7	294	20.33	-12.50	14.49	-6.66	12.55	-8530.76	-5.290e+04	-4.435e+04	-1.708e+04	-1.750e+04
1	7	295	20.90	-7.87	16.14	-3.11	10.69	-3042.38	-4.537e+04	-3.663e+04	-1.178e+04	-1.713e+04
1	7	296	21.48	-4.21	17.36	-0.10	9.42	530.53	-3.936e+04	-3.103e+04	-7800.20	-1.622e+04
1	7	297	21.61	-1.14	17.34	3.12	8.88	100.84	-3.435e+04	-2.921e+04	-5036.27	-1.227e+04
1	7	298	27.54	-54.05	-16.85	-9.66	40.63	-1.170e+05	-1.314e+05	-1.299e+05	-1.185e+05	4418.66
1	7	299	23.26	-42.80	-7.82	-11.72	32.97	-6.206e+04	-1.009e+05	-8.952e+04	-7.344e+04	-1.768e+04
1	7	300	20.86	-28.79	0.72	-8.65	24.38	-3.077e+04	-8.435e+04	-6.653e+04	-4.858e+04	-2.524e+04
1	7	301	21.28	-19.72	6.46	-4.90	19.70	-1.559e+04	-7.250e+04	-5.302e+04	-3.507e+04	-2.700e+04
1	7	302	21.96	-13.33	10.06	-1.43	16.68	-7349.97	-6.353e+04	-4.402e+04	-2.685e+04	-2.674e+04
1	7	303	23.03	-8.44	12.79	1.80	14.75	-2350.94	-5.655e+04	-3.747e+04	-2.143e+04	-2.588e+04
1	7	304	24.16	-4.47	15.12	4.57	13.31	961.31	-5.057e+04	-3.257e+04	-1.703e+04	-2.456e+04
1	7	305	25.40	-1.18	16.41	7.81	12.57	294.34	-4.490e+04	-3.086e+04	-1.375e+04	-2.092e+04
1	7	306	23.09	-57.30	-25.85	-8.36	39.23	-9.276e+04	-1.161e+05	-1.045e+05	-1.043e+05	-1.165e+04
1	7	307	20.33	-38.02	-13.46	-4.22	28.81	-4.819e+04	-9.728e+04	-7.282e+04	-7.264e+04	-2.454e+04
1	7	308	21.52	-27.66	-5.43	-0.71	24.48	-2.492e+04	-8.369e+04	-5.438e+04	-5.423e+04	-2.938e+04
1	7	309	22.35	-19.57	0.16	2.63	20.92	-1.323e+04	-7.362e+04	-4.348e+04	-4.337e+04	-3.019e+04
1	7	310	23.38	-13.59	4.15	5.64	18.47	-6316.21	-6.560e+04	-3.600e+04	-3.591e+04	-2.964e+04
1	7	311	24.71	-8.84	7.39	8.48	16.77	-1138.36	-5.885e+04	-3.002e+04	-2.997e+04	-2.886e+04
1	7	312	26.35	-4.72	10.60	11.03	15.53	1103.26	-5.372e+04	-2.633e+04	-2.629e+04	-2.741e+04
1	7	313	28.01	-1.21	12.82	13.98	14.60	318.97	-4.834e+04	-2.401e+04	-2.401e+04	-2.433e+04
1	7	314	28.13	-62.93	-31.18	-3.62	43.39	-1.173e+05	-1.313e+05	-1.188e+05	-1.298e+05	4350.05
1	7	315	25.69	-51.01	-27.56	2.25	35.34	-6.212e+04	-1.009e+05	-7.368e+04	-8.940e+04	-1.775e+04
1	7	316	22.85	-35.02	-18.25	6.08	26.26	-3.079e+04	-8.441e+04	-4.876e+04	-6.644e+04	-2.531e+04
1	7	317	23.24	-23.98	-10.34	9.60	21.40	-1.560e+04	-7.256e+04	-3.521e+04	-5.295e+04	-2.707e+04
1	7	318	24.23	-16.29	-4.67	12.61	18.33	-7351.71	-6.360e+04	-2.696e+04	-4.399e+04	-2.680e+04
1	7	319	25.48	-10.47	-1.27e-02	15.02	16.33	-2337.88	-5.659e+04	-2.150e+04	-3.743e+04	-2.593e+04
1	7	320	27.45	-5.42	4.48	17.55	15.08	964.39	-5.064e+04	-1.711e+04	-3.256e+04	-2.462e+04
1	7	321	29.40	-1.43	7.78	20.20	14.11	294.49	-4.495e+04	-1.377e+04	-3.089e+04	-2.094e+04
1	7	322	7.98	-63.53	-57.94	2.40	19.19	-1.128e+05	-1.370e+05	-1.219e+05	-1.279e+05	1.174e+04
1	7	323	18.90	-62.74	-52.88	9.04	26.60	-7.420e+04	-9.686e+04	-7.492e+04	-9.613e+04	-3994.61
1	7	324	23.89	-42.24	-34.02	15.67	21.82	-3.702e+04	-7.644e+04	-4.256e+04	-7.090e+04	-1.371e+04
1	7	325	24.04	-28.49	-22.05	17.60	17.23	-1.786e+04	-6.274e+04	-2.581e+04	-5.480e+04	-1.713e+04
1	7	326	24.56	-18.98	-13.74	19.32	14.17	-8532.70	-5.300e+04	-1.718e+04	-4.435e+04	-1.760e+04
1	7	327	25.65	-11.99	-7.35	21.01	12.38	-3031.54	-4.546e+04	-1.185e+04	-3.664e+04	-1.721e+04
1	7	328	27.29	-6.25	-1.75	22.79	11.43	539.63	-3.944e+04	-7849.80	-3.105e+04	-1.628e+04
1	7	329	29.30	-1.80	2.70	24.80	10.94	101.13	-3.441e+04	-5049.01	-2.926e+04	-1.230e+04
1	7	330	27.75	-67.88	-64.50	24.38	17.64	-9.729e+04	-1.693e+05	-1.441e+05	-1.225e+05	3.435e+04
1	7	331	27.16	-58.35	-56.08	24.89	13.74	-6.878e+04	-9.818e+04	-7.792e+04	-8.904e+04	1.361e+04
1	7	332	25.03	-44.84	-42.85	23.04	11.62	-4.037e+04	-6.441e+04	-4.069e+04	-6.409e+04	2778.95
1	7	333	24.87	-32.10	-30.52	23.28	9.36	-1.961e+04	-4.639e+04	-1.991e+04	-4.608e+04	-2840.85
1	7	334	24.31	-21.54	-20.45	23.22	6.97	-8866.65	-3.519e+04	-9851.08	-3.421e+04	-4994.63
1	7	335	25.54	-13.59	-12.52	24.48	6.36	-3606.85	-2.776e+04	-5053.42	-2.631e+04	-5730.89
1	7	336	26.12	-7.51	-6.42	25.03	5.95	-177.05	-2.166e+04	-1832.11	-2.000e+04	-5728.49
1	7	337	27.15	-2.74	-1.51	25.92	5.94	-392.41	-1.866e+04	-1083.18	-1.797e+04	-3484.51

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	23	1	17.03	-36.27	4.73	-23.97	-22.46	5.910e+04	-9.856e+04	5.865e+04	-9.811e+04	-8428.82
1	23	2	20.06	-37.87	14.44	-32.25	-17.14	6.190e+04	-1.489e+05	6.145e+04	-1.485e+05	9760.24
1	23	3	25.14	-22.70	15.71	-13.28	-19.03	4.822e+04	-9.522e+04	4.776e+04	-9.476e+04	-8107.39
1	23	4	24.32	-26.51	12.30	-14.48	-21.60	1.091e+05	-1.034e+05	1.071e+05	-1.014e+05	-2.042e+04
1	23	5	19.46	-10.99	12.89	-4.42	-12.52	6.564e+04	-4.365e+04	5.895e+04	-3.697e+04	-2.620e+04
1	23	6	30.85	-26.07	18.46	-13.68	-23.48	1.192e+05	-4.230e+04	1.055e+05	-2.862e+04	-4.497e+04
1	23	7	11.66	-11.98	7.75	-8.07	-8.78	1.176e+05	-2.532e+04	1.127e+05	-2.034e+04	-2.621e+04
1	23	8	23.57	-20.14	13.39	-9.95	-18.48	1.419e+05	-1.038e+04	1.112e+05	2.035e+04	-6.112e+04
1	23	9	7.31	-21.61	-2.38	-11.92	-13.65	1.380e+05	2.329e+04	9.078e+04	7.053e+04	-5.647e+04
1	23	10	30.96	-22.09	22.72	-13.84	-19.22	1.975e+05	3.214e+04	1.609e+05	6.872e+04	-6.863e+04
1	23	11	9.20	-23.35	0.96	-15.12	-14.15	1.509e+05	6.910e+04	1.273e+05	9.272e+04	-3.706e+04
1	23	12	30.58	-24.96	11.62	-6.00	-26.33	1.874e+05	4.801e+04	1.455e+05	8.993e+04	-6.392e+04
1	23	13	16.36	-31.80	-5.43	-10.02	-23.97	1.975e+05	6.236e+04	1.387e+05	1.211e+05	-6.697e+04
1	23	14	39.55	-27.65	7.51	4.39	-33.57	2.101e+05	1.061e+05	1.580e+05	1.583e+05	-5.201e+04
1	23	15	38.78	-36.18	-4.37	6.96	-37.05	2.308e+05	1.170e+05	1.738e+05	1.740e+05	-5.690e+04
1	23	16	50.47	-25.29	14.53	10.65	-37.83	1.778e+05	1.116e+05	1.491e+05	1.403e+05	-3.283e+04
1	23	17	57.54	-23.29	-1.37	35.62	-35.94	1.779e+05	1.117e+05	1.400e+05	1.496e+05	-3.277e+04
1	23	18	68.24	-19.12	17.28	31.84	-43.07	1.935e+05	8.827e+04	1.407e+05	1.410e+05	-5.260e+04
1	23	19	23.23	-36.01	21.23	-34.02	-10.70	-1.117e+04	-1.539e+05	-1.766e+04	-1.474e+05	2.974e+04
1	23	20	27.61	-13.16	22.97	-8.52	-12.95	1739.89	-9.716e+04	1023.65	-9.645e+04	8386.07
1	23	21	15.52	-3.88	14.73	-3.08	-3.85	5.970e+04	-9.352e+04	5.959e+04	-9.341e+04	-4129.43
1	23	22	11.06	-9.95	7.21	-6.10	-8.12	8.598e+04	-3.110e+04	8.172e+04	-2.684e+04	-2.194e+04
1	23	23	5.97	-15.85	-1.30	-8.58	-10.28	1.430e+05	3.147e+04	1.160e+05	5.846e+04	-4.778e+04
1	23	24	9.76	-24.16	-3.01	-11.39	-16.44	1.753e+05	7.211e+04	1.369e+05	1.105e+05	-4.990e+04
1	23	25	-1.89	-17.53	-13.24	-6.18	-6.98	1.604e+05	8.622e+04	1.232e+05	1.235e+05	-3.710e+04
1	23	26	18.83	-37.59	-21.61	2.85	-25.42	1.975e+05	6.252e+04	1.210e+05	1.390e+05	-5.620e+04
1	23	27	48.43	-27.01	-11.94	33.36	-30.16	2.102e+05	1.065e+05	1.583e+05	1.585e+05	-5.187e+04
1	23	28	29.94	-33.65	28.75	-32.46	-8.62	-3.763e+04	-1.668e+05	-5.416e+04	-1.503e+05	4.315e+04
1	23	29	36.78	-12.21	35.61	-11.04	-7.48	-1.106e+04	-1.492e+05	-1.306e+04	-1.472e+05	1.651e+04
1	23	30	28.67	-8.40	25.21	-4.94	-10.78	-8257.51	-1.181e+05	-9255.14	-1.171e+05	1.042e+04
1	23	31	13.13	-4.58	11.45	-2.90	-5.19	3.601e+04	-7.456e+04	3.568e+04	-7.423e+04	-6006.36
1	23	32	3.97	-9.33	-0.96	-4.39	-6.42	1.485e+05	1.367e+04	1.389e+05	2.327e+04	-3.466e+04
1	23	33	2.62	-18.16	-9.54	-6.01	-10.24	2.074e+05	6.189e+04	1.346e+05	1.347e+05	-7.276e+04
1	23	34	12.27	-35.63	-24.56	1.20	-20.19	1.755e+05	7.229e+04	1.105e+05	1.373e+05	-4.984e+04
1	23	35	15.89	-42.86	-37.63	10.67	-16.73	1.511e+05	6.932e+04	9.273e+04	1.277e+05	-3.697e+04
1	23	36	45.02	-34.99	-26.00	36.03	-25.27	1.876e+05	4.845e+04	9.009e+04	1.460e+05	-6.372e+04
1	23	37	46.16	-61.11	46.15	-61.09	1.24	-8.455e+04	-2.233e+05	-1.047e+05	-2.032e+05	4.886e+04
1	23	38	39.07	7.66	39.06	7.67	0.15	-6.890e+04	-1.547e+05	-1.078e+05	-1.158e+05	4.273e+04
1	23	39	27.83	4.53	27.83	4.53	-2.95e-03	-7.786e+04	-1.657e+05	-9.536e+04	-1.482e+05	3.508e+04
1	23	40	14.11	3.07	14.05	3.13	0.78	-5.823e+04	-1.826e+05	-6.210e+04	-1.788e+05	2.160e+04
1	23	41	7.88e-02	-0.10	-7.60e-03	-1.75e-02	9.13e-02	-1.703e+04	-3.013e+04	-2.357e+04	-2.359e+04	-6553.30
1	23	42	-1.65	-15.62	-14.13	-3.15	-4.32	1.490e+05	1.394e+04	2.345e+04	1.395e+05	-3.456e+04
1	23	43	-1.47	-31.40	-28.40	-4.47	-8.98	1.433e+05	3.196e+04	5.877e+04	1.165e+05	-4.762e+04
1	23	44	-4.47	-43.62	-40.06	-8.03	-11.25	1.382e+05	2.385e+04	7.089e+04	9.117e+04	-5.628e+04
1	23	45	71.32	-48.93	-47.45	69.85	-13.23	1.979e+05	3.275e+04	6.907e+04	1.616e+05	-6.840e+04
1	23	46	31.87	-35.88	29.26	-33.26	13.04	-9.577e+04	-2.016e+05	-1.182e+05	-1.791e+05	4.328e+04
1	23	47	40.41	-11.93	38.83	-10.35	8.94	-1.080e+05	-1.720e+05	-1.199e+05	-1.601e+05	2.485e+04
1	23	48	35.69	-9.84	30.97	-5.12	13.88	-1.182e+05	-1.953e+05	-1.436e+05	-1.699e+05	3.623e+04
1	23	49	21.37	-6.17	17.47	-2.27	9.60	-1.124e+05	-2.297e+05	-1.710e+05	-1.712e+05	5.864e+04
1	23	50	12.22	-6.10	1.13	4.99	8.95	-5.803e+04	-1.820e+05	-1.781e+05	-6.195e+04	2.171e+04
1	23	51	13.31	-20.10	-19.40	12.62	4.78	3.654e+04	-7.391e+04	-7.361e+04	3.624e+04	-5749.97
1	23	52	12.14	-33.58	-32.93	11.49	5.42	8.649e+04	-3.052e+04	-2.632e+04	8.229e+04	-2.177e+04
1	23	53	15.59	-39.42	-39.42	15.59	0.10	1.181e+05	-2.483e+04	-1.990e+04	1.132e+05	-2.609e+04
1	23	54	40.49	-31.41	-31.36	40.44	-1.88	1.423e+05	-9735.88	2.079e+04	1.118e+05	-6.090e+04
1	23	55	25.78	-40.49	20.24	-34.95	18.35	-1.556e+05	-2.212e+05	-1.875e+05	-1.893e+05	3.281e+04
1	23	56	36.15	-16.67	27.62	-8.13	19.44	-1.091e+05	-2.090e+05	-1.504e+05	-1.677e+05	4.916e+04
1	23	57	20.22	-1.20	18.07	0.95	6.43	-1.333e+05	-1.769e+05	-1.549e+05	-1.552e+05	2.180e+04
1	23	58	24.96	-13.07	8.42	3.46	18.85	-1.181e+05	-1.951e+05	-1.695e+05	-1.437e+05	3.630e+04
1	23	59	23.26	-11.39	1.71	10.16	16.80	-7.740e+04	-1.654e+05	-1.477e+05	-9.508e+04	3.525e+04
1	23	60	20.36	-15.02	-11.55	16.89	10.53	-7754.80	-1.175e+05	-1.164e+05	-8787.11	1.059e+04
1	23	61	11.73	-19.09	-18.82	11.46	2.86	6.020e+04	-9.295e+04	-9.284e+04	6.010e+04	-4011.60
1	23	62	20.63	-29.65	-28.15	19.13	8.55	6.610e+04	-4.298e+04	-3.641e+04	5.952e+04	-2.596e+04
1	23	63	47.29	-26.73	-26.73	47.28	-0.65	1.198e+05	-4.149e+04	-2.791e+04	1.062e+05	-4.479e+04
1	23	64	25.01	-47.69	11.66	-34.34	28.15	-1.569e+05	-1.806e+05	-1.621e+05	-1.754e+05	9847.44
1	23	65	34.76	-32.63	15.28	-13.15	30.55	-1.603e+05	-2.437e+05	-2.019e+05	-2.022e+05	4.168e+04
1	23	66	31.17	-14.58	13.09	3.50	22.37	-1.090e+05	-2.089e+05	-1.674e+05	-1.504e+05	4.923e+04
1	23	67	26.19	-12.40	1.61	12.17	18.56	-1.079e+05	-1.716e+05	-1.596e+05	-1.199e+05	2.494e+04
1	23	68	30.24	-12.89	2.84	14.51	20.76	-6.833e+04	-1.546e+05	-1.154e+05	-1.075e+05	4.293e+04
1	23	69	20.83	-13.98	-8.25	15.10	12.91	-1.064e+04	-1.486e+05	-1.466e+05	-1.267e+04	1.664e+04
1	23	70	19.50	-21.78	-17.96	15.68	11.96	2287.08	-9.659e+04	-9.583e+04	1528.76	8625.93
1	23	71	30.99	-27.41	-23.22	26.80	15.07	4.890e+04	-9.444e+04	-9.400e+04	4.846e+04	-7899.51
1	23	72	45.67	-21.81	-19.98	43.85	10.95	1.097e+05	-1.028e+05	-1.008e+05	1.078e+05	-2.032e+04
1	23	73	18.96	-53.75	-6.62	-28.17	34.72	-1.346e+05	-1.874e+05	-1.609e+05	-1.612e+05	2.641e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	23	74	23.94	-40.69	-3.21	-13.54	31.90	-1.570e+05	-1.804e+05	-1.749e+05	-1.624e+05	9909.76
1	23	75	32.05	-36.65	2.05	-6.65	34.07	-1.552e+05	-2.211e+05	-1.889e+05	-1.875e+05	3.296e+04
1	23	76	29.34	-29.93	-6.68	6.10	28.94	-9.537e+04	-2.013e+05	-1.786e+05	-1.181e+05	4.349e+04
1	23	77	29.73	-32.24	-19.99	17.48	24.68	-8.400e+04	-2.228e+05	-2.025e+05	-1.043e+05	4.910e+04
1	23	78	28.15	-25.95	-14.67	16.87	21.98	-3.706e+04	-1.664e+05	-1.497e+05	-5.377e+04	4.338e+04
1	23	79	34.94	-35.03	-24.62	24.53	24.90	-1.044e+04	-1.533e+05	-1.467e+05	-1.701e+04	2.992e+04
1	23	80	32.93	-24.44	-18.25	26.74	17.80	6.248e+04	-1.483e+05	-1.478e+05	6.201e+04	9868.27
1	23	81	38.98	-14.30	-8.31	32.99	16.83	5.967e+04	-9.791e+04	-9.748e+04	5.923e+04	-8242.82
1	23	82	31.95	-37.60	-23.54	17.89	27.93	-6.058e+04	-1.448e+05	-1.264e+05	-7.897e+04	3.480e+04
1	23	83	26.61	-28.37	-18.06	16.29	21.47	-3.182e+04	-1.659e+05	-1.476e+05	-5.020e+04	4.611e+04
1	23	84	24.01	-29.30	-17.18	11.89	22.35	-4.525e+04	-1.019e+05	-8.224e+04	-6.493e+04	2.698e+04
1	23	85	25.44	-28.97	-19.43	15.90	20.69	-1.892e+04	-9.956e+04	-8.503e+04	-3.345e+04	3.099e+04
1	23	86	18.87	-21.25	-14.43	12.05	15.07	-2.745e+04	-6.359e+04	-4.493e+04	-4.610e+04	1.806e+04
1	23	87	18.83	-18.12	-12.86	13.57	12.91	-6632.12	-6.675e+04	-5.222e+04	-2.116e+04	2.573e+04
1	23	88	16.82	-15.08	-11.66	13.41	9.87	-1.349e+04	-3.771e+04	-2.144e+04	-2.977e+04	1.137e+04
1	23	89	14.93	-12.42	-9.45	11.96	8.50	2286.21	-4.246e+04	-2.961e+04	-1.057e+04	2.025e+04
1	23	90	16.18	-10.87	-9.24	14.55	6.44	-4754.95	-2.162e+04	-8633.03	-1.774e+04	7096.82
1	23	91	12.45	-8.39	-7.01	11.08	5.17	8325.86	-2.507e+04	-1.478e+04	-1966.93	1.542e+04
1	23	92	15.17	-6.91	-6.18	14.43	3.96	145.96	-1.162e+04	-2181.43	-9293.57	4687.16
1	23	93	10.15	-5.62	-5.09	9.62	2.85	1.136e+04	-1.373e+04	-6453.02	4078.60	1.139e+04
1	23	94	13.90	-3.22	-2.95	13.63	2.14	1113.82	-5621.18	-341.61	-4165.75	2772.01
1	23	95	8.58	-2.58	-2.46	8.46	1.19	1.058e+04	-6979.27	-3133.87	6733.16	7261.52
1	23	96	12.26	-1.84	-1.07	11.48	3.22	-864.98	-3712.37	-909.25	-3668.10	352.29
1	23	97	7.69	-1.92	-1.44	7.21	2.08	3376.37	-1010.24	-1009.85	3375.97	-41.49
1	23	98	26.04	-15.22	-9.75	20.57	13.99	5807.47	-1.099e+05	-1.085e+05	4363.11	1.285e+04
1	23	99	24.84	-18.24	-12.96	19.56	14.12	8038.26	-8.866e+04	-8.203e+04	1403.41	2.445e+04
1	23	100	19.50	-14.26	-9.81	15.04	11.43	1.322e+04	-6.490e+04	-5.712e+04	5433.49	2.340e+04
1	23	101	14.41	-10.38	-7.05	11.08	8.45	1.678e+04	-4.597e+04	-3.845e+04	9260.18	2.038e+04
1	23	102	10.21	-7.37	-4.96	7.80	6.04	1.883e+04	-3.108e+04	-2.452e+04	1.227e+04	1.687e+04
1	23	103	6.49	-4.79	-3.21	4.90	3.92	1.885e+04	-2.021e+04	-1.516e+04	1.380e+04	1.312e+04
1	23	104	3.04	-2.27	-1.44	2.21	1.93	1.562e+04	-1.228e+04	-9327.96	1.266e+04	8587.13
1	23	105	3.73	-3.11	-2.05	2.66	2.48	3478.26	-908.50	-871.18	3440.94	-402.90
1	23	106	39.50	-24.69	-17.16	31.98	20.65	3.072e+04	-9.423e+04	-9.345e+04	2.994e+04	9860.48
1	23	107	31.74	-17.31	-11.17	25.60	16.23	2.986e+04	-7.448e+04	-7.294e+04	2.832e+04	1.259e+04
1	23	108	22.16	-12.73	-8.12	17.55	11.81	2.901e+04	-5.793e+04	-5.600e+04	2.708e+04	1.280e+04
1	23	109	15.85	-10.19	-6.12	11.78	9.45	2.758e+04	-4.444e+04	-4.235e+04	2.549e+04	1.208e+04
1	23	110	10.74	-8.57	-4.56	6.74	7.83	2.554e+04	-3.346e+04	-3.143e+04	2.351e+04	1.075e+04
1	23	111	6.66	-7.19	-3.39	2.85	6.18	2.236e+04	-2.467e+04	-2.290e+04	2.059e+04	8940.21
1	23	112	2.83	-6.65	-2.61	-1.21	4.69	1.695e+04	-1.650e+04	-1.531e+04	1.575e+04	6200.68
1	23	113	1.83	-6.97	-3.69	-1.45	4.26	1684.99	-1344.03	-1319.62	1660.58	270.83
1	23	114	46.92	-21.94	-16.24	41.22	18.97	4.902e+04	-7.379e+04	-7.367e+04	4.890e+04	-3883.73
1	23	115	32.64	-15.35	-10.93	28.21	13.88	4.361e+04	-5.999e+04	-5.995e+04	4.357e+04	-2164.27
1	23	116	24.73	-13.00	-8.62	20.35	12.09	3.870e+04	-4.896e+04	-4.895e+04	3.869e+04	-1020.35
1	23	117	18.23	-11.69	-7.50	14.04	10.38	3.383e+04	-3.964e+04	-3.964e+04	3.383e+04	-261.67
1	23	118	12.49	-10.88	-6.84	8.45	8.84	2.901e+04	-3.175e+04	-3.175e+04	2.901e+04	230.75
1	23	119	7.81	-10.57	-6.08	3.32	7.90	2.406e+04	-2.484e+04	-2.484e+04	2.405e+04	432.75
1	23	120	4.05	-10.96	-5.77	-1.13	7.14	1.691e+04	-1.749e+04	-1.749e+04	1.691e+04	329.01
1	23	121	1.47	-12.27	-7.53	-3.27	6.53	1361.76	-1744.33	-1723.01	1340.44	256.47
1	23	122	51.44	-20.79	-14.37	45.02	20.55	6.901e+04	-6.473e+04	-6.121e+04	6.548e+04	-2.143e+04
1	23	123	43.55	-19.46	-14.58	38.67	16.85	5.932e+04	-5.267e+04	-4.936e+04	5.602e+04	-1.894e+04
1	23	124	33.61	-16.02	-12.29	29.87	13.10	4.959e+04	-4.393e+04	-4.088e+04	4.654e+04	-1.659e+04
1	23	125	24.96	-14.99	-11.55	21.53	11.20	4.085e+04	-3.652e+04	-3.381e+04	3.815e+04	-1.421e+04
1	23	126	17.60	-14.35	-10.97	14.23	9.82	3.309e+04	-3.011e+04	-2.779e+04	3.076e+04	-1.190e+04
1	23	127	10.96	-14.37	-10.81	7.41	8.80	2.605e+04	-2.422e+04	-2.228e+04	2.411e+04	-9671.68
1	23	128	5.56	-14.57	-10.69	1.69	7.93	1.812e+04	-1.719e+04	-1.577e+04	1.670e+04	-6936.67
1	23	129	2.34	-15.63	-12.23	-1.06	7.04	2106.82	-1308.36	-1038.67	1837.13	-921.03
1	23	130	60.82	-11.31	-11.02	60.53	4.54	8.575e+04	-4.121e+04	-3.602e+04	8.057e+04	-2.512e+04
1	23	131	60.28	-17.03	-15.56	58.81	10.57	7.680e+04	-3.667e+04	-2.506e+04	6.518e+04	-3.439e+04
1	23	132	43.19	-19.44	-18.07	41.82	9.19	6.085e+04	-3.332e+04	-2.151e+04	4.904e+04	-3.119e+04
1	23	133	31.65	-18.63	-17.24	30.25	8.25	4.745e+04	-2.956e+04	-1.871e+04	3.660e+04	-2.679e+04
1	23	134	22.28	-18.15	-16.64	20.77	7.67	3.648e+04	-2.567e+04	-1.614e+04	2.694e+04	-2.239e+04
1	23	135	14.22	-18.10	-16.36	12.48	7.30	2.747e+04	-2.154e+04	-1.353e+04	1.945e+04	-1.813e+04
1	23	136	7.15	-18.41	-16.25	4.98	7.12	1.894e+04	-1.577e+04	-9757.40	1.293e+04	-1.313e+04
1	23	137	2.97	-18.64	-16.92	1.25	5.86	3424.99	-735.95	967.90	1721.14	-2046.10
1	23	138	70.79	-26.15	-26.05	70.69	-3.12	1.479e+05	-1.398e+04	1.723e+04	1.167e+05	-6.387e+04
1	23	139	64.36	-25.99	-25.66	64.03	-5.46	9.392e+04	-1.540e+04	9526.93	6.900e+04	-4.586e+04
1	23	140	48.17	-22.31	-22.30	48.16	-0.77	6.992e+04	-1.875e+04	5334.40	4.584e+04	-3.944e+04
1	23	141	35.81	-21.33	-21.31	35.78	1.19	5.200e+04	-1.979e+04	2296.73	2.992e+04	-3.314e+04
1	23	142	25.43	-21.14	-21.02	25.31	2.32	3.826e+04	-1.933e+04	72.31	1.887e+04	-2.722e+04
1	23	143	16.47	-21.14	-20.89	16.22	3.06	2.766e+04	-1.758e+04	-1342.77	1.142e+04	-2.170e+04
1	23	144	8.25	-21.54	-21.11	7.83	3.54	1.877e+04	-1.337e+04	-1211.44	6613.86	-1.559e+04
1	23	145	3.32	-21.10	-20.76	2.97	2.90	4888.85	-324.82	3550.88	1013.16	-2277.19
1	23	146	82.64	-47.62	-45.75	80.77	-15.51	1.350e+05	1.720e+04	5.105e+04	1.011e+05	-5.330e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	23	147	60.73	-26.65	-24.69	58.77	-12.96	1.038e+05	6860.30	4.306e+04	6.764e+04	-4.691e+04
1	23	148	49.52	-23.22	-22.00	48.31	-9.33	7.457e+04	-2467.52	3.239e+04	3.971e+04	-3.835e+04
1	23	149	37.96	-22.84	-22.12	37.23	-6.60	5.337e+04	-8576.67	2.318e+04	2.162e+04	-3.096e+04
1	23	150	27.43	-23.07	-22.66	27.02	-4.54	3.780e+04	-1.187e+04	1.592e+04	1.001e+04	-2.466e+04
1	23	151	17.66	-23.26	-23.07	17.46	-2.79	2.653e+04	-1.267e+04	1.058e+04	3281.43	-1.926e+04
1	23	152	8.79	-23.54	-23.49	8.74	-1.36	1.770e+04	-1.037e+04	7038.47	287.34	-1.362e+04
1	23	153	3.55	-23.02	-22.96	3.49	-1.30	6303.92	-31.51	5972.68	299.73	-1410.26
1	23	154	79.04	-27.49	-21.61	73.16	-24.31	1.658e+05	4.815e+04	9.530e+04	1.186e+05	-5.765e+04
1	23	155	67.56	-26.74	-21.85	62.68	-20.90	1.062e+05	2.877e+04	7.012e+04	6.489e+04	-3.864e+04
1	23	156	53.36	-24.23	-19.86	48.99	-17.89	7.351e+04	1.356e+04	5.216e+04	3.490e+04	-2.871e+04
1	23	157	40.10	-24.22	-20.55	36.43	-14.92	5.100e+04	2748.51	3.779e+04	1.597e+04	-2.152e+04
1	23	158	28.44	-24.20	-21.36	25.60	-11.89	3.510e+04	-4149.61	2.662e+04	4325.65	-1.615e+04
1	23	159	18.24	-24.74	-22.55	16.05	-9.46	2.398e+04	-7473.77	1.839e+04	-1889.20	-1.202e+04
1	23	160	9.29	-25.14	-23.57	7.72	-7.19	1.587e+04	-6930.22	1.246e+04	-3514.01	-8138.49
1	23	161	3.61	-24.96	-23.57	2.22	-6.15	7613.96	176.54	7597.50	193.01	349.52
1	23	162	76.91	-5.31	3.29	68.31	-25.17	1.410e+05	6.924e+04	1.066e+05	1.036e+05	-3.584e+04
1	23	163	77.39	-19.07	-4.37	62.70	-34.67	9.852e+04	4.626e+04	8.111e+04	6.367e+04	-2.463e+04
1	23	164	55.69	-25.09	-12.42	43.03	-29.37	6.639e+04	2.709e+04	5.921e+04	3.427e+04	-1.519e+04
1	23	165	40.69	-25.12	-14.92	30.49	-23.81	4.504e+04	1.276e+04	4.218e+04	1.562e+04	-9171.57
1	23	166	28.56	-25.14	-16.91	20.33	-19.35	3.052e+04	3020.11	2.943e+04	4115.48	-5378.22
1	23	167	18.26	-25.48	-18.87	11.65	-15.67	2.064e+04	-2437.42	2.022e+04	-2017.35	-3085.02
1	23	168	9.22	-26.11	-20.85	3.97	-12.57	1.389e+04	-3563.66	1.373e+04	-3439.23	-1468.29
1	23	169	3.52	-26.00	-21.55	-0.94	-10.57	8838.23	296.03	8059.26	1075.00	2459.13
1	23	170	80.32	-31.64	10.44	38.24	-54.23	1.410e+05	7.470e+04	1.125e+05	1.032e+05	-3.283e+04
1	23	171	67.99	-28.40	3.13	36.47	-45.22	8.441e+04	5.523e+04	7.679e+04	6.285e+04	-1.282e+04
1	23	172	50.72	-24.73	-1.92	27.92	-34.65	5.443e+04	3.612e+04	5.343e+04	3.712e+04	-4161.23
1	23	173	37.59	-24.52	-6.02	19.09	-28.40	3.665e+04	1.993e+04	3.663e+04	1.995e+04	570.69
1	23	174	26.59	-24.66	-9.39	11.32	-23.44	2.508e+04	8274.70	2.453e+04	8825.23	2991.39
1	23	175	17.23	-25.08	-12.44	4.59	-19.37	1.721e+04	1413.58	1.621e+04	2421.50	3861.21
1	23	176	8.77	-25.83	-15.17	-1.89	-15.97	1.209e+04	-957.77	1.088e+04	247.87	3778.34
1	23	177	3.22	-25.78	-17.12	-5.44	-13.27	9718.10	337.11	7145.74	2909.48	4185.00
1	23	178	74.79	-25.21	15.89	33.69	-49.20	1.090e+05	7.216e+04	9.048e+04	9.069e+04	-1.842e+04
1	23	179	53.81	-21.71	10.01	22.09	-37.28	6.731e+04	5.487e+04	6.101e+04	6.118e+04	-6217.54
1	23	180	42.79	-22.65	5.64	14.49	-32.42	4.107e+04	3.970e+04	4.032e+04	4.045e+04	682.59
1	23	181	32.55	-22.90	1.63	8.02	-27.54	3.002e+04	2.128e+04	2.560e+04	2.570e+04	4367.57
1	23	182	23.67	-23.25	-1.97	2.38	-23.36	2.150e+04	9378.42	1.539e+04	1.548e+04	6058.75
1	23	183	15.26	-23.49	-5.45	-2.78	-19.33	1.527e+04	2624.36	8920.47	8974.65	6323.14
1	23	184	7.58	-23.93	-8.68	-7.67	-15.75	1.127e+04	-2.64	5611.87	5654.90	5635.98
1	23	185	2.86	-23.67	-11.21	-9.60	-13.24	1.003e+04	311.23	5171.25	5173.11	4860.95
1	23	186	70.56	-30.86	15.86	23.85	-50.55	1.410e+05	7.454e+04	1.030e+05	1.126e+05	-3.289e+04
1	23	187	58.71	-25.12	18.29	15.29	-41.89	8.450e+04	5.504e+04	6.263e+04	7.690e+04	-1.288e+04
1	23	188	42.90	-21.08	14.40	7.42	-31.80	5.453e+04	3.594e+04	3.695e+04	5.352e+04	-4221.73
1	23	189	31.63	-20.54	9.62	1.46	-25.76	3.671e+04	1.981e+04	1.982e+04	3.670e+04	516.19
1	23	190	22.22	-20.33	5.18	-3.30	-20.85	2.510e+04	8202.24	8730.69	2.457e+04	2941.24
1	23	191	14.20	-20.68	1.27	-7.75	-16.85	1.723e+04	1376.01	2358.41	1.625e+04	3822.42
1	23	192	7.22	-21.16	-2.46	-11.48	-13.45	1.208e+04	-990.02	185.67	1.090e+04	3739.30
1	23	193	2.77	-21.39	-5.91	-12.71	-11.59	9689.75	336.41	2895.75	7130.41	4169.91
1	23	194	53.67	-2.82	37.45	13.40	-25.55	1.409e+05	6.901e+04	1.033e+05	1.067e+05	-3.592e+04
1	23	195	53.37	-13.22	32.46	7.69	-30.91	9.856e+04	4.598e+04	6.341e+04	8.113e+04	-2.475e+04
1	23	196	38.99	-17.71	21.54	-0.25	-26.17	6.646e+04	2.686e+04	3.409e+04	5.923e+04	-1.530e+04
1	23	197	28.25	-17.28	15.28	-4.31	-20.55	4.510e+04	1.260e+04	1.550e+04	4.220e+04	-9270.91
1	23	198	19.59	-16.97	10.17	-7.55	-15.99	3.056e+04	2912.49	4036.66	2.944e+04	-5460.48
1	23	199	12.32	-17.01	5.74	-10.43	-12.24	2.066e+04	-2508.23	-2071.09	2.022e+04	-3152.36
1	23	200	6.13	-17.39	1.79	-13.05	-9.12	1.389e+04	-3609.45	-3477.01	1.376e+04	-1516.72
1	23	201	2.49	-17.57	-1.77	-13.31	-8.21	8800.26	294.43	1065.55	8029.15	2442.20
1	23	202	45.51	-17.66	30.56	-2.71	-26.85	1.656e+05	4.765e+04	1.181e+05	9.515e+04	-5.786e+04
1	23	203	39.12	-18.19	24.52	-3.60	-24.96	1.062e+05	2.841e+04	6.461e+04	7.000e+04	-3.880e+04
1	23	204	30.51	-14.37	20.61	-4.47	-18.61	7.353e+04	1.329e+04	3.474e+04	5.208e+04	-2.885e+04
1	23	205	22.42	-13.44	15.46	-6.49	-14.18	5.103e+04	2561.68	1.588e+04	3.772e+04	-2.164e+04
1	23	206	15.51	-12.84	10.95	-8.29	-10.41	3.513e+04	-4262.82	4283.44	2.658e+04	-1.624e+04
1	23	207	9.62	-12.65	6.90	-9.93	-7.29	2.399e+04	-7563.05	-1911.82	1.834e+04	-1.210e+04
1	23	208	4.74	-12.74	3.34	-11.34	-4.74	1.588e+04	-6979.86	-3523.33	1.242e+04	-8188.85
1	23	209	2.10	-13.07	0.46	-11.43	-4.71	7561.69	172.69	187.98	7546.40	335.73
1	23	210	37.93	-24.72	25.96	-12.75	-24.63	1.347e+05	1.671e+04	1.007e+05	5.076e+04	-5.348e+04
1	23	211	31.12	-18.28	18.82	-5.98	-21.36	1.037e+05	6443.01	6.737e+04	4.282e+04	-4.707e+04
1	23	212	23.13	-13.06	15.41	-5.34	-14.82	7.454e+04	-2773.22	3.957e+04	3.219e+04	-3.848e+04
1	23	213	16.51	-10.42	11.84	-5.75	-10.19	5.337e+04	-8782.86	2.156e+04	2.302e+04	-3.107e+04
1	23	214	11.12	-8.95	8.48	-6.31	-6.78	3.781e+04	-1.200e+04	1.003e+04	1.579e+04	-2.474e+04
1	23	215	6.76	-8.11	5.58	-6.93	-4.03	2.653e+04	-1.276e+04	3297.96	1.048e+04	-1.932e+04
1	23	216	3.24	-7.80	2.95	-7.51	-1.76	1.768e+04	-1.045e+04	276.37	6955.18	-1.366e+04
1	23	217	1.71	-8.31	1.14	-7.74	-2.32	6235.70	-34.50	302.20	5899.00	-1413.44
1	23	218	27.07	-20.02	16.05	-9.00	-19.94	1.476e+05	-1.462e+04	1.162e+05	1.675e+04	-6.406e+04
1	23	219	27.31	-19.09	16.10	-7.88	-19.86	9.373e+04	-1.585e+04	6.872e+04	9156.63	-4.599e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	23	220	17.88	-13.08	10.55	-5.75	-13.16	6.983e+04	-1.907e+04	4.571e+04	5049.50	-3.953e+04
1	23	221	12.51	-9.22	7.68	-4.39	-9.03	5.197e+04	-2.001e+04	2.988e+04	2081.00	-3.319e+04
1	23	222	8.26	-6.48	5.42	-3.64	-5.81	3.825e+04	-1.947e+04	1.887e+04	-93.14	-2.726e+04
1	23	223	4.89	-4.44	3.49	-3.04	-3.34	2.765e+04	-1.767e+04	1.145e+04	-1468.92	-2.172e+04
1	23	224	1.95	-2.96	1.65	-2.66	-1.18	1.877e+04	-1.346e+04	6635.57	-1329.30	-1.561e+04
1	23	225	1.88	-3.72	1.28	-3.12	-1.74	4815.03	-338.49	1010.54	3466.00	-2265.47
1	23	226	14.39	-21.62	5.21	-12.45	-15.69	8.532e+04	-4.178e+04	8.010e+04	-3.656e+04	-2.523e+04
1	23	227	16.82	-20.19	7.11	-10.48	-16.29	7.654e+04	-3.711e+04	6.490e+04	-2.548e+04	-3.446e+04
1	23	228	14.90	-15.36	6.05	-6.51	-13.76	6.072e+04	-3.361e+04	4.892e+04	-2.181e+04	-3.121e+04
1	23	229	11.47	-10.70	4.47	-3.69	-10.31	4.738e+04	-2.975e+04	3.656e+04	-1.893e+04	-2.679e+04
1	23	230	8.58	-6.96	3.17	-1.56	-7.40	3.645e+04	-2.580e+04	2.695e+04	-1.630e+04	-2.238e+04
1	23	231	6.15	-3.94	2.06	0.16	-4.95	2.746e+04	-2.163e+04	1.947e+04	-1.364e+04	-1.812e+04
1	23	232	4.24	-1.43	1.17	1.63	-2.82	1.892e+04	-1.583e+04	1.294e+04	-9846.64	-1.312e+04
1	23	233	4.40	-1.58	1.93	0.88	-2.94	3369.32	-755.32	1711.18	902.82	-2022.32
1	23	234	25.29	-34.81	11.40	-20.92	-25.34	6.859e+04	-6.529e+04	6.503e+04	-6.174e+04	-2.153e+04
1	23	235	19.49	-28.39	6.54	-15.44	-21.27	5.906e+04	-5.303e+04	5.575e+04	-4.973e+04	-1.896e+04
1	23	236	15.36	-19.87	4.75	-9.26	-16.16	4.943e+04	-4.416e+04	4.640e+04	-4.113e+04	-1.656e+04
1	23	237	13.02	-14.30	3.81	-5.09	-12.92	4.077e+04	-3.666e+04	3.809e+04	-3.397e+04	-1.417e+04
1	23	238	11.26	-9.67	3.21	-1.62	-10.19	3.305e+04	-3.020e+04	3.074e+04	-2.789e+04	-1.186e+04
1	23	239	9.80	-6.13	2.38	1.29	-7.95	2.605e+04	-2.428e+04	2.413e+04	-2.237e+04	-9631.71
1	23	240	9.37	-2.97	2.80	3.60	-6.16	1.809e+04	-1.723e+04	1.669e+04	-1.582e+04	-6896.66
1	23	241	8.63	-1.45	3.92	3.26	-5.03	2067.18	-1337.01	1814.46	-1084.30	-892.43
1	23	242	22.26	-42.29	9.33	-29.36	-25.84	4.864e+04	-7.419e+04	4.852e+04	-7.407e+04	-3930.34
1	23	243	17.86	-29.89	7.05	-19.08	-19.98	4.336e+04	-6.025e+04	4.332e+04	-6.020e+04	-2156.52
1	23	244	16.51	-23.44	6.14	-13.07	-17.52	3.855e+04	-4.911e+04	3.854e+04	-4.910e+04	-982.08
1	23	245	15.24	-17.90	5.70	-8.36	-15.01	3.375e+04	-3.971e+04	3.375e+04	-3.971e+04	-206.29
1	23	246	14.37	-13.37	5.32	-4.32	-13.01	2.899e+04	-3.177e+04	2.899e+04	-3.177e+04	311.43
1	23	247	13.28	-8.13	5.31	-0.15	-10.35	2.405e+04	-2.486e+04	2.404e+04	-2.485e+04	483.28
1	23	248	12.76	-3.36	6.01	3.38	-7.96	1.688e+04	-1.753e+04	1.687e+04	-1.752e+04	341.14
1	23	249	12.32	-1.36	7.00	3.95	-6.67	1348.34	-1765.74	1323.62	-1741.02	276.34
1	23	250	23.54	-48.07	8.69	-33.22	-29.03	3.024e+04	-9.466e+04	2.947e+04	-9.389e+04	9752.46
1	23	251	22.65	-41.67	10.83	-29.85	-24.91	2.955e+04	-7.472e+04	2.801e+04	-7.318e+04	1.257e+04
1	23	252	19.43	-32.04	10.44	-23.05	-19.54	2.881e+04	-5.805e+04	2.687e+04	-5.612e+04	1.281e+04
1	23	253	18.04	-24.07	10.34	-16.37	-16.27	2.747e+04	-4.449e+04	2.537e+04	-4.239e+04	1.211e+04
1	23	254	16.61	-16.98	9.94	-10.31	-13.40	2.549e+04	-3.346e+04	2.345e+04	-3.142e+04	1.078e+04
1	23	255	16.62	-10.92	10.72	-5.03	-11.30	2.232e+04	-2.465e+04	2.054e+04	-2.287e+04	8964.62
1	23	256	16.31	-5.53	10.71	5.90e-02	-9.53	1.693e+04	-1.650e+04	1.573e+04	-1.530e+04	6219.16
1	23	257	17.04	-1.85	12.54	2.64	-8.04	1663.68	-1359.32	1636.73	-1332.37	284.16
1	23	258	11.27	-54.47	9.14	-52.34	-11.62	5344.60	-1.103e+05	3927.79	-1.089e+05	1.272e+04
1	23	259	18.76	-55.35	13.77	-50.36	-18.57	7677.74	-8.887e+04	1075.50	-8.227e+04	2.437e+04
1	23	260	21.85	-40.14	17.32	-35.60	-16.14	1.297e+04	-6.499e+04	5201.04	-5.722e+04	2.336e+04
1	23	261	21.15	-30.10	17.15	-26.10	-13.75	1.663e+04	-4.599e+04	9102.29	-3.846e+04	2.037e+04
1	23	262	20.48	-21.80	16.95	-18.27	-11.70	1.874e+04	-3.107e+04	1.217e+04	-2.449e+04	1.686e+04
1	23	263	19.99	-14.23	16.88	-11.13	-9.82	1.879e+04	-2.019e+04	1.372e+04	-1.512e+04	1.311e+04
1	23	264	19.70	-7.12	16.80	-4.22	-8.33	1.557e+04	-1.227e+04	1.260e+04	-9310.20	8584.22
1	23	265	19.10	-2.91	16.88	-0.68	-6.64	3439.49	-911.28	3404.13	-875.92	-390.59
1	23	266	26.45	-61.70	25.76	-61.01	-7.75	-3.238e+04	-1.663e+05	-5.060e+04	-1.481e+05	4.591e+04
1	23	267	25.89	-55.03	25.50	-54.64	-5.60	-1.931e+04	-9.971e+04	-3.374e+04	-8.528e+04	3.086e+04
1	23	268	23.54	-43.16	22.73	-42.36	-7.29	-6895.67	-6.679e+04	-2.137e+04	-5.232e+04	2.564e+04
1	23	269	23.32	-33.14	22.34	-32.15	-7.39	2116.28	-4.246e+04	-1.072e+04	-2.962e+04	2.019e+04
1	23	270	23.53	-24.21	22.53	-23.21	-6.82	8211.44	-2.506e+04	-2087.64	-1.476e+04	1.538e+04
1	23	271	22.84	-16.34	21.96	-15.46	-5.80	1.129e+04	-1.372e+04	3995.19	-6420.98	1.137e+04
1	23	272	22.59	-8.14	21.96	-7.51	-4.34	1.049e+04	-6959.87	6640.26	-3113.57	7232.58
1	23	273	20.05	-3.41	19.55	-2.91	-3.39	3317.91	-1011.35	3317.62	-1011.07	-35.07
1	23	274	45.24	-70.91	45.21	-70.88	1.87	-6.101e+04	-1.450e+05	-7.920e+04	-1.268e+05	3.461e+04
1	23	275	26.41	-52.01	26.38	-51.99	1.35	-4.563e+04	-1.020e+05	-6.513e+04	-8.249e+04	2.681e+04
1	23	276	24.19	-43.20	24.19	-43.20	0.20	-2.771e+04	-6.359e+04	-4.625e+04	-4.504e+04	1.793e+04
1	23	277	24.30	-33.26	24.30	-33.26	-0.38	-1.364e+04	-3.770e+04	-2.988e+04	-2.147e+04	1.127e+04
1	23	278	24.59	-24.25	24.59	-24.25	-0.52	-4821.06	-2.162e+04	-1.783e+04	-8609.44	7019.77
1	23	279	24.18	-15.53	24.16	-15.52	-0.66	110.97	-1.163e+04	-9354.93	-2163.99	4640.53
1	23	280	23.63	-7.65	23.62	-7.64	-0.27	1066.67	-5635.45	-4214.25	-354.53	2739.57
1	23	281	21.53	-3.63	21.52	-3.62	0.53	-864.09	-3753.89	-3710.77	-907.21	350.33
1	23	282	26.43	-66.12	24.82	-64.51	12.13	-9.727e+04	-1.693e+05	-1.225e+05	-1.441e+05	3.435e+04
1	23	283	26.35	-57.93	25.39	-56.96	8.96	-6.876e+04	-9.815e+04	-8.901e+04	-7.790e+04	1.361e+04
1	23	284	24.48	-44.14	23.39	-43.05	8.57	-4.035e+04	-6.439e+04	-6.407e+04	-4.067e+04	2785.72
1	23	285	24.19	-31.48	23.23	-30.52	7.24	-1.959e+04	-4.637e+04	-4.606e+04	-1.989e+04	-2829.67
1	23	286	23.50	-21.08	22.81	-20.39	5.50	-8859.37	-3.517e+04	-3.419e+04	-9839.15	-4981.64
1	23	287	24.57	-13.23	23.79	-12.45	5.37	-3604.94	-2.773e+04	-2.629e+04	-5046.00	-5717.71
1	23	288	25.03	-7.29	24.12	-6.38	5.35	-177.82	-2.163e+04	-1.998e+04	-1828.59	-5717.77
1	23	289	26.04	-2.68	24.91	-1.55	5.59	-393.51	-1.864e+04	-1.795e+04	-1083.24	-3479.75
1	23	290	8.88	-63.47	4.80	-59.39	16.69	-1.128e+05	-1.370e+05	-1.279e+05	-1.219e+05	1.174e+04
1	23	291	18.99	-62.47	11.45	-54.93	23.61	-7.418e+04	-9.684e+04	-9.612e+04	-7.491e+04	-3991.18
1	23	292	23.64	-41.93	17.12	-35.41	19.62	-3.701e+04	-7.643e+04	-7.089e+04	-4.255e+04	-1.370e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	23	293	23.63	-28.22	18.38	-22.97	15.65	-1.785e+04	-6.272e+04	-5.478e+04	-2.579e+04	-1.712e+04
1	23	294	24.04	-18.77	19.61	-14.34	13.03	-8529.45	-5.298e+04	-4.434e+04	-1.717e+04	-1.759e+04
1	23	295	25.01	-11.82	20.92	-7.73	11.57	-3030.54	-4.544e+04	-3.663e+04	-1.184e+04	-1.720e+04
1	23	296	26.55	-6.14	22.40	-1.99	10.88	539.33	-3.942e+04	-3.104e+04	-7845.26	-1.627e+04
1	23	297	28.52	-1.78	24.20	2.54	10.59	100.84	-3.439e+04	-2.925e+04	-5046.60	-1.229e+04
1	23	298	28.03	-62.46	1.57	-36.00	41.16	-1.173e+05	-1.313e+05	-1.298e+05	-1.188e+05	4351.12
1	23	299	25.76	-50.55	5.83	-30.62	33.52	-6.212e+04	-1.009e+05	-8.939e+04	-7.367e+04	-1.775e+04
1	23	300	22.79	-34.91	8.20	-20.31	25.08	-3.079e+04	-8.440e+04	-6.643e+04	-4.876e+04	-2.531e+04
1	23	301	23.06	-23.89	10.91	-11.74	20.56	-1.560e+04	-7.255e+04	-5.295e+04	-3.521e+04	-2.706e+04
1	23	302	23.98	-16.22	13.37	-5.61	17.72	-7350.45	-6.359e+04	-4.399e+04	-2.695e+04	-2.680e+04
1	23	303	25.16	-10.41	15.38	-0.63	15.88	-2337.11	-5.658e+04	-3.742e+04	-2.150e+04	-2.593e+04
1	23	304	27.08	-5.37	17.58	4.13	14.77	964.23	-5.063e+04	-3.256e+04	-1.711e+04	-2.461e+04
1	23	305	29.01	-1.42	19.99	7.59	13.89	294.41	-4.495e+04	-3.088e+04	-1.377e+04	-2.094e+04
1	23	306	24.46	-58.64	-3.33	-30.85	39.21	-9.276e+04	-1.161e+05	-1.043e+05	-1.045e+05	-1.165e+04
1	23	307	21.00	-38.69	-1.00	-16.69	28.80	-4.819e+04	-9.728e+04	-7.264e+04	-7.282e+04	-2.454e+04
1	23	308	21.81	-27.95	1.42	-7.57	24.47	-2.492e+04	-8.369e+04	-5.424e+04	-5.437e+04	-2.938e+04
1	23	309	22.47	-19.69	4.05	-1.28	20.91	-1.323e+04	-7.362e+04	-4.337e+04	-4.348e+04	-3.019e+04
1	23	310	23.43	-13.65	6.57	3.21	18.47	-6316.20	-6.560e+04	-3.591e+04	-3.600e+04	-2.964e+04
1	23	311	24.73	-8.87	9.05	6.81	16.76	-1138.36	-5.885e+04	-2.997e+04	-3.002e+04	-2.886e+04
1	23	312	26.35	-4.72	11.31	10.31	15.53	1103.26	-5.372e+04	-2.629e+04	-2.633e+04	-2.741e+04
1	23	313	28.01	-1.22	14.05	12.75	14.60	318.97	-4.834e+04	-2.401e+04	-2.401e+04	-2.433e+04
1	23	314	30.23	-57.15	-4.88	-22.04	42.84	-1.170e+05	-1.314e+05	-1.219e+05	-1.299e+05	4417.48
1	23	315	24.74	-44.85	-8.69	-11.42	34.77	-6.206e+04	-1.009e+05	-7.345e+04	-8.952e+04	-1.768e+04
1	23	316	21.67	-29.67	-6.59	-1.41	25.54	-3.077e+04	-8.436e+04	-4.859e+04	-6.654e+04	-2.525e+04
1	23	317	21.78	-20.15	-3.51	5.14	20.52	-1.559e+04	-7.251e+04	-3.508e+04	-5.302e+04	-2.701e+04
1	23	318	22.35	-13.57	-0.49	9.28	17.28	-7351.22	-6.353e+04	-2.186e+04	-4.403e+04	-2.675e+04
1	23	319	23.41	-8.57	2.41	12.43	15.18	-2351.69	-5.656e+04	-2.144e+04	-3.747e+04	-2.589e+04
1	23	320	24.53	-4.54	4.92	15.08	13.62	961.47	-5.057e+04	-1.703e+04	-3.258e+04	-2.457e+04
1	23	321	25.79	-1.19	7.99	16.61	12.78	294.42	-4.491e+04	-1.375e+04	-3.087e+04	-2.092e+04
1	23	322	6.04	-42.78	-26.18	-10.57	23.13	-1.125e+05	-1.370e+05	-1.216e+05	-1.279e+05	1.182e+04
1	23	323	16.18	-41.98	-22.00	-3.79	27.62	-7.398e+04	-9.683e+04	-7.465e+04	-9.616e+04	-3866.37
1	23	324	20.43	-28.90	-14.27	5.80	22.53	-3.694e+04	-7.636e+04	-4.238e+04	-7.092e+04	-1.359e+04
1	23	325	20.72	-19.54	-9.77	10.96	17.26	-1.784e+04	-6.265e+04	-2.568e+04	-5.481e+04	-1.702e+04
1	23	326	21.08	-12.96	-6.06	14.19	13.68	-8534.02	-5.292e+04	-1.709e+04	-4.436e+04	-1.751e+04
1	23	327	21.64	-8.15	-2.73	16.22	11.49	-3043.38	-4.539e+04	-1.178e+04	-3.665e+04	-1.714e+04
1	23	328	22.24	-4.36	0.14	17.74	9.97	530.84	-3.938e+04	-7804.76	-3.105e+04	-1.622e+04
1	23	329	22.39	-1.17	3.28	17.94	9.22	101.14	-3.437e+04	-5038.70	-2.923e+04	-1.228e+04
1	23	330	22.74	-40.12	-23.09	5.71	27.94	-9.679e+04	-1.691e+05	-1.436e+05	-1.223e+05	3.458e+04
1	23	331	23.00	-33.08	-17.70	7.62	25.02	-6.839e+04	-9.817e+04	-7.763e+04	-8.893e+04	1.377e+04
1	23	332	19.11	-24.72	-15.90	10.29	17.57	-4.016e+04	-6.437e+04	-4.052e+04	-6.401e+04	2926.23
1	23	333	18.90	-17.56	-12.34	13.68	12.77	-1.954e+04	-4.630e+04	-1.982e+04	-4.603e+04	-2717.99
1	23	334	18.51	-11.72	-8.71	15.49	9.06	-8853.04	-3.513e+04	-9803.25	-3.418e+04	-4905.87
1	23	335	19.07	-7.41	-5.27	16.93	7.22	-3615.92	-2.768e+04	-5021.77	-2.627e+04	-5643.65
1	23	336	18.64	-4.17	-2.68	17.16	5.63	-194.03	-2.161e+04	-1819.02	-1.998e+04	-5670.77
1	23	337	17.89	-1.48	0.34	16.07	5.65	-390.87	-1.861e+04	-1078.19	-1.793e+04	-3471.72
1	39	1	14.21	-3.72	9.73	0.76	7.77	5.934e+04	-9.795e+04	5.890e+04	-9.751e+04	-8294.65
1	39	2	9.41	-6.09	4.62	-1.30	7.17	6.215e+04	-1.482e+05	6.169e+04	-1.477e+05	9802.62
1	39	3	8.01	-6.88	3.34	-2.22	6.91	4.857e+04	-9.452e+04	4.812e+04	-9.408e+04	-7954.91
1	39	4	14.46	-4.39	12.22	-2.15	6.10	1.093e+05	-1.028e+05	1.073e+05	-1.008e+05	-2.030e+04
1	39	5	4.80	-8.92	2.03	-6.15	5.51	6.579e+04	-4.314e+04	5.919e+04	-3.655e+04	-2.598e+04
1	39	6	14.33	-7.03	12.98	-5.68	5.20	1.193e+05	-4.171e+04	1.057e+05	-2.813e+04	-4.474e+04
1	39	7	5.84	-14.25	4.66	-13.07	4.72	1.177e+05	-2.497e+04	1.128e+05	-2.004e+04	-2.606e+04
1	39	8	14.90	-11.27	13.83	-10.20	5.17	1.418e+05	-9957.50	1.113e+05	2.055e+04	-6.082e+04
1	39	9	-2.65	-16.36	-3.17	-15.84	2.62	1.378e+05	2.359e+04	9.082e+04	7.056e+04	-5.619e+04
1	39	10	27.52	-18.84	27.47	-18.78	1.62	1.973e+05	3.245e+04	1.610e+05	6.874e+04	-6.830e+04
1	39	11	5.80	-17.54	5.65	-17.38	-1.91	1.507e+05	6.905e+04	1.273e+05	9.245e+04	-3.691e+04
1	39	12	16.78	-13.10	16.23	-12.55	-4.02	1.871e+05	4.817e+04	1.455e+05	8.978e+04	-6.363e+04
1	39	13	9.26	-16.25	6.56	-13.55	-7.84	1.970e+05	6.228e+04	1.386e+05	1.207e+05	-6.677e+04
1	39	14	20.05	-11.10	18.68	-9.73	-6.39	2.097e+05	1.061e+05	1.579e+05	1.578e+05	-5.179e+04
1	39	15	16.97	-15.92	9.84	-8.79	-13.56	2.302e+05	1.167e+05	1.735e+05	1.734e+05	-5.677e+04
1	39	16	24.02	-11.48	19.05	-6.51	-12.32	1.774e+05	1.113e+05	1.491e+05	1.397e+05	-3.272e+04
1	39	17	20.32	-10.89	10.02	-0.59	-14.68	1.774e+05	1.113e+05	1.398e+05	1.489e+05	-3.275e+04
1	39	18	26.07	-7.96	15.50	2.60	-15.75	1.930e+05	8.802e+04	1.406e+05	1.404e+05	-5.249e+04
1	39	19	7.56	-6.68	4.17	-3.30	6.06	-1.066e+04	-1.532e+05	-1.718e+04	-1.467e+05	2.979e+04
1	39	20	3.14	-4.90	0.12	-1.87	3.89	2102.65	-9.659e+04	1361.03	-9.584e+04	8522.89
1	39	21	0.37	-3.95	-9.13e-02	-3.49	1.34	5.990e+04	-9.295e+04	5.980e+04	-9.284e+04	-4035.35
1	39	22	3.53	-10.09	0.66	-7.22	5.56	8.612e+04	-3.068e+04	8.191e+04	-2.647e+04	-2.176e+04
1	39	23	-1.19	-11.80	-1.77	-11.23	2.40	1.429e+05	3.169e+04	1.161e+05	5.848e+04	-4.755e+04
1	39	24	5.31	-16.48	4.32	-15.49	-4.54	1.750e+05	7.202e+04	1.368e+05	1.102e+05	-4.974e+04
1	39	25	2.70	-9.75	2.15	-9.21	-2.55	1.600e+05	8.597e+04	1.231e+05	1.229e+05	-3.702e+04
1	39	26	8.60	-13.97	2.07	-7.45	-10.23	1.970e+05	6.221e+04	1.208e+05	1.384e+05	-6.680e+04
1	39	27	19.48	-16.06	7.10	-3.68	-16.93	2.096e+05	1.059e+05	1.579e+05	1.577e+05	-5.186e+04
1	39	28	5.35	-4.74	3.26	-2.65	4.09	-3.717e+04	-1.662e+05	-5.377e+04	-1.496e+05	4.319e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	39	29	2.27	-2.03	1.83	-1.60	1.30	-1.075e+04	-1.485e+05	-1.277e+04	-1.465e+05	1.655e+04
1	39	30	1.27	-2.34	-0.23	-0.84	1.78	-7896.99	-1.174e+05	-8915.17	-1.164e+05	1.051e+04
1	39	31	0.60	-3.78	-1.53	-1.65	2.18	3.629e+04	-7.398e+04	3.598e+04	-7.368e+04	-5810.85
1	39	32	-1.13	-5.70	-1.24	-5.58	0.73	1.485e+05	1.377e+04	1.390e+05	2.328e+04	-3.450e+04
1	39	33	5.07	-10.72	4.14	-9.79	-3.73	2.069e+05	6.169e+04	1.342e+05	1.342e+05	-7.259e+04
1	39	34	8.30	-10.83	2.42	-4.95	-8.83	1.749e+05	7.194e+04	1.102e+05	1.366e+05	-4.977e+04
1	39	35	7.76	-10.94	-1.79	-1.39	-9.35	1.505e+05	6.896e+04	9.248e+04	1.270e+05	-3.695e+04
1	39	36	15.96	-13.80	0.98	1.19	-14.88	1.870e+05	4.798e+04	8.973e+04	1.452e+05	-6.373e+04
1	39	37	6.12	-6.80	4.92	-5.60	3.74	-8.400e+04	-2.225e+05	-1.042e+05	-2.023e+05	4.890e+04
1	39	38	4.87	-1.31e-02	4.06	0.80	1.82	-6.837e+04	-1.543e+05	-1.073e+05	-1.153e+05	4.276e+04
1	39	39	3.35	-4.89e-02	2.83	0.48	1.23	-7.738e+04	-1.651e+05	-9.496e+04	-1.475e+05	3.511e+04
1	39	40	2.35	-0.66	1.38	0.31	1.41	-5.797e+04	-1.818e+05	-6.187e+04	-1.779e+05	2.162e+04
1	39	41	3.34e-02	-4.18e-02	-6.30e-03	-2.14e-03	3.76e-02	-1.704e+04	-3.013e+04	-2.356e+04	-2.360e+04	-6543.14
1	39	42	3.98	-5.36	-1.14	-0.25	-4.65	1.482e+05	1.368e+04	2.323e+04	1.387e+05	-3.456e+04
1	39	43	8.24	-10.74	-2.18	-0.32	-9.44	1.427e+05	3.148e+04	5.837e+04	1.158e+05	-4.762e+04
1	39	44	10.00	-13.60	-3.00	-0.60	-11.74	1.377e+05	2.334e+04	7.042e+04	9.063e+04	-5.629e+04
1	39	45	15.77	-12.96	-3.44	6.24	-13.52	1.971e+05	3.218e+04	6.861e+04	1.606e+05	-6.841e+04
1	39	46	6.74	-6.86	3.20	-3.32	5.96	-9.530e+04	-2.009e+05	-1.179e+05	-1.784e+05	4.331e+04
1	39	47	6.91	-1.41	5.79	-0.29	2.85	-1.077e+05	-1.713e+05	-1.196e+05	-1.594e+05	2.484e+04
1	39	48	7.93	-2.10	5.88	-5.19e-02	4.04	-1.179e+05	-1.948e+05	-1.433e+05	-1.693e+05	3.619e+04
1	39	49	6.59	-1.12	4.39	1.07	3.48	-1.122e+05	-2.292e+05	-1.707e+05	-1.707e+05	5.849e+04
1	39	50	6.38	0.37	1.23	5.52	2.10	-5.810e+04	-1.820e+05	-1.782e+05	-6.198e+04	2.157e+04
1	39	51	10.62	-6.76	-6.43	10.29	-2.36	3.600e+04	-7.422e+04	-7.390e+04	3.568e+04	-5925.62
1	39	52	8.91	-9.66	-6.90	6.15	-6.60	8.586e+04	-3.089e+04	-2.665e+04	8.162e+04	-2.184e+04
1	39	53	8.75	-9.01	-4.12	3.86	-7.93	1.174e+05	-2.515e+04	-2.019e+04	1.125e+05	-2.612e+04
1	39	54	14.23	-13.27	-4.72	5.68	-12.73	1.416e+05	-1.020e+04	2.041e+04	1.110e+05	-6.092e+04
1	39	55	7.65	-9.78	0.97	-3.10	8.47	-1.550e+05	-2.207e+05	-1.871e+05	-1.886e+05	3.282e+04
1	39	56	9.93	-4.22	5.23	0.48	6.67	-1.088e+05	-2.084e+05	-1.501e+05	-1.671e+05	4.908e+04
1	39	57	5.70	1.07	3.57	3.19	2.30	-1.330e+05	-1.765e+05	-1.548e+05	-1.547e+05	2.173e+04
1	39	58	12.05	-4.35	1.18	6.52	7.75	-1.180e+05	-1.948e+05	-1.695e+05	-1.433e+05	3.167e+04
1	39	59	12.99	-0.28	1.78	10.93	4.80	-7.761e+04	-1.652e+05	-1.477e+05	-9.512e+04	3.504e+04
1	39	60	15.74	-5.36	-5.18	15.56	-1.96	-8164.37	-1.176e+05	-1.166e+05	-9169.13	1.044e+04
1	39	61	9.86	-4.65	-4.44	9.65	-1.73	5.963e+04	-9.315e+04	-9.304e+04	5.952e+04	-4087.82
1	39	62	12.41	-8.42	-5.61	9.61	-7.11	6.555e+04	-4.338e+04	-3.674e+04	5.891e+04	-2.607e+04
1	39	63	18.23	-16.40	-9.04	10.87	-14.17	1.190e+05	-4.200e+04	-2.837e+04	1.054e+05	-4.481e+04
1	39	64	8.26	-13.61	-0.88	-4.46	10.79	-1.566e+05	-1.801e+05	-1.620e+05	-1.747e+05	9850.27
1	39	65	11.22	-10.67	0.57	-1.83e-02	10.94	-1.600e+05	-2.432e+05	-2.016e+05	-2.015e+05	4.158e+04
1	39	66	12.19	-5.20	1.12	5.87	8.36	-1.089e+05	-2.085e+05	-1.673e+05	-1.501e+05	4.905e+04
1	39	67	15.33	-5.70	-3.01	12.64	7.03	-1.078e+05	-1.715e+05	-1.596e+05	-1.197e+05	2.481e+04
1	39	68	17.55	0.81	3.01	15.34	5.66	-6.862e+04	-1.543e+05	-1.154e+05	-1.075e+05	4.268e+04
1	39	69	16.63	-5.51	-5.49	16.62	0.56	-1.098e+04	-1.487e+05	-1.467e+05	-1.298e+04	1.650e+04
1	39	70	14.81	-8.62	-7.75	13.94	-4.41	1825.97	-9.680e+04	-9.607e+04	1100.25	8428.85
1	39	71	14.90	-13.92	-11.06	12.03	-8.63	4.822e+04	-9.480e+04	-9.435e+04	4.777e+04	-8031.79
1	39	72	12.43	-14.95	-10.29	7.77	-10.29	1.090e+05	-1.030e+05	-1.010e+05	1.070e+05	-2.034e+04
1	39	73	6.02	-18.86	-7.80	-5.03	12.36	-1.343e+05	-1.870e+05	-1.607e+05	-1.606e+05	2.633e+04
1	39	74	6.89	-16.33	-9.42	-2.59e-02	10.62	-1.566e+05	-1.801e+05	-1.749e+05	-1.619e+05	9826.45
1	39	75	9.39	-14.74	-9.14	3.80	10.19	-1.552e+05	-2.207e+05	-1.888e+05	-1.871e+05	3.276e+04
1	39	76	12.90	-14.79	-11.43	9.54	9.04	-9.548e+04	-2.011e+05	-1.786e+05	-1.180e+05	4.323e+04
1	39	77	18.80	-24.87	-24.18	18.12	5.44	-8.425e+04	-2.227e+05	-2.025e+05	-1.044e+05	4.880e+04
1	39	78	13.17	-14.62	-14.62	13.16	0.49	-3.744e+04	-1.663e+05	-1.498e+05	-5.398e+04	4.311e+04
1	39	79	12.38	-18.19	-18.14	12.33	-1.25	-1.101e+04	-1.534e+05	-1.469e+05	-1.750e+04	2.972e+04
1	39	80	11.90	-18.85	-17.03	10.08	-7.25	6.185e+04	-1.484e+05	-1.479e+05	6.139e+04	9774.88
1	39	81	8.73	-17.69	-12.87	3.91	-10.20	5.907e+04	-9.816e+04	-9.771e+04	5.862e+04	-8351.22
1	39	82	18.29	-28.63	-28.05	17.70	5.19	-6.080e+04	-1.447e+05	-1.265e+05	-7.901e+04	3.457e+04
1	39	83	11.08	-26.06	-26.06	11.08	0.12	-3.221e+04	-1.658e+05	-1.476e+05	-5.043e+04	4.585e+04
1	39	84	10.64	-20.99	-20.61	10.26	3.46	-4.547e+04	-1.018e+05	-8.227e+04	-6.497e+04	2.679e+04
1	39	85	11.00	-23.90	-23.89	10.99	0.50	-1.921e+04	-9.948e+04	-8.505e+04	-3.364e+04	3.082e+04
1	39	86	9.56	-17.32	-17.16	9.40	2.06	-2.762e+04	-6.347e+04	-4.494e+04	-4.614e+04	1.791e+04
1	39	87	9.82	-18.24	-18.18	9.76	-1.32	-6854.77	-6.667e+04	-5.222e+04	-2.131e+04	2.561e+04
1	39	88	9.52	-13.34	-13.29	9.47	1.06	-1.362e+04	-3.763e+04	-2.145e+04	-2.980e+04	1.126e+04
1	39	89	9.60	-13.81	-13.64	9.43	-1.98	2116.30	-4.240e+04	-2.959e+04	-1.070e+04	2.015e+04
1	39	90	9.68	-9.87	-9.85	9.67	0.53	-4839.69	-2.157e+04	-8632.83	-1.778e+04	7005.30
1	39	91	9.93	-10.07	-9.81	9.67	-2.29	8194.28	-2.504e+04	-1.476e+04	-2081.14	1.536e+04
1	39	92	9.45	-6.25	-6.25	9.45	6.30e-02	94.54	-1.160e+04	-2180.06	-9326.62	4629.19
1	39	93	9.44	-7.05	-6.81	9.19	-1.99	1.127e+04	-1.369e+04	-6423.16	4000.52	1.134e+04
1	39	94	9.18	-2.95	-2.95	9.17	0.17	1073.39	-5612.39	-342.16	-4196.84	2731.35
1	39	95	9.60	-3.41	-3.29	9.47	-1.29	1.048e+04	-6950.48	-3115.89	6645.38	7220.42
1	39	96	8.27	-1.44	-1.43	8.26	0.32	-865.00	-3738.92	-908.32	-3695.60	350.17
1	39	97	8.14	-1.37	-1.21	7.99	-1.21	3326.20	-1009.89	-1009.58	3325.89	-36.94
1	39	98	5.72	-24.02	-23.57	5.27	-3.64	5400.96	-1.100e+05	-1.086e+05	3977.66	1.274e+04
1	39	99	8.43	-24.25	-22.99	7.17	-6.29	7711.41	-8.865e+04	-8.205e+04	1110.81	2.434e+04
1	39	100	9.44	-17.42	-16.11	8.13	-5.78	1.297e+04	-6.487e+04	-5.711e+04	5206.85	2.332e+04
1	39	101	8.98	-12.95	-11.68	7.72	-5.11	1.660e+04	-4.593e+04	-3.841e+04	9085.11	2.033e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	39	102	8.62	-9.32	-8.14	7.44	-4.46	1.870e+04	-3.104e+04	-2.448e+04	1.214e+04	1.683e+04
1	39	103	8.41	-6.06	-4.99	7.34	-3.79	1.875e+04	-2.018e+04	-1.512e+04	1.369e+04	1.309e+04
1	39	104	8.31	-2.99	-1.93	7.25	-3.30	1.554e+04	-1.226e+04	-9300.21	1.258e+04	8573.32
1	39	105	8.17	-1.21	-0.34	7.30	-2.73	3432.25	-910.67	-875.41	3396.99	-389.72
1	39	106	11.34	-21.98	-17.34	6.70	-11.53	3.025e+04	-9.434e+04	-9.357e+04	2.948e+04	9769.01
1	39	107	10.57	-18.75	-14.80	6.63	-10.00	2.953e+04	-7.452e+04	-7.298e+04	2.799e+04	1.256e+04
1	39	108	8.79	-14.45	-11.20	5.54	-8.06	2.876e+04	-5.793e+04	-5.600e+04	2.683e+04	1.279e+04
1	39	109	7.93	-10.79	-7.82	4.96	-6.84	2.741e+04	-4.442e+04	-4.232e+04	2.531e+04	1.209e+04
1	39	110	6.87	-7.43	-4.82	4.26	-5.52	2.543e+04	-3.343e+04	-3.139e+04	2.339e+04	1.076e+04
1	39	111	7.19	-4.68	-2.39	4.90	-4.69	2.226e+04	-2.464e+04	-2.287e+04	2.049e+04	8955.87
1	39	112	6.86	-2.45	-0.29	4.70	-3.93	1.689e+04	-1.648e+04	-1.528e+04	1.569e+04	6212.71
1	39	113	7.53	-0.79	1.12	5.62	-3.50	1650.17	-1361.91	-1333.29	1621.55	292.23
1	39	114	11.73	-21.00	-16.05	6.77	-11.73	4.860e+04	-7.392e+04	-7.380e+04	4.848e+04	-3896.98
1	39	115	8.99	-14.63	-10.33	4.68	-9.12	4.331e+04	-6.006e+04	-6.002e+04	4.326e+04	-2144.46
1	39	116	7.99	-11.31	-6.97	3.64	-8.06	3.848e+04	-4.899e+04	-4.898e+04	3.847e+04	-981.96
1	39	117	7.25	-8.65	-4.44	3.04	-7.01	3.367e+04	-3.964e+04	-3.964e+04	3.367e+04	-210.93
1	39	118	6.84	-6.68	-2.43	2.59	-6.28	2.891e+04	-3.172e+04	-3.172e+04	2.891e+04	301.77
1	39	119	6.14	-3.91	-0.18	2.41	-4.85	2.399e+04	-2.484e+04	-2.483e+04	2.398e+04	485.50
1	39	120	5.82	-1.39	1.41	3.02	-3.52	1.683e+04	-1.750e+04	-1.750e+04	1.683e+04	356.89
1	39	121	5.42	-0.63	1.69	3.10	-2.94	1337.26	-1778.13	-1751.18	1310.30	288.52
1	39	122	13.78	-19.04	-12.46	7.19	-13.14	6.853e+04	-6.498e+04	-6.144e+04	6.499e+04	-2.144e+04
1	39	123	10.32	-15.23	-8.95	4.03	-11.00	5.898e+04	-5.281e+04	-4.231e+04	5.569e+04	-1.890e+04
1	39	124	7.97	-10.43	-5.25	2.79	-8.28	4.934e+04	-4.400e+04	-4.098e+04	4.632e+04	-1.653e+04
1	39	125	6.69	-7.43	-2.86	2.13	-6.61	4.068e+04	-3.655e+04	-3.387e+04	3.800e+04	-1.415e+04
1	39	126	5.91	-4.98	-0.80	1.73	-5.29	3.297e+04	-3.013e+04	-2.782e+04	3.066e+04	-1.183e+04
1	39	127	5.10	-3.36	0.61	1.12	-4.22	2.598e+04	-2.422e+04	-2.231e+04	2.407e+04	-9611.70
1	39	128	5.26	-1.67	1.78	1.81	-3.46	1.803e+04	-1.719e+04	-1.579e+04	1.663e+04	-6874.70
1	39	129	4.57	-0.65	1.88	2.03	-2.61	2059.56	-1335.61	-1085.32	1809.27	-887.20
1	39	130	7.21	-12.34	-7.00	1.87	-8.71	8.523e+04	-4.150e+04	-3.631e+04	8.004e+04	-2.514e+04
1	39	131	9.17	-11.94	-5.90	3.13	-9.54	7.643e+04	-3.689e+04	-2.528e+04	6.483e+04	-3.436e+04
1	39	132	7.96	-8.81	-3.43	2.57	-7.83	6.060e+04	-3.344e+04	-2.167e+04	4.883e+04	-3.113e+04
1	39	133	6.17	-6.10	-1.75	1.83	-5.87	4.728e+04	-2.962e+04	-1.882e+04	3.648e+04	-2.672e+04
1	39	134	4.79	-3.98	-0.49	1.30	-4.29	3.637e+04	-2.570e+04	-1.621e+04	2.688e+04	-2.233e+04
1	39	135	3.72	-2.30	0.53	0.89	-3.01	2.739e+04	-2.155e+04	-1.358e+04	1.942e+04	-1.808e+04
1	39	136	2.96	-0.88	1.44	0.64	-1.88	1.888e+04	-1.577e+04	-9794.28	1.290e+04	-1.309e+04
1	39	137	2.98	-0.64	1.32	1.01	-1.80	3378.99	-747.99	921.19	1709.82	-2025.46
1	39	138	14.17	-12.59	-3.66	5.24	-12.62	1.473e+05	-1.441e+04	1.684e+04	1.161e+05	-6.386e+04
1	39	139	14.30	-11.40	-3.17	6.08	-11.99	9.356e+04	-1.568e+04	9248.30	6.863e+04	-4.584e+04
1	39	140	9.07	-7.77	-2.20	3.50	-7.92	6.969e+04	-1.892e+04	5129.99	4.564e+04	-3.941e+04
1	39	141	6.28	-5.27	-1.35	2.36	-5.47	5.186e+04	-1.989e+04	2151.31	2.982e+04	-3.310e+04
1	39	142	4.09	-3.41	-0.94	1.63	-3.52	3.819e+04	-1.937e+04	-22.67	1.883e+04	-2.719e+04
1	39	143	2.77	-2.00	-0.37	1.14	-2.27	2.760e+04	-1.759e+04	-1415.07	1.142e+04	-2.167e+04
1	39	144	1.33	-0.93	-0.12	0.51	-1.08	1.874e+04	-1.339e+04	-1272.09	6619.27	-1.558e+04
1	39	145	1.43	-0.95	-6.64e-02	0.54	-1.15	4839.12	-333.63	3497.21	1008.28	-2267.29
1	39	146	18.24	-14.19	-3.03	7.08	-15.41	1.345e+05	1.678e+04	5.071e+04	1.005e+05	-5.330e+04
1	39	147	14.81	-10.86	-1.16	5.11	-12.45	1.035e+05	6538.65	4.278e+04	6.728e+04	-4.692e+04
1	39	148	10.59	-7.42	-0.96	4.13	-8.64	7.438e+04	-2678.00	3.218e+04	4.562e+04	-3.835e+04
1	39	149	7.24	-5.21	-1.08	3.11	-5.86	5.326e+04	-8696.89	2.302e+04	2.154e+04	-3.097e+04
1	39	150	4.63	-3.76	-1.20	2.07	-3.87	3.774e+04	-1.192e+04	1.580e+04	1.003e+04	-2.466e+04
1	39	151	2.68	-2.72	-1.49	1.45	-2.27	2.649e+04	-1.270e+04	1.050e+04	3298.73	-1.926e+04
1	39	152	1.30	-2.13	-1.76	0.93	-1.06	1.766e+04	-1.041e+04	6978.08	269.67	-1.362e+04
1	39	153	0.81	-2.39	-1.93	0.34	-1.13	6254.10	-32.20	5919.85	302.05	-1410.48
1	39	154	19.24	-10.41	1.26	7.56	-14.48	1.653e+05	4.763e+04	9.494e+04	1.179e+05	-5.768e+04
1	39	155	16.45	-10.54	0.97	4.94	-13.35	1.060e+05	2.843e+04	6.986e+04	6.452e+04	-3.867e+04
1	39	156	12.26	-7.00	0.35	4.91	-9.36	7.336e+04	1.332e+04	5.198e+04	3.471e+04	-2.875e+04
1	39	157	8.77	-5.65	-0.72	3.85	-6.84	5.092e+04	2608.29	3.766e+04	1.587e+04	-2.156e+04
1	39	158	5.89	-4.64	-1.55	2.80	-4.79	3.505e+04	-4220.38	2.654e+04	4291.95	-1.618e+04
1	39	159	3.42	-4.13	-2.38	1.67	-3.18	2.396e+04	-7520.52	1.833e+04	-1892.90	-1.206e+04
1	39	160	1.72	-3.78	-2.89	0.83	-2.03	1.584e+04	-6946.03	1.240e+04	-3509.95	-8153.86
1	39	161	0.88	-3.97	-3.15	5.46e-02	-1.82	7564.10	172.63	7548.41	188.33	340.25
1	39	162	20.30	-2.35	8.10	9.85	-11.29	1.406e+05	6.887e+04	1.064e+05	1.031e+05	-3.582e+04
1	39	163	20.23	-6.65	5.94	7.64	-13.41	9.832e+04	4.593e+04	8.092e+04	6.332e+04	-2.467e+04
1	39	164	14.82	-7.43	2.41	4.98	-11.05	6.630e+04	2.685e+04	5.908e+04	3.406e+04	-1.525e+04
1	39	165	10.60	-6.63	0.36	3.61	-8.46	4.499e+04	1.261e+04	4.210e+04	1.550e+04	-9234.72
1	39	166	7.24	-6.06	-1.24	2.42	-6.40	3.049e+04	2934.85	2.937e+04	4052.56	-5436.20
1	39	167	4.46	-5.74	-2.61	1.33	-4.70	2.062e+04	-2482.93	2.019e+04	-2049.45	-3134.78
1	39	168	2.19	-5.62	-3.80	0.37	-3.30	1.387e+04	-3592.41	1.374e+04	-3462.02	-1503.27
1	39	169	0.97	-5.61	-3.90	-0.74	-2.89	8794.62	293.59	8022.81	1065.41	2442.44
1	39	170	28.32	-13.80	14.01	0.51	-19.94	1.407e+05	7.437e+04	1.123e+05	1.028e+05	-3.281e+04
1	39	171	23.05	-10.47	9.71	2.86	-16.41	8.428e+04	5.493e+04	7.669e+04	6.253e+04	-1.285e+04
1	39	172	16.34	-8.37	5.44	2.53	-12.27	5.439e+04	3.589e+04	5.337e+04	3.690e+04	-4212.95
1	39	173	11.87	-7.71	2.50	1.66	-9.78	3.662e+04	1.979e+04	3.660e+04	1.981e+04	512.54
1	39	174	8.26	-7.32	0.24	0.70	-7.78	2.505e+04	8205.22	2.452e+04	8733.43	2935.60

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	39	175	5.19	-7.21	-1.79	-0.23	-6.15	1.718e+04	1395.51	1.620e+04	2376.86	3811.99
1	39	176	2.61	-7.19	-3.50	-1.08	-4.75	1.205e+04	-980.88	1.088e+04	191.00	3728.66
1	39	177	1.07	-7.24	-3.95	-2.21	-4.07	9667.97	334.52	7114.14	2888.35	4161.01
1	39	178	29.31	-11.00	18.25	5.32e-02	-17.99	1.087e+05	7.195e+04	9.041e+04	9.029e+04	-1.840e+04
1	39	179	20.79	-8.87	11.90	2.29e-02	-13.59	6.716e+04	5.472e+04	6.099e+04	6.089e+04	-6221.89
1	39	180	16.26	-8.71	7.93	-0.38	-11.78	4.095e+04	3.963e+04	4.033e+04	4.025e+04	661.03
1	39	181	12.24	-8.51	4.80	-1.07	-9.95	2.993e+04	2.126e+04	2.563e+04	2.556e+04	4334.94
1	39	182	8.78	-8.43	2.17	-1.82	-8.37	2.142e+04	9406.94	1.544e+04	1.539e+04	6008.78
1	39	183	5.65	-8.41	-0.14	-2.62	-6.92	1.522e+04	2643.78	8951.38	8913.55	6288.66
1	39	184	2.85	-8.50	-2.29	-3.36	-5.65	1.123e+04	-16.40	5621.43	5590.67	5622.42
1	39	185	1.09	-8.41	-3.10	-4.23	-4.72	9998.89	313.37	5156.85	5155.42	4842.76
1	39	186	30.13	-12.06	19.38	-1.31	-18.38	1.407e+05	7.444e+04	1.029e+05	1.122e+05	-3.278e+04
1	39	187	25.63	-11.13	17.30	-2.80	-15.39	8.423e+04	5.502e+04	6.264e+04	7.661e+04	-1.283e+04
1	39	188	19.37	-9.49	13.10	-3.22	-11.90	5.431e+04	3.598e+04	3.699e+04	5.330e+04	-4187.77
1	39	189	14.32	-9.23	9.01	-3.93	-9.84	3.656e+04	1.986e+04	1.988e+04	3.655e+04	534.79
1	39	190	10.11	-9.18	5.53	-4.61	-8.21	2.502e+04	8248.44	8786.99	2.448e+04	2956.28
1	39	191	6.52	-9.20	2.53	-5.22	-6.84	1.715e+04	1419.67	2413.26	1.616e+04	3826.86
1	39	192	3.30	-9.42	-0.27	-5.85	-5.71	1.204e+04	-959.64	227.23	1.085e+04	3744.49
1	39	193	1.23	-9.35	-1.69	-6.43	-4.73	9667.39	335.08	2891.53	7110.94	4161.99
1	39	194	30.52	-3.48	28.90	-1.85	-7.26	1.406e+05	6.897e+04	1.033e+05	1.063e+05	-3.579e+04
1	39	195	30.39	-7.70	27.22	-4.53	-10.52	9.828e+04	4.604e+04	6.345e+04	8.088e+04	-2.462e+04
1	39	196	21.66	-9.74	18.71	-6.79	-9.16	6.624e+04	2.695e+04	3.415e+04	5.904e+04	-1.520e+04
1	39	197	15.74	-9.60	13.21	-7.06	-7.60	4.494e+04	1.268e+04	1.556e+04	4.206e+04	-9195.51
1	39	198	11.00	-9.47	8.80	-7.28	-6.34	3.044e+04	2985.94	4094.48	2.933e+04	-5404.34
1	39	199	6.99	-9.52	5.07	-7.60	-5.29	2.058e+04	-2448.03	-2020.15	2.015e+04	-3109.35
1	39	200	3.55	-9.70	1.85	-8.00	-4.43	1.383e+04	-3569.62	-3441.64	1.371e+04	-1486.91
1	39	201	1.36	-9.62	-0.11	-8.14	-3.74	8782.33	294.61	1066.25	8010.69	2440.08
1	39	202	30.77	-10.43	30.33	-9.99	-4.24	1.653e+05	4.785e+04	1.182e+05	9.498e+04	-5.758e+04
1	39	203	27.22	-10.36	26.91	-10.05	-3.40	1.060e+05	2.856e+04	6.465e+04	6.987e+04	-3.861e+04
1	39	204	21.00	-9.48	20.49	-8.96	-3.92	7.333e+04	1.342e+04	3.478e+04	5.197e+04	-2.870e+04
1	39	205	15.63	-9.34	15.07	-8.79	-3.67	5.088e+04	2673.83	1.592e+04	3.764e+04	-2.152e+04
1	39	206	11.01	-9.13	10.52	-8.64	-3.10	3.500e+04	-4184.46	4315.16	2.650e+04	-1.615e+04
1	39	207	6.90	-9.37	6.43	-8.90	-2.72	2.391e+04	-7490.76	-1878.66	1.830e+04	-1.203e+04
1	39	208	3.58	-9.41	3.09	-8.92	-2.47	1.580e+04	-6932.84	-3503.50	1.237e+04	-8136.04
1	39	209	1.41	-9.51	0.99	-9.09	-2.11	7544.25	174.16	189.72	7528.70	338.21
1	39	210	31.78	-18.14	31.77	-18.13	0.69	1.346e+05	1.696e+04	1.007e+05	5.078e+04	-5.323e+04
1	39	211	23.09	-9.82	23.09	-9.82	-0.11	1.036e+05	6671.67	6.740e+04	4.283e+04	-4.686e+04
1	39	212	18.95	-8.73	18.95	-8.73	-0.13	7.438e+04	-2590.00	3.959e+04	3.220e+04	-3.831e+04
1	39	213	14.53	-8.72	14.53	-8.72	-0.16	5.324e+04	-8642.34	2.157e+04	2.303e+04	-3.093e+04
1	39	214	10.40	-8.84	10.40	-8.84	-0.13	3.771e+04	-1.189e+04	1.003e+04	1.579e+04	-2.463e+04
1	39	215	6.78	-9.03	6.78	-9.03	-1.47e-02	2.646e+04	-1.269e+04	3296.50	1.048e+04	-1.924e+04
1	39	216	3.52	-9.23	3.52	-9.23	-6.36e-02	1.763e+04	-1.040e+04	277.76	6957.45	-1.361e+04
1	39	217	1.38	-9.07	1.37	-9.06	-0.21	6235.86	-32.91	301.99	5900.97	-1409.69
1	39	218	26.68	-9.47	26.21	-9.00	4.10	1.475e+05	-1.421e+04	1.163e+05	1.697e+04	-6.378e+04
1	39	219	23.12	-9.09	22.89	-8.87	2.68	9.362e+04	-1.556e+04	6.874e+04	9321.28	-4.580e+04
1	39	220	17.95	-8.10	17.64	-7.78	2.86	6.973e+04	-1.885e+04	4.570e+04	5175.28	-3.938e+04
1	39	221	13.55	-8.11	13.19	-7.76	2.75	5.187e+04	-1.984e+04	2.986e+04	2176.97	-3.308e+04
1	39	222	9.79	-8.47	9.40	-8.09	2.62	3.818e+04	-1.935e+04	1.885e+04	-10.95	-2.718e+04
1	39	223	6.49	-8.42	6.17	-8.10	2.18	2.759e+04	-1.759e+04	1.142e+04	-1419.14	-2.166e+04
1	39	224	3.23	-8.71	2.95	-8.43	1.82	1.872e+04	-1.338e+04	6614.75	-1274.11	-1.556e+04
1	39	225	1.30	-8.29	1.09	-8.08	1.40	4829.20	-332.13	1009.34	3487.73	-2263.68
1	39	226	22.54	-2.28	21.71	-1.46	4.45	8.537e+04	-4.137e+04	8.019e+04	-3.619e+04	-2.509e+04
1	39	227	22.54	-5.56	20.50	-3.52	7.29	7.651e+04	-3.679e+04	6.493e+04	-2.521e+04	-3.433e+04
1	39	228	16.26	-7.05	14.57	-5.37	6.04	6.066e+04	-3.337e+04	4.889e+04	-2.161e+04	-3.112e+04
1	39	229	12.03	-7.12	10.60	-5.68	5.04	4.732e+04	-2.958e+04	3.652e+04	-1.878e+04	-2.672e+04
1	39	230	8.57	-7.19	7.30	-5.92	4.29	3.639e+04	-2.568e+04	2.690e+04	-1.619e+04	-2.233e+04
1	39	231	5.53	-7.34	4.37	-6.18	3.69	2.740e+04	-2.154e+04	1.942e+04	-1.356e+04	-1.808e+04
1	39	232	2.88	-7.52	1.75	-6.39	3.23	1.889e+04	-1.577e+04	1.291e+04	-9791.41	-1.309e+04
1	39	233	1.17	-7.48	0.32	-6.63	2.57	3382.04	-745.74	1711.55	924.75	-2026.05
1	39	234	19.30	-6.58	13.19	-0.47	10.99	6.869e+04	-6.483e+04	6.516e+04	-6.130e+04	-2.141e+04
1	39	235	16.50	-6.32	12.11	-1.93	8.99	5.909e+04	-5.271e+04	5.579e+04	-4.941e+04	-1.890e+04
1	39	236	12.57	-5.61	9.49	-2.53	6.82	4.942e+04	-4.393e+04	4.640e+04	-4.090e+04	-1.653e+04
1	39	237	9.39	-5.64	6.83	-3.08	5.65	4.074e+04	-3.650e+04	3.805e+04	-3.381e+04	-1.416e+04
1	39	238	6.67	-5.53	4.42	-3.28	4.73	3.301e+04	-3.010e+04	3.070e+04	-2.779e+04	-1.185e+04
1	39	239	3.97	-5.95	1.91	-3.89	4.03	2.601e+04	-2.420e+04	2.408e+04	-2.227e+04	-9633.51
1	39	240	2.23	-6.01	0.56	-4.34	3.31	1.806e+04	-1.718e+04	1.665e+04	-1.577e+04	-6898.51
1	39	241	0.95	-6.67	-0.73	-4.98	3.16	2081.62	-1320.22	1821.69	-1060.28	-903.71
1	39	242	15.77	-5.20	11.08	-0.50	8.74	4.878e+04	-7.378e+04	4.865e+04	-7.366e+04	-3895.82
1	39	243	11.19	-4.07	7.69	-0.57	6.41	4.343e+04	-5.996e+04	4.339e+04	-5.991e+04	-2157.46
1	39	244	8.72	-4.11	5.51	-0.91	5.55	3.857e+04	-4.891e+04	3.856e+04	-4.890e+04	-1003.54
1	39	245	6.40	-4.15	3.54	-1.30	4.69	3.374e+04	-3.957e+04	3.374e+04	-3.957e+04	-241.66
1	39	246	4.13	-4.21	1.68	-1.75	3.81	2.896e+04	-3.168e+04	2.896e+04	-3.168e+04	254.53
1	39	247	2.78	-4.64	-5.13e-02	-1.80	3.61	2.402e+04	-2.480e+04	2.402e+04	-2.479e+04	443.62

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	39	248	1.87	-5.28	-1.08	-2.33	3.52	1.688e+04	-1.746e+04	1.687e+04	-1.746e+04	325.38
1	39	249	0.54	-6.05	-2.12	-3.38	3.23	1361.82	-1742.00	1340.73	-1720.91	254.99
1	39	250	12.36	-5.84	7.72	-1.21	7.93	3.049e+04	-9.418e+04	2.972e+04	-9.341e+04	9790.75
1	39	251	10.00	-4.09	6.14	-0.24	6.28	2.970e+04	-7.440e+04	2.816e+04	-7.286e+04	1.255e+04
1	39	252	7.10	-3.17	4.07	-0.15	4.68	2.889e+04	-5.783e+04	2.697e+04	-5.591e+04	1.277e+04
1	39	253	5.07	-3.04	2.27	-0.24	3.85	2.750e+04	-4.434e+04	2.542e+04	-4.225e+04	1.206e+04
1	39	254	3.58	-3.45	0.40	-0.27	3.50	2.550e+04	-3.336e+04	2.347e+04	-3.133e+04	1.073e+04
1	39	255	2.55	-3.31	-0.27	-0.49	2.93	2.231e+04	-2.460e+04	2.055e+04	-2.283e+04	8917.71
1	39	256	1.15	-3.86	-1.65	-1.06	2.49	1.692e+04	-1.644e+04	1.574e+04	-1.525e+04	6171.64
1	39	257	0.62	-3.65	-1.46	-1.56	2.14	1691.58	-1334.35	1668.96	-1311.73	260.64
1	39	258	7.62	-1.84	5.13	0.65	4.16	5647.13	-1.098e+05	4218.58	-1.084e+05	1.276e+04
1	39	259	6.94	-2.66	4.55	-0.27	4.15	7906.12	-8.853e+04	1304.43	-8.192e+04	2.435e+04
1	39	260	5.33	-2.67	3.17	-0.50	3.55	1.312e+04	-6.477e+04	5361.93	-5.701e+04	2.332e+04
1	39	261	3.85	-2.19	2.07	-0.40	2.75	1.671e+04	-4.584e+04	9209.25	-3.834e+04	2.032e+04
1	39	262	2.65	-1.86	1.16	-0.37	2.13	1.878e+04	-3.098e+04	1.223e+04	-2.443e+04	1.682e+04
1	39	263	1.65	-1.64	0.39	-0.37	1.60	1.880e+04	-2.014e+04	1.376e+04	-1.510e+04	1.308e+04
1	39	264	0.75	-1.37	-0.38	-0.24	1.06	1.557e+04	-1.224e+04	1.263e+04	-9295.65	8559.77
1	39	265	0.89	-1.75	-0.12	-0.74	1.28	3471.78	-905.26	3434.32	-867.80	-403.17
1	39	266	6.15	-5.24	3.99	-3.08	4.46	-3.194e+04	-1.657e+05	-5.021e+04	-1.474e+05	4.593e+04
1	39	267	5.94	-5.49	3.75	-3.30	4.50	-1.900e+04	-9.937e+04	-3.346e+04	-8.492e+04	3.086e+04
1	39	268	4.36	-3.41	3.07	-2.12	2.89	-6699.16	-6.659e+04	-2.116e+04	-5.213e+04	2.563e+04
1	39	269	3.42	-2.32	2.72	-1.63	1.88	2233.74	-4.234e+04	-1.058e+04	-2.953e+04	2.017e+04
1	39	270	3.07	-1.53	2.88	-1.34	0.92	8276.61	-2.501e+04	-1997.01	-1.474e+04	1.538e+04
1	39	271	2.37	-1.53	2.27	-1.44	0.60	1.131e+04	-1.368e+04	4055.66	-6426.35	1.135e+04
1	39	272	2.43	-0.82	2.29	-0.68	0.66	1.053e+04	-6958.61	6691.51	-3123.59	7235.23
1	39	273	1.74	-0.84	1.33	-0.43	0.94	3357.26	-1006.88	3356.88	-1006.51	-40.47
1	39	274	7.05	-8.62	5.06	-6.63	5.22	-6.059e+04	-1.446e+05	-7.886e+04	-1.263e+05	3.464e+04
1	39	275	5.48	-6.97	3.39	-4.88	4.64	-4.528e+04	-1.017e+05	-6.484e+04	-8.214e+04	2.684e+04
1	39	276	4.49	-5.18	3.47	-4.16	2.97	-2.747e+04	-6.342e+04	-4.604e+04	-4.486e+04	1.796e+04
1	39	277	4.34	-3.90	3.92	-3.48	1.82	-1.352e+04	-3.761e+04	-2.972e+04	-2.140e+04	1.131e+04
1	39	278	4.48	-3.14	4.31	-2.97	1.12	-4783.15	-2.156e+04	-1.772e+04	-8626.00	7049.65
1	39	279	4.16	-1.97	4.11	-1.92	0.55	130.57	-1.159e+04	-9280.23	-2180.06	4663.14
1	39	280	3.72	-0.81	3.67	-0.76	0.46	1107.34	-5602.20	-4159.63	-335.22	2756.44
1	39	281	3.09	-0.65	2.78	-0.34	1.03	-864.69	-3707.10	-3662.93	-908.86	351.56
1	39	282	5.10	-11.32	2.28	-8.51	6.19	-9.675e+04	-1.688e+05	-1.221e+05	-1.434e+05	3.441e+04
1	39	283	5.42	-9.65	2.98	-7.21	5.55	-6.838e+04	-9.793e+04	-8.875e+04	-7.755e+04	1.367e+04
1	39	284	5.23	-7.51	3.83	-6.11	3.98	-4.014e+04	-6.423e+04	-6.388e+04	-4.048e+04	2859.17
1	39	285	5.46	-5.47	4.70	-4.71	2.78	-1.951e+04	-4.622e+04	-4.593e+04	-1.980e+04	-2759.10
1	39	286	5.01	-3.59	4.68	-3.26	1.66	-8838.44	-3.506e+04	-3.410e+04	-9799.00	-4926.00
1	39	287	5.60	-2.04	5.20	-1.65	1.70	-3615.79	-2.763e+04	-2.622e+04	-5030.12	-5653.79
1	39	288	5.26	-1.38	4.80	-0.93	1.67	-187.63	-2.156e+04	-1.992e+04	-1824.66	-5683.50
1	39	289	5.39	-0.53	4.79	6.80e-02	1.78	-390.95	-1.857e+04	-1.789e+04	-1077.71	-3466.30
1	39	290	1.33	-14.15	-2.22	-10.60	6.51	-1.124e+05	-1.367e+05	-1.276e+05	-1.214e+05	1.175e+04
1	39	291	4.38	-13.74	0.14	-9.51	7.67	-7.388e+04	-9.663e+04	-9.593e+04	-7.458e+04	-3917.08
1	39	292	6.14	-9.47	2.95	-6.28	6.30	-3.688e+04	-7.622e+04	-7.076e+04	-4.235e+04	-1.361e+04
1	39	293	6.42	-6.43	4.29	-4.31	4.78	-1.780e+04	-6.255e+04	-5.469e+04	-2.567e+04	-1.703e+04
1	39	294	6.61	-4.28	5.04	-2.71	3.82	-8518.88	-5.284e+04	-4.427e+04	-1.709e+04	-1.751e+04
1	39	295	6.83	-2.64	5.44	-1.26	3.35	-3038.57	-4.532e+04	-3.657e+04	-1.179e+04	-1.713e+04
1	39	296	7.04	-1.48	5.73	-0.18	3.07	533.08	-3.933e+04	-3.099e+04	-7808.34	-1.621e+04
1	39	297	7.07	-0.43	5.64	1.00	2.94	101.54	-3.432e+04	-2.918e+04	-5032.14	-1.226e+04
1	39	298	8.90	-18.56	-4.59	-5.07	13.73	-1.169e+05	-1.311e+05	-1.296e+05	-1.184e+05	4365.83
1	39	299	7.59	-14.70	-1.80	-5.32	11.00	-6.193e+04	-1.007e+05	-8.929e+04	-7.368e+04	-1.768e+04
1	39	300	6.83	-9.93	0.82	-3.92	8.04	-3.070e+04	-8.421e+04	-6.637e+04	-4.855e+04	-2.523e+04
1	39	301	7.07	-6.76	2.67	-2.36	6.44	-1.557e+04	-7.240e+04	-5.290e+04	-3.506e+04	-2.698e+04
1	39	302	7.44	-4.60	3.83	-0.99	5.52	-7343.51	-6.345e+04	-4.395e+04	-2.685e+04	-2.672e+04
1	39	303	7.77	-2.85	4.51	0.41	4.90	-2355.15	-5.647e+04	-3.739e+04	-2.144e+04	-2.586e+04
1	39	304	8.20	-1.52	5.31	1.36	4.44	953.93	-5.051e+04	-3.253e+04	-1.703e+04	-2.454e+04
1	39	305	8.65	-0.45	5.58	2.62	4.30	295.54	-4.485e+04	-3.082e+04	-1.373e+04	-2.089e+04
1	39	306	7.65	-20.28	-7.84	-4.78	13.88	-9.255e+04	-1.158e+05	-1.042e+05	-1.042e+05	-1.165e+04
1	39	307	6.74	-13.38	-3.97	-2.67	10.04	-4.807e+04	-9.710e+04	-7.262e+04	-7.255e+04	-2.451e+04
1	39	308	7.20	-9.63	-1.40	-1.03	8.41	-2.487e+04	-8.354e+04	-5.423e+04	-5.418e+04	-2.934e+04
1	39	309	7.50	-6.64	0.43	0.43	7.07	-1.322e+04	-7.350e+04	-4.338e+04	-4.334e+04	-3.014e+04
1	39	310	7.82	-4.30	1.79	1.73	6.06	-6347.87	-6.549e+04	-3.593e+04	-3.590e+04	-2.957e+04
1	39	311	8.51	-2.92	2.78	2.81	5.72	-1157.86	-5.876e+04	-2.997e+04	-2.995e+04	-2.880e+04
1	39	312	9.29	-1.85	3.73	3.71	5.57	1117.12	-5.364e+04	-2.627e+04	-2.625e+04	-2.738e+04
1	39	313	10.12	-0.43	4.65	5.04	5.27	316.02	-4.827e+04	-2.398e+04	-2.398e+04	-2.430e+04
1	39	314	9.99	-23.06	-10.06	-3.00	16.14	-1.170e+05	-1.310e+05	-1.185e+05	-1.295e+05	4340.10
1	39	315	8.89	-18.53	-9.21	-0.42	12.99	-6.196e+04	-1.007e+05	-7.345e+04	-8.925e+04	-1.771e+04
1	39	316	7.85	-12.53	-6.11	1.43	9.46	-3.071e+04	-8.424e+04	-4.862e+04	-6.634e+04	-2.526e+04
1	39	317	8.00	-8.48	-3.46	2.98	7.59	-1.557e+04	-7.243e+04	-3.512e+04	-5.288e+04	-2.700e+04
1	39	318	8.47	-5.78	-1.57	4.26	6.50	-7344.94	-6.349e+04	-2.689e+04	-4.394e+04	-2.675e+04
1	39	319	8.89	-3.65	0.13	5.10	5.76	-2350.87	-5.650e+04	-2.147e+04	-3.738e+04	-2.588e+04
1	39	320	9.64	-1.91	1.55	6.18	5.29	955.15	-5.054e+04	-1.706e+04	-3.253e+04	-2.456e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	39	321	10.36	-0.55	2.73	7.09	5.00	295.66	-4.487e+04	-1.374e+04	-3.084e+04	-2.090e+04
1	39	322	2.41	-23.15	-20.71	-2.97e-02	7.51	-1.125e+05	-1.367e+05	-1.216e+05	-1.276e+05	1.172e+04
1	39	323	6.62	-22.90	-18.71	2.44	10.30	-7.397e+04	-9.665e+04	-7.469e+04	-9.594e+04	-3967.32
1	39	324	8.40	-15.40	-12.09	5.09	8.23	-3.691e+04	-7.627e+04	-4.243e+04	-7.076e+04	-1.366e+04
1	39	325	8.39	-10.34	-7.87	5.92	6.34	-1.782e+04	-6.260e+04	-2.573e+04	-5.469e+04	-1.708e+04
1	39	326	8.57	-6.87	-4.91	6.62	5.13	-8521.63	-5.289e+04	-1.713e+04	-4.428e+04	-1.755e+04
1	39	327	9.00	-4.29	-2.56	7.27	4.47	-3035.24	-4.537e+04	-1.182e+04	-3.658e+04	-1.717e+04
1	39	328	9.63	-2.31	-0.63	7.96	4.15	536.60	-3.937e+04	-7829.31	-3.100e+04	-1.624e+04
1	39	329	10.37	-0.68	0.95	8.74	3.91	101.83	-3.435e+04	-5038.32	-2.921e+04	-1.227e+04
1	39	330	10.46	-25.48	-23.63	8.61	7.94	-9.696e+04	-1.689e+05	-1.436e+05	-1.222e+05	3.432e+04
1	39	331	10.04	-21.59	-20.32	8.77	6.21	-6.854e+04	-9.795e+04	-7.767e+04	-8.882e+04	1.361e+04
1	39	332	9.07	-16.69	-15.74	8.12	4.86	-4.023e+04	-6.426e+04	-4.056e+04	-6.393e+04	2798.66
1	39	333	8.91	-12.01	-11.34	8.25	3.66	-1.955e+04	-4.627e+04	-1.985e+04	-4.597e+04	-2815.10
1	39	334	8.25	-7.96	-7.60	7.90	2.37	-8850.66	-3.511e+04	-9828.35	-3.413e+04	-4971.37
1	39	335	9.05	-4.79	-4.37	8.63	2.37	-3614.39	-2.769e+04	-5049.08	-2.625e+04	-5698.79
1	39	336	9.08	-2.83	-2.33	8.58	2.39	-180.64	-2.160e+04	-1832.95	-1.995e+04	-5715.28
1	39	337	9.87	-1.04	-0.56	9.39	2.24	-390.42	-1.861e+04	-1079.48	-1.792e+04	-3475.73
1	55	1	5.21	-11.65	0.53	-6.98	-7.55	5.912e+04	-9.818e+04	5.867e+04	-9.773e+04	-8359.49
1	55	2	5.31	-11.82	2.83	-9.33	-6.03	6.192e+04	-1.484e+05	6.146e+04	-1.480e+05	9766.33
1	55	3	7.15	-6.37	2.69	-1.90	-6.36	4.829e+04	-9.480e+04	4.784e+04	-9.435e+04	-8031.01
1	55	4	7.43	-7.61	2.72	-2.90	-6.98	1.090e+05	-1.030e+05	1.071e+05	-1.011e+05	-2.034e+04
1	55	5	5.00	-2.27	2.38	0.35	-3.49	6.560e+04	-4.339e+04	5.896e+04	-3.675e+04	-2.606e+04
1	55	6	8.04	-6.40	4.71	-3.07	-6.08	1.191e+05	-4.200e+04	1.055e+05	-2.839e+04	-4.481e+04
1	55	7	2.57	-2.52	2.35	-2.30	-1.04	1.175e+05	-2.515e+04	1.125e+05	-2.020e+04	-2.611e+04
1	55	8	6.21	-4.79	4.44	-3.02	-4.05	1.417e+05	-1.019e+04	1.111e+05	2.039e+04	-6.090e+04
1	55	9	-0.24	-5.63	-0.98	-4.89	-1.85	1.377e+05	2.337e+04	9.067e+04	7.042e+04	-5.627e+04
1	55	10	10.22	-6.72	9.20	-5.70	-4.03	1.971e+05	3.221e+04	1.607e+05	6.861e+04	-6.839e+04
1	55	11	2.27	-8.29	1.18	-7.20	-3.21	1.506e+05	6.897e+04	1.271e+05	9.245e+04	-3.694e+04
1	55	12	9.61	-7.52	5.68	-3.59	-7.21	1.870e+05	4.800e+04	1.453e+05	8.972e+04	-6.371e+04
1	55	13	5.96	-11.64	0.62	-6.29	-8.09	1.970e+05	6.222e+04	1.207e+05	-6.679e+04	1.207e+05
1	55	14	13.12	-8.20	5.81	-0.89	-10.12	2.096e+05	1.059e+05	1.577e+05	1.578e+05	-5.185e+04
1	55	15	14.15	-13.10	1.85	-0.80	-13.56	2.302e+05	1.167e+05	1.734e+05	1.735e+05	-5.677e+04
1	55	16	18.50	-9.28	8.06	1.16	-13.45	1.774e+05	1.113e+05	1.489e+05	1.398e+05	-3.274e+04
1	55	17	20.50	-7.76	2.36	10.38	-13.55	1.774e+05	1.113e+05	1.397e+05	1.490e+05	-3.274e+04
1	55	18	24.83	-6.72	8.26	9.85	-15.76	1.930e+05	8.802e+04	1.405e+05	1.405e+05	-5.249e+04
1	55	19	7.17	-11.47	5.45	-9.75	-5.40	-1.094e+04	-1.534e+05	-1.744e+04	-1.469e+05	2.972e+04
1	55	20	8.41	-3.58	5.75	-0.92	-4.98	1882.54	-9.679e+04	1156.39	-9.607e+04	8433.66
1	55	21	3.86	-1.25e-02	3.38	0.47	-1.27	5.970e+04	-9.316e+04	5.959e+04	-9.305e+04	-4080.85
1	55	22	1.91	-0.89	0.98	3.43e-02	-1.31	8.591e+04	-3.089e+04	8.168e+04	-2.666e+04	-2.183e+04
1	55	23	-0.17	-3.88	-0.53	-3.51	-1.11	1.428e+05	3.151e+04	1.159e+05	5.837e+04	-4.761e+04
1	55	24	2.89	-9.36	0.72	-7.19	-4.68	1.749e+05	7.195e+04	1.367e+05	1.102e+05	-4.976e+04
1	55	25	-0.87	-6.18	-2.76	-4.29	-2.55	1.600e+05	8.597e+04	1.229e+05	1.230e+05	-3.702e+04
1	55	26	6.80	-13.49	-5.19	-1.50	-9.98	1.970e+05	6.227e+04	1.207e+05	1.385e+05	-6.677e+04
1	55	27	18.00	-10.56	-1.74	9.18	-13.20	2.097e+05	1.061e+05	1.579e+05	1.579e+05	-5.180e+04
1	55	28	10.30	-11.83	9.08	-10.61	-5.05	-3.740e+04	-1.663e+05	-5.393e+04	-1.498e+05	4.311e+04
1	55	29	12.45	-4.57	11.26	-3.38	-4.34	-1.092e+04	-1.487e+05	-1.293e+04	-1.467e+05	1.650e+04
1	55	30	8.87	-2.89	6.21	-0.23	-1.91	-8102.74	-1.176e+05	-9108.07	-1.166e+05	1.045e+04
1	55	31	3.09	-0.30	1.31	1.48	-1.69	3.606e+04	-7.422e+04	3.575e+04	-7.390e+04	-5910.01
1	55	32	0.36	-2.54	-0.39	-1.79	-1.27	1.483e+05	1.367e+04	1.388e+05	2.321e+04	-3.455e+04
1	55	33	1.56	-7.21	-0.52	-5.13	-3.73	2.069e+05	6.169e+04	1.343e+05	1.343e+05	-7.259e+04
1	55	34	5.36	-12.59	-5.88	-1.35	-8.68	1.750e+05	7.201e+04	1.102e+05	1.368e+05	-4.975e+04
1	55	35	6.57	-15.46	-11.97	3.08	-8.05	1.506e+05	6.904e+04	9.247e+04	1.272e+05	-3.692e+04
1	55	36	17.17	-13.42	-7.98	11.73	-11.69	1.871e+05	4.815e+04	8.979e+04	1.454e+05	-6.365e+04
1	55	37	16.22	-21.66	16.10	-21.55	-2.07	-8.422e+04	-2.227e+05	-1.043e+05	-2.025e+05	4.881e+04
1	55	38	14.25	2.07	13.63	2.68	-2.66	-6.859e+04	-1.543e+05	-1.075e+05	-1.154e+05	4.269e+04
1	55	39	10.32	0.97	9.71	1.58	-2.31	-7.757e+04	-1.652e+05	-9.508e+04	-1.477e+05	3.505e+04
1	55	40	4.99	1.00	4.90	1.09	-0.59	-5.806e+04	-1.820e+05	-6.194e+04	-1.782e+05	2.158e+04
1	55	41	3.34e-02	-4.18e-02	-2.53e-03	-5.88e-03	3.76e-02	-1.704e+04	-3.013e+04	-2.356e+04	-2.360e+04	-6543.14
1	55	42	0.26	-6.28	-4.93	-1.10	-2.65	1.484e+05	1.377e+04	2.329e+04	1.389e+05	-3.451e+04
1	55	43	1.53	-12.97	-9.89	-1.55	-5.93	1.429e+05	3.167e+04	5.848e+04	1.160e+05	-4.756e+04
1	55	44	0.78	-17.53	-13.95	-2.80	-7.26	1.378e+05	2.356e+04	7.056e+04	9.078e+04	-5.621e+04
1	55	45	25.96	-17.97	-16.51	24.50	-7.88	1.972e+05	3.242e+04	6.874e+04	1.609e+05	-6.832e+04
1	55	46	11.35	-12.87	11.08	-12.60	2.54	-9.546e+04	-2.010e+05	-1.179e+05	-1.786e+05	4.323e+04
1	55	47	14.84	-4.31	14.74	-4.21	1.39	-1.078e+05	-1.715e+05	-1.196e+05	-1.596e+05	2.481e+04
1	55	48	14.18	-4.12	13.40	-3.34	3.70	-1.179e+05	-1.948e+05	-1.433e+05	-1.695e+05	3.616e+04
1	55	49	9.71	-4.24	8.78	-3.31	3.48	-1.122e+05	-2.292e+05	-1.707e+05	-1.708e+05	5.849e+04
1	55	50	5.39	-2.95	0.45	1.99	4.10	-5.801e+04	-1.818e+05	-1.779e+05	-6.191e+04	2.161e+04
1	55	51	7.58	-9.70	-9.56	7.44	1.52	3.622e+04	-7.399e+04	-7.368e+04	3.591e+04	-5826.46
1	55	52	5.83	-14.16	-14.15	5.82	0.26	8.606e+04	-3.068e+04	-2.646e+04	8.185e+04	-2.178e+04
1	55	53	6.39	-15.11	-14.88	6.16	-2.18	1.176e+05	-2.497e+04	-2.003e+04	1.127e+05	-2.607e+04
1	55	54	15.55	-12.36	-11.91	15.10	-3.51	1.418e+05	-9965.20	2.056e+04	1.113e+05	-6.084e+04
1	55	55	9.81	-15.49	8.90	-14.58	4.72	-1.552e+05	-2.207e+05	-1.871e+05	-1.888e+05	3.276e+04
1	55	56	13.95	-7.13	11.84	-5.01	6.33	-1.089e+05	-2.085e+05	-1.501e+05	-1.673e+05	4.906e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	55	57	8.58	-1.82	8.04	-1.28	2.30	-1.330e+05	-1.765e+05	-1.547e+05	-1.548e+05	2.173e+04
1	55	58	10.27	-6.80	4.47	-1.00	8.09	-1.179e+05	-1.948e+05	-1.693e+05	-1.434e+05	3.618e+04
1	55	59	10.87	-6.15	0.67	4.05	8.34	-7.742e+04	-1.651e+05	-1.475e+05	-9.500e+04	3.510e+04
1	55	60	10.49	-7.16	-5.78	9.11	4.73	-7958.64	-1.174e+05	-1.164e+05	-8976.24	1.051e+04
1	55	61	6.23	-8.44	-8.39	6.17	0.88	5.984e+04	-9.294e+04	-9.284e+04	5.973e+04	-4042.33
1	55	62	9.41	-12.26	-12.09	9.24	1.89	6.574e+04	-4.314e+04	-3.654e+04	5.914e+04	-2.598e+04
1	55	63	19.38	-11.88	-11.61	19.11	-2.91	1.193e+05	-4.170e+04	-2.812e+04	1.057e+05	-4.475e+04
1	55	64	10.02	-18.10	6.10	-14.18	9.74	-1.566e+05	-1.801e+05	-1.619e+05	-1.749e+05	9827.24
1	55	65	13.66	-13.12	7.99	-7.44	10.94	-1.600e+05	-2.432e+05	-2.015e+05	-2.016e+05	4.158e+04
1	55	66	12.37	-6.50	6.61	-0.74	8.69	-1.088e+05	-2.084e+05	-1.671e+05	-1.501e+05	4.908e+04
1	55	67	10.89	-6.30	0.91	3.69	8.48	-1.077e+05	-1.714e+05	-1.594e+05	-1.197e+05	2.484e+04
1	55	68	13.85	-6.95	1.13	5.77	10.14	-6.840e+04	-1.543e+05	-1.153e+05	-1.074e+05	4.276e+04
1	55	69	10.00	-6.52	-3.71	7.19	6.21	-1.080e+04	-1.485e+05	-1.465e+05	-1.282e+04	1.655e+04
1	55	70	9.39	-9.80	-8.70	8.29	4.46	2046.06	-9.659e+04	-9.585e+04	1304.86	8518.04
1	55	71	13.51	-12.20	-11.34	12.65	4.63	4.849e+04	-9.451e+04	-9.407e+04	4.805e+04	-7955.73
1	55	72	17.77	-9.92	-9.63	17.49	2.79	1.092e+05	-1.028e+05	-1.008e+05	1.072e+05	-2.030e+04
1	55	73	6.93	-19.77	-1.38	-11.46	12.37	-1.343e+05	-1.870e+05	-1.606e+05	-1.607e+05	2.633e+04
1	55	74	8.86	-15.58	0.31	-7.02	11.66	-1.566e+05	-1.801e+05	-1.747e+05	-1.620e+05	9849.45
1	55	75	13.41	-15.19	2.35	-4.13	13.93	-1.550e+05	-2.207e+05	-1.886e+05	-1.871e+05	3.282e+04
1	55	76	12.36	-12.86	-2.16	1.65	12.47	-9.533e+04	-2.010e+05	-1.784e+05	-1.179e+05	4.331e+04
1	55	77	12.91	-14.22	-8.24	6.93	11.25	-8.404e+04	-2.225e+05	-2.023e+05	-1.043e+05	4.889e+04
1	55	78	12.24	-11.58	-6.68	7.34	9.63	-3.722e+04	-1.662e+05	-1.463e+05	-5.382e+04	4.319e+04
1	55	79	14.93	-15.58	-11.66	11.01	10.22	-1.072e+04	-1.532e+05	-1.467e+05	-1.724e+04	2.979e+04
1	55	80	13.50	-10.75	-9.20	11.95	5.93	6.208e+04	-1.482e+05	-1.477e+05	6.162e+04	9811.14
1	55	81	14.27	-6.31	-4.96	12.91	5.10	5.929e+04	-9.793e+04	-9.749e+04	5.885e+04	-8286.44
1	55	82	13.42	-16.08	-9.69	7.02	12.16	-6.063e+04	-1.446e+05	-1.263e+05	-7.890e+04	3.464e+04
1	55	83	10.92	-12.71	-8.44	6.66	9.09	-3.199e+04	-1.657e+05	-1.474e+05	-5.026e+04	4.593e+04
1	55	84	9.77	-12.33	-7.11	4.55	9.39	-4.532e+04	-1.017e+05	-8.216e+04	-6.488e+04	2.685e+04
1	55	85	10.32	-12.82	-9.00	6.50	8.59	-1.905e+04	-9.941e+04	-8.495e+04	-3.351e+04	3.087e+04
1	55	86	7.48	-8.92	-6.01	4.57	6.27	-2.751e+04	-6.345e+04	-4.489e+04	-4.608e+04	1.796e+04
1	55	87	7.52	-8.01	-6.01	5.52	5.20	-6742.79	-6.664e+04	-5.217e+04	-2.121e+04	2.564e+04
1	55	88	6.48	-6.31	-4.90	5.08	4.00	-1.355e+04	-3.763e+04	-2.142e+04	-2.975e+04	1.130e+04
1	55	89	5.92	-5.42	-4.37	4.86	3.30	2193.07	-4.239e+04	-2.957e+04	-1.062e+04	2.018e+04
1	55	90	6.19	-4.64	-4.01	5.55	2.55	-4806.94	-2.157e+04	-8637.30	-1.774e+04	7037.73
1	55	91	5.17	-3.59	-3.22	4.79	1.77	8246.84	-2.503e+04	-1.476e+04	-2026.41	1.537e+04
1	55	92	5.67	-2.85	-2.60	5.42	1.42	113.49	-1.160e+04	-2184.71	-9297.83	4650.71
1	55	93	4.20	-2.75	-2.60	4.05	1.01	1.130e+04	-1.369e+04	-6432.56	4037.54	1.134e+04
1	55	94	5.16	-1.24	-1.11	5.03	0.89	1095.02	-5605.81	-336.85	-4173.95	2746.72
1	55	95	4.04	-1.33	-1.24	3.94	0.71	1.052e+04	-6957.83	-3123.37	6682.52	7232.11
1	55	96	4.42	-0.77	-0.46	4.11	1.23	-865.15	-3719.33	-909.01	-3675.48	351.07
1	55	97	3.10	-0.80	-0.61	2.91	0.83	3350.12	-1008.79	-1008.43	3349.76	-39.60
1	55	98	10.08	-7.49	-5.74	8.33	5.27	5590.39	-1.098e+05	-1.084e+05	4158.32	1.278e+04
1	55	99	9.66	-8.60	-6.94	8.01	5.24	7859.74	-8.856e+04	-8.195e+04	1250.14	2.436e+04
1	55	100	7.52	-6.38	-5.06	6.20	4.08	1.307e+04	-6.482e+04	-5.706e+04	5310.39	2.333e+04
1	55	101	5.52	-4.52	-3.59	4.59	2.92	1.667e+04	-4.590e+04	-3.839e+04	9160.47	2.033e+04
1	55	102	3.96	-3.15	-2.51	3.32	2.04	1.874e+04	-3.103e+04	-2.447e+04	1.219e+04	1.683e+04
1	55	103	2.69	-2.04	-1.64	2.28	1.32	1.878e+04	-2.017e+04	-1.512e+04	1.373e+04	1.309e+04
1	55	104	1.48	-0.90	-0.74	1.31	0.61	1.556e+04	-1.226e+04	-9303.73	1.261e+04	8570.47
1	55	105	1.75	-1.04	-0.81	1.51	0.78	3453.17	-908.48	-872.11	3416.80	-396.60
1	55	106	15.18	-10.69	-8.68	13.16	6.93	3.044e+04	-9.419e+04	-9.341e+04	2.967e+04	9803.66
1	55	107	12.03	-7.49	-5.91	10.45	5.33	2.966e+04	-7.442e+04	-7.288e+04	2.812e+04	1.256e+04
1	55	108	8.16	-5.38	-4.26	7.05	3.72	2.885e+04	-5.787e+04	-5.594e+04	2.692e+04	1.278e+04
1	55	109	5.59	-4.03	-3.06	4.62	2.89	2.746e+04	-4.438e+04	-4.229e+04	2.537e+04	1.207e+04
1	55	110	3.54	-3.24	-2.08	2.37	2.56	2.546e+04	-3.341e+04	-3.138e+04	2.343e+04	1.074e+04
1	55	111	2.46	-2.49	-1.44	1.42	2.02	2.229e+04	-2.464e+04	-2.287e+04	2.052e+04	8939.14
1	55	112	0.97	-2.37	-1.21	-0.18	1.59	1.690e+04	-1.647e+04	-1.528e+04	1.571e+04	6196.78
1	55	113	0.79	-2.09	-1.29	-1.63e-02	1.29	1666.85	-1350.37	-1324.12	1640.60	280.22
1	55	114	17.73	-9.70	-8.45	16.48	5.71	4.875e+04	-7.378e+04	-7.366e+04	4.863e+04	-3884.24
1	55	115	12.09	-6.51	-5.57	11.15	4.08	4.341e+04	-5.997e+04	-5.992e+04	4.336e+04	-2150.01
1	55	116	8.87	-5.10	-4.17	7.94	3.48	3.854e+04	-4.893e+04	-4.892e+04	3.853e+04	-997.95
1	55	117	6.27	-4.25	-3.38	5.40	2.89	3.371e+04	-3.960e+04	-3.960e+04	3.371e+04	-233.94
1	55	118	3.91	-3.66	-2.93	3.18	2.25	2.893e+04	-3.171e+04	-3.170e+04	2.893e+04	267.59
1	55	119	2.36	-3.34	-2.20	1.22	2.28	2.400e+04	-2.482e+04	-2.482e+04	2.400e+04	460.80
1	55	120	1.59	-3.62	-2.04	1.01e-02	2.40	1.685e+04	-1.748e+04	-1.748e+04	1.685e+04	345.22
1	55	121	0.50	-4.28	-2.73	-1.04	2.24	1347.31	-1762.64	-1738.27	1322.94	274.25
1	55	122	18.89	-8.67	-7.49	17.71	5.57	6.868e+04	-6.479e+04	-6.126e+04	6.516e+04	-2.141e+04
1	55	123	15.67	-7.77	-6.86	14.76	4.53	5.908e+04	-5.268e+04	-4.939e+04	5.579e+04	-1.890e+04
1	55	124	12.02	-6.07	-5.34	11.29	3.57	4.941e+04	-4.392e+04	-4.089e+04	4.638e+04	-1.654e+04
1	55	125	8.83	-5.37	-4.65	8.11	3.11	4.072e+04	-3.650e+04	-3.381e+04	3.803e+04	-1.416e+04
1	55	126	6.12	-4.71	-3.97	5.39	2.73	3.299e+04	-3.010e+04	-2.779e+04	3.068e+04	-1.185e+04
1	55	127	3.50	-4.65	-3.83	2.68	2.45	2.599e+04	-2.420e+04	-2.228e+04	2.407e+04	-9628.21
1	55	128	1.97	-4.47	-3.68	1.18	2.11	1.805e+04	-1.718e+04	-1.577e+04	1.664e+04	-6891.76
1	55	129	0.90	-5.03	-4.10	-3.48e-02	2.16	2075.98	-1323.78	-1066.44	1818.64	-899.26

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	55	130	21.97	-5.18	-5.18	21.97	0.23	8.539e+04	-4.132e+04	-3.613e+04	8.020e+04	-2.510e+04
1	55	131	21.75	-6.77	-6.62	21.59	2.12	7.652e+04	-3.674e+04	-2.515e+04	6.493e+04	-3.433e+04
1	55	132	15.51	-7.22	-7.04	15.33	2.00	6.065e+04	-3.335e+04	-2.157e+04	4.888e+04	-3.112e+04
1	55	133	11.29	-6.66	-6.43	11.06	2.00	4.731e+04	-2.956e+04	-1.875e+04	3.650e+04	-2.672e+04
1	55	134	7.90	-6.27	-5.97	7.60	2.03	3.638e+04	-2.566e+04	-1.616e+04	2.688e+04	-2.234e+04
1	55	135	5.00	-6.07	-5.68	4.60	2.06	2.740e+04	-2.153e+04	-1.354e+04	1.941e+04	-1.808e+04
1	55	136	2.53	-6.01	-5.43	1.95	2.15	1.889e+04	-1.576e+04	-9769.69	1.290e+04	-1.310e+04
1	55	137	1.09	-6.00	-5.56	0.65	1.72	3394.67	-742.21	939.51	1712.94	-2031.97
1	55	138	25.81	-10.01	-9.63	25.43	-3.67	1.475e+05	-1.419e+04	1.700e+04	1.163e+05	-6.379e+04
1	55	139	23.91	-9.98	-9.45	23.37	-4.23	9.363e+04	-1.552e+04	9366.68	6.874e+04	-4.580e+04
1	55	140	17.44	-8.24	-8.12	17.32	-1.74	6.972e+04	-1.882e+04	5218.17	4.569e+04	-3.938e+04
1	55	141	12.78	-7.60	-7.59	12.76	-0.54	5.188e+04	-1.982e+04	2215.77	2.984e+04	-3.308e+04
1	55	142	9.02	-7.50	-7.50	9.02	0.29	3.819e+04	-1.933e+04	24.64	1.884e+04	-2.718e+04
1	55	143	5.92	-7.24	-7.21	5.89	0.63	2.760e+04	-1.757e+04	-1382.48	1.141e+04	-2.166e+04
1	55	144	2.90	-7.36	-7.27	2.81	0.95	1.874e+04	-1.337e+04	-1241.16	6612.27	-1.557e+04
1	55	145	1.21	-6.99	-6.92	1.14	0.77	4856.18	-329.58	3517.33	1009.26	-2269.45
1	55	146	29.95	-17.52	-15.87	28.31	-8.67	1.345e+05	1.696e+04	5.080e+04	1.007e+05	-5.324e+04
1	55	147	22.14	-10.03	-8.47	20.58	-6.91	1.036e+05	6685.64	4.286e+04	6.738e+04	-4.686e+04
1	55	148	17.83	-8.44	-7.49	16.88	-4.90	7.439e+04	-2572.85	3.224e+04	3.958e+04	-3.830e+04
1	55	149	13.49	-8.04	-7.49	12.95	-3.38	5.326e+04	-8627.25	2.307e+04	2.156e+04	-3.093e+04
1	55	150	9.55	-7.91	-7.61	9.25	-2.27	3.773e+04	-1.187e+04	1.583e+04	1.003e+04	-2.463e+04
1	55	151	6.18	-7.95	-7.82	6.05	-1.33	2.649e+04	-1.267e+04	1.052e+04	3293.72	-1.924e+04
1	55	152	3.21	-8.07	-8.03	3.17	-0.69	1.765e+04	-1.038e+04	6994.79	274.76	-1.361e+04
1	55	153	1.28	-7.94	-7.90	1.24	-0.61	6267.43	-31.59	5934.47	301.38	-1409.42
1	55	154	28.49	-10.26	-6.79	25.02	-11.07	1.653e+05	4.782e+04	9.499e+04	1.181e+05	-5.759e+04
1	55	155	24.00	-9.85	-6.86	21.00	-9.61	1.060e+05	2.856e+04	6.989e+04	6.463e+04	-3.861e+04
1	55	156	19.01	-8.61	-6.25	16.66	-7.71	7.335e+04	1.342e+04	5.200e+04	3.477e+04	-2.870e+04
1	55	157	14.28	-8.47	-6.63	12.45	-6.19	5.090e+04	2675.70	3.767e+04	1.591e+04	-2.152e+04
1	55	158	10.09	-8.26	-6.94	8.78	-4.74	3.503e+04	-4180.54	2.654e+04	4309.42	-1.615e+04
1	55	159	6.34	-8.45	-7.50	5.39	-3.64	2.394e+04	-7488.72	1.833e+04	-1883.05	-1.203e+04
1	55	160	3.31	-8.48	-7.77	2.60	-2.80	1.583e+04	-6929.25	1.240e+04	-3505.73	-8135.65
1	55	161	1.33	-8.54	-7.98	0.78	-2.28	7572.74	174.07	7556.77	190.04	343.38
1	55	162	27.36	-1.45	2.71	23.20	-10.13	1.406e+05	6.896e+04	1.063e+05	1.032e+05	-3.579e+04
1	55	163	27.67	-6.78	-6.91e-02	20.96	-13.64	9.830e+04	4.603e+04	8.091e+04	6.342e+04	-2.463e+04
1	55	164	19.97	-8.89	-3.30	14.39	-11.40	6.626e+04	2.693e+04	5.907e+04	3.413e+04	-1.521e+04
1	55	165	14.59	-8.81	-4.46	10.24	-9.11	4.496e+04	1.267e+04	4.209e+04	1.555e+04	-9197.71
1	55	166	10.24	-8.75	-5.35	6.84	-7.28	3.047e+04	2977.26	2.936e+04	4084.81	-5405.72
1	55	167	6.53	-8.82	-6.20	3.91	-5.78	2.060e+04	-2454.68	2.017e+04	-2027.27	-3110.00
1	55	168	3.33	-8.99	-7.01	1.35	-4.53	1.386e+04	-3574.09	1.373e+04	-3446.48	-1485.97
1	55	169	1.30	-8.88	-7.23	-0.35	-3.75	8801.46	294.29	8027.60	1068.15	2446.33
1	55	170	29.59	-11.75	6.36	11.48	-20.51	1.407e+05	7.443e+04	1.122e+05	1.029e+05	-3.278e+04
1	55	171	24.89	-10.21	3.12	11.56	-17.04	8.424e+04	5.501e+04	7.664e+04	6.262e+04	-1.283e+04
1	55	172	18.39	-8.79	0.63	8.96	-12.94	5.434e+04	3.596e+04	5.333e+04	3.697e+04	-4190.07
1	55	173	13.60	-8.66	-1.22	6.15	-10.50	3.659e+04	1.984e+04	3.657e+04	1.986e+04	533.03
1	55	174	9.63	-8.68	-2.69	3.63	-8.59	2.503e+04	8236.16	2.450e+04	8773.00	2954.52
1	55	175	6.22	-8.78	-3.96	1.40	-7.01	1.717e+04	1412.02	1.618e+04	2403.44	3826.32
1	55	176	3.18	-9.00	-5.11	-0.71	-5.68	1.205e+04	-966.54	1.087e+04	217.30	3743.31
1	55	177	1.20	-8.94	-5.79	-1.95	-4.69	9675.37	334.86	7117.37	2892.86	4165.30
1	55	178	27.14	-8.85	8.58	9.70	-17.98	1.087e+05	7.195e+04	9.032e+04	9.038e+04	-1.840e+04
1	55	179	19.55	-7.64	5.48	6.43	-13.59	6.716e+04	5.472e+04	6.092e+04	6.096e+04	-6221.90
1	55	180	15.56	-8.01	3.35	4.21	-11.78	4.095e+04	3.963e+04	4.027e+04	4.031e+04	661.03
1	55	181	11.82	-8.09	1.52	2.21	-9.95	2.993e+04	2.126e+04	2.558e+04	2.561e+04	4334.93
1	55	182	8.55	-8.20	-5.83e-02	0.41	-8.37	2.142e+04	9406.99	1.541e+04	1.543e+04	6008.77
1	55	183	5.54	-8.30	-1.51	-1.24	-6.92	1.522e+04	2643.80	8926.79	8938.12	6288.65
1	55	184	2.82	-8.48	-2.85	-2.81	-5.65	1.123e+04	-16.38	5601.70	5610.37	5622.41
1	55	185	1.06	-8.38	-3.83	-3.49	-4.72	9998.88	313.37	5155.96	5156.29	4842.75
1	55	186	25.24	-10.46	8.43	6.34	-17.82	1.407e+05	7.438e+04	1.028e+05	1.123e+05	-3.280e+04
1	55	187	21.16	-8.76	8.60	3.80	-14.76	8.427e+04	5.495e+04	6.256e+04	7.666e+04	-1.285e+04
1	55	188	15.65	-7.39	6.67	1.59	-11.24	5.436e+04	3.591e+04	3.692e+04	5.335e+04	-4210.67
1	55	189	11.58	-7.27	4.52	-0.21	-9.12	3.660e+04	1.981e+04	1.983e+04	3.658e+04	514.27
1	55	190	8.16	-7.25	2.60	-1.69	-7.40	2.503e+04	8217.51	8747.41	2.450e+04	2937.35
1	55	191	5.23	-7.37	0.91	-3.05	-5.98	1.717e+04	1403.18	2386.67	1.618e+04	3812.52
1	55	192	2.67	-7.54	-0.64	-4.24	-4.78	1.204e+04	-973.94	200.93	1.087e+04	3729.82
1	55	193	1.04	-7.58	-1.95	-4.59	-4.10	9659.96	334.74	2887.01	7107.69	4157.69
1	55	194	19.89	-0.79	15.55	3.55	-8.42	1.406e+05	6.888e+04	1.031e+05	1.063e+05	-3.582e+04
1	55	195	19.72	-4.33	13.91	1.48	-10.29	9.830e+04	4.594e+04	6.335e+04	8.090e+04	-2.467e+04
1	55	196	14.34	-6.12	9.30	-1.09	-8.81	6.627e+04	2.686e+04	3.408e+04	5.905e+04	-1.525e+04
1	55	197	10.41	-6.07	6.58	-2.24	-6.96	4.497e+04	1.262e+04	1.551e+04	4.207e+04	-9232.54
1	55	198	7.24	-6.02	4.38	-3.16	-5.45	3.047e+04	2943.50	4062.21	2.935e+04	-5434.84
1	55	199	4.56	-6.09	2.49	-4.01	-4.22	2.059e+04	-2476.30	-2042.34	2.016e+04	-3134.14
1	55	200	2.32	-6.24	0.87	-4.79	-3.21	1.384e+04	-3587.97	-3457.19	1.371e+04	-1504.23
1	55	201	0.94	-6.25	-0.50	-4.81	-2.88	8775.45	293.91	1063.49	8005.87	2436.19
1	55	202	16.12	-5.18	12.87	-1.92	-7.66	1.653e+05	4.766e+04	1.180e+05	9.493e+04	-5.766e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	55	203	13.99	-5.38	10.84	-2.23	-7.15	1.059e+05	2.843e+04	6.454e+04	6.984e+04	-3.867e+04
1	55	204	11.05	-4.67	8.74	-2.36	-5.57	7.335e+04	1.332e+04	3.472e+04	5.195e+04	-2.875e+04
1	55	205	8.16	-4.57	6.47	-2.88	-4.32	5.090e+04	2606.37	1.588e+04	3.762e+04	-2.156e+04
1	55	206	5.66	-4.37	4.55	-3.25	-3.16	3.502e+04	-4224.34	4297.67	2.650e+04	-1.618e+04
1	55	207	3.43	-4.49	2.72	-3.78	-2.26	2.393e+04	-7522.61	-1888.51	1.829e+04	-1.206e+04
1	55	208	1.81	-4.53	1.32	-4.04	-1.70	1.581e+04	-6949.65	-3507.71	1.237e+04	-8154.26
1	55	209	0.81	-4.79	0.27	-4.26	-1.65	7535.57	172.72	188.00	7520.29	335.07
1	55	210	12.57	-7.33	10.53	-5.28	-6.05	1.345e+05	1.678e+04	1.006e+05	5.069e+04	-5.330e+04
1	55	211	10.14	-5.04	7.61	-2.51	-5.65	1.035e+05	6524.60	6.729e+04	4.275e+04	-4.692e+04
1	55	212	7.71	-3.72	6.20	-2.21	-3.87	7.437e+04	-2695.23	3.953e+04	3.214e+04	-3.835e+04
1	55	213	5.58	-3.19	4.69	-2.30	-2.64	5.325e+04	-8712.04	2.155e+04	2.299e+04	-3.097e+04
1	55	214	3.70	-2.91	3.22	-2.43	-1.73	3.772e+04	-1.193e+04	1.003e+04	1.576e+04	-2.466e+04
1	55	215	2.36	-2.88	2.18	-2.70	-0.95	2.647e+04	-1.271e+04	3301.52	1.046e+04	-1.926e+04
1	55	216	1.33	-3.01	1.28	-2.96	-0.44	1.763e+04	-1.042e+04	272.67	6940.69	-1.362e+04
1	55	217	0.61	-3.23	0.47	-3.09	-0.73	6222.50	-33.53	302.67	5886.31	-1410.75
1	55	218	8.13	-5.15	6.00	-3.02	-4.87	1.473e+05	-1.443e+04	1.161e+05	1.681e+04	-6.385e+04
1	55	219	8.03	-5.03	5.59	-2.60	-5.08	9.356e+04	-1.571e+04	6.864e+04	9202.79	-4.585e+04
1	55	220	5.34	-3.41	3.80	-1.87	-3.33	6.969e+04	-1.896e+04	4.565e+04	5087.02	-3.941e+04
1	55	221	3.70	-2.44	2.78	-1.52	-2.18	5.186e+04	-1.991e+04	2.984e+04	2112.45	-3.310e+04
1	55	222	2.38	-1.90	2.01	-1.53	-1.20	3.818e+04	-1.939e+04	1.884e+04	-58.31	-2.719e+04
1	55	223	1.60	-1.45	1.42	-1.26	-0.72	2.759e+04	-1.761e+04	1.142e+04	-1451.78	-2.166e+04
1	55	224	0.67	-1.30	0.65	-1.27	-0.22	1.873e+04	-1.341e+04	6621.76	-1305.08	-1.557e+04
1	55	225	0.64	-1.37	0.49	-1.22	-0.52	4812.13	-336.21	1008.36	3467.57	-2261.51
1	55	226	4.25	-5.97	1.64	-3.36	-4.45	8.522e+04	-4.156e+04	8.003e+04	-3.637e+04	-2.514e+04
1	55	227	4.64	-5.38	2.04	-2.78	-4.39	7.642e+04	-3.694e+04	6.483e+04	-2.534e+04	-3.435e+04
1	55	228	4.22	-4.18	1.80	-1.76	-3.81	6.061e+04	-3.347e+04	4.884e+04	-2.170e+04	-3.112e+04
1	55	229	3.25	-2.90	1.36	-1.01	-2.84	4.729e+04	-2.964e+04	3.650e+04	-1.885e+04	-2.672e+04
1	55	230	2.43	-1.88	0.99	-0.44	-2.03	3.638e+04	-2.572e+04	2.690e+04	-1.624e+04	-2.233e+04
1	55	231	1.76	-1.07	0.66	2.91e-02	-1.38	2.740e+04	-2.157e+04	1.943e+04	-1.360e+04	-1.808e+04
1	55	232	1.25	-0.33	0.44	0.48	-0.79	1.888e+04	-1.579e+04	1.291e+04	-9816.02	-1.309e+04
1	55	233	1.44	-0.50	0.69	0.26	-0.95	3366.39	-751.55	1708.42	906.41	-2019.54
1	55	234	7.24	-10.11	2.53	-5.40	-7.72	6.853e+04	-6.502e+04	6.499e+04	-6.148e+04	-2.145e+04
1	55	235	5.71	-8.41	1.34	-4.04	-6.53	5.899e+04	-5.283e+04	5.569e+04	-4.954e+04	-1.890e+04
1	55	236	4.58	-6.05	0.98	-2.45	-5.03	4.936e+04	-4.401e+04	4.634e+04	-4.099e+04	-1.653e+04
1	55	237	3.98	-4.44	0.84	-1.30	-4.07	4.071e+04	-3.655e+04	3.802e+04	-3.387e+04	-1.414e+04
1	55	238	3.64	-3.01	0.75	-0.12	-3.30	3.299e+04	-3.013e+04	3.068e+04	-2.782e+04	-1.184e+04
1	55	239	3.10	-2.21	0.35	0.54	-2.65	2.600e+04	-2.422e+04	2.409e+04	-2.231e+04	-9617.01
1	55	240	3.42	-1.11	1.19	1.11	-2.27	1.804e+04	-1.719e+04	1.664e+04	-1.579e+04	-6881.48
1	55	241	2.78	-0.45	1.34	0.99	-1.61	2065.18	-1332.01	1812.32	-1079.15	-891.67
1	55	242	6.58	-13.32	1.45	-8.20	-8.71	4.863e+04	-7.393e+04	4.851e+04	-7.380e+04	-3908.61
1	55	243	5.49	-9.61	1.24	-5.36	-6.79	4.333e+04	-6.005e+04	4.329e+04	-6.001e+04	-2151.93
1	55	244	5.23	-7.74	1.21	-3.72	-6.00	3.851e+04	-4.897e+04	3.850e+04	-4.896e+04	-987.56
1	55	245	4.92	-6.11	1.18	-2.37	-5.22	3.370e+04	-3.961e+04	3.370e+04	-3.961e+04	-218.67
1	55	246	4.78	-4.96	1.08	-1.26	-4.73	2.894e+04	-3.170e+04	2.894e+04	-3.169e+04	288.69
1	55	247	4.24	-2.89	1.13	0.21	-3.53	2.401e+04	-2.481e+04	2.401e+04	-2.481e+04	468.30
1	55	248	3.94	-0.91	1.92	1.11	-2.39	1.686e+04	-1.748e+04	1.685e+04	-1.748e+04	337.03
1	55	249	3.53	-0.47	2.01	1.04	-1.94	1351.61	-1757.29	1328.12	-1733.80	269.24
1	55	250	7.62	-16.16	1.20	-9.75	-10.55	3.030e+04	-9.434e+04	2.953e+04	-9.357e+04	9756.05
1	55	251	7.33	-14.12	2.32	-9.10	-9.08	2.957e+04	-7.449e+04	2.803e+04	-7.296e+04	1.254e+04
1	55	252	6.32	-10.85	2.56	-7.09	-7.10	2.880e+04	-5.789e+04	2.688e+04	-5.596e+04	1.278e+04
1	55	253	5.80	-8.20	2.60	-5.00	-5.88	2.745e+04	-4.437e+04	2.536e+04	-4.228e+04	1.207e+04
1	55	254	4.93	-5.67	2.28	-3.03	-4.59	2.547e+04	-3.338e+04	2.343e+04	-3.135e+04	1.074e+04
1	55	255	5.32	-3.55	3.21	-1.44	-3.78	2.229e+04	-2.460e+04	2.052e+04	-2.283e+04	8934.41
1	55	256	5.01	-1.92	3.23	-0.15	-3.02	1.691e+04	-1.645e+04	1.572e+04	-1.526e+04	6187.54
1	55	257	5.63	-0.63	4.16	0.84	-2.65	1674.74	-1345.70	1649.93	-1320.89	272.64
1	55	258	3.26	-18.34	2.15	-17.22	-4.79	5457.67	-1.100e+05	4037.88	-1.086e+05	1.272e+04
1	55	259	6.11	-18.76	3.69	-16.34	-7.37	7757.74	-8.862e+04	1165.07	-8.202e+04	2.433e+04
1	55	260	7.22	-13.68	5.10	-11.56	-6.31	1.301e+04	-6.482e+04	5258.37	-5.707e+04	2.331e+04
1	55	261	7.00	-10.31	5.19	-8.51	-5.28	1.664e+04	-4.587e+04	9133.88	-3.837e+04	2.032e+04
1	55	262	6.77	-7.50	5.28	-6.00	-4.37	1.873e+04	-3.099e+04	1.218e+04	-2.444e+04	1.682e+04
1	55	263	6.63	-4.92	5.44	-3.72	-3.51	1.877e+04	-2.015e+04	1.372e+04	-1.509e+04	1.308e+04
1	55	264	6.56	-2.45	5.55	-1.44	-2.85	1.555e+04	-1.224e+04	1.260e+04	-9292.11	8562.61
1	55	265	6.40	-1.01	5.66	-0.27	-2.23	3450.85	-907.44	3414.51	-871.10	-396.29
1	55	266	9.09	-21.37	8.41	-20.69	-4.50	-3.216e+04	-1.658e+05	-5.038e+04	-1.476e+05	4.585e+04
1	55	267	8.73	-18.69	8.25	-18.21	-3.60	-1.916e+04	-9.944e+04	-3.358e+04	-8.502e+04	3.082e+04
1	55	268	7.90	-14.88	7.30	-14.29	-3.64	-6811.18	-6.662e+04	-2.126e+04	-5.218e+04	2.560e+04
1	55	269	7.90	-11.51	7.28	-10.90	-3.40	2156.94	-4.236e+04	-1.065e+04	-2.955e+04	2.015e+04
1	55	270	8.35	-8.53	7.74	-7.93	-3.14	8224.02	-2.501e+04	-2051.76	-1.474e+04	1.536e+04
1	55	271	7.84	-6.07	7.42	-5.64	-2.40	1.128e+04	-1.368e+04	4018.63	-6416.93	1.134e+04
1	55	272	7.98	-2.90	7.81	-2.73	-1.34	1.049e+04	-6951.25	6654.35	-3116.11	7223.53
1	55	273	6.56	-1.19	6.40	-1.03	-1.10	3333.33	-1007.98	3333.00	-1007.65	-37.81
1	55	274	15.81	-25.08	15.73	-25.00	-1.76	-6.077e+04	-1.446e+05	-7.896e+04	-1.264e+05	3.457e+04
1	55	275	9.15	-18.45	9.09	-18.39	-1.29	-4.544e+04	-1.017e+05	-6.493e+04	-8.224e+04	2.678e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	55	276	8.36	-15.38	8.30	-15.32	-1.25	-2.758e+04	-6.343e+04	-4.610e+04	-4.491e+04	1.791e+04
1	55	277	8.37	-11.93	8.31	-11.87	-1.12	-1.358e+04	-3.761e+04	-2.977e+04	-2.142e+04	1.127e+04
1	55	278	8.46	-8.86	8.42	-8.81	-0.90	-4815.97	-2.156e+04	-1.776e+04	-8621.52	7017.20
1	55	279	8.18	-5.62	8.13	-5.57	-0.82	-111.55	-1.160e+04	-9309.04	-2175.40	4641.60
1	55	280	7.82	-2.61	7.81	-2.60	-0.26	1085.66	-5608.73	-4182.55	-340.52	2741.06
1	55	281	6.93	-1.31	6.93	-1.31	0.12	-864.54	-3726.71	-3683.08	-908.17	350.67
1	55	282	9.25	-23.78	9.07	-23.60	2.43	-9.693e+04	-1.689e+05	-1.222e+05	-1.436e+05	3.433e+04
1	55	283	9.34	-21.27	9.28	-21.20	1.43	-6.852e+04	-9.793e+04	-8.879e+04	-7.765e+04	1.361e+04
1	55	284	8.61	-16.07	8.47	-15.94	1.80	-4.021e+04	-6.424e+04	-6.391e+04	-4.054e+04	2805.45
1	55	285	8.32	-11.46	8.20	-11.34	1.53	-1.954e+04	-4.625e+04	-4.595e+04	-1.984e+04	-2803.91
1	55	286	7.54	-7.59	7.49	-7.54	0.90	-8843.38	-3.508e+04	-3.411e+04	-9816.44	-4958.38
1	55	287	8.10	-4.45	7.95	-4.29	1.38	-3612.48	-2.766e+04	-2.623e+04	-5041.66	-5685.61
1	55	288	7.98	-2.60	7.67	-2.29	1.79	-181.41	-2.158e+04	-1.993e+04	-1829.43	-5704.56
1	55	289	8.76	-0.99	8.38	-0.61	1.89	-391.51	-1.859e+04	-1.790e+04	-1079.53	-3470.97
1	55	290	3.49	-23.19	2.49	-22.19	5.07	-1.125e+05	-1.367e+05	-1.276e+05	-1.215e+05	1.172e+04
1	55	291	6.75	-22.70	4.81	-20.77	7.29	-7.396e+04	-9.664e+04	-9.592e+04	-7.468e+04	-3963.86
1	55	292	8.22	-15.16	6.54	-13.48	6.04	-3.691e+04	-7.626e+04	-7.075e+04	-4.241e+04	-1.365e+04
1	55	293	8.06	-10.13	6.71	-8.78	4.76	-1.781e+04	-6.259e+04	-5.468e+04	-2.572e+04	-1.707e+04
1	55	294	8.08	-6.69	6.91	-5.51	3.99	-8518.38	-5.287e+04	-4.426e+04	-1.712e+04	-1.754e+04
1	55	295	8.37	-4.13	7.19	-2.94	3.66	-3034.24	-4.535e+04	-3.657e+04	-1.181e+04	-1.716e+04
1	55	296	8.90	-2.19	7.57	-0.87	3.60	536.29	-3.935e+04	-3.099e+04	-7824.76	-1.623e+04
1	55	297	9.59	-0.66	8.14	0.79	3.57	101.54	-3.433e+04	-2.919e+04	-5035.90	-1.227e+04
1	55	298	9.99	-22.53	2.12	-14.67	13.92	-1.170e+05	-1.310e+05	-1.295e+05	-1.185e+05	4341.21
1	55	299	9.07	-18.10	3.18	-12.21	11.20	-6.196e+04	-1.007e+05	-8.924e+04	-7.345e+04	-1.771e+04
1	55	300	7.85	-12.46	3.55	-8.17	8.29	-3.071e+04	-8.423e+04	-6.633e+04	-4.861e+04	-2.525e+04
1	55	301	7.88	-8.44	4.29	-4.85	6.76	-1.557e+04	-7.242e+04	-5.288e+04	-3.511e+04	-2.700e+04
1	55	302	8.26	-5.73	5.03	-2.51	5.89	-7343.68	-6.348e+04	-4.394e+04	-2.689e+04	-2.674e+04
1	55	303	8.58	-3.60	5.46	-0.48	5.31	-2350.10	-5.649e+04	-3.738e+04	-2.146e+04	-2.587e+04
1	55	304	9.28	-1.86	6.21	1.20	4.98	954.99	-5.054e+04	-3.252e+04	-1.706e+04	-2.456e+04
1	55	305	9.97	-0.54	6.88	2.55	4.79	295.57	-4.487e+04	-3.083e+04	-1.374e+04	-2.090e+04
1	55	306	9.08	-21.70	0.36	-12.98	13.87	-9.255e+04	-1.158e+05	-1.042e+05	-1.042e+05	-1.165e+04
1	55	307	7.45	-14.08	0.58	-7.22	10.03	-4.807e+04	-9.710e+04	-7.255e+04	-7.262e+04	-2.451e+04
1	55	308	7.50	-9.94	1.10	-3.54	8.41	-2.487e+04	-8.354e+04	-5.418e+04	-5.423e+04	-2.934e+04
1	55	309	7.63	-6.78	1.85	-1.00	7.06	-1.322e+04	-7.350e+04	-4.334e+04	-4.338e+04	-3.014e+04
1	55	310	7.89	-4.37	2.67	0.85	6.06	-6347.87	-6.549e+04	-3.590e+04	-3.593e+04	-2.957e+04
1	55	311	8.54	-2.95	3.38	2.20	5.72	-1157.86	-5.876e+04	-2.995e+04	-2.997e+04	-2.880e+04
1	55	312	9.29	-1.86	3.99	3.45	5.57	1117.12	-5.364e+04	-2.625e+04	-2.627e+04	-2.738e+04
1	55	313	10.12	-0.44	5.10	4.59	5.27	316.02	-4.827e+04	-2.398e+04	-2.398e+04	-2.430e+04
1	55	314	11.50	-21.69	-0.48	-9.71	15.94	-1.169e+05	-1.311e+05	-1.184e+05	-1.296e+05	4364.68
1	55	315	9.01	-16.74	-2.33	-5.41	12.78	-6.194e+04	-1.007e+05	-7.337e+04	-8.930e+04	-1.769e+04
1	55	316	7.63	-10.79	-1.86	-1.30	9.20	-3.071e+04	-8.422e+04	-4.855e+04	-6.637e+04	-2.523e+04
1	55	317	7.55	-7.17	-0.97	1.35	7.27	-1.557e+04	-7.241e+04	-3.507e+04	-5.291e+04	-2.698e+04
1	55	318	7.81	-4.81	-5.03e-02	3.05	6.12	-7344.76	-6.346e+04	-2.686e+04	-4.395e+04	-2.673e+04
1	55	319	8.15	-2.98	1.02	4.15	5.34	-2355.91	-5.648e+04	-2.144e+04	-3.740e+04	-2.586e+04
1	55	320	8.57	-1.58	1.71	5.28	4.76	954.09	-5.052e+04	-1.703e+04	-3.253e+04	-2.454e+04
1	55	321	9.05	-0.46	2.81	5.78	4.52	295.63	-4.486e+04	-1.374e+04	-3.083e+04	-2.090e+04
1	55	322	2.27	-16.15	-9.12	-4.76	8.95	-1.124e+05	-1.367e+05	-1.214e+05	-1.277e+05	1.175e+04
1	55	323	6.13	-15.83	-7.46	-2.24	10.67	-7.389e+04	-9.664e+04	-7.459e+04	-9.595e+04	-3920.57
1	55	324	7.37	-10.77	-4.89	1.50	8.49	-3.689e+04	-7.624e+04	-4.236e+04	-7.077e+04	-1.362e+04
1	55	325	7.28	-7.17	-3.39	3.50	6.35	-1.781e+04	-6.257e+04	-2.568e+04	-5.470e+04	-1.704e+04
1	55	326	7.34	-4.71	-2.11	4.75	4.95	-8522.13	-5.286e+04	-1.710e+04	-4.428e+04	-1.752e+04
1	55	327	7.57	-2.91	-0.87	5.52	4.15	-3039.57	-4.534e+04	-1.180e+04	-3.658e+04	-1.714e+04
1	55	328	7.80	-1.63	5.82e-02	6.12	3.61	533.39	-3.935e+04	-7812.89	-3.100e+04	-1.622e+04
1	55	329	7.85	-0.45	1.16	6.24	3.29	101.84	-3.433e+04	-5034.56	-2.920e+04	-1.227e+04
1	55	330	9.43	-16.16	-8.54	1.81	11.70	-9.677e+04	-1.688e+05	-1.435e+05	-1.221e+05	3.441e+04
1	55	331	9.29	-13.14	-6.33	2.48	10.32	-6.840e+04	-9.795e+04	-7.757e+04	-8.878e+04	1.367e+04
1	55	332	7.23	-9.67	-5.91	3.47	7.02	-4.016e+04	-6.425e+04	-4.050e+04	-6.390e+04	2852.35
1	55	333	6.83	-6.80	-4.72	4.75	4.90	-1.953e+04	-4.624e+04	-1.982e+04	-4.595e+04	-2770.31
1	55	334	6.12	-4.36	-3.32	5.08	3.13	-8845.74	-3.508e+04	-9810.92	-3.412e+04	-4939.01
1	55	335	6.73	-2.57	-1.72	5.88	2.68	-3617.72	-2.766e+04	-5037.54	-2.624e+04	-5666.99
1	55	336	6.41	-1.67	-0.97	5.71	2.27	-186.86	-2.158e+04	-1828.18	-1.994e+04	-5694.23
1	55	337	6.51	-0.60	0.11	5.80	2.13	-389.85	-1.859e+04	-1077.65	-1.791e+04	-3471.07
1	69	1	2.98	-2.09	-1.88	2.77	1.01	5.912e+04	-9.796e+04	5.868e+04	-9.752e+04	-8319.71
1	69	2	3.83	-3.85	-3.84	3.82	0.34	6.192e+04	-1.481e+05	6.147e+04	-1.477e+05	9769.82
1	69	3	4.71	-4.87	-4.79	4.63	0.91	4.833e+04	-9.456e+04	4.789e+04	-9.412e+04	-7987.20
1	69	4	4.04	-3.07	-2.78	3.75	1.41	1.090e+05	-1.028e+05	1.070e+05	-1.008e+05	-2.029e+04
1	69	5	3.48	-4.05	-3.65	3.08	1.69	6.558e+04	-4.323e+04	5.897e+04	-3.662e+04	-2.599e+04
1	69	6	4.90	-5.06	-3.18	3.02	3.90	1.190e+05	-4.183e+04	1.054e+05	-2.825e+04	-4.472e+04
1	69	7	3.65	-3.39	-0.75	1.01	3.41	1.174e+05	-2.505e+04	1.125e+05	-2.012e+04	-2.605e+04
1	69	8	4.45	-4.18	-0.70	0.96	4.23	1.415e+05	-1.009e+04	1.110e+05	2.042e+04	-6.078e+04
1	69	9	4.41	-5.44	-0.17	-0.86	4.91	1.375e+05	2.342e+04	9.060e+04	7.036e+04	-5.616e+04
1	69	10	5.06	-4.64	1.45	-1.03	4.69	1.969e+05	3.225e+04	1.606e+05	6.856e+04	-6.826e+04
1	69	11	2.96	-4.32	1.30	-2.66	3.06	1.504e+05	6.889e+04	1.270e+05	9.230e+04	-3.688e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	69	12	4.41	-4.35	2.27	-2.21	3.77	1.868e+05	4.799e+04	1.452e+05	8.960e+04	-6.359e+04
1	69	13	4.21	-4.27	4.08	-4.15	1.01	1.967e+05	6.214e+04	1.383e+05	1.205e+05	-6.669e+04
1	69	14	5.95	-5.04	4.83	-3.92	3.32	2.093e+05	1.058e+05	1.576e+05	1.576e+05	-5.175e+04
1	69	15	5.42	-5.26	5.42	-5.26	-8.00e-02	2.299e+05	1.165e+05	1.732e+05	1.732e+05	-5.670e+04
1	69	16	4.38	-4.32	4.35	-4.28	0.54	1.772e+05	1.111e+05	1.488e+05	1.395e+05	-3.269e+04
1	69	17	4.56	-4.16	4.50	-4.10	-0.70	1.772e+05	1.111e+05	1.396e+05	1.487e+05	-3.270e+04
1	69	18	3.09	-2.77	3.09	-2.77	-8.99e-02	1.927e+05	8.788e+04	1.403e+05	1.403e+05	-5.242e+04
1	69	19	4.83	-4.26	-3.61	4.17	-2.36	-1.082e+04	-1.531e+05	-1.731e+04	-1.466e+05	2.971e+04
1	69	20	3.47	-4.15	-4.12	3.45	-0.41	1964.41	-9.658e+04	1232.54	-9.585e+04	8460.96
1	69	21	2.51	-3.14	-3.13	2.50	0.20	5.969e+04	-9.295e+04	5.959e+04	-9.284e+04	-4052.99
1	69	22	4.50	-3.54	-2.59	3.55	2.59	8.587e+04	-3.077e+04	8.166e+04	-2.655e+04	-2.177e+04
1	69	23	3.81	-4.51	-9.33e-02	-0.60	4.15	1.426e+05	3.153e+04	1.158e+05	5.831e+04	-4.752e+04
1	69	24	3.38	-5.30	2.86	-4.78	2.06	1.747e+05	7.185e+04	1.365e+05	1.100e+05	-4.969e+04
1	69	25	3.25	-3.21	3.25	-3.21	-5.79e-04	1.598e+05	8.582e+04	1.228e+05	1.228e+05	-3.697e+04
1	69	26	4.38	-4.14	4.23	-3.99	-1.12	1.967e+05	6.213e+04	1.206e+05	1.383e+05	-6.670e+04
1	69	27	5.31	-5.90	4.11	-4.70	-3.47	2.093e+05	1.058e+05	1.576e+05	1.575e+05	-5.177e+04
1	69	28	3.51	-3.78	-2.20	1.93	-3.00	-3.726e+04	-1.660e+05	-5.380e+04	-1.495e+05	4.309e+04
1	69	29	2.30	-4.00	-2.71	1.01	-2.54	-1.084e+04	-1.484e+05	-1.285e+04	-1.464e+05	1.650e+04
1	69	30	2.79	-5.01	-4.69	2.47	-1.55	-8013.93	-1.174e+05	-9023.69	-1.164e+05	1.046e+04
1	69	31	4.01	-4.51	-4.50	4.00	0.31	3.610e+04	-7.403e+04	3.579e+04	-7.372e+04	-5854.74
1	69	32	1.50	-1.87	-6.70e-02	-0.30	1.68	1.482e+05	1.367e+04	1.386e+05	2.318e+04	-3.448e+04
1	69	33	4.65	-4.62	4.65	-4.62	6.46e-03	2.066e+05	6.157e+04	1.341e+05	1.340e+05	-7.250e+04
1	69	34	5.36	-3.35	4.83	-2.82	-2.08	1.747e+05	7.184e+04	1.100e+05	1.365e+05	-4.969e+04
1	69	35	4.41	-2.93	2.75	-1.27	-3.07	1.504e+05	6.888e+04	9.232e+04	1.269e+05	-3.689e+04
1	69	36	4.60	-4.45	2.36	-2.21	-3.91	1.868e+05	4.797e+04	8.961e+04	1.451e+05	-6.361e+04
1	69	37	4.13	-4.12	-1.13	1.14	-3.96	-8.402e+04	-2.223e+05	-1.242e+05	-2.022e+05	4.878e+04
1	69	38	3.73	-4.87	-0.96	-0.18	-4.28	-6.841e+04	-1.541e+05	-1.073e+05	-1.152e+05	4.266e+04
1	69	39	3.24	-4.04	-0.68	-0.12	-3.63	-7.740e+04	-1.650e+05	-9.491e+04	-1.474e+05	3.503e+04
1	69	40	1.17	-1.59	-0.34	-7.68e-02	-1.37	-5.796e+04	-1.817e+05	-6.184e+04	-1.778e+05	2.156e+04
1	69	41	7.42e-03	-6.24e-03	3.75e-04	8.08e-04	6.83e-03	-1.705e+04	-3.012e+04	-2.356e+04	-2.360e+04	-6537.32
1	69	42	1.91	-1.48	0.35	8.04e-02	-1.69	1.481e+05	1.368e+04	2.320e+04	1.386e+05	-3.449e+04
1	69	43	4.61	-3.76	0.73	0.12	-4.18	1.426e+05	3.151e+04	5.832e+04	1.158e+05	-4.753e+04
1	69	44	5.61	-4.36	1.04	0.21	-4.97	1.375e+05	2.339e+04	7.036e+04	9.056e+04	-5.617e+04
1	69	45	4.86	-5.13	1.24	-1.51	-4.80	1.968e+05	3.222e+04	6.856e+04	1.605e+05	-6.827e+04
1	69	46	3.52	-3.61	0.66	-0.74	-3.49	-9.528e+04	-2.007e+05	-1.178e+05	-1.782e+05	4.320e+04
1	69	47	3.16	-2.94	0.92	-0.69	-2.94	-1.076e+05	-1.712e+05	-1.195e+05	-1.593e+05	2.479e+04
1	69	48	4.04	-3.03	3.32	-2.32	-2.14	-1.178e+05	-1.946e+05	-1.432e+05	-1.692e+05	3.612e+04
1	69	49	3.79	-3.91	3.79	-3.91	-3.86e-02	-1.121e+05	-2.289e+05	-1.705e+05	-1.705e+05	5.840e+04
1	69	50	1.48	-1.15	6.05e-02	0.28	1.31	-5.801e+04	-1.817e+05	-1.778e+05	-6.188e+04	2.156e+04
1	69	51	4.49	-3.93	-3.92	4.47	-0.35	3.603e+04	-7.403e+04	-7.372e+04	3.572e+04	-5870.35
1	69	52	3.62	-4.42	-3.38	2.58	-2.70	8.582e+04	-3.077e+04	-2.655e+04	8.160e+04	-2.178e+04
1	69	53	3.55	-3.60	-0.80	0.76	-3.49	1.174e+05	-2.505e+04	-2.011e+04	1.124e+05	-2.606e+04
1	69	54	4.40	-4.59	-0.75	0.56	-4.45	1.415e+05	-1.010e+04	2.043e+04	1.110e+05	-6.080e+04
1	69	55	3.82	-4.33	2.39	-2.89	-3.10	-1.549e+05	-2.204e+05	-1.868e+05	-1.885e+05	3.274e+04
1	69	56	3.01	-3.45	2.78	-3.22	-1.18	-1.087e+05	-2.082e+05	-1.499e+05	-1.670e+05	4.900e+04
1	69	57	2.29	-2.56	2.29	-2.56	-6.20e-02	-1.329e+05	-1.762e+05	-1.545e+05	-1.546e+05	2.170e+04
1	69	58	2.78	-4.13	2.20	-3.56	1.92	-1.178e+05	-1.946e+05	-1.692e+05	-1.432e+05	3.612e+04
1	69	59	3.80	-3.18	8.08e-02	0.54	3.48	-7.743e+04	-1.650e+05	-1.474e+05	-9.495e+04	3.502e+04
1	69	60	4.92	-2.74	-2.48	4.65	1.40	-8075.55	-1.174e+05	-1.164e+05	-9084.75	1.045e+04
1	69	61	3.15	-2.41	-2.40	3.14	-0.26	5.963e+04	-9.294e+04	-9.284e+04	5.952e+04	-4059.95
1	69	62	4.10	-3.41	-2.88	3.57	-1.93	6.553e+04	-4.323e+04	-3.661e+04	5.892e+04	-2.600e+04
1	69	63	5.13	-5.12	-2.94	2.95	-4.20	1.190e+05	-4.183e+04	-2.824e+04	1.054e+05	-4.472e+04
1	69	64	3.04	-2.73	2.92	-2.61	-0.82	-1.564e+05	-1.799e+05	-1.617e+05	-1.746e+05	9815.65
1	69	65	3.82	-4.18	3.81	-4.17	-0.31	-1.598e+05	-2.428e+05	-2.013e+05	-2.013e+05	4.151e+04
1	69	66	3.01	-3.29	2.89	-3.17	0.84	-1.087e+05	-2.082e+05	-1.670e+05	-1.499e+05	4.899e+04
1	69	67	2.49	-3.17	0.51	-1.18	2.70	-1.076e+05	-1.712e+05	-1.593e+05	-1.195e+05	2.479e+04
1	69	68	4.51	-3.61	0.15	0.75	4.05	-6.845e+04	-1.541e+05	-1.152e+05	-1.073e+05	4.265e+04
1	69	69	3.79	-2.25	-1.10	2.64	2.37	-1.090e+04	-1.484e+05	-1.464e+05	-1.291e+04	1.650e+04
1	69	70	4.06	-3.39	-3.38	4.05	0.16	1907.85	-9.658e+04	-9.585e+04	1176.40	8456.15
1	69	71	4.73	-4.72	-4.52	4.53	-1.36	4.826e+04	-9.456e+04	-9.411e+04	4.781e+04	-7987.98
1	69	72	2.91	-4.24	-3.70	2.36	-1.89	1.089e+05	-1.028e+05	-1.008e+05	1.070e+05	-2.029e+04
1	69	73	1.68	-1.93	1.62	-1.87	-0.46	-1.342e+05	-1.868e+05	-1.605e+05	-1.605e+05	2.629e+04
1	69	74	2.32	-3.28	2.32	-3.28	4.29e-02	-1.564e+05	-1.799e+05	-1.746e+05	-1.617e+05	9814.85
1	69	75	3.44	-3.60	2.52	-2.68	2.38	-1.549e+05	-2.204e+05	-1.885e+05	-1.869e+05	3.274e+04
1	69	76	2.86	-3.31	0.44	-0.89	3.01	-9.530e+04	-2.007e+05	-1.782e+05	-1.178e+05	4.320e+04
1	69	77	3.43	-4.06	-1.50	0.88	3.55	-8.406e+04	-2.223e+05	-2.022e+05	-1.042e+05	4.878e+04
1	69	78	3.11	-3.33	-2.09	1.88	2.54	-3.731e+04	-1.660e+05	-1.495e+05	-5.385e+04	4.308e+04
1	69	79	3.65	-4.63	-4.22	3.25	1.80	-1.088e+04	-1.531e+05	-1.466e+05	-1.738e+04	2.971e+04
1	69	80	3.56	-4.12	-4.01	3.46	-0.88	6.185e+04	-1.481e+05	-1.477e+05	6.140e+04	9778.37
1	69	81	1.93	-3.56	-3.03	1.40	-1.63	5.908e+04	-9.794e+04	-9.750e+04	5.863e+04	-8311.46
1	69	82	2.88	-3.83	-1.74	0.79	3.11	-6.066e+04	-1.444e+05	-1.262e+05	-7.887e+04	3.455e+04
1	69	83	1.94	-3.74	-2.93	1.13	1.99	-3.208e+04	-1.656e+05	-1.473e+05	-5.030e+04	4.582e+04
1	69	84	1.62	-2.62	-1.34	0.34	1.95	-4.536e+04	-1.016e+05	-8.212e+04	-6.486e+04	2.677e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	69	85	1.68	-3.59	-3.01	1.10	1.65	-1.912e+04	-9.933e+04	-8.490e+04	-3.354e+04	3.080e+04
1	69	86	0.98	-1.87	-1.17	0.28	1.23	-2.755e+04	-6.338e+04	-4.487e+04	-4.606e+04	1.790e+04
1	69	87	1.09	-2.27	-2.08	0.91	0.77	-6806.28	-6.657e+04	-5.214e+04	-2.124e+04	2.558e+04
1	69	88	0.56	-1.28	-1.02	0.30	0.64	-1.358e+04	-3.758e+04	-2.142e+04	-2.975e+04	1.125e+04
1	69	89	0.83	-1.49	-1.45	0.79	0.31	2139.64	-4.234e+04	-2.955e+04	-1.065e+04	2.013e+04
1	69	90	0.46	-1.07	-1.00	0.39	0.31	-4836.72	-2.154e+04	-8639.75	-1.774e+04	7003.82
1	69	91	1.20	-1.05	-1.04	1.18	-0.18	8201.51	-2.501e+04	-1.475e+04	-2060.54	1.535e+04
1	69	92	0.25	-0.55	-0.55	0.25	-3.04e-02	94.90	-1.158e+04	-2186.60	-9300.28	4629.80
1	69	93	0.85	-1.18	-1.18	0.85	-4.49e-02	1.126e+04	-1.367e+04	-6420.82	4013.98	1.132e+04
1	69	94	0.22	-0.17	-5.36e-02	9.84e-02	0.18	1084.28	-5597.05	-334.12	-4178.65	2732.21
1	69	95	1.45	-0.64	-0.54	1.35	0.43	1.048e+04	-6945.53	-3117.35	6653.46	7215.23
1	69	96	-2.80e-02	-0.19	-0.11	-0.11	8.29e-02	-865.25	-3723.33	-908.87	-3679.71	350.36
1	69	97	0.46	-0.15	-0.14	0.44	0.10	3335.06	-1007.96	-1007.62	3334.71	-38.52
1	69	98	1.31	-3.46	-3.44	1.30	0.26	5465.86	-1.098e+05	-1.084e+05	4040.84	1.274e+04
1	69	99	1.38	-3.50	-3.49	1.38	0.14	7757.32	-8.850e+04	-8.191e+04	1162.22	2.432e+04
1	69	100	1.13	-2.34	-2.33	1.12	-0.14	1.299e+04	-6.477e+04	-5.702e+04	5239.77	2.329e+04
1	69	101	0.89	-1.62	-1.60	0.86	-0.26	1.660e+04	-4.586e+04	-3.836e+04	9103.26	2.030e+04
1	69	102	0.78	-1.13	-1.10	0.74	-0.25	1.869e+04	-3.100e+04	-2.445e+04	1.214e+04	1.681e+04
1	69	103	0.80	-0.76	-0.74	0.78	-0.17	1.874e+04	-2.015e+04	-1.510e+04	1.369e+04	1.307e+04
1	69	104	0.82	-0.36	-0.34	0.80	-0.15	1.553e+04	-1.224e+04	-9289.82	1.258e+04	8560.91
1	69	105	0.90	-0.14	-9.76e-02	0.86	-0.20	3438.78	-908.46	-872.64	3402.96	-392.99
1	69	106	2.51	-3.95	-3.81	2.37	-0.94	3.029e+04	-9.416e+04	-9.339e+04	2.951e+04	9771.06
1	69	107	1.94	-3.07	-2.89	1.76	-0.93	2.954e+04	-7.439e+04	-7.285e+04	2.800e+04	1.254e+04
1	69	108	1.28	-2.31	-2.05	1.02	-0.92	2.876e+04	-5.784e+04	-5.591e+04	2.683e+04	1.277e+04
1	69	109	0.87	-1.66	-1.31	0.51	-0.88	2.740e+04	-4.435e+04	-4.226e+04	2.531e+04	1.207e+04
1	69	110	0.14	-0.93	-0.65	-0.14	-0.47	2.542e+04	-3.338e+04	-3.135e+04	2.339e+04	1.074e+04
1	69	111	0.72	-0.46	-0.33	0.59	-0.38	2.225e+04	-2.462e+04	-2.285e+04	2.048e+04	8938.52
1	69	112	0.45	-0.46	-0.41	0.41	-0.19	1.688e+04	-1.645e+04	-1.526e+04	1.568e+04	6194.55
1	69	113	1.00	-9.87e-02	8.96e-02	0.81	-0.41	1656.48	-1354.04	-1326.70	1629.14	285.60
1	69	114	2.82	-4.52	-3.99	2.29	-1.90	4.859e+04	-7.377e+04	-7.365e+04	4.847e+04	-3884.52
1	69	115	1.91	-3.04	-2.50	1.36	-1.55	4.329e+04	-5.995e+04	-5.991e+04	4.324e+04	-2141.84
1	69	116	1.50	-2.30	-1.62	0.82	-1.46	3.846e+04	-4.891e+04	-4.890e+04	3.844e+04	-985.11
1	69	117	1.29	-1.87	-1.02	0.44	-1.40	3.365e+04	-3.958e+04	-3.958e+04	3.365e+04	-218.03
1	69	118	1.32	-1.85	-0.68	0.15	-1.53	2.888e+04	-3.168e+04	-3.168e+04	2.888e+04	288.72
1	69	119	0.96	-0.93	1.90e-02	1.20e-02	-0.94	2.397e+04	-2.481e+04	-2.480e+04	2.396e+04	476.90
1	69	120	0.81	-4.26e-02	0.10	0.67	-0.32	1.682e+04	-1.748e+04	-1.747e+04	1.682e+04	354.52
1	69	121	0.38	-0.12	1.71e-02	0.24	-0.22	1339.11	-1773.24	-1747.02	1312.90	284.44
1	69	122	3.37	-4.87	-3.55	2.04	-3.03	6.849e+04	-6.482e+04	-6.129e+04	6.497e+04	-2.140e+04
1	69	123	2.38	-3.77	-2.43	1.04	-2.54	5.894e+04	-5.269e+04	-4.940e+04	5.565e+04	-1.887e+04
1	69	124	1.78	-2.50	-1.36	0.63	-1.90	4.930e+04	-4.392e+04	-4.090e+04	4.628e+04	-1.651e+04
1	69	125	1.49	-1.77	-0.70	0.42	-1.53	4.065e+04	-3.649e+04	-3.381e+04	3.796e+04	-1.413e+04
1	69	126	1.53	-1.17	4.50e-02	0.32	-1.34	3.293e+04	-3.009e+04	-2.779e+04	3.063e+04	-1.182e+04
1	69	127	1.26	-1.12	0.17	-3.69e-02	-1.19	2.595e+04	-2.419e+04	-2.227e+04	2.404e+04	-9603.27
1	69	128	1.88	-0.64	0.35	0.89	-1.23	1.801e+04	-1.717e+04	-1.577e+04	1.661e+04	-6865.99
1	69	129	1.20	-8.05e-02	0.57	0.55	-0.64	2058.41	-1332.74	-1082.37	1808.04	-886.77
1	69	130	1.41	-3.39	-1.83	-0.16	-2.25	8.518e+04	-4.138e+04	-3.619e+04	7.999e+04	-2.508e+04
1	69	131	2.23	-3.48	-1.48	0.23	-2.72	7.636e+04	-3.678e+04	-2.520e+04	6.478e+04	-3.430e+04
1	69	132	1.88	-2.45	-0.71	0.14	-2.12	6.054e+04	-3.336e+04	-2.160e+04	4.878e+04	-3.108e+04
1	69	133	1.50	-1.68	-0.23	4.91e-02	-1.58	4.723e+04	-2.956e+04	-1.877e+04	3.644e+04	-2.668e+04
1	69	134	1.31	-1.11	0.15	4.44e-02	-1.21	3.633e+04	-2.565e+04	-1.618e+04	2.685e+04	-2.230e+04
1	69	135	1.24	-0.70	0.45	8.02e-02	-0.95	2.736e+04	-2.152e+04	-1.355e+04	1.939e+04	-1.805e+04
1	69	136	1.25	-0.26	0.77	0.21	-0.71	1.886e+04	-1.575e+04	-9776.74	1.289e+04	-1.308e+04
1	69	137	1.36	-0.11	0.96	0.30	-0.66	3377.31	-745.84	923.23	1708.24	-2023.86
1	69	138	3.60	-4.36	-0.22	-0.54	-3.98	1.472e+05	-1.431e+04	1.687e+04	1.160e+05	-6.374e+04
1	69	139	3.47	-3.57	-0.15	4.95e-02	-3.52	9.346e+04	-1.560e+04	9274.74	6.859e+04	-4.576e+04
1	69	140	2.13	-2.47	1.85e-02	-0.37	-2.29	6.961e+04	-1.886e+04	5151.48	4.560e+04	-3.934e+04
1	69	141	1.50	-1.66	0.28	-0.44	-1.54	5.180e+04	-1.984e+04	2169.32	2.980e+04	-3.305e+04
1	69	142	0.89	-0.96	0.26	-0.33	-0.88	3.815e+04	-1.933e+04	-2.71	1.882e+04	-2.715e+04
1	69	143	1.13	-0.54	0.64	-4.46e-02	-0.76	2.756e+04	-1.756e+04	-1405.27	1.141e+04	-2.163e+04
1	69	144	0.95	-0.34	0.67	-6.03e-02	-0.53	1.872e+04	-1.337e+04	-1258.21	6611.35	-1.555e+04
1	69	145	1.20	-8.94e-02	1.02	9.16e-02	-0.45	4837.44	-332.33	3498.09	1007.02	-2265.01
1	69	146	4.73	-5.25	1.27	-1.78	-4.75	1.343e+05	1.683e+04	5.066e+04	1.005e+05	-5.320e+04
1	69	147	3.36	-3.85	0.83	-1.32	-3.44	1.034e+05	6585.44	4.274e+04	6.723e+04	-4.683e+04
1	69	148	2.40	-2.72	0.83	-1.15	-2.36	7.428e+04	-2633.28	3.215e+04	3.950e+04	-3.828e+04
1	69	149	1.75	-1.84	0.90	-0.99	-1.53	5.319e+04	-8656.28	2.300e+04	2.153e+04	-3.091e+04
1	69	150	1.42	-1.35	1.02	-0.95	-0.97	3.769e+04	-1.188e+04	1.578e+04	1.003e+04	-2.462e+04
1	69	151	1.09	-0.66	0.93	-0.50	-0.50	2.646e+04	-1.267e+04	1.049e+04	3300.78	-1.923e+04
1	69	152	0.94	-0.12	0.84	-2.77e-02	-0.30	1.763e+04	-1.039e+04	6969.74	267.55	-1.360e+04
1	69	153	0.79	-9.81e-02	0.74	-4.42e-02	-0.21	6246.50	-31.64	5912.54	302.32	-1408.94
1	69	154	3.64	-4.53	1.72	-2.60	-3.47	1.650e+05	4.764e+04	9.482e+04	1.179e+05	-5.756e+04
1	69	155	3.33	-4.48	1.75	-2.91	-3.13	1.058e+05	2.844e+04	6.976e+04	6.449e+04	-3.860e+04
1	69	156	2.38	-2.72	1.56	-1.90	-1.88	7.325e+04	1.334e+04	5.191e+04	3.469e+04	-2.869e+04
1	69	157	1.80	-1.76	1.35	-1.31	-1.19	5.084e+04	2633.92	3.760e+04	1.588e+04	-2.152e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	69	158	1.50	-1.04	1.33	-0.88	-0.63	3.499e+04	-4198.31	2.649e+04	4300.11	-1.615e+04
1	69	159	1.19	-0.78	1.14	-0.73	-0.30	2.392e+04	-7497.32	1.830e+04	-1879.52	-1.204e+04
1	69	160	1.34	-0.38	1.29	-0.33	-0.29	1.580e+04	-6928.70	1.237e+04	-3500.99	-8134.02
1	69	161	0.96	-5.74e-02	0.96	-5.35e-02	-6.30e-02	7549.10	172.65	7533.40	188.34	339.86
1	69	162	2.79	-3.09	2.38	-2.68	-1.50	1.404e+05	6.880e+04	1.062e+05	1.030e+05	-3.576e+04
1	69	163	2.83	-3.42	2.40	-2.99	-1.58	9.817e+04	4.590e+04	8.079e+04	6.328e+04	-2.463e+04
1	69	164	2.21	-2.32	1.93	-2.04	-1.09	6.619e+04	2.685e+04	5.898e+04	3.405e+04	-1.522e+04
1	69	165	1.69	-1.53	1.54	-1.38	-0.67	4.492e+04	1.262e+04	4.203e+04	1.551e+04	-9212.71
1	69	166	1.33	-0.95	1.27	-0.90	-0.35	3.044e+04	2952.64	2.932e+04	4067.22	-5421.49
1	69	167	1.08	-0.54	1.07	-0.54	-0.11	2.058e+04	-2464.61	2.015e+04	-2032.95	-3124.33
1	69	168	0.94	-0.16	0.93	-0.16	8.92e-02	1.384e+04	-3580.09	1.371e+04	-3450.65	-1496.12
1	69	169	1.00	-4.02e-02	0.98	-1.24e-02	0.17	8780.37	293.29	8009.44	1064.23	2438.98
1	69	170	4.18	-4.05	4.01	-3.88	-1.17	1.405e+05	7.428e+04	1.121e+05	1.027e+05	-3.276e+04
1	69	171	3.24	-2.86	3.11	-2.73	-0.87	8.415e+04	5.488e+04	7.655e+04	6.248e+04	-1.283e+04
1	69	172	2.15	-1.97	2.10	-1.91	-0.48	5.429e+04	3.587e+04	5.327e+04	3.689e+04	-4206.61
1	69	173	1.56	-1.29	1.54	-1.27	-0.23	3.655e+04	1.979e+04	3.654e+04	1.981e+04	511.43
1	69	174	1.16	-0.78	1.16	-0.78	-7.05e-02	2.501e+04	8213.97	2.448e+04	8743.03	2933.36
1	69	175	0.91	-0.44	0.91	-0.43	8.35e-02	1.715e+04	1411.09	1.616e+04	2393.07	3806.30
1	69	176	0.72	-0.11	0.65	-3.95e-02	0.23	1.203e+04	-971.65	1.086e+04	199.76	3723.22
1	69	177	0.78	-1.99e-02	0.70	5.46e-02	0.23	9650.86	333.56	7101.09	2883.33	4153.99
1	69	178	4.39	-4.06	4.39	-4.06	-7.86e-02	1.086e+05	7.184e+04	9.023e+04	9.020e+04	-1.838e+04
1	69	179	2.89	-2.55	2.89	-2.55	-2.32e-04	6.708e+04	5.463e+04	6.087e+04	6.084e+04	-6224.40
1	69	180	2.03	-1.69	2.03	-1.69	6.53e-02	4.088e+04	3.959e+04	4.025e+04	4.022e+04	648.65
1	69	181	1.47	-1.14	1.47	-1.13	0.14	2.988e+04	2.125e+04	2.557e+04	2.555e+04	4316.20
1	69	182	1.07	-0.75	1.04	-0.72	0.23	2.138e+04	9423.31	1.541e+04	1.539e+04	5980.10
1	69	183	0.78	-0.40	0.74	-0.36	0.20	1.519e+04	2654.92	8930.41	8917.16	6268.87
1	69	184	0.54	-5.26e-02	0.50	-1.50e-02	0.14	1.120e+04	-24.28	5595.87	5584.83	5614.63
1	69	185	0.47	-5.37e-02	0.40	9.90e-03	0.17	9979.23	314.60	5147.19	5146.64	4832.31
1	69	186	4.29	-3.81	4.17	-3.70	0.96	1.405e+05	7.429e+04	1.027e+05	1.121e+05	-3.276e+04
1	69	187	3.15	-2.90	3.04	-2.79	0.80	8.413e+04	5.490e+04	6.251e+04	6.252e+04	-1.283e+04
1	69	188	2.30	-1.83	2.23	-1.75	0.56	5.427e+04	3.589e+04	3.691e+04	5.325e+04	-4204.32
1	69	189	1.66	-1.23	1.59	-1.17	0.43	3.653e+04	1.981e+04	1.983e+04	3.651e+04	513.17
1	69	190	1.17	-0.81	1.12	-0.76	0.31	2.499e+04	8226.26	8757.00	2.446e+04	2935.11
1	69	191	0.76	-0.40	0.70	-0.35	0.25	1.713e+04	1418.75	2402.89	1.614e+04	3806.83
1	69	192	0.47	-0.15	0.41	-8.13e-02	0.19	1.202e+04	-964.72	209.68	1.085e+04	3724.39
1	69	193	0.43	-4.06e-02	0.32	6.72e-02	0.20	9642.86	333.78	2882.00	7094.65	4150.68
1	69	194	3.35	-2.46	2.99	-2.10	1.41	1.404e+05	6.881e+04	1.030e+05	1.062e+05	-3.576e+04
1	69	195	3.68	-2.49	3.27	-2.09	1.53	9.816e+04	4.591e+04	6.331e+04	8.076e+04	-2.462e+04
1	69	196	2.60	-1.88	2.28	-1.56	1.15	6.617e+04	2.686e+04	3.471e+04	5.886e+04	-1.521e+04
1	69	197	1.83	-1.30	1.59	-1.06	0.83	4.489e+04	1.263e+04	1.552e+04	4.200e+04	-9210.52
1	69	198	1.25	-0.83	1.06	-0.65	0.59	3.041e+04	2961.29	4076.87	2.930e+04	-5420.13
1	69	199	0.76	-0.46	0.63	-0.33	0.38	2.055e+04	-2457.98	-2025.85	2.012e+04	-3123.69
1	69	200	0.41	-0.13	0.34	-5.54e-02	0.19	1.382e+04	-3575.64	-3445.81	1.369e+04	-1497.07
1	69	201	0.34	-4.76e-02	0.22	6.87e-02	0.18	8761.22	293.61	1062.31	7992.52	2432.74
1	69	202	4.58	-3.32	2.73	-1.47	3.35	1.651e+05	4.766e+04	1.179e+05	9.480e+04	-5.755e+04
1	69	203	4.56	-3.02	2.98	-1.44	3.07	1.058e+05	2.844e+04	6.451e+04	6.974e+04	-3.859e+04
1	69	204	2.85	-2.07	1.93	-1.16	1.92	7.324e+04	1.334e+04	3.471e+04	5.886e+04	-2.869e+04
1	69	205	1.95	-1.45	1.31	-0.80	1.33	5.082e+04	2632.01	1.588e+04	3.757e+04	-2.152e+04
1	69	206	1.43	-0.93	0.87	-0.37	1.00	3.497e+04	-4202.26	4305.84	2.646e+04	-1.615e+04
1	69	207	0.71	-0.66	0.32	-0.26	0.62	2.389e+04	-7499.41	-1875.14	1.827e+04	-1.204e+04
1	69	208	0.20	0.11	0.16	0.15	4.72e-02	1.577e+04	-6932.32	-3498.75	1.234e+04	-8134.42
1	69	209	0.19	-0.18	0.16	-0.14	0.11	7520.59	172.74	188.02	7505.32	334.69
1	69	210	5.14	-4.46	1.67	-0.99	4.61	1.343e+05	1.683e+04	1.005e+05	5.064e+04	-5.319e+04
1	69	211	3.80	-3.14	1.18	-0.52	3.36	1.034e+05	6571.40	6.725e+04	4.271e+04	-4.683e+04
1	69	212	2.75	-2.24	0.91	-0.41	2.41	7.427e+04	-2650.49	3.951e+04	3.211e+04	-3.828e+04
1	69	213	1.89	-1.62	0.59	-0.32	1.69	5.318e+04	-8671.42	2.154e+04	2.297e+04	-3.092e+04
1	69	214	1.18	-1.19	0.20	-0.20	1.17	3.767e+04	-1.189e+04	1.004e+04	1.574e+04	-2.462e+04
1	69	215	0.83	-0.88	0.23	-0.27	0.82	2.644e+04	-1.269e+04	3303.56	1.045e+04	-1.923e+04
1	69	216	0.45	-0.48	0.33	-0.36	0.32	1.761e+04	-1.040e+04	270.54	6932.37	-1.360e+04
1	69	217	0.15	-0.48	8.60e-02	-0.42	0.19	6214.93	-32.97	302.94	5879.03	-1409.21
1	69	218	4.10	-3.46	0.24	0.40	3.78	1.472e+05	-1.433e+04	1.160e+05	1.684e+04	-6.373e+04
1	69	219	3.42	-3.42	-0.43	0.43	3.39	9.345e+04	-1.564e+04	6.859e+04	9229.28	-4.576e+04
1	69	220	2.46	-2.17	-7.07e-02	0.36	2.30	6.961e+04	-1.889e+04	4.562e+04	5108.55	-3.934e+04
1	69	221	1.80	-1.71	-2.39e-02	0.12	1.75	5.180e+04	-1.986e+04	2.981e+04	2130.49	-3.305e+04
1	69	222	1.32	-1.60	5.15e-02	-0.32	1.45	3.814e+04	-1.935e+04	1.883e+04	-38.33	-2.715e+04
1	69	223	0.81	-0.82	0.24	-0.25	0.78	2.755e+04	-1.758e+04	1.141e+04	-1441.95	-2.163e+04
1	69	224	0.23	-0.63	7.19e-02	-0.48	0.33	1.870e+04	-1.338e+04	6613.84	-1291.18	-1.555e+04
1	69	225	0.16	-0.25	4.45e-02	-0.13	0.18	4810.48	-334.90	1007.10	3468.47	-2259.24
1	69	226	3.01	-1.57	-0.41	1.85	1.99	8.517e+04	-4.144e+04	7.999e+04	-3.625e+04	-2.508e+04
1	69	227	3.12	-2.36	-0.87	1.63	2.44	7.636e+04	-3.683e+04	6.478e+04	-2.526e+04	-3.430e+04
1	69	228	2.23	-1.90	-0.64	0.96	1.91	6.055e+04	-3.339e+04	4.880e+04	-2.164e+04	-3.108e+04
1	69	229	1.57	-1.47	-0.42	0.52	1.45	4.724e+04	-2.958e+04	3.646e+04	-1.880e+04	-2.668e+04
1	69	230	1.04	-1.10	-0.26	0.20	1.05	3.633e+04	-2.567e+04	2.687e+04	-1.620e+04	-2.230e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	69	231	0.58	-0.77	-0.15	-4.32e-02	0.67	2.736e+04	-2.153e+04	1.940e+04	-1.357e+04	-1.805e+04
1	69	232	0.30	-0.48	1.14e-02	-0.18	0.38	1.886e+04	-1.576e+04	1.289e+04	-9798.46	-1.307e+04
1	69	233	0.13	-0.27	-2.60e-02	-0.11	0.20	3364.71	-749.39	1706.85	908.47	-2017.95
1	69	234	4.34	-3.39	-2.56	3.51	2.39	6.850e+04	-6.486e+04	6.497e+04	-6.133e+04	-2.140e+04
1	69	235	3.26	-2.40	-1.64	2.50	1.92	5.895e+04	-5.272e+04	5.566e+04	-4.943e+04	-1.887e+04
1	69	236	2.02	-1.75	-1.18	1.46	1.35	4.932e+04	-4.393e+04	4.630e+04	-4.091e+04	-1.650e+04
1	69	237	1.33	-1.32	-0.87	0.88	1.00	4.067e+04	-3.649e+04	3.799e+04	-3.381e+04	-1.413e+04
1	69	238	1.00	-0.92	-0.66	0.74	0.65	3.295e+04	-3.009e+04	3.065e+04	-2.779e+04	-1.182e+04
1	69	239	0.25	-0.94	-0.81	0.11	0.38	2.597e+04	-2.418e+04	2.406e+04	-2.227e+04	-9608.58
1	69	240	0.27	-0.32	0.27	-0.31	-3.12e-02	1.802e+04	-1.717e+04	1.662e+04	-1.577e+04	-6872.76
1	69	241	0.14	-0.60	-0.14	-0.32	0.36	2064.03	-1329.14	1811.09	-1076.20	-891.24
1	69	242	4.12	-3.24	-3.06	3.95	1.12	4.862e+04	-7.378e+04	4.850e+04	-7.365e+04	-3896.14
1	69	243	2.63	-2.22	-2.09	2.50	0.78	4.332e+04	-5.994e+04	4.327e+04	-5.990e+04	-2149.30
1	69	244	1.76	-1.72	-1.61	1.65	0.61	3.848e+04	-4.889e+04	3.847e+04	-4.888e+04	-990.70
1	69	245	1.13	-1.48	-1.42	1.07	0.39	3.368e+04	-3.955e+04	3.367e+04	-3.955e+04	-225.77
1	69	246	0.50	-1.35	-1.35	0.49	2.04e-02	2.891e+04	-3.166e+04	2.891e+04	-3.165e+04	275.65
1	69	247	0.50	-1.34	-1.26	0.42	0.38	2.399e+04	-2.478e+04	2.399e+04	-2.478e+04	459.70
1	69	248	0.50	-1.12	-0.43	-0.19	0.80	1.684e+04	-1.745e+04	1.684e+04	-1.745e+04	334.67
1	69	249	4.01e-02	-1.52	-0.85	-0.63	0.77	1353.51	-1752.46	1330.70	-1729.65	265.18
1	69	250	3.71	-3.09	-3.09	3.71	4.59e-02	3.033e+04	-9.415e+04	2.956e+04	-9.338e+04	9758.11
1	69	251	2.80	-2.56	-2.56	2.80	9.19e-03	2.958e+04	-7.436e+04	2.804e+04	-7.283e+04	1.253e+04
1	69	252	2.07	-1.96	-1.96	2.07	3.13e-02	2.880e+04	-5.780e+04	2.688e+04	-5.587e+04	1.276e+04
1	69	253	1.52	-1.85	-1.84	1.52	8.26e-02	2.744e+04	-4.431e+04	2.535e+04	-4.222e+04	1.205e+04
1	69	254	1.22	-2.18	-2.11	1.15	0.47	2.545e+04	-3.333e+04	2.343e+04	-3.131e+04	1.072e+04
1	69	255	0.77	-1.25	-1.10	0.62	0.54	2.227e+04	-2.458e+04	2.051e+04	-2.281e+04	8917.08
1	69	256	0.15	-1.48	-1.06	-0.26	0.71	1.689e+04	-1.642e+04	1.571e+04	-1.523e+04	6169.39
1	69	257	7.50e-02	-0.91	-0.64	-0.19	0.44	1681.12	-1337.93	1657.50	-1314.31	266.02
1	69	258	3.08	-2.02	-1.87	2.93	-0.86	5522.55	-1.098e+05	4101.04	-1.083e+05	1.272e+04
1	69	259	3.35	-2.26	-2.09	3.18	-0.95	7803.64	-8.847e+04	1216.45	-8.188e+04	2.431e+04
1	69	260	2.33	-2.02	-1.91	2.23	-0.67	1.303e+04	-6.472e+04	5291.26	-5.698e+04	2.328e+04
1	69	261	1.64	-1.72	-1.67	1.59	-0.43	1.664e+04	-4.581e+04	9152.00	-3.831e+04	2.029e+04
1	69	262	1.05	-1.43	-1.42	1.04	-0.17	1.873e+04	-3.095e+04	1.219e+04	-2.441e+04	1.680e+04
1	69	263	0.53	-1.13	-1.12	0.53	0.11	1.876e+04	-2.012e+04	1.372e+04	-1.508e+04	1.306e+04
1	69	264	0.24	-0.98	-0.90	0.16	0.30	1.554e+04	-1.223e+04	1.260e+04	-9281.73	8550.21
1	69	265	7.56e-02	-0.89	-0.78	-3.30e-02	0.30	3457.37	-905.24	3420.46	-868.33	-399.55
1	69	266	3.76	-2.86	-1.54	2.44	-2.64	-3.204e+04	-1.655e+05	-5.025e+04	-1.473e+05	4.582e+04
1	69	267	3.79	-2.75	-1.65	2.69	-2.45	-1.908e+04	-9.929e+04	-3.349e+04	-8.488e+04	3.079e+04
1	69	268	2.41	-2.15	-1.56	1.82	-1.54	-6762.72	-6.653e+04	-2.119e+04	-5.209e+04	2.558e+04
1	69	269	1.70	-1.76	-1.36	1.29	-1.11	2180.27	-4.230e+04	-1.061e+04	-2.951e+04	2.013e+04
1	69	270	1.35	-1.25	-0.74	0.84	-1.03	8231.25	-2.499e+04	-2031.17	-1.472e+04	1.535e+04
1	69	271	0.18	-1.11	-0.93	-1.02e-02	-0.45	1.128e+04	-1.366e+04	4032.07	-6414.60	1.132e+04
1	69	272	0.27	-0.56	-0.31	1.44e-02	0.38	1.049e+04	-6946.31	6662.43	-3117.56	7218.34
1	69	273	8.22e-02	-1.18	-1.14	4.21e-02	0.22	3342.18	-1006.05	3341.82	-1005.69	-39.39
1	69	274	4.11	-3.97	-1.18	1.32	-3.84	-6.062e+04	-1.444e+05	-7.882e+04	-1.262e+05	3.455e+04
1	69	275	2.96	-2.89	-0.82	0.89	-2.80	-4.532e+04	-1.016e+05	-6.481e+04	-8.209e+04	2.677e+04
1	69	276	2.14	-2.29	-0.83	0.68	-2.08	-2.751e+04	-6.334e+04	-4.602e+04	-4.484e+04	1.791e+04
1	69	277	1.44	-1.91	-0.87	0.40	-1.55	-1.355e+04	-3.756e+04	-2.972e+04	-2.139e+04	1.126e+04
1	69	278	0.79	-1.61	-0.86	3.73e-02	-1.11	-4812.98	-2.153e+04	-1.771e+04	-8628.45	7015.73
1	69	279	0.62	-1.55	-1.07	0.13	-0.91	111.93	-1.158e+04	-9282.71	-2181.94	4642.21
1	69	280	0.33	-1.30	-1.26	0.29	-0.25	1096.56	-5593.41	-4164.37	-332.49	2741.92
1	69	281	1.80e-02	-1.46	-1.45	8.73e-03	-0.12	-864.79	-3711.13	-3667.20	-908.72	350.86
1	69	282	3.09	-3.19	3.61e-02	-0.14	-3.14	-9.674e+04	-1.686e+05	-1.220e+05	-1.434e+05	3.431e+04
1	69	283	2.58	-3.23	3.24e-02	-0.69	-2.88	-6.838e+04	-9.780e+04	-8.867e+04	-7.751e+04	1.361e+04
1	69	284	1.85	-2.31	-8.47e-02	-0.38	-2.08	-4.014e+04	-6.416e+04	-6.382e+04	-4.047e+04	2816.76
1	69	285	1.36	-2.12	-0.43	-0.34	-1.74	-1.951e+04	-4.618e+04	-4.589e+04	-1.980e+04	-2789.14
1	69	286	1.10	-2.57	-1.30	-0.17	-1.74	-8834.21	-3.503e+04	-3.406e+04	-9803.41	-4945.03
1	69	287	0.81	-1.56	-1.14	0.39	-0.91	-3616.79	-2.762e+04	-2.620e+04	-5039.17	-5667.20
1	69	288	9.05e-02	-1.80	-1.77	5.64e-02	-0.25	-183.48	-2.154e+04	-1.990e+04	-1829.92	-5696.98
1	69	289	-1.21e-02	-1.15	-1.10	-6.33e-02	-0.24	-390.36	-1.856e+04	-1.788e+04	-1077.40	-3465.94
1	69	290	2.05	-1.72	1.17	-0.84	-1.59	-1.123e+05	-1.365e+05	-1.275e+05	-1.213e+05	1.171e+04
1	69	291	2.26	-2.42	1.01	-1.17	-2.07	-7.383e+04	-9.652e+04	-9.581e+04	-7.454e+04	-3948.19
1	69	292	1.67	-2.10	0.47	-0.90	-1.76	-3.685e+04	-7.616e+04	-7.067e+04	-4.234e+04	-1.363e+04
1	69	293	1.20	-1.83	1.02e-02	-0.64	-1.48	-1.779e+04	-6.251e+04	-5.462e+04	-2.567e+04	-1.704e+04
1	69	294	0.78	-1.60	-0.38	-0.44	-1.19	-8512.02	-5.281e+04	-4.422e+04	-1.710e+04	-1.751e+04
1	69	295	0.46	-1.35	-0.69	-0.19	-0.87	-3036.36	-4.530e+04	-3.654e+04	-1.180e+04	-1.713e+04
1	69	296	0.10	-1.26	-0.94	-0.22	-0.58	534.55	-3.931e+04	-3.096e+04	-7813.00	-1.621e+04
1	69	297	-1.24e-02	-1.27	-1.07	-0.21	-0.46	101.94	-3.430e+04	-2.916e+04	-5029.77	-1.225e+04
1	69	298	2.98	-2.97	2.44	-2.44	-1.70	-1.168e+05	-1.309e+05	-1.294e+05	-1.183e+05	4335.52
1	69	299	2.30	-2.29	1.66	-1.64	-1.60	-6.186e+04	-1.006e+05	-8.916e+04	-7.332e+04	-1.769e+04
1	69	300	1.54	-1.85	0.88	-1.20	-1.34	-3.067e+04	-8.414e+04	-6.628e+04	-4.853e+04	-2.522e+04
1	69	301	1.15	-1.56	0.49	-0.90	-1.16	-1.555e+04	-7.234e+04	-5.284e+04	-3.506e+04	-2.696e+04
1	69	302	0.78	-1.26	0.25	-0.73	-0.89	-7339.79	-6.341e+04	-4.391e+04	-2.685e+04	-2.671e+04
1	69	303	0.44	-1.07	-0.23	-0.39	-0.75	-2357.56	-5.643e+04	-3.735e+04	-2.144e+04	-2.584e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	69	304	0.25	-1.04	-0.31	-0.47	-0.64	949.70	-5.048e+04	-3.250e+04	-1.703e+04	-2.452e+04
1	69	305	-3.31e-02	-0.96	-0.64	-0.35	-0.44	296.24	-4.482e+04	-3.080e+04	-1.372e+04	-2.088e+04
1	69	306	2.57	-2.81	2.48	-2.73	-0.67	-9.242e+04	-1.157e+05	-1.041e+05	-1.041e+05	-1.165e+04
1	69	307	1.64	-1.94	1.48	-1.79	-0.73	-4.801e+04	-9.699e+04	-7.250e+04	-7.250e+04	-2.449e+04
1	69	308	1.19	-1.49	0.92	-1.22	-0.81	-2.484e+04	-8.346e+04	-5.415e+04	-5.415e+04	-2.931e+04
1	69	309	1.01	-1.26	0.59	-0.84	-0.88	-1.321e+04	-7.343e+04	-4.333e+04	-4.332e+04	-3.011e+04
1	69	310	1.12	-1.19	0.43	-0.50	-1.06	-6366.03	-6.543e+04	-3.590e+04	-3.590e+04	-2.953e+04
1	69	311	0.53	-0.84	0.13	-0.44	-0.62	-1169.04	-5.871e+04	-2.994e+04	-2.994e+04	-2.877e+04
1	69	312	-0.15	-0.55	-0.21	-0.49	-0.15	1125.08	-5.360e+04	-2.624e+04	-2.624e+04	-2.736e+04
1	69	313	1.84e-02	-0.15	-3.14e-02	-9.69e-02	-7.58e-02	314.32	-4.824e+04	-2.396e+04	-2.396e+04	-2.427e+04
1	69	314	2.10	-2.70	2.05	-2.64	0.51	-1.168e+05	-1.309e+05	-1.183e+05	-1.294e+05	4334.39
1	69	315	1.32	-1.97	1.32	-1.96	0.17	-6.187e+04	-1.006e+05	-7.333e+04	-8.917e+04	-1.769e+04
1	69	316	0.86	-1.25	0.85	-1.24	-0.17	-3.067e+04	-8.415e+04	-4.854e+04	-6.628e+04	-2.522e+04
1	69	317	0.57	-0.90	0.49	-0.82	-0.34	-1.556e+04	-7.235e+04	-3.506e+04	-5.284e+04	-2.697e+04
1	69	318	0.31	-0.62	0.20	-0.52	-0.29	-7341.04	-6.342e+04	-2.685e+04	-4.391e+04	-2.671e+04
1	69	319	0.32	-0.70	0.22	-0.59	-0.31	-2358.31	-5.644e+04	-2.145e+04	-3.735e+04	-2.585e+04
1	69	320	0.11	-0.58	-0.12	-0.35	-0.33	949.86	-5.049e+04	-1.703e+04	-3.251e+04	-2.453e+04
1	69	321	-4.11e-02	-0.56	-0.17	-0.43	-0.22	296.33	-4.483e+04	-1.373e+04	-3.081e+04	-2.088e+04
1	69	322	0.94	-1.70	0.66	-1.42	0.81	-1.123e+05	-1.365e+05	-1.213e+05	-1.275e+05	1.171e+04
1	69	323	1.23	-1.70	0.89	-1.36	0.94	-7.384e+04	-9.653e+04	-7.455e+04	-9.582e+04	-3951.67
1	69	324	0.60	-1.09	0.48	-0.97	0.44	-3.685e+04	-7.617e+04	-4.235e+04	-7.068e+04	-1.363e+04
1	69	325	0.28	-0.79	0.27	-0.78	9.83e-02	-1.779e+04	-6.252e+04	-2.568e+04	-5.463e+04	-1.705e+04
1	69	326	0.15	-0.68	0.15	-0.67	-5.44e-02	-8515.27	-5.283e+04	-1.711e+04	-4.423e+04	-1.752e+04
1	69	327	0.20	-0.61	0.19	-0.61	-6.27e-02	-3037.36	-4.532e+04	-1.181e+04	-3.655e+04	-1.714e+04
1	69	328	1.59e-02	-0.56	1.39e-02	-0.55	-3.37e-02	534.86	-3.933e+04	-7817.55	-3.097e+04	-1.622e+04
1	69	329	-2.33e-02	-0.50	-5.17e-02	-0.47	-0.11	102.24	-3.431e+04	-5032.18	-2.518e+04	-1.226e+04
1	69	330	2.08	-2.70	-0.19	-0.44	2.38	-9.677e+04	-1.686e+05	-1.434e+05	-1.220e+05	3.431e+04
1	69	331	1.78	-2.06	0.20	-0.48	1.89	-6.840e+04	-9.782e+04	-7.753e+04	-8.869e+04	1.361e+04
1	69	332	0.67	-1.30	-0.18	-0.44	0.98	-4.016e+04	-6.418e+04	-4.049e+04	-6.384e+04	2809.97
1	69	333	2.43e-02	-0.74	-0.34	-0.38	0.38	-1.952e+04	-4.620e+04	-1.982e+04	-4.591e+04	-2800.33
1	69	334	-0.14	-0.99	-0.23	-0.89	-0.27	-8841.48	-3.506e+04	-9815.32	-3.408e+04	-4958.02
1	69	335	0.32	-0.46	0.31	-0.46	7.75e-02	-3618.71	-2.764e+04	-5046.58	-2.622e+04	-5680.38
1	69	336	0.13	-0.98	1.39e-02	-0.86	0.34	-182.70	-2.157e+04	-1833.43	-1.992e+04	-5707.70
1	69	337	6.14e-02	-0.17	-2.34e-02	-8.89e-02	0.11	-389.27	-1.858e+04	-1077.35	-1.790e+04	-3470.69

M_G	N max	N min	N 1	N 2	N 1-2	M max	M min	M 1	M 2	M 1-2
	84.51	-74.55	-73.91	-70.88	-54.23	-3.157e+05	-2.628e+05	-2.628e+05	-9.424e+04	-9.424e+04
			84.22	80.77	43.39	2.988e+05	2.252e+05	2.251e+05	7.592e+04	7.592e+04

Elem. Cmb	Nodo	Von Mises	N max	N min	N 1	N 2	N 1-2	M max	M min	M 1	M 2	M 1-2
		daN/cm2	daN/cm	daN/cm	daN/cm	daN/cm	daN/cm	daN	daN	daN	daN	daN
1.516e+04	1	23.53	4.54	-0.23	0.06	4.25	1.13	7.869e+04	-1.376e+05	7.762e+04	-1.366e+05	-
3.490e+04	2	22.47	4.19	-5.52	-5.45	4.12	0.84	3.393e+04	-1.616e+05	3.372e+04	-1.614e+05	6531.31
1.223e+04	3	49.87	10.63	-7.56	-7.35	10.42	1.95	1.769e+05	-2.829e+05	1.743e+05	-2.802e+05	-
1.283e+04	4	19.44	4.91	-11.11	-9.39	3.19	4.96	1.131e+05	-6.530e+04	1.123e+05	-6.445e+04	-
2.953e+04	1	19.91	3.84	-0.19	0.05	3.60	0.96	6.658e+04	-1.165e+05	6.568e+04	-1.156e+05	-
1.035e+04	2	19.01	3.55	-4.67	-4.61	3.49	0.71	2.871e+04	-1.367e+05	2.853e+04	-1.366e+05	5526.49
1.182e+04	3	42.20	8.99	-6.40	-6.22	8.81	1.65	1.497e+05	-2.394e+05	1.474e+05	-2.371e+05	-
2.727e+04	4	16.45	4.15	-9.40	-7.95	2.70	4.19	9.572e+04	-5.525e+04	9.501e+04	-5.454e+04	-
1.172e+04	1	18.38	-4.11	-63.56	-11.59	-56.08	-19.72	6.048e+04	-1.066e+05	5.964e+04	-1.057e+05	-
2.700e+04	2	17.45	79.41	-20.52	25.19	33.70	-49.78	2.605e+04	-1.250e+05	2.588e+04	-1.248e+05	5035.74
1.166e+04	3	38.70	14.81	-62.28	-0.91	-46.56	-31.06	1.361e+05	-2.190e+05	1.340e+05	-2.169e+05	-
2.685e+04	4	15.18	76.48	-19.79	49.02	7.67	-43.47	8.711e+04	-5.055e+04	8.645e+04	-4.990e+04	-9455.64
1.166e+04	1	18.18	-1.58	-20.99	-4.20	-18.37	-6.64	6.051e+04	-1.061e+05	5.969e+04	-1.053e+05	-
2.700e+04	2	17.34	28.57	-7.75	6.52	14.30	-17.74	2.608e+04	-1.246e+05	2.592e+04	-1.244e+05	5028.33
1.166e+04	3	38.41	3.20	-19.01	-3.92	-11.88	-10.37	1.361e+05	-2.181e+05	1.340e+05	-2.160e+05	-
2.685e+04	4	14.98	22.96	-5.33	13.28	4.36	-13.42	8.705e+04	-5.035e+04	8.640e+04	-4.970e+04	-9426.86
1.166e+04	1	18.10	3.49	-0.17	0.05	3.27	0.87	6.053e+04	-1.059e+05	5.971e+04	-1.051e+05	-
2.685e+04	2	17.28	3.23	-4.24	-4.19	3.17	0.65	2.610e+04	-1.243e+05	2.593e+04	-1.241e+05	5024.08
2.685e+04	3	38.36	8.18	-5.82	-5.66	8.01	1.50	1.361e+05	-2.176e+05	1.340e+05	-2.156e+05	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

	4	14.95	3.78	-8.55	-7.22	2.45	3.81	8.702e+04	-5.023e+04	8.637e+04	-4.958e+04	-9410.34
2 1	4	45.58	5.80	-9.93	-9.69	5.57	-1.91	2.016e+05	-2.223e+05	2.007e+05	-2.213e+05	-
1.993e+04												
1.288e+05	3	33.28	4.90	-9.08	-6.47	2.29	5.45	2.314e+05	-6.226e+04	1.552e+05	1.399e+04	-
3.673e+04	5	8.60	3.97	-7.07	-7.04	3.94	0.59	6.129e+04	-1.393e+04	1.560e+04	3.177e+04	-
	6	28.27	8.37	-4.14	-2.25	6.48	4.49	5.321e+04	-1.967e+05	2.231e+04	-1.658e+05	8.227e+04
2 3	4	38.57	4.91	-8.40	-8.20	4.71	-1.61	1.706e+05	-1.881e+05	1.698e+05	-1.873e+05	-
1.686e+04												
1.089e+05	3	28.16	4.15	-7.68	-5.47	1.94	4.61	1.958e+05	-5.268e+04	1.313e+05	1.184e+04	-
3.108e+04	5	7.27	3.36	-5.98	-5.96	3.33	0.50	5.186e+04	-1.179e+04	1.320e+04	2.688e+04	-
	6	23.92	7.09	-3.51	-1.90	5.48	3.80	4.503e+04	-1.664e+05	1.888e+04	-1.403e+05	6.961e+04
2 24	4	35.24	19.52	-62.08	-60.21	17.64	-12.22	1.555e+05	-1.700e+05	1.548e+05	-1.693e+05	-
1.517e+04												
9.865e+04	3	25.86	51.57	-65.37	9.16	-22.97	56.22	1.784e+05	-4.714e+04	1.202e+05	1.103e+04	-
2.799e+04	5	6.68	-19.26	-38.93	-30.72	-27.47	9.70	4.718e+04	-1.015e+04	1.234e+04	2.469e+04	-
	6	21.76	80.72	-34.35	1.71	44.67	53.37	4.136e+04	-1.502e+05	1.741e+04	-1.263e+05	6.336e+04
2 56	4	35.13	9.95	-27.48	-26.69	9.15	-5.39	1.552e+05	-1.706e+05	1.545e+05	-1.699e+05	-
1.527e+04												
9.890e+04	3	25.69	19.92	-26.99	0.18	-7.26	23.16	1.781e+05	-4.762e+04	1.197e+05	1.086e+04	-
2.816e+04	5	6.64	-6.33	-16.40	-14.64	-8.09	3.82	4.716e+04	-1.051e+04	1.212e+04	2.453e+04	-
	6	21.75	33.32	-14.35	-0.48	19.45	21.65	4.109e+04	-1.509e+05	1.725e+04	-1.271e+05	6.331e+04
2 69	4	35.06	4.46	-7.63	-7.45	4.28	-1.47	1.551e+05	-1.710e+05	1.544e+05	-1.703e+05	-
1.533e+04												
9.905e+04	3	25.60	3.77	-6.98	-4.97	1.76	4.19	1.780e+05	-4.789e+04	1.193e+05	1.076e+04	-
2.826e+04	5	6.61	3.05	-5.44	-5.41	3.03	0.45	4.715e+04	-1.072e+04	1.200e+04	2.444e+04	-
	6	21.75	6.44	-3.19	-1.73	4.98	3.45	4.093e+04	-1.513e+05	1.716e+04	-1.275e+05	6.328e+04
3 1	6	13.95	1.65	-7.88	-7.80	1.56	0.89	1.151e+05	5715.69	1.288e+04	1.080e+05	-
2.707e+04												
5.721e+04	5	24.69	6.17	-10.00	-7.76	3.93	5.59	1.238e+05	-1.054e+05	1.085e+05	-9.009e+04	-
4.030e+04	7	22.63	9.99	-3.83	0.62	5.55	6.46	1.549e+05	-4.591e+04	1.465e+05	-3.747e+04	-
6.954e+04	8	26.74	7.03	-2.71	5.73	-1.41	3.31	2.156e+05	109.41	1.902e+05	2.555e+04	-
	6	11.80	1.39	-6.67	-6.60	1.32	0.76	9.741e+04	4836.36	1.090e+04	9.135e+04	-
3 3	5	20.89	5.22	-8.46	-6.57	3.33	4.73	1.048e+05	-8.918e+04	9.180e+04	-7.623e+04	-
2.291e+04												
4.841e+04	7	19.15	8.46	-3.24	0.52	4.69	5.46	1.311e+05	-3.885e+04	1.240e+05	-3.170e+04	-
3.410e+04	8	22.62	5.95	-2.29	4.85	-1.19	2.80	1.825e+05	92.58	1.609e+05	2.162e+04	-
5.884e+04												
3 7	6	10.91	26.09	-84.43	3.43	-61.76	-44.62	8.914e+04	4423.63	1.008e+04	8.348e+04	-
2.114e+04												
4.400e+04	5	19.03	35.51	-13.16	26.44	-4.08	18.96	9.590e+04	-8.080e+04	8.416e+04	-6.906e+04	-
3.112e+04	7	17.51	-3.35	-20.73	-3.36	-20.72	0.44	1.199e+05	-3.521e+04	1.134e+05	-2.869e+04	-
5.350e+04	8	20.68	50.65	-58.27	30.13	-37.74	42.59	1.669e+05	527.36	1.474e+05	2.001e+04	-
	6	10.78	6.35	-30.67	-2.56	-21.75	-15.83	8.877e+04	4406.63	9971.61	8.320e+04	-
3 39	5	18.98	13.15	-6.88	5.84	0.43	9.64	9.547e+04	-8.097e+04	8.371e+04	-6.921e+04	-
2.094e+04												
4.401e+04	7	17.41	0.97	-6.74	-0.92	-4.84	3.32	1.195e+05	-3.528e+04	1.130e+05	-2.877e+04	-
3.104e+04	8	20.60	21.88	-22.54	13.79	-14.45	17.14	1.663e+05	245.81	1.467e+05	1.978e+04	-
5.349e+04												
3 69	6	10.73	1.27	-6.06	-6.00	1.20	0.69	8.856e+04	4396.69	9910.55	8.304e+04	-
2.082e+04												
4.401e+04	5	19.00	4.75	-7.69	-5.97	3.02	4.30	9.523e+04	-8.107e+04	8.346e+04	-6.930e+04	-
	7	17.41	7.69	-2.94	0.48	4.27	4.97	1.192e+05	-3.531e+04	1.127e+05	-2.882e+04	-











**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		20	22.28	3.65	-7.93	-7.35	3.07	2.52-1.099e+04-1.848e+05-1.111e+04-1.846e+05	-4595.14	
		21	36.04	4.03	-4.28	-4.24	4.00	0.57 1.496e+05-1.852e+05 1.496e+05-1.852e+05	-470.41	
		5	17.50	5.38	-2.44	-2.44	5.38	0.10 1.168e+05-3.974e+04 1.127e+05-3.570e+04	-	
2.481e+04										
	10	3	3	7.31	2.98	-5.58	-5.56	2.96	-0.45 2.846e+04-3.903e+04-3.651e+042.594e+04 1.279e+04	
			20	18.86	3.09	-6.71	-6.22	2.60	2.14 -9295.08-1.563e+05 -9397.96-1.562e+05	-3888.19
			21	30.50	3.41	-3.62	-3.59	3.38	0.48 1.266e+05-1.567e+05 1.266e+05-1.567e+05	-398.04
			5	14.80	4.56	-2.06	-2.06	4.56	0.09 9.882e+04-3.362e+04 9.540e+04-3.021e+04	-
2.100e+04										
	10	7	3	6.75	-3.76	-39.33	-6.67	-36.43	-9.74 2.602e+04-3.539e+04-3.318e+042.382e+04 1.143e+04	
			20	17.14	17.86	-13.37	3.71	0.78	15.54 -8146.90-1.421e+05 -8231.52-1.420e+05	-3365.96
			21	27.88	10.85	-13.16	7.98	-10.29	7.79 1.158e+05-1.427e+05 1.158e+05-1.427e+05	-364.01
			5	13.60	24.45	-32.94	15.63	-24.12	20.70 9.066e+04-3.028e+04 8.760e+04-2.722e+04	-
1.898e+04										
	10	39	3	6.64	-3.78	-13.44	-5.64	-11.57	-3.81 2.593e+04-3.545e+04-3.319e+042.367e+04 1.155e+04	
			20	17.14	6.96	-7.41	-2.24	1.79	6.90 -8339.60-1.421e+05 -8429.83-1.420e+05	-3473.20
			21	27.75	2.90	-3.87	0.84	-1.80	3.12 1.153e+05-1.425e+05 1.153e+05-1.425e+05	-362.64
			5	13.48	8.46	-10.11	4.51	-6.16	7.60 9.014e+04-3.046e+04 8.705e+04-2.737e+04	-
1.905e+04										
	10	69	3	6.64	2.71	-5.07	-5.05	2.69	-0.41 2.587e+04-3.548e+04-3.319e+042.358e+04 1.163e+04	
			20	17.14	2.81	-6.10	-5.65	2.36	1.94 -8450.07-1.421e+05 -8543.60-1.420e+05	-3534.72
			21	27.73	3.10	-3.29	-3.26	3.07	0.44 1.151e+05-1.425e+05 1.151e+05-1.425e+05	-361.85
			5	13.46	4.14	-1.88	-1.88	4.14	0.08 8.983e+04-3.057e+04 8.673e+04-2.746e+04	-
1.909e+04										
	11	1	5	18.29	3.87	-2.84	-1.73	2.77	2.49 7.142e+04-9.802e+04 6.982e+04-9.643e+04	-
1.638e+04										
			21	29.84	2.64	-7.00	-6.26	1.90	2.57 2.023e+05-6.352e+04 1.544e+05-1.559e+04	-
1.022e+05										
			22	31.21	3.78	-3.71	-1.66	1.74	3.34 1.173e+05-1.715e+05 1.085e+05-1.627e+05	-
4.964e+04										
			7	21.56	7.28	-3.41	-2.77	6.63	2.54 1.847e+05 2.456e+04 1.569e+05 5.236e+04	-
6.065e+04										
	11	3	5	15.47	3.28	-2.40	-1.46	2.34	2.11 6.043e+04-8.294e+04 5.908e+04-8.159e+04	-
1.386e+04										
			21	25.25	2.24	-5.92	-5.29	1.61	2.18 1.712e+05-5.375e+04 1.306e+05-1.320e+04	-
8.647e+04										
			22	26.41	3.20	-3.14	-1.41	1.47	2.82 9.929e+04-1.451e+05 9.185e+04-1.377e+05	-
4.200e+04										
			7	18.24	6.16	-2.89	-2.35	5.61	2.15 1.563e+05 2.078e+04 1.327e+05 4.430e+04	-
5.132e+04										
	11	7	5	14.17	-6.44	-23.56	-6.94	-23.06	2.88 5.547e+04-7.538e+04 5.424e+04-7.415e+04	-
1.259e+04										
			21	23.08	16.76	-16.98	16.45	-16.67	3.22 1.566e+05-4.861e+04 1.196e+05-1.168e+04	-
7.883e+04										
			22	24.14	14.36	-36.49	5.09	-27.22	19.63 9.088e+04-1.320e+05 8.411e+04-1.253e+05	-
3.825e+04										
			7	16.77	26.54	-15.79	25.75	-15.00	-5.75 1.429e+05 1.935e+04 1.215e+05 4.073e+04	-
4.674e+04										
	11	53	5	14.08	10.09	-0.39	5.77	3.93	-5.16 5.482e+04-7.562e+04 5.358e+04-7.438e+04	-
1.265e+04										
			21	22.96	7.53	-4.75	-4.37	7.15	-2.13 1.555e+05-4.913e+04 1.186e+05-1.219e+04	-
7.872e+04										
			22	24.04	11.64	-2.82	0.23	8.60	-5.90 9.020e+04-1.322e+05 8.341e+04-1.254e+05	-
3.827e+04										
			7	16.57	1.21	-4.15	-3.72	0.78	-1.46 1.420e+05 1.871e+04 1.206e+05 4.017e+04	-
4.674e+04										
	11	69	5	14.07	2.98	-2.18	-1.33	2.13	1.91 5.494e+04-7.540e+04 5.371e+04-7.417e+04	-
1.260e+04										
			21	22.96	2.03	-5.38	-4.81	1.46	1.98 1.556e+05-4.886e+04 1.188e+05-1.200e+04	-
7.861e+04										
			22	24.01	2.91	-2.85	-1.28	1.34	2.57 9.027e+04-1.319e+05 8.350e+04-1.252e+05	-
3.819e+04										
			7	16.58	5.60	-2.63	-2.13	5.10	1.95 1.420e+05 1.889e+04 1.207e+05 4.028e+04	-
4.665e+04										
	12	1	7	24.03	0.28	-3.81	-0.58	-2.95	1.67 1.317e+05-9.080e+04 1.314e+05-9.048e+04	-8314.01
			22	39.81	8.13	-5.78	-4.08	6.44	4.55 3.138e+05-1.357e+04 1.923e+05 1.079e+05	-
1.581e+05										
			23	11.85	7.21	-2.48	0.11	4.63	4.28 9.889e+04 7342.92 8.273e+04 2.349e+04	-
3.490e+04										
			9	23.06	8.55	-6.14	1.20	1.21	7.34 1.924e+05 1.415e+04 1.398e+05 6.670e+04	-
8.127e+04										
	12	3	7	20.33	0.24	-3.23	-0.49	-2.50	1.41 1.114e+05-7.683e+04 1.112e+05-7.656e+04	-7034.93
			22	33.68	6.88	-4.89	-3.45	5.45	3.85 2.655e+05-1.148e+04 1.627e+05 9.130e+04	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.691e+04	14	3	11	19.71	4.12	-6.84	3.57	-6.29	2.39	1.819e+05	7.013e+04	1.469e+05	1.051e+05	-
5.182e+04			24	20.17	2.26	-3.56	1.65	-2.95	1.78	1.858e+05	6.962e+04	1.112e+05	1.443e+05	-
5.567e+04			25	22.27	6.56	-3.02	6.12	-2.58	2.01	2.074e+05	1.046e+05	1.743e+05	1.377e+05	-
4.801e+04			13	17.46	1.59	-4.08	0.98	-3.47	1.76	1.625e+05	8.172e+04	1.297e+05	1.145e+05	-
3.969e+04	14	7	11	18.05	29.17	-14.48	29.03	-14.34	2.40	1.662e+05	6.432e+04	1.344e+05	9.609e+04	-
4.720e+04			24	18.41	17.40	-51.76	4.58	-38.94	-26.88	1.694e+05	6.373e+04	1.017e+05	1.315e+05	-
5.071e+04			25	20.38	23.65	-28.47	22.86	-27.68	-6.36	1.894e+05	9.579e+04	1.594e+05	1.257e+05	-
4.365e+04			13	15.96	-8.07	-34.75	-16.06	-26.77	-12.22	1.484e+05	7.464e+04	1.186e+05	1.044e+05	-
3.619e+04	14	39	11	17.96	12.88	-9.10	12.64	-8.86	2.26	1.657e+05	6.396e+04	1.339e+05	9.574e+04	-
4.714e+04			24	18.35	6.12	-19.39	2.62	-15.90	-8.77	1.691e+05	6.345e+04	1.013e+05	1.313e+05	-
5.065e+04			25	20.30	11.93	-11.64	11.87	-11.58	-1.16	1.888e+05	9.536e+04	1.588e+05	1.254e+05	-
4.365e+04			13	15.91	-3.80	-13.25	-5.29	-11.76	-3.44	1.480e+05	7.442e+04	1.182e+05	1.042e+05	-
3.612e+04	14	69	11	17.91	3.74	-6.22	3.24	-5.72	2.17	1.654e+05	6.375e+04	1.336e+05	9.554e+04	-
4.711e+04			24	18.33	2.05	-3.24	1.50	-2.68	1.62	1.689e+05	6.330e+04	1.011e+05	1.311e+05	-
5.061e+04			25	20.25	5.97	-2.74	5.56	-2.34	1.83	1.885e+05	9.511e+04	1.585e+05	1.252e+05	-
4.365e+04			13	15.87	1.45	-3.71	0.89	-3.15	1.60	1.478e+05	7.429e+04	1.179e+05	1.041e+05	-
3.609e+04	15	1	13	36.92	3.51	-7.22	3.32	-7.03	-1.41	3.322e+05	8.964e+04	2.662e+05	1.557e+05	-
1.080e+05			25	17.70	4.70	-4.66	4.70	-4.66	-0.01	1.567e+05	1.228e+05	1.398e+05	1.397e+05	-
1.694e+04			26	36.91	7.31	-3.13	7.16	-2.97	1.27	3.322e+05	8.963e+04	1.557e+05	2.661e+05	-
1.080e+05			15	25.18	5.73	-5.95	5.73	-5.95	0.10	1.642e+05	-6.295e+04	5.063e+04	5.064e+04	1.136e+05
9.137e+04	15	3	13	31.24	2.97	-6.11	2.81	-5.95	-1.20	2.811e+05	7.585e+04	2.252e+05	1.317e+05	-
1.433e+04			25	14.98	3.97	-3.94	3.97	-3.94	-0.01	1.326e+05	1.039e+05	1.183e+05	1.182e+05	-
9.137e+04			26	31.24	6.19	-2.64	6.05	-2.51	1.08	2.811e+05	7.584e+04	1.318e+05	2.252e+05	-
8.339e+04	15	23	13	21.31	4.85	-5.04	4.85	-5.04	0.08	1.390e+05	-5.327e+04	4.284e+04	4.285e+04	9.611e+04
1.305e+04			25	13.68	12.67	-18.33	-6.05	0.38	-15.16	1.210e+05	9.489e+04	1.077e+05	1.082e+05	-
8.336e+04			26	28.75	40.50	-50.62	-27.69	17.58	-39.54	2.567e+05	6.934e+04	1.203e+05	2.058e+05	-
8.319e+04	15	55	13	19.54	-27.30	-64.77	-51.80	-40.26	17.83	1.269e+05	-4.860e+04	3.920e+04	3.909e+04	8.774e+04
1.304e+04			25	13.64	4.62	-6.67	0.09	-2.14	-5.53	1.207e+05	9.461e+04	1.076e+05	1.077e+05	-
8.317e+04			26	28.51	14.13	-15.77	-6.60	4.96	-13.79	2.560e+05	6.909e+04	1.200e+05	2.051e+05	-
8.307e+04	15	69	13	19.43	-10.25	-23.43	-16.08	-17.59	6.55	1.265e+05	-4.849e+04	3.904e+04	3.900e+04	8.751e+04
1.303e+04			25	13.61	3.61	-3.58	3.61	-3.58	-0.01	1.205e+05	9.445e+04	1.075e+05	1.074e+05	-
8.307e+04			26	28.40	5.63	-2.40	5.50	-2.28	0.98	2.555e+05	6.895e+04	1.198e+05	2.047e+05	-
7.713e+04	16	1	15	19.37	4.41	-4.58	4.41	-4.58	0.08	1.263e+05	-4.842e+04	3.895e+04	3.896e+04	8.738e+04
8.359e+04			26	22.31	6.40	-7.59	6.40	-7.58	-0.28	1.892e+05	2.040e+04	9.298e+04	1.167e+05	-
			27	41.86	7.09	-3.47	6.47	-2.85	-2.48	3.667e+05	6.952e+04	3.472e+05	8.907e+04	-









**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

	34	20.60	4.03	-4.19	3.35	-3.50	-2.27	1.806e+05	1.464e+05	1.488e+05	1.782e+05	-8605.68
	25	16.06	1.46	-1.46	1.46	-1.46	0.04	1.476e+05	5.254e+04	1.001e+05	1.000e+05	-
4.752e+04	1											
23	25	26.32	3.61	-7.62	3.06	-7.07	-2.41	2.451e+05	1.236e+05	1.627e+05	2.059e+05	-
5.678e+04												
6.581e+04	34	23.84	4.27	-2.63	3.53	-1.90	-2.13	2.196e+05	8.226e+04	1.706e+05	1.313e+05	-
6.127e+04	35	23.29	8.26	-4.81	7.58	-4.14	-2.89	2.149e+05	8.284e+04	1.242e+05	1.736e+05	-
4.691e+04	26	20.64	4.91	-1.86	4.16	-1.10	-2.13	1.921e+05	9.658e+04	1.354e+05	1.533e+05	-
23	3											
4.805e+04	25	22.27	3.05	-6.45	2.59	-5.98	-2.04	2.074e+05	1.046e+05	1.377e+05	1.743e+05	-
5.569e+04	34	20.17	3.61	-2.23	2.99	-1.61	-1.80	1.858e+05	6.961e+04	1.443e+05	1.111e+05	-
5.184e+04	35	19.70	6.99	-4.07	6.42	-3.50	-2.45	1.819e+05	7.009e+04	1.051e+05	1.469e+05	-
3.970e+04	26	17.46	4.16	-1.57	3.52	-0.93	-1.81	1.625e+05	8.172e+04	1.146e+05	1.297e+05	-
23	7											
4.399e+04	25	20.33	4.60	-23.40	-12.77	-6.03	-13.59	1.892e+05	9.526e+04	1.257e+05	1.588e+05	-
5.087e+04	34	18.49	14.65	-36.55	-16.26	-5.63	-25.04	1.698e+05	6.348e+04	1.320e+05	1.012e+05	-
4.738e+04	35	18.04	26.19	-5.36	19.78	1.05	-12.70	1.659e+05	6.378e+04	9.585e+04	1.338e+05	-
3.623e+04	26	15.96	13.50	-34.13	-0.22	-20.41	-21.57	1.483e+05	7.465e+04	1.047e+05	1.183e+05	-
23	39											
4.379e+04	25	20.27	1.85	-10.67	-3.16	-5.66	-6.13	1.888e+05	9.513e+04	1.254e+05	1.585e+05	-
5.071e+04	34	18.39	6.60	-13.78	-4.20	-2.98	-10.17	1.692e+05	6.335e+04	1.315e+05	1.011e+05	-
4.722e+04	35	17.96	13.35	-4.07	10.92	-1.64	-6.04	1.655e+05	6.374e+04	9.565e+04	1.336e+05	-
3.614e+04	26	15.91	7.18	-13.21	1.95	-7.98	-8.91	1.480e+05	7.442e+04	1.044e+05	1.180e+05	-
23	69											
4.368e+04	25	20.25	2.78	-5.86	2.36	-5.44	-1.86	1.885e+05	9.506e+04	1.252e+05	1.584e+05	-
5.062e+04	34	18.34	3.29	-2.03	2.72	-1.46	-1.64	1.689e+05	6.328e+04	1.312e+05	1.010e+05	-
4.713e+04	35	17.91	6.35	-3.70	5.83	-3.18	-2.22	1.653e+05	6.372e+04	9.554e+04	1.335e+05	-
3.609e+04	26	15.87	3.78	-1.43	3.20	-0.85	-1.64	1.478e+05	7.429e+04	1.042e+05	1.179e+05	-
24	1											
1.083e+05	26	35.79	5.74	-10.58	4.28	-9.11	-4.66	3.253e+05	1.005e+05	2.428e+05	1.830e+05	-
1.064e+04	35	14.97	10.86	-3.04	6.89	0.93	-6.28	1.355e+05	9.564e+04	9.872e+04	1.324e+05	-
1.216e+05	36	39.74	4.48	0.44	0.76	4.16	-1.09	3.440e+05	5.391e+04	1.200e+05	2.779e+05	-
24	3											
9.167e+04	27	25.74	5.88	-8.42	5.20	-7.74	-3.04	1.569e+05	7.830e+04	2.566e+04	5.291e+04	1.168e+05
	26	30.28	4.86	-8.95	3.62	-7.71	-3.95	2.752e+05	8.503e+04	2.054e+05	1.548e+05	-
1.029e+05	35	12.67	9.19	-2.57	5.83	0.79	-5.31	1.147e+05	8.092e+04	8.353e+04	1.121e+05	-9006.32
	36	33.63	3.79	0.38	0.64	3.52	-0.92	2.911e+05	4.561e+04	1.015e+05	2.352e+05	-
8.358e+04	27	21.78	4.97	-7.12	4.40	-6.55	-2.57	1.327e+05	6.626e+04	2.171e+04	4.477e+04	9.883e+04
	26	27.84	51.68	-21.37	10.80	19.51	-36.26	2.512e+05	7.783e+04	1.875e+05	1.416e+05	-
9.383e+04	35	11.61	-0.96	-25.76	-16.58	-10.14	-11.98	1.049e+05	7.394e+04	7.625e+04	1.026e+05	-8141.18
	36	31.17	79.56	-68.51	-37.41	48.46	-60.32	2.659e+05	4.190e+04	9.275e+04	2.150e+05	-
8.343e+04	27	20.21	1.22	-102.59	-75.32	-26.05	45.68	1.214e+05	6.039e+04	2.006e+04	4.092e+04	9.028e+04
	26	27.64	19.93	-11.25	6.03	2.66	-15.50	2.506e+05	7.750e+04	1.870e+05	1.410e+05	-
9.367e+04	35	11.53	4.48	-10.40	-2.68	-3.24	-7.43	1.045e+05	7.370e+04	7.605e+04	1.021e+05	-8170.65
	36	30.79	31.12	-24.69	-13.26	19.70	-22.52	2.651e+05	4.163e+04	9.245e+04	2.143e+05	-
8.334e+04	27	19.92	-2.85	-35.35	-24.91	-13.28	15.17	1.209e+05	6.029e+04	1.986e+04	4.078e+04	9.000e+04
	26	27.53	4.41	-8.14	3.29	-7.01	-3.59	2.502e+05	7.730e+04	1.868e+05	1.408e+05	-
9.357e+04	35	11.52	8.35	-2.34	5.30	0.72	-4.83	1.043e+05	7.357e+04	7.594e+04	1.019e+05	-8187.56
	36	30.57	3.44	0.34	0.59	3.20	-0.84	2.646e+05	4.147e+04	9.227e+04	2.138e+05	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

	27	19.80	4.52	-6.48	4.00	-5.96	-2.33	1.207e+05	-6.023e+04	1.974e+04	4.070e+04	8.984e+04	
25 1	28	33.29	3.31	-14.15	-5.63	-5.22	-8.73	-2.776e+04	-2.812e+05	-5.614e+04	-2.528e+05		
7.991e+04													
8.111e+04	37	23.04	5.98	-4.56	-3.94	5.35	-2.49	520.92	-1.856e+05	-4.692e+04	-1.382e+05		-
3.673e+04	38	16.99	1.65	-8.97	-4.21	-3.11	-5.28	-8.297e+04	-1.581e+05	-1.126e+05	-1.284e+05		
	29	24.06	5.24	-2.84	0.14	2.25	-3.90	-1.319e+04	-2.002e+05	-1.361e+04	-1.998e+05	8836.62	
25 3	28	28.17	2.80	-11.97	-4.76	-4.41	-7.39	-2.349e+04	-2.379e+05	-4.750e+04	-2.139e+05		
6.762e+04													
6.863e+04	37	19.50	5.06	-3.86	-3.33	4.53	-2.11	440.78	-1.571e+05	-3.970e+04	-1.169e+05		-
3.108e+04	38	14.37	1.39	-7.59	-3.56	-2.64	-4.47	-7.020e+04	-1.338e+05	-9.530e+04	-1.087e+05		
	29	20.36	4.43	-2.40	0.12	1.91	-3.30	-1.116e+04	-1.694e+05	-1.152e+04	-1.691e+05	7477.14	
25 21	28	25.83	39.00	-17.92	26.15	-5.06	23.80	-2.185e+04	-2.173e+05	-4.361e+04	-1.955e+05		
6.148e+04													
6.294e+04	37	18.45	86.26	-89.34	37.51	-40.59	-78.64	244.03	-1.439e+05	-3.673e+04	-1.069e+05		-
2.814e+04	38	13.26	44.16	9.32	38.80	14.68	-12.58	-6.449e+04	-1.221e+05	-8.721e+04	-9.936e+04		
	29	18.77	83.08	-43.69	59.45	-20.07	-49.36	-1.055e+04	-1.549e+05	-1.085e+04	-1.546e+05	6627.64	
25 53	28	25.67	8.31	-5.93	6.78	-4.40	4.41	-2.153e+04	-2.167e+05	-4.334e+04	-1.948e+05		
6.147e+04													
6.259e+04	37	17.99	31.98	-32.41	11.75	-12.18	-29.89	343.45	-1.432e+05	-3.632e+04	-1.065e+05		-
2.821e+04	38	13.14	16.23	-0.31	12.09	3.83	-7.16	-6.407e+04	-1.218e+05	-8.685e+04	-9.901e+04		
	29	18.59	32.08	-16.56	21.74	-6.21	-19.90	-1.029e+04	-1.543e+05	-1.061e+04	-1.540e+05	6735.52	
25 69	28	25.61	2.55	-10.89	-4.33	-4.01	-6.71	-2.136e+04	-2.163e+05	-4.318e+04	-1.945e+05		
6.147e+04													
6.239e+04	37	17.73	4.60	-3.51	-3.03	4.12	-1.92	400.71	-1.428e+05	-3.609e+04	-1.063e+05		-
2.825e+04	38	13.07	1.27	-6.90	-3.24	-2.40	-4.06	-6.382e+04	-1.216e+05	-8.664e+04	-9.880e+04		
	29	18.51	4.03	-2.19	0.11	1.73	-3.00	-1.015e+04	-1.540e+05	-1.047e+04	-1.537e+05	6797.40	
26 1	29	25.30	1.62	-2.03	-1.05	0.64	-1.62	4.640e+04	-1.769e+05	4.628e+04	-1.767e+05	-5251.18	
6.085e+04	38	23.13	3.20	-7.25	-3.25	-0.79	-5.08	-7.930e+04	-2.130e+05	-1.185e+05	-1.739e+05		
2.459e+04	39	14.91	0.69	-8.05	-6.23	-1.13	-3.55	-6.373e+04	-1.387e+05	-7.293e+04	-1.295e+05		
1.364e+05	30	38.49	5.52	-7.92	-7.16	4.76	-3.11	-4.901e+04	-3.319e+05	-1.529e+05	-2.280e+05		
26 3	29	21.41	1.37	-1.72	-0.89	0.55	-1.37	3.926e+04	-1.496e+05	3.916e+04	-1.495e+05	-4443.31	
5.149e+04	38	19.58	2.71	-6.13	-2.75	-0.67	-4.30	-6.710e+04	-1.802e+05	-1.002e+05	-1.471e+05		
2.081e+04	39	12.62	0.59	-6.81	-5.27	-0.95	-3.00	-5.393e+04	-1.174e+05	-6.171e+04	-1.096e+05		
1.154e+05	30	32.57	4.67	-6.70	-6.05	4.03	-2.63	-4.147e+04	-2.808e+05	-1.293e+05	-1.929e+05		
26 23	29	19.75	54.67	-10.23	53.98	-9.55	6.62	3.564e+04	-1.368e+05	3.554e+04	-1.367e+05	-4113.71	
4.687e+04	38	17.99	48.75	-13.10	36.12	-0.47	-24.94	-6.148e+04	-1.645e+05	-9.161e+04	-1.344e+05		
1.894e+04	39	11.58	28.35	9.42	28.19	9.58	-1.72	-4.940e+04	-1.073e+05	-5.645e+04	-1.003e+05		
1.051e+05	30	29.79	30.82	-18.33	22.58	-10.08	-18.37	-3.815e+04	-2.563e+05	-1.182e+05	-1.763e+05		
26 55	29	19.56	19.28	-3.28	19.17	-3.17	1.62	3.567e+04	-1.363e+05	3.558e+04	-1.362e+05	-4066.47	
4.683e+04	38	17.87	18.58	-7.56	11.58	-0.56	-11.57	-6.117e+04	-1.641e+05	-9.130e+04	-1.340e+05		
1.892e+04	39	11.51	8.28	1.90	7.23	2.94	-2.36	-4.916e+04	-1.069e+05	-5.623e+04	-9.986e+04		
1.050e+05	30	29.68	10.45	-7.07	4.73	-1.35	-8.22	-3.786e+04	-2.557e+05	-1.178e+05	-1.757e+05		
26 69	29	19.46	1.25	-1.56	-0.81	0.50	-1.24	3.569e+04	-1.360e+05	3.560e+04	-1.359e+05	-4039.37	
4.681e+04	38	17.80	2.46	-5.58	-2.50	-0.61	-3.91	-6.100e+04	-1.639e+05	-9.112e+04	-1.337e+05		
1.892e+04	39	11.47	0.53	-6.19	-4.79	-0.87	-2.73	-4.903e+04	-1.067e+05	-5.610e+04	-9.963e+04		
1.049e+05	30	29.61	4.25	-6.09	-5.50	3.66	-2.39	-3.770e+04	-2.553e+05	-1.176e+05	-1.754e+05		
27 1	30	16.32	2.65	-9.11	-8.84	2.39	-1.74	-2.067e+04	-1.407e+05	-7.012e+04	-9.121e+04		-
5.906e+04													

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

9.766e+04	39	32.55	4.06	-8.85	-5.74	0.96	-5.52-5.605e+04-2.858e+05-1.104e+05-2.314e+05				
1.594e+04	40	18.02	-3.62	-8.19	-7.74	-4.08	-1.37	-1816.28-1.463e+05		-3597.60-1.445e+05	-
1.394e+05	31	40.69	11.75	-2.91	-1.39	10.23	-4.47 5.362e+04-2.976e+05-1.514e+04-2.289e+05				
4.998e+04	30	13.81	2.24	-7.71	-7.48	2.02	-1.47-1.749e+04-1.190e+05-5.934e+04-7.717e+04				-
8.264e+04	39	27.54	3.44	-7.49	-4.86	0.81	-4.67-4.742e+04-2.418e+05-9.345e+04-1.958e+05				
1.349e+04	40	15.25	-3.06	-6.93	-6.55	-3.45	-1.16	-1536.85-1.238e+05		-3044.13-1.223e+05	-
1.179e+05	31	34.43	9.94	-2.46	-1.18	8.66	-3.78 4.537e+04-2.518e+05-1.281e+04-1.936e+05				
4.550e+04	30	12.57	15.86	-18.00	14.04	-16.18	7.64-1.572e+04-1.081e+05-5.387e+04-6.998e+04				-
7.549e+04	39	25.11	16.04	1.32	11.09	6.27	6.96-4.291e+04-2.204e+05-8.499e+04-1.784e+05				
1.220e+04	40	13.89	8.83	-4.87	6.15	-2.19	5.44	-1089.76-1.125e+05		-2443.45-1.111e+05	-
1.078e+05	31	31.42	2.06	-7.40	-0.49	-4.86	4.20 4.192e+04-2.295e+05-1.127e+04-1.763e+05				
4.553e+04	30	12.58	9.02	1.34	9.02	1.34	-0.17-1.596e+04-1.085e+05-5.407e+04-7.036e+04				-
7.520e+04	39	25.09	10.48	-4.69	5.57	0.22	-7.10-4.325e+04-2.202e+05-8.512e+04-1.783e+05				
1.232e+04	40	13.90	1.20	-0.36	0.95	-0.11	-0.57	-1455.75-1.128e+05		-2835.21-1.114e+05	-
1.073e+05	31	31.33	8.31	-3.22	1.95	3.14	-5.74 4.118e+04-2.293e+05-1.176e+04-1.764e+05				
4.543e+04	30	12.56	2.04	-7.01	-6.80	1.84	-1.34-1.590e+04-1.082e+05-5.394e+04-7.016e+04				-
7.512e+04	39	25.04	3.12	-6.81	-4.42	0.74	-4.24-4.311e+04-2.198e+05-8.495e+04-1.780e+05				
1.226e+04	40	13.87	-2.78	-6.30	-5.95	-3.14	-1.06	-1397.14-1.125e+05		-2767.39-1.111e+05	-
1.072e+05	31	31.30	9.04	-2.24	-1.07	7.87	-3.44 4.125e+04-2.289e+05-1.165e+04-1.760e+05				
1.143e+04	31	8.63	1.29	-2.52	-2.52	1.29	0.13	8465.45-6.490e+04-6.308e+04		6639.68	-
4.076e+04	40	33.82	1.63	-8.64	-8.23	1.21	-2.02 1.358e+04-2.656e+05		1.022e+04-2.622e+05	3.047e+04	-
	41	47.80	0.52	-0.60	-0.60	0.52	-0.07 1.910e+05-2.527e+05		1.909e+05-2.526e+05	-8116.12	-
	32	32.27	8.79	-1.68	-0.89	8.00	2.77 2.201e+05-6.682e+04 2.142e+05-6.090e+04				-
3.449e+04	31	7.30	1.10	-2.14	-2.13	1.09	0.11	7163.07-5.492e+04-5.337e+04		5618.19	-9670.76
	40	28.62	1.38	-7.31	-6.96	1.03	-1.71 1.149e+04-2.247e+05		8643.76-2.219e+05	2.578e+04	-
	41	40.45	0.44	-0.51	-0.51	0.44	-0.06 1.617e+05-2.139e+05		1.615e+05-2.137e+05	-6867.49	-
	32	27.31	7.44	-1.42	-0.75	6.77	2.35 1.863e+05-5.654e+04 1.813e+05-5.153e+04				-
3.156e+04	31	6.75	16.54	-0.46	16.36	-0.28	-1.72	6335.10-5.042e+04-4.897e+04		4882.39	-8963.02
	40	26.13	10.09	-2.07	8.15	-0.13	-4.45 1.034e+04-2.053e+05		7765.01-2.028e+05	2.344e+04	-
	41	36.91	1.51	-0.41	0.58	0.52	0.96 1.471e+05-1.955e+05		1.470e+05-1.954e+05	-6508.56	-
	32	24.88	0.53	-10.29	-4.23	-5.53	-5.37 1.697e+05-5.174e+04 1.651e+05-4.714e+04				-
3.143e+04	31	6.67	4.81	0.45	4.73	0.53	-0.56	6447.37-5.011e+04-4.868e+04		5025.40	-8854.09
	40	26.05	2.48	-2.98	-1.05	0.55	-2.61 1.041e+04-2.047e+05		7824.08-2.021e+05	2.344e+04	-
	41	36.82	0.59	-0.23	-0.08	0.44	0.32 1.470e+05-1.948e+05		1.469e+05-1.947e+05	-6339.92	-
	32	24.84	1.99	-2.07	-1.98	1.89	-0.60 1.695e+05-5.152e+04 1.649e+05-4.696e+04				-
6.783e+04	31	6.64	1.00	-1.94	-1.94	0.99	0.10	6511.88-4.993e+04-4.852e+04		5107.44	-8791.60
	40	26.02	1.25	-6.65	-6.33	0.93	-1.56 1.045e+04-2.043e+05		7857.97-2.017e+05	2.344e+04	-
	41	36.77	0.40	-0.46	-0.46	0.40	-0.05 1.470e+05-1.944e+05		1.468e+05-1.943e+05	-6243.17	-
	32	24.83	6.77	-1.29	-0.68	6.15	2.13 1.693e+05-5.140e+04 1.648e+05-4.685e+04				-
1.658e+05	32	26.96	1.60	-9.24	1.00	-8.64	2.48 2.430e+05		6.689e+04 2.111e+05	9.881e+04	-
6.785e+04	41	48.67	0.58	-0.58	0.58	-0.58	2.47e-03 4.336e+05		1.020e+05 2.678e+05	2.677e+05	-
1.022e+05	42	26.95	9.28	-1.58	8.68	-0.98	-2.49 2.429e+05		6.690e+04 9.885e+04	2.110e+05	-
	33	31.76	2.37	-2.34	2.37	-2.34	0.01 2.874e+05 8.288e+04 1.851e+05 1.851e+05				-
	32	22.81	1.35	-7.82	0.85	-7.31	2.10 2.056e+05		5.660e+04 1.786e+05	8.361e+04	-



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

4.557e+04	43	21.88	8.68	-1.46	6.48	0.74	-4.18	2.029e+05	8.689e+04	1.090e+05	1.808e+05	-	
8.888e+04	44	24.08	8.32	-3.65	3.50	1.18	-5.87	2.068e+05	2.905e+04	1.166e+05	1.192e+05	-	
4.905e+04	35	22.14	1.86	-2.58	0.44	-1.17	-2.07	2.061e+05	1.044e+05	1.419e+05	1.687e+05	-	
9.860e+04	31 3	34	24.91	7.45	-4.79	6.69	-4.03	-2.95	2.021e+05	2652.57	8.747e+04	1.173e+05	-
3.856e+04	43	18.51	7.34	-1.23	5.48	0.63	-3.54	1.717e+05	7.352e+04	9.224e+04	1.530e+05	-	
7.520e+04	44	20.38	7.04	-3.09	2.96	0.99	-4.97	1.750e+05	2.458e+04	9.869e+04	1.009e+05	-	
4.150e+04	35	18.73	1.57	-2.18	0.37	-0.99	-1.75	1.744e+05	8.837e+04	1.200e+05	1.427e+05	-	
9.021e+04	31 7	34	22.87	26.01	-9.60	13.02	3.39	-17.14	1.844e+05	1997.15	7.969e+04	1.067e+05	-
3.522e+04	43	16.89	11.21	-24.15	-1.09	-11.85	-16.84	1.566e+05	6.705e+04	8.417e+04	1.395e+05	-	
6.873e+04	44	18.78	35.98	-29.94	-4.37	10.41	-32.12	1.597e+05	2.219e+04	8.999e+04	9.187e+04	-	
3.786e+04	35	17.12	-3.67	-36.45	-34.13	-5.99	-8.42	1.591e+05	8.068e+04	1.097e+05	1.301e+05	-	
8.985e+04	31 39	34	22.73	13.08	-5.56	8.61	-1.09	-7.96	1.840e+05	2260.41	7.958e+04	1.067e+05	-
3.511e+04	43	16.85	8.25	-9.44	2.77	-3.96	-8.18	1.563e+05	6.692e+04	8.397e+04	1.392e+05	-	
6.850e+04	44	18.62	16.98	-12.49	0.11	4.37	-14.58	1.593e+05	2.229e+04	8.982e+04	9.178e+04	-	
3.778e+04	35	17.05	-1.24	-13.74	-12.23	-2.76	-4.08	1.588e+05	8.046e+04	1.093e+05	1.299e+05	-	
8.964e+04	31 69	34	22.64	6.77	-4.35	6.08	-3.66	-2.69	1.837e+05	2411.42	7.952e+04	1.066e+05	-
3.505e+04	43	16.83	6.68	-1.12	4.98	0.57	-3.21	1.561e+05	6.684e+04	8.385e+04	1.391e+05	-	
6.837e+04	44	18.53	6.40	-2.81	2.69	0.90	-4.52	1.591e+05	2.235e+04	8.972e+04	9.172e+04	-	
3.773e+04	35	17.03	1.43	-1.99	0.34	-0.90	-1.59	1.586e+05	8.033e+04	1.091e+05	1.298e+05	-	
7.086e+04	32 1	35	25.21	3.39	-6.22	-0.59	-2.25	-4.73	2.293e+05	7.126e+04	1.153e+05	1.852e+05	-
6.840e+04	44	20.80	9.93	-2.39	4.30	3.25	-6.14	1.866e+05	4.969e+04	1.209e+05	1.154e+05	-	
1.506e+05	45	38.69	5.49	-6.65	4.66	-5.82	-3.06	3.150e+05	6222.16	1.944e+05	1.268e+05	-	
5.438e+04	36	25.44	16.04	-4.62	6.25	5.17	-10.31	2.332e+05	8.286e+04	1.061e+05	2.099e+05	-	
5.996e+04	32 3	35	21.33	2.87	-5.27	-0.50	-1.90	-4.01	1.940e+05	6.029e+04	9.756e+04	1.567e+05	-
5.788e+04	44	17.60	8.41	-2.02	3.64	2.75	-5.19	1.579e+05	4.205e+04	1.023e+05	9.767e+04	-	
1.275e+05	45	32.74	4.65	-5.63	3.95	-4.93	-2.59	2.665e+05	5264.90	1.645e+05	1.073e+05	-	
4.602e+04	36	21.52	13.57	-3.91	5.29	4.38	-8.73	1.973e+05	7.011e+04	8.981e+04	1.776e+05	-	
5.468e+04	32 23	35	19.78	49.55	-90.77	-64.44	23.21	-54.79	1.773e+05	5.518e+04	8.907e+04	1.434e+05	-
5.273e+04	44	16.05	-9.95	-47.61	-41.46	-16.10	-13.92	1.442e+05	3.867e+04	9.354e+04	8.935e+04	-	
1.164e+05	45	30.42	102.09	-94.98	-39.61	46.72	-88.58	2.435e+05	4862.81	1.502e+05	9.814e+04	-	
4.183e+04	36	19.70	21.46	-42.51	-27.47	6.42	27.13	1.803e+05	6.426e+04	8.206e+04	1.625e+05	-	
5.457e+04	32 55	35	19.53	18.98	-35.40	-23.78	7.36	-22.29	1.767e+05	5.495e+04	8.883e+04	1.428e+05	-
5.266e+04	44	16.00	0.53	-17.83	-13.01	-4.28	-8.07	1.438e+05	3.839e+04	9.318e+04	8.899e+04	-	
1.161e+05	45	30.00	37.28	-35.25	-12.16	14.18	-33.79	2.427e+05	4814.19	1.498e+05	9.776e+04	-	
4.183e+04	36	19.56	6.60	-8.69	-6.96	4.87	4.85	1.797e+05	6.393e+04	8.180e+04	1.619e+05	-	
5.451e+04	32 69	35	19.39	2.61	-4.79	-0.45	-1.73	-3.64	1.764e+05	5.481e+04	8.869e+04	1.425e+05	-
	44	16.00	7.64	-1.84	3.31	2.50	-4.72	1.435e+05	3.823e+04	9.298e+04	8.879e+04	-	





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

7.537e+04	48	22.68	3.02	-5.30	2.53	-4.81	1.95-5.062e+04-2.028e+05-1.164e+05-1.370e+05
1.903e+04	39	19.33	6.95	3.27	5.86	4.36	1.68-1.127e+05-1.777e+05-1.189e+05-1.716e+05
5.613e+04	34 69 38	19.06	5.62	-4.30	0.68	0.64	-4.96-6.258e+04-1.749e+05-1.212e+05-1.164e+05
2.528e+04	47	19.47	0.16	-2.36	-1.88	-0.32	-0.99-1.205e+05-1.776e+05-1.358e+05-1.624e+05
7.518e+04	48	22.64	5.55	-4.35	4.37	-3.16	-3.21-5.076e+04-2.025e+05-1.163e+05-1.370e+05
1.898e+04	39	19.30	4.98	-1.38	3.29	0.31	-2.81-1.126e+05-1.776e+05-1.188e+05-1.714e+05
3.522e+04	35 1 39	22.52	8.30	-4.99	4.16	-0.85	-6.16-1.316e+05-2.071e+05-1.558e+05-1.829e+05
5.238e+04	48	29.76	6.73	-3.00	6.40	-2.67	-1.77-1.305e+05-2.770e+05-1.525e+05-2.550e+05
6.797e+04	49	31.89	2.80	-11.69	0.80	-9.70	-5.00-1.601e+05-2.967e+05-2.353e+05-2.215e+05
5.298e+04	40	30.75	7.26	3.02	6.71	3.57	-1.42-1.557e+05-2.859e+05-1.830e+05-2.586e+05
2.980e+04	35 3 39	19.06	7.02	-4.22	3.52	-0.72	-5.21-1.114e+05-1.752e+05-1.318e+05-1.548e+05
4.432e+04	48	25.18	5.70	-2.54	5.42	-2.26	-1.49-1.104e+05-2.344e+05-1.290e+05-2.158e+05
5.751e+04	49	26.98	2.37	-9.89	0.68	-8.20	-4.23-1.355e+05-2.511e+05-1.991e+05-1.874e+05
4.483e+04	40	26.02	6.14	2.55	5.68	3.02	-1.20-1.318e+05-2.419e+05-1.549e+05-2.188e+05
2.737e+04	35 7 39	17.40	13.95	-16.05	4.98	-7.08	13.74-1.012e+05-1.597e+05-1.201e+05-1.408e+05
4.038e+04	48	23.00	22.30	6.56	11.21	17.66	7.18-1.006e+05-2.137e+05-1.176e+05-1.967e+05
5.273e+04	49	24.65	12.97	-7.16	5.99	-0.18	9.58-1.231e+05-2.291e+05-1.816e+05-1.706e+05
4.091e+04	40	23.72	11.19	-0.35	3.99	6.85	5.59-1.202e+05-2.205e+05-1.413e+05-1.994e+05
2.719e+04	35 39 39	17.33	4.39	-3.54	3.85	-3.00	2.00-1.012e+05-1.595e+05-1.199e+05-1.407e+05
4.032e+04	48	22.93	8.21	4.13	7.21	5.13	1.75-1.005e+05-2.133e+05-1.174e+05-1.964e+05
5.244e+04	49	24.57	2.72	-4.95	2.58	-4.80	1.05-1.231e+05-2.286e+05-1.812e+05-1.705e+05
4.081e+04	40	23.68	5.85	3.12	4.73	4.24	1.34-1.199e+05-2.201e+05-1.410e+05-1.991e+05
2.709e+04	35 69 39	17.33	6.39	-3.84	3.20	-0.66	-4.73-1.012e+05-1.593e+05-1.198e+05-1.407e+05
4.029e+04	48	22.89	5.18	-2.31	4.92	-2.05	-1.36-1.004e+05-2.131e+05-1.173e+05-1.961e+05
5.228e+04	49	24.53	2.15	-8.99	0.62	-7.46	-3.84-1.231e+05-2.282e+05-1.810e+05-1.704e+05
4.075e+04	40	23.66	5.58	2.32	5.16	2.74	-1.09-1.198e+05-2.199e+05-1.408e+05-1.989e+05
4.462e+04	36 1 40	29.52	8.06	-1.70	7.47	-1.10	-2.33-1.298e+05-2.748e+05-1.452e+05-2.594e+05
8.941e+04	49	35.09	1.37	-1.58	1.37	-1.58	-0.04-1.475e+05-3.264e+05-2.369e+05-2.370e+05
4.462e+04	50	29.52	1.66	-8.08	1.11	-7.53	2.24-1.298e+05-2.748e+05-2.595e+05-1.452e+05
1.481e+05	41	51.67	0.54	-0.55	0.54	-0.55	0.01-1.806e+05-4.767e+05-3.286e+05-3.286e+05
3.776e+04	36 3 40	24.98	6.82	-1.43	6.32	-0.93	-1.97-1.098e+05-2.325e+05-1.228e+05-2.195e+05
7.565e+04	49	29.69	1.16	-1.33	1.16	-1.33	-0.03-1.248e+05-2.761e+05-2.005e+05-2.005e+05
3.775e+04	50	24.98	1.40	-6.83	0.94	-6.37	1.89-1.099e+05-2.325e+05-2.195e+05-1.229e+05
1.253e+05	41	43.72	0.45	-0.46	0.45	-0.46	9.79e-03-1.528e+05-4.033e+05-2.781e+05-2.781e+05
3.453e+04	36 7 40	22.79	7.01	-11.20	1.31	-5.50	8.45-1.001e+05-2.118e+05-1.121e+05-1.999e+05
6.904e+04	49	27.13	19.53	9.63	10.63	18.52	2.99-1.138e+05-2.519e+05-1.828e+05-1.830e+05
	50	22.85	10.49	-9.44	-2.58	3.62	9.47-1.002e+05-2.124e+05-2.006e+05-1.120e+05



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

8.392e+04	43	24.41	4.20	-7.24	-3.44	0.39	-5.39	1.962e+05	-852.96	4.606e+04	1.493e+05	-
39 1	43	11.85	2.64	-6.99	-4.38	0.04	-4.28	9.882e+04	7318.27	2.349e+04	8.265e+04	-
3.490e+04	52	39.81	5.79	-8.14	-6.30	3.95	-4.72	3.138e+05-1.362e+04	1.079e+05	1.923e+05	-	
1.582e+05	53	24.02	4.17	-0.05	3.41	0.72	-1.62	1.316e+05-9.078e+04-9.047e+04	1.313e+05	-8332.67	-	
8.129e+04	44	23.06	6.41	-8.64	-0.96	-1.28	-7.52	1.924e+05	1.411e+04	6.670e+04	1.398e+05	-
39 3	43	10.03	2.24	-5.91	-3.70	0.03	-3.62	8.362e+04	6192.38	1.988e+04	6.993e+04	-
2.953e+04	52	33.68	4.90	-6.89	-5.33	3.35	-3.99	2.655e+05-1.152e+04	9.129e+04	1.627e+05	-	
1.338e+05	53	20.32	3.53	-0.04	2.88	0.61	-1.37	1.114e+05-7.681e+04-7.655e+04	1.111e+05	-7050.72	-	
6.879e+04	44	19.52	5.42	-7.31	-0.81	-1.08	-6.37	1.628e+05	1.194e+04	5.644e+04	1.183e+05	-
39 8	43	9.20	24.98	-8.64	4.27	12.08	-16.35	7.573e+04	5179.18	1.777e+04	6.314e+04	-
2.701e+04	52	30.81	12.64	-25.50	-9.94	-2.92	-18.75	2.418e+05-1.117e+04	8.283e+04	1.478e+05	-	
1.222e+05	53	18.61	40.85	3.69	39.35	5.19	-7.32	1.009e+05-7.041e+04-7.016e+04	1.007e+05	-6544.53	-	
6.290e+04	44	17.93	34.56	-34.77	9.19	-9.40	-33.40	1.481e+05	1.030e+04	5.105e+04	1.074e+05	-
39 40	43	9.15	10.35	-6.51	-0.58	4.42	-8.05	7.591e+04	5465.37	1.796e+04	6.342e+04	-
2.691e+04	52	30.69	6.98	-12.81	-6.70	0.87	-9.14	2.415e+05-1.073e+04	8.293e+04	1.479e+05	-	
1.219e+05	53	18.52	16.83	1.42	16.01	2.25	-3.46	1.011e+05-7.004e+04-6.980e+04	1.009e+05	-6458.88	-	
6.267e+04	44	17.81	15.64	-16.81	2.88	-4.05	-15.85	1.480e+05	1.065e+04	5.122e+04	1.075e+05	-
39 69	43	9.11	2.03	-5.37	-3.37	0.03	-3.29	7.601e+04	5629.44	1.807e+04	6.357e+04	-
2.685e+04	52	30.62	4.46	-6.26	-4.85	3.04	-3.63	2.414e+05-1.048e+04	8.299e+04	1.479e+05	-	
1.217e+05	53	18.47	3.21	-0.03	2.62	0.55	-1.25	1.012e+05-6.983e+04-6.959e+04	1.010e+05	-6409.74	-	
6.253e+04	44	17.74	4.93	-6.65	-0.74	-0.98	-5.79	1.480e+05	1.085e+04	5.131e+04	1.075e+05	-
40 1	44	15.59	4.55	-8.07	-1.45	-2.07	-6.30	1.354e+05	2.280e+04	6.169e+04	9.648e+04	-
5.354e+04	53	21.40	10.15	-4.86	4.35	0.94	-7.31	1.538e+05-3.275e+04-2.899e+04	1.501e+05	-	-	
2.620e+04	54	31.37	3.26	-12.27	-3.85	-5.16	-7.74	2.394e+05-2.495e+04	1.616e+04	1.983e+05	-	
9.580e+04	45	17.19	8.61	-7.14	-1.46	2.93	-7.56	1.157e+05-3.779e+04-2.495e+04	1.029e+05	4.249e+04	-	
40 3	44	13.20	3.85	-6.83	-1.22	-1.75	-5.33	1.146e+05	1.929e+04	5.220e+04	8.164e+04	-
4.530e+04	53	18.10	8.59	-4.11	3.68	0.80	-6.19	1.302e+05-2.771e+04-2.453e+04	1.270e+05	-	-	
2.217e+04	54	26.54	2.76	-10.38	-3.26	-4.37	-6.55	2.026e+05-2.111e+04	1.367e+04	1.678e+05	-	
8.106e+04	45	14.54	7.28	-6.04	-1.24	2.48	-6.40	9.790e+04-3.198e+04-2.111e+04	8.703e+04	3.596e+04	-	
40 23	44	12.05	-18.53	-46.24	-43.97	-20.80	-7.59	1.047e+05	1.799e+04	4.794e+04	7.475e+04	-
4.124e+04	53	16.72	33.84	-62.64	-51.78	22.98	30.49	1.191e+05-2.498e+04-2.212e+04	1.163e+05	-	-	
2.012e+04	54	24.59	42.21	-84.44	-40.68	-1.55	-60.23	1.852e+05-1.893e+04	1.273e+04	1.536e+05	-	
7.391e+04	45	13.91	85.02	-85.52	-55.43	54.93	65.01	8.977e+04-2.894e+04-1.886e+04	7.969e+04	3.309e+04	-	
40 55	44	12.00	-5.54	-19.79	-16.74	-8.59	-5.85	1.043e+05	1.770e+04	4.763e+04	7.441e+04	-
4.120e+04	53	16.55	10.90	-18.81	-16.75	8.84	7.54	1.186e+05-2.511e+04-2.223e+04	1.157e+05	-	-	
2.014e+04	54	24.30	16.73	-36.53	-16.71	-3.09	-25.74	1.846e+05-1.910e+04	1.254e+04	1.529e+05	-	
7.377e+04	45	13.46	29.41	-28.87	-20.92	21.46	20.00	8.928e+04-2.902e+04-1.907e+04	7.933e+04	3.283e+04	-	
40 69	44	12.00	3.50	-6.21	-1.11	-1.59	-4.85	1.041e+05	1.753e+04	4.746e+04	7.422e+04	-
4.118e+04	53	16.46	7.81	-3.74	3.35	0.73	-5.62	1.183e+05-2.519e+04-2.230e+04	1.154e+05	-	-	
2.016e+04	54	24.13	2.51	-9.44	-2.96	-3.97	-5.95	1.842e+05-1.919e+04	1.243e+04	1.525e+05	-	
7.369e+04	45	13.22	6.62	-5.49	-1.12	2.26	-5.81	8.900e+04-2.907e+04-1.919e+04	7.912e+04	3.269e+04	-	
41 1	46	40.74	5.32	-2.23	-1.48	4.56	-2.27	1.097e+05-3.693e+05-1.545e+05	-3.244e+05	-	-	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

9.810e+04										
1.405e+05	55	31.79	1.97	-6.42	1.78	-6.24	-1.24	6.007e+04-2.210e+05-7.886e+04-8.207e+04	-	
8.541e+04	56	36.26	4.74	-8.80	3.05	-7.11	-4.48-1.582e+05-3.374e+05-2.749e+05-2.207e+05			
8.301e+04	47	19.84	9.09	-3.26	5.05	0.78	-5.79-1.335e+05-1.774e+05-1.348e+05-1.761e+05	-7369.13		
	41 3	46	34.47	4.50	-1.89	-1.25	3.86	-1.92-9.284e+04-3.125e+05-1.308e+05-2.745e+05		
1.189e+05	55	26.90	1.67	-5.43	1.51	-5.28	-1.05	5.083e+04-1.870e+05-6.673e+04-6.945e+04	-	
7.227e+04	56	30.68	4.01	-7.45	2.58	-6.02	-3.79-1.338e+05-2.855e+05-2.326e+05-1.867e+05			
7.584e+04	47	16.79	7.69	-2.75	4.27	0.66	-4.90-1.130e+05-1.501e+05-1.141e+05-1.490e+05	-6235.42		
	41 7	46	31.64	31.04	-46.97	12.85	-28.78	32.99-8.445e+04-2.848e+05-1.192e+05-2.501e+05		
1.084e+05	55	24.57	50.86	20.95	38.58	33.23	-14.72	4.643e+04-1.704e+05-6.064e+04-6.331e+04	-	
6.603e+04	56	28.12	16.44	-33.98	-14.85	-2.69	24.47-1.219e+05-2.605e+05-2.123e+05-1.701e+05			
7.560e+04	47	15.34	21.73	-5.61	5.17	10.95	13.36-1.031e+05-1.366e+05-1.041e+05-1.357e+05	-5606.63		
	41 39	46	31.43	10.36	-14.66	3.96	-8.26	10.92-8.442e+04-2.843e+05-1.190e+05-2.498e+05		
1.082e+05	55	24.50	18.65	5.35	14.94	9.07	-5.97	4.629e+04-1.701e+05-6.065e+04-6.320e+04	-	
6.582e+04	56	27.96	2.55	-10.93	-3.92	-4.46	6.73-1.217e+05-2.599e+05-2.117e+05-1.699e+05			
7.546e+04	47	15.29	6.40	2.33	4.35	4.38	2.04-1.029e+05-1.365e+05-1.038e+05-1.355e+05	-5645.99		
	41 69	46	31.34	4.09	-1.72	-1.14	3.51	-1.74-8.440e+04-2.840e+05-1.189e+05-2.496e+05		
1.081e+05	55	24.46	1.52	-4.94	1.37	-4.80	-0.95	4.621e+04-1.700e+05-6.066e+04-6.313e+04	-	
6.570e+04	56	27.89	3.65	-6.77	2.35	-5.47	-3.44-1.217e+05-2.595e+05-2.114e+05-1.698e+05			
4.440e+04	47	15.26	6.99	-2.50	3.88	0.60	-4.46-1.027e+05-1.364e+05-1.037e+05-1.355e+05	-5668.56		
	42 1	47	25.88	6.24	-3.17	5.73	-2.66	-2.12-1.377e+05-2.402e+05-1.634e+05-2.145e+05		
2.391e+04	56	23.20	3.28	-2.02	2.47	-1.21	-1.91-1.563e+05-2.073e+05-1.730e+05-1.907e+05			
3.821e+04	57	29.57	2.53	-6.45	1.93	-5.85	-2.24-1.823e+05-2.698e+05-2.047e+05-2.474e+05			
4.277e+04	48	25.56	3.34	-2.87	1.91	-1.44	-2.61-1.430e+05-2.362e+05-2.082e+05-1.711e+05			
3.757e+04	42 3	47	21.90	5.28	-2.68	4.85	-2.25	-1.80-1.165e+05-2.032e+05-1.382e+05-1.815e+05		
2.023e+04	56	19.63	2.78	-1.71	2.09	-1.02	-1.61-1.323e+05-1.754e+05-1.464e+05-1.614e+05			
3.233e+04	57	25.02	2.14	-5.46	1.63	-4.95	-1.90-1.542e+05-2.283e+05-1.732e+05-2.094e+05			
3.619e+04	48	21.63	2.82	-2.43	1.62	-1.22	-2.21-1.210e+05-1.999e+05-1.762e+05-1.447e+05			
3.421e+04	42 23	47	20.04	14.72	-24.01	14.55	-23.84	-2.57-1.065e+05-1.856e+05-1.262e+05-1.658e+05		
1.846e+04	56	17.97	30.91	8.23	23.87	15.27	10.50-1.206e+05-1.601e+05-1.334e+05-1.473e+05			
2.937e+04	57	22.85	25.66	-19.06	25.02	-18.43	5.30-1.409e+05-2.084e+05-1.580e+05-1.913e+05			
3.297e+04	48	19.73	46.02	-14.13	34.83	-2.94	23.41-1.105e+05-1.822e+05-1.605e+05-1.322e+05			
3.417e+04	42 55	47	19.95	8.32	-10.21	8.10	-9.99	-1.97-1.061e+05-1.850e+05-1.259e+05-1.653e+05		
1.842e+04	56	17.89	11.25	3.64	9.91	4.98	2.90-1.204e+05-1.597e+05-1.332e+05-1.469e+05			
2.938e+04	57	22.78	10.10	-9.61	10.06	-9.58	0.83-1.405e+05-2.079e+05-1.577e+05-1.907e+05			
3.293e+04	48	19.69	16.51	-4.65	13.63	-1.78	7.26-1.102e+05-1.819e+05-1.603e+05-1.318e+05			
3.415e+04	42 69	47	19.91	4.80	-2.44	4.41	-2.05	-1.63-1.059e+05-1.848e+05-1.257e+05-1.650e+05		
1.839e+04	56	17.85	2.52	-1.55	1.90	-0.93	-1.47-1.203e+05-1.595e+05-1.330e+05-1.467e+05			
2.939e+04	57	22.74	1.95	-4.96	1.48	-4.50	-1.73-1.402e+05-2.076e+05-1.575e+05-1.903e+05			
	48	19.66	2.57	-2.21	1.47	-1.11	-2.01-1.100e+05-1.817e+05-1.601e+05-1.316e+05			

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

3.290e+04	43	1	48	31.86	4.10	-4.65	3.28	-3.83	-2.55-2.319e+05-2.762e+05-2.325e+05-2.756e+05	-5059.51
			57	23.22	0.74	-1.18	0.74	-1.18	-0.02-1.292e+05-2.148e+05-1.720e+05-1.720e+05	
4.278e+04			58	31.86	4.16	-4.31	3.61	-3.76	2.09-2.319e+05-2.762e+05-2.756e+05-2.325e+05	-5053.02
			49	29.24	7.95	-8.04	7.95	-8.04	-0.03-1.145e+05-2.712e+05-1.928e+05-1.928e+05	
7.837e+04	43	3	48	26.96	3.47	-3.93	2.77	-3.24	-2.16-1.962e+05-2.337e+05-1.967e+05-2.332e+05	-4281.13
			57	19.64	0.63	-1.00	0.63	-1.00	-0.02-1.093e+05-1.817e+05-1.455e+05-1.455e+05	
3.620e+04			58	26.95	3.52	-3.64	3.05	-3.18	1.77-1.963e+05-2.337e+05-2.332e+05-1.968e+05	-4275.63
			49	24.74	6.73	-6.80	6.73	-6.80	-0.02-9.686e+04-2.295e+05-1.632e+05-1.632e+05	
6.632e+04	43	23	48	24.61	27.05	-14.22	20.83	-8.00	14.76-1.789e+05-2.133e+05-1.793e+05-2.129e+05	-3801.39
			57	18.03	30.04	14.16	28.20	16.01	-5.09-9.968e+04-1.658e+05-1.327e+05-1.328e+05	
3.305e+04			58	24.62	31.89	-18.19	7.95	5.75	25.02-1.791e+05-2.130e+05-2.126e+05-1.796e+05	-3982.86
			49	22.58	27.49	-10.58	24.64	-7.73	10.02-8.830e+04-2.094e+05-1.487e+05-1.490e+05	
6.054e+04	43	55	48	24.54	10.33	-5.92	9.20	-4.79	4.14-1.786e+05-2.128e+05-1.790e+05-2.123e+05	-3858.92
			57	17.92	11.23	4.68	10.64	5.26	-1.87-9.950e+04-1.654e+05-1.324e+05-1.325e+05	
3.296e+04			58	24.55	12.84	-7.92	4.66	0.26	10.14-1.787e+05-2.127e+05-2.122e+05-1.791e+05	-3921.91
			49	22.52	13.52	-7.40	12.87	-6.75	3.64-8.814e+04-2.089e+05-1.485e+05-1.486e+05	
6.038e+04	43	69	48	24.51	3.15	-3.58	2.52	-2.94	-1.96-1.784e+05-2.125e+05-1.789e+05-2.120e+05	-3891.93
			57	17.86	0.57	-0.91	0.57	-0.91	-0.01-9.939e+04-1.652e+05-1.323e+05-1.323e+05	
3.291e+04			58	24.50	3.20	-3.31	2.78	-2.89	1.61-1.784e+05-2.124e+05-2.120e+05-1.789e+05	-3886.94
			49	22.49	6.12	-6.18	6.12	-6.18	-0.02-8.805e+04-2.086e+05-1.483e+05-1.483e+05	
6.029e+04	44	1	49	31.89	11.48	-2.93	9.59	-1.04	4.86-1.601e+05-2.967e+05-2.215e+05-2.353e+05	
6.795e+04			58	29.76	2.63	-6.84	2.37	-6.59	1.53-1.305e+05-2.770e+05-2.550e+05-1.525e+05	
5.238e+04			59	22.52	4.78	-8.23	0.87	-4.32	5.96-1.317e+05-2.071e+05-1.829e+05-1.558e+05	
3.521e+04			50	30.75	-3.13	-7.27	-3.61	-6.79	1.33-1.558e+05-2.859e+05-2.586e+05-1.831e+05	
5.298e+04	44	3	49	26.98	9.71	-2.48	8.12	-0.88	4.11-1.355e+05-2.511e+05-1.874e+05-1.991e+05	
5.750e+04			58	25.18	2.22	-5.79	2.01	-5.57	1.30-1.104e+05-2.344e+05-2.157e+05-1.291e+05	
4.432e+04			59	19.06	4.05	-6.96	0.74	-3.65	5.05-1.114e+05-1.752e+05-1.548e+05-1.319e+05	
2.979e+04			50	26.02	-2.65	-6.15	-3.06	-5.74	1.13-1.318e+05-2.419e+05-2.188e+05-1.549e+05	
4.483e+04	44	7	49	24.65	20.78	-11.81	0.57	8.39	15.82-1.239e+05-2.290e+05-1.713e+05-1.816e+05	
5.225e+04			58	23.03	33.80	10.59	10.92	33.47	2.75-1.007e+05-2.140e+05-1.969e+05-1.178e+05	
4.053e+04			59	17.42	31.66	-15.66	-3.88	19.88	20.46-1.019e+05-1.600e+05-1.415e+05-1.204e+05	
2.704e+04			50	23.76	11.72	4.03	6.22	9.53	3.47-1.202e+05-2.208e+05-1.998e+05-1.412e+05	
4.094e+04	44	55	49	24.57	15.30	-4.11	10.03	1.16	8.63-1.232e+05-2.286e+05-1.705e+05-1.812e+05	
5.243e+04			58	22.93	10.41	-4.18	9.01	-2.78	4.29-1.005e+05-2.133e+05-1.963e+05-1.174e+05	
4.032e+04			59	17.36	9.16	-13.50	-1.67	-2.67	11.32-1.013e+05-1.595e+05-1.407e+05-1.200e+05	
2.718e+04			50	23.68	0.63	-7.56	-1.28	-5.65	3.46-1.200e+05-2.201e+05-1.991e+05-1.410e+05	
4.081e+04	44	69	49	24.53	8.83	-2.25	7.38	-0.80	3.74-1.232e+05-2.282e+05-1.704e+05-1.810e+05	
5.227e+04			58	22.89	2.02	-5.26	1.83	-5.07	1.18-1.004e+05-2.131e+05-1.961e+05-1.173e+05	
4.029e+04			59	17.33	3.68	-6.33	0.67	-3.32	4.59-1.013e+05-1.593e+05-1.407e+05-1.199e+05	
2.708e+04			50	23.66	-2.40	-5.59	-2.78	-5.22	1.03-1.198e+05-2.199e+05-1.989e+05-1.408e+05	
4.075e+04	45	1	50	18.02	8.08	3.66	4.09	7.64	1.31 -1891.04-1.463e+05-1.445e+05	-3675.29
1.595e+04										-



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

9.765e+04	59	32.54	8.46	-4.03	-1.12	5.55	5.28-5.611e+04-2.858e+05-2.314e+05-1.105e+05	
5.906e+04	60	16.32	8.94	-2.41	-2.17	8.70	1.63-2.071e+04-1.407e+05-9.122e+04-7.018e+04	-
1.393e+05	51	40.68	2.88	-11.64	-10.19	1.43	4.36 5.352e+04-2.976e+05-2.288e+05-1.524e+04	
1.350e+04	45 3	50	15.25	6.83	3.10	3.46	6.47 1.11 -1600.11-1.238e+05-1.223e+05 -3109.86	-
8.262e+04	59	27.54	7.16	-3.41	-0.95	4.69	4.47-4.748e+04-2.418e+05-1.958e+05-9.350e+04	
4.997e+04	60	13.81	7.56	-2.04	-1.84	7.36	1.38-1.753e+04-1.190e+05-7.719e+04-5.938e+04	-
1.179e+05	51	34.42	2.44	-9.85	-8.62	1.21	3.69 4.529e+04-2.518e+05-1.936e+05-1.289e+04	
1.221e+04	45 23	50	13.88	21.26	0.82	4.09	17.98 7.50 -1147.34-1.125e+05-1.111e+05 -2503.26	-
7.548e+04	59	25.16	29.25	-4.81	4.67	19.77	15.26-4.296e+04-2.204e+05-1.784e+05-8.504e+04	
4.549e+04	60	12.59	29.65	-21.80	-19.68	27.53	10.23-1.576e+04-1.082e+05-6.999e+04-5.392e+04	-
1.077e+05	51	31.50	6.20	-25.07	-20.56	1.69	10.99 4.184e+04-2.295e+05-1.763e+05-1.135e+04	
1.225e+04	45 55	50	13.87	11.68	2.10	3.49	10.29 3.38 -1342.64-1.125e+05-1.112e+05 -2709.07	-
7.525e+04	59	25.08	14.79	-3.71	1.16	9.92	8.15-4.309e+04-2.201e+05-1.781e+05-8.501e+04	
4.545e+04	60	12.57	15.17	-9.11	-8.24	14.29	4.53-1.587e+04-1.082e+05-7.011e+04-5.396e+04	-
1.074e+05	51	31.37	3.65	-14.81	-12.47	1.32	6.14 4.142e+04-2.291e+05-1.761e+05-1.159e+04	
1.227e+04	45 69	50	13.86	6.21	2.82	3.15	5.88 1.01 -1454.65-1.125e+05-1.112e+05 -2827.14	-
7.511e+04	59	25.03	6.51	-3.10	-0.86	4.27	4.06-4.316e+04-2.198e+05-1.780e+05-8.500e+04	
4.543e+04	60	12.56	6.88	-1.86	-1.67	6.69	1.26-1.593e+04-1.082e+05-7.017e+04-5.398e+04	-
1.072e+05	51	31.29	2.22	-8.95	-7.84	1.10	3.35 4.117e+04-2.289e+05-1.760e+05-1.172e+04	
6.374e+04	46 1	51	21.96	9.13	-8.36	-8.35	9.12 -0.45 8.038e+04-1.221e+05-1.219e+05 8.025e+04 -5186.32	
		60	26.19	4.80	-4.34	-4.10	4.57 1.45 7.561e+04-1.629e+05-1.444e+05 5.714e+04	-
		61	11.94	2.52	-0.27	-0.23	2.48 0.31 3.618e+04-7.292e+04-7.260e+04 3.587e+04 -5848.25	
	46 3	52	24.31	5.62	-4.69	-3.17	4.10 -3.65 1.014e+05-1.245e+05-1.100e+05 8.695e+04 5.536e+04	
		51	18.58	7.73	-7.07	-7.06	7.72 -0.38 6.801e+04-1.033e+05-1.032e+05 6.790e+04 -4388.42	
		60	22.16	4.06	-3.67	-3.47	3.86 1.23 6.398e+04-1.378e+05-1.222e+05 4.835e+04	-
5.393e+04	61	10.10	2.13	-0.22	-0.20	2.10	0.26 3.061e+04-6.170e+04-6.143e+04 3.035e+04 -4948.52	
		52	20.57	4.75	-3.97	-2.68	3.47 -3.09 8.584e+04-1.053e+05-9.305e+04 7.357e+04 4.685e+04	
	46 8	51	17.01	28.38	-10.68	-7.68	25.38 -10.39 6.150e+04-9.457e+04-9.445e+04 6.139e+04 -4260.91	
		60	20.36	30.74	-16.42	-8.22	22.54 -17.87 5.768e+04-1.262e+05-1.120e+05 4.345e+04	-
4.914e+04	61	9.23	33.26	15.67	18.34	30.60	6.31 2.749e+04-5.662e+04-5.637e+04 2.723e+04 -4665.46	
		52	18.83	35.95	-20.74	7.21	8.00 -28.34 7.749e+04-9.652e+04-8.534e+04 6.631e+04 4.266e+04	
	46 40	51	16.93	14.46	-7.63	-6.88	13.71 -4.01 6.171e+04-9.415e+04-9.404e+04 6.160e+04 -4088.43	
		60	20.23	12.39	-6.94	-5.00	10.45 -5.81 5.799e+04-1.256e+05-1.114e+05 4.377e+04	-
4.907e+04	61	9.20	13.26	5.68	6.57	12.37	2.45 2.771e+04-5.628e+04-5.604e+04 2.746e+04 -4559.47	
		52	18.73	15.27	-9.27	1.08	4.92 -12.12 7.783e+04-9.603e+04-8.486e+04 6.667e+04 4.261e+04	
	46 69	51	16.89	7.02	-6.43	-6.42	7.01 -0.34 6.183e+04-9.391e+04-9.380e+04 6.173e+04 -3989.48	
		60	20.15	3.69	-3.34	-3.15	3.51 1.12 5.816e+04-1.253e+05-1.111e+05 4.396e+04	-
4.903e+04	61	9.19	1.94	-0.20	-0.18	1.91	0.24 2.783e+04-5.609e+04-5.585e+04 2.759e+04 -4498.66	
		52	18.70	4.32	-3.61	-2.44	3.15 -2.81 7.803e+04-9.574e+04-8.459e+04 6.688e+04 4.259e+04	
	47 1	52	31.20	3.94	-3.70	-1.46	1.70 -3.48 1.173e+05-1.715e+05-1.627e+05 1.085e+05	-
4.963e+04	61	29.83	6.92	-2.47	-1.58	6.03	-2.76 2.022e+05-6.355e+04-1.561e+04 1.542e+05	-
1.022e+05	62	18.28	3.13	-3.81	-2.60	1.92	-2.64 7.136e+04-9.800e+04-9.640e+04 6.976e+04	-
1.639e+04	53	21.55	3.40	-7.28	-6.57	2.68	-2.67 1.846e+05 2.452e+04 5.235e+04 1.568e+05	-
6.067e+04	47 3	52	26.40	3.34	-3.13	-1.24	1.44 -2.94 9.926e+04-1.451e+05-1.376e+05 9.182e+04	-
4.200e+04								

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

8.646e+04	61	25.24	5.86	-2.09	-1.33	5.10	-2.33	1.711e+05	-5.377e+04	-1.321e+04	1.305e+05	-
1.386e+04	62	15.47	2.65	-3.23	-2.20	1.63	-2.23	6.038e+04	-8.292e+04	-8.157e+04	5.903e+04	-
5.133e+04	53	18.24	2.87	-6.16	-5.56	2.27	-2.26	1.562e+05	2.075e+04	4.430e+04	1.327e+05	-
3.824e+04	47 23 52	24.17	12.57	-34.56	-29.66	7.67	14.38	9.085e+04	-1.320e+05	-1.252e+05	8.408e+04	-
7.882e+04	61	23.13	25.90	-19.36	-19.34	25.89	-0.89	1.565e+05	-4.863e+04	-1.169e+04	1.195e+05	-
1.259e+04	62	14.19	-4.08	-27.20	-27.15	-4.13	-1.07	5.542e+04	-7.536e+04	-7.413e+04	5.420e+04	-
4.675e+04	53	16.81	31.62	-26.88	-25.19	29.93	-9.78	1.428e+05	1.932e+04	4.073e+04	1.214e+05	-
3.820e+04	47 55 52	24.06	4.42	-12.32	-11.53	3.63	3.54	9.046e+04	-1.319e+05	-1.252e+05	8.370e+04	-
7.868e+04	61	23.02	12.52	-7.96	-7.82	12.38	-1.67	1.559e+05	-4.879e+04	-1.189e+04	1.190e+05	-
1.260e+04	62	14.11	-0.31	-11.43	-11.17	-0.57	-1.68	5.508e+04	-7.537e+04	-7.414e+04	5.386e+04	-
4.670e+04	53	16.66	13.15	-13.32	-12.39	12.22	-4.87	1.423e+05	1.903e+04	4.044e+04	1.209e+05	-
3.818e+04	47 69 52	24.00	3.03	-2.85	-1.13	1.31	-2.68	9.024e+04	-1.319e+05	-1.251e+05	8.347e+04	-
7.860e+04	61	22.95	5.32	-1.90	-1.21	4.64	-2.12	1.555e+05	-4.889e+04	-1.201e+04	1.187e+05	-
1.260e+04	62	14.06	2.41	-2.93	-2.00	1.48	-2.03	5.489e+04	-7.538e+04	-7.415e+04	5.366e+04	-
4.667e+04	53	16.58	2.61	-5.60	-5.05	2.06	-2.05	1.420e+05	1.886e+04	4.027e+04	1.206e+05	-
4.031e+04	48 1 53	22.62	4.11	-9.88	-5.38	-0.40	-6.54	1.549e+05	-4.590e+04	-3.745e+04	1.464e+05	-
5.722e+04	62	24.69	9.88	-6.61	-4.12	7.40	-5.89	1.237e+05	-1.054e+05	-9.007e+04	1.084e+05	-
2.707e+04	63	13.95	8.06	-0.70	-0.66	8.02	-0.56	1.151e+05	5685.15	1.080e+05	1.285e+04	-
6.956e+04	54	26.73	3.37	-7.65	1.78	-6.06	-3.87	2.156e+05	102.25	2.556e+04	1.901e+05	-
3.411e+04	48 3 53	19.14	3.48	-8.36	-4.55	-0.34	-5.53	1.311e+05	-3.884e+04	-3.169e+04	1.239e+05	-
4.842e+04	62	20.89	8.36	-5.59	-3.49	6.26	-4.99	1.047e+05	-8.917e+04	-7.621e+04	9.173e+04	-
2.291e+04	63	11.80	6.82	-0.59	-0.56	6.79	-0.48	9.741e+04	4810.51	9.135e+04	1.087e+04	-
5.886e+04	54	22.62	2.85	-6.47	1.50	-5.13	-3.27	1.824e+05	86.52	2.163e+04	1.609e+05	-
3.113e+04	48 23 53	17.55	-0.89	-32.26	-29.03	-4.12	-9.54	1.199e+05	-3.520e+04	-2.868e+04	1.134e+05	-
4.401e+04	62	19.12	40.05	-12.41	-10.40	38.04	10.07	9.584e+04	-8.079e+04	-6.905e+04	8.410e+04	-
2.114e+04	63	10.93	36.54	-84.19	-63.27	15.62	-45.70	8.914e+04	4400.27	8.348e+04	1.005e+04	-
5.351e+04	54	20.69	39.29	-53.77	-35.49	21.01	36.97	1.669e+05	521.76	2.002e+04	1.474e+05	-
3.106e+04	48 55 53	17.46	1.36	-16.27	-13.21	-1.70	-6.67	1.194e+05	-3.527e+04	-2.876e+04	1.129e+05	-
4.401e+04	62	19.03	17.51	-5.84	-5.81	17.49	0.79	9.542e+04	-8.097e+04	-6.920e+04	8.365e+04	-
2.094e+04	63	10.80	16.76	-30.53	-23.39	9.62	-16.93	8.877e+04	4383.19	8.320e+04	9947.34	-
5.351e+04	54	20.61	10.62	-17.99	-12.07	4.70	11.59	1.662e+05	240.27	1.979e+04	1.467e+05	-
3.101e+04	48 69 53	17.40	3.16	-7.60	-4.14	-0.31	-5.03	1.191e+05	-3.531e+04	-2.881e+04	1.126e+05	-
4.401e+04	62	18.99	7.60	-5.08	-3.17	5.69	-4.53	9.517e+04	-8.106e+04	-6.929e+04	8.339e+04	-
2.083e+04	63	10.73	6.20	-0.54	-0.51	6.17	-0.43	8.856e+04	4373.19	8.304e+04	9886.28	-
5.351e+04	54	20.56	2.59	-5.88	1.37	-4.66	-2.98	1.658e+05	78.65	1.966e+04	1.463e+05	-
6.788e+04	49 1 55	43.13	6.12	-3.16	4.89	-1.93	-3.15	-9.805e+04	-3.862e+05	-3.692e+05	-1.150e+05	-
	64	33.58	4.26	-8.11	4.08	-7.93	1.49	-2.404e+05	-2.933e+05	-2.594e+05	-2.743e+05	-

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

2.540e+04										
6.048e+04	65	46.08	4.08	-7.59	2.65	-6.16	-3.83-1.119e+05-4.147e+05-1.245e+05-4.020e+05			
5.758e+04	56	22.04	3.90	-5.98	3.89	-5.96	-0.39-8.845e+04-2.046e+05-1.390e+05-1.540e+05			
49 3	55	36.50	5.18	-2.67	4.14	-1.63	-2.66-8.296e+04-3.268e+05-3.124e+05-9.734e+04			
5.744e+04	64	28.41	3.60	-6.86	3.45	-6.71	1.26-2.034e+05-2.482e+05-2.195e+05-2.321e+05			
2.149e+04	65	38.99	3.45	-6.42	2.24	-5.21	-3.24-9.471e+04-3.509e+05-1.054e+05-3.402e+05			
5.117e+04	56	18.65	3.30	-5.06	3.29	-5.04	-0.33-7.485e+04-1.731e+05-1.176e+05-1.303e+05			
4.872e+04	55	33.43	31.18	-59.12	-14.32	-13.62	45.15-7.565e+04-2.980e+05-2.848e+05-8.884e+04			
49 23	64	26.01	32.27	-1.32	18.25	12.69	-16.56-1.855e+05-2.265e+05-2.000e+05-2.121e+05			
5.254e+04	65	35.84	48.90	-50.93	33.58	-35.62	35.98-8.650e+04-3.203e+05-9.616e+04-3.107e+05			
1.962e+04	56	17.04	53.10	-5.31	51.63	-3.85	9.13-6.832e+04-1.579e+05-1.073e+05-1.189e+05			
4.653e+04	55	33.24	10.63	-19.37	-2.83	-5.91	14.92-7.550e+04-2.974e+05-2.843e+05-8.862e+04			
4.444e+04	64	25.88	11.32	-1.92	8.65	0.75	-5.31-1.851e+05-2.260e+05-1.997e+05-2.114e+05			
49 55	65	35.59	17.33	-19.79	13.54	-15.99	11.24-8.624e+04-3.195e+05-9.593e+04-3.098e+05			
5.233e+04	56	16.98	21.11	-4.70	20.72	-4.32	3.14-6.814e+04-1.576e+05-1.071e+05-1.186e+05			
1.957e+04	55	33.18	4.71	-2.43	3.76	-1.48	-2.42-7.542e+04-2.971e+05-2.840e+05-8.849e+04			
4.652e+04	64	25.83	3.28	-6.24	3.14	-6.10	1.15-1.849e+05-2.256e+05-1.996e+05-2.110e+05			
4.434e+04	65	35.45	3.14	-5.84	2.04	-4.74	-2.95-8.610e+04-3.190e+05-9.580e+04-3.093e+05			
49 69	56	16.95	3.00	-4.60	2.99	-4.59	-0.30-6.804e+04-1.574e+05-1.069e+05-1.185e+05			
5.221e+04	55	37.95	5.10	-2.53	5.05	-2.48	0.61-1.440e+05-3.515e+05-1.926e+05-3.030e+05			
1.954e+04	64	31.44	3.75	-4.76	3.75	-4.76	-0.07 4.835e+04-2.260e+05-8.882e+04-8.882e+04			-
4.652e+04	66	37.95	2.45	-6.16	2.19	-5.90	-1.48-1.440e+05-3.515e+05-3.029e+05-1.926e+05			
4.429e+04	57	22.30	3.56	-3.74	3.56	-3.74	-0.08-1.732e+05-1.859e+05-1.795e+05-1.795e+05			-6373.23
50 1	56	32.11	4.31	-2.14	4.27	-2.10	0.52-1.218e+05-2.975e+05-1.629e+05-2.563e+05			
8.788e+04	65	26.61	3.17	-4.03	3.17	-4.03	-0.06 4.091e+04-1.912e+05-7.515e+04-7.516e+04			-
1.372e+05	66	32.11	2.08	-5.21	1.85	-4.99	-1.26-1.218e+05-2.975e+05-2.563e+05-1.629e+05			
8.788e+04	57	18.87	3.01	-3.16	3.01	-3.16	-0.07-1.465e+05-1.573e+05-1.519e+05-1.519e+05			-5392.73
50 3	56	29.41	39.82	-28.99	17.31	-6.48	32.28-1.110e+05-2.712e+05-1.486e+05-2.336e+05			
7.436e+04	65	24.31	53.93	23.44	32.88	44.49	-14.09 3.733e+04-1.744e+05-6.847e+04-6.860e+04			-
1.161e+05	66	29.46	47.36	-31.93	-12.34	27.77	34.20-1.112e+05-2.715e+05-2.341e+05-1.486e+05			
7.436e+04	57	17.23	17.05	-10.96	-0.24	6.33	13.62-1.337e+05-1.435e+05-1.388e+05-1.383e+05			-4898.80
50 7	56	29.27	16.16	-10.95	8.78	-3.57	12.07-1.109e+05-2.707e+05-1.483e+05-2.333e+05			
6.788e+04	65	24.23	19.03	8.68	13.82	13.89	-5.17 3.724e+04-1.740e+05-6.838e+04-6.843e+04			-
1.059e+05	66	29.28	14.80	-10.99	-3.43	7.24	11.74-1.109e+05-2.708e+05-2.334e+05-1.483e+05			
6.785e+04	57	17.18	6.02	-3.89	1.65	0.48	4.92-1.334e+05-1.432e+05-1.384e+05-1.382e+05			-4901.14
50 39	56	29.19	3.92	-1.94	3.88	-1.91	0.47-1.107e+05-2.704e+05-1.481e+05-2.330e+05			
6.770e+04	65	24.19	2.88	-3.66	2.88	-3.66	-0.05 3.719e+04-1.738e+05-6.832e+04-6.833e+04			-
1.056e+05	66	29.20	1.89	-4.74	1.69	-4.54	-1.14-1.108e+05-2.704e+05-2.330e+05-1.481e+05			
6.769e+04	57	17.15	2.74	-2.88	2.74	-2.88	-0.06-1.332e+05-1.430e+05-1.381e+05-1.381e+05			-4902.48
50 69	57	29.57	6.13	-3.00	5.66	-2.53	2.02-1.823e+05-2.698e+05-2.474e+05-2.047e+05			
6.760e+04	65	24.19	2.88	-3.66	2.88	-3.66	-0.05 3.719e+04-1.738e+05-6.832e+04-6.833e+04			-
1.055e+05	66	29.20	1.89	-4.74	1.69	-4.54	-1.14-1.108e+05-2.704e+05-2.330e+05-1.481e+05			
6.760e+04	57	17.15	2.74	-2.88	2.74	-2.88	-0.06-1.332e+05-1.430e+05-1.381e+05-1.381e+05			-4902.48
51 1	57	29.57	6.13	-3.00	5.66	-2.53	2.02-1.823e+05-2.698e+05-2.474e+05-2.047e+05			

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

3.821e+04								
2.391e+04	66	23.20	1.11	-3.13	0.65	-2.67	1.32-1.563e+05-2.073e+05-1.907e+05-1.730e+05	
4.439e+04	67	25.88	2.94	-6.10	2.49	-5.66	1.95-1.377e+05-2.402e+05-2.145e+05-1.634e+05	
4.276e+04	58	25.56	2.44	-3.57	1.35	-2.48	2.32-1.430e+05-2.362e+05-1.711e+05-2.082e+05	
3.233e+04	51 3 57	25.02	5.19	-2.54	4.79	-2.14	1.71-1.543e+05-2.283e+05-2.093e+05-1.732e+05	
2.023e+04	66	19.63	0.94	-2.65	0.55	-2.26	1.12-1.323e+05-1.754e+05-1.614e+05-1.464e+05	
3.756e+04	67	21.90	2.49	-5.16	2.11	-4.79	1.65-1.165e+05-2.032e+05-1.815e+05-1.383e+05	
3.618e+04	58	21.63	2.06	-3.02	1.14	-2.10	1.96-1.210e+05-1.999e+05-1.447e+05-1.762e+05	
2.937e+04	51 7 57	22.84	23.82	-11.76	-9.56	21.62	8.58-1.409e+05-2.084e+05-1.912e+05-1.580e+05	
1.846e+04	66	17.97	31.37	5.21	16.73	19.85	12.99-1.206e+05-1.601e+05-1.473e+05-1.334e+05	
3.421e+04	67	20.05	5.85	-19.86	-19.85	5.84	0.53-1.065e+05-1.856e+05-1.658e+05-1.262e+05	
3.296e+04	58	19.72	46.93	-16.28	-0.77	31.43	27.20-1.105e+05-1.822e+05-1.322e+05-1.605e+05	
2.938e+04	51 39 57	22.77	8.49	-2.56	-0.72	6.65	4.12-1.405e+05-2.079e+05-1.907e+05-1.577e+05	
1.842e+04	66	17.89	11.56	0.79	6.42	5.93	5.38-1.204e+05-1.597e+05-1.469e+05-1.332e+05	
3.417e+04	67	19.96	-0.40	-6.25	-6.02	-0.64	1.15-1.062e+05-1.850e+05-1.653e+05-1.259e+05	
3.292e+04	58	19.68	17.41	-6.79	0.38	10.25	11.05-1.102e+05-1.819e+05-1.318e+05-1.603e+05	
2.939e+04	51 69 57	22.74	4.71	-2.31	4.35	-1.94	1.56-1.402e+05-2.076e+05-1.903e+05-1.575e+05	
1.839e+04	66	17.85	0.86	-2.41	0.50	-2.06	1.02-1.203e+05-1.595e+05-1.467e+05-1.331e+05	
3.415e+04	67	19.91	2.26	-4.69	1.92	-4.35	1.50-1.060e+05-1.848e+05-1.650e+05-1.257e+05	
3.289e+04	58	19.66	1.88	-2.75	1.03	-1.90	1.78-1.100e+05-1.817e+05-1.316e+05-1.602e+05	
9.771e+04	52 1 58	29.43	5.54	-7.11	4.10	-5.67	4.02-6.603e+04-2.633e+05-1.781e+05-1.512e+05	
3.287e+04	67	25.31	2.30	-0.44	0.13	1.73	1.12-1.567e+05-2.309e+05-2.111e+05-1.765e+05	
7.296e+04	68	24.78	5.22	-7.13	-0.77	-1.14	6.17-8.140e+04-2.275e+05-1.513e+05-1.576e+05	
2.467e+04	59	25.09	1.45	-6.57	-0.60	-4.52	3.50-1.465e+05-2.308e+05-2.229e+05-1.544e+05	
8.268e+04	52 3 58	24.91	4.69	-6.02	3.47	-4.80	3.40-5.587e+04-2.228e+05-1.507e+05-1.280e+05	
2.781e+04	67	21.42	1.95	-0.37	0.11	1.46	0.95-1.326e+05-1.954e+05-1.786e+05-1.494e+05	
6.173e+04	68	20.97	4.41	-6.03	-0.65	-0.97	5.22-6.887e+04-1.925e+05-1.280e+05-1.333e+05	
2.087e+04	59	21.23	1.23	-5.56	-0.50	-3.83	2.96-1.239e+05-1.953e+05-1.886e+05-1.307e+05	
7.523e+04	52 7 58	22.83	29.75	-23.98	-10.24	16.01	23.44-5.140e+04-2.033e+05-1.378e+05-1.169e+05	
2.539e+04	67	19.64	63.07	-5.77	-5.63	62.93	-3.12-1.209e+05-1.784e+05-1.631e+05-1.362e+05	
5.623e+04	68	19.22	55.78	-24.57	-4.43	35.64	34.82-6.310e+04-1.757e+05-1.170e+05-1.218e+05	
1.901e+04	59	19.43	30.83	9.81	13.68	26.96	8.15-1.131e+05-1.783e+05-1.722e+05-1.192e+05	
7.519e+04	52 39 58	22.71	11.45	-10.11	-1.73	3.07	10.51-5.101e+04-2.028e+05-1.373e+05-1.166e+05	
2.532e+04	67	19.53	23.80	-2.00	-1.98	23.79	-0.59-1.207e+05-1.779e+05-1.626e+05-1.359e+05	
5.616e+04	68	19.12	22.51	-12.07	-1.99	12.43	15.71-6.279e+04-1.752e+05-1.166e+05-1.214e+05	
1.899e+04	59	19.34	11.06	1.25	4.70	7.62	4.68-1.128e+05-1.778e+05-1.717e+05-1.190e+05	
7.516e+04	52 69 58	22.64	4.26	-5.47	3.16	-4.36	3.09-5.079e+04-2.025e+05-1.370e+05-1.163e+05	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.528e+04	67	19.47	1.77	-0.34	0.10	1.33	0.86-1.205e+05-1.776e+05-1.624e+05-1.358e+05		
5.612e+04	68	19.06	4.01	-5.48	-0.59	-0.88	4.75-6.261e+04-1.750e+05-1.164e+05-1.212e+05		
1.897e+04	59	19.30	1.12	-5.05	-0.46	-3.48	2.69-1.127e+05-1.776e+05-1.714e+05-1.188e+05		
2.459e+04	53 1	59	14.91	7.82	-0.45	1.27	6.10	3.35-6.380e+04-1.387e+05-1.295e+05-7.299e+04	
6.084e+04	68	23.13	6.60	-3.09	0.57	2.94	4.70-7.935e+04-2.130e+05-1.739e+05-1.185e+05		
1.363e+05	69	25.30	2.01	-1.48	-0.72	1.25	1.45 4.632e+04-1.769e+05-1.767e+05 4.619e+04	-5249.10	
2.080e+04	60	38.49	7.61	-5.73	-4.99	6.87	3.06-4.907e+04-3.319e+05-2.280e+05-1.529e+05		
5.148e+04	53 3	59	12.62	6.61	-0.38	1.07	5.16	2.84-5.398e+04-1.174e+05-1.096e+05-6.176e+04	
1.153e+05	68	19.57	5.59	-2.61	0.48	2.49	3.98-6.714e+04-1.803e+05-1.471e+05-1.003e+05		
1.893e+04	69	21.40	1.70	-1.25	-0.61	1.06	1.22 3.919e+04-1.496e+05-1.495e+05 3.909e+04	-4441.55	
4.686e+04	60	32.57	6.44	-4.85	-4.22	5.81	2.59-4.152e+04-2.808e+05-1.929e+05-1.294e+05		
1.051e+05	53 7	59	11.58	38.17	10.95	11.43	37.69	3.60-4.945e+04-1.073e+05-1.003e+05-5.650e+04	
1.897e+04	68	17.96	47.37	-5.92	0.57	40.87	-17.43-6.152e+04-1.645e+05-1.344e+05-9.166e+04		
4.692e+04	69	19.75	56.97	-11.78	-10.58	55.78	8.99 3.557e+04-1.368e+05-1.367e+05 3.547e+04	-4112.08	
1.051e+05	60	29.75	36.77	-21.01	-17.60	33.36	-13.63-3.820e+04-2.563e+05-1.763e+05-1.182e+05		
1.891e+04	53 53	59	11.49	7.78	-7.99	-3.16	2.95	7.27-4.892e+04-1.066e+05-9.950e+04-5.603e+04	
4.680e+04	68	17.84	14.85	-10.97	3.67	0.21	12.79-6.084e+04-1.639e+05-1.337e+05-9.106e+04		
1.051e+05	69	19.48	-1.13	-11.45	-2.42	-10.16	3.42 3.584e+04-1.359e+05-1.358e+05 3.575e+04	-3994.35	
1.891e+04	60	29.66	11.78	-5.50	-1.69	7.98	7.16-3.750e+04-2.554e+05-1.754e+05-1.176e+05		
4.680e+04	53 69	59	11.47	6.01	-0.35	0.97	4.69	2.58-4.907e+04-1.067e+05-9.965e+04-5.615e+04	
1.049e+05	68	17.80	5.08	-2.38	0.44	2.26	3.61-6.104e+04-1.639e+05-1.337e+05-9.116e+04		
4.359e+04	69	19.46	1.55	-1.14	-0.55	0.96	1.11 3.563e+04-1.360e+05-1.360e+05 3.553e+04	-4037.77	
8.739e+04	60	29.60	5.85	-4.41	-3.84	5.28	2.35-3.775e+04-2.553e+05-1.754e+05-1.176e+05		
3.688e+04	54 1	60	29.34	4.28	-1.84	-1.61	4.06	1.14 1.250e+05-1.478e+05-1.416e+05 1.187e+05 4.084e+04	
7.395e+04	69	23.77	6.70	-4.36	-3.94	6.27	2.13-8.499e+04-2.193e+05-2.033e+05-1.010e+05		
3.358e+04	70	18.32	4.09	-0.38	-0.14	3.85	1.00 5.810e+04-1.098e+05-1.096e+05 5.793e+04	5400.23	
6.741e+04	61	30.74	3.82	-7.01	-6.71	3.52	1.80 5456.08-2.449e+05-2.093e+05-3.010e+04		
3.355e+04	54 3	60	24.83	3.62	-1.55	-1.36	3.44	0.97 1.057e+05-1.251e+05-1.198e+05 1.004e+05 3.456e+04	
7.395e+04	69	20.11	5.67	-3.69	-3.33	5.31	1.80-7.191e+04-1.856e+05-1.720e+05-8.550e+04		
3.358e+04	70	15.50	3.46	-0.32	-0.12	3.26	0.85 4.916e+04-9.290e+04-9.275e+04 4.902e+04	4569.42	
6.729e+04	61	26.01	3.24	-5.93	-5.67	2.98	1.52 4616.68-2.072e+05-1.771e+05-2.547e+04		
3.358e+04	54 7	60	22.74	39.51	-12.70	-6.57	33.38	-16.81 9.623e+04-1.143e+05-1.095e+05 9.142e+04 3.145e+04	
6.741e+04	69	18.48	25.11	-28.85	-27.66	23.93	7.91-6.584e+04-1.695e+05-1.572e+05-7.819e+04		
3.355e+04	70	14.20	28.37	7.68	8.44	27.62	-3.88 4.467e+04-8.497e+04-8.484e+04 4.454e+04	4112.65	
6.729e+04	61	23.83	23.84	-24.01	-23.99	23.82	-1.05 3929.54-1.893e+05-1.619e+05-2.347e+04		
3.355e+04	54 39	60	22.63	15.79	-4.82	-3.18	14.15	-5.57 9.616e+04-1.139e+05-1.091e+05 9.135e+04 3.143e+04	
6.729e+04	69	18.35	12.42	-12.64	-12.01	11.79	3.92-6.555e+04-1.690e+05-1.567e+05-7.790e+04		
3.353e+04	70	14.13	12.05	2.91	3.01	11.95	-0.92 4.469e+04-8.464e+04-8.451e+04 4.455e+04	4138.94	
6.722e+04	61	23.71	10.41	-12.03	-12.02	10.40	0.49 4099.48-1.887e+05-1.614e+05-2.327e+04		
3.353e+04	54 69	60	22.57	3.29	-1.41	-1.24	3.12	0.88 9.613e+04-1.137e+05-1.089e+05 9.131e+04 3.142e+04	
6.722e+04	69	18.28	5.15	-3.36	-3.03	4.83	1.63-6.537e+04-1.687e+05-1.564e+05-7.773e+04		
3.353e+04	70	14.09	3.15	-0.29	-0.11	2.97	0.77 4.469e+04-8.445e+04-8.432e+04 4.456e+04	4154.02	
6.722e+04	61	23.65	2.94	-5.39	-5.16	2.71	1.38 4196.98-1.884e+05-1.610e+05-2.315e+04		
3.353e+04	55 1	61	36.03	4.34	-4.02	-3.97	4.28	-0.68 1.495e+05-1.852e+05-1.852e+05 1.495e+05	-469.64
6.722e+04	70	22.28	8.03	-4.06	-3.26	7.23	-3.01-1.106e+04-1.848e+05-1.846e+05-1.118e+04	-4601.16	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		71	8.63	7.16	-2.81	-2.75	7.10	0.77 3.363e+04-4.616e+04 3.064e+04-4.317e+04 1.514e+04		
		62	17.48	2.13	-5.03	-4.97	2.06	-0.69 1.167e+05-3.973e+04-3.569e+04 1.126e+05	-	
2.483e+04										
	55	3	61	30.49	3.67	-3.40	-3.36	3.63	-0.57 1.265e+05-1.567e+05-1.567e+05 1.265e+05	-397.39
			70	18.85	6.80	-3.44	-2.76	6.12	-2.55 -9357.60-1.563e+05-1.562e+05	-9460.80 -3893.29
			71	7.31	6.06	-2.38	-2.33	6.01	0.65 2.845e+04-3.905e+04 2.593e+04-3.653e+04	1.281e+04
			62	14.79	1.80	-4.26	-4.20	1.74	-0.58 9.874e+04-3.362e+04-3.020e+04 9.531e+04	-
2.101e+04										
	55	8	61	27.82	20.91	-14.37	-5.89	12.43	-15.07 1.148e+05-1.432e+05-1.432e+05 1.148e+05	-384.15
			70	17.40	59.65	-40.19	-18.79	38.26	-40.96 -8991.56-1.432e+05-1.431e+05	-9100.78 -3827.05
			71	6.72	65.90	24.60	32.69	57.81	16.39 2.587e+04-3.589e+04 2.344e+04-3.346e+04	1.201e+04
			62	13.46	39.63	-34.31	11.19	-5.87	-35.97 8.925e+04-3.119e+04-2.797e+04 8.603e+04	-
1.942e+04										
	55	40	61	27.75	9.18	-6.64	-4.09	6.63	-5.83 1.149e+05-1.427e+05-1.427e+05 1.149e+05	-369.61
			70	17.23	25.43	-16.39	-8.44	17.48	-16.41 -8683.72-1.425e+05-1.424e+05	-8783.03 -3644.23
			71	6.67	27.00	8.12	10.58	24.55	6.35 2.587e+04-3.565e+04 2.352e+04-3.330e+04	1.178e+04
			62	13.45	13.78	-13.26	1.65	-1.13	-13.45 8.957e+04-3.079e+04-2.764e+04 8.642e+04	-
1.922e+04										
	55	69	61	27.72	3.34	-3.10	-3.05	3.30	-0.52 1.150e+05-1.425e+05-1.425e+05 1.150e+05	-361.26
			70	17.14	6.18	-3.13	-2.51	5.56	-2.32 -8506.91-1.421e+05-1.420e+05	-8600.73 -3539.35
			71	6.64	5.51	-2.16	-2.11	5.46	0.59 2.587e+04-3.550e+04 2.357e+04-3.321e+04	1.164e+04
			62	13.45	1.64	-3.87	-3.82	1.58	-0.53 8.976e+04-3.056e+04-2.745e+04 8.665e+04	-
1.910e+04										
	56	1	62	8.60	7.25	-3.33	-3.26	7.18	-0.83 6.130e+04-1.397e+04 3.177e+04 1.556e+04	-
3.675e+04										
			71	33.26	8.83	-5.14	-1.84	5.53	-5.93 2.312e+05-6.228e+04 1.397e+04 1.550e+05	-
1.287e+05										
			72	45.57	10.32	-5.74	-5.53	10.11	1.82 2.015e+05-2.222e+05-2.213e+05 2.006e+05	-
1.993e+04										
	56	3	63	28.26	4.12	-9.17	-6.95	1.89	-4.97 5.316e+04-1.967e+05-1.658e+05 2.227e+04	8.224e+04
			62	7.27	6.13	-2.82	-2.76	6.08	-0.70 5.187e+04-1.182e+04 2.688e+04 1.316e+04	-
3.109e+04										
			71	28.14	7.47	-4.35	-1.56	4.68	-5.02 1.957e+05-5.270e+04 1.182e+04 1.311e+05	-
1.089e+05										
			72	38.56	8.73	-4.86	-4.68	8.55	1.54 1.705e+05-1.880e+05-1.872e+05 1.697e+05	-
1.687e+04										
	56	7	63	23.91	3.49	-7.76	-5.88	1.60	-4.20 4.498e+04-1.664e+05-1.403e+05 1.884e+04	6.958e+04
			62	6.69	37.36	-0.28	0.47	36.61	-5.26 4.729e+04-1.103e+04 2.441e+04 1.185e+04	-
2.848e+04										
			71	25.91	48.97	-30.03	6.67	12.27	-39.40 1.782e+05-4.839e+04 1.066e+04 1.192e+05	-
9.947e+04										
			72	35.49	60.89	-29.86	-29.86	60.89	0.41 1.553e+05-1.719e+05-1.711e+05 1.546e+05	-
1.546e+04										
	56	39	63	21.85	21.35	-52.31	-38.02	7.05	-29.13 4.081e+04-1.522e+05-1.284e+05 1.706e+04	6.340e+04
			62	6.64	17.15	-1.71	-1.42	16.86	-2.32 4.720e+04-1.085e+04 2.443e+04 1.192e+04	-
2.834e+04										
			71	25.70	21.85	-13.14	1.53	7.18	-17.26 1.780e+05-4.808e+04 1.072e+04 1.192e+05	-
9.918e+04										
			72	35.21	27.17	-13.62	-13.59	27.14	1.04 1.551e+05-1.713e+05-1.705e+05 1.544e+05	-
1.538e+04										
	56	69	63	21.78	9.79	-23.55	-17.25	3.50	-13.05 4.086e+04-1.516e+05-1.279e+05 1.711e+04	6.331e+04
			62	6.61	5.57	-2.56	-2.51	5.52	-0.64 4.715e+04-1.074e+04 2.444e+04 1.197e+04	-
2.827e+04										
			71	25.59	6.79	-3.95	-1.42	4.26	-4.56 1.779e+05-4.791e+04 1.075e+04 1.192e+05	-
9.901e+04										
			72	35.05	7.94	-4.42	-4.26	7.77	1.40 1.550e+05-1.709e+05-1.702e+05 1.543e+05	-
1.533e+04										
	57	1	63	21.74	3.17	-7.06	-5.34	1.45	-3.82 4.089e+04-1.513e+05-1.275e+05 1.713e+04	6.326e+04
			64	23.15	4.10	-7.77	3.29	-6.95	-2.99-1.318e+05-2.135e+05-1.348e+05-2.104e+05	-
1.550e+04										
			73	33.13	1.37	-1.09	1.27	-0.99	-0.49-1.746e+05-3.077e+05-2.412e+05-2.412e+05	-
6.652e+04										
			74	23.14	5.19	-4.13	5.06	-4.00	1.08-1.318e+05-2.135e+05-2.104e+05-1.349e+05	-
1.550e+04										
			65	73.11	7.43	-7.52	7.42	-7.50	-0.47-1.994e+05-6.636e+05-4.315e+05-4.315e+05	-
2.321e+05										
	57	3	64	19.59	3.47	-6.57	2.78	-5.88	-2.53-1.115e+05-1.806e+05-1.141e+05-1.781e+05	-
1.312e+04										
			73	28.04	1.16	-0.92	1.08	-0.84	-0.41-1.478e+05-2.603e+05-2.041e+05-2.041e+05	-
5.629e+04										
			74	19.58	4.39	-3.49	4.29	-3.39	0.92-1.115e+05-1.806e+05-1.781e+05-1.141e+05	-
1.312e+04										
			65	61.86	6.29	-6.36	6.28	-6.35	-0.40-1.687e+05-5.615e+05-3.651e+05-3.651e+05	-





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

7.227e+04										
1.189e+05	75	26.90	4.43	-2.46	4.37	-2.41	0.61	5.082e+04-1.870e+05-6.945e+04-6.674e+04	-	
8.301e+04	76	34.47	1.60	-4.07	-3.54	1.07	1.65-9.287e+04-3.125e+05-2.745e+05-1.308e+05			
6.589e+04	67	16.79	2.02	-7.53	-1.02	-4.49	4.45-1.130e+05-1.501e+05-1.490e+05-1.141e+05	-6239.07		
59 7	66	28.13	18.18	-40.77	-17.09	-5.50	28.90-1.222e+05-2.604e+05-1.705e+05-2.121e+05			
1.085e+05	75	24.78	89.58	-2.62	19.06	67.91	-39.10	4.633e+04-1.707e+05-6.337e+04-6.103e+04	-	
7.567e+04	76	31.80	63.01	-64.11	-39.47	38.37	50.26-8.486e+04-2.853e+05-2.508e+05-1.194e+05			
6.577e+04	67	15.39	24.91	0.16	8.70	16.37	11.77-1.030e+05-1.372e+05-1.362e+05-1.040e+05	-5734.73		
59 39	66	27.98	9.50	-15.72	-2.82	-3.40	12.61-1.219e+05-2.599e+05-1.700e+05-2.117e+05			
1.083e+05	75	24.56	31.96	0.88	9.47	23.37	-13.90	4.625e+04-1.703e+05-6.322e+04-6.081e+04	-	
7.554e+04	76	31.51	23.83	-25.66	-16.43	14.61	19.27-8.459e+04-2.845e+05-2.500e+05-1.191e+05			
6.570e+04	67	15.30	9.85	-3.89	2.58	3.37	6.86-1.028e+05-1.367e+05-1.357e+05-1.038e+05	-5694.79		
59 69	66	27.89	6.58	-3.41	5.37	-2.20	3.26-1.217e+05-2.595e+05-1.697e+05-2.115e+05			
1.081e+05	75	24.45	4.03	-2.24	3.98	-2.19	0.56	4.620e+04-1.700e+05-6.313e+04-6.068e+04	-	
7.546e+04	76	31.34	1.46	-3.70	-3.22	0.98	1.50-8.443e+04-2.841e+05-2.496e+05-1.189e+05			
5.900e+04	67	15.27	1.84	-6.85	-0.93	-4.08	4.05-1.027e+05-1.364e+05-1.355e+05-1.037e+05	-5671.89		
60 1	67	27.77	7.95	-3.64	1.21	3.09	5.72-1.154e+05-2.580e+05-2.267e+05-1.467e+05			
2.317e+04	76	29.05	1.50	-10.55	-5.28	-3.77	5.98-1.378e+05-2.703e+05-2.661e+05-1.420e+05			
1.566e+05	77	41.14	7.20	-5.17	2.83	-0.80	5.91-2.480e+04-3.433e+05-1.553e+05-2.128e+05			
5.128e+04	68	22.59	3.10	-7.25	-2.13	-2.03	5.18-1.048e+05-2.101e+05-1.456e+05-1.693e+05			
4.992e+04	60 3	67	23.49	6.72	-3.08	1.03	2.61	4.84-9.768e+04-2.183e+05-1.919e+05-1.241e+05		
1.961e+04	76	24.58	1.27	-8.93	-4.47	-3.19	5.06-1.166e+05-2.287e+05-2.252e+05-1.201e+05			
1.325e+05	77	34.81	6.09	-4.38	2.39	-0.68	5.00-2.098e+04-2.905e+05-1.314e+05-1.801e+05			
4.339e+04	68	19.11	2.62	-6.14	-1.80	-1.71	4.38-8.871e+04-1.778e+05-1.232e+05-1.433e+05			
4.553e+04	60 7	67	21.64	84.81	-42.81	-19.78	61.78	49.08-8.915e+04-1.993e+05-1.753e+05-1.132e+05		
1.778e+04	76	22.45	44.71	-21.62	-5.72	28.82	-28.31-1.065e+05-2.089e+05-2.057e+05-1.096e+05			
1.210e+05	77	32.21	90.78	-89.09	-41.78	43.47	79.20-1.916e+04-2.652e+05-1.200e+05-1.643e+05			
3.953e+04	68	17.50	45.04	11.06	15.40	40.70	11.34-8.112e+04-1.623e+05-1.126e+05-1.308e+05			
4.544e+04	60 39	67	21.46	34.45	-17.04	-6.62	24.03	20.69-8.893e+04-1.988e+05-1.747e+05-1.130e+05		
1.781e+04	76	22.37	11.96	-7.96	-4.67	8.67	-7.40-1.062e+05-2.083e+05-2.051e+05-1.094e+05			
1.207e+05	77	31.85	35.78	-34.17	-13.85	15.46	31.76-1.910e+04-2.645e+05-1.196e+05-1.639e+05			
3.948e+04	68	17.39	17.33	1.09	4.57	13.85	6.66-8.082e+04-1.619e+05-1.122e+05-1.305e+05			
4.538e+04	60 69	67	21.36	6.11	-2.80	0.93	2.38	4.40-8.880e+04-1.985e+05-1.744e+05-1.129e+05		
1.783e+04	76	22.35	1.16	-8.12	-4.06	-2.90	4.60-1.060e+05-2.079e+05-2.047e+05-1.092e+05			
1.205e+05	77	31.65	5.54	-3.98	2.17	-0.62	4.55-1.907e+04-2.641e+05-1.194e+05-1.637e+05			
3.945e+04	68	17.37	2.38	-5.58	-1.64	-1.56	3.98-8.065e+04-1.616e+05-1.120e+05-1.303e+05			
3.672e+04	61 1	68	16.99	8.64	-1.40	3.11	4.12	5.00-8.302e+04-1.581e+05-1.285e+05-1.127e+05		
8.111e+04	77	23.05	3.42	-6.02	-5.68	3.09	1.75	471.16-1.856e+05-1.382e+05-4.698e+04	-	
7.991e+04	78	33.29	13.60	-3.15	5.08	5.37	8.37-2.782e+04-2.812e+05-2.528e+05-5.620e+04			

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		69	24.06	2.29	-5.05	-2.55	-0.20	3.48-1.326e+04-2.002e+05-1.998e+05-1.368e+04		8832.34
61	3	68	14.37	7.31	-1.19	2.63	3.49	4.23-7.024e+04-1.338e+05-1.087e+05-9.536e+04		
3.107e+04										
6.863e+04		77	19.50	2.90	-5.09	-4.81	2.61	1.48	398.67-1.571e+05-1.169e+05-3.975e+04	-
6.762e+04		78	28.17	11.51	-2.66	4.30	4.55	7.09-2.354e+04-2.379e+05-2.139e+05-4.755e+04		
		69	20.36	1.94	-4.27	-2.16	-0.17	2.94-1.122e+04-1.694e+05-1.691e+05-1.157e+04		7473.52
61	7	68	13.23	46.91	19.45	20.46	45.90	5.17-6.434e+04-1.222e+05-9.934e+04-8.717e+04		
2.827e+04										
6.282e+04		77	18.39	83.49	-81.52	-50.86	52.84	-64.17	301.65-1.437e+05-1.069e+05-3.652e+04	-
6.164e+04		78	25.95	78.18	-32.86	4.20	41.12	52.36-2.167e+04-2.173e+05-1.955e+05-4.353e+04		
		69	18.78	66.34	-33.90	-21.86	54.29	-32.59-1.040e+04-1.549e+05-1.545e+05-1.072e+04		6732.12
61	39	68	13.12	20.39	7.34	8.98	18.75	4.33-6.403e+04-1.218e+05-9.900e+04-8.687e+04		
2.826e+04										
6.255e+04		77	17.97	30.56	-31.11	-21.32	20.77	-22.54	340.25-1.431e+05-1.065e+05-3.628e+04	-
6.153e+04		78	25.73	34.97	-13.34	4.01	17.62	23.18-2.150e+04-2.167e+05-1.948e+05-4.334e+04		
		69	18.60	22.92	-12.44	-9.22	19.70	-10.18-1.027e+04-1.543e+05-1.540e+05-1.059e+04		6771.51
61	69	68	13.07	6.65	-1.08	2.39	3.17	3.84-6.386e+04-1.216e+05-9.881e+04-8.669e+04		
2.825e+04										
6.239e+04		77	17.73	2.63	-4.63	-4.37	2.38	1.34	362.43-1.428e+05-1.063e+05-3.614e+04	-
6.147e+04		78	25.61	10.46	-2.42	3.91	4.13	6.44-2.140e+04-2.163e+05-1.945e+05-4.323e+04		
		69	18.51	1.76	-3.88	-1.96	-0.15	2.67-1.020e+04-1.540e+05-1.537e+05-1.052e+04		6794.11
62	1	69	24.07	9.79	-1.86	1.49	6.43	5.28	9248.18-1.892e+05-1.814e+05 1417.25 3.864e+04	
3.613e+04		78	30.45	2.48	0.16	2.23	0.41	-0.72-6.405e+04-2.712e+05-2.647e+05-7.055e+04		
5.685e+04		79	18.25	7.18	-5.80	-4.89	6.26	3.32	1817.10-1.463e+05-2.478e+04-1.197e+05	
		70	21.83	3.43	-9.22	-8.51	2.72	2.91 2.502e+04-1.619e+05-1.575e+05 2.069e+04 2.811e+04		
62	3	69	20.37	8.28	-1.58	1.26	5.44	4.46	7825.38-1.601e+05-1.535e+05 1199.21 3.269e+04	
3.057e+04		78	25.77	2.10	0.13	1.89	0.34	-0.61-5.420e+04-2.295e+05-2.240e+05-5.970e+04		
4.810e+04		79	15.45	6.07	-4.91	-4.14	5.30	2.81	1537.54-1.238e+05-2.097e+04-1.012e+05	
		70	18.48	2.90	-7.81	-7.20	2.30	2.47 2.117e+04-1.370e+05-1.333e+05 1.751e+04 2.379e+04		
62	8	69	18.57	26.61	10.81	11.92	25.50	-4.05	6796.09-1.462e+05-1.402e+05 768.26 2.977e+04	
2.754e+04		78	23.63	63.92	-66.19	-38.30	36.04	-53.39-4.987e+04-2.098e+05-2.049e+05-5.476e+04		
4.416e+04		79	14.14	100.71	-6.79	15.96	77.96	43.91	1491.72-1.131e+05-1.928e+04-9.237e+04	
		70	16.85	12.68	-46.62	-29.66	-4.28	-26.80 1.849e+04-1.252e+05-1.220e+05 1.523e+04 2.139e+04		
62	40	69	18.53	12.60	4.91	5.08	12.44	1.10	6998.09-1.458e+05-1.398e+05 972.83 2.974e+04	
2.770e+04		78	23.49	23.99	-23.53	-12.87	13.34	-19.82-4.949e+04-2.091e+05-2.041e+05-5.445e+04		
4.388e+04		79	14.07	39.98	-5.07	3.43	31.48	17.63	1431.90-1.127e+05-1.914e+04-9.216e+04	
		70	16.82	3.53	-18.74	-14.98	-0.23	-8.34 1.897e+04-1.248e+05-1.215e+05 1.567e+04 2.154e+04		
62	69	69	18.52	7.53	-1.43	1.15	4.95	4.06	7113.98-1.455e+05-1.395e+05 1090.19 2.972e+04	
2.779e+04		78	23.42	1.91	0.12	1.72	0.31	-0.56-4.927e+04-2.086e+05-2.036e+05-5.427e+04		
4.373e+04		79	14.04	5.52	-4.46	-3.76	4.82	2.55	1397.77-1.125e+05-1.906e+04-9.205e+04	
		70	16.80	2.64	-7.10	-6.55	2.09	2.24 1.925e+04-1.245e+05-1.212e+05 1.592e+04 2.162e+04		
63	1	70	7.61	7.27	-5.69	-5.69	7.26	-0.09-3.723e+04-7.074e+04-4.664e+04-6.132e+04		
1.506e+04										
1.041e+05		79	25.50	3.64	-2.76	-2.75	3.63	-0.21	1.310e+05-1.059e+05-4.390e+04 6.901e+04	-
		80	45.77	5.48	-6.10	-6.08	5.46	-0.48	1.563e+05-2.649e+05-2.649e+05 1.563e+05	2773.11
1.070e+05		71	37.37	4.78	-8.07	-7.99	4.70	1.04	6644.42-2.977e+05-2.538e+05-3.728e+04	
1.274e+04		70	6.44	6.15	-4.81	-4.81	6.15	-0.07-3.150e+04-5.985e+04-3.946e+04-5.189e+04		
8.812e+04		79	21.57	3.08	-2.34	-2.33	3.07	-0.18	1.109e+05-8.961e+04-3.715e+04 5.839e+04	-
		80	38.73	4.64	-5.16	-5.14	4.62	-0.41	1.322e+05-2.242e+05-2.242e+05 1.322e+05	2346.48
9.051e+04		71	31.62	4.05	-6.83	-6.76	3.98	0.88	5622.20-2.519e+05-2.148e+05-3.155e+04	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

63 23	70	5.88	10.82	-32.85	-32.50	10.47	3.87-2.837e+04-5.449e+04-3.575e+04-4.712e+04		
1.176e+04	79	19.73	44.65	-16.47	-8.56	36.74	20.51 1.016e+05-8.133e+04-3.370e+04-5.398e+04	-	
8.027e+04	80	35.64	36.32	-50.26	-50.26	36.32	0.03 1.212e+05-2.041e+05-2.041e+05 1.211e+05	2218.72	
8.272e+04	71	28.98	25.33	-39.22	-13.68	-0.21	31.56 5504.55-2.293e+05-1.952e+05-2.858e+04		
1.165e+04	63 55	70	5.85	7.45	-14.71	-14.63	7.37	1.37-2.854e+04-5.444e+04-3.583e+04-4.715e+04	
8.017e+04	79	19.64	17.63	-6.93	-4.47	15.17	7.37 1.011e+05-8.141e+04-3.375e+04-5.341e+04	-	
8.244e+04	80	35.36	15.91	-21.30	-21.30	15.91	-0.22 1.206e+05-2.039e+05-2.039e+05 1.205e+05	2164.35	
1.158e+04	71	28.83	9.90	-16.57	-8.89	2.22	12.01 5254.45-2.291e+05-1.952e+05-2.864e+04		
8.011e+04	63 69	70	5.86	5.59	-4.37	-4.37	5.59	-0.07-2.863e+04-5.441e+04-3.587e+04-4.717e+04	
8.228e+04	79	19.61	2.80	-2.12	-2.12	2.79	-0.16 1.008e+05-8.146e+04-3.377e+04-5.308e+04	-	
3.492e+04	80	35.21	4.22	-4.69	-4.68	4.20	-0.37 1.202e+05-2.038e+05-2.038e+05 1.202e+05	2133.16	
1.515e+04	71	28.74	3.68	-6.21	-6.15	3.61	0.80 5111.09-2.290e+05-1.952e+05-2.868e+04		
1.223e+04	64 1	71	49.85	6.70	-11.41	-10.92	6.21	-2.92 1.768e+05-2.829e+05-2.802e+05 1.741e+05	-
2.955e+04	80	22.45	5.98	-3.30	-2.65	5.33	-2.38 3.387e+04-1.616e+05-1.614e+05 3.365e+04	6548.30	
1.223e+04	81	23.52	-0.53	-6.07	-5.35	-1.26	-1.87 7.862e+04-1.376e+05-1.366e+05 7.755e+04	-	
2.955e+04	72	19.43	12.76	-5.18	-2.58	10.17	-6.31 1.131e+05-6.526e+04-6.441e+04 1.122e+05	-	
1.282e+04	64 3	71	42.18	5.67	-9.65	-9.24	5.26	-2.47 1.496e+05-2.393e+05-2.371e+05 1.473e+05	-
1.035e+04	80	19.00	5.06	-2.80	-2.24	4.51	-2.01 2.866e+04-1.367e+05-1.365e+05 2.848e+04	5540.87	
2.729e+04	81	19.90	-0.45	-5.14	-4.53	-1.06	-1.58 6.652e+04-1.164e+05-1.155e+05 6.562e+04	-	
1.182e+04	72	16.44	10.80	-4.38	-2.19	8.60	-5.34 9.568e+04-5.522e+04-5.450e+04 9.496e+04	-	
2.702e+04	64 7	71	38.79	24.03	-77.10	-63.19	10.12	-34.83 1.360e+05-2.190e+05-2.168e+05 1.339e+05	-
1.171e+04	80	17.40	82.67	-21.65	28.52	32.50	-52.12 2.600e+04-1.250e+05-1.248e+05 2.584e+04	5048.83	
2.686e+04	81	18.40	-3.86	-71.55	-63.27	-12.15	-22.19 6.043e+04-1.065e+05-1.057e+05 5.959e+04	-	
1.171e+04	72	15.26	93.90	-26.41	3.73	63.76	-52.13 8.706e+04-5.052e+04-4.987e+04 8.641e+04	-9450.76	
2.702e+04	71	38.51	11.71	-33.35	-28.37	6.73	-14.13 1.360e+05-2.181e+05-2.160e+05 1.339e+05	-	
1.171e+04	80	17.29	32.12	-8.56	9.10	14.45	-20.16 2.604e+04-1.245e+05-1.244e+05 2.587e+04	5041.41	
2.686e+04	81	18.21	-1.67	-29.05	-25.68	-5.04	-9.00 6.046e+04-1.061e+05-1.053e+05 5.963e+04	-	
1.171e+04	72	15.06	40.34	-12.03	0.10	28.21	-22.09 8.701e+04-5.032e+04-4.967e+04 8.636e+04	-9421.97	
2.686e+04	71	38.35	5.15	-8.77	-8.40	4.78	-2.25 1.360e+05-2.176e+05-2.155e+05 1.339e+05	-	
1.165e+04	80	17.27	4.60	-2.54	-2.04	4.10	-1.83 2.606e+04-1.243e+05-1.241e+05 2.589e+04	5037.15	
2.513e+04	81	18.09	-0.41	-4.67	-4.11	-0.97	-1.44 6.048e+04-1.059e+05-1.050e+05 5.966e+04	-	
7.094e+04	72	14.95	9.82	-3.98	-1.99	7.82	-4.85 8.698e+04-5.020e+04-4.955e+04 8.633e+04	-9405.46	
5.392e+04	77	41.71	6.92	-2.10	2.53	2.29	4.51-8.345e+04-3.703e+05-3.681e+05-8.567e+04		
8.363e+04	82	22.88	2.49	-7.90	-4.13	-1.28	5.00-6.642e+04-2.083e+05-1.380e+05-1.368e+05		
2.126e+04	83	22.00	5.01	-2.46	-1.15	3.70	2.84-5.767e+04-1.990e+05-1.739e+05-8.267e+04		
6.003e+04	78	23.83	4.26	-14.58	-9.99	-0.34	8.09-3.248e+04-2.058e+05-1.420e+05-9.636e+04		
4.563e+04	65 3	77	35.29	5.86	-1.78	1.94	3.82-7.062e+04-3.133e+05-3.115e+05-7.249e+04		
7.076e+04	82	19.36	2.11	-6.69	-3.49	-1.09	4.23-5.620e+04-1.763e+05-1.167e+05-1.157e+05		
1.972e+04	83	18.61	4.24	-2.08	-0.97	3.13	2.40-4.879e+04-1.683e+05-1.472e+05-6.995e+04		
5.481e+04	78	20.17	3.60	-12.34	-8.45	-0.29	6.85-2.749e+04-1.742e+05-1.201e+05-8.153e+04		
	65 23	77	32.27	33.92	-26.13	-16.83	21.72-6.406e+04-2.853e+05-2.835e+05-6.583e+04		
	82	17.84	29.53	-45.37	-19.91	4.06	35.48-5.106e+04-1.607e+05-1.063e+05-1.055e+05		

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

4.179e+04	83	17.09	28.34	-24.04	-14.92	19.22	19.86-4.410e+04-1.534e+05-1.339e+05-6.354e+04
6.467e+04	78	18.65	32.24	-57.59	-33.13	7.79	39.98-2.470e+04-1.587e+05-1.093e+05-7.413e+04
1.947e+04	65 55 77	32.15	15.20	-10.00	-4.90	10.10	10.12-6.415e+04-2.850e+05-2.833e+05-6.588e+04
5.466e+04	82	17.69	11.98	-20.40	-9.28	0.85	15.38-5.108e+04-1.604e+05-1.062e+05-1.053e+05
4.159e+04	83	16.98	12.78	-9.96	-6.00	8.82	8.63-4.426e+04-1.532e+05-1.339e+05-6.357e+04
6.445e+04	78	18.45	13.83	-28.11	-16.96	2.68	18.53-2.488e+04-1.585e+05-1.092e+05-7.412e+04
1.933e+04	65 69 77	32.09	5.33	-1.62	1.95	1.76	3.47-6.420e+04-2.849e+05-2.832e+05-6.590e+04
5.457e+04	82	17.60	1.92	-6.08	-3.18	-0.99	3.85-5.109e+04-1.602e+05-1.061e+05-1.052e+05
4.148e+04	83	16.92	3.86	-1.89	-0.88	2.85	2.19-4.436e+04-1.530e+05-1.338e+05-6.359e+04
6.433e+04	78	18.33	3.27	-11.22	-7.68	-0.26	6.22-2.499e+04-1.583e+05-1.092e+05-7.412e+04
5.255e+04	66 1 82	21.67	4.14	-3.85	-0.72	1.02	3.90-8.409e+04-2.008e+05-1.679e+05-1.170e+05
3.817e+04	84	14.56	1.84	-3.87	-1.60	-0.43	2.79-5.828e+04-1.351e+05-1.008e+05-9.257e+04
4.217e+04	85	14.16	1.64	-4.10	-2.89	0.43	2.34-2.489e+04-1.244e+05-1.011e+05-4.823e+04
6.496e+04	83	22.83	3.12	-6.54	-5.41	1.99	3.11-3.831e+04-2.001e+05-1.674e+05-7.101e+04
4.446e+04	66 3 82	18.34	3.51	-3.26	-0.61	0.86	3.30-7.116e+04-1.699e+05-1.421e+05-9.904e+04
3.229e+04	84	12.32	1.55	-3.28	-1.35	-0.37	2.36-4.931e+04-1.143e+05-8.526e+04-7.833e+04
3.568e+04	85	11.98	1.39	-3.47	-2.44	0.37	1.98-2.106e+04-1.053e+05-8.552e+04-4.081e+04
5.497e+04	83	19.32	2.64	-5.53	-4.58	1.68	2.63-3.242e+04-1.693e+05-1.416e+05-6.009e+04
4.049e+04	66 7 82	16.93	47.67	-61.95	-59.54	45.25	16.09-6.512e+04-1.552e+05-1.298e+05-9.046e+04
2.941e+04	84	11.38	28.81	-57.67	-54.20	25.34	16.96-4.513e+04-1.043e+05-7.790e+04-7.153e+04
3.250e+04	85	11.10	6.76	-56.83	-56.70	6.63	2.88-1.937e+04-9.611e+04-7.813e+04-3.735e+04
5.009e+04	83	17.94	72.28	-92.31	-92.31	72.28	-0.28-2.978e+04-1.546e+05-1.294e+05-5.497e+04
4.044e+04	66 39 82	16.76	18.48	-23.55	-22.06	16.99	7.77-6.485e+04-1.547e+05-1.294e+05-9.019e+04
2.938e+04	84	11.27	10.84	-22.36	-20.54	9.03	7.55-4.494e+04-1.040e+05-7.765e+04-7.132e+04
3.246e+04	85	10.97	2.82	-22.27	-22.08	2.63	2.20-1.923e+04-9.585e+04-7.788e+04-3.719e+04
5.001e+04	83	17.70	27.35	-36.33	-36.30	27.32	1.41-2.959e+04-1.542e+05-1.290e+05-5.475e+04
4.042e+04	66 69 82	16.67	3.19	-2.96	-0.56	0.78	3.00-6.469e+04-1.545e+05-1.291e+05-9.004e+04
2.936e+04	84	11.20	1.41	-2.98	-1.23	-0.33	2.15-4.483e+04-1.039e+05-7.751e+04-7.121e+04
3.244e+04	85	10.89	1.26	-3.15	-2.22	0.33	1.80-1.914e+04-9.570e+04-7.774e+04-3.710e+04
4.997e+04	83	17.56	2.40	-5.03	-4.16	1.53	2.39-2.947e+04-1.539e+05-1.287e+05-5.462e+04
3.628e+04	67 1 84	14.22	2.28	-3.34	-1.08	0.02	2.75-5.878e+04-1.321e+05-1.007e+05-9.014e+04
2.331e+04	86	8.92	1.25	-2.80	-1.41	-0.14	1.92-3.500e+04-8.269e+04-5.382e+04-6.388e+04
3.612e+04	87	10.19	1.50	-2.82	-2.43	1.11	1.24 -9004.79-8.620e+04-6.121e+04-3.399e+04
4.590e+04	85	14.86	2.00	-4.49	-3.51	1.02	2.33-2.455e+04-1.300e+05-1.033e+05-5.130e+04
3.070e+04	67 3 84	12.04	1.93	-2.83	-0.92	0.02	2.33-4.973e+04-1.118e+05-8.523e+04-7.628e+04
1.972e+04	86	7.55	1.05	-2.37	-1.20	-0.12	1.62-2.962e+04-6.997e+04-4.554e+04-5.405e+04
	87	8.62	1.27	-2.39	-2.06	0.94	1.05 -7619.43-7.294e+04-5.180e+04-2.876e+04





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

69	3	88	4.49	0.50	-1.48	-0.92	-0.06	0.89-1.465e+04-4.121e+04-2.147e+04-3.439e+04			
1.160e+04		90	2.73	0.65	-1.09	-1.02	0.59	0.33	-5186.07-2.416e+04	-8335.27-2.101e+04	7060.18
		91	4.00	0.96	-1.14	-1.13	0.95	0.15	8695.65-2.701e+04-1.275e+04	-5566.03	1.749e+04
		89	5.90	0.99	-1.41	-1.34	0.93	0.38	1699.34-4.668e+04-2.857e+04-1.641e+04		
2.341e+04		88	4.12	12.27	-14.88	-10.38	7.78	10.09-1.323e+04-3.760e+04-1.952e+04-3.131e+04			
1.066e+04		90	2.51	14.73	-13.76	-7.80	8.77	11.59	-4640.70-2.202e+04	-7553.60-1.911e+04	6491.84
		91	3.73	17.70	-9.74	-6.64	14.60	8.69	8026.50-2.463e+04-1.161e+04	-4995.46	1.599e+04
		89	5.44	15.38	-8.54	-5.78	12.61	7.65	1691.47-4.255e+04-2.601e+04-1.486e+04		
2.141e+04		88	4.10	4.74	-6.26	-4.32	2.80	4.19-1.329e+04-3.751e+04-1.952e+04-3.128e+04			
1.059e+04		90	2.49	5.68	-5.57	-3.43	3.54	4.42	-4687.69-2.199e+04	-7568.80-1.911e+04	6445.14
		91	3.67	6.93	-4.13	-3.08	5.87	3.25	7949.38-2.459e+04-1.160e+04	-5036.49	1.593e+04
		89	5.39	6.14	-3.89	-2.88	5.13	3.01	1598.30-4.248e+04-2.598e+04-1.490e+04		
2.133e+04		88	4.08	0.45	-1.34	-0.84	-0.06	0.81-1.332e+04-3.746e+04-1.952e+04-3.126e+04			
1.055e+04		90	2.48	0.59	-0.99	-0.93	0.53	0.30	-4714.61-2.197e+04	-7577.52-1.910e+04	6418.35
		91	3.64	0.87	-1.04	-1.03	0.86	0.13	7905.13-2.456e+04-1.159e+04	-5060.03	1.590e+04
		89	5.36	0.90	-1.28	-1.22	0.84	0.35	1544.86-4.243e+04-2.597e+04-1.492e+04		
2.128e+04		90	3.13	-0.38	-2.74	-0.85	-2.27	0.95	-6081.65-2.765e+04	-9722.23-2.401e+04	8079.71
	70	92	2.21	7.11	-2.76	-2.19	6.54	-2.30	569.07-1.723e+04	-1725.06-1.493e+04	5963.88
		93	3.34	1.51	-2.11	-1.15	0.55	1.60	1.394e+04-1.700e+04	-5455.07	2403.32
		91	4.82	3.01	-1.12	-0.90	2.79	-0.93	1.014e+04-3.280e+04-1.564e+04	-7015.39	2.103e+04
	70	90	2.65	-0.32	-2.32	-0.72	-1.92	0.80	-5146.01-2.340e+04	-8226.51-2.032e+04	6836.68
		92	1.87	6.02	-2.34	-1.86	5.54	-1.94	481.52-1.458e+04	-1459.66-1.264e+04	5046.36
		93	2.83	1.28	-1.79	-0.97	0.47	1.36	1.180e+04-1.438e+04	-4615.82	2033.58
		91	4.08	2.55	-0.94	-0.76	2.36	-0.78	8580.74-2.775e+04-1.324e+04	-5936.10	1.780e+04
	70	90	2.46	4.50	-7.33	3.43	-6.26	3.39	-4568.35-2.138e+04	-7452.29-1.849e+04	6337.44
		92	1.67	5.82	-2.08	4.18	-0.44	3.21	429.14-1.304e+04	-1373.05-1.124e+04	4585.46
		93	2.67	15.41	-8.94	5.92	0.55	11.88	1.087e+04-1.314e+04	-4192.09	1917.22
		91	3.76	14.32	-3.29	10.41	0.62	7.32	7964.35-2.523e+04-1.203e+04	-5235.29	1.624e+04
	70	90	2.41	6.97	-8.56	-8.02	6.43	2.85	-4703.48-2.128e+04	-7478.29-1.851e+04	6189.33
		92	1.73	12.99	-7.95	-7.95	12.99	-0.21	456.87-1.326e+04	-1266.53-1.154e+04	4546.15
		93	2.56	8.09	-8.13	-7.76	7.72	-2.42	1.070e+04-1.311e+04	-4225.05	1817.99
		91	3.72	11.03	-10.11	-9.19	10.11	-4.32	7761.51-2.524e+04-1.204e+04	-5440.91	1.617e+04
	70	90	2.41	-0.29	-2.11	-0.66	-1.74	0.73	-4678.20-2.127e+04	-7478.64-1.847e+04	6215.16
		92	1.70	5.47	-2.12	-1.69	5.03	-1.77	437.75-1.325e+04	-1326.97-1.149e+04	4587.60
		93	2.57	1.16	-1.63	-0.88	0.42	1.23	1.073e+04-1.307e+04	-4196.20	1848.71
		91	3.71	2.32	-0.86	-0.69	2.15	-0.71	7800.68-2.523e+04-1.203e+04	-5396.45	1.618e+04
	71	92	1.94	10.34	-1.53	1.66	7.15	5.26	-1401.97-1.620e+04	-2627.11-1.498e+04	4078.25
		94	1.06	0.02	-3.26	0.02	-3.26	-0.03	1988.57	-7323.49	352.12
		95	2.27	4.19	-0.92	-0.21	3.48	-0.03	1988.57	-7323.49	352.12
		93	3.56	1.41	-3.97	-2.95	0.39	-2.12	1.516e+04-1.786e+04	-5192.80	2489.11
	71	92	1.64	8.75	-1.30	1.41	6.05	4.45	-1186.28-1.371e+04	-2222.94-1.267e+04	3450.83
		94	0.90	0.02	-2.76	0.02	-2.76	-0.02	1682.64	-6196.80	297.95
		95	1.92	3.54	-0.78	-0.18	2.94	1.50	1.048e+04	-7118.62	-1729.07
		93	3.01	1.20	-3.36	-2.49	0.33	-1.79	1.283e+04-1.511e+04	-4393.91	2106.17
	71	92	1.57	31.12	-12.71	-9.76	28.16	10.99	-1378.48-1.253e+04	-2217.05-1.170e+04	2941.33
		94	0.86	19.76	-9.29	-8.50	18.98	4.70	1489.06	-5641.54	247.93
		95	1.72	24.09	-12.56	-10.94	22.47	-7.53	9415.27	-6459.25	-1568.10
		93	2.79	24.77	-19.22	-16.23	21.77	-11.09	1.170e+04-1.374e+04	-3870.52	1839.97
	71	92	1.52	16.06	-5.05	-2.74	13.76	6.58	-1188.34-1.249e+04	-2092.38-1.158e+04	3065.74
		94	0.82	5.65	-3.42	-3.09	5.32	1.70	1514.86	-5636.39	262.50
		95	1.73	10.14	-4.34	-4.09	9.89	-1.88	9486.39	-6467.00	-1570.50
		93	2.76	9.64	-8.87	-7.36	8.13	-5.08	1.168e+04-1.374e+04	-3949.28	1887.46
	71	92	1.49	7.96	-1.18	1.28	5.50	4.05	-1078.44-1.246e+04	-2020.86-1.152e+04	3137.12
		94	0.82	0.02	-2.51	0.02	-2.51	-0.02	1529.67	-5633.46	270.86
		95	1.74	3.22	-0.71	-0.16	2.67	1.36	9527.21	-6471.48	-1571.89
		93	2.74	1.09	-3.06	-2.27	0.30	-1.63	1.166e+04-1.374e+04	-3994.46	1914.70
	72	94	1.03	1.08	-0.53	0.13	0.41	0.80	1222.74	-7612.94	-218.09
		96	0.67	0.02	-0.82	-0.03	-0.77	0.20	209.69	-5273.40	-769.30
		97	0.57	0.81	-0.18	-0.18	0.80	0.02	4024.71	-892.15	-689.46
		95	2.48	1.34	-0.27	-0.23	1.30	0.27	1.366e+04	-9210.28	-2281.91
	72	94	0.87	0.92	-0.45	0.11	0.35	0.67	1034.63	-6441.72	-184.54
		96	0.57	0.02	-0.69	-0.03	-0.65	0.17	177.43	-4462.11	-650.95
		97	0.48	0.68	-0.15	-0.15	0.68	0.02	3405.53	-754.90	-583.39
		95	2.09	1.14	-0.23	-0.19	1.10	0.23	1.156e+04	-7793.31	-1930.84
	72	94	0.84	5.91	-22.99	4.26	-21.35	-6.69	1021.82	-5827.03	-130.92
									-4674.29	2562.45	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		96	0.57	3.43	-24.41	2.18	-23.16	-5.75	170.98	-4010.81	-594.95	-3244.88	1617.50	
		97	0.54	5.44	-20.54	2.41	-17.51	8.34	3152.93	-678.44	-526.48	3000.97	-747.75	
		95	1.93	7.47	-23.28	4.78	-20.59	8.69	1.057e+04	-7096.31	-1772.64	5248.46	8106.75	
	72	37	94	0.81	2.05	-8.02	1.62	-7.58	-2.05	970.11	-5845.43	-154.33	-4720.99	2529.69
			96	0.53	1.18	-9.22	0.78	-8.82	-2.00	164.79	-4039.78	-592.93	-3282.06	1616.09
			97	0.47	1.96	-7.16	0.79	-5.99	3.05	3116.70	-683.40	-528.94	2962.24	-750.41
			95	1.91	2.76	-8.00	1.63	-6.87	3.30	1.053e+04	-7089.00	-1761.63	5203.52	8092.40
	72	69	94	0.79	0.83	-0.41	0.10	0.32	0.61	940.57	-5856.11	-167.76	-4747.77	2510.89
			96	0.52	0.02	-0.63	-0.02	-0.59	0.16	161.30	-4056.46	-591.77	-3303.39	1615.29
			97	0.44	0.62	-0.14	-0.14	0.62	0.02	3095.93	-686.27	-530.35	2940.02	-751.93
			95	1.90	1.03	-0.21	-0.18	1.00	0.21	1.051e+04	-7084.83	-1755.31	5177.74	8084.16
	73	1	78	13.05	3.21	-7.10	-6.96	3.07	1.19-5.362e+04	-1.212e+05	-8.575e+04	-8.904e+04		
3.373e+04														
			83	32.73	4.01	-7.62	-0.66	-2.95	5.70-3.349e+04	-2.789e+05	-1.712e+05	-1.412e+05		
1.218e+05														
			98	22.58	0.09	-5.87	-5.36	-0.42	-1.67	9.892e+04	-1.111e+05	-1.108e+05	9.857e+04	8534.94
			79	63.65	6.10	-9.55	-4.05	0.60	7.47-3.262e+04	-5.286e+05	-2.977e+05	-2.635e+05		
2.474e+05														
	73	3	78	11.04	2.72	-6.01	-5.89	2.60	1.01-4.537e+04	-1.025e+05	-7.256e+04	-7.534e+04		
2.854e+04														
			83	27.70	3.39	-6.44	-0.56	-2.49	4.82-2.834e+04	-2.360e+05	-1.448e+05	-1.195e+05		
1.030e+05														
			98	19.11	0.08	-4.97	-4.54	-0.36	-1.41	8.370e+04	-9.403e+04	-9.374e+04	8.341e+04	7221.88
			79	53.86	5.16	-8.08	-3.43	0.51	6.32-2.760e+04	-4.472e+05	-2.519e+05	-2.230e+05		
2.093e+05														
	73	7	78	10.13	61.06	-65.21	-64.62	60.46	-8.63-4.165e+04	-9.362e+04	-6.642e+04	-6.885e+04		
2.596e+04														
			83	25.57	9.59	-67.68	-31.90	-26.19	38.53-2.609e+04	-2.155e+05	-1.324e+05	-1.091e+05		
9.397e+04														
			98	17.71	10.96	-71.37	-68.94	8.53	-13.93	7.614e+04	-8.596e+04	-8.569e+04	7.588e+04	6503.55
			79	49.56	48.09	-104.90	-86.02	29.22	50.31-2.549e+04	-4.084e+05	-2.304e+05	-2.036e+05		
1.910e+05														
	73	39	78	10.06	23.67	-27.09	-26.96	23.54	-2.56-4.139e+04	-9.336e+04	-6.613e+04	-6.862e+04		
2.595e+04														
			83	25.32	5.37	-28.31	-11.95	-10.99	16.83-2.588e+04	-2.149e+05	-1.319e+05	-1.088e+05		
9.378e+04														
			98	17.50	4.00	-28.85	-27.75	2.90	-5.89	7.611e+04	-8.566e+04	-8.539e+04	7.585e+04	6542.82
			79	49.18	20.01	-42.41	-33.34	10.95	21.99-2.524e+04	-4.073e+05	-2.295e+05	-2.030e+05		
1.906e+05														
	73	69	78	10.04	2.47	-5.46	-5.35	2.36	0.92-4.125e+04	-9.320e+04	-6.596e+04	-6.849e+04		
2.595e+04														
			83	25.18	3.08	-5.86	-0.51	-2.27	4.38-2.576e+04	-2.145e+05	-1.317e+05	-1.086e+05		
9.367e+04														
			98	17.37	0.07	-4.52	-4.12	-0.32	-1.28	7.609e+04	-8.548e+04	-8.522e+04	7.582e+04	6565.34
			79	48.96	4.69	-7.35	-3.11	0.46	5.75-2.509e+04	-4.066e+05	-2.290e+05	-2.027e+05		
1.903e+05														
	74	1	83	21.21	-0.92	-3.96	-3.69	-1.20	0.87-3.466e+04	-1.857e+05	-1.429e+05	-7.740e+04		
6.802e+04														
			85	15.16	3.20	-6.09	-2.77	-0.13	4.45-2.630e+04	-1.330e+05	-8.442e+04	-7.488e+04		
5.314e+04														
			99	14.96	3.66	-4.07	-3.99	3.58	0.79	1.466e+04	-1.125e+05	-8.224e+04	-1.564e+04	
5.419e+04														
			98	20.81	1.42	-9.31	-3.77	-4.12	5.36	-8009.24	-1.714e+05	-1.303e+05	-4.904e+04	
7.085e+04														
	74	3	83	17.95	-0.78	-3.35	-3.12	-1.01	0.74-2.933e+04	-1.571e+05	-1.209e+05	-6.549e+04		
5.756e+04														
			85	12.82	2.70	-5.15	-2.34	-0.11	3.77-2.225e+04	-1.125e+05	-7.143e+04	-6.336e+04		
4.496e+04														
			99	12.66	3.10	-3.45	-3.38	3.03	0.67	1.241e+04	-9.523e+04	-6.958e+04	-1.323e+04	
4.585e+04														
			98	17.61	1.20	-7.88	-3.19	-3.48	4.54	-6777.05	-1.450e+05	-1.103e+05	-4.150e+04	
5.995e+04														
	74	7	83	16.52	0.24	-109.58	-102.28	-7.06	-27.35-2.697e+04	-1.435e+05	-1.106e+05	-5.989e+04		
5.246e+04														
			85	11.96	54.12	-66.75	-53.00	40.37	38.39-2.046e+04	-1.027e+05	-6.529e+04	-5.791e+04		
4.098e+04														
			99	11.69	22.56	-66.41	-65.50	21.65	-8.96	1.116e+04	-8.697e+04	-6.360e+04	-1.221e+04	
4.180e+04														
			98	16.29	12.97	-51.43	-42.79	4.33	21.95	-6395.81	-1.325e+05	-1.009e+05	-3.802e+04	
5.465e+04														
	74	39	83	16.39	-0.78	-41.47	-39.09	-3.16	-9.54-2.677e+04	-1.431e+05	-1.102e+05	-5.966e+04		
5.238e+04														
			85	11.76	20.94	-26.96	-20.67	14.65	16.17-2.031e+04	-1.025e+05	-6.507e+04	-5.771e+04		





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		95	1.93	1.75	-4.33	1.56	-4.14	1.06	1.077e+04	-7009.91	1440.97	2322.28	8880.61
		104	2.88	3.76	-3.78	1.51	-1.53	3.45	1.475e+04-1.177e+04	-3043.64	6021.43	1.246e+04	
		103	4.18	4.19	-3.17	3.08	-2.06	2.64	1.854e+04-2.023e+04	-6229.16	4540.89	1.862e+04	
79	69	93	2.72	1.71	-0.76	-0.23	1.17	1.02	1.128e+04-1.391e+04	-72.08	-2554.60	1.253e+04	
		95	1.92	0.50	-1.00	-0.77	0.27	0.54	1.074e+04	-6999.33	1444.51	2299.11	8860.85
		104	2.85	1.19	-0.20	-0.15	1.14	0.24	1.472e+04-1.177e+04	-3041.18	5992.09	1.245e+04	
		103	4.16	0.80	-0.84	-0.82	0.79	-0.15	1.850e+04-2.022e+04	-6218.95	4504.35	1.860e+04	
80	1	95	2.59	1.43	-0.89	-0.40	0.95	0.94	1.450e+04	-9403.30	1532.20	3567.27	1.191e+04
		97	0.84	0.52	-0.34	0.04	0.14	0.43	5272.82	-2354.93	-972.77	3890.66	2938.10
		105	0.56	1.67	-0.21	-0.20	1.66	-0.14	4318.32	-328.54	-327.80	4317.58	58.63
		104	3.93	1.18	-0.23	-0.16	1.11	-0.31	1.993e+04-1.663e+04	-4426.03	7717.08	1.724e+04	
80	3	95	2.19	1.21	-0.75	-0.34	0.80	0.80	1.227e+04	-7956.64	1296.48	3018.46	1.008e+04
		97	0.71	0.44	-0.29	0.03	0.12	0.36	4461.62	-1992.63	-823.11	3292.10	2486.08
		105	0.48	1.41	-0.18	-0.17	1.40	-0.11	3653.96	-278.00	-277.37	3653.34	49.61
		104	3.33	1.00	-0.19	-0.13	0.94	-0.26	1.686e+04-1.408e+04	-3745.10	6529.84	1.459e+04	
80	8	95	2.08	27.59	-7.53	-4.41	24.48	9.99	1.110e+04	-7231.73	1180.38	2683.01	9132.57
		97	0.75	24.46	-4.62	-3.00	22.85	6.66	4010.58	-1823.57	-750.99	2938.00	2259.91
		105	0.54	26.31	-4.44	-1.96	23.83	-8.37	3269.52	-254.82	-254.23	3268.94	45.37
		104	3.06	27.43	-8.71	-5.77	24.49	-9.88	1.530e+04-1.282e+04	-3401.70	5881.60	1.327e+04	
80	39	95	2.02	9.40	-3.52	-2.39	8.28	3.65	1.116e+04	-7239.91	1181.06	2734.82	9164.99
		97	0.68	7.63	-1.68	-0.66	6.61	2.91	4049.90	-1815.45	-749.50	2983.94	2261.84
		105	0.47	10.00	-1.39	-0.99	9.59	-2.10	3314.53	-253.25	-252.67	3313.95	45.45
		104	3.04	9.89	-2.00	-1.09	8.99	-3.16	1.534e+04-1.281e+04	-3407.33	5930.44	1.328e+04	
80	69	95	2.00	1.10	-0.68	-0.31	0.73	0.73	1.116e+04	-7233.31	1178.62	2744.05	9161.27
		97	0.65	0.40	-0.26	0.03	0.11	0.33	4056.02	-1811.48	-748.28	2992.82	2260.07
		105	0.43	1.28	-0.16	-0.15	1.27	-0.10	3321.79	-252.72	-252.16	3321.22	45.10
		104	3.02	0.91	-0.18	-0.12	0.85	-0.24	1.533e+04-1.280e+04	-3404.64	5936.22	1.326e+04	
81	1	79	41.13	2.97	-6.84	-4.01	0.13	4.45	9.864e+04-2.710e+05-1.985e+05	2.616e+04	1.467e+05		
		98	18.01	4.22	-3.97	-3.60	3.85	1.71	-3.604e+04-1.599e+05-9.348e+04-1.024e+05				
6.174e+04													
		106	17.78	1.62	-4.06	-3.55	1.11	1.62	4.396e+04-1.161e+05-7.659e+04	4472.56	6.900e+04		
		80	25.45	4.77	-5.96	-4.48	3.28	3.70	6.145e+04-1.672e+05-9.260e+04-1.318e+04				
1.072e+05													
81	3	79	34.80	2.51	-5.79	-3.39	0.11	3.76	8.346e+04-2.293e+05-1.679e+05	2.213e+04	1.242e+05		
		98	15.24	3.57	-3.36	-3.05	3.26	1.45	-3.050e+04-1.353e+05-7.910e+04-8.666e+04				
5.225e+04													
		106	15.04	1.37	-3.44	-3.01	0.94	1.37	3.720e+04-9.822e+04-6.481e+04	3784.47	5.838e+04		
		80	21.53	4.03	-5.05	-3.79	2.78	3.13	5.200e+04-1.415e+05-7.835e+04-1.115e+04				
9.073e+04													
81	8	79	31.73	54.39	-104.16	-88.63	38.86	-47.13	7.497e+04-2.097e+05-1.543e+05	1.960e+04	1.127e+05		
		98	14.38	14.21	-113.19	-77.57	-21.41	57.18	-2.803e+04-1.236e+05-7.241e+04-7.917e+04				
4.764e+04													
		106	13.81	60.21	-91.24	-69.80	38.76	-52.80	3.334e+04-8.986e+04-5.957e+04	3052.68	5.305e+04		
		80	20.35	15.83	-161.71	-117.75	-28.14	76.63	4.684e+04-1.293e+05-7.187e+04-1.063e+04				
8.260e+04													
81	40	79	31.67	18.50	-38.54	-34.27	14.23	-15.01	7.555e+04-2.089e+05-1.533e+05	1.993e+04	1.128e+05		
		98	14.05	6.83	-42.79	-30.04	-5.92	21.68	-2.784e+04-1.232e+05-7.209e+04-7.892e+04				
4.755e+04													
		106	13.70	21.65	-34.16	-27.18	14.67	-18.45	3.364e+04-8.950e+04-5.916e+04	3299.07	5.307e+04		
		80	19.86	8.01	-61.77	-45.12	-8.65	29.75	4.711e+04-1.289e+05-7.146e+04-1.032e+04				
8.252e+04													
81	69	79	31.64	2.28	-5.26	-3.08	0.10	3.42	7.587e+04-2.084e+05-1.527e+05	2.012e+04	1.129e+05		
		98	13.85	3.25	-3.06	-2.77	2.96	1.32	-2.772e+04-1.230e+05-7.191e+04-7.878e+04				
4.750e+04													
		106	13.67	1.24	-3.13	-2.73	0.85	1.25	3.382e+04-8.930e+04-5.892e+04	3440.43	5.308e+04		
		80	19.58	3.67	-4.59	-3.45	2.52	2.85	4.727e+04-1.286e+05-7.123e+04-1.014e+04				
8.248e+04													
82	1	98	20.94	6.16	-3.88	-0.71	2.99	4.67	9010.56-1.640e+05-9.982e+04-5.514e+04				
8.356e+04													
		99	14.71	7.76e-03	-5.82	-3.48	-2.33	2.86	6236.44-1.152e+05-5.995e+04-4.901e+04				
6.047e+04													
		107	15.05	4.47	-3.60	-3.27	4.14	1.60	3.943e+04-9.656e+04-5.479e+04	-2342.15	6.274e+04		
		106	18.41	1.50	-9.44	-6.34	-1.61	4.93	3.841e+04-1.251e+05-8.150e+04	-5185.33	7.231e+04		
82	3	98	17.72	5.21	-3.28	-0.60	2.53	3.95	7624.32-1.387e+05-8.446e+04-4.666e+04				
7.070e+04													
		99	12.45	6.57e-03	-4.92	-2.95	-1.97	2.42	5276.98-9.748e+04-5.073e+04-4.147e+04				
5.117e+04													
		107	12.73	3.78	-3.05	-2.77	3.50	1.35	3.337e+04-8.171e+04-4.636e+04	-1981.82	5.309e+04		
		106	15.57	1.27	-7.99	-5.36	-1.36	4.17	3.250e+04-1.059e+05-6.896e+04	-4387.59	6.118e+04		
82	7	98	16.31	20.36	-50.50	-48.89	18.76	10.55	6721.00-1.268e+05-7.730e+04-4.273e+04				
6.446e+04													
		99	11.62	15.88	-67.56	-55.11	3.43	29.73	4669.11-8.902e+04-4.640e+04-3.795e+04				
4.665e+04													



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		107	11.74	44.56	-48.47	-48.47	44.56	0.22	3.030e+04-7.464e+04-4.241e+04	-1933.94	4.841e+04
		106	14.56	2.17	-85.79	-69.58	-14.04	34.10	2.947e+04-9.674e+04-6.311e+04	-4153.28	5.580e+04
82	39	98	16.18	9.65	-19.52	-18.17	8.30	6.13	6854.57-1.264e+05-7.697e+04-4.253e+04		
6.434e+04											
		99	11.42	5.58	-27.26	-21.79	0.11	12.24	4750.54-8.876e+04-4.622e+04-3.779e+04		
4.657e+04											
		107	11.63	18.29	-19.29	-19.27	18.27	0.86	3.032e+04-7.441e+04-4.224e+04	-1849.88	4.831e+04
		106	14.30	1.46	-35.83	-28.46	-5.90	14.84	2.952e+04-9.642e+04-6.285e+04	-4048.71	5.568e+04
82	69	98	16.11	4.74	-2.98	-0.55	2.30	3.59	6931.20-1.261e+05-7.678e+04-4.242e+04		
6.427e+04											
		99	11.31	5.97e-03	-4.48	-2.68	-1.79	2.20	4797.26-8.862e+04-4.612e+04-3.770e+04		
4.652e+04											
		107	11.57	3.44	-2.77	-2.52	3.19	1.23	3.033e+04-7.428e+04-4.215e+04	-1801.65	4.826e+04
		106	14.16	1.15	-7.26	-4.88	-1.24	3.79	2.955e+04-9.623e+04-6.269e+04	-3988.72	5.562e+04
83	1	99	15.10	2.42	-4.31	-2.83	0.94	2.79	1.061e+04-1.160e+05-5.957e+04-4.581e+04		
6.292e+04											
		100	11.63	1.20	-3.19	-2.30	0.31	1.76	1.682e+04-8.411e+04-3.380e+04-3.349e+04		
5.047e+04											
		108	12.35	1.91	-3.03	-2.86	1.74	0.89	3.752e+04-7.532e+04-3.789e+04	92.48	5.313e+04
		107	14.95	1.92	-4.04	-3.56	1.43	1.63	3.793e+04-9.690e+04-5.594e+04	-3024.29	6.201e+04
83	3	99	12.78	2.05	-3.65	-2.39	0.79	2.36	8977.99-9.814e+04-5.040e+04-3.876e+04		
5.324e+04											
		100	9.84	1.01	-2.70	-1.95	0.26	1.49	1.423e+04-7.117e+04-2.860e+04-2.834e+04		
4.270e+04											
		108	10.45	1.61	-2.56	-2.42	1.47	0.76	3.175e+04-6.373e+04-3.206e+04	78.25	4.495e+04
		107	12.65	1.62	-3.42	-3.01	1.21	1.38	3.210e+04-8.199e+04-4.734e+04	-2559.02	5.247e+04
83	7	99	11.84	25.56	-57.66	-53.29	21.19	18.57	8035.18-8.963e+04-4.611e+04-3.548e+04		
4.854e+04											
		100	9.11	22.63	-45.58	-40.79	17.84	17.43	1.288e+04-6.498e+04-2.615e+04-2.594e+04		
3.893e+04											
		108	9.63	24.07	-36.93	-36.76	23.89	3.27	2.887e+04-5.819e+04-2.930e+04	-22.77	4.100e+04
		107	11.67	22.01	-44.82	-44.46	21.65	4.90	2.915e+04-7.490e+04-4.330e+04	-2455.37	4.785e+04
83	39	99	11.70	10.31	-22.93	-20.81	8.18	8.13	8115.65-8.937e+04-4.593e+04-3.533e+04		
4.845e+04											
		100	9.00	8.76	-18.10	-15.99	6.65	7.22	1.292e+04-6.480e+04-2.606e+04-2.583e+04		
3.886e+04											
		108	9.55	9.67	-14.91	-14.80	9.56	1.63	2.887e+04-5.803e+04-2.920e+04	36.91	4.092e+04
		107	11.56	8.84	-18.19	-17.95	8.59	2.59	2.917e+04-7.467e+04-4.313e+04	-2373.40	4.775e+04
83	69	99	11.62	1.86	-3.31	-2.18	0.72	2.14	8161.81-8.922e+04-4.582e+04-3.524e+04		
4.840e+04											
		100	8.94	0.92	-2.45	-1.77	0.24	1.36	1.294e+04-6.470e+04-2.600e+04-2.576e+04		
3.882e+04											
		108	9.50	1.47	-2.33	-2.20	1.34	0.69	2.886e+04-5.794e+04-2.915e+04	71.14	4.087e+04
		107	11.50	1.48	-3.11	-2.74	1.10	1.26	2.918e+04-7.454e+04-4.303e+04	-2326.38	4.770e+04
84	1	100	11.67	1.50	-3.03	-2.26	0.72	1.71	1.708e+04-8.428e+04-3.402e+04-3.319e+04		
5.068e+04											
		101	9.06	1.06	-2.25	-1.72	0.53	1.22	2.195e+04-5.951e+04-1.643e+04-2.113e+04		
4.066e+04											
		109	10.13	1.26	-2.21	-2.19	1.24	0.28	3.554e+04-5.784e+04-2.487e+04	2575.50	4.463e+04
		108	12.32	1.64	-2.81	-2.69	1.52	0.72	3.730e+04-7.521e+04-3.797e+04	58.87	5.295e+04
84	3	100	9.87	1.27	-2.57	-1.91	0.61	1.44	1.445e+04-7.132e+04-2.878e+04-2.808e+04		
4.288e+04											
		101	7.67	0.90	-1.90	-1.45	0.45	1.03	1.857e+04-5.036e+04-1.390e+04-1.788e+04		
3.441e+04											
		109	8.57	1.07	-1.87	-1.85	1.05	0.24	3.007e+04-4.894e+04-2.105e+04	2179.27	3.776e+04
		108	10.42	1.39	-2.38	-2.28	1.28	0.61	3.156e+04-6.364e+04-3.213e+04	49.82	4.480e+04
84	23	100	9.11	17.20	-13.39	3.29	0.52	15.24	1.336e+04-6.497e+04-2.613e+04-2.547e+04		
3.916e+04											
		101	7.10	14.32	-14.02	3.65	-3.35	13.73	1.707e+04-4.589e+04-1.262e+04-1.621e+04		
3.142e+04											
		109	7.92	19.82	-10.46	5.29	4.07	15.13	2.752e+04-4.458e+04-1.915e+04	2097.61	3.445e+04
		108	9.61	21.55	-10.22	6.61	4.73	15.86	2.894e+04-5.795e+04-2.920e+04	198.61	4.088e+04
84	55	100	9.02	6.71	-6.07	0.10	0.54	6.39	1.322e+04-6.488e+04-2.615e+04-2.551e+04		
3.905e+04											
		101	7.02	5.41	-5.88	0.49	-0.96	5.60	1.695e+04-4.582e+04-1.263e+04-1.624e+04		
3.133e+04											
		109	7.84	7.16	-4.21	0.86	2.09	5.65	2.741e+04-4.452e+04-1.914e+04	2023.61	3.437e+04
		108	9.52	7.95	-4.39	1.09	2.47	6.13	2.878e+04-5.789e+04-2.921e+04	101.18	4.078e+04
84	69	100	8.97	1.15	-2.33	-1.74	0.56	1.31	1.314e+04-6.483e+04-2.617e+04-2.553e+04		
3.898e+04											
		101	6.97	0.82	-1.73	-1.32	0.41	0.94	1.689e+04-4.578e+04-1.264e+04-1.625e+04		
3.128e+04											
		109	7.79	0.97	-1.70	-1.68	0.95	0.22	2.734e+04-4.449e+04-1.913e+04	1981.15	3.433e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		108	9.47	1.26	-2.16	-2.07	1.17	0.55	2.869e+04	-5.786e+04	-2.921e+04	45.29	4.073e+04
85	1	101	9.08	1.06	-2.14	-1.72	0.63	1.09	2.187e+04	-5.974e+04	-1.672e+04	-2.115e+04	
4.075e+04													
		102	7.06	1.08	-1.68	-1.18	0.58	1.06	2.478e+04	-4.029e+04	-4809.02	-1.070e+04	3.240e+04
		110	8.22	0.63	-1.43	-1.42	0.63	-0.08	3.276e+04	-4.356e+04	-1.537e+04	4569.66	3.684e+04
		109	10.10	1.27	-1.94	-1.94	1.27	0.09	3.553e+04	-5.761e+04	-2.478e+04	2698.22	4.449e+04
85	3	101	7.68	0.89	-1.81	-1.45	0.53	0.92	1.851e+04	-5.055e+04	-1.415e+04	-1.789e+04	
3.448e+04													
		102	5.97	0.91	-1.42	-1.00	0.49	0.89	2.097e+04	-3.409e+04	-4069.17	-9057.61	2.742e+04
		110	6.96	0.54	-1.21	-1.20	0.53	-0.07	2.772e+04	-3.686e+04	-1.300e+04	3866.64	3.117e+04
		109	8.54	1.07	-1.64	-1.64	1.07	0.08	3.006e+04	-4.875e+04	-2.097e+04	2283.11	3.765e+04
85	23	101	7.08	10.75	-9.59	1.48	-0.32	10.13	1.700e+04	-4.606e+04	-1.284e+04	-1.622e+04	
3.149e+04													
		102	5.54	10.78	-12.41	3.21	-4.83	10.88	1.920e+04	-3.108e+04	-3683.12	-8189.14	2.504e+04
		110	6.43	14.82	-8.36	3.69	2.77	11.58	2.533e+04	-3.358e+04	-1.185e+04	3595.24	2.843e+04
		109	7.87	15.93	-7.42	5.77	2.74	11.58	2.751e+04	-4.440e+04	-1.908e+04	2193.85	3.435e+04
85	55	101	7.02	4.18	-4.29	-0.30	0.19	4.23	1.689e+04	-4.600e+04	-1.285e+04	-1.625e+04	
3.140e+04													
		102	5.47	4.16	-5.04	0.59	-1.48	4.48	1.911e+04	-3.102e+04	-3693.37	-8217.77	2.497e+04
		110	6.36	5.18	-3.21	0.65	1.32	4.18	2.525e+04	-3.353e+04	-1.183e+04	3544.33	2.837e+04
		109	7.80	5.66	-2.89	1.16	1.62	4.27	2.740e+04	-4.434e+04	-1.907e+04	2118.68	3.427e+04
85	69	101	6.98	0.81	-1.65	-1.32	0.48	0.84	1.683e+04	-4.596e+04	-1.286e+04	-1.627e+04	
3.134e+04													
		102	5.43	0.83	-1.29	-0.91	0.45	0.81	1.906e+04	-3.099e+04	-3699.25	-8234.19	2.492e+04
		110	6.33	0.49	-1.10	-1.09	0.48	-0.06	2.520e+04	-3.351e+04	-1.182e+04	3515.13	2.834e+04
		109	7.77	0.98	-1.49	-1.49	0.97	0.07	2.733e+04	-4.431e+04	-1.906e+04	2075.55	3.423e+04
86	1	102	7.07	0.79	-1.61	-1.40	0.58	0.67	2.476e+04	-4.045e+04	-5002.65	-1.069e+04	3.249e+04
		103	5.47	1.19	-1.29	-0.59	0.49	1.11	2.471e+04	-2.619e+04	1338.80	-2819.11	2.537e+04
		111	6.52	0.52	-1.10	-1.04	0.45	-0.33	2.872e+04	-3.194e+04	-8958.25	5729.73	2.943e+04
		110	8.20	0.92	-0.84	-0.83	0.92	0.09	3.267e+04	-4.341e+04	-1.536e+04	4618.50	3.671e+04
86	3	102	5.99	0.67	-1.36	-1.19	0.49	0.57	2.095e+04	-3.423e+04	-4233.01	-9042.73	2.749e+04
		103	4.63	1.00	-1.09	-0.50	0.42	0.94	2.091e+04	-2.216e+04	1132.83	-2385.40	2.147e+04
		111	5.51	0.44	-0.93	-0.88	0.38	-0.28	2.430e+04	-2.703e+04	-7580.06	4848.23	2.490e+04
		110	6.94	0.78	-0.71	-0.70	0.78	0.08	2.765e+04	-3.673e+04	-1.299e+04	3907.96	3.106e+04
86	23	102	5.50	4.27	-6.93	-0.47	-2.19	5.53	1.918e+04	-3.120e+04	-3839.72	-8179.86	2.510e+04
		103	4.29	7.94	-10.75	2.88	-5.68	8.31	1.913e+04	-2.021e+04	1046.55	-2128.10	1.961e+04
		111	5.09	10.13	-6.64	1.88	1.60	8.38	2.217e+04	-2.463e+04	-6928.71	4462.39	2.270e+04
		110	6.39	12.12	-5.26	5.61	1.25	8.41	2.528e+04	-3.347e+04	-1.183e+04	3641.89	2.834e+04
86	55	102	5.46	1.67	-3.04	-0.86	-0.51	2.35	1.910e+04	-3.115e+04	-3845.10	-8205.79	2.503e+04
		103	4.24	3.26	-4.33	0.76	-1.83	3.57	1.905e+04	-2.017e+04	1035.94	-2153.80	1.955e+04
		111	5.04	3.41	-2.42	0.18	0.81	2.90	2.212e+04	-2.460e+04	-6904.72	4427.50	2.266e+04
		110	6.33	4.41	-1.86	1.64	0.91	3.11	2.519e+04	-3.342e+04	-1.182e+04	3585.21	2.827e+04
86	69	102	5.44	0.61	-1.24	-1.08	0.44	0.52	1.905e+04	-3.112e+04	-3848.19	-8220.67	2.498e+04
		103	4.21	0.91	-0.99	-0.46	0.38	0.86	1.901e+04	-2.015e+04	1029.85	-2168.55	1.952e+04
		111	5.01	0.40	-0.85	-0.80	0.35	-0.25	2.209e+04	-2.457e+04	-6890.96	4407.48	2.264e+04
		110	6.31	0.71	-0.64	-0.64	0.71	0.07	2.513e+04	-3.339e+04	-1.181e+04	3552.69	2.824e+04
87	1	103	5.51	0.96	-0.71	-0.49	0.74	0.57	2.490e+04	-2.641e+04	1247.04	-2754.42	2.558e+04
		104	3.86	0.87	-1.13	-0.61	0.36	0.87	2.025e+04	-1.557e+04	2493.83	2184.03	1.791e+04
		112	4.52	1.30	-0.11	-0.10	1.30	-0.08	2.102e+04	-2.108e+04	-5203.06	5136.25	2.041e+04
		111	6.54	0.26	-0.70	-0.69	0.24	0.13	2.880e+04	-3.210e+04	-9106.40	5811.71	2.952e+04
87	3	103	4.67	0.81	-0.60	-0.42	0.62	0.48	2.107e+04	-2.235e+04	1055.19	-2330.66	2.164e+04
		104	3.27	0.73	-0.95	-0.52	0.30	0.74	1.713e+04	-1.317e+04	2110.16	1848.03	1.515e+04
		112	3.83	1.10	-0.09	-0.09	1.10	-0.07	1.778e+04	-1.784e+04	-4402.59	4346.05	1.727e+04
		111	5.54	0.22	-0.60	-0.58	0.21	0.11	2.437e+04	-2.716e+04	-7705.41	4917.60	2.498e+04
87	21	103	4.27	6.15	-17.35	5.62	-16.82	-3.48	1.927e+04	-2.034e+04	964.63	-2037.15	1.975e+04
		104	2.98	8.10	-17.72	8.08	-17.71	0.57	1.566e+04	-1.200e+04	1916.85	1742.33	1.383e+04
		112	3.54	8.71	-16.26	4.99	-12.54	8.89	1.623e+04	-1.622e+04	-4015.50	4030.20	1.572e+04
		111	5.09	14.81	-16.24	11.47	-12.90	9.62	2.224e+04	-2.470e+04	-7014.69	4560.42	2.275e+04
87	53	103	4.25	1.94	-5.90	1.81	-5.77	-0.99	1.920e+04	-2.032e+04	961.22	-2089.03	1.970e+04
		104	2.98	2.69	-6.33	2.65	-6.28	0.63	1.560e+04	-1.198e+04	1917.79	1702.74	1.379e+04
		112	3.50	3.20	-5.37	1.77	-3.94	3.20	1.619e+04	-1.622e+04	-4007.15	3979.85	1.571e+04
		111	5.05	5.16	-5.89	3.84	-4.58	3.57	2.219e+04	-2.469e+04	-7008.48	4503.31	2.272e+04
87	69	103	4.24	0.74	-0.55	-0.38	0.57	0.44	1.916e+04	-2.031e+04	959.26	-2118.78	1.967e+04
		104	2.97	0.67	-0.87	-0.47	0.27	0.67	1.558e+04	-1.198e+04	1918.33	1680.03	1.378e+04
		112	3.48	1.00	-0.08	-0.08	1.00	-0.06	1.617e+04	-1.622e+04	-4002.36	3950.96	1.570e+04
		111	5.03	0.20	-0.54	-0.53	0.19	0.10	2.216e+04	-2.469e+04	-7004.92	4470.54	2.271e+04
88	1	104	4.06	0.93	-0.50	-0.34	0.77	0.46	2.148e+04	-1.618e+04	2409.12	2895.15	1.883e+04
		105	0.78	0.78	-0.26	-3.37e-04	0.52	0.45	4835.02	-2245.98	-734.59	3323.63	2901.35
		113	0.34	1.70	-0.21	-0.19	1.68	-0.17	2102.02	-959.06	-113.68	1256.64	1368.62
		112	4.75	0.85	-0.05	-0.03	0.83	-0.13	2.171e+04	-2.249e+04	-5569.40	4785.17	2.148e+04
88	3	104	3.44	0.79	-0.42	-0.28	0.65	0.39	1.818e+04	-1.369e+04	2038.49	2449.75	1.593e+04
		105	0.66	0.66	-0.22	-2.85e-04	0.44	0.38	4091.17	-1900.44	-621.58	2812.31	2454.99
		113	0.29	1.44	-0.17	-0.16	1.43	-0.14	1778.63	-811.52	-96.19	1063.31	1158.06

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		112	4.02	0.72	-0.04	-0.02	0.70	-0.11	1.837e+04-1.903e+04	-4712.57	4048.99	1.818e+04
88	8	104	3.20	28.20	-7.31	-4.49	25.39	9.59	1.650e+04-1.247e+04	1857.50	2171.89	1.448e+04
		105	0.71	25.55	-4.97	-3.34	23.92	6.87	3679.35 -1742.86	-567.56	2504.06	2234.13
		113	0.30	29.17	-3.19	-1.23	27.21	-7.72	1574.06 -762.41	-89.48	901.13	1058.04
		112	3.71	28.05	-7.92	-5.06	25.19	-9.73	1.669e+04-1.736e+04	-4284.93	3612.49	1.656e+04
88	40	104	3.15	10.73	-2.91	-1.80	9.63	3.72	1.651e+04-1.245e+04	1854.75	2206.93	1.448e+04
		105	0.64	9.66	-1.90	-1.22	8.97	2.73	3704.68 -1733.19	-565.98	2537.47	2232.66
		113	0.27	11.44	-1.24	-0.54	10.74	-2.90	1601.21 -746.64	-88.19	942.76	1054.70
		112	3.67	10.63	-2.90	-1.86	9.59	-3.61	1.669e+04-1.732e+04	-4284.44	3655.96	1.654e+04
88	69	104	3.12	0.72	-0.39	-0.26	0.59	0.35	1.652e+04-1.244e+04	1853.17	2227.04	1.448e+04
		105	0.60	0.60	-0.20	-2.59e-04	0.40	0.35	3719.25 -1727.67	-565.07	2556.64	2231.81
		113	0.26	1.31	-0.16	-0.15	1.30	-0.13	1616.94 -737.74	-87.45	966.65	1052.78
		112	3.65	0.65	-0.04	-0.02	0.64	-0.10	1.670e+04-1.730e+04	-4284.15	3680.90	1.653e+04
89	1	80	27.92	2.58	-6.33	-3.67	-0.07	4.08	7.301e+04-1.794e+05-7.318e+04-3.319e+04			
1.246e+05		106	17.82	5.79	-2.33	-2.00	5.46	1.61	3.390e+04-1.237e+05-4.813e+04-4.166e+04			
7.873e+04		114	16.99	3.43	-7.02	-5.26	1.67	3.91	6.486e+04-9.222e+04-3.661e+04	9252.05	7.512e+04	
		81	21.81	4.58	-4.12	-3.43	3.89	2.36	7.622e+04-1.247e+05-5.810e+04	9590.31	9.461e+04	
89	3	80	23.63	2.19	-5.36	-3.11	-0.06	3.45	6.178e+04-1.518e+05-6.192e+04-2.809e+04			
1.054e+05		106	15.08	4.90	-1.97	-1.69	4.62	1.36	2.868e+04-1.047e+05-4.073e+04-3.525e+04			
6.661e+04		114	14.37	2.90	-5.94	-4.45	1.42	3.30	5.488e+04-7.803e+04-3.098e+04	7828.66	6.356e+04	
		81	18.45	3.88	-3.49	-2.90	3.29	2.00	6.450e+04-1.055e+05-4.916e+04	8114.88	8.005e+04	
89	7	80	21.78	19.38	-89.79	-86.60	16.19	18.37	5.607e+04-1.388e+05-5.686e+04-2.582e+04			
9.617e+04		106	13.81	52.42	-30.93	-30.34	51.83	6.97	2.599e+04-9.565e+04-3.736e+04-3.230e+04			
6.076e+04		114	13.35	25.30	-63.74	-58.09	19.64	21.71	4.991e+04-7.133e+04-2.843e+04	7007.97	5.797e+04	
		81	16.95	36.39	-22.80	-21.80	35.39	7.63	5.864e+04-9.653e+04-4.513e+04	7244.03	7.303e+04	
89	39	80	21.59	7.71	-35.21	-33.37	5.87	8.69	5.613e+04-1.383e+05-5.650e+04-2.564e+04			
9.596e+04		106	13.74	21.89	-12.36	-12.04	21.56	3.33	2.604e+04-9.533e+04-3.715e+04-3.214e+04			
6.063e+04		114	13.17	10.77	-26.54	-23.75	7.98	9.82	4.990e+04-7.108e+04-2.826e+04	7077.23	5.785e+04	
		81	16.84	15.42	-10.24	-9.62	14.80	3.94	5.864e+04-9.616e+04-4.485e+04	7328.63	7.287e+04	
89	69	80	21.48	1.99	-4.87	-2.83	-0.06	3.14	5.616e+04-1.380e+05-5.629e+04-2.553e+04			
9.585e+04		106	13.71	4.45	-1.79	-1.54	4.20	1.24	2.607e+04-9.514e+04-3.702e+04-3.205e+04			
6.056e+04		114	13.07	2.64	-5.40	-4.05	1.29	3.00	4.989e+04-7.094e+04-2.816e+04	7116.96	5.778e+04	
		81	16.78	3.53	-3.17	-2.64	2.99	1.82	5.863e+04-9.595e+04-4.469e+04	7377.17	7.278e+04	
90	1	106	18.62	5.60	-6.17	-3.29	2.73	5.05	4.133e+04-1.249e+05-4.671e+04-3.684e+04			
8.295e+04		107	14.91	1.28	-4.25	-2.79	-0.18	2.43	3.765e+04-9.677e+04-2.862e+04-3.050e+04			
6.720e+04		115	14.46	2.61	-3.86	-3.17	1.93	1.99	5.706e+04-7.690e+04-2.800e+04	8159.09	6.450e+04	
		114	17.31	3.42	-5.02	-3.77	2.18	2.99	6.415e+04-9.576e+04-3.916e+04	7548.12	7.647e+04	
90	3	106	15.75	4.74	-5.22	-2.79	2.31	4.28	3.497e+04-1.057e+05-3.952e+04-3.117e+04			
7.019e+04		107	12.62	1.08	-3.59	-2.36	-0.15	2.06	3.186e+04-8.188e+04-2.421e+04-2.581e+04			
5.687e+04		115	12.23	2.21	-3.27	-2.69	1.63	1.68	4.828e+04-6.507e+04-2.369e+04	6903.84	5.457e+04	
		114	14.65	2.89	-4.24	-3.19	1.84	2.53	5.428e+04-8.102e+04-3.313e+04	6386.87	6.470e+04	
90	7	106	14.64	43.76	-66.63	-55.39	32.53	33.38	3.171e+04-9.657e+04-3.627e+04-2.859e+04			
6.402e+04		107	11.65	13.85	-46.54	-40.37	7.67	18.30	2.894e+04-7.480e+04-2.220e+04-2.366e+04			
5.186e+04		115	11.29	22.11	-34.93	-32.46	19.64	11.61	4.394e+04-5.946e+04-2.171e+04	6197.93	4.978e+04	
		114	13.53	28.29	-38.79	-35.16	24.66	15.18	4.937e+04-7.407e+04-3.040e+04	5696.68	5.902e+04	
90	39	106	14.44	18.51	-27.12	-21.80	13.19	14.64	3.176e+04-9.624e+04-3.605e+04-2.843e+04			
6.389e+04		107	11.53	5.57	-18.93	-16.08	2.71	7.86	2.895e+04-7.457e+04-2.208e+04-2.353e+04			
5.176e+04		115	11.18	9.30	-14.58	-13.39	8.10	5.21	4.391e+04-5.926e+04-2.160e+04	6247.68	4.967e+04	
		114	13.39	11.90	-16.50	-14.66	10.05	6.99	4.935e+04-7.381e+04-3.022e+04	5766.31	5.889e+04	
90	69	106	14.32	4.31	-4.74	-2.53	2.10	3.89	3.179e+04-9.606e+04-3.593e+04-2.834e+04			
6.381e+04		107	11.47	0.98	-3.27	-2.15	-0.14	1.87	2.896e+04-7.444e+04-2.201e+04-2.346e+04			
5.170e+04		115	11.12	2.01	-2.97	-2.44	1.48	1.53	4.389e+04-5.915e+04-2.154e+04	6276.22	4.961e+04	
		114	13.31	2.63	-3.86	-2.90	1.67	2.30	4.934e+04-7.366e+04-3.012e+04	5806.25	5.882e+04	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

91	1	107	14.97	2.46	-4.13	-2.60	0.93	2.78	3.858e+04-9.658e+04-2.816e+04-2.984e+04
6.758e+04		108	12.31	1.46	-3.12	-2.32	0.67	1.73	3.731e+04-7.514e+04-1.500e+04-2.283e+04
5.609e+04		116	12.23	2.04	-3.03	-2.77	1.78	1.11	5.036e+04-6.324e+04-2.066e+04 7778.71 5.499e+04
		115	14.50	2.47	-3.73	-3.18	1.93	1.76	5.685e+04-7.750e+04-2.848e+04 7834.56 6.467e+04
91	3	107	12.67	2.08	-3.49	-2.20	0.79	2.36	3.265e+04-8.172e+04-2.383e+04-2.525e+04
5.718e+04		108	10.42	1.24	-2.64	-1.96	0.56	1.47	3.157e+04-6.358e+04-1.270e+04-1.931e+04
4.746e+04		116	10.35	1.73	-2.56	-2.34	1.51	0.94	4.261e+04-5.351e+04-1.748e+04 6581.99 4.653e+04
		115	12.27	2.09	-3.16	-2.69	1.63	1.49	4.810e+04-6.557e+04-2.410e+04 6629.25 5.472e+04
91	23	107	11.69	28.51	-16.15	16.40	-4.04	19.85	3.000e+04-7.438e+04-2.154e+04-2.284e+04
5.219e+04		108	9.62	22.13	-15.78	13.89	-7.55	15.63	2.895e+04-5.789e+04-1.147e+04-1.747e+04
4.332e+04		116	9.56	28.26	-13.40	15.04	-0.18	19.39	3.898e+04-4.870e+04-1.586e+04 6148.76 4.244e+04
		115	11.32	32.16	-13.57	17.28	1.30	21.42	4.406e+04-5.965e+04-2.183e+04 6233.03 4.992e+04
91	55	107	11.58	10.91	-7.22	4.71	-1.02	8.60	2.980e+04-7.433e+04-2.162e+04-2.291e+04
5.206e+04		108	9.52	8.03	-6.52	3.93	-2.43	6.55	2.879e+04-5.784e+04-1.152e+04-1.753e+04
4.321e+04		116	9.47	10.26	-5.32	4.13	0.81	7.61	3.883e+04-4.866e+04-1.588e+04 6043.83 4.235e+04
		115	11.21	11.91	-5.75	4.75	1.41	8.67	4.385e+04-5.963e+04-2.188e+04 6101.85 4.981e+04
91	69	107	11.52	1.89	-3.18	-2.00	0.71	2.14	2.968e+04-7.429e+04-2.166e+04-2.295e+04
5.198e+04		108	9.47	1.12	-2.40	-1.79	0.51	1.33	2.870e+04-5.780e+04-1.154e+04-1.756e+04
4.315e+04		116	9.41	1.57	-2.33	-2.13	1.37	0.85	3.874e+04-4.864e+04-1.589e+04 5983.62 4.230e+04
		115	11.15	1.90	-2.87	-2.45	1.48	1.35	4.373e+04-5.961e+04-2.191e+04 6026.59 4.975e+04
92	1	108	12.31	1.64	-3.05	-2.32	0.91	1.70	3.742e+04-7.508e+04-1.498e+04-2.267e+04
5.612e+04		109	10.11	1.02	-2.24	-1.88	0.66	1.02	3.570e+04-5.757e+04 -5753.68-1.612e+04 4.635e+04
		117	10.24	1.74	-2.53	-2.48	1.70	0.45	4.389e+04-5.134e+04-1.481e+04 7362.15 4.630e+04
		116	12.22	2.00	-2.73	-2.55	1.81	0.91	5.028e+04-6.323e+04-2.072e+04 7765.71 5.494e+04
92	3	108	10.42	1.39	-2.58	-1.96	0.77	1.44	3.166e+04-6.353e+04-1.268e+04-1.918e+04
4.748e+04		109	8.56	0.86	-1.90	-1.59	0.56	0.87	3.021e+04-4.872e+04 -4868.50-1.364e+04 3.922e+04
		117	8.67	1.48	-2.14	-2.10	1.44	0.38	3.714e+04-4.344e+04-1.253e+04 6229.51 3.918e+04
		116	10.34	1.69	-2.31	-2.15	1.53	0.77	4.255e+04-5.351e+04-1.753e+04 6570.99 4.649e+04
92	23	108	9.60	18.63	-12.01	11.18	-4.56	13.14	2.903e+04-5.784e+04-1.145e+04-1.735e+04
4.333e+04		109	7.90	16.47	-13.39	11.00	-7.93	11.55	2.765e+04-4.437e+04 -4389.81-1.234e+04 3.579e+04
		117	8.00	21.64	-11.89	11.05	-1.29	15.59	3.394e+04-3.955e+04-1.140e+04 5793.04 3.572e+04
		116	9.53	24.94	-10.60	14.50	-0.15	16.19	3.892e+04-4.869e+04-1.591e+04 6138.70 4.240e+04
92	55	108	9.52	6.86	-5.13	2.94	-1.21	5.62	2.887e+04-5.778e+04-1.150e+04-1.741e+04
4.323e+04		109	7.82	5.76	-5.23	3.09	-2.57	4.71	2.753e+04-4.432e+04 -4412.75-1.238e+04 3.570e+04
		117	7.92	7.61	-4.44	2.81	0.36	5.90	3.383e+04-3.951e+04-1.139e+04 5710.53 3.566e+04
		116	9.45	8.98	-4.11	4.04	0.83	6.35	3.877e+04-4.866e+04-1.593e+04 6033.80 4.231e+04
92	69	108	9.47	1.27	-2.35	-1.78	0.70	1.31	2.878e+04-5.775e+04-1.153e+04-1.744e+04
4.317e+04		109	7.78	0.78	-1.72	-1.45	0.51	0.79	2.746e+04-4.429e+04 -4425.90-1.240e+04 3.565e+04
		117	7.88	1.34	-1.95	-1.91	1.31	0.34	3.376e+04-3.949e+04-1.139e+04 5663.19 3.562e+04
		116	9.40	1.54	-2.10	-1.96	1.40	0.70	3.868e+04-4.864e+04-1.594e+04 5973.62 4.226e+04
93	1	109	10.12	0.99	-2.26	-2.01	0.73	0.87	3.570e+04-5.761e+04 -5800.35-1.611e+04 4.637e+04
		110	8.23	0.42	-1.34	-1.21	0.29	0.46	3.319e+04-4.325e+04 326.69-1.038e+04 3.784e+04
		118	8.48	1.40	-2.55	-2.49	1.33	-0.50	3.769e+04-4.124e+04-1.030e+04 6741.38 3.853e+04
		117	10.23	1.92	-2.16	-2.14	1.90	0.28	4.386e+04-5.125e+04-1.478e+04 7388.31 4.624e+04
93	3	109	8.56	0.84	-1.91	-1.70	0.62	0.74	3.021e+04-4.875e+04 -4907.99-1.364e+04 3.924e+04
		110	6.97	0.36	-1.13	-1.03	0.25	0.39	2.808e+04-3.659e+04 276.43 -8786.52 3.202e+04
		118	7.17	1.18	-2.16	-2.10	1.13	-0.42	3.189e+04-3.490e+04 -8714.35 5704.25 3.261e+04
		117	8.65	1.62	-1.82	-1.81	1.61	0.23	3.711e+04-4.337e+04-1.251e+04 6251.65 3.913e+04
93	23	109	7.87	11.41	-9.70	7.32	-5.62	8.34	2.764e+04-4.440e+04 -4426.69-1.233e+04 3.580e+04
		110	6.43	11.88	-12.41	8.72	-9.25	8.17	2.566e+04-3.334e+04 267.01 -7946.38 2.921e+04
		118	6.62	15.58	-10.64	7.33	-2.39	12.17	2.909e+04-3.178e+04 -7967.66 5278.58 2.971e+04
		117	7.97	18.95	-8.89	11.60	-1.53	12.27	3.392e+04-3.948e+04-1.138e+04 5817.68 3.568e+04
93	55	109	7.81	3.85	-3.86	1.69	-1.69	3.47	2.753e+04-4.435e+04 -4449.00-1.237e+04 3.572e+04
		110	6.37	4.00	-4.65	2.59	-3.23	3.20	2.558e+04-3.329e+04 257.03 -7972.67 2.915e+04
		118	6.56	4.90	-3.66	1.46	-0.22	4.19	2.903e+04-3.175e+04 -7938.73 5219.55 2.967e+04
		117	7.90	6.59	-3.04	3.18	0.37	4.61	3.380e+04-3.945e+04-1.137e+04 5732.30 3.561e+04
93	69	109	7.78	0.76	-1.74	-1.55	0.56	0.67	2.746e+04-4.432e+04 -4461.81-1.240e+04 3.567e+04
		110	6.33	0.33	-1.03	-0.93	0.23	0.35	2.553e+04-3.327e+04 251.30 -7987.75 2.911e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		118	6.52	1.07	-1.96	-1.91	1.02	-0.38 2.899e+04-3.173e+04	-7922.14	5185.68 2.964e+04		
		117	7.87	1.47	-1.66	-1.64	1.46	0.21 3.374e+04-3.942e+04-1.137e+04	5683.32 3.557e+04			
94	1	110	8.28	-0.70	-1.76	-1.42	-1.04	-0.49 3.355e+04-4.338e+04	340.38-1.016e+04	3.810e+04		
		111	6.48	3.19	-1.42	0.76	1.01	2.30 2.852e+04-3.160e+04	3070.23	-6150.10 2.971e+04		
		119	7.02	0.92	-7.32	-2.60	-3.80	-4.08 3.267e+04-3.242e+04	-6680.11	6930.25 3.183e+04		
		118	8.43	3.65	-2.38	-2.37	3.65	-0.18 3.729e+04-4.120e+04-1.024e+04	6329.96 3.836e+04			
94	3	110	7.01	-0.59	-1.49	-1.20	-0.88	-0.42 2.839e+04-3.670e+04	288.02	-8600.95 3.224e+04		
		111	5.48	2.70	-1.20	0.64	0.85	1.95 2.413e+04-2.674e+04	2597.88	-5203.93 2.514e+04		
		119	5.94	0.78	-6.20	-2.20	-3.21	-3.45 2.764e+04-2.743e+04	-5652.40	5864.06 2.693e+04		
		118	7.14	3.09	-2.01	-2.01	3.09	-0.16 3.155e+04-3.486e+04	-8665.03	5356.12 3.246e+04		
94	23	110	6.42	4.94	-9.03	3.86	-7.95	3.73 2.589e+04-3.344e+04	268.80	-7818.86 2.938e+04		
		111	5.06	9.37	-12.08	7.36	-10.07	6.26 2.215e+04-2.439e+04	2416.93	-4656.94 2.300e+04		
		119	5.41	8.11	-10.03	3.73	-5.65	7.76 2.492e+04-2.495e+04	-5231.27	5204.30 2.438e+04		
		118	6.57	14.05	-7.22	8.86	-2.03	9.14 2.886e+04-3.175e+04	-7932.89	5042.20 2.960e+04		
94	55	110	6.39	1.00	-3.69	0.71	-3.41	1.12 2.584e+04-3.339e+04	264.37	-7818.98 2.934e+04		
		111	5.01	4.55	-4.68	3.05	-3.18	3.41 2.202e+04-2.434e+04	2381.84	-4703.90 2.291e+04		
		119	5.37	0.26	-4.08	0.09	-3.92	0.84 2.505e+04-2.494e+04	-5172.35	5284.79 2.444e+04		
		118	6.52	4.84	-1.72	2.07	1.04	3.24 2.875e+04-3.171e+04	-7897.56	4932.27 2.954e+04		
94	69	110	6.37	-0.54	-1.35	-1.09	-0.80	-0.38 2.581e+04-3.337e+04	261.83	-7819.05 2.931e+04		
		111	4.98	2.45	-1.09	0.58	0.78	1.77 2.194e+04-2.431e+04	2361.71	-4730.84 2.285e+04		
		119	5.40	0.71	-5.63	-2.00	-2.92	-3.14 2.513e+04-2.494e+04	-5138.54	5330.96 2.448e+04		
		118	6.49	2.81	-1.83	-1.83	2.81	-0.14 2.869e+04-3.169e+04	-7877.30	4869.20 2.951e+04		
95	1	111	6.67	1.65	-1.04	-0.83	1.44	-0.73 2.965e+04-3.237e+04	3449.59	-6170.49 3.063e+04		
		112	4.56	0.33	-2.15	-0.71	-1.11	1.23 2.184e+04-2.051e+04	3538.06	-2204.30 2.098e+04		
		120	4.72	3.35	-0.09	-0.05	3.31	-0.34 2.117e+04-2.278e+04	-4899.43	3292.54 2.159e+04		
		119	6.77	1.00	-4.60	0.54	-4.14	1.54 3.123e+04-3.173e+04	-7466.52	6973.40 3.064e+04		
95	3	111	5.64	1.40	-0.88	-0.70	1.22	-0.62 2.509e+04-2.739e+04	2918.89	-5221.18 2.592e+04		
		112	3.86	0.28	-1.82	-0.60	-0.94	1.04 1.848e+04-1.735e+04	2993.74	-1865.18 1.775e+04		
		120	3.99	2.83	-0.07	-0.05	2.80	-0.29 1.791e+04-1.927e+04	-4145.67	2785.99 1.827e+04		
		119	5.73	0.85	-3.89	0.46	-3.50	1.30 2.643e+04-2.685e+04	-6317.82	5900.57 2.593e+04		
95	8	111	5.16	25.70	-16.25	-14.56	24.00	8.26 2.281e+04-2.486e+04	2779.61	-4824.84 2.353e+04		
		112	3.56	24.24	-11.88	-10.03	22.38	7.97 1.681e+04-1.588e+04	2734.68	-1805.95 1.618e+04		
		120	3.67	27.13	-8.77	-7.59	25.95	-6.40 1.628e+04-1.758e+04	-3796.85	2500.57 1.664e+04		
		119	5.28	23.45	-10.54	-8.52	21.43	-8.03 2.404e+04-2.476e+04	-5926.68	5210.95 2.375e+04		
95	55	111	5.13	-0.17	-2.58	-0.24	-2.52	-0.40 2.283e+04-2.490e+04	2651.58	-4718.37 2.358e+04		
		112	3.52	1.78	-5.28	1.30	-4.80	1.77 1.683e+04-1.581e+04	2716.56	-1699.24 1.617e+04		
		120	3.65	2.69	-1.90	0.56	0.23	2.29 1.632e+04-1.751e+04	-3769.21	2583.63 1.662e+04		
		119	5.23	4.46	-5.68	3.14	-4.36	3.41 2.405e+04-2.447e+04	-5735.45	5317.32 2.362e+04		
95	69	111	5.13	1.27	-0.80	-0.64	1.11	-0.56 2.280e+04-2.490e+04	2653.53	-4746.53 2.356e+04		
		112	3.51	0.25	-1.66	-0.55	-0.85	0.94 1.680e+04-1.578e+04	2721.58	-1695.62 1.614e+04		
		120	3.63	2.57	-0.07	-0.04	2.55	-0.26 1.628e+04-1.752e+04	-3768.79	2532.72 1.661e+04		
		119	5.21	0.77	-3.54	0.42	-3.18	1.19 2.403e+04-2.440e+04	-5743.48	5364.16 2.357e+04		
96	1	112	4.80	0.54	-0.75	-0.64	0.44	0.36 2.321e+04-2.148e+04	3643.25	-1914.87 2.218e+04		
		113	0.52	0.97	-0.13	0.09	0.75	0.44 2204.94 -2561.54	-252.83	-103.77 2382.08		
		121	0.44	1.13	-0.28	-0.24	1.09	-0.23 2002.25 -2057.57	-73.83	18.52 2029.38		
		120	4.91	1.03	0.20	0.34	0.90	-0.31 2.192e+04-2.374e+04	-5118.19	3297.80 2.244e+04		
96	3	112	4.06	0.46	-0.64	-0.54	0.37	0.30 1.964e+04-1.818e+04	3082.75	-1620.28 1.876e+04		
		113	0.44	0.82	-0.11	0.07	0.64	0.37 1865.72 -2167.46	-213.93	-87.81 2015.60		
		121	0.37	0.95	-0.24	-0.21	0.92	-0.19 1694.21 -1741.02	-62.48	15.67 1717.17		
		120	4.15	0.88	0.17	0.29	0.76	-0.26 1.855e+04-2.009e+04	-4330.78	2790.45 1.899e+04		
96	8	112	3.75	26.68	-7.53	-5.40	24.55	8.26 1.786e+04-1.659e+04	2824.39	-1555.04 1.709e+04		
		113	0.46	26.01	-3.82	-2.12	24.30	6.93 1660.60 -2011.37	-198.08	-152.70 1835.85		
		121	0.41	27.61	-3.30	-1.88	26.20	-6.46 1518.82 -1616.69	-53.08	-44.80 1567.75		
		120	3.84	27.83	-5.44	-2.66	25.05	-9.20 1.685e+04-1.837e+04	-3975.81	2464.16 1.731e+04		
96	40	112	3.71	9.99	-3.11	-2.28	9.16	3.19 1.786e+04-1.655e+04	2810.48	-1502.90 1.707e+04		
		113	0.42	9.93	-1.43	-0.73	9.23	2.74 1683.09 -1985.27	-195.79	-106.39 1833.64		
		121	0.36	10.62	-1.34	-0.80	10.08	-2.47 1532.33 -1595.05	-55.44	-7.28 1563.50		
		120	3.80	10.64	-1.88	-0.80	9.57	-3.51 1.686e+04-1.830e+04	-3951.19	2510.30 1.728e+04		
96	69	112	3.69	0.42	-0.58	-0.50	0.34	0.27 1.786e+04-1.653e+04	2802.50	-1472.98 1.706e+04		
		113	0.40	0.75	-0.10	0.07	0.58	0.34 1696.11 -1970.42	-194.48	-79.82 1832.37		
		121	0.34	0.87	-0.22	-0.19	0.84	-0.18 1540.19 -1582.74	-56.80	14.25 1561.06		
		120	3.77	0.80	0.16	0.26	0.69	-0.24 1.686e+04-1.826e+04	-3937.07	2536.77 1.726e+04		
97	1	72	28.52	4.86	-10.69	-4.85	-0.98	-7.53 1.272e+05-1.380e+05-1.237e+05	1.129e+05	-		
5.990e+04		81	21.20	3.63	-3.87	-3.16	2.93	-2.19 7.573e+04-1.198e+05-1.158e+05	7.178e+04	-		
2.754e+04		114	17.36	4.08	-6.55	-4.94	2.48	-3.81 6.044e+04-9.930e+04-9.602e+04	5.715e+04	-		
2.268e+04		122	17.85	1.82	-4.94	-3.67	0.55	-2.64 9.082e+04-7.497e+04-6.178e+04	7.763e+04	-		
4.486e+04		97	3	72	24.13	4.11	-9.05	-4.10	-0.83	-6.37 1.076e+05-1.168e+05-1.047e+05	9.552e+04	-
5.069e+04		81	17.94	3.07	-3.27	-2.68	2.48	-1.85 6.408e+04-1.014e+05-9.801e+04	6.073e+04	-		





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.203e+04	116	12.25	1.91	-3.18	-0.49	-0.77	-2.54	4.966e+04	-6.399e+04	-4.540e+04	3.107e+04	-	
5.572e+04	124	13.00	2.57	-3.23	0.72	-1.38	-2.70	6.402e+04	-5.687e+04	-1.986e+04	2.701e+04	-	
99 3	123	13.20	2.47	-3.84	-0.07	-1.30	-3.09	6.467e+04	-5.802e+04	-2.146e+04	2.810e+04	-	
5.612e+04	115	12.27	2.07	-3.27	-0.85	-0.35	-2.66	4.727e+04	-6.636e+04	-4.707e+04	2.797e+04	-	
4.267e+04	116	10.36	1.62	-2.69	-0.42	-0.65	-2.15	4.202e+04	-5.415e+04	-3.842e+04	2.629e+04	-	
3.557e+04	124	11.00	2.17	-2.73	0.61	-1.17	-2.29	5.417e+04	-4.812e+04	-1.681e+04	2.286e+04	-	
4.715e+04	99 7	123	12.18	21.86	-30.69	3.53	-12.35	-25.05	5.890e+04	-5.306e+04	-1.968e+04	2.552e+04	-
5.121e+04	115	11.33	20.34	-34.73	-3.50	-10.89	-27.29	4.302e+04	-6.064e+04	-4.303e+04	2.541e+04	-	
3.892e+04	116	9.56	18.80	-29.46	-1.65	-9.00	-23.85	3.826e+04	-4.945e+04	-3.511e+04	2.393e+04	-	
3.243e+04	124	10.16	22.72	-25.10	8.21	-10.59	-21.99	4.936e+04	-4.398e+04	-1.540e+04	2.079e+04	-	
4.302e+04	99 39	123	12.06	9.39	-13.40	1.24	-5.26	-10.92	5.883e+04	-5.286e+04	-1.957e+04	2.554e+04	-
5.109e+04	115	11.22	8.58	-14.52	-1.77	-4.17	-11.49	4.299e+04	-6.044e+04	-4.288e+04	2.542e+04	-	
3.884e+04	116	9.47	7.79	-12.29	-0.84	-3.66	-9.94	3.822e+04	-4.931e+04	-3.499e+04	2.391e+04	-	
3.237e+04	124	10.06	9.54	-10.73	3.34	-4.53	-9.34	4.929e+04	-4.383e+04	-1.532e+04	2.078e+04	-	
4.292e+04	99 69	123	12.00	2.24	-3.49	-0.07	-1.19	-2.81	5.879e+04	-5.275e+04	-1.951e+04	2.555e+04	-
5.101e+04	115	11.16	1.88	-2.98	-0.78	-0.32	-2.42	4.297e+04	-6.033e+04	-4.279e+04	2.542e+04	-	
3.879e+04	116	9.42	1.47	-2.44	-0.38	-0.59	-1.96	3.820e+04	-4.922e+04	-3.493e+04	2.390e+04	-	
3.233e+04	124	10.00	1.98	-2.49	0.55	-1.06	-2.08	4.925e+04	-4.375e+04	-1.528e+04	2.078e+04	-	
4.286e+04	100 1	124	13.01	2.24	-2.94	0.95	-2.23	6.389e+04	-5.709e+04	-1.021e+04	1.701e+04	-	
5.894e+04	116	12.23	1.85	-3.02	0.05	-1.23	-2.35	4.967e+04	-6.387e+04	-3.758e+04	2.338e+04	-	
4.790e+04	117	10.25	1.63	-2.52	0.36	-1.26	-1.91	4.362e+04	-5.162e+04	-3.016e+04	2.215e+04	-	
3.979e+04	125	10.77	2.21	-2.41	1.31	-1.52	-1.83	5.273e+04	-4.745e+04	-8019.60	1.330e+04	-	
4.894e+04	100 3	124	11.01	1.89	-2.48	0.81	-1.89	5.406e+04	-4.831e+04	-8642.49	1.439e+04	-	
4.987e+04	116	10.35	1.57	-2.56	0.05	-1.04	-1.99	4.203e+04	-5.405e+04	-3.180e+04	1.978e+04	-	
4.053e+04	117	8.67	1.38	-2.14	0.31	-1.07	-1.62	3.691e+04	-4.368e+04	-2.552e+04	1.874e+04	-	
3.367e+04	125	9.11	1.87	-2.04	1.11	-1.28	-1.54	4.461e+04	-4.015e+04	-6785.82	1.125e+04	-	
4.141e+04	100 7	124	10.13	18.00	-19.93	10.06	-11.99	-15.43	4.925e+04	-4.415e+04	-7956.93	1.306e+04	-
4.550e+04	116	9.54	17.53	-27.59	3.46	-13.52	-20.90	3.827e+04	-4.936e+04	-2.908e+04	1.799e+04	-	
3.696e+04	117	7.99	16.79	-22.45	3.94	-9.60	-18.41	3.362e+04	-3.987e+04	-2.332e+04	1.708e+04	-	
3.070e+04	125	8.40	19.78	-18.84	12.18	-11.24	-15.35	4.067e+04	-3.666e+04	-6234.98	1.024e+04	-	
3.778e+04	100 39	124	10.05	7.65	-8.70	4.13	-5.18	-6.72	4.918e+04	-4.400e+04	-7893.31	1.307e+04	-
4.540e+04	116	9.46	7.29	-11.53	1.29	-5.53	-8.77	3.823e+04	-4.921e+04	-2.897e+04	1.798e+04	-	
3.688e+04	117	7.92	6.91	-9.42	1.61	-4.12	-7.65	3.358e+04	-3.977e+04	-2.324e+04	1.705e+04	-	
3.064e+04	125	8.33	8.29	-8.05	5.08	-4.84	-6.49	4.060e+04	-3.656e+04	-6193.00	1.023e+04	-	
3.769e+04	100 69	124	10.01	1.72	-2.26	0.73	-1.72	4.914e+04	-4.392e+04	-7856.81	1.308e+04	-	
4.534e+04	116	9.41	1.42	-2.33	0.04	-0.94	-1.81	3.821e+04	-4.913e+04	-2.891e+04	1.798e+04	-	
3.684e+04	117	7.88	1.25	-1.94	0.28	-0.97	-1.47	3.355e+04	-3.971e+04	-2.320e+04	1.704e+04	-	





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.489e+04	127	5.37	6.73	-3.28	5.91	-2.46	-2.75	2.556e+04	-2.425e+04	1448.34	-143.33	-
102 69	126	6.78	2.03	-0.77	2.02	-0.76	-0.13	3.286e+04	-3.024e+04	1855.56	765.46	-
3.155e+04	118	6.51	0.36	-2.05	-0.35	-1.34	-1.10	2.895e+04	-3.158e+04	-1.213e+04	9488.66	-
2.827e+04	119	5.30	3.85	-2.76	3.85	-2.76	-0.16	2.415e+04	-2.509e+04	-9998.64	9058.37	-
2.271e+04	127	5.35	1.63	-0.71	1.02	-0.11	-1.03	2.552e+04	-2.419e+04	1465.61	-129.49	-
2.484e+04	127	7.12	1.71	-4.09	1.14	-3.52	1.74	3.441e+04	-3.181e+04	4412.05	-1805.07	-
103 1	119	6.65	9.79	-1.04	6.10	2.64	-5.13	2.934e+04	-3.225e+04	-1.093e+04	8023.73	-
3.296e+04	120	4.68	0.42	-2.02	-1.92	0.32	-0.48	2.177e+04	-2.179e+04	-6113.87	6088.21	-
2.930e+04	128	4.78	4.65	-1.04	4.02	-0.40	-1.79	2.243e+04	-2.194e+04	2483.18	-1988.90	-
2.091e+04	127	6.03	1.45	-3.46	0.96	-2.97	1.47	2.912e+04	-2.691e+04	3733.27	-1527.37	-
2.207e+04	119	5.63	8.28	-0.88	5.16	2.24	-4.34	2.483e+04	-2.729e+04	-9251.15	6789.31	-
103 3	120	3.96	0.35	-1.71	-1.62	0.27	-0.41	1.842e+04	-1.844e+04	-5173.27	5151.56	-
2.789e+04	128	4.04	3.93	-0.88	3.40	-0.34	-1.51	1.898e+04	-1.856e+04	2101.15	-1682.91	-
2.479e+04	127	5.49	14.70	-4.75	14.55	-4.60	1.70	2.651e+04	-2.452e+04	3360.75	-1376.50	-
1.769e+04	119	5.17	16.83	-10.01	11.93	-5.11	-10.37	2.273e+04	-2.486e+04	-8281.69	6149.41	-
1.867e+04	120	3.65	11.49	-5.33	7.70	-1.54	-7.03	1.674e+04	-1.685e+04	-4797.70	4684.89	-
103 7	128	3.72	16.46	-5.58	15.94	-5.06	-3.35	1.735e+04	-1.692e+04	1946.40	-1515.82	-
2.540e+04	127	5.48	6.09	-3.62	5.86	-3.39	1.47	2.648e+04	-2.449e+04	3381.80	-1384.13	-
2.267e+04	119	5.13	10.81	-4.05	7.33	-0.57	-6.29	2.263e+04	-2.483e+04	-8363.31	6163.83	-
1.611e+04	120	3.62	3.75	-2.29	1.87	-0.41	-2.80	1.674e+04	-1.679e+04	-4737.51	4683.84	-
1.705e+04	128	3.69	8.20	-2.47	7.77	-2.04	-2.09	1.729e+04	-1.689e+04	1923.36	-1524.78	-
103 39	127	5.48	1.32	-3.15	0.87	-2.70	1.34	2.647e+04	-2.447e+04	3393.88	-1388.52	-
2.537e+04	119	5.11	7.53	-0.80	4.69	2.03	-3.95	2.257e+04	-2.481e+04	-8410.14	6172.10	-
2.259e+04	120	3.60	0.32	-1.55	-1.48	0.25	-0.37	1.674e+04	-1.676e+04	-4702.98	4683.24	-
1.609e+04	128	3.68	3.58	-0.80	3.09	-0.31	-1.37	1.725e+04	-1.687e+04	1910.14	-1529.92	-
1.700e+04	128	5.04	2.26	-0.38	2.21	-0.34	-0.35	2.358e+04	-2.333e+04	3821.86	-3568.38	-
103 69	120	4.86	1.60	-0.49	0.91	0.20	-0.98	2.263e+04	-2.259e+04	-4975.48	5012.21	-
2.536e+04	121	0.44	0.28	-0.47	-0.29	0.10	-0.32	1480.38	-2553.79	-1294.46	221.05	-1869.34
2.254e+04	129	0.53	1.95	-0.22	1.95	-0.22	-0.07	3121.67	-1763.45	1336.08	22.14	-2352.55
1.608e+04	128	4.27	1.91	-0.32	1.87	-0.29	-0.29	1.996e+04	-1.974e+04	3233.88	-3019.40	-
1.698e+04	120	4.11	1.35	-0.41	0.77	0.17	-0.83	1.915e+04	-1.912e+04	-4210.02	4241.10	-
2.316e+04	121	0.37	0.24	-0.40	-0.24	0.08	-0.27	1252.63	-2160.90	-1095.31	187.05	-1581.75
2.205e+04	129	0.45	1.65	-0.19	1.65	-0.19	-0.06	2641.41	-1492.15	1130.53	18.73	-1990.62
104 3	128	3.92	26.77	-4.22	24.86	-2.31	7.44	1.815e+04	-1.799e+04	2890.55	-2731.79	-
1.960e+04	120	3.78	24.96	-7.63	22.25	-4.93	-8.99	1.737e+04	-1.744e+04	-3901.25	3835.44	-
1.866e+04	121	0.37	23.20	-2.60	21.04	-0.44	-7.14	1119.00	-2001.72	-1055.85	173.13	-1434.27
1.785e+04	129	0.43	25.79	-3.67	25.14	-3.02	4.32	2369.47	-1380.45	974.97	14.06	-1812.36
1.697e+04	128	3.89	10.70	-1.56	10.14	-1.01	2.54	1.814e+04	-1.796e+04	2921.90	-2740.12	-
104 40	120	3.76	9.78	-2.92	8.56	-1.70	-3.76	1.740e+04	-1.740e+04	-3854.25	3848.22	-
1.783e+04	121	0.35	8.42	-1.00	7.53	-0.11	-2.76	1131.48	-1977.97	-1017.65	171.17	-1436.61

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		129	0.41	10.32	-1.41	10.12	-1.21	1.54	2389.65	-1365.19	1008.51	15.94	-1810.64
104	69	128	3.88	1.73	-0.29	1.70	-0.26	-0.27	1.814e+04	-1.795e+04	2939.89	-2744.91	-
1.782e+04													
		120	3.74	1.23	-0.37	0.70	0.16	-0.75	1.741e+04	-1.738e+04	-3827.29	3855.54	-
1.696e+04													
		121	0.34	0.22	-0.36	-0.22	0.08	-0.25	1138.76	-1964.45	-995.74	170.04	-1437.96
		129	0.41	1.50	-0.17	1.50	-0.17	-0.06	2401.28	-1356.50	1027.75	17.03	-1809.65
105	1	63	44.20	11.40	-10.50	-4.38	5.29	-9.82	2.021e+05	-2.089e+05	-1.884e+05	1.816e+05	-
8.957e+04													
		72	25.73	-4.08	-9.17	-4.89	-8.36	1.86	1.275e+05	-1.118e+05	-9.586e+04	1.116e+05	-
5.963e+04													
		122	19.31	8.26	-8.25	-3.58	3.59	-7.44	8.170e+04	-9.746e+04	-8.669e+04	7.092e+04	-
4.260e+04													
		130	15.92	-1.71	-8.55	-4.68	-5.57	3.39	1.311e+05	6154.33	3.811e+04	9.913e+04	-
5.451e+04													
105	3	63	37.40	9.65	-8.88	-3.71	4.47	-8.31	1.710e+05	-1.768e+05	-1.594e+05	1.536e+05	-
7.579e+04													
		72	21.77	-3.45	-7.76	-4.14	-7.07	1.57	1.079e+05	-9.458e+04	-8.112e+04	9.441e+04	-
5.045e+04													
		122	16.34	6.99	-6.98	-3.03	3.04	-6.29	6.913e+04	-8.247e+04	-7.335e+04	6.001e+04	-
3.605e+04													
		130	13.47	-1.45	-7.23	-3.96	-4.71	2.87	1.109e+05	5207.51	3.225e+04	8.388e+04	-
4.612e+04													
105	21	63	34.09	103.99	-44.13	12.66	47.21	72.02	1.566e+05	-1.597e+05	-1.441e+05	1.410e+05	-
6.841e+04													
		72	20.49	154.53	-18.99	-14.78	150.32	-26.70	9.880e+04	-8.558e+04	-7.333e+04	8.654e+04	-
4.592e+04													
		122	15.03	84.59	-50.02	10.38	24.18	66.95	6.340e+04	-7.450e+04	-6.626e+04	5.516e+04	-
3.269e+04													
		130	12.72	112.44	-19.24	-15.34	108.54	-22.34	1.014e+05	5041.26	2.963e+04	7.685e+04	-
4.202e+04													
105	56	63	34.06	26.15	-47.02	-9.22	-11.66	-36.57	1.551e+05	-1.611e+05	-1.452e+05	1.392e+05	-
6.908e+04													
		72	20.03	2.33	-65.65	0.25	-63.58	11.69	9.781e+04	-8.613e+04	-7.389e+04	8.557e+04	-
4.585e+04													
		122	14.95	25.94	-38.54	-7.55	-5.05	-32.21	6.264e+04	-7.515e+04	-6.684e+04	5.433e+04	-
3.280e+04													
		130	12.39	3.48	-48.22	0.67	-45.42	11.70	1.006e+05	4622.09	2.920e+04	7.603e+04	-
4.189e+04													
105	69	63	34.00	8.77	-8.08	-3.37	4.07	-7.56	1.555e+05	-1.607e+05	-1.449e+05	1.397e+05	-
6.890e+04													
		72	19.79	-3.14	-7.05	-3.76	-6.43	1.43	9.807e+04	-8.599e+04	-7.374e+04	8.583e+04	-
4.587e+04													
		122	14.86	6.35	-6.35	-2.76	2.76	-5.72	6.284e+04	-7.497e+04	-6.668e+04	5.455e+04	-
3.277e+04													
		130	12.24	-1.31	-6.57	-3.60	-4.29	2.61	1.008e+05	4734.10	2.932e+04	7.625e+04	-
4.193e+04													
106	1	130	21.55	3.78	-12.52	-6.95	-1.79	-7.73	1.318e+05	-6.460e+04	-2.229e+04	8.950e+04	-
8.075e+04													
		122	18.45	4.06	-5.09	-2.17	1.15	-4.26	9.206e+04	-7.934e+04	-5.791e+04	7.063e+04	-
5.669e+04													
		123	15.85	2.97	-6.35	-2.78	-0.61	-4.53	7.653e+04	-7.076e+04	-5.049e+04	5.627e+04	-
5.074e+04													
		131	15.70	5.00	-2.91	3.11	-1.02	-3.38	9.982e+04	-4.251e+04	-4185.53	6.149e+04	-
6.314e+04													
106	3	130	18.23	3.20	-10.59	-5.88	-1.51	-6.54	1.115e+05	-5.466e+04	-1.886e+04	7.573e+04	-
6.833e+04													
		122	15.61	3.44	-4.30	-1.84	0.97	-3.60	7.789e+04	-6.713e+04	-4.900e+04	5.976e+04	-
4.796e+04													
		123	13.41	2.51	-5.37	-2.35	-0.51	-3.83	6.476e+04	-5.987e+04	-4.272e+04	4.761e+04	-
4.293e+04													
		131	13.29	4.23	-2.46	2.63	-0.86	-2.86	8.446e+04	-3.597e+04	-3541.60	5.203e+04	-
5.342e+04													
106	23	130	16.78	49.71	-22.34	-22.22	49.59	-2.95	1.020e+05	-4.950e+04	-1.690e+04	6.944e+04	-
6.227e+04													
		122	14.57	86.26	-2.48	3.45	80.33	-22.15	7.133e+04	-6.096e+04	-4.444e+04	5.482e+04	-
4.373e+04													
		123	12.36	43.37	-36.94	-34.82	41.25	12.88	5.925e+04	-5.440e+04	-3.875e+04	4.361e+04	-
3.916e+04													
		131	12.39	70.33	-10.12	-5.77	65.99	-18.19	7.722e+04	-3.259e+04	-3019.35	4.765e+04	-
4.871e+04													
106	55	130	16.65	18.01	-12.30	-11.50	17.21	-4.86	1.016e+05	-4.962e+04	-1.705e+04	6.906e+04	-
6.217e+04													

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.365e+04	122	14.33	32.99	-2.95	0.19	29.85	-10.16	7.100e+04	-6.100e+04	-4.451e+04	4.451e+04	-
3.908e+04	123	12.25	14.95	-14.26	-14.05	14.74	2.48	5.901e+04	-5.442e+04	-3.881e+04	4.340e+04	-
4.862e+04	131	12.19	26.13	-3.15	-0.58	23.56	-8.28	7.694e+04	-3.266e+04	-3146.62	4.743e+04	-
6.211e+04	106 69 130	16.58	2.91	-9.63	-5.35	-1.37	-5.95	1.014e+05	-4.969e+04	-1.714e+04	6.884e+04	-
4.360e+04	122	14.19	3.12	-3.91	-1.67	0.88	-3.28	7.081e+04	-6.103e+04	-4.455e+04	4.433e+04	-
3.903e+04	123	12.19	2.28	-4.88	-2.14	-0.47	-3.48	5.887e+04	-5.443e+04	-3.884e+04	4.328e+04	-
4.857e+04	131	12.08	3.85	-2.24	2.39	-0.78	-2.60	7.678e+04	-3.270e+04	-3219.64	4.730e+04	-
7.035e+04	107 1 131	16.33	3.03	-4.87	-1.60e-04	-1.85	-3.84	1.001e+05	-4.893e+04	1038.46	5.011e+04	-
5.769e+04	123	15.55	2.99	-4.37	-0.66	-0.71	-3.68	7.682e+04	-6.773e+04	-3.900e+04	4.809e+04	-
4.923e+04	124	13.09	2.27	-3.63	-0.59	-0.77	-2.95	6.427e+04	-5.739e+04	-3.229e+04	3.916e+04	-
5.873e+04	132	13.28	2.90	-3.10	1.25	-1.44	-2.68	7.869e+04	-4.312e+04	1653.35	3.391e+04	-
5.952e+04	107 3 131	13.82	2.56	-4.12	-1.35e-04	-1.56	-3.25	8.468e+04	-4.140e+04	878.70	4.240e+04	-
4.882e+04	123	13.16	2.53	-3.69	-0.56	-0.60	-3.11	6.500e+04	-5.731e+04	-3.300e+04	4.069e+04	-
4.166e+04	124	11.07	1.92	-3.07	-0.50	-0.65	-2.49	5.438e+04	-4.856e+04	-2.732e+04	3.314e+04	-
4.969e+04	132	11.24	2.45	-2.62	1.05	-1.22	-2.27	6.658e+04	-3.649e+04	1398.99	2.870e+04	-
5.434e+04	107 7 131	12.76	22.13	-27.13	0.64	-5.65	-24.43	7.717e+04	-3.792e+04	694.20	3.856e+04	-
4.455e+04	123	12.15	21.07	-32.03	-3.83	-7.13	-26.49	5.921e+04	-5.241e+04	-3.021e+04	3.701e+04	-
3.801e+04	124	10.23	18.38	-28.18	-4.02	-5.78	-23.26	4.955e+04	-4.438e+04	-2.500e+04	3.017e+04	-
4.536e+04	132	10.39	24.02	-20.07	7.75	-3.80	-21.28	6.070e+04	-3.339e+04	1201.88	2.611e+04	-
5.420e+04	107 39 131	12.64	9.54	-12.27	0.23	-2.96	-10.78	7.705e+04	-3.774e+04	760.68	3.855e+04	-
4.444e+04	123	12.03	9.14	-13.81	-1.72	-2.95	-11.46	5.914e+04	-5.221e+04	-3.008e+04	3.700e+04	-
3.792e+04	124	10.13	7.81	-12.05	-1.75	-2.49	-9.92	4.948e+04	-4.423e+04	-2.490e+04	3.014e+04	-
4.524e+04	132	10.28	10.15	-8.80	3.43	-2.09	-9.07	6.059e+04	-3.325e+04	1246.32	2.609e+04	-
5.411e+04	107 69 131	12.56	2.33	-3.75	-1.23e-04	-1.42	-2.96	7.698e+04	-3.763e+04	798.81	3.855e+04	-
4.438e+04	123	11.96	2.30	-3.36	-0.51	-0.55	-2.83	5.910e+04	-5.210e+04	-3.000e+04	3.699e+04	-
3.787e+04	124	10.07	1.74	-2.79	-0.46	-0.59	-2.27	4.943e+04	-4.415e+04	-2.484e+04	3.012e+04	-
4.518e+04	132	10.21	2.23	-2.38	0.96	-1.11	-2.06	6.053e+04	-3.317e+04	1271.81	2.609e+04	-
6.038e+04	108 1 132	13.31	2.37	-2.91	1.06	-1.61	-2.28	7.860e+04	-4.355e+04	8300.75	2.675e+04	-
5.300e+04	124	13.04	2.19	-3.23	0.07	-1.12	-2.64	6.421e+04	-5.702e+04	-2.582e+04	3.301e+04	-
4.427e+04	125	10.80	1.90	-2.52	0.26	-0.88	-2.13	5.301e+04	-4.745e+04	-2.096e+04	2.652e+04	-
4.967e+04	133	10.83	2.28	-2.28	1.38	-1.39	-1.81	6.132e+04	-3.857e+04	6084.91	1.667e+04	-
5.109e+04	108 3 132	11.26	2.00	-2.46	0.90	-1.36	-1.93	6.651e+04	-3.685e+04	7023.71	2.263e+04	-
4.485e+04	124	11.03	1.85	-2.74	0.06	-0.95	-2.24	5.433e+04	-4.825e+04	-2.185e+04	2.793e+04	-
3.746e+04	125	9.14	1.60	-2.13	0.22	-0.75	-1.80	4.486e+04	-4.015e+04	-1.774e+04	2.244e+04	-
4.203e+04	133	9.16	1.93	-1.93	1.17	-1.17	-1.53	5.189e+04	-3.264e+04	5148.77	1.410e+04	-
4.664e+04	108 7 132	10.38	17.72	-16.13	6.96	-5.37	-15.77	6.063e+04	-3.372e+04	6335.95	2.057e+04	-
	124	10.17	16.20	-23.94	0.86	-8.61	-19.50	4.950e+04	-4.409e+04	-2.001e+04	2.541e+04	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.609e+04	127	5.89	1.63	-1.20	1.18	-0.75	-1.04	2.846e+04-2.634e+04	-7319.64	9448.42	-
2.667e+04	135	5.78	1.67	-0.83	1.48	-0.63	-0.67	2.993e+04-2.376e+04	6159.71	1.90	-
110 7	134	6.77	11.86	-3.75	10.18	-2.08	-4.83	3.640e+04-2.592e+04	7961.19	2514.92	-
3.104e+04	126	6.85	9.87	-12.83	4.64	-7.60	-9.56	3.313e+04-3.014e+04	-8489.92	1.148e+04	-
3.002e+04	127	5.43	10.66	-9.92	4.37	-3.64	-9.48	2.596e+04-2.401e+04	-6676.25	8631.06	-
2.378e+04	135	5.34	13.34	-6.84	10.35	-3.85	-7.17	2.730e+04-2.171e+04	5599.36	-10.79	-
2.434e+04	134	6.72	5.19	-1.81	4.51	-1.13	-2.08	3.632e+04-2.585e+04	7961.54	2517.73	-
110 39	126	6.80	4.39	-5.61	2.16	-3.38	-4.17	3.307e+04-3.006e+04	-8454.88	1.147e+04	-
3.097e+04	127	5.38	4.79	-4.27	2.27	-1.76	-4.06	2.591e+04-2.397e+04	-6662.25	8604.63	-
2.995e+04	135	5.29	5.81	-2.96	4.63	-1.77	-3.00	2.724e+04-2.164e+04	5599.60	-2.83	-
2.374e+04	134	6.70	1.38	-0.71	1.25	-0.58	-0.50	3.628e+04-2.580e+04	7961.74	2519.34	-
2.428e+04	126	6.78	1.25	-1.47	0.74	-0.96	-1.07	3.303e+04-3.001e+04	-8434.78	1.146e+04	-
110 69	127	5.35	1.48	-1.09	1.07	-0.68	-0.94	2.588e+04-2.394e+04	-6654.22	8589.47	-
3.092e+04	135	5.26	1.52	-0.75	1.34	-0.57	-0.61	2.720e+04-2.160e+04	5599.74	1.73	-
2.991e+04	135	6.89	1.70	-0.85	1.70	-0.85	-0.05	3.567e+04-2.830e+04	9023.93	-1651.03	-
2.371e+04	127	7.00	2.40	-1.02	1.59	-0.21	-1.45	3.373e+04-3.140e+04	-6968.95	9304.51	-
2.424e+04	128	4.82	1.18	-1.07	0.88	-0.77	-0.76	2.320e+04-2.160e+04	-4539.87	6137.76	-
111 1	136	4.75	2.26	-0.29	2.14	-0.16	-0.55	2.388e+04-2.022e+04	6087.40	-2427.60	-
3.154e+04	135	5.83	1.44	-0.72	1.44	-0.72	-0.04	3.019e+04-2.395e+04	7635.63	-1397.03	-
3.153e+04	127	5.93	2.03	-0.86	1.35	-0.18	-1.23	2.854e+04-2.657e+04	-5896.80	7873.04	-
2.176e+04	128	4.07	1.00	-0.90	0.75	-0.65	-0.64	1.963e+04-1.828e+04	-3841.43	5193.49	-
2.164e+04	136	4.02	1.92	-0.24	1.81	-0.14	-0.47	2.021e+04-1.711e+04	5150.88	-2054.12	-
111 3	135	5.33	22.59	-8.84	21.90	-8.16	4.60	2.748e+04-2.187e+04	6888.69	-1272.32	-
2.669e+04	127	5.44	21.27	-14.73	18.23	-11.69	-10.02	2.596e+04-2.423e+04	-5431.85	7162.71	-
2.668e+04	128	3.76	20.72	-9.74	17.82	-6.85	-8.94	1.786e+04-1.668e+04	-3550.81	4737.62	-
1.841e+04	136	3.67	21.43	-8.15	21.38	-8.09	1.26	1.839e+04-1.562e+04	4645.57	-1868.92	-
1.831e+04	135	5.30	9.04	-3.61	8.82	-3.39	1.65	2.746e+04-2.181e+04	6922.24	-1270.86	-
111 8	127	5.41	8.86	-5.80	7.42	-4.36	-4.36	2.595e+04-2.418e+04	-5386.66	7159.28	-
2.434e+04	128	3.72	8.13	-4.07	6.93	-2.87	-3.63	1.785e+04-1.664e+04	-3513.57	4727.28	-
2.429e+04	136	3.66	8.84	-3.03	8.84	-3.03	0.19	1.838e+04-1.558e+04	4669.11	-1867.94	-
1.676e+04	135	5.30	1.31	-0.65	1.31	-0.65	-0.04	2.744e+04-2.177e+04	6941.48	-1270.02	-
1.669e+04	127	5.39	1.85	-0.79	1.23	-0.16	-1.12	2.595e+04-2.415e+04	-5360.73	7157.31	-
111 40	128	3.70	0.91	-0.82	0.68	-0.59	-0.58	1.785e+04-1.662e+04	-3492.21	4721.35	-
2.429e+04	136	3.65	1.74	-0.22	1.64	-0.12	-0.43	1.837e+04-1.555e+04	4682.62	-1867.38	-
2.427e+04	136	4.98	1.87	1.70e-03	1.82	0.05	0.29	2.477e+04-2.155e+04	6761.77	-3538.25	-
1.675e+04	128	5.04	1.75	-0.91	1.42	-0.58	-0.88	2.442e+04-2.242e+04	-3304.90	5307.61	-
1.666e+04	129	0.43	1.21	-0.02	1.00	0.19	-0.46	2238.50 -1709.99	283.78	244.74	-1974.15



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		137	0.71	2.40	-0.25	2.40	-0.25	2.19e-03	5001.72	-1202.11	3749.19	50.42	-2490.32	
112	3	136	4.21	1.58	1.44e-03	1.54	0.04	0.24	2.096e+04	-1.823e+04	5721.50	-2993.90	-	
1.910e+04														
1.948e+04		128	4.26	1.48	-0.77	1.20	-0.49	-0.75	2.067e+04	-1.897e+04	-2796.45	4491.05	-	
		129	0.36	1.02	-0.02	0.85	0.16	-0.39	1894.12	-1446.91	240.12	207.09	-1670.43	
		137	0.60	2.03	-0.21	2.03	-0.21	1.85e-03	4232.23	-1017.17	3172.39	42.66	-2107.19	
112	21	136	3.88	8.24	-25.58	-22.64	5.31	-9.52	1.910e+04	-1.655e+04	5274.67	-2728.26	-	
1.737e+04														
1.775e+04		128	3.92	5.93	-27.00	-24.78	3.71	8.25	1.887e+04	-1.724e+04	-2452.37	4082.89	-	
		129	0.41	3.95	-28.11	-26.82	2.66	6.31	1771.97	-1280.15	301.40	190.42	-1525.05	
		137	0.58	4.38	-23.47	-20.99	1.90	-7.93	3903.49	-909.72	2953.10	40.67	-1916.03	
112	40	136	3.84	9.47	-1.07	8.69	-0.28	2.76	1.906e+04	-1.660e+04	5188.63	-2724.12	-	
1.739e+04														
1.772e+04		128	3.89	8.76	-3.57	7.81	-2.61	-3.29	1.879e+04	-1.727e+04	-2562.55	4087.55	-	
		129	0.35	7.99	-1.04	7.03	-0.08	-2.78	1713.14	-1325.38	200.14	187.61	-1519.25	
		137	0.57	9.54	-1.26	9.40	-1.12	1.23	3838.31	-929.04	2870.79	38.48	-1917.40	
112	69	136	3.83	1.44	1.31e-03	1.40	0.04	0.22	1.905e+04	-1.657e+04	5201.36	-2721.73	-	
1.737e+04														
1.771e+04		128	3.87	1.35	-0.70	1.09	-0.45	-0.68	1.879e+04	-1.725e+04	-2542.23	4082.77	-	
		129	0.33	0.93	-0.01	0.77	0.15	-0.36	1721.92	-1315.37	218.29	188.26	-1518.58	
		137	0.55	1.84	-0.19	1.84	-0.19	1.68e-03	3847.48	-924.70	2883.99	38.79	-1915.63	
113	1	54	13.92	6.79	-0.68	0.29	5.82	-2.51	1.074e+05	-8757.79	3.182e+04	6.687e+04	-	
5.539e+04														
2.393e+05		63	60.43	5.83	-8.98	-0.97	-2.17	-7.38	4.676e+05	-3.695e+04	1.354e+05	2.953e+05	-	
		130	24.51	1.62	-0.23	1.47	-0.08	-0.51	7.495e+04	-1.493e+05	-1.479e+05	7.363e+04	1.718e+04	
		138	33.11	5.26	-6.88	-1.69	0.07	-6.01	2.517e+05	-2.796e+04	4.915e+04	1.746e+05	-	
1.250e+05														
4.687e+04		113	3	54	11.78	5.75	-0.57	0.24	4.93	-2.12	9.091e+04	-7410.44	2.692e+04	5.658e+04
2.024e+05		63	51.13	4.93	-7.60	-0.82	-1.84	-6.24	3.956e+05	-3.126e+04	1.145e+05	2.498e+05	-	
		130	20.74	1.37	-0.20	1.24	-0.07	-0.43	6.342e+04	-1.263e+05	-1.252e+05	6.230e+04	1.454e+04	
		138	28.02	4.45	-5.83	-1.43	0.06	-5.09	2.130e+05	-2.365e+04	4.159e+04	1.477e+05	-	
1.057e+05														
4.264e+04		113	23	54	10.82	72.81	-56.36	-47.23	63.68	33.11	8.311e+04	-6359.52	2.484e+04	5.191e+04
1.846e+05		63	47.07	107.11	-49.16	-43.43	101.38	-29.38	3.615e+05	-2.801e+04	1.047e+05	2.288e+05	-	
		130	19.11	71.88	-3.03	7.56	61.28	26.10	5.811e+04	-1.149e+05	-1.138e+05	5.707e+04	1.336e+04	
		138	25.94	79.66	-14.83	11.12	53.71	-42.17	1.946e+05	-2.120e+04	3.823e+04	1.352e+05	-	
9.640e+04														
4.262e+04		113	55	54	10.72	28.63	-19.65	-17.08	26.06	10.85	8.281e+04	-6599.23	2.461e+04	5.161e+04
1.843e+05		63	46.70	39.56	-19.98	-16.31	35.90	-14.32	3.603e+05	-2.827e+04	1.043e+05	2.277e+05	-	
		130	18.94	26.10	-0.32	3.47	22.30	9.26	5.782e+04	-1.148e+05	-1.138e+05	5.680e+04	1.327e+04	
		138	25.64	31.48	-8.64	3.23	19.61	-18.31	1.940e+05	-2.139e+04	3.796e+04	1.346e+05	-	
9.623e+04														
4.261e+04		113	69	54	10.71	5.22	-0.52	0.22	4.48	-1.93	8.265e+04	-6736.76	2.447e+04	5.144e+04
1.840e+05		63	46.48	4.48	-6.91	-0.75	-1.67	-5.68	3.597e+05	-2.842e+04	1.041e+05	2.271e+05	-	
		130	18.86	1.25	-0.18	1.13	-0.06	-0.40	5.766e+04	-1.148e+05	-1.138e+05	5.664e+04	1.322e+04	
		138	25.47	4.05	-5.30	-1.30	0.05	-4.62	1.936e+05	-2.150e+04	3.781e+04	1.343e+05	-	
9.613e+04														
7.704e+04		114	1	138	21.35	3.69	-8.98	-1.38	-3.91	-6.21	1.604e+05	-2.121e+04	2.153e+04	1.176e+05
7.387e+04		130	20.68	11.99	-4.71	5.09	2.19	-8.23	1.407e+05	-4.307e+04	-5814.70	1.034e+05	-	
		131	16.30	0.74	-6.99	-5.23	-1.02	-3.24	9.628e+04	-5.321e+04	-2.807e+04	7.113e+04	-	
5.592e+04														
6.943e+04		139	16.92	6.90	-3.76	3.36	-0.21	-5.02	1.259e+05	-1.867e+04	3.351e+04	7.371e+04	-	
		114	3	138	18.06	3.13	-7.60	-1.17	-3.31	-5.26	1.357e+05	-1.795e+04	1.822e+04	9.954e+04
6.519e+04														
6.251e+04		130	17.50	10.15	-3.99	4.31	1.85	-6.96	1.190e+05	-3.644e+04	-4920.13	8.752e+04	-	
		131	13.79	0.63	-5.92	-4.43	-0.86	-2.74	8.147e+04	-4.502e+04	-2.375e+04	6.019e+04	-	



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

4.669e+04	141	10.36	2.32	-2.25	1.47	-1.40	-1.78	6.734e+04	-2.605e+04	2.155e+04	1.975e+04	-
116 3	140	11.04	2.21	-2.44	1.05	-1.28	-2.01	7.656e+04	-2.095e+04	2.475e+04	3.086e+04	-
4.866e+04	132	11.26	1.97	-2.66	0.18	-0.87	-2.25	6.677e+04	-3.648e+04	-6158.83	3.645e+04	-
4.702e+04	133	9.16	1.61	-2.08	0.17	-0.64	-1.80	5.204e+04	-3.245e+04	-5847.70	2.544e+04	-
3.924e+04	141	8.77	1.97	-1.90	1.25	-1.18	-1.51	5.698e+04	-2.204e+04	1.823e+04	1.671e+04	-
3.950e+04	140	10.19	20.34	-13.65	3.49	3.20	-16.99	6.982e+04	-1.923e+04	2.253e+04	2.807e+04	-
116 7	132	10.38	15.30	-19.25	-2.10	-1.85	-17.28	6.087e+04	-3.338e+04	-5698.77	3.318e+04	-
4.444e+04	133	8.47	14.16	-17.87	-2.90	-0.81	-15.98	4.745e+04	-2.967e+04	-5389.23	2.318e+04	-
4.292e+04	141	8.13	20.73	-12.79	5.79	2.15	-16.66	5.197e+04	-2.018e+04	1.659e+04	1.520e+04	-
3.582e+04	140	10.09	8.55	-6.24	1.88	0.43	-7.36	6.968e+04	-1.911e+04	2.251e+04	2.806e+04	-
3.607e+04	132	10.29	6.68	-8.52	-0.66	-1.18	-7.60	6.076e+04	-3.324e+04	-5635.33	3.315e+04	-
116 39	133	8.38	6.05	-7.68	-0.96	-0.66	-6.87	4.736e+04	-2.956e+04	-5342.75	2.315e+04	-
4.431e+04	141	8.03	8.54	-5.61	2.83	0.10	-6.94	5.186e+04	-2.009e+04	1.658e+04	1.519e+04	-
4.281e+04	140	10.03	2.01	-2.22	0.96	-1.16	-1.83	6.960e+04	-1.905e+04	2.250e+04	2.805e+04	-
3.573e+04	132	10.23	1.79	-2.42	0.16	-0.79	-2.05	6.070e+04	-3.316e+04	-5598.94	3.314e+04	-
3.597e+04	133	8.33	1.46	-1.89	0.15	-0.58	-1.64	4.731e+04	-2.950e+04	-5316.09	2.313e+04	-
116 69	141	7.97	1.79	-1.73	1.13	-1.08	-1.37	5.180e+04	-2.004e+04	1.658e+04	1.519e+04	-
4.424e+04	140	10.03	2.01	-2.22	0.96	-1.16	-1.83	6.960e+04	-1.905e+04	2.250e+04	2.805e+04	-
4.275e+04	132	10.23	1.79	-2.42	0.16	-0.79	-2.05	6.070e+04	-3.316e+04	-5598.94	3.314e+04	-
3.567e+04	133	8.33	1.46	-1.89	0.15	-0.58	-1.64	4.731e+04	-2.950e+04	-5316.09	2.313e+04	-
3.591e+04	141	7.97	1.79	-1.73	1.13	-1.08	-1.37	5.180e+04	-2.004e+04	1.658e+04	1.519e+04	-
117 1	141	10.35	1.99	-1.72	1.46	-1.19	-1.30	6.733e+04	-2.598e+04	2.399e+04	1.736e+04	-
4.654e+04	133	10.81	1.67	-2.24	0.43	-1.00	-1.82	6.148e+04	-3.824e+04	-4340.26	2.758e+04	-
4.723e+04	134	8.69	1.73	-1.70	0.58	-0.55	-1.62	4.727e+04	-3.317e+04	-4402.37	1.850e+04	-
3.856e+04	142	8.19	1.67	-1.44	1.29	-1.06	-1.02	4.953e+04	-2.538e+04	1.706e+04	7090.50	-
3.712e+04	141	8.76	1.68	-1.46	1.23	-1.01	-1.10	5.697e+04	-2.198e+04	2.030e+04	1.469e+04	-
117 3	133	9.15	1.41	-1.89	0.36	-0.85	-1.54	5.202e+04	-3.235e+04	-3672.52	2.334e+04	-
3.938e+04	134	7.35	1.46	-1.44	0.49	-0.47	-1.37	4.000e+04	-2.807e+04	-3725.08	1.566e+04	-
3.997e+04	142	6.93	1.41	-1.22	1.09	-0.90	-0.86	4.191e+04	-2.148e+04	1.444e+04	5999.66	-
3.263e+04	141	8.08	14.78	-7.33	5.03	2.42	-10.98	5.196e+04	-2.013e+04	1.848e+04	1.335e+04	-
3.141e+04	133	8.43	10.09	-13.91	-0.78	-3.04	-11.95	4.743e+04	-2.958e+04	-3405.71	2.125e+04	-
117 7	134	6.79	10.70	-12.87	-1.36	-0.81	-11.78	3.648e+04	-2.565e+04	-3429.93	1.427e+04	-
3.596e+04	142	6.42	15.70	-9.17	5.75	0.78	-12.18	3.822e+04	-1.965e+04	1.313e+04	5444.92	-
3.648e+04	141	8.00	6.20	-3.35	2.55	0.30	-4.64	5.186e+04	-2.004e+04	1.846e+04	1.335e+04	-
2.978e+04	133	8.36	4.46	-6.13	-0.07	-1.60	-5.24	4.734e+04	-2.947e+04	-3363.10	2.123e+04	-
2.868e+04	134	6.72	4.70	-5.48	-0.21	-0.57	-5.09	3.641e+04	-2.556e+04	-3402.29	1.425e+04	-
117 39	142	6.34	6.40	-3.91	2.73	-0.23	-4.94	3.815e+04	-1.957e+04	1.313e+04	5450.84	-
3.586e+04	141	7.96	1.53	-1.33	1.12	-0.92	-1.00	5.179e+04	-1.998e+04	1.845e+04	1.336e+04	-
3.639e+04	133	8.32	1.28	-1.72	0.33	-0.77	-1.40	4.729e+04	-2.941e+04	-3338.66	2.122e+04	-
2.970e+04	134	6.69	1.33	-1.31	0.45	-0.43	-1.24	3.636e+04	-2.552e+04	-3386.44	1.423e+04	-
2.860e+04	142	6.30	1.28	-1.11	0.99	-0.81	-0.79	3.810e+04	-1.952e+04	1.312e+04	5454.23	-
117 69												-
3.580e+04												-
3.633e+04												-
2.966e+04												-

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

2.856e+04	118	1	142	8.19	1.68	-0.78	1.42	-0.53	-0.75	4.952e+04-2.537e+04	1.858e+04	5565.57	-
3.688e+04			134	8.70	1.29	-1.59	0.67	-0.96	-1.19	4.734e+04-3.318e+04	-2779.31	1.693e+04	-
3.903e+04			135	6.80	1.63	-1.13	0.77	-0.28	-1.27	3.548e+04-2.763e+04	-2844.04	1.069e+04	-
3.082e+04			143	6.37	1.45	-0.94	1.33	-0.81	-0.54	3.583e+04-2.297e+04	1.287e+04	-8.55	-
2.869e+04	118	3	142	6.93	1.42	-0.66	1.20	-0.44	-0.64	4.190e+04-2.147e+04	1.572e+04	4709.33	-
3.120e+04			134	7.36	1.09	-1.34	0.57	-0.81	-1.00	4.005e+04-2.808e+04	-2351.72	1.433e+04	-
3.303e+04			135	5.75	1.38	-0.96	0.65	-0.24	-1.08	3.002e+04-2.338e+04	-2406.49	9045.30	-
2.608e+04			143	5.39	1.23	-0.79	1.12	-0.69	-0.46	3.032e+04-1.944e+04	1.089e+04	-7.23	-
2.427e+04	118	7	142	6.37	10.63	-2.66	5.44	2.53	-6.48	3.823e+04-1.964e+04	1.431e+04	4275.34	-
2.849e+04			134	6.76	5.86	-9.71	-0.26	-3.59	-7.60	3.652e+04-2.565e+04	-2180.37	1.305e+04	-
3.014e+04			135	5.31	7.81	-8.84	-0.72	-0.31	-8.32	2.739e+04-2.135e+04	-2215.00	8254.30	-
2.380e+04			143	4.98	11.55	-6.33	5.38	-0.15	-8.50	2.764e+04-1.777e+04	9899.52	-29.03	-
2.215e+04	118	39	142	6.32	4.58	-1.24	2.68	0.66	-2.73	3.814e+04-1.956e+04	1.430e+04	4279.07	-
2.841e+04			134	6.72	2.73	-4.27	0.23	-1.78	-3.35	3.645e+04-2.557e+04	-2153.40	1.303e+04	-
3.007e+04			135	5.26	3.59	-3.73	0.12	-0.25	-3.66	2.732e+04-2.129e+04	-2197.67	8234.41	-
2.374e+04			143	4.93	4.77	-2.62	2.61	-0.45	-3.36	2.759e+04-1.770e+04	9899.14	-14.76	-
2.210e+04	118	69	142	6.30	1.29	-0.60	1.09	-0.40	-0.58	3.809e+04-1.952e+04	1.429e+04	4281.21	-
2.837e+04			134	6.69	0.99	-1.22	0.51	-0.74	-0.91	3.641e+04-2.553e+04	-2137.93	1.302e+04	-
3.003e+04			135	5.23	1.25	-0.87	0.60	-0.22	-0.98	2.729e+04-2.125e+04	-2187.72	8223.00	-
2.371e+04			143	4.90	1.12	-0.72	1.02	-0.62	-0.41	2.756e+04-1.767e+04	9898.92	-6.57	-
2.207e+04	119	1	143	6.40	1.30	-0.43	1.23	-0.35	-0.36	3.599e+04-2.315e+04	1.382e+04	-978.77	-
2.863e+04			135	6.85	1.30	-0.88	0.93	-0.51	-0.82	3.576e+04-2.788e+04	-1846.19	9730.00	-
3.129e+04			136	4.70	1.32	-0.72	0.86	-0.27	-0.85	2.400e+04-1.961e+04	-1077.65	5469.78	-
2.156e+04			144	4.44	1.88	-0.34	1.82	-0.28	-0.36	2.385e+04-1.725e+04	9269.92	-2674.99	-
1.966e+04	119	3	143	5.42	1.10	-0.36	1.04	-0.30	-0.30	3.046e+04-1.959e+04	1.170e+04	-828.19	-
2.423e+04			135	5.80	1.10	-0.74	0.79	-0.43	-0.69	3.026e+04-2.359e+04	-1562.16	8233.08	-
2.647e+04			136	3.97	1.12	-0.61	0.73	-0.23	-0.72	2.031e+04-1.659e+04	-911.86	4628.28	-
1.824e+04			144	3.75	1.59	-0.29	1.54	-0.23	-0.31	2.018e+04-1.460e+04	7843.78	-2263.45	-
1.664e+04	119	8	143	4.95	18.45	-5.77	18.06	-5.38	3.08	2.774e+04-1.794e+04	1.058e+04	-782.43	-
2.212e+04			135	5.33	16.30	-13.49	13.83	-11.02	-8.21	2.755e+04-2.153e+04	-1492.58	7509.95	-
2.413e+04			136	3.67	16.66	-8.83	13.46	-5.63	-8.45	1.849e+04-1.516e+04	-883.15	4215.82	-
1.663e+04			144	3.45	17.29	-6.66	17.29	-6.66	-0.06	1.838e+04-1.333e+04	7099.74	-2052.52	-
1.518e+04	119	40	143	4.93	7.28	-2.23	7.18	-2.13	0.95	2.771e+04-1.785e+04	1.062e+04	-763.66	-
2.206e+04			135	5.29	6.56	-5.33	5.50	-4.27	-3.39	2.752e+04-2.148e+04	-1446.55	7493.85	-
2.409e+04			136	3.63	6.70	-3.56	5.33	-2.18	-3.49	1.847e+04-1.511e+04	-848.72	4210.55	-
1.660e+04			144	3.43	7.20	-2.57	7.19	-2.56	-0.20	1.836e+04-1.329e+04	7119.42	-2055.80	-
1.515e+04													

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

119	69	143	4.93	1.00	-0.33	0.94	-0.27	-0.27	2.769e+04	-1.781e+04	1.063e+04	-752.90	-
2.202e+04		135	5.27	1.00	-0.68	0.72	-0.39	-0.63	2.751e+04	-2.144e+04	-1420.15	7484.62	-
2.407e+04		136	3.61	1.01	-0.55	0.67	-0.20	-0.65	1.846e+04	-1.508e+04	-828.96	4207.53	-
1.658e+04		144	3.41	1.45	-0.26	1.40	-0.21	-0.28	1.834e+04	-1.327e+04	7130.71	-2057.68	-
1.513e+04		120	4.63	1.55	0.09	1.55	0.10	0.09	2.457e+04	-1.840e+04	9480.88	-3305.87	-
2.051e+04	1	144	4.63	1.55	0.09	1.55	0.10	0.09	2.457e+04	-1.840e+04	9480.88	-3305.87	-
2.281e+04		136	4.95	1.28	-0.58	1.15	-0.45	-0.48	2.542e+04	-2.053e+04	-271.09	5165.07	-
		137	0.54	1.19	-0.07	0.98	0.14	-0.47	3842.21	-799.99	2757.72	284.50	-1964.26
		145	0.92	2.13	-0.22	2.13	-0.22	-0.03	6969.18	-759.54	6110.64	98.99	-2428.64
		120	3.92	1.32	0.08	1.31	0.08	0.07	2.079e+04	-1.557e+04	8022.28	-2797.28	-
1.736e+04	3	144	3.92	1.32	0.08	1.31	0.08	0.07	2.079e+04	-1.557e+04	8022.28	-2797.28	-
1.930e+04		136	4.18	1.09	-0.49	0.98	-0.38	-0.40	2.151e+04	-1.737e+04	-229.38	4370.44	-
		137	0.46	1.01	-0.06	0.83	0.12	-0.40	3251.10	-676.92	2333.45	240.73	-1662.06
		145	0.78	1.80	-0.19	1.80	-0.19	-0.02	5897.00	-642.69	5170.55	83.76	-2055.00
		120	3.60	8.22	-26.61	-23.44	5.05	-10.01	1.893e+04	-1.411e+04	7364.41	-2547.16	-
1.576e+04	21	144	3.60	8.22	-26.61	-23.44	5.05	-10.01	1.893e+04	-1.411e+04	7364.41	-2547.16	-
1.757e+04		136	3.87	7.09	-27.66	-25.26	4.69	8.81	1.961e+04	-1.577e+04	-137.32	3971.62	-
		137	0.54	4.43	-27.29	-25.71	2.85	6.90	3009.31	-600.54	2187.91	220.86	-1513.42
		145	0.77	4.32	-24.26	-22.00	2.05	-7.72	5418.30	-574.14	4765.90	78.27	-1866.51
		120	3.57	11.25	-2.82	10.17	-1.74	3.74	1.889e+04	-1.417e+04	7266.95	-2541.45	-
1.579e+04	56	144	3.57	11.25	-2.82	10.17	-1.74	3.74	1.889e+04	-1.417e+04	7266.95	-2541.45	-
1.754e+04		136	3.83	11.43	-3.20	10.42	-2.19	-3.71	1.954e+04	-1.580e+04	-234.49	3973.68	-
		137	0.46	11.16	-1.65	10.41	-0.90	-3.01	2936.04	-620.88	2097.05	218.11	-1510.08
		145	0.73	10.91	-1.63	10.26	-0.98	2.79	5340.02	-587.99	4676.65	75.38	-1868.79
		120	3.56	1.20	0.07	1.19	0.07	0.07	1.890e+04	-1.415e+04	7292.99	-2542.98	-
1.578e+04	69	144	3.56	1.20	0.07	1.19	0.07	0.07	1.890e+04	-1.415e+04	7292.99	-2542.98	-
1.755e+04		136	3.80	0.99	-0.45	0.89	-0.35	-0.37	1.956e+04	-1.579e+04	-208.53	3973.13	-
		137	0.41	0.92	-0.06	0.76	0.11	-0.36	2955.55	-615.38	2121.32	218.84	-1510.97
		145	0.71	1.64	-0.17	1.64	-0.17	-0.02	5360.91	-584.26	4700.50	76.15	-1868.18
		121	36.79	4.71	-12.45	-0.79	-6.95	-8.01	3.009e+05	8717.37	1.952e+04	2.901e+05	-
5.514e+04	1	45	36.79	4.71	-12.45	-0.79	-6.95	-8.01	3.009e+05	8717.37	1.952e+04	2.901e+05	-
9.870e+04		54	24.57	13.66	-7.46	-1.56	7.76	-9.47	1.822e+05	-2.773e+04	4.154e+04	1.129e+05	-
7.594e+04		138	22.59	2.75	-2.05	1.23	-0.54	-2.23	1.773e+05	-9314.40	2.976e+04	1.383e+05	-
8.623e+04		146	23.06	8.25	-5.30	3.95	-1.00	-6.30	1.962e+05	2.307e+04	1.023e+05	1.169e+05	-
4.666e+04	3	45	31.13	3.99	-10.54	-0.67	-5.88	-6.78	2.546e+05	7376.24	1.652e+04	2.455e+05	-
8.352e+04		54	20.79	11.56	-6.31	-1.32	6.57	-8.02	1.541e+05	-2.346e+04	3.515e+04	9.554e+04	-
6.425e+04		138	19.12	2.32	-1.74	1.04	-0.45	-1.89	1.501e+05	-7881.41	2.518e+04	1.170e+05	-
7.296e+04		146	19.51	6.98	-4.48	3.34	-0.84	-5.33	1.660e+05	1.952e+04	8.657e+04	9.893e+04	-
4.283e+04	7	45	28.56	29.74	-33.16	-23.60	20.19	-22.58	2.320e+05	6424.96	1.487e+04	2.236e+05	-
7.629e+04		54	19.29	63.04	-36.20	-11.32	38.17	-43.01	1.406e+05	-2.165e+04	3.193e+04	8.697e+04	-
5.876e+04		138	17.61	27.48	-17.30	-8.92	19.10	-17.46	1.368e+05	-7470.15	2.281e+04	1.065e+05	-
6.661e+04		146	18.07	53.39	-30.92	1.15	21.31	-40.93	1.514e+05	1.770e+04	7.899e+04	9.010e+04	-
4.257e+04	39	45	28.39	11.25	-16.28	-8.99	3.96	-12.15	2.317e+05	6603.42	1.496e+04	2.233e+05	-
7.606e+04		54	19.04	29.65	-16.83	-4.89	17.71	-20.31	1.403e+05	-2.145e+04	3.194e+04	8.690e+04	-
5.854e+04		138	17.46	10.83	-6.78	-2.65	6.70	-7.46	1.366e+05	-7276.18	2.286e+04	1.064e+05	-
6.643e+04		146	17.86	22.99	-13.35	2.35	7.28	-18.00	1.511e+05	1.773e+04	7.880e+04	9.000e+04	-
4.241e+04	69	45	28.30	3.62	-9.58	-0.61	-5.35	-6.16	2.315e+05	6705.67	1.502e+04	2.232e+05	-
		54	18.90	10.51	-5.74	-1.20	5.97	-7.29	1.401e+05	-2.133e+04	3.195e+04	8.685e+04	-





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.133e+04	140	10.04	17.36	-8.17	-7.90	17.09	-2.61	6.940e+04-1.887e+04	9778.39	4.075e+04	-	
3.871e+04	148	9.50	19.79	-8.11	-5.71	17.40	-7.81	7.469e+04	-2739.99	3.680e+04	3.515e+04	-
4.797e+04	123 69 147	12.44	3.07	-3.70	1.11	-1.74	-3.07	1.032e+05	6211.40	4.765e+04	6.175e+04	-
4.929e+04	139	12.79	3.39	-3.46	0.38	-0.46	-3.40	9.437e+04-1.558e+04	1.506e+04	6.373e+04	-	
4.129e+04	140	9.98	1.92	-2.78	-0.17	-0.68	-2.34	6.928e+04-1.891e+04	9707.42	4.067e+04	-	
3.868e+04	148	9.44	2.77	-2.71	1.40	-1.34	-2.37	7.459e+04	-2799.76	3.671e+04	3.508e+04	-
5.012e+04	124 1 148	12.23	2.99	-3.16	1.56	-1.73	-2.60	9.663e+04	-3670.76	4.833e+04	4.463e+04	-
5.428e+04	140	13.02	2.62	-3.21	0.36	-0.95	-2.84	9.068e+04-2.420e+04	1.446e+04	5.201e+04	-	
4.501e+04	141	10.32	1.91	-2.47	0.28	-0.85	-2.12	6.732e+04-2.563e+04	9286.92	3.241e+04	-	
3.990e+04	149	9.40	2.63	-2.48	1.76	-1.60	-1.93	6.925e+04-1.159e+04	3.526e+04	2.240e+04	-	
4.241e+04	124 3 148	10.35	2.53	-2.68	1.32	-1.47	-2.20	8.176e+04	-3106.03	4.089e+04	3.777e+04	-
4.593e+04	140	11.02	2.21	-2.71	0.30	-0.80	-2.40	7.673e+04-2.048e+04	1.224e+04	4.401e+04	-	
3.809e+04	141	8.73	1.61	-2.09	0.24	-0.72	-1.79	5.696e+04-2.169e+04	7858.16	2.742e+04	-	
3.376e+04	149	7.96	2.23	-2.10	1.49	-1.36	-1.63	5.860e+04	-9805.81	2.984e+04	1.895e+04	-
3.874e+04	124 7 148	9.58	24.95	-13.56	0.72	10.67	-18.60	7.459e+04	-2947.01	3.728e+04	3.437e+04	-
4.195e+04	140	10.17	17.51	-16.74	-5.63	6.40	-16.03	6.997e+04-1.880e+04	1.109e+04	4.008e+04	-	
3.478e+04	141	8.08	15.40	-16.46	-6.71	5.64	-14.69	5.195e+04-1.986e+04	7116.75	2.498e+04	-	
3.084e+04	149	7.39	23.87	-12.61	2.18	9.08	-17.91	5.346e+04	-9026.49	2.720e+04	1.724e+04	-
3.862e+04	124 39 148	9.47	10.15	-6.08	1.02	3.04	-8.05	7.443e+04	-2868.63	3.721e+04	3.435e+04	-
4.183e+04	140	10.07	7.47	-7.47	-1.88	1.87	-7.23	6.983e+04-1.868e+04	1.111e+04	4.004e+04	-	
3.468e+04	141	7.99	6.35	-7.02	-2.31	1.64	-6.39	5.185e+04-1.977e+04	7133.93	2.495e+04	-	
3.075e+04	149	7.29	9.57	-5.39	1.65	2.53	-7.47	5.334e+04	-8955.25	2.715e+04	1.723e+04	-
3.855e+04	124 69 148	9.41	2.30	-2.43	1.20	-1.33	-2.00	7.433e+04	-2823.66	3.717e+04	3.433e+04	-
4.176e+04	140	10.02	2.01	-2.47	0.28	-0.73	-2.18	6.975e+04-1.862e+04	1.113e+04	4.001e+04	-	
3.463e+04	141	7.94	1.47	-1.90	0.21	-0.65	-1.63	5.179e+04-1.971e+04	7143.78	2.493e+04	-	
3.070e+04	149	7.23	2.03	-1.91	1.35	-1.23	-1.48	5.327e+04	-8914.38	2.712e+04	1.723e+04	-
3.974e+04	125 1 149	9.39	2.37	-1.97	1.75	-1.35	-1.52	6.923e+04-1.148e+04	3.589e+04	2.187e+04	-	
4.516e+04	141	10.31	1.61	-2.22	0.44	-1.05	-1.76	6.738e+04-2.549e+04	1.014e+04	3.174e+04	-	
3.668e+04	142	8.14	1.33	-1.53	0.39	-0.59	-1.35	4.953e+04-2.490e+04	6012.25	1.861e+04	-	
3.129e+04	150	7.28	1.85	-1.78	1.59	-1.52	-0.94	4.914e+04-1.577e+04	2.529e+04	8090.68	-	
3.363e+04	125 3 149	7.94	2.00	-1.67	1.48	-1.14	-1.28	5.858e+04	-9710.09	3.036e+04	1.850e+04	-
3.821e+04	141	8.73	1.36	-1.87	0.37	-0.89	-1.49	5.701e+04-2.157e+04	8583.50	2.686e+04	-	
3.104e+04	142	6.89	1.13	-1.30	0.33	-0.50	-1.14	4.191e+04-2.107e+04	5087.29	1.575e+04	-	
2.648e+04	150	6.16	1.56	-1.50	1.34	-1.28	-0.79	4.158e+04-1.334e+04	2.140e+04	6845.96	-	
3.072e+04	125 7 149	7.34	18.04	-8.39	0.88	8.77	-12.61	5.345e+04	-8938.50	2.769e+04	1.683e+04	-
3.489e+04	141	8.04	9.87	-11.98	-5.31	3.20	-10.06	5.199e+04-1.976e+04	7776.71	2.446e+04	-	
	142	6.37	10.73	-12.45	-6.01	4.29	-10.38	3.822e+04-1.928e+04	4599.98	1.434e+04	-	



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.398e+04	152	3.32	2.29	-0.23	2.28	-0.22	-0.16	1.907e+04-1.146e+04	9935.82	-2329.68	-
127 21	151	4.31	15.35	-28.77	-25.75	12.34	-11.14	2.666e+04-1.241e+04	1.429e+04	-39.74	-
1.817e+04	143	4.97	16.96	-25.65	-23.69	15.00	8.93	2.780e+04-1.759e+04	2953.54	7258.96	-
2.259e+04	144	3.38	11.91	-25.42	-24.27	10.77	6.43	1.830e+04-1.255e+04	2234.51	3510.49	-
1.541e+04	152	3.01	11.72	-22.65	-21.04	10.11	-7.27	1.736e+04-1.038e+04	9077.92	-2098.89	-
1.269e+04	151	4.31	6.01	-11.23	-9.86	4.63	-4.67	2.665e+04-1.259e+04	1.421e+04	-153.86	-
127 53	143	4.93	5.87	-8.87	-8.15	5.15	3.17	2.778e+04-1.756e+04	2896.45	7329.47	-
1.826e+04	144	3.35	4.05	-9.09	-8.84	3.80	1.81	1.828e+04-1.260e+04	2171.23	3514.21	-
2.256e+04	152	3.01	4.26	-7.06	-6.35	3.56	-2.74	1.734e+04-1.041e+04	9049.10	-2110.96	-
1.543e+04	151	4.32	0.81	-1.33	-0.74	0.21	-0.96	2.665e+04-1.270e+04	1.417e+04	-219.32	-
1.270e+04	143	4.91	0.78	-0.51	0.76	-0.49	-0.14	2.777e+04-1.754e+04	2863.70	7369.92	-
127 69	144	3.34	0.76	-0.94	0.01	-0.20	-0.84	1.828e+04-1.263e+04	2134.93	3516.34	-
1.831e+04	152	3.02	2.08	-0.21	2.07	-0.20	-0.14	1.734e+04-1.042e+04	9032.57	-2117.89	-
2.254e+04	152	4.06	1.39	0.26	1.38	0.27	0.07	2.316e+04-1.431e+04	1.178e+04	-2933.71	-
1.544e+04	144	4.60	0.90	-0.65	0.81	-0.56	-0.35	2.517e+04-1.745e+04	2983.99	4735.73	-
2.129e+04	145	0.74	1.03	-0.06	0.81	0.16	-0.44	5764.95 -261.29	5181.10	322.56	-1782.57
	153	1.12	1.69	-0.22	1.69	-0.22	-0.02	8762.12 -389.79	8216.02	156.31	-2167.87
128 3	152	3.44	1.17	0.22	1.17	0.23	0.06	1.960e+04-1.211e+04	9969.48	-2482.37	-
1.458e+04	144	3.89	0.76	-0.55	0.69	-0.48	-0.30	2.130e+04-1.476e+04	2524.91	4007.15	-
1.801e+04	145	0.62	0.87	-0.05	0.68	0.14	-0.38	4878.04 -221.09	4384.01	272.94	-1508.33
	153	0.95	1.43	-0.19	1.43	-0.19	-0.02	7414.10 -329.82	6952.01	132.27	-1834.35
128 24	152	3.15	28.44	-7.00	25.54	-4.10	9.71	1.779e+04-1.109e+04	8992.65	-2287.70	-
1.329e+04	144	3.61	28.18	-8.33	25.75	-5.90	-9.10	1.934e+04-1.346e+04	2217.04	3658.12	-
1.639e+04	145	0.69	26.91	-4.60	24.80	-2.49	-7.88	4372.90 -211.59	3916.65	244.65	-1372.41
	153	0.94	26.49	-4.30	24.77	-2.58	7.07	6686.38 -301.91	6261.15	123.31	-1670.56
128 56	152	3.13	11.02	-2.40	9.99	-1.36	3.57	1.781e+04-1.104e+04	9037.46	-2268.00	-
1.327e+04	144	3.57	10.71	-3.36	9.78	-2.43	-3.49	1.935e+04-1.344e+04	2266.82	3648.43	-
1.638e+04	145	0.61	10.29	-1.69	9.44	-0.83	-3.09	4412.07 -204.84	3960.38	246.86	-1371.65
	153	0.89	10.43	-1.62	9.86	-1.05	2.57	6720.50 -300.58	6298.55	121.36	-1668.67
128 69	152	3.12	1.07	0.20	1.06	0.21	0.05	1.782e+04-1.101e+04	9063.17	-2256.70	-
1.326e+04	144	3.54	0.69	-0.50	0.62	-0.43	-0.27	1.936e+04-1.342e+04	2295.37	3642.87	-
1.638e+04	145	0.57	0.80	-0.05	0.62	0.13	-0.34	4434.58 -201.00	3985.46	248.12	-1371.21
	153	0.86	1.30	-0.17	1.30	-0.17	-0.02	6740.09 -299.84	6320.01	120.24	-1667.59
129 1	36	22.17	6.84	-16.73	1.89	-11.78	-9.60	2.014e+05 6.228e+04	1.157e+05	1.480e+05	-
6.767e+04	45	53.99	9.37	-3.38	4.08	1.90	-6.28	4.503e+05 3.209e+04	1.627e+05	3.197e+05	-
1.938e+05	146	15.65	4.72	-9.73	-0.60	-4.41	-6.97	1.290e+05 5889.31	1.548e+04	1.194e+05	-
3.300e+04	154	28.16	5.52	-3.47	3.93	-1.88	-3.43	2.474e+05 4.858e+04	1.320e+05	1.640e+05	-
9.810e+04	129 3	36	18.76	5.78	-14.15	1.60	-8.12	1.704e+05 5.270e+04	9.789e+04	1.252e+05	-
5.726e+04	45	45.68	7.93	-2.86	3.46	1.61	-5.31	3.810e+05 2.716e+04	1.377e+05	2.705e+05	-
1.640e+05	146	13.24	3.99	-8.24	-0.51	-3.73	-5.90	1.092e+05 4983.26	1.310e+04	1.010e+05	-
2.792e+04	154	23.83	4.67	-2.93	3.33	-1.59	-2.90	2.093e+05 4.111e+04	1.117e+05	1.388e+05	-
8.301e+04	129 23	36	17.32	63.53	2.32	6.07	-14.67	1.556e+05 4.844e+04	8.949e+04	1.145e+05	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.998e+04	147	13.77	3.63	-4.06	0.48	-0.91	-3.78	1.146e+05	7749.22	4.231e+04	8.002e+04	-
4.115e+04	148	10.27	2.57	-3.39	0.27	-1.09	-2.90	8.127e+04	-2847.75	3.052e+04	4.790e+04	-
3.274e+04	156	9.29	3.00	-2.91	1.85	-1.76	-2.34	8.096e+04	1.443e+04	5.360e+04	4.180e+04	-
3.878e+04	131 7 155	11.95	41.45	-22.83	-4.34	22.96	-29.10	1.057e+05	2.801e+04	6.476e+04	6.893e+04	-
4.568e+04	147	12.73	31.29	-20.38	-7.67	18.57	-22.26	1.045e+05	6918.40	3.854e+04	7.290e+04	-
3.760e+04	148	9.52	26.20	-21.71	-10.79	15.28	-20.10	7.414e+04	-2711.83	2.780e+04	4.363e+04	-
2.993e+04	156	8.64	37.46	-14.61	2.52	20.33	-24.47	7.390e+04	1.306e+04	4.891e+04	3.805e+04	-
3.864e+04	131 39 155	11.81	16.18	-10.07	-0.70	6.80	-12.58	1.054e+05	2.803e+04	6.461e+04	6.885e+04	-
4.553e+04	147	12.60	13.05	-9.33	-2.52	6.25	-10.30	1.043e+05	6998.69	3.849e+04	7.280e+04	-
3.748e+04	148	9.41	10.58	-9.42	-3.78	4.94	-9.00	7.398e+04	-2633.69	2.777e+04	4.358e+04	-
2.982e+04	156	8.51	14.70	-6.32	1.99	6.39	-10.27	7.371e+04	1.310e+04	4.879e+04	3.802e+04	-
3.856e+04	131 69 155	11.72	3.12	-4.19	1.39	-2.46	-3.10	1.053e+05	2.804e+04	6.453e+04	6.880e+04	-
4.544e+04	147	12.52	3.30	-3.69	0.44	-0.83	-3.43	1.042e+05	7044.75	3.847e+04	7.275e+04	-
3.741e+04	148	9.34	2.33	-3.08	0.25	-0.99	-2.63	7.388e+04	-2588.86	2.775e+04	4.355e+04	-
2.976e+04	156	8.44	2.73	-2.65	1.68	-1.60	-2.13	7.360e+04	1.312e+04	4.873e+04	3.800e+04	-
3.876e+04	132 1 156	10.94	3.05	-3.25	1.78	-1.97	-2.54	9.543e+04	1.709e+04	6.192e+04	5.059e+04	-
4.848e+04	148	12.19	2.88	-3.47	0.56	-1.14	-3.06	9.662e+04	-3018.65	3.532e+04	5.828e+04	-
3.979e+04	149	9.33	2.23	-2.72	0.52	-1.00	-2.35	6.900e+04	-1.105e+04	2.461e+04	3.334e+04	-
2.997e+04	157	8.05	2.76	-2.39	1.88	-1.51	-1.94	6.629e+04	3040.09	4.476e+04	2.457e+04	-
3.280e+04	132 3 156	9.26	2.58	-2.75	1.50	-1.67	-2.15	8.075e+04	1.446e+04	5.240e+04	4.281e+04	-
4.102e+04	148	10.31	2.44	-2.94	0.47	-0.97	-2.59	8.175e+04	-2554.24	2.989e+04	4.931e+04	-
3.367e+04	149	7.90	1.89	-2.30	0.44	-0.85	-1.99	5.838e+04	-9351.84	2.082e+04	2.821e+04	-
2.536e+04	157	6.81	2.34	-2.02	1.59	-1.28	-1.64	5.609e+04	2572.38	3.787e+04	2.079e+04	-
2.998e+04	132 7 156	8.58	30.92	-14.38	-2.56	19.10	-19.89	7.370e+04	1.308e+04	4.781e+04	3.897e+04	-
3.748e+04	148	9.52	20.94	-15.65	-8.65	13.94	-14.40	7.459e+04	-2443.64	2.722e+04	4.492e+04	-
3.076e+04	149	7.31	18.85	-16.63	-10.37	12.59	-13.53	5.327e+04	-8611.49	1.896e+04	2.569e+04	-
2.319e+04	157	6.33	28.19	-14.00	-1.65	15.83	-19.20	5.121e+04	2267.16	3.456e+04	1.891e+04	-
2.988e+04	132 39 156	8.48	11.98	-6.05	-0.07	6.00	-8.49	7.351e+04	1.312e+04	4.770e+04	3.893e+04	-
3.736e+04	148	9.43	8.51	-6.87	-2.88	4.52	-6.75	7.442e+04	-2366.37	2.719e+04	4.486e+04	-
3.066e+04	149	7.22	7.47	-6.89	-3.53	4.10	-6.08	5.315e+04	-8541.71	1.894e+04	2.566e+04	-
2.310e+04	157	6.24	10.97	-5.61	0.32	5.03	-7.95	5.107e+04	2312.51	3.448e+04	1.891e+04	-
2.981e+04	132 69 156	8.42	2.35	-2.50	1.37	-1.52	-1.95	7.341e+04	1.314e+04	4.763e+04	3.891e+04	-
3.729e+04	148	9.37	2.22	-2.67	0.43	-0.88	-2.35	7.432e+04	-2322.04	2.717e+04	4.483e+04	-
3.061e+04	149	7.18	1.72	-2.09	0.40	-0.77	-1.81	5.308e+04	-8501.68	1.893e+04	2.565e+04	-
2.306e+04	157	6.19	2.13	-1.84	1.45	-1.16	-1.49	5.099e+04	2338.53	3.443e+04	1.890e+04	-
3.012e+04	133 1 157	8.04	2.42	-1.91	1.75	-1.24	-1.57	6.631e+04	3191.41	4.416e+04	2.534e+04	-
	149	9.33	1.90	-2.44	0.56	-1.10	-2.01	6.911e+04	-1.090e+04	2.394e+04	3.427e+04	-





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.946e+04	151	4.27	2.30	-1.23	2.26	-1.19	-0.38	2.631e+04	-1.262e+04	7002.88	6680.62	-
1.367e+04	159	3.55	1.64	-0.79	1.20	-0.34	-0.94	2.391e+04	-7688.94	1.602e+04	198.12	-
1.831e+04	135 1 159	4.66	1.50	-1.62	1.44	-1.55	0.45	3.155e+04	-1.005e+04	2.061e+04	882.49	-
2.483e+04	151	5.46	5.22	-1.09	3.32	0.82	-2.90	3.343e+04	-1.623e+04	8728.07	8475.89	-
1.752e+04	152	3.83	0.49	-0.99	-0.68	0.18	-0.60	2.250e+04	-1.268e+04	6504.00	3316.28	-
1.219e+04	160	3.24	3.15	-0.71	2.74	-0.30	-1.19	2.027e+04	-9032.26	1.375e+04	-2506.22	-
1.550e+04	135 3 159	3.95	1.27	-1.37	1.22	-1.31	0.38	2.669e+04	-8507.24	1.744e+04	746.72	-
2.101e+04	151	4.62	4.42	-0.92	2.81	0.69	-2.45	2.829e+04	-1.373e+04	7385.29	7171.91	-
1.482e+04	152	3.24	0.42	-0.84	-0.58	0.16	-0.51	1.904e+04	-1.073e+04	5503.38	2806.08	-
1.032e+04	160	2.74	2.66	-0.60	2.31	-0.25	-1.01	1.715e+04	-7642.68	1.163e+04	-2120.64	-
1.404e+04	135 23 159	3.60	17.40	-25.33	-22.74	14.81	-10.20	2.425e+04	-7756.90	1.594e+04	560.57	-
1.927e+04	151	4.28	13.58	-24.63	-23.37	12.32	6.81	2.606e+04	-1.248e+04	6872.14	6707.25	-
1.349e+04	152	3.01	11.81	-25.46	-24.71	11.05	5.24	1.735e+04	-9744.10	5036.25	2570.86	-
1.411e+04	135 56 159	2.51	12.76	-24.15	-21.50	10.11	-9.53	1.571e+04	-6955.61	1.068e+04	-1931.65	-9413.51
1.908e+04	151	4.23	12.68	-6.03	10.72	-4.06	-5.74	2.566e+04	-1.250e+04	6691.49	6462.45	-
1.348e+04	152	2.98	8.43	-4.53	7.45	-3.55	-3.43	1.729e+04	-9772.90	4975.61	2546.20	-
1.409e+04	135 69 159	2.51	10.64	-3.96	10.55	-3.87	1.14	1.558e+04	-6956.12	1.055e+04	-1926.19	-9384.41
1.910e+04	151	4.20	4.02	-0.84	2.55	0.63	-2.23	2.572e+04	-1.248e+04	6713.90	6519.92	-
1.348e+04	152	2.95	0.38	-0.76	-0.53	0.14	-0.46	1.731e+04	-9754.64	5003.08	2550.99	-
1.299e+04	136 1 160	2.49	2.42	-0.54	2.10	-0.23	-0.91	1.559e+04	-6947.89	1.057e+04	-1927.86	-9378.95
1.847e+04	152	4.02	1.05	-0.40	0.82	-0.18	-0.53	2.349e+04	-1.351e+04	6100.42	3875.70	-
1.099e+04	136 3 160	0.95	0.52	-0.19	0.18	0.15	-0.36	7722.35	63.97	7429.73	356.59	-1468.12
1.563e+04	152	3.41	0.89	-0.34	0.70	-0.15	-0.44	1.987e+04	-1.143e+04	5161.89	3279.44	-
1.001e+04	136 23 160	0.81	0.44	-0.16	0.15	0.13	-0.30	6534.30	54.13	6286.69	301.73	-1242.25
1.425e+04	152	3.19	5.95	-27.30	-24.74	3.39	8.87	1.816e+04	-1.038e+04	4765.70	3014.36	-
1.000e+04	136 56 160	1.08	4.39	-24.60	-22.06	1.85	-8.21	8009.85	-57.24	7792.34	160.28	-1306.66
1.421e+04	152	3.13	10.11	-3.08	9.02	-1.98	-3.64	1.805e+04	-1.041e+04	4666.54	2973.11	-
1.421e+04	136 69 160	0.77	8.87	-1.68	7.91	-0.72	-3.04	5919.46	49.38	5693.57	275.26	-1129.13
8.237e+04	137 1 27	48.63	8.72	-9.13	3.88	-4.29	-7.94	4.157e+05	5.199e+04	7.171e+04	3.960e+05	-
	36	23.93	3.07	-8.72	3.06	-8.72	-0.14	2.080e+05	3.493e+04	1.132e+05	1.298e+05	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

3.734e+04	155	11.59	3.64	-6.11	0.30	-2.77	-4.63	1.041e+05	2.793e+04	5.857e+04	7.344e+04	-		
2.640e+04	163	10.83	4.95	-2.45	4.73	-2.23	-1.25	1.007e+05	4.698e+04	7.884e+04	6.886e+04	-		
139	1	163	13.83	3.48	-4.78	1.60	-2.91	-3.46	1.286e+05	5.913e+04	9.287e+04	9.485e+04	-	
3.471e+04	155	15.26	3.94	-4.82	1.28	-2.16	-4.03	1.375e+05	3.822e+04	7.440e+04	1.013e+05	-		
4.778e+04	156	10.84	2.98	-4.03	0.55	-1.59	-3.34	9.465e+04	1.737e+04	5.399e+04	5.804e+04	-		
3.859e+04	164	9.38	3.49	-2.97	2.55	-2.04	-2.27	8.668e+04	3.462e+04	6.962e+04	5.167e+04	-		
2.443e+04	139	3	163	11.70	2.95	-4.05	1.36	-2.46	-2.93	1.088e+05	5.003e+04	7.858e+04	8.025e+04	-
2.937e+04	155	12.91	3.33	-4.08	1.08	-1.82	-3.41	1.163e+05	3.234e+04	6.295e+04	8.572e+04	-		
4.043e+04	156	9.17	2.52	-3.41	0.46	-1.35	-2.83	8.009e+04	1.470e+04	4.568e+04	4.911e+04	-		
3.265e+04	164	7.94	2.95	-2.51	2.16	-1.72	-1.92	7.334e+04	2.929e+04	5.891e+04	4.372e+04	-		
2.067e+04	139	7	163	10.86	49.45	-20.89	-4.86	33.42	-29.51	9.931e+04	4.555e+04	7.174e+04	7.312e+04	-
2.687e+04	155	11.96	40.77	-16.65	-4.61	28.73	-23.38	1.062e+05	2.937e+04	5.742e+04	7.811e+04	-		
3.697e+04	156	8.49	32.18	-22.32	-14.96	24.83	-18.63	7.310e+04	1.330e+04	4.167e+04	4.474e+04	-		
2.986e+04	164	7.40	45.36	-17.43	0.61	27.32	-28.42	6.697e+04	2.663e+04	5.379e+04	3.981e+04	-		
1.892e+04	139	39	163	10.72	18.65	-8.88	-0.99	10.76	-12.45	9.905e+04	4.551e+04	7.155e+04	7.302e+04	-
2.676e+04	155	11.82	15.91	-7.55	-1.06	9.42	-10.49	1.059e+05	2.939e+04	5.730e+04	7.799e+04	-		
3.683e+04	156	8.39	12.32	-9.24	-5.19	8.27	-8.42	7.291e+04	1.334e+04	4.158e+04	4.468e+04	-		
2.975e+04	164	7.28	17.28	-6.85	1.47	8.96	-11.47	6.678e+04	2.663e+04	5.364e+04	3.977e+04	-		
1.884e+04	139	69	163	10.64	2.68	-3.68	1.23	-2.24	-2.66	9.891e+04	4.549e+04	7.144e+04	7.296e+04	-
2.670e+04	155	11.73	3.03	-3.71	0.98	-1.66	-3.10	1.058e+05	2.940e+04	5.723e+04	7.793e+04	-		
3.675e+04	156	8.34	2.29	-3.10	0.42	-1.23	-2.57	7.281e+04	1.336e+04	4.153e+04	4.464e+04	-		
2.968e+04	164	7.22	2.68	-2.28	1.96	-1.57	-1.75	6.667e+04	2.663e+04	5.355e+04	3.975e+04	-		
1.879e+04	140	1	164	9.36	2.85	-2.80	1.80	-1.74	-2.20	8.647e+04	3.471e+04	6.722e+04	5.396e+04	-
2.502e+04	156	10.88	2.81	-3.43	0.78	-1.41	-2.92	9.516e+04	1.787e+04	5.169e+04	6.134e+04	-		
3.834e+04	157	7.96	2.28	-2.59	0.61	-0.92	-2.31	6.581e+04	3646.04	3.647e+04	3.299e+04	-		
3.104e+04	165	6.53	2.62	-2.09	1.86	-1.34	-1.73	5.870e+04	1.603e+04	4.837e+04	2.635e+04	-		
1.827e+04	140	3	164	7.92	2.41	-2.37	1.52	-1.47	-1.86	7.317e+04	2.937e+04	5.688e+04	4.565e+04	-
2.117e+04	156	9.20	2.37	-2.90	0.66	-1.19	-2.47	8.052e+04	1.512e+04	4.374e+04	5.190e+04	-		
3.244e+04	157	6.73	1.93	-2.19	0.52	-0.78	-1.95	5.569e+04	3085.11	3.086e+04	2.791e+04	-		
2.626e+04	165	5.52	2.22	-1.77	1.58	-1.13	-1.46	4.967e+04	1.356e+04	4.093e+04	2.230e+04	-		
1.546e+04	140	7	164	7.34	38.33	-17.14	-5.81	26.99	-22.37	6.681e+04	2.670e+04	5.193e+04	4.158e+04	-
1.938e+04	156	8.50	27.01	-16.16	-11.95	22.80	-12.81	7.349e+04	1.369e+04	3.989e+04	4.729e+04	-		
2.967e+04	157	6.22	24.15	-18.22	-14.15	20.09	-12.48	5.084e+04	2735.11	2.815e+04	2.542e+04	-		
2.401e+04	165	5.13	33.04	-17.08	-5.36	21.32	-21.22	4.536e+04	1.230e+04	3.737e+04	2.029e+04	-		
1.416e+04	140	39	164	7.25	14.43	-6.68	-1.24	8.99	-9.23	6.662e+04	2.670e+04	5.179e+04	4.153e+04	-
1.929e+04	156	8.41	10.24	-6.59	-3.97	7.62	-6.10	7.331e+04	1.373e+04	3.981e+04	4.722e+04	-		
2.956e+04	157	6.16	9.17	-7.16	-4.86	6.87	-5.68	5.070e+04	2779.30	2.809e+04	2.539e+04	-		



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

142	56	166	3.67	9.58	-7.47	9.42	-7.31	1.65	3.064e+04	2736.82	2.499e+04	8386.49	-	
1.121e+04		158	4.63	9.11	-9.97	8.00	-8.86	-4.48	3.491e+04	-3978.57	1.726e+04	1.367e+04	-	
1.936e+04		159	3.52	9.00	-8.01	7.86	-6.86	-4.26	2.368e+04	-7245.20	1.120e+04	5232.14	-	
1.517e+04		167	2.79	9.12	-6.26	9.06	-6.20	0.93	2.071e+04	-2694.32	1.715e+04	872.99	-8412.84	
1.119e+04	142	69	166	3.65	1.45	-0.62	1.21	-0.38	-0.67	3.064e+04	2775.42	2.502e+04	8400.06	-
1.934e+04		158	4.60	1.12	-1.23	0.55	-0.66	-1.00	3.491e+04	-3934.94	1.730e+04	1.368e+04	-	
1.516e+04		159	3.48	1.25	-0.84	0.72	-0.31	-0.91	2.368e+04	-7232.99	1.123e+04	5221.87	-	
		167	2.76	1.46	-0.65	1.23	-0.42	-0.66	2.071e+04	-2665.46	1.716e+04	882.26	-8387.66	
1.135e+04	143	1	167	3.59	1.58	-0.39	1.51	-0.32	-0.37	2.700e+04	-3439.75	2.192e+04	1643.18	-
2.000e+04		159	4.56	1.54	-0.92	0.98	-0.36	-1.03	3.096e+04	-9540.68	1.390e+04	7523.63	-	
1.379e+04		160	3.15	1.07	-0.68	0.62	-0.23	-0.76	2.013e+04	-8391.63	9492.39	2247.47	-	
		168	2.60	1.86	-0.36	1.71	-0.21	-0.55	1.809e+04	-4840.88	1.518e+04	-1929.42	-7634.48	
1.692e+04	143	3	167	3.04	1.34	-0.33	1.28	-0.27	-0.31	2.285e+04	-2910.56	1.855e+04	1390.39	-9606.52
1.167e+04		159	3.85	1.31	-0.78	0.83	-0.31	-0.87	2.620e+04	-8072.89	1.176e+04	6366.15	-	
		160	2.67	0.91	-0.58	0.53	-0.20	-0.65	1.703e+04	-7100.61	8032.02	1901.71	-	
		168	2.20	1.57	-0.30	1.44	-0.18	-0.47	1.531e+04	-4096.13	1.284e+04	-1632.59	-6459.94	
1.542e+04	143	23	167	2.81	17.16	-26.94	-24.20	14.43	-10.63	2.082e+04	-2623.48	1.695e+04	1254.60	-8711.79
1.062e+04		159	3.60	15.20	-26.81	-25.20	13.59	8.06	2.391e+04	-7317.56	1.078e+04	5810.92	-	
		160	2.52	12.32	-25.78	-24.76	11.30	6.16	1.553e+04	-6451.70	7368.96	1713.49	-	
		168	2.07	12.29	-25.93	-23.69	10.05	-8.97	1.397e+04	-3709.53	1.174e+04	-1483.44	-5864.50	
1.539e+04	143	56	167	2.78	9.79	-4.46	9.41	-4.09	2.29	2.077e+04	-2669.06	1.684e+04	1261.67	-8757.04
1.062e+04		159	3.54	9.24	-6.25	8.11	-5.12	-4.03	2.381e+04	-7361.83	1.067e+04	5784.49	-	
		160	2.46	8.69	-4.65	7.64	-3.60	-3.59	1.548e+04	-6467.68	7280.87	1734.19	-	
		168	2.03	9.41	-3.49	9.28	-3.37	1.27	1.391e+04	-3737.50	1.166e+04	-1486.45	-5887.48	
1.538e+04	143	69	167	2.76	1.22	-0.30	1.16	-0.25	-0.28	2.077e+04	-2645.96	1.686e+04	1263.99	-8733.20
1.061e+04		159	3.50	1.19	-0.71	0.76	-0.28	-0.79	2.382e+04	-7338.99	1.069e+04	5787.41	-	
		160	2.43	0.83	-0.52	0.48	-0.18	-0.59	1.549e+04	-6455.10	7301.84	1728.83	-	
		168	2.00	1.43	-0.27	1.31	-0.16	-0.43	1.392e+04	-3723.76	1.168e+04	-1484.17	-5872.68	
1.470e+04	144	1	168	2.63	1.50	0.17	1.50	0.17	-8.06e-03	1.817e+04	-5023.50	1.471e+04	-1562.12	-8265.45
		160	3.31	1.05	-0.65	0.87	-0.48	-0.51	2.101e+04	-9006.86	9028.25	2971.08	-	
		161	1.18	0.78	-5.84e-04	0.55	0.23	-0.35	9597.63	233.94	9478.37	353.19	-1049.97	
		169	1.46	1.92	-0.21	1.91	-0.20	-0.13	1.178e+04	136.18	1.167e+04	243.22	-1111.16	
1.244e+04	144	3	168	2.22	1.27	0.14	1.27	0.14	-6.82e-03	1.538e+04	-4250.66	1.245e+04	-1321.79	-6993.84
		160	2.80	0.89	-0.55	0.74	-0.40	-0.44	1.777e+04	-7621.19	7639.29	2513.99	-	
		161	1.00	0.66	-4.94e-04	0.47	0.19	-0.30	8121.07	197.95	8020.16	298.86	-888.44	
		169	1.24	1.62	-0.18	1.61	-0.17	-0.11	9966.65	115.23	9876.09	205.80	-940.21	
1.133e+04	144	23	168	2.07	8.73	-27.95	-25.10	5.89	-9.82	1.402e+04	-3847.77	1.138e+04	-1204.63	-6344.20
		160	2.66	6.69	-28.20	-25.50	3.99	9.32	1.622e+04	-6924.81	7015.27	2282.81	-	
		161	1.04	4.51	-26.99	-25.40	2.92	6.88	7446.07	182.32	7354.62	273.77	-809.87	
		169	1.23	4.22	-26.74	-24.55	2.03	-7.94	9118.47	107.41	9036.91	188.97	-853.42	
1.130e+04	144	54	168	2.04	11.66	-2.91	10.72	-1.97	3.57	1.397e+04	-3870.26	1.130e+04	-1200.54	-6363.09
		160	2.58	11.38	-3.12	10.22	-1.95	-3.94	1.614e+04	-6929.67	6919.12	2286.41	-	
		161	0.95	10.57	-1.55	9.84	-0.83	-2.88	7359.72	179.09	7267.88	270.93	-806.87	
		169	1.16	11.56	-1.56	10.95	-0.95	2.76	9039.50	103.79	8956.88	186.40	-855.22	
1.131e+04	144	69	168	2.02	1.15	0.13	1.15	0.13	-6.20e-03	1.398e+04	-3864.23	1.132e+04	-1201.63	-6358.04
		160	2.55	0.81	-0.50	0.67	-0.37	-0.40	1.616e+04	-6928.35	6944.81	2285.45	-	
		161	0.91	0.60	-4.49e-04	0.42	0.18	-0.27	7382.79	179.95	7291.06	271.69	-807.67	
		169	1.12	1.47	-0.16	1.47	-0.15	-0.10	9060.59	104.76	8978.26	187.09	-854.74	
2.459e+04	145	1	17	20.68	6.24	0.36	6.20	0.41	0.51	1.858e+05	1.364e+05	1.635e+05	1.587e+05	-
		27	61.94	6.69	-10.40	4.14	-7.85	-6.09	5.455e+05	1.109e+05	3.301e+05	3.263e+05	-	





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

147	1	171	11.88	3.60	-3.78	2.25	-2.43	-2.86	1.089e+05	7.098e+04	8.793e+04	9.198e+04	-
1.886e+04		163	13.92	4.21	-4.29	1.90	-1.98	-3.78	1.294e+05	6.044e+04	8.694e+04	1.029e+05	-
3.355e+04		164	9.19	2.58	-3.39	0.66	-1.48	-2.79	8.508e+04	3.491e+04	6.267e+04	5.732e+04	-
2.494e+04		172	7.78	3.34	-2.59	2.47	-1.72	-2.10	7.129e+04	4.638e+04	6.520e+04	5.247e+04	-
1.070e+04		171	10.05	3.05	-3.20	1.91	-2.06	-2.42	9.217e+04	6.006e+04	7.441e+04	7.783e+04	-
1.596e+04	3	163	11.78	3.56	-3.63	1.61	-1.68	-3.20	1.095e+05	5.114e+04	7.357e+04	8.708e+04	-
2.839e+04		164	7.78	2.19	-2.87	0.56	-1.25	-2.36	7.199e+04	2.954e+04	5.303e+04	4.850e+04	-
2.110e+04		172	6.58	2.82	-2.19	2.09	-1.46	-1.78	6.032e+04	3.925e+04	5.517e+04	4.439e+04	-9054.63
1.463e+04	7	171	9.34	56.16	-21.66	-0.92	35.42	-34.41	8.415e+04	5.475e+04	6.797e+04	7.092e+04	-
2.599e+04		163	10.93	52.15	-19.26	-8.78	41.67	-25.28	9.996e+04	4.656e+04	6.716e+04	7.937e+04	-
1.933e+04		164	7.21	39.99	-22.98	-15.88	32.89	-19.91	6.574e+04	2.686e+04	4.841e+04	4.419e+04	-
1.455e+04	39	172	6.12	48.95	-22.04	-2.25	29.17	-31.83	5.511e+04	3.572e+04	5.040e+04	4.043e+04	-8310.63
2.587e+04		171	9.21	21.22	-8.73	0.76	11.73	-13.94	8.392e+04	5.466e+04	6.776e+04	7.081e+04	-
1.924e+04		163	10.79	19.77	-7.82	-2.27	14.22	-11.06	9.970e+04	4.652e+04	6.698e+04	7.924e+04	-
1.451e+04	69	164	7.12	14.92	-9.11	-5.47	11.27	-8.62	6.555e+04	2.686e+04	4.828e+04	4.413e+04	-
2.581e+04		172	6.03	18.57	-8.39	0.38	9.79	-12.63	5.493e+04	3.569e+04	5.025e+04	4.038e+04	-8260.34
1.919e+04		171	9.14	2.77	-2.91	1.73	-1.87	-2.20	8.379e+04	5.460e+04	6.764e+04	7.075e+04	-
1.133e+04	1	163	10.71	3.24	-3.30	1.46	-1.53	-2.91	9.955e+04	4.649e+04	6.688e+04	7.917e+04	-
2.529e+04		164	7.07	1.99	-2.61	0.51	-1.13	-2.15	6.545e+04	2.686e+04	4.821e+04	4.409e+04	-
1.992e+04		172	5.98	2.57	-1.99	1.90	-1.32	-1.61	5.484e+04	3.568e+04	5.016e+04	4.036e+04	-8231.48
1.133e+04		172	7.75	2.77	-2.32	1.81	-1.35	-1.99	7.099e+04	4.650e+04	6.341e+04	5.409e+04	-
2.529e+04		164	9.29	2.61	-2.96	0.88	-1.23	-2.58	8.596e+04	3.536e+04	6.025e+04	6.107e+04	-
1.685e+04		165	6.42	2.13	-2.26	0.62	-0.75	-2.08	5.797e+04	1.662e+04	4.286e+04	3.173e+04	-
2.140e+04	3	173	5.15	2.43	-1.78	1.74	-1.08	-1.57	4.789e+04	2.543e+04	4.563e+04	2.770e+04	-6760.33
1.685e+04		172	6.56	2.35	-1.96	1.53	-1.15	-1.69	6.007e+04	3.935e+04	5.365e+04	4.577e+04	-9582.80
1.544e+04		164	7.86	2.21	-2.50	0.74	-1.04	-2.18	7.273e+04	2.992e+04	5.098e+04	5.167e+04	-
1.960e+04		165	5.43	1.80	-1.91	0.53	-0.64	-1.76	4.906e+04	1.406e+04	3.626e+04	2.685e+04	-
1.544e+04	7	173	4.36	2.06	-1.51	1.47	-0.92	-1.32	4.052e+04	2.152e+04	3.861e+04	2.344e+04	-5720.28
1.544e+04		172	6.08	42.77	-20.60	-7.75	29.92	-25.48	5.488e+04	3.582e+04	4.901e+04	4.169e+04	-8800.40
1.544e+04		164	7.26	34.87	-19.19	-15.80	31.48	-13.12	6.641e+04	2.720e+04	4.653e+04	4.709e+04	-
1.544e+04		165	5.01	29.91	-20.78	-17.47	26.60	-12.53	4.481e+04	1.275e+04	3.310e+04	2.445e+04	-
1.536e+04		173	4.02	36.04	-20.39	-8.24	23.89	-23.20	3.703e+04	1.956e+04	3.527e+04	2.132e+04	-5261.76
1.536e+04	39	172	6.00	16.09	-7.78	-1.94	10.25	-10.26	5.471e+04	3.579e+04	4.886e+04	4.164e+04	-8743.99
1.536e+04		164	7.19	12.88	-7.33	-5.33	10.87	-6.04	6.623e+04	2.720e+04	4.641e+04	4.702e+04	-
1.536e+04		165	4.96	11.14	-7.88	-6.06	9.33	-5.59	4.467e+04	1.277e+04	3.302e+04	2.443e+04	-
1.532e+04		173	3.98	13.58	-7.56	-2.15	8.18	-9.22	3.691e+04	1.956e+04	3.516e+04	2.131e+04	-5222.68
1.532e+04	69	172	5.96	2.13	-1.78	1.39	-1.04	-1.53	5.461e+04	3.577e+04	4.877e+04	4.161e+04	-8711.64
1.532e+04		164	7.14	2.01	-2.28	0.68	-0.94	-1.98	6.612e+04	2.720e+04	4.635e+04	4.698e+04	-
1.532e+04		165	4.94	1.64	-1.74	0.48	-0.58	-1.60	4.460e+04	1.278e+04	3.297e+04	2.441e+04	-
2.037e+04	1	173	3.96	1.87	-1.37	1.34	-0.83	-1.20	3.684e+04	1.956e+04	3.510e+04	2.131e+04	-5200.26
1.629e+04		173	5.15	2.12	-1.36	1.48	-0.71	-1.35	4.790e+04	2.557e+04	4.495e+04	2.852e+04	-7560.26
1.629e+04		165	6.44	1.77	-1.99	0.59	-0.81	-1.75	5.817e+04	1.679e+04	4.111e+04	3.385e+04	-
1.629e+04		166	4.65	1.69	-1.47	0.55	-0.33	-1.52	3.926e+04	4073.73	2.831e+04	1.503e+04	-
1.629e+04		174	3.61	1.94	-1.17	1.45	-0.69	-1.13	3.279e+04	1.044e+04	3.167e+04	1.156e+04	-4871.77

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

149	3	173	4.36	1.80	-1.15	1.25	-0.60	-1.14	4.053e+04	2.163e+04	3.804e+04	2.413e+04	-6397.14
		165	5.45	1.50	-1.68	0.50	-0.68	-1.48	4.922e+04	1.421e+04	3.478e+04	2.864e+04	-
1.724e+04													
1.379e+04		166	3.93	1.43	-1.24	0.47	-0.28	-1.28	3.322e+04	3447.00	2.395e+04	1.271e+04	-
		174	3.05	1.64	-0.99	1.23	-0.58	-0.96	2.774e+04	8831.64	2.680e+04	9777.50	-4122.26
149	8	173	4.02	17.67	-8.57	1.77	7.33	-12.82	3.701e+04	1.957e+04	3.468e+04	2.190e+04	-5934.63
		165	5.01	8.97	-11.81	-4.82	1.99	-9.82	4.491e+04	1.278e+04	3.165e+04	2.605e+04	-
1.582e+04													
1.265e+04		166	3.64	10.54	-12.98	-5.82	3.38	-10.82	3.033e+04	3031.07	2.180e+04	1.156e+04	-
		174	2.81	15.51	-10.40	0.96	4.15	-12.86	2.532e+04	7955.01	2.442e+04	8849.88	-3838.93
149	40	173	3.98	7.20	-3.51	1.37	2.32	-5.33	3.691e+04	1.963e+04	3.462e+04	2.192e+04	-5858.98
		165	4.97	3.95	-5.09	-1.47	0.33	-4.43	4.481e+04	1.287e+04	3.163e+04	2.604e+04	-
1.572e+04													
1.258e+04		166	3.60	4.52	-5.30	-1.85	1.07	-4.69	3.025e+04	3096.25	2.179e+04	1.156e+04	-
		174	2.79	6.36	-4.12	1.06	1.18	-5.24	2.526e+04	8001.92	2.438e+04	8874.51	-3780.84
149	69	173	3.96	1.63	-1.04	1.14	-0.55	-1.04	3.685e+04	1.967e+04	3.458e+04	2.194e+04	-5815.58
		165	4.95	1.36	-1.53	0.45	-0.62	-1.34	4.475e+04	1.291e+04	3.162e+04	2.604e+04	-
1.567e+04													
1.253e+04		166	3.57	1.30	-1.13	0.42	-0.26	-1.17	3.020e+04	3133.64	2.178e+04	1.156e+04	-
		174	2.77	1.49	-0.90	1.12	-0.53	-0.87	2.522e+04	8028.76	2.436e+04	8888.63	-3747.51
150	1	174	3.60	1.70	-0.65	1.33	-0.28	-0.86	3.280e+04	1.051e+04	3.130e+04	1.201e+04	-5581.82
		166	4.65	1.22	-1.30	0.52	-0.60	-1.13	3.938e+04	4139.31	2.717e+04	1.635e+04	-
1.677e+04													
1.321e+04		167	3.49	1.36	-0.88	0.53	-0.06	-1.08	2.647e+04	-2935.85	1.822e+04	5308.06	-
		175	2.71	1.63	-0.72	1.37	-0.47	-0.73	2.254e+04	1625.16	2.180e+04	2365.58	-3864.70
150	3	174	3.05	1.44	-0.55	1.12	-0.23	-0.73	2.775e+04	8894.87	2.649e+04	1.016e+04	-4723.08
		166	3.94	1.03	-1.10	0.44	-0.51	-0.95	3.332e+04	3502.49	2.299e+04	1.383e+04	-
1.419e+04													
1.118e+04		167	2.95	1.15	-0.75	0.45	-0.05	-0.92	2.240e+04	-2484.18	1.542e+04	4491.43	-
		175	2.29	1.38	-0.61	1.16	-0.39	-0.62	1.907e+04	1375.14	1.844e+04	2001.65	-3270.13
150	24	174	2.85	21.57	-15.47	20.97	-14.87	4.68	2.522e+04	7998.42	2.402e+04	9200.02	-4388.02
		166	3.68	20.27	-23.04	18.14	-20.91	-9.38	3.029e+04	3066.73	2.080e+04	1.256e+04	-
1.297e+04													
1.021e+04		167	2.79	19.83	-18.02	17.29	-15.48	-9.46	2.036e+04	-2323.87	1.395e+04	4085.81	-
		175	2.18	20.43	-13.67	20.24	-13.48	2.55	1.732e+04	1204.73	1.672e+04	1805.95	-3054.10
150	56	174	2.80	8.41	-5.67	8.29	-5.56	1.28	2.523e+04	8054.33	2.406e+04	9224.86	-4328.09
		166	3.61	7.87	-8.92	6.87	-7.92	-3.97	3.029e+04	3141.33	2.087e+04	1.257e+04	-
1.293e+04													
1.018e+04		167	2.72	7.75	-6.85	6.57	-5.67	-3.98	2.036e+04	-2282.20	1.399e+04	4084.10	-
		175	2.12	8.07	-5.17	8.05	-5.14	0.57	1.733e+04	1233.67	1.675e+04	1814.67	-3002.47
150	69	174	2.77	1.31	-0.50	1.02	-0.21	-0.66	2.523e+04	8086.24	2.408e+04	9239.10	-4293.71
		166	3.58	0.94	-1.00	0.40	-0.46	-0.87	3.029e+04	3184.08	2.090e+04	1.257e+04	-
1.290e+04													
1.016e+04		167	2.68	1.05	-0.68	0.41	-0.04	-0.83	2.036e+04	-2258.35	1.402e+04	4083.12	-
		175	2.08	1.25	-0.56	1.05	-0.36	-0.56	1.734e+04	1250.12	1.677e+04	1819.68	-2972.84
151	1	175	2.70	1.41	-0.07	1.29	0.06	-0.41	2.254e+04	1659.80	2.154e+04	2654.85	-4447.72
		167	3.51	0.87	-0.81	0.53	-0.47	-0.68	2.663e+04	-2982.17	1.745e+04	6196.85	-
1.370e+04													
		168	2.49	1.02	-0.36	0.56	0.10	-0.65	1.761e+04	-4230.92	1.220e+04	1181.65	-9430.32
		176	2.08	1.49	-0.39	1.38	-0.28	-0.45	1.590e+04	-1496.30	1.542e+04	-1016.11	-2849.87
151	3	175	2.29	1.19	-0.06	1.09	0.05	-0.35	1.907e+04	1404.45	1.823e+04	2246.41	-3763.46
		167	2.97	0.74	-0.68	0.45	-0.40	-0.57	2.253e+04	-2523.38	1.477e+04	5243.49	-
1.159e+04													
		168	2.11	0.86	-0.30	0.47	0.09	-0.55	1.490e+04	-3580.01	1.032e+04	999.86	-7979.50
		176	1.76	1.26	-0.33	1.16	-0.24	-0.38	1.345e+04	-1266.10	1.305e+04	-859.78	-2411.43
151	23	175	2.18	15.67	-27.53	-24.64	12.79	-10.78	1.739e+04	1327.80	1.665e+04	2069.29	-3370.70
		167	2.82	15.80	-26.86	-25.24	14.17	8.17	2.054e+04	-2275.99	1.351e+04	4752.79	-
1.053e+04													
		168	2.04	12.20	-25.84	-24.66	11.01	6.62	1.359e+04	-3233.16	9450.66	907.68	-7247.18
		176	1.71	11.47	-26.24	-24.27	9.50	-8.39	1.228e+04	-1152.77	1.192e+04	-793.78	-2166.44
151	54	175	2.12	11.11	-5.38	10.33	-4.60	3.50	1.731e+04	1258.07	1.654e+04	2032.31	-3439.78
		167	2.74	10.60	-6.49	9.76	-5.66	-3.69	2.046e+04	-2300.58	1.339e+04	4771.92	-
1.053e+04													
		168	1.96	10.25	-4.58	9.58	-3.91	-3.10	1.353e+04	-3262.38	9360.04	909.43	-7256.61

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		176	1.64	10.75	-4.22	10.29	-3.76	2.59	1.221e+04	-1150.40	1.184e+04	-777.19	-2201.60
151	69	175	2.08	1.08	-0.05	0.99	0.04	-0.31	1.734e+04	1276.77	1.657e+04	2042.19	-3421.32
		167	2.70	0.67	-0.62	0.41	-0.36	-0.52	2.049e+04	-2293.98	1.342e+04	4766.81	-
1.053e+04		168	1.92	0.79	-0.28	0.43	0.08	-0.50	1.355e+04	-3254.55	9384.25	908.96	-7254.09
		176	1.60	1.14	-0.30	1.06	-0.22	-0.34	1.223e+04	-1151.00	1.186e+04	-781.62	-2192.21
152	1	176	2.05	1.28	0.25	1.27	0.25	-0.06	1.577e+04	-1394.47	1.508e+04	-704.30	-3371.86
		168	2.58	0.69	-0.48	0.63	-0.43	-0.25	1.812e+04	-4544.82	1.164e+04	1938.10	-
1.024e+04		169	1.39	0.73	0.07	0.57	0.23	-0.29	1.136e+04	318.22	1.133e+04	351.42	-604.48
		177	1.58	1.59	-0.21	1.58	-0.19	-0.16	1.282e+04	235.79	1.280e+04	254.06	-479.09
152	3	176	1.74	1.08	0.21	1.08	0.21	-0.05	1.334e+04	-1179.93	1.276e+04	-595.94	-2853.11
		168	2.18	0.58	-0.41	0.54	-0.36	-0.21	1.534e+04	-3845.62	9849.90	1639.93	-8667.61
		169	1.18	0.62	0.06	0.48	0.20	-0.24	9610.90	269.27	9582.81	297.36	-511.49
		177	1.34	1.35	-0.17	1.33	-0.16	-0.13	1.085e+04	199.52	1.083e+04	214.98	-405.39
152	23	176	1.68	7.93	-28.52	-25.52	4.93	-10.02	1.218e+04	-1057.32	1.167e+04	-542.67	-2559.02
		168	2.11	7.15	-28.18	-25.54	4.51	9.29	1.399e+04	-3482.49	9017.36	1485.75	-7880.50
		169	1.20	4.37	-26.81	-25.05	2.61	7.19	8795.89	246.77	8770.57	272.08	-464.54
		177	1.34	3.88	-27.62	-25.79	2.05	-7.37	9923.61	183.97	9909.98	197.60	-364.11
152	54	176	1.61	11.62	-2.51	10.64	-1.53	3.59	1.211e+04	-1078.34	1.157e+04	-541.44	-2606.39
		168	2.03	10.99	-3.11	9.98	-2.09	-3.65	1.393e+04	-3500.97	8931.52	1492.70	-7879.33
		169	1.11	10.49	-1.47	9.73	-0.71	-2.92	8715.79	244.07	8690.17	269.68	-465.15
		177	1.26	11.56	-1.46	11.06	-0.95	2.52	9836.04	180.43	9821.83	194.64	-370.15
152	69	176	1.58	0.98	0.19	0.98	0.19	-0.05	1.213e+04	-1072.67	1.160e+04	-541.77	-2593.74
		168	1.98	0.53	-0.37	0.49	-0.33	-0.19	1.394e+04	-3496.02	8954.45	1490.84	-7879.64
		169	1.07	0.56	0.05	0.44	0.18	-0.22	8737.19	244.79	8711.65	270.32	-464.99
		177	1.22	1.22	-0.16	1.21	-0.15	-0.12	9859.43	181.38	9845.38	195.43	-368.53
153	1	18	23.53	4.65	-3.60	4.65	-3.60	-0.25	2.191e+05	1.139e+05	1.471e+05	1.859e+05	-
4.891e+04		17	31.08	6.45	-5.82	4.61	-3.99	-4.38	2.892e+05	1.354e+05	2.025e+05	2.220e+05	-
7.625e+04		170	18.00	5.78	-1.16	5.78	-1.16	0.04	1.670e+05	9.523e+04	1.231e+05	1.391e+05	-
3.500e+04		178	15.64	5.98	-6.37	5.75	-6.14	-1.67	1.434e+05	9.386e+04	1.183e+05	1.190e+05	-
2.478e+04		153	19.91	3.94	-3.05	3.93	-3.04	-0.21	1.854e+05	9.635e+04	1.245e+05	1.573e+05	-
4.138e+04	3	17	26.30	5.46	-4.93	3.90	-3.37	-3.70	2.447e+05	1.146e+05	1.714e+05	1.879e+05	-
6.452e+04		170	15.23	4.89	-0.98	4.89	-0.98	0.04	1.413e+05	8.058e+04	1.042e+05	1.177e+05	-
2.961e+04		178	13.24	5.06	-5.39	4.86	-5.20	-1.42	1.214e+05	7.942e+04	1.001e+05	1.007e+05	-
2.097e+04		153	18.33	41.68	-45.42	-12.90	9.17	-42.13	1.692e+05	8.796e+04	1.135e+05	1.437e+05	-
3.771e+04	23	17	24.57	145.58	-29.84	21.76	93.98	-79.93	2.233e+05	1.047e+05	1.563e+05	1.717e+05	-
5.879e+04		170	14.09	56.01	-59.34	-20.48	17.15	-54.52	1.290e+05	7.366e+04	9.505e+04	1.076e+05	-
2.694e+04		178	12.37	91.75	-21.77	12.19	57.79	-51.98	1.107e+05	7.255e+04	9.128e+04	9.198e+04	-
1.908e+04		153	18.18	15.19	-16.04	-2.43	1.58	-15.48	1.688e+05	8.773e+04	1.133e+05	1.432e+05	-
3.765e+04	55	17	24.15	54.43	-11.93	10.19	32.31	-31.28	2.227e+05	1.044e+05	1.560e+05	1.711e+05	-
5.870e+04		170	13.93	21.04	-19.99	-4.64	5.69	-19.85	1.287e+05	7.340e+04	9.484e+04	1.072e+05	-
2.693e+04		178	12.16	33.15	-7.84	7.25	18.06	-19.77	1.105e+05	7.233e+04	9.112e+04	9.168e+04	-
1.907e+04		153	18.10	3.58	-2.77	3.57	-2.77	-0.19	1.685e+05	8.759e+04	1.131e+05	1.430e+05	-
3.762e+04	69	17	23.91	4.96	-4.48	3.55	-3.07	-3.37	2.224e+05	1.042e+05	1.558e+05	1.708e+05	-
5.866e+04		170	13.84	4.44	-0.89	4.44	-0.89	0.03	1.285e+05	7.325e+04	9.472e+04	1.070e+05	-
2.692e+04		178	12.03	4.60	-4.90	4.42	-4.73	-1.29	1.103e+05	7.220e+04	9.103e+04	9.151e+04	-
1.906e+04		154	15.24	4.98	-4.79	4.13	-3.94	-2.76	1.395e+05	9.234e+04	1.030e+05	1.288e+05	-
1.973e+04	1	170	19.03	7.46	-5.43	5.90	-3.87	-4.20	1.767e+05	9.859e+04	1.212e+05	1.541e+05	-
3.543e+04		171	11.62	3.20	-4.36	1.44	-2.60	-3.19	1.062e+05	7.095e+04	8.658e+04	9.059e+04	-
1.752e+04													-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		179	9.99	4.25	-3.27	3.66	-2.68	-2.02	8.748e+04	7.112e+04	7.556e+04	8.303e+04	-7279.95
154	3	178	12.89	4.22	-4.06	3.49	-3.34	-2.33	1.180e+05	7.813e+04	8.715e+04	1.090e+05	-
1.669e+04		170	16.10	6.31	-4.60	4.99	-3.28	-3.56	1.495e+05	8.342e+04	1.025e+05	1.304e+05	-
2.998e+04		171	9.83	2.71	-3.69	1.22	-2.20	-2.70	8.988e+04	6.004e+04	7.326e+04	7.666e+04	-
1.483e+04		179	8.45	3.60	-2.76	3.10	-2.26	-1.71	7.402e+04	6.017e+04	6.394e+04	7.026e+04	-6159.96
154	23	178	11.95	58.96	-29.46	-14.00	43.49	-33.59	1.077e+05	7.135e+04	7.947e+04	9.959e+04	-
1.514e+04		170	14.98	91.08	-40.52	-32.10	82.66	-32.21	1.364e+05	7.626e+04	9.358e+04	1.191e+05	-
2.724e+04		171	9.15	66.81	-16.44	-9.04	59.41	-23.69	8.196e+04	5.492e+04	6.685e+04	7.003e+04	-
1.343e+04		179	7.84	55.45	-20.74	-6.11	40.82	-30.01	6.752e+04	5.496e+04	5.829e+04	6.419e+04	-5543.49
154	55	178	11.80	21.46	-10.61	-3.08	13.93	-13.59	1.075e+05	7.115e+04	7.932e+04	9.928e+04	-
1.516e+04		170	14.76	32.81	-13.39	-8.82	28.24	-13.80	1.361e+05	7.599e+04	9.335e+04	1.188e+05	-
2.725e+04		171	9.02	24.26	-6.46	-2.59	20.39	-10.20	8.180e+04	5.470e+04	6.669e+04	6.981e+04	-
1.346e+04		179	7.74	20.40	-7.27	-0.44	13.57	-11.93	6.737e+04	5.480e+04	5.818e+04	6.399e+04	-5579.38
154	69	178	11.72	3.83	-3.69	3.18	-3.03	-2.12	1.073e+05	7.103e+04	7.923e+04	9.911e+04	-
1.517e+04		170	14.63	5.74	-4.18	4.54	-2.98	-3.23	1.359e+05	7.584e+04	9.323e+04	1.185e+05	-
2.725e+04		171	8.94	2.46	-3.35	1.11	-2.00	-2.46	8.171e+04	5.458e+04	6.660e+04	6.969e+04	-
1.348e+04		179	7.68	3.27	-2.51	2.82	-2.06	-1.56	6.729e+04	5.470e+04	5.812e+04	6.387e+04	-5599.97
155	1	179	9.94	3.69	-3.13	2.72	-2.16	-2.39	8.696e+04	7.088e+04	7.319e+04	8.464e+04	-5649.67
1.786e+04		171	11.92	3.95	-3.77	1.92	-1.74	-3.40	1.092e+05	7.139e+04	8.407e+04	9.654e+04	-
1.105e+04		172	7.63	2.64	-2.82	1.06	-1.24	-2.48	6.972e+04	4.668e+04	6.145e+04	5.495e+04	-
155	3	180	6.49	2.99	-2.26	2.27	-1.55	-1.80	5.325e+04	5.141e+04	5.316e+04	5.150e+04	397.32
1.511e+04		179	8.41	3.12	-2.65	2.30	-1.83	-2.02	7.358e+04	5.997e+04	6.193e+04	7.162e+04	-4780.49
		171	10.08	3.34	-3.19	1.62	-1.47	-2.88	9.242e+04	6.041e+04	7.113e+04	8.169e+04	-
		172	6.46	2.23	-2.39	0.89	-1.05	-2.10	5.899e+04	3.950e+04	5.199e+04	4.650e+04	-9351.55
		180	5.49	2.53	-1.92	1.92	-1.31	-1.52	4.506e+04	4.350e+04	4.499e+04	4.358e+04	336.19
155	7	179	7.79	53.70	-23.47	-1.80	32.03	-34.68	6.713e+04	5.476e+04	5.662e+04	6.528e+04	-4411.43
1.387e+04		171	9.36	54.19	-22.86	-11.56	42.88	-27.26	8.438e+04	5.506e+04	6.497e+04	7.447e+04	-
		172	5.98	44.81	-24.28	-15.50	36.03	-23.00	5.389e+04	3.596e+04	4.749e+04	4.236e+04	-8595.55
		180	5.07	46.93	-22.66	-3.41	27.68	-31.12	4.118e+04	3.964e+04	4.113e+04	3.969e+04	271.84
155	39	179	7.70	20.33	-9.03	0.67	10.62	-13.81	6.698e+04	5.461e+04	5.642e+04	6.517e+04	-4369.79
1.378e+04		171	9.24	20.45	-8.95	-3.28	14.78	-11.60	8.415e+04	5.497e+04	6.478e+04	7.434e+04	-
		172	5.91	16.74	-9.35	-5.14	12.53	-9.60	5.373e+04	3.593e+04	4.735e+04	4.230e+04	-8535.73
		180	5.02	17.71	-8.51	-0.13	9.33	-12.23	4.104e+04	3.958e+04	4.098e+04	3.964e+04	293.31
155	69	179	7.64	2.84	-2.41	2.09	-1.66	-1.84	6.689e+04	5.452e+04	5.630e+04	6.511e+04	-4345.90
1.374e+04		171	9.17	3.04	-2.90	1.48	-1.34	-2.62	8.401e+04	5.492e+04	6.467e+04	7.426e+04	-
		172	5.87	2.03	-2.17	0.81	-0.95	-1.91	5.363e+04	3.591e+04	4.727e+04	4.227e+04	-8501.41
		180	4.99	2.30	-1.74	1.75	-1.19	-1.38	4.096e+04	3.955e+04	4.090e+04	3.962e+04	305.63
156	1	180	6.49	2.72	-1.97	1.81	-1.06	-1.85	5.312e+04	5.144e+04	5.308e+04	5.148e+04	256.13
1.163e+04		172	7.70	2.46	-2.52	0.90	-0.96	-2.31	7.031e+04	4.695e+04	5.976e+04	5.751e+04	-
		173	5.07	2.01	-1.91	0.61	-0.51	-1.88	4.707e+04	2.585e+04	4.300e+04	2.992e+04	-8350.33
		181	4.30	2.26	-1.60	1.64	-0.98	-1.42	3.887e+04	2.761e+04	3.805e+04	2.844e+04	2935.09
156	3	180	5.49	2.30	-1.67	1.53	-0.90	-1.57	4.495e+04	4.352e+04	4.491e+04	4.356e+04	216.72
		172	6.51	2.08	-2.13	0.76	-0.81	-1.95	5.950e+04	3.973e+04	5.057e+04	4.866e+04	-9837.09
		173	4.29	1.70	-1.61	0.51	-0.43	-1.59	3.983e+04	2.188e+04	3.639e+04	2.532e+04	-7065.67
		181	3.64	1.91	-1.35	1.38	-0.83	-1.20	3.289e+04	2.336e+04	3.219e+04	2.406e+04	2483.54
156	7	180	5.05	42.85	-22.79	-9.86	29.92	-26.11	4.107e+04	3.966e+04	4.105e+04	3.968e+04	149.86
		172	6.01	38.38	-21.80	-18.43	35.01	-13.85	5.435e+04	3.617e+04	4.618e+04	4.434e+04	-9047.61
		173	3.92	33.82	-23.09	-19.82	30.54	-13.26	3.639e+04	1.988e+04	3.322e+04	2.305e+04	-6500.74
		181	3.36	35.90	-22.42	-10.70	24.17	-23.37	3.004e+04	2.127e+04	2.943e+04	2.188e+04	2235.24
156	39	180	5.01	16.15	-8.47	-2.71	10.39	-10.42	4.094e+04	3.960e+04	4.091e+04	3.963e+04	179.83
		172	5.95	14.16	-8.14	-6.28	12.29	-6.18	5.419e+04	3.614e+04	4.605e+04	4.428e+04	-8981.01
		173	3.91	12.58	-8.62	-6.93	10.89	-5.75	3.627e+04	1.989e+04	3.313e+04	2.303e+04	-6451.55
		181	3.32	13.46	-8.23	-3.10	8.33	-9.21	2.995e+04	2.125e+04	2.933e+04	2.188e+04	2249.55
156	69	180	4.99	2.09	-1.51	1.40	-0.82	-1.42	4.086e+04	3.957e+04	4.083e+04	3.960e+04	197.02

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		172	5.92	1.89	-1.94	0.69	-0.74	-1.77	5.409e+04	3.612e+04	4.597e+04	4.424e+04	-8942.80
		173	3.90	1.54	-1.47	0.47	-0.39	-1.44	3.621e+04	1.989e+04	3.308e+04	2.302e+04	-6423.33
		181	3.31	1.74	-1.23	1.26	-0.75	-1.09	2.990e+04	2.124e+04	2.927e+04	2.187e+04	2257.76
157	1	181	4.29	2.06	-1.18	1.38	-0.50	-1.33	3.882e+04	2.762e+04	3.835e+04	2.809e+04	2252.98
		173	5.08	1.57	-1.67	0.49	-0.60	-1.52	4.721e+04	2.607e+04	4.195e+04	3.134e+04	-9143.05
		174	3.52	1.51	-1.22	0.38	-0.09	-1.34	3.219e+04	1.081e+04	2.945e+04	1.354e+04	-7143.80
		182	3.00	1.74	-1.13	1.33	-0.71	-1.01	2.783e+04	1.225e+04	2.712e+04	1.295e+04	3231.03
157	3	181	3.63	1.75	-1.00	1.17	-0.42	-1.12	3.285e+04	2.337e+04	3.245e+04	2.377e+04	1906.36
		173	4.30	1.33	-1.41	0.42	-0.51	-1.29	3.995e+04	2.206e+04	3.550e+04	2.652e+04	-7736.43
		174	2.98	1.28	-1.03	0.32	-0.07	-1.14	2.724e+04	9144.47	2.492e+04	1.146e+04	-6044.75
		182	2.54	1.48	-0.96	1.12	-0.60	-0.86	2.354e+04	1.036e+04	2.295e+04	1.096e+04	2733.95
157	23	181	3.37	29.78	-25.24	-21.54	26.09	-13.77	3.000e+04	2.128e+04	2.960e+04	2.168e+04	1811.00
		173	3.96	35.36	-24.53	-24.41	35.24	2.62	3.641e+04	2.019e+04	3.242e+04	2.418e+04	-6983.92
		174	2.82	29.09	-23.57	-23.43	28.95	2.72	2.483e+04	8378.17	2.277e+04	1.045e+04	-5453.54
		182	2.43	25.61	-23.56	-20.89	22.93	-11.15	2.151e+04	9377.67	2.094e+04	9948.76	2569.74
157	56	181	3.31	7.20	-5.90	7.20	-5.90	0.07	2.984e+04	2.123e+04	2.949e+04	2.158e+04	1690.73
		173	3.92	6.85	-10.52	5.97	-9.64	-3.81	3.632e+04	2.000e+04	3.223e+04	2.409e+04	-7074.50
		174	2.74	6.58	-8.24	5.42	-7.08	-3.99	2.476e+04	8279.50	2.263e+04	1.041e+04	-5528.14
		182	2.33	6.81	-6.11	6.80	-6.10	-0.33	2.138e+04	9427.45	2.086e+04	9952.24	2449.16
157	69	181	3.30	1.59	-0.91	1.06	-0.38	-1.02	2.986e+04	2.124e+04	2.950e+04	2.161e+04	1733.06
		173	3.91	1.20	-1.28	0.38	-0.46	-1.17	3.632e+04	2.006e+04	3.227e+04	2.411e+04	-7033.12
		174	2.71	1.16	-0.94	0.29	-0.07	-1.03	2.476e+04	8313.15	2.266e+04	1.042e+04	-5495.23
		182	2.31	1.34	-0.87	1.02	-0.55	-0.78	2.140e+04	9420.63	2.086e+04	9960.41	2485.41
158	1	182	2.99	1.56	-0.61	1.17	-0.22	-0.83	2.778e+04	1.224e+04	2.738e+04	1.265e+04	2480.91
		174	3.53	0.94	-1.05	0.30	-0.42	-0.93	3.227e+04	1.095e+04	2.875e+04	1.446e+04	-7909.52
		175	2.62	1.29	-0.67	0.34	0.29	-0.98	2.202e+04	1929.39	1.984e+04	4105.69	-6244.01
		183	2.27	1.31	-0.88	1.16	-0.74	-0.54	1.978e+04	3524.71	1.937e+04	3941.06	2568.36
158	3	182	2.53	1.32	-0.52	0.99	-0.19	-0.70	2.351e+04	1.036e+04	2.317e+04	1.070e+04	2099.23
		174	2.99	0.79	-0.89	0.26	-0.35	-0.78	2.730e+04	9263.33	2.433e+04	1.224e+04	-6692.67
		175	2.22	1.10	-0.57	0.29	0.24	-0.83	1.863e+04	1632.56	1.679e+04	3474.05	-5283.39
		183	1.92	1.11	-0.75	0.99	-0.63	-0.46	1.674e+04	2982.45	1.639e+04	3334.74	2173.23
158	23	182	2.43	21.08	-25.85	-22.86	18.09	-11.47	2.147e+04	9380.60	2.113e+04	9717.05	1988.30
		174	2.83	24.67	-24.81	-24.10	23.96	5.87	2.488e+04	8482.61	2.223e+04	1.114e+04	-6044.41
		175	2.16	19.30	-24.11	-23.43	18.62	5.38	1.702e+04	1558.22	1.535e+04	3228.52	-4799.92
		183	1.91	18.35	-24.51	-22.50	16.34	-9.08	1.534e+04	2527.28	1.499e+04	2879.97	2096.60
158	54	182	2.34	10.20	-7.47	9.56	-6.83	3.31	2.134e+04	9431.90	2.103e+04	9736.31	1879.26
		174	2.75	9.62	-9.69	9.10	-9.17	-3.11	2.480e+04	8398.72	2.208e+04	1.112e+04	-6098.77
		175	2.07	9.46	-7.05	8.90	-6.49	-2.99	1.691e+04	1457.14	1.523e+04	3132.60	-4804.24
		183	1.79	9.88	-7.19	9.42	-6.73	2.78	1.517e+04	2778.18	1.487e+04	3086.86	1931.57
158	69	182	2.30	1.20	-0.47	0.90	-0.17	-0.64	2.137e+04	9418.31	2.106e+04	9731.17	1908.39
		174	2.71	0.72	-0.81	0.23	-0.32	-0.71	2.482e+04	8421.21	2.212e+04	1.112e+04	-6084.24
		175	2.02	1.00	-0.52	0.26	0.22	-0.76	1.694e+04	1484.15	1.526e+04	3158.23	-4803.09
		183	1.75	1.01	-0.68	0.90	-0.57	-0.42	1.522e+04	2711.32	1.490e+04	3031.58	1975.66
159	1	183	2.27	1.26	0.53	1.20	0.59	-0.20	1.970e+04	3360.05	1.947e+04	3589.35	1921.87
		175	2.62	0.57	-0.96	0.29	-0.68	-0.60	2.208e+04	2108.66	1.933e+04	4867.07	-6891.44
		176	1.99	0.79	-0.14	0.44	0.20	-0.45	1.543e+04	-1118.31	1.391e+04	395.91	-4770.50
		184	1.83	1.13	-0.31	0.97	-0.15	-0.45	1.466e+04	-123.23	1.447e+04	66.97	1666.15
159	3	183	1.92	1.07	0.45	1.01	0.50	-0.17	1.667e+04	2843.12	1.647e+04	3037.14	1626.20
		175	2.22	0.49	-0.82	0.25	-0.57	-0.51	1.869e+04	1784.25	1.635e+04	4118.29	-5831.22
		176	1.68	0.67	-0.12	0.37	0.17	-0.38	1.305e+04	-946.26	1.177e+04	335.00	-4036.57
		184	1.55	0.95	-0.26	0.82	-0.13	-0.38	1.241e+04	-104.27	1.225e+04	56.67	1409.82
159	23	183	1.90	12.26	-27.86	-24.58	8.98	-10.99	1.535e+04	2728.82	1.513e+04	2953.18	1667.73
		175	2.17	16.48	-25.50	-23.90	14.88	8.03	1.706e+04	1496.49	1.494e+04	3612.82	-5334.03
		176	1.67	11.29	-25.04	-23.90	10.15	6.32	1.194e+04	-830.20	1.081e+04	295.23	-3619.38
		184	1.54	9.92	-24.60	-22.94	8.27	-7.37	1.130e+04	-72.50	1.115e+04	80.23	1309.29
159	55	183	1.80	4.84	-9.65	-8.37	3.56	-4.10	1.522e+04	2637.86	1.503e+04	2831.08	1547.40
		175	2.07	5.58	-9.06	-8.57	5.09	2.64	1.701e+04	1576.31	1.489e+04	3696.11	-5313.11
		176	1.58	4.14	-8.84	-8.50	3.80	2.09	1.189e+04	-849.18	1.074e+04	301.15	-3651.30
		184	1.45	3.67	-8.62	-7.89	2.94	-2.91	1.129e+04	-86.65	1.114e+04	61.98	1291.73
159	69	183	1.74	0.97	0.41	0.92	0.46	-0.15	1.515e+04	2584.65	1.498e+04	2761.04	1478.36
		175	2.02	0.44	-0.74	0.22	-0.52	-0.46	1.699e+04	1622.05	1.487e+04	3743.90	-5301.11
		176	1.53	0.60	-0.11	0.34	0.16	-0.34	1.187e+04	-860.24	1.070e+04	304.55	-3669.61
		184	1.41	0.87	-0.24	0.75	-0.12	-0.34	1.128e+04	-94.79	1.113e+04	51.52	1281.65
160	1	184	1.80	1.00	0.40	0.98	0.43	-0.12	1.450e+04	38.03	1.439e+04	145.68	1242.92
		176	2.00	0.41	-0.47	0.40	-0.47	-0.05	1.552e+04	-1075.37	1.346e+04	976.05	-5461.28
		177	1.54	0.50	0.08	0.30	0.28	-0.21	1.257e+04	337.06	1.257e+04	339.05	-155.74
		185	1.61	1.12	-0.25	1.09	-0.22	-0.19	1.311e+04	270.19	1.311e+04	270.87	93.20
160	3	184	1.52	0.85	0.34	0.83	0.36	-0.10	1.227e+04	32.18	1.217e+04	123.26	1051.70
		176	1.69	0.34	-0.40	0.34	-0.40	-0.04	1.313e+04	-909.93	1.139e+04	825.89	-4621.09
		177	1.30	0.42	0.07	0.26	0.23	-0.18	1.064e+04	285.21	1.063e+04	286.89	-131.78
		185	1.37	0.95	-0.21	0.93	-0.19	-0.16	1.110e+04	228.62	1.109e+04	229.20	78.86
160	23	184	1.52	6.00	-27.66	-24.58	2.91	-9.72	1.123e+04	58.25	1.113e+04	150.05	1008.32
		176	1.68	7.57	-26.69	-24.41	5.29	8.53	1.198e+04	-817.87	1.044e+04	728.98	-4172.66



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		177	1.31	3.94	-25.33	-23.48	2.10	7.11	9740.06	262.79	9738.63	264.22	-116.47
		185	1.36	3.68	-26.31	-24.80	2.17	-6.56	1.014e+04	204.27	1.014e+04	204.87	77.34
160	55	184	1.43	2.46	-9.67	-8.48	1.27	-3.60	1.118e+04	39.87	1.109e+04	125.91	975.13
		176	1.58	2.55	-9.55	-8.70	1.70	3.09	1.195e+04	-823.75	1.039e+04	742.85	-4190.66
		177	1.23	1.53	-9.04	-8.41	0.90	2.49	9694.75	260.56	9693.26	262.05	-118.58
		185	1.28	1.31	-9.14	-8.51	0.68	-2.48	1.011e+04	206.54	1.011e+04	207.09	73.75
160	69	184	1.38	0.77	0.31	0.75	0.33	-0.09	1.115e+04	29.25	1.107e+04	112.06	956.09
		176	1.54	0.31	-0.36	0.31	-0.36	-0.04	1.193e+04	-827.20	1.036e+04	750.81	-4200.99
		177	1.18	0.39	0.06	0.23	0.21	-0.16	9668.75	259.28	9667.23	260.81	-119.80
		185	1.24	0.86	-0.19	0.84	-0.17	-0.15	1.009e+04	207.84	1.009e+04	208.36	71.69
161	1	186	18.00	1.58	-5.58	-0.18	-3.83	3.08	1.670e+05	9.524e+04	1.661e+05	9.618e+04	-8169.32
		16	31.08	6.10	-5.69	-1.35	1.76	5.69	2.892e+05	1.354e+05	2.851e+05	1.395e+05	-
2.472e+04													
		18	23.53	3.82	-4.45	1.47	-2.09	3.73	2.191e+05	1.139e+05	2.189e+05	1.140e+05	-4053.85
		178	15.64	6.84	-5.37	2.10	-0.64	5.95	1.434e+05	9.387e+04	1.410e+05	9.624e+04	-
1.058e+04													
161	3	186	15.23	1.33	-4.72	-0.15	-3.24	2.60	1.413e+05	8.059e+04	1.405e+05	8.138e+04	-6912.50
		16	26.30	5.16	-4.82	-1.14	1.49	4.81	2.447e+05	1.146e+05	2.412e+05	1.180e+05	-
2.091e+04													
		18	19.91	3.24	-3.76	1.24	-1.77	3.16	1.854e+05	9.634e+04	1.853e+05	9.647e+04	-3430.18
		178	13.23	5.79	-4.55	1.78	-0.54	5.04	1.214e+05	7.943e+04	1.193e+05	8.144e+04	-8950.78
161	7	186	14.08	53.99	-65.73	53.89	-65.62	-3.50	1.290e+05	7.367e+04	1.283e+05	7.437e+04	-6184.69
		16	24.55	144.27	-25.61	143.99	-25.33	6.89	2.233e+05	1.047e+05	2.202e+05	1.078e+05	-
1.888e+04													
		18	18.33	42.56	-49.64	42.41	-49.49	-3.72	1.692e+05	8.795e+04	1.691e+05	8.806e+04	-2977.25
		178	12.37	95.11	-22.04	94.57	-21.50	7.90	1.107e+05	7.255e+04	1.089e+05	7.433e+04	-8047.05
161	39	186	13.92	19.56	-25.79	19.56	-25.79	0.23	1.287e+05	7.341e+04	1.279e+05	7.413e+04	-6247.85
		16	24.13	52.29	-8.84	51.83	-8.38	5.29	2.227e+05	1.044e+05	2.196e+05	1.075e+05	-
1.896e+04													
		18	18.19	16.18	-19.07	16.18	-19.06	0.47	1.688e+05	8.772e+04	1.687e+05	8.783e+04	-3066.91
		178	12.15	36.26	-8.90	35.51	-8.15	5.79	1.105e+05	7.233e+04	1.087e+05	7.414e+04	-8104.25
161	69	186	13.84	1.21	-4.29	-0.14	-2.94	2.37	1.285e+05	7.326e+04	1.278e+05	7.398e+04	-6284.09
		16	23.91	4.69	-4.38	-1.04	1.35	4.37	2.224e+05	1.042e+05	2.193e+05	1.073e+05	-
1.901e+04													
		18	18.10	2.94	-3.42	1.13	-1.61	2.87	1.685e+05	8.758e+04	1.684e+05	8.770e+04	-3118.34
		178	12.03	5.26	-4.13	1.62	-0.49	4.58	1.103e+05	7.221e+04	1.085e+05	7.403e+04	-8137.07
162	1	187	11.62	4.82	-2.77	0.36	1.69	3.74	1.062e+05	7.097e+04	1.022e+05	7.494e+04	-
1.114e+04													
		186	19.02	5.91	-7.16	0.16	-1.42	6.49	1.767e+05	9.860e+04	1.741e+05	1.012e+05	-
1.393e+04													
		178	15.24	5.04	-4.56	1.32	-0.84	4.68	1.395e+05	9.234e+04	1.389e+05	9.290e+04	-5123.56
		179	9.99	3.68	-3.68	0.87	-0.88	3.57	8.748e+04	7.112e+04	8.706e+04	7.154e+04	-2590.70
162	3	187	9.83	4.08	-2.35	0.30	1.43	3.16	8.986e+04	6.005e+04	8.650e+04	6.341e+04	-9429.26
		186	16.10	5.00	-6.06	0.14	-1.20	5.49	1.495e+05	8.343e+04	1.474e+05	8.560e+04	-
1.179e+04													
		178	12.89	4.27	-3.86	1.12	-0.71	3.96	1.180e+05	7.813e+04	1.176e+05	7.861e+04	-4335.32
		179	8.45	3.11	-3.11	0.74	-0.74	3.02	7.402e+04	6.018e+04	7.366e+04	6.053e+04	-2192.13
162	7	187	9.14	68.25	-15.28	66.43	-13.46	12.19	8.195e+04	5.493e+04	7.894e+04	5.795e+04	-8502.77
		186	14.96	94.11	-46.51	88.57	-40.96	27.37	1.364e+05	7.627e+04	1.345e+05	7.821e+04	-
1.063e+04													
		178	11.95	60.73	-31.03	60.64	-30.94	2.77	1.077e+05	7.135e+04	1.073e+05	7.176e+04	-3833.77
		179	7.84	55.99	-21.96	55.98	-21.96	0.58	6.751e+04	5.496e+04	6.722e+04	5.525e+04	-1899.54
162	39	187	9.01	25.71	-5.40	24.39	-4.08	6.27	8.179e+04	5.472e+04	7.875e+04	5.776e+04	-8546.80
		186	14.74	35.73	-18.99	32.37	-15.63	13.15	1.361e+05	7.600e+04	1.342e+05	7.797e+04	-
1.068e+04													
		178	11.80	23.07	-12.00	22.76	-11.69	3.30	1.075e+05	7.115e+04	1.070e+05	7.157e+04	-3902.04
		179	7.74	20.97	-8.56	20.84	-8.43	1.96	6.737e+04	5.480e+04	6.706e+04	5.511e+04	-1958.83
162	69	187	8.94	3.71	-2.13	0.28	1.30	2.88	8.169e+04	5.459e+04	7.864e+04	5.765e+04	-8572.06
		186	14.63	4.54	-5.51	0.13	-1.09	4.99	1.359e+05	7.585e+04	1.340e+05	7.782e+04	-
1.072e+04													
		178	11.72	3.88	-3.51	1.02	-0.65	3.60	1.073e+05	7.103e+04	1.069e+05	7.146e+04	-3941.20
		179	7.68	2.83	-2.83	0.67	-0.68	2.75	6.729e+04	5.471e+04	6.697e+04	5.503e+04	-1992.84
163	1	188	7.63	3.39	-2.28	0.23	0.88	2.81	6.969e+04	4.671e+04	6.099e+04	5.540e+04	-
1.115e+04													
		187	11.91	4.22	-3.68	0.13	0.41	3.95	1.092e+05	7.141e+04	1.047e+05	7.589e+04	-
1.222e+04													
		179	9.93	3.39	-3.21	0.93	-0.75	3.19	8.696e+04	7.088e+04	8.672e+04	7.112e+04	-1945.72
		180	6.49	2.65	-2.39	0.71	-0.45	2.45	5.325e+04	5.142e+04	5.142e+04	5.324e+04	-48.43
163	3	188	6.46	2.86	-1.93	0.19	0.75	2.38	5.897e+04	3.952e+04	5.161e+04	4.688e+04	-9430.57
		187	10.08	3.57	-3.12	0.11	0.35	3.34	9.240e+04	6.042e+04	8.861e+04	6.421e+04	-
1.034e+04													
		179	8.41	2.87	-2.71	0.79	-0.63	2.70	7.358e+04	5.997e+04	7.338e+04	6.017e+04	-1646.38
		180	5.49	2.24	-2.02	0.60	-0.38	2.08	4.505e+04	4.351e+04	4.351e+04	4.505e+04	-40.98



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

163	23	188	5.97	44.30	-22.70	44.20	-22.60	-2.59	5.387e+04	3.598e+04	4.706e+04	4.278e+04	-8688.04
		187	9.35	53.00	-21.52	52.81	-21.34	-3.71	8.436e+04	5.508e+04	8.083e+04	5.861e+04	-9535.38
		179	7.79	52.29	-22.29	48.49	-18.48	-16.41	6.713e+04	5.477e+04	6.692e+04	5.497e+04	-1589.78
		180	5.07	45.67	-21.83	42.08	-18.24	-15.14	4.117e+04	3.965e+04	3.965e+04	4.116e+04	-106.52
163	55	188	5.90	16.23	-7.82	16.23	-7.81	0.43	5.370e+04	3.595e+04	4.697e+04	4.268e+04	-8615.10
		187	9.23	19.33	-7.59	19.32	-7.58	0.58	8.413e+04	5.498e+04	8.065e+04	5.846e+04	-9447.23
		179	7.70	18.89	-7.86	18.13	-7.10	-4.42	6.698e+04	5.461e+04	6.678e+04	5.480e+04	-1530.64
		180	5.02	16.49	-7.67	15.69	-6.87	-4.32	4.103e+04	3.959e+04	3.959e+04	4.103e+04	-62.51
163	69	188	5.87	2.60	-1.75	0.18	0.68	2.16	5.360e+04	3.593e+04	4.691e+04	4.262e+04	-8573.25
		187	9.16	3.25	-2.83	0.10	0.32	3.04	8.400e+04	5.493e+04	8.055e+04	5.838e+04	-9396.66
		179	7.64	2.61	-2.47	0.72	-0.58	2.46	6.689e+04	5.452e+04	6.671e+04	5.470e+04	-1496.71
		180	4.99	2.04	-1.84	0.54	-0.35	1.89	4.096e+04	3.955e+04	3.955e+04	4.096e+04	-37.25
164	1	189	5.06	2.56	-1.67	0.09	0.79	2.08	4.704e+04	2.588e+04	3.326e+04	3.965e+04	-
1.009e+04		188	7.69	3.03	-2.26	0.27	0.51	2.64	7.028e+04	4.698e+04	6.166e+04	5.561e+04	-
1.125e+04		180	6.48	2.21	-2.19	0.48	-0.47	2.15	5.311e+04	5.145e+04	5.145e+04	5.311e+04	-11.39
		181	4.30	1.96	-1.65	0.54	-0.22	1.76	3.887e+04	2.761e+04	2.772e+04	3.876e+04	1089.39
164	3	189	4.28	2.16	-1.41	0.08	0.67	1.76	3.980e+04	2.190e+04	2.815e+04	3.355e+04	-8534.95
		188	6.51	2.56	-1.91	0.22	0.43	2.23	5.947e+04	3.975e+04	5.217e+04	4.705e+04	-9520.93
		180	5.49	1.87	-1.85	0.41	-0.40	1.82	4.494e+04	4.353e+04	4.353e+04	4.494e+04	-9.64
		181	3.63	1.66	-1.39	0.45	-0.19	1.49	3.289e+04	2.336e+04	2.345e+04	3.287e+04	921.79
164	23	189	3.92	33.54	-22.17	33.53	-22.17	-0.49	3.637e+04	1.990e+04	2.565e+04	3.061e+04	-7850.98
		188	6.00	38.43	-21.26	38.43	-21.26	0.34	5.433e+04	3.619e+04	4.758e+04	4.294e+04	-8770.70
		180	5.05	41.74	-22.20	38.45	-18.92	-14.11	4.106e+04	3.967e+04	3.967e+04	4.106e+04	-78.19
		181	3.36	35.11	-21.95	31.96	-18.80	-13.04	3.004e+04	2.127e+04	2.134e+04	2.997e+04	789.85
164	55	189	3.90	12.31	-7.73	12.27	-7.69	0.84	3.625e+04	1.990e+04	2.561e+04	3.054e+04	-7792.56
		188	5.94	14.23	-7.60	14.14	-7.50	1.41	5.416e+04	3.616e+04	4.748e+04	4.284e+04	-8697.42
		180	5.01	15.01	-7.88	14.26	-7.12	-4.10	4.093e+04	3.961e+04	3.961e+04	4.093e+04	-34.07
		181	3.82	12.68	-7.73	11.91	-6.96	-3.89	2.995e+04	2.125e+04	2.133e+04	2.987e+04	820.44
164	69	189	3.89	1.97	-1.29	0.07	0.61	1.60	3.618e+04	1.990e+04	2.559e+04	3.050e+04	-7759.04
		188	5.92	2.33	-1.73	0.20	0.39	2.03	5.406e+04	3.614e+04	4.743e+04	4.277e+04	-8655.39
		180	4.99	1.70	-1.68	0.37	-0.36	1.65	4.086e+04	3.957e+04	3.957e+04	4.086e+04	-8.76
		181	3.36	1.51	-1.27	0.41	-0.17	1.32	2.990e+04	2.124e+04	2.132e+04	2.982e+04	837.99
165	1	190	3.52	1.96	-1.17	0.04	0.76	1.52	3.217e+04	1.082e+04	1.539e+04	2.760e+04	-8751.53
1.009e+04		189	5.08	2.24	-1.41	0.26	0.56	1.82	4.718e+04	2.609e+04	3.357e+04	3.971e+04	-
		181	4.29	1.40	-1.50	0.15	-0.25	1.43	3.882e+04	2.762e+04	2.772e+04	3.872e+04	1045.44
		182	3.00	1.45	-1.19	0.33	-0.07	1.30	2.783e+04	1.225e+04	1.240e+04	2.767e+04	1544.04
165	3	190	2.98	1.66	-0.99	0.03	0.65	1.29	2.722e+04	9158.34	1.302e+04	2.335e+04	-7405.14
		189	4.30	1.90	-1.20	0.22	0.48	1.54	3.992e+04	2.208e+04	2.841e+04	3.360e+04	-8535.73
		181	3.63	1.18	-1.27	0.13	-0.21	1.21	3.285e+04	2.337e+04	2.345e+04	3.276e+04	884.60
		182	2.53	1.22	-1.01	0.28	-0.06	1.10	2.355e+04	1.036e+04	1.049e+04	2.342e+04	1306.49
165	7	190	2.82	29.80	-23.86	27.50	-21.56	10.87	2.481e+04	8390.75	1.186e+04	2.135e+04	-6700.67
		189	3.97	36.65	-25.14	34.22	-22.71	12.01	3.639e+04	2.021e+04	2.588e+04	3.071e+04	-7721.53
		181	3.37	29.47	-25.64	28.87	-25.05	-5.69	3.000e+04	2.128e+04	2.137e+04	2.991e+04	876.10
		182	2.43	25.80	-24.06	25.49	-23.75	-3.90	2.151e+04	9378.51	9510.75	2.138e+04	1259.80
165	39	190	2.75	11.22	-8.67	10.04	-7.49	4.71	2.477e+04	8349.50	1.184e+04	2.127e+04	-6720.55
		189	3.93	13.87	-9.27	12.60	-8.00	5.27	3.633e+04	2.012e+04	2.585e+04	3.060e+04	-7745.82
		181	3.32	10.69	-9.35	10.60	-9.25	-1.38	2.991e+04	2.126e+04	2.134e+04	2.983e+04	830.40
		182	2.35	9.49	-8.73	9.45	-8.70	-0.78	2.144e+04	9405.97	9529.67	2.132e+04	1214.00
165	69	190	2.71	1.51	-0.90	0.03	0.59	1.17	2.474e+04	8325.76	1.184e+04	2.123e+04	-6731.95
		189	3.91	1.72	-1.09	0.20	0.43	1.40	3.629e+04	2.007e+04	2.582e+04	3.054e+04	-7759.75
		181	3.30	1.07	-1.15	0.12	-0.20	1.10	2.986e+04	2.125e+04	2.132e+04	2.979e+04	804.18
		182	2.30	1.11	-0.92	0.25	-0.06	1.00	2.141e+04	9421.63	9540.52	2.129e+04	1187.72
166	1	191	2.62	1.46	-0.46	0.17	0.83	0.90	2.199e+04	1944.72	5003.10	1.893e+04	-7207.45
		190	3.52	1.68	-0.87	0.29	0.52	1.27	3.225e+04	1.096e+04	1.558e+04	2.764e+04	-8770.04
		182	2.99	0.84	-1.02	-0.18	-7.41e-03	0.93	2.777e+04	1.225e+04	1.239e+04	2.763e+04	1504.01
		183	2.27	1.06	-1.25	0.04	-0.23	1.15	1.981e+04	3526.42	3669.70	1.967e+04	1520.78
166	3	191	2.21	1.24	-0.39	0.14	0.71	0.76	1.861e+04	1645.53	4233.39	1.602e+04	-6098.61
		190	2.98	1.42	-0.74	0.24	0.44	1.07	2.729e+04	9276.17	1.318e+04	2.338e+04	-7420.80
		182	2.53	0.71	-0.86	-0.15	-6.27e-03	0.78	2.350e+04	1.036e+04	1.049e+04	2.338e+04	1272.62
		183	1.92	0.90	-1.06	0.04	-0.20	0.97	1.676e+04	2983.90	3105.13	1.664e+04	1286.81
166	7	191	2.16	19.73	-24.24	17.53	-22.04	9.58	1.700e+04	1570.03	3918.47	1.465e+04	-5542.14
		190	2.83	25.77	-25.22	23.41	-22.85	10.73	2.487e+04	8494.26	1.199e+04	2.137e+04	-6712.69
		182	2.43	20.53	-26.15	19.38	-25.01	-7.22	2.146e+04	9382.25	9508.94	2.133e+04	1230.47
		183	1.91	18.49	-25.14	17.91	-24.55	-5.02	1.536e+04	2528.62	2656.23	1.524e+04	1273.46
166	39	191	2.06	7.49	-8.65	6.47	-7.63	3.93	1.694e+04	1522.95	3874.03	1.459e+04	-5543.44
		190	2.75	9.82	-9.22	8.67	-8.07	4.53	2.483e+04	8455.31	1.199e+04	2.130e+04	-6733.97
		182	2.34	7.27	-9.41	6.98	-9.12	-2.18	2.140e+04	9406.41	9524.41	2.128e+04	1183.74
		183	1.81	6.65	-9.17	6.55	-9.06	-1.27	1.529e+04	2645.66	2762.10	1.517e+04	1207.61
166	69	191	2.01	1.12	-0.35	0.13	0.64	0.69	1.691e+04	1495.94	3848.54	1.456e+04	-5544.19
		190	2.71	1.29	-0.67	0.22	0.40	0.98	2.481e+04	8432.89	1.198e+04	2.126e+04	-6746.18

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		182	2.30	0.64	-0.79	-0.14	-5.70e-03	0.71	2.136e+04	9420.15	9533.28	2.125e+04	1156.93
		183	1.75	0.82	-0.96	0.03	-0.18	0.88	1.524e+04	2712.63	2822.84	1.513e+04	1169.83
167	1	192	1.98	1.17	-0.47	-0.14	0.84	0.66	1.541e+04	-1105.40	677.35	1.363e+04	-5125.34
		191	2.62	1.17	-0.32	0.11	0.73	0.68	2.206e+04	2105.59	5259.51	1.891e+04	-7279.77
		183	2.27	0.58	-0.62	0.16	-0.20	0.58	1.974e+04	3364.92	3505.34	1.960e+04	1509.71
		184	1.82	0.77	-0.26	0.45	0.06	0.48	1.465e+04	-121.89	-12.44	1.454e+04	1266.79
167	3	192	1.68	0.99	-0.40	-0.12	0.71	0.56	1.304e+04	-935.34	573.14	1.153e+04	-4336.83
		191	2.21	0.99	-0.27	0.09	0.62	0.57	1.867e+04	1781.65	4450.35	1.600e+04	-6159.80
		183	1.92	0.49	-0.53	0.13	-0.17	0.49	1.670e+04	2847.24	2966.06	1.658e+04	1277.45
		184	1.54	0.65	-0.22	0.38	0.05	0.41	1.240e+04	-103.14	-10.53	1.230e+04	1071.90
167	7	192	1.67	11.39	-25.10	9.48	-23.19	8.13	1.193e+04	-820.38	508.97	1.060e+04	-3895.75
		191	2.17	17.50	-25.58	14.97	-23.05	10.11	1.704e+04	1494.08	3916.70	1.462e+04	-5638.52
		183	1.91	11.58	-28.58	9.24	-26.24	-9.41	1.538e+04	2731.70	2877.83	1.523e+04	1351.66
		184	1.54	10.07	-24.99	9.10	-24.02	-5.74	1.129e+04	-71.52	17.57	1.120e+04	1002.33
167	39	192	1.58	4.27	-8.92	3.39	-8.04	3.29	1.188e+04	-839.30	516.64	1.053e+04	-3925.50
		191	2.07	6.61	-9.15	5.51	-8.05	4.02	1.700e+04	1573.93	3998.72	1.457e+04	-5613.93
		183	1.80	4.16	-10.38	3.44	-9.66	-3.15	1.525e+04	2641.29	2762.55	1.513e+04	1230.71
		184	1.45	3.81	-9.00	3.54	-8.73	-1.86	1.128e+04	-85.64	0.32	1.119e+04	984.61
167	69	192	1.53	0.90	-0.36	-0.11	0.65	0.51	1.186e+04	-850.31	521.04	1.048e+04	-3942.57
		191	2.01	0.90	-0.25	0.09	0.56	0.52	1.697e+04	1619.68	4045.77	1.455e+04	-5599.82
		183	1.74	0.45	-0.48	0.12	-0.15	0.44	1.518e+04	2588.40	2696.41	1.507e+04	1161.32
		184	1.40	0.59	-0.20	0.34	0.05	0.37	1.127e+04	-93.76	-9.57	1.118e+04	974.45
168	1	193	1.54	1.06	-0.23	-0.17	0.99	0.28	1.256e+04	337.18	338.40	1.256e+04	-121.97
		192	1.99	0.91	0.14	0.31	0.74	0.32	1.550e+04	-1066.80	946.52	1.348e+04	-5412.43
		184	1.80	0.07	-0.29	-0.27	0.05	0.09	1.450e+04	39.94	156.92	1.438e+04	1295.28
		185	1.61	0.34	-0.14	0.30	-0.09	0.14	1.311e+04	270.14	271.39	1.311e+04	126.72
168	3	193	1.30	0.89	-0.20	-0.14	0.84	0.24	1.063e+04	285.31	286.34	1.063e+04	-103.21
		192	1.68	0.77	0.11	0.26	0.63	0.27	1.311e+04	-902.67	800.90	1.141e+04	-4579.75
		184	1.52	0.06	-0.25	-0.22	0.04	0.08	1.227e+04	33.79	132.78	1.217e+04	1096.01
		185	1.36	0.29	-0.12	0.25	-0.08	0.12	1.109e+04	228.58	229.64	1.109e+04	107.23
168	7	193	1.30	3.85	-25.05	1.79	-22.99	7.43	9733.25	262.87	263.74	9732.39	-90.33
		192	1.68	8.28	-26.55	5.93	-24.20	8.73	1.197e+04	-811.34	706.41	1.045e+04	-4134.80
		184	1.52	5.35	-28.27	2.33	-25.24	-9.62	1.123e+04	59.62	158.97	1.113e+04	1048.69
		185	1.37	3.92	-27.06	2.54	-25.69	-6.38	1.014e+04	204.23	205.30	1.014e+04	103.27
168	39	193	1.22	1.44	-8.77	0.57	-7.90	2.85	9687.91	260.65	261.56	9687.00	-92.55
		192	1.58	3.27	-9.41	2.31	-8.46	3.34	1.194e+04	-817.18	720.19	1.040e+04	-4152.98
		184	1.43	1.81	-10.27	0.72	-9.18	-3.46	1.118e+04	41.31	134.66	1.109e+04	1015.45
		185	1.29	1.54	-9.88	1.07	-9.41	-2.26	1.010e+04	206.50	207.50	1.010e+04	99.59
168	69	193	1.19	0.81	-0.18	-0.13	0.76	0.22	9661.89	259.37	260.31	9660.96	-93.83
		192	1.53	0.70	0.10	0.24	0.57	0.25	1.192e+04	-820.61	728.10	1.037e+04	-4163.41
		184	1.38	0.06	-0.22	-0.20	0.04	0.07	1.115e+04	30.72	120.71	1.106e+04	996.37
		185	1.24	0.26	-0.11	0.23	-0.07	0.11	1.009e+04	207.80	208.76	1.008e+04	97.48
169	1	194	14.73	1.51	-6.42	1.44	-6.35	0.76	1.366e+05	5.765e+04	1.318e+05	6.241e+04	1.880e+04
		14	61.93	10.21	-5.83	2.63	1.75	8.01	5.455e+05	1.109e+05	4.764e+05	1.800e+05	-
1.589e+05		16	20.68	0.68	-5.91	-0.02	-5.21	2.03	1.858e+05	1.365e+05	1.763e+05	1.459e+05	-
1.944e+04		186	23.77	6.36	-4.30	1.68	0.37	5.29	2.206e+05	9.541e+04	1.953e+05	1.208e+05	-
5.031e+04		194	12.47	1.28	-5.43	1.22	-5.37	0.64	1.156e+05	4.878e+04	1.116e+05	5.281e+04	1.590e+04
169	3	14	52.40	8.64	-4.93	2.22	1.48	6.77	4.615e+05	9.383e+04	4.031e+05	1.523e+05	-
1.345e+05		16	17.50	0.57	-5.00	-0.02	-4.41	1.72	1.572e+05	1.155e+05	1.492e+05	1.235e+05	-
1.645e+04		186	20.12	5.38	-3.64	1.42	0.32	4.48	1.867e+05	8.073e+04	1.652e+05	1.022e+05	-
4.257e+04		194	11.86	126.17	-17.09	85.86	23.22	64.42	1.057e+05	4.467e+04	1.019e+05	4.840e+04	1.461e+04
169	7	14	48.38	116.71	-54.47	100.50	-38.26	-50.12	4.212e+05	8.586e+04	3.681e+05	1.390e+05	-
1.224e+05		16	16.25	175.79	-18.47	126.02	31.30	84.80	1.434e+05	1.056e+05	1.363e+05	1.127e+05	-
1.483e+04		186	18.77	99.21	-61.65	77.33	-39.77	-55.15	1.703e+05	7.381e+04	1.509e+05	9.327e+04	-
3.872e+04		194	11.52	46.01	-8.64	32.00	5.36	23.85	1.053e+05	4.446e+04	1.016e+05	4.815e+04	1.452e+04
169	39	14	47.88	41.69	-16.86	37.92	-13.09	-14.36	4.202e+05	8.551e+04	3.670e+05	1.386e+05	-
1.223e+05		16	16.02	64.30	-9.50	45.93	8.86	31.91	1.431e+05	1.052e+05	1.359e+05	1.124e+05	-
1.491e+04		186	18.45	35.21	-20.51	29.01	-14.32	-17.52	1.699e+05	7.354e+04	1.505e+05	9.303e+04	-
3.871e+04		194	11.33	1.16	-4.94	1.11	-4.88	0.58	1.051e+05	4.435e+04	1.014e+05	4.801e+04	1.446e+04
169	69	14	47.64	7.85	-4.48	2.02	1.35	6.16	4.196e+05	8.530e+04	3.664e+05	1.384e+05	-
1.222e+05													-

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

1.495e+04	16	15.91	0.52	-4.55	-0.02	-4.01	1.56	1.429e+05	1.050e+05	1.356e+05	1.123e+05	-	
3.870e+04	186	18.29	4.89	-3.31	1.29	0.29	4.07	1.697e+05	7.339e+04	1.502e+05	9.289e+04	-	
2.522e+04	170 1	195	13.09	6.76	-1.07	1.78	3.91	3.77	1.218e+05	5.779e+04	1.095e+05	7.009e+04	-
3.937e+04	194	22.89	4.96	-10.52	-1.91	-3.65	7.69	2.125e+05	9.426e+04	1.975e+05	1.093e+05	-	
2.245e+04	186	18.02	9.36	-3.70	4.22	1.45	6.38	1.673e+05	9.583e+04	1.593e+05	1.038e+05	-	
1.948e+04	187	12.32	3.35	-5.57	1.10	-3.32	3.87	1.133e+05	7.198e+04	9.951e+04	8.576e+04	-	
2.134e+04	170 3	195	11.07	5.72	-0.90	1.51	3.31	3.19	1.031e+05	4.890e+04	9.265e+04	5.931e+04	-
3.331e+04	194	19.37	4.20	-8.90	-1.62	-3.09	6.51	1.798e+05	7.976e+04	1.671e+05	9.246e+04	-	
1.899e+04	186	15.25	7.92	-3.13	3.57	1.23	5.40	1.415e+05	8.109e+04	1.348e+05	8.780e+04	-	
1.649e+04	187	10.43	2.83	-4.71	0.93	-2.81	3.27	9.587e+04	6.090e+04	8.420e+04	7.257e+04	-	
1.957e+04	170 23	195	10.24	51.26	-21.32	51.05	-21.11	3.88	9.406e+04	4.452e+04	8.448e+04	5.410e+04	-
3.053e+04	194	17.99	81.29	-15.86	60.32	5.11	-39.97	1.641e+05	7.268e+04	1.524e+05	8.437e+04	-	
1.744e+04	186	14.16	67.39	16.76	66.97	17.18	-4.58	1.292e+05	7.398e+04	1.230e+05	8.019e+04	-	
1.513e+04	187	9.71	69.43	-38.61	57.83	-27.02	-33.44	8.754e+04	5.550e+04	7.677e+04	6.627e+04	-	
1.946e+04	170 55	195	10.13	19.89	-6.20	19.48	-5.79	3.25	9.382e+04	4.448e+04	8.432e+04	5.398e+04	-
3.037e+04	194	17.72	25.63	-4.49	21.06	0.08	-10.81	1.637e+05	7.257e+04	1.521e+05	8.417e+04	-	
1.733e+04	186	13.97	26.58	6.86	26.48	6.97	1.45	1.289e+05	7.381e+04	1.227e+05	7.995e+04	-	
1.504e+04	187	9.55	24.57	-14.42	21.62	-11.47	-10.30	8.729e+04	5.542e+04	7.663e+04	6.608e+04	-	
1.940e+04	170 69	195	10.07	5.20	-0.82	1.37	3.01	2.90	9.369e+04	4.445e+04	8.422e+04	5.392e+04	-
3.028e+04	194	17.61	3.82	-8.09	-1.47	-2.81	5.92	1.635e+05	7.251e+04	1.519e+05	8.405e+04	-	
1.727e+04	186	13.86	7.20	-2.84	3.24	1.11	4.91	1.287e+05	7.372e+04	1.226e+05	7.982e+04	-	
1.499e+04	187	9.48	2.58	-4.28	0.85	-2.55	2.98	8.715e+04	5.537e+04	7.655e+04	6.597e+04	-	
2.434e+04	171 1	196	9.19	3.86	-2.23	0.83	0.80	3.04	8.505e+04	3.493e+04	6.595e+04	5.403e+04	-
2.882e+04	195	13.91	4.64	-3.94	0.89	-0.19	4.26	1.294e+05	6.046e+04	1.138e+05	7.602e+04	-	
1.703e+04	187	11.88	4.07	-3.12	1.70	-0.75	3.38	1.089e+05	7.100e+04	9.827e+04	8.164e+04	-	
1.220e+04	188	7.77	2.97	-2.72	1.30	-1.05	2.59	7.125e+04	4.641e+04	5.649e+04	6.117e+04	-	
2.060e+04	171 3	196	7.78	3.26	-1.88	0.70	0.68	2.57	7.197e+04	2.955e+04	5.580e+04	4.572e+04	-
2.439e+04	195	11.77	3.93	-3.34	0.75	-0.16	3.60	1.095e+05	5.116e+04	9.633e+04	6.432e+04	-	
1.441e+04	187	10.05	3.45	-2.64	1.44	-0.63	2.86	9.215e+04	6.008e+04	8.315e+04	6.908e+04	-	
1.032e+04	188	6.58	2.51	-2.30	1.10	-0.88	2.19	6.029e+04	3.927e+04	4.780e+04	5.176e+04	-	
1.888e+04	171 23	196	7.19	39.78	-20.80	39.21	-20.23	-5.81	6.571e+04	2.687e+04	5.087e+04	4.171e+04	-
2.235e+04	195	10.91	50.97	-17.67	49.85	-16.55	-8.71	9.995e+04	4.658e+04	8.784e+04	5.869e+04	-	
1.323e+04	187	9.33	54.86	-19.31	48.38	-12.83	-20.94	8.413e+04	5.476e+04	7.581e+04	6.308e+04	-	
1.878e+04	188	6.10	47.53	-21.11	40.70	-14.27	-20.56	5.508e+04	3.574e+04	4.355e+04	4.727e+04	-9489.05	
2.224e+04	171 55	196	7.10	14.72	-7.00	14.70	-6.98	-0.63	6.553e+04	2.687e+04	5.078e+04	4.162e+04	-
1.315e+04	195	10.77	18.65	-6.17	18.61	-6.12	-1.09	9.969e+04	4.653e+04	8.767e+04	5.855e+04	-	
	187	9.20	19.90	-6.48	18.47	-5.04	-5.98	8.390e+04	5.467e+04	7.567e+04	6.290e+04	-	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		188	6.02	17.17	-7.41	15.47	-5.71	-6.23	5.491e+04	3.571e+04	4.349e+04	4.714e+04	-9422.67
171	69	196	7.07	2.97	-1.71	0.64	0.62	2.34	6.542e+04	2.687e+04	5.073e+04	4.156e+04	-
1.873e+04													
2.217e+04		195	10.70	3.57	-3.03	0.68	-0.15	3.27	9.954e+04	4.651e+04	8.757e+04	5.848e+04	-
1.310e+04		187	9.13	3.13	-2.40	1.31	-0.57	2.60	8.377e+04	5.462e+04	7.559e+04	6.280e+04	-
		188	5.98	2.28	-2.09	1.00	-0.80	1.99	5.481e+04	3.570e+04	4.345e+04	4.706e+04	-9384.59
172	1	197	6.42	2.79	-1.72	0.53	0.54	2.26	5.794e+04	1.663e+04	3.632e+04	3.825e+04	-
2.063e+04													
2.454e+04		196	9.28	3.37	-2.42	0.76	0.19	2.88	8.593e+04	3.538e+04	6.671e+04	5.459e+04	-
1.205e+04		188	7.75	2.61	-2.26	1.11	-0.76	2.25	7.096e+04	4.653e+04	5.675e+04	6.074e+04	-
		189	5.15	2.17	-1.78	0.99	-0.61	1.81	4.786e+04	2.546e+04	2.944e+04	4.387e+04	-8567.76
172	3	197	5.43	2.36	-1.46	0.45	0.46	1.91	4.903e+04	1.407e+04	3.074e+04	3.236e+04	-
1.746e+04													
2.076e+04		196	7.86	2.85	-2.04	0.65	0.16	2.44	7.271e+04	2.993e+04	5.645e+04	4.619e+04	-
1.020e+04		188	6.55	2.21	-1.92	0.94	-0.65	1.90	6.004e+04	3.937e+04	4.802e+04	5.140e+04	-
		189	4.36	1.83	-1.51	0.84	-0.51	1.53	4.050e+04	2.154e+04	2.491e+04	3.712e+04	-7249.64
172	23	197	4.99	29.76	-19.70	29.46	-19.39	-3.88	4.478e+04	1.276e+04	2.801e+04	2.953e+04	-
1.599e+04													
1.903e+04		196	7.24	35.07	-18.42	34.88	-18.23	-3.19	6.639e+04	2.721e+04	5.146e+04	4.214e+04	-
		188	6.07	41.86	-19.76	36.66	-14.56	-17.14	5.486e+04	3.584e+04	4.376e+04	4.694e+04	-9374.54
		189	4.00	35.25	-19.83	29.96	-14.54	-16.23	3.700e+04	1.957e+04	2.268e+04	3.390e+04	-6667.56
172	55	197	4.94	11.00	-6.81	11.00	-6.80	-0.31	4.465e+04	1.278e+04	2.797e+04	2.946e+04	-
1.592e+04													
1.893e+04		196	7.17	13.09	-6.56	13.09	-6.55	0.24	6.621e+04	2.721e+04	5.137e+04	4.205e+04	-
		188	5.99	15.18	-6.95	13.91	-5.68	-5.15	5.468e+04	3.581e+04	4.369e+04	4.680e+04	-9308.61
		189	3.97	12.78	-6.98	11.41	-5.60	-5.03	3.688e+04	1.958e+04	2.266e+04	3.380e+04	-6618.65
172	69	197	4.94	2.15	-1.32	0.41	0.42	1.74	4.457e+04	1.279e+04	2.794e+04	2.942e+04	-
1.587e+04													
1.888e+04		196	7.14	2.59	-1.86	0.59	0.15	2.21	6.610e+04	2.721e+04	5.132e+04	4.199e+04	-
		188	5.96	2.01	-1.74	0.85	-0.59	1.73	5.459e+04	3.579e+04	4.365e+04	4.672e+04	-9270.79
		189	3.96	1.67	-1.37	0.76	-0.47	1.39	3.682e+04	1.958e+04	2.265e+04	3.375e+04	-6590.59
173	1	198	4.64	2.07	-1.17	0.31	0.59	1.61	3.923e+04	4085.15	1.727e+04	2.604e+04	-
1.701e+04													
2.065e+04		197	6.43	2.42	-1.56	0.56	0.30	1.99	5.814e+04	1.680e+04	3.662e+04	3.832e+04	-
		189	5.15	1.67	-1.56	0.67	-0.56	1.49	4.787e+04	2.559e+04	2.961e+04	4.385e+04	-8569.87
		190	3.60	1.54	-1.22	0.75	-0.42	1.25	3.276e+04	1.045e+04	1.231e+04	3.091e+04	-6155.41
173	3	198	3.93	1.75	-0.99	0.26	0.50	1.36	3.319e+04	3456.67	1.461e+04	2.204e+04	-
1.440e+04													
1.747e+04		197	5.44	2.05	-1.32	0.48	0.26	1.68	4.919e+04	1.422e+04	3.098e+04	3.243e+04	-
		189	4.36	1.41	-1.32	0.57	-0.48	1.26	4.050e+04	2.165e+04	2.506e+04	3.710e+04	-7251.43
		190	3.05	1.31	-1.03	0.63	-0.36	1.06	2.772e+04	8845.50	1.041e+04	2.615e+04	-5208.43
173	7	198	3.67	32.51	-25.15	30.91	-23.55	9.47	3.026e+04	3210.64	1.331e+04	2.016e+04	-
1.308e+04													
1.587e+04		197	5.00	39.32	-26.67	37.50	-24.84	10.81	4.485e+04	1.307e+04	2.825e+04	2.966e+04	-
		189	4.00	35.88	-26.94	34.54	-25.60	-9.06	3.692e+04	1.982e+04	2.286e+04	3.388e+04	-6538.89
		190	2.87	29.39	-25.63	28.39	-24.64	-7.34	2.528e+04	8099.81	9491.52	2.388e+04	-4686.87
173	39	198	3.60	12.29	-9.17	11.42	-8.30	4.24	3.021e+04	3167.32	1.329e+04	2.008e+04	-
1.309e+04													
1.588e+04		197	4.97	14.96	-9.92	13.94	-8.91	4.91	4.477e+04	1.298e+04	2.820e+04	2.954e+04	-
		189	3.97	13.21	-9.90	12.92	-9.61	-2.57	3.686e+04	1.973e+04	2.281e+04	3.378e+04	-6572.77
		190	2.80	10.93	-9.40	10.72	-9.19	-2.06	2.523e+04	8062.72	9475.40	2.382e+04	-4717.41
173	69	198	3.57	1.59	-0.90	0.24	0.45	1.24	3.017e+04	3142.43	1.328e+04	2.003e+04	-
1.309e+04													
1.588e+04		197	4.95	1.86	-1.20	0.43	0.23	1.53	4.472e+04	1.293e+04	2.817e+04	2.948e+04	-
		189	3.96	1.28	-1.20	0.52	-0.43	1.15	3.682e+04	1.969e+04	2.278e+04	3.373e+04	-6592.21
		190	2.77	1.19	-0.94	0.58	-0.33	0.96	2.520e+04	8041.36	9466.15	2.378e+04	-4734.93
174	1	199	3.48	1.48	-0.70	0.16	0.62	1.06	2.643e+04	-2927.18	6166.84	1.734e+04	-
1.358e+04													
		198	4.65	1.74	-0.90	0.41	0.42	1.32	3.935e+04	4151.08	1.743e+04	2.606e+04	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.706e+04		190	3.60	0.93	-0.98	0.34	-0.39	0.88 3.277e+04	1.053e+04	1.239e+04	3.091e+04	-6167.69
		191	2.70	1.05	-0.79	0.53	-0.28	0.83 2.252e+04	1637.38	2639.34	2.152e+04	-4462.81
	174	3 199	2.94	1.25	-0.59	0.13	0.53	0.90 2.237e+04	-2476.84	5218.09	1.467e+04	-
1.149e+04		198	3.93	1.47	-0.76	0.35	0.36	1.12 3.329e+04	3512.45	1.475e+04	2.205e+04	-
1.444e+04		190	3.04	0.79	-0.83	0.29	-0.33	0.75 2.773e+04	8908.36	1.049e+04	2.615e+04	-5218.82
		191	2.28	0.89	-0.67	0.45	-0.23	0.70 1.905e+04	1385.48	2233.29	1.821e+04	-3776.23
	174	7 199	2.80	21.84	-25.49	20.23	-23.89	8.56 2.040e+04	-2222.27	4748.34	1.343e+04	-
1.044e+04		198	3.68	27.02	-26.76	25.11	-24.85	9.94 3.035e+04	3264.55	1.343e+04	2.018e+04	-
1.311e+04		190	2.86	24.78	-27.39	23.03	-25.64	-9.39 2.529e+04	8156.46	9561.85	2.389e+04	-4701.62
		191	2.20	20.00	-26.24	18.75	-24.99	-7.49 1.738e+04	1271.74	2016.16	1.663e+04	-3381.46
	174	39 199	2.72	8.25	-9.20	7.45	-8.40	3.64 2.036e+04	-2240.94	4745.40	1.337e+04	-
1.044e+04		198	3.61	10.31	-9.80	9.36	-8.85	4.27 3.030e+04	3219.20	1.342e+04	2.010e+04	-
1.312e+04		190	2.80	9.05	-10.02	8.56	-9.54	-2.99 2.524e+04	8119.68	9544.44	2.381e+04	-4728.79
		191	2.12	7.42	-9.57	7.10	-9.24	-2.32 1.734e+04	1264.04	2025.12	1.658e+04	-3414.17
	174	69 199	2.68	1.14	-0.54	0.12	0.48	0.82 2.033e+04	-2251.67	4743.72	1.334e+04	-
1.044e+04		198	3.58	1.34	-0.69	0.32	0.33	1.02 3.027e+04	3193.14	1.341e+04	2.005e+04	-
1.312e+04		190	2.77	0.72	-0.76	0.26	-0.30	0.68 2.521e+04	8098.51	9534.46	2.377e+04	-4744.38
		191	2.08	0.81	-0.61	0.41	-0.21	0.64 1.732e+04	1259.53	2030.26	1.655e+04	-3432.93
	175	1 200	2.49	1.07	-0.45	-0.03	0.65	0.68 1.758e+04	-4223.81	1260.17	1.210e+04	-9460.48
		199	3.50	1.21	-0.29	0.40	0.53	0.75 2.660e+04	-2975.09	6307.69	1.731e+04	-
1.372e+04		191	2.70	0.33	-0.59	0.03	-0.28	0.43 2.251e+04	1675.18	2700.21	2.149e+04	-4506.69
		192	2.07	0.64	-0.34	0.44	-0.14	0.40 1.588e+04	-1490.97	-990.50	1.538e+04	-2905.66
	175	3 200	2.10	0.91	-0.38	-0.02	0.55	0.58 1.488e+04	-3573.99	1066.30	1.024e+04	-8005.02
		199	2.96	1.03	-0.24	0.34	0.44	0.63 2.250e+04	-2517.39	5337.27	1.465e+04	-
1.161e+04		191	2.28	0.28	-0.50	0.02	-0.24	0.37 1.905e+04	1417.46	2284.79	1.818e+04	-3813.36
		192	1.75	0.54	-0.29	0.37	-0.12	0.34 1.344e+04	-1261.59	-838.12	1.301e+04	-2458.64
	175	7 200	2.04	12.49	-26.17	10.85	-24.53	7.79 1.357e+04	-3227.66	968.03	9371.55	-7270.65
		199	2.82	16.88	-27.29	14.77	-25.18	9.43 2.052e+04	-2270.50	4838.04	1.341e+04	-
1.056e+04		191	2.18	15.26	-28.35	12.85	-25.94	-9.97 1.738e+04	1339.59	2103.78	1.661e+04	-3416.25
		192	1.72	11.67	-27.06	10.12	-25.51	-7.59 1.227e+04	-1148.71	-774.29	1.189e+04	-2209.64
	175	39 200	1.96	4.70	-9.38	3.94	-8.63	3.17 1.354e+04	-3241.26	968.88	9329.29	-7274.87
		199	2.74	6.52	-9.86	5.58	-8.92	3.80 2.048e+04	-2281.94	4846.96	1.335e+04	-
1.056e+04		191	2.11	5.48	-10.37	4.70	-9.59	-3.42 1.734e+04	1307.24	2086.82	1.656e+04	-3448.30
		192	1.64	4.38	-9.85	3.90	-9.37	-2.57 1.223e+04	-1147.54	-766.43	1.185e+04	-2225.84
	175	69 200	1.91	0.82	-0.35	-0.02	0.50	0.52 1.352e+04	-3249.09	969.36	9305.04	-7277.29
		199	2.69	0.93	-0.22	0.31	0.40	0.58 2.046e+04	-2288.53	4852.07	1.332e+04	-
1.056e+04		191	2.07	0.26	-0.45	0.02	-0.21	0.33 1.732e+04	1288.60	2077.08	1.653e+04	-3466.69
		192	1.59	0.49	-0.26	0.34	-0.11	0.31 1.221e+04	-1146.90	-761.92	1.183e+04	-2235.13
	176	1 201	1.39	0.89	-0.24	-0.12	0.78	0.34 1.133e+04	318.76	333.07	1.132e+04	-396.78
		200	2.57	0.79	0.13	0.36	0.56	0.32 1.809e+04	-4539.38	1559.46	1.199e+04	-
1.004e+04		192	2.04	-0.09	-0.27	-0.26	-0.10	0.04 1.575e+04	-1385.64	-819.84	1.519e+04	-3062.06
		193	1.57	0.30	-0.12	0.29	-0.11	0.07 1.281e+04	235.88	240.68	1.280e+04	-245.55
	176	3 201	1.18	0.76	-0.20	-0.10	0.66	0.29 9590.95	269.72	281.83	9578.84	-335.74
		200	2.18	0.67	0.11	0.30	0.47	0.27 1.531e+04	-3841.01	1319.54	1.015e+04	-8496.27
		192	1.73	-0.08	-0.23	-0.22	-0.09	0.03 1.333e+04	-1172.47	-693.71	1.285e+04	-2590.97
		193	1.33	0.26	-0.11	0.25	-0.09	0.06 1.084e+04	199.59	203.65	1.083e+04	-207.77
	176	7 201	1.20	4.33	-26.89	2.60	-25.16	7.15 8777.79	247.17	258.00	8766.97	-303.71
		200	2.11	7.92	-28.41	5.46	-25.94	9.14 1.396e+04	-3478.27	1194.47	9287.64	-7723.46
		192	1.68	7.44	-29.49	4.15	-26.20	-10.52 1.217e+04	-1050.57	-630.23	1.175e+04	-2319.43
		193	1.34	4.08	-28.75	2.14	-26.81	-7.73 9914.80	184.04	187.50	9911.34	-183.30
	176	39 201	1.11	1.63	-9.53	0.89	-8.79	2.77 8740.46	245.92	256.86	8729.52	-304.67
		200	2.03	3.15	-10.17	2.16	-9.18	3.49 1.393e+04	-3486.88	1197.72	9247.63	-7723.73
		192	1.61	2.58	-10.80	1.39	-9.60	-3.82 1.214e+04	-1060.26	-630.49	1.171e+04	-2342.31
		193	1.26	1.60	-10.51	0.92	-9.83	-2.78 9873.99	182.40	186.00	9870.39	-186.85
	176	69 201	1.07	0.69	-0.18	-0.10	0.60	0.26 8719.04	245.20	256.21	8708.04	-305.22
		200	1.98	0.61	0.10	0.28	0.43	0.24 1.392e+04	-3491.83	1199.58	9224.67	-7723.89
		192	1.57	-0.07	-0.21	-0.20	-0.08	0.03 1.212e+04	-1065.88	-630.64	1.168e+04	-2355.43
		193	1.21	0.23	-0.10	0.22	-0.09	0.06 9850.58	181.45	185.14	9846.89	-188.88



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

177	1	202	23.73	8.88	-6.50	-0.24	2.63	7.55	2.173e+05	7.459e+04	1.996e+05	9.229e+04	-
4.704e+04		12	23.93	8.61	-2.92	8.07	-2.38	2.43	2.080e+05	3.494e+04	1.658e+05	7.719e+04	-
7.434e+04		14	48.64	9.54	-8.40	1.29	-0.15	8.94	4.158e+05	5.208e+04	4.157e+05	5.216e+04	-5181.57
		194	24.36	4.81	0.91	4.56	1.16	-0.95	2.236e+05	7.907e+04	1.385e+05	1.642e+05	-
7.113e+04		202	20.08	7.51	-5.50	-0.21	2.22	6.39	1.839e+05	6.311e+04	1.689e+05	7.809e+04	-
177	3	202	20.08	7.51	-5.50	-0.21	2.22	6.39	1.839e+05	6.311e+04	1.689e+05	7.809e+04	-
3.980e+04		12	20.25	7.28	-2.47	6.83	-2.01	2.05	1.760e+05	2.957e+04	1.403e+05	6.532e+04	-
6.291e+04		14	41.16	8.07	-7.10	1.09	-0.12	7.56	3.518e+05	4.407e+04	3.518e+05	4.413e+04	-4384.40
		194	20.62	4.07	0.77	3.86	0.98	-0.80	1.892e+05	6.690e+04	1.172e+05	1.390e+05	-
6.018e+04		202	18.37	71.00	10.49	45.96	35.54	29.80	1.679e+05	5.800e+04	1.544e+05	7.153e+04	-
177	7	202	18.37	71.00	10.49	45.96	35.54	29.80	1.679e+05	5.800e+04	1.544e+05	7.153e+04	-
3.610e+04		12	18.79	67.71	-74.13	64.38	-70.80	-21.49	1.607e+05	2.722e+04	1.281e+05	5.978e+04	-
5.732e+04		14	38.20	135.72	-47.94	123.75	-35.97	45.33	3.215e+05	4.072e+04	3.215e+05	4.076e+04	-3580.01
		194	19.01	92.42	-13.82	87.27	-8.68	-22.81	1.726e+05	6.112e+04	1.071e+05	1.267e+05	-
5.488e+04		202	18.27	30.04	0.83	16.64	14.24	14.56	1.674e+05	5.760e+04	1.538e+05	7.119e+04	-
177	39	202	18.27	30.04	0.83	16.64	14.24	14.56	1.674e+05	5.760e+04	1.538e+05	7.119e+04	-
3.616e+04		12	18.54	28.22	-27.77	27.42	-26.97	-6.65	1.603e+05	2.700e+04	1.277e+05	5.953e+04	-
5.724e+04		14	37.70	52.40	-19.84	45.74	-13.18	20.90	3.204e+05	4.030e+04	3.204e+05	4.035e+04	-3837.88
		194	18.84	36.04	-4.59	34.05	-2.60	-8.78	1.722e+05	6.093e+04	1.067e+05	1.265e+05	-
5.477e+04		202	18.26	6.83	-5.00	-0.19	2.02	5.81	1.671e+05	5.737e+04	1.535e+05	7.099e+04	-
177	69	202	18.26	6.83	-5.00	-0.19	2.02	5.81	1.671e+05	5.737e+04	1.535e+05	7.099e+04	-
3.619e+04		12	18.41	6.62	-2.24	6.21	-1.83	1.87	1.600e+05	2.688e+04	1.275e+05	5.938e+04	-
5.719e+04		14	37.42	7.34	-6.46	0.99	-0.11	6.88	3.198e+05	4.006e+04	3.198e+05	4.012e+04	-3985.82
		194	18.74	3.70	0.70	3.51	0.89	-0.73	1.720e+05	6.082e+04	1.065e+05	1.263e+05	-
5.471e+04		203	15.06	8.06	-4.45	1.98	1.63	6.25	1.353e+05	3.632e+04	1.092e+05	6.243e+04	-
178	1	203	15.06	8.06	-4.45	1.98	1.63	6.25	1.353e+05	3.632e+04	1.092e+05	6.243e+04	-
4.362e+04		202	22.02	4.35	-1.94	1.46	0.95	3.14	2.007e+05	6.403e+04	1.768e+05	8.797e+04	-
5.195e+04		194	21.46	12.86	-3.49	2.96	6.42	7.99	1.991e+05	8.508e+04	1.785e+05	1.057e+05	-
4.385e+04		195	14.08	3.52	-5.73	2.70	-4.91	2.64	1.309e+05	6.109e+04	9.980e+04	9.221e+04	-
3.471e+04		203	12.74	6.82	-3.76	1.68	1.38	5.29	1.145e+05	3.073e+04	9.239e+04	5.282e+04	-
178	3	203	12.74	6.82	-3.76	1.68	1.38	5.29	1.145e+05	3.073e+04	9.239e+04	5.282e+04	-
3.691e+04		202	18.63	3.68	-1.64	1.24	0.80	2.65	1.698e+05	5.418e+04	1.496e+05	7.444e+04	-
4.396e+04		194	18.16	10.88	-2.95	2.50	5.43	6.76	1.684e+05	7.199e+04	1.510e+05	8.941e+04	-
3.711e+04		195	11.91	2.98	-4.85	2.28	-4.15	2.23	1.108e+05	5.169e+04	8.445e+04	7.802e+04	-
2.937e+04		203	11.64	74.35	-61.24	66.85	-53.74	31.00	1.045e+05	2.828e+04	8.440e+04	4.836e+04	-
178	7	203	11.64	74.35	-61.24	66.85	-53.74	31.00	1.045e+05	2.828e+04	8.440e+04	4.836e+04	-
3.357e+04		202	17.65	149.89	-3.28	132.93	13.68	-48.06	1.551e+05	4.971e+04	1.367e+05	6.809e+04	-
3.998e+04		194	16.73	56.52	-19.36	56.34	-19.17	3.73	1.538e+05	6.592e+04	1.380e+05	8.170e+04	-
3.372e+04		195	11.14	92.42	-14.07	86.32	-7.96	-24.75	1.011e+05	4.735e+04	7.715e+04	7.125e+04	-
2.669e+04		203	11.58	29.60	-23.06	25.34	-18.80	14.36	1.042e+05	2.806e+04	8.414e+04	4.814e+04	-
178	39	203	11.58	29.60	-23.06	25.34	-18.80	14.36	1.042e+05	2.806e+04	8.414e+04	4.814e+04	-
3.356e+04		202	17.19	54.40	0.23	49.17	5.45	-15.99	1.546e+05	4.942e+04	1.362e+05	6.782e+04	-
3.997e+04		194	16.58	23.02	-4.89	21.98	-3.85	5.27	1.534e+05	6.562e+04	1.376e+05	8.144e+04	-
3.373e+04		195	10.93	34.30	-6.81	32.78	-5.30	-7.73	1.008e+05	4.712e+04	7.691e+04	7.105e+04	-
2.669e+04		203	11.58	6.20	-3.42	1.52	1.25	4.81	1.041e+05	2.794e+04	8.399e+04	4.802e+04	-
178	69	203	11.58	6.20	-3.42	1.52	1.25	4.81	1.041e+05	2.794e+04	8.399e+04	4.802e+04	-
3.355e+04		202	16.94	3.35	-1.49	1.12	0.73	2.41	1.544e+05	4.926e+04	1.360e+05	6.767e+04	-
3.996e+04		194	16.51	9.89	-2.68	2.27	4.94	6.14	1.531e+05	6.544e+04	1.373e+05	8.128e+04	-
3.373e+04													-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.670e+04	195	10.83	2.71	-4.41	2.07	-3.78	2.03	1.007e+05	4.699e+04	7.677e+04	7.093e+04	-	
179	1	204	10.83	4.28	-2.67	1.06	0.56	3.47	9.463e+04	1.737e+04	6.551e+04	4.650e+04	-
3.744e+04		203	15.25	4.97	-3.70	1.39	-0.12	4.27	1.375e+05	3.822e+04	1.104e+05	6.535e+04	-
4.423e+04		195	13.83	5.01	-3.03	2.49	-0.51	3.73	1.286e+05	5.915e+04	1.016e+05	8.612e+04	-
3.384e+04		196	9.38	3.26	-2.82	1.91	-1.46	2.53	8.665e+04	3.463e+04	5.661e+04	6.468e+04	-
2.569e+04		204	9.17	3.62	-2.26	0.89	0.47	2.93	8.007e+04	1.470e+04	5.543e+04	3.934e+04	-
179	3	203	12.91	4.20	-3.13	1.18	-0.10	3.61	1.163e+05	3.234e+04	9.337e+04	5.530e+04	-
3.168e+04		195	11.70	4.24	-2.57	2.11	-0.43	3.16	1.088e+05	5.005e+04	8.596e+04	7.287e+04	-
3.743e+04		196	7.93	2.76	-2.38	1.62	-1.24	2.14	7.332e+04	2.931e+04	4.790e+04	5.473e+04	-
2.863e+04		204	8.47	31.28	-19.34	29.61	-17.66	-9.06	7.308e+04	1.330e+04	5.051e+04	3.587e+04	-
2.174e+04	179	203	11.93	38.65	-12.92	35.06	-9.32	-13.13	1.062e+05	2.938e+04	8.511e+04	5.042e+04	-
2.898e+04	23	195	10.84	48.69	-17.54	42.40	-11.26	-19.41	9.930e+04	4.556e+04	7.834e+04	6.652e+04	-
3.424e+04		196	7.37	44.06	-16.24	35.24	-7.42	-21.30	6.695e+04	2.664e+04	4.363e+04	4.996e+04	-
2.621e+04		204	8.36	11.46	-6.31	11.31	-6.17	-1.61	7.290e+04	1.334e+04	5.043e+04	3.581e+04	-
1.990e+04	179	203	11.79	13.88	-3.88	13.46	-3.46	-2.70	1.059e+05	2.939e+04	8.497e+04	5.033e+04	-
2.887e+04	55	195	10.70	17.91	-5.59	16.67	-4.35	-5.25	9.904e+04	4.552e+04	7.822e+04	6.634e+04	-
3.411e+04		196	7.26	15.98	-5.62	13.78	-3.42	-6.53	6.676e+04	2.664e+04	4.357e+04	4.983e+04	-
2.609e+04		204	8.33	3.30	-2.05	0.81	0.43	2.67	7.279e+04	1.336e+04	5.039e+04	3.577e+04	-
1.981e+04	179	203	11.73	3.82	-2.84	1.07	-0.09	3.28	1.058e+05	2.940e+04	8.489e+04	5.027e+04	-
2.880e+04	69	195	10.64	3.85	-2.33	1.91	-0.39	2.87	9.890e+04	4.550e+04	7.815e+04	6.624e+04	-
3.403e+04		196	7.21	2.51	-2.17	1.47	-1.13	1.94	6.665e+04	2.664e+04	4.354e+04	4.975e+04	-
2.603e+04		205	7.95	2.97	-1.92	0.66	0.38	2.44	6.579e+04	3643.96	3.683e+04	3.260e+04	-
1.976e+04	180	204	10.87	3.65	-2.66	0.96	0.04	3.12	9.514e+04	1.787e+04	6.604e+04	4.697e+04	-
3.100e+04	1	196	9.35	3.04	-2.34	1.66	-0.96	2.35	8.644e+04	3.472e+04	5.710e+04	6.406e+04	-
3.744e+04		197	6.52	2.40	-1.87	1.36	-0.83	1.83	5.866e+04	1.604e+04	2.870e+04	4.601e+04	-
2.563e+04		205	6.73	2.51	-1.63	0.56	0.32	2.07	5.566e+04	3083.35	3.117e+04	2.758e+04	-
1.947e+04	180	204	9.20	3.09	-2.25	0.81	0.03	2.64	8.050e+04	1.512e+04	5.588e+04	3.975e+04	-
2.623e+04	3	196	7.91	2.58	-1.98	1.40	-0.81	1.99	7.314e+04	2.938e+04	4.832e+04	5.420e+04	-
3.168e+04		197	5.52	2.03	-1.58	1.15	-0.70	1.55	4.964e+04	1.358e+04	2.429e+04	3.893e+04	-
2.168e+04		205	6.20	23.59	-16.62	22.49	-15.52	-6.56	5.082e+04	2733.49	2.840e+04	2.515e+04	-
1.648e+04	180	204	8.47	26.64	-14.56	25.79	-13.71	-5.85	7.348e+04	1.369e+04	5.093e+04	3.624e+04	-
2.399e+04	23	196	7.32	37.71	-16.01	32.02	-10.33	-16.52	6.679e+04	2.671e+04	4.402e+04	4.948e+04	-
2.898e+04		197	5.11	32.24	-16.30	25.73	-9.79	-16.53	4.534e+04	1.231e+04	2.210e+04	3.554e+04	-
1.985e+04		205	6.13	8.63	-5.57	8.52	-5.47	-1.20	5.068e+04	2777.69	2.836e+04	2.510e+04	-
1.509e+04	180	204	8.39	9.89	-5.00	9.87	-4.98	-0.61	7.329e+04	1.373e+04	5.085e+04	3.617e+04	-
2.390e+04	55	196	7.23	13.80	-5.55	12.48	-4.23	-4.87	6.660e+04	2.671e+04	4.396e+04	4.935e+04	-
2.886e+04		197	5.04	11.72	-5.65	10.04	-3.98	-5.13	4.520e+04	1.233e+04	2.209e+04	3.544e+04	-
1.976e+04													-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.938e+04	206	4.63	10.10	-9.92	9.23	-9.05	4.09 3.493e+04	-3914.01	1.421e+04	1.680e+04	-
1.139e+04	198	3.66	10.03	-10.00	9.50	-9.47	-3.22 3.065e+04	2805.94	8718.76	2.474e+04	-
	199	2.77	8.05	-9.63	7.58	-9.16	-2.84 2.071e+04	-2643.86	1118.53	1.694e+04	-8584.82
182 69	207	3.47	1.23	-0.65	4.68e-03	0.58	0.89 2.365e+04	-7237.75	5629.50	1.079e+04	-
1.523e+04	206	4.60	1.35	-0.83	0.26	0.26	1.09 3.489e+04	-3936.02	1.420e+04	1.675e+04	-
1.937e+04	198	3.64	0.84	-0.80	0.42	-0.38	0.72 3.062e+04	2783.23	8708.55	2.469e+04	-
1.139e+04	199	2.75	0.81	-0.57	0.54	-0.30	0.55 2.069e+04	-2658.15	1115.03	1.691e+04	-8593.33
183 1	208	3.15	0.86	-0.70	-0.23	0.39	0.71 2.010e+04	-8395.33	2150.75	9550.32	-
1.376e+04	207	4.55	1.22	0.05	0.60	0.67	0.58 3.093e+04	-9544.87	7381.27	1.400e+04	-
1.996e+04	199	3.58	0.27	-0.74	-0.08	-0.38	0.48 2.697e+04	-3430.53	1568.98	2.197e+04	-
1.127e+04	200	2.59	0.69	-0.27	0.61	-0.19	0.25 1.806e+04	-4836.39	-1980.84	1.520e+04	-7564.56
183 3	208	2.66	0.72	-0.59	-0.19	0.33	0.60 1.700e+04	-7103.74	1819.86	8081.04	-
1.164e+04	207	3.85	1.03	0.04	0.50	0.56	0.49 2.617e+04	-8076.43	6245.69	1.185e+04	-
1.689e+04	199	3.03	0.23	-0.62	-0.07	-0.33	0.41 2.282e+04	-2902.75	1327.60	1.859e+04	-9534.94
	200	2.20	0.58	-0.23	0.52	-0.16	0.21 1.528e+04	-4092.33	-1676.10	1.286e+04	-6400.78
183 7	208	2.52	12.71	-26.36	11.35	-25.00	7.17 1.551e+04	-6454.46	1639.00	7413.66	-
1.059e+04	207	3.61	16.39	-27.52	14.39	-25.51	9.16 2.388e+04	-7320.71	5701.18	1.086e+04	-
1.539e+04	199	2.81	16.95	-28.01	14.54	-25.60	-10.13 2.080e+04	-2616.33	1197.68	1.698e+04	-8646.34
	200	2.07	12.53	-27.01	10.62	-25.10	-8.48 1.394e+04	-3706.04	-1522.94	1.176e+04	-5810.47
183 39	208	2.46	4.67	-9.57	4.02	-8.92	2.96 1.548e+04	-6456.66	1648.80	7370.92	-
1.059e+04	207	3.54	6.39	-9.83	5.54	-8.98	3.63 2.382e+04	-7334.37	5686.38	1.080e+04	-
1.537e+04	199	2.77	6.03	-10.29	5.26	-9.52	-3.46 2.076e+04	-2630.62	1203.55	1.693e+04	-8660.19
	200	2.02	4.80	-9.87	4.17	-9.25	-2.97 1.391e+04	-3715.09	-1523.44	1.172e+04	-5815.82
183 69	208	2.42	0.66	-0.54	-0.18	0.30	0.55 1.546e+04	-6457.94	1654.42	7346.40	-
1.058e+04	207	3.50	0.94	0.04	0.46	0.51	0.45 2.379e+04	-7342.21	5677.90	1.077e+04	-
1.536e+04	199	2.75	0.21	-0.57	-0.06	-0.30	0.37 2.074e+04	-2638.87	1206.91	1.690e+04	-8668.13
	200	2.00	0.53	-0.20	0.47	-0.15	0.19 1.389e+04	-3720.30	-1523.73	1.169e+04	-5818.90
184 1	209	1.17	0.60	-0.26	-0.07	0.41	0.36 9560.61	234.99	319.94	9475.66	-886.01
	208	3.30	0.60	0.17	0.31	0.46	0.21 2.097e+04	-9011.30	2459.75	9497.89	-
1.457e+04	200	2.62	-0.22	-0.26	-0.22	-0.25	0.01 1.814e+04	-5017.39	-1841.45	1.497e+04	-7967.00
	201	1.45	0.28	-0.18	0.28	-0.18	0.01 1.175e+04	135.67	207.88	1.168e+04	-913.08
184 3	209	0.99	0.51	-0.22	-0.06	0.35	0.30 8089.75	198.84	270.72	8017.87	-749.70
	208	2.80	0.51	0.14	0.27	0.39	0.17 1.774e+04	-7624.94	2081.33	8036.68	-
1.233e+04	200	2.21	-0.18	-0.22	-0.19	-0.21	0.01 1.535e+04	-4245.48	-1558.15	1.267e+04	-6741.31
	201	1.23	0.24	-0.15	0.23	-0.15	0.01 9945.16	114.79	175.90	9884.06	-772.61
184 7	209	1.04	4.52	-27.35	2.93	-25.76	6.93 7417.64	183.13	248.13	7352.64	-682.66
	208	2.66	7.52	-28.75	4.93	-26.16	9.33 1.619e+04	-6928.15	1888.67	7377.38	-
1.123e+04	200	2.07	8.34	-29.22	5.23	-26.10	-10.35 1.400e+04	-3843.02	-1418.99	1.158e+04	-6113.47
	201	1.24	4.40	-28.16	2.11	-25.88	-8.32 9098.97	107.01	161.85	9044.14	-700.05
184 39	209	0.95	1.70	-9.86	1.03	-9.19	2.70 7377.40	181.63	246.85	7312.18	-681.95
	208	2.58	2.95	-10.31	1.95	-9.31	3.50 1.615e+04	-6930.44	1890.86	7332.07	-
1.122e+04	200	2.03	2.93	-10.77	1.80	-9.64	-3.77 1.397e+04	-3853.50	-1417.40	1.154e+04	-6123.00
	201	1.16	1.72	-10.33	0.91	-9.52	-3.03 9062.17	105.33	160.61	9006.88	-701.53
184 69	209	0.90	0.46	-0.20	-0.06	0.32	0.27 7354.32	180.76	246.11	7288.97	-681.54
	208	2.54	0.46	0.13	0.24	0.35	0.16 1.613e+04	-6931.77	1892.11	7306.07	-
1.121e+04	200	2.01	-0.17	-0.20	-0.17	-0.19	0.01 1.396e+04	-3859.53	-1416.50	1.151e+04	-6128.46
	201	1.12	0.21	-0.14	0.21	-0.13	0.01 9041.06	104.36	159.91	8985.51	-702.37
185 1	210	15.65	9.75	-4.40	3.48	1.87	7.03 1.290e+05	5884.15	1.236e+05	1.125e+04	-
2.514e+04	10	53.99	3.24	-9.16	-3.07	-2.85	6.20 4.504e+05	3.212e+04	3.469e+05	1.356e+05	-
1.805e+05	12	22.16	16.94	-6.53	10.59	-0.18	10.43 2.014e+05	6.232e+04	1.576e+05	1.061e+05	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

3.972e+04	203	12.05	4.03	-3.03	1.89	-0.90	3.24	1.081e+05	2.837e+04	7.182e+04	6.468e+04	-
187 1	212	12.14	4.06	-2.90	0.81	0.36	3.47	9.604e+04	-3387.16	5.968e+04	3.297e+04	-
4.789e+04	211	16.28	4.80	-4.20	0.53	0.07	4.49	1.354e+05	9140.29	9.828e+04	4.628e+04	-
5.754e+04	203	15.24	5.48	-3.63	2.99	-1.14	4.06	1.369e+05	3.646e+04	9.263e+04	8.070e+04	-
4.985e+04	204	10.97	3.55	-2.88	2.02	-1.34	2.75	9.566e+04	1.706e+04	5.187e+04	6.085e+04	-
3.905e+04	212	10.27	3.44	-2.45	0.68	0.30	2.94	8.126e+04	-2866.06	5.049e+04	2.790e+04	-
187 3	211	13.77	4.06	-3.55	0.45	0.06	3.80	1.146e+05	7734.09	8.316e+04	3.916e+04	-
4.052e+04	203	12.89	4.64	-3.07	2.53	-0.96	3.44	1.158e+05	3.085e+04	7.838e+04	6.828e+04	-
4.869e+04	204	9.28	3.01	-2.44	1.71	-1.13	2.32	8.095e+04	1.443e+04	4.389e+04	5.149e+04	-
4.218e+04	212	9.49	23.46	-17.33	17.98	-11.86	-13.91	7.414e+04	-2728.52	4.600e+04	2.541e+04	-
3.304e+04	211	12.69	26.80	-15.03	20.98	-9.21	-14.47	1.045e+05	6904.60	7.576e+04	3.566e+04	-
187 23	203	11.92	39.37	-18.25	29.34	-8.22	-21.85	1.057e+05	2.801e+04	7.139e+04	6.230e+04	-
3.703e+04	204	8.61	35.23	-11.95	24.87	-1.59	-19.53	7.388e+04	1.306e+04	3.996e+04	4.698e+04	-
4.450e+04	212	9.38	9.64	-10.65	-5.71	4.70	8.71	7.378e+04	-2560.66	4.587e+04	2.535e+04	-
3.856e+04	211	12.56	9.46	-13.12	-7.09	3.43	9.99	1.040e+05	7077.06	7.554e+04	3.558e+04	-
3.021e+04	203	11.77	10.21	-15.97	-7.56	1.80	12.23	1.051e+05	2.806e+04	7.120e+04	6.199e+04	-
187 54	204	8.48	6.57	-14.35	-6.95	-0.83	10.00	7.348e+04	1.314e+04	3.988e+04	4.675e+04	-
3.677e+04	212	9.34	3.12	-2.23	0.62	0.27	2.67	7.387e+04	-2605.51	4.590e+04	2.536e+04	-
4.417e+04	211	12.52	3.69	-3.23	0.41	0.05	3.45	1.042e+05	7030.99	7.560e+04	3.560e+04	-
4.450e+04	203	11.72	4.21	-2.79	2.30	-0.88	3.12	1.053e+05	2.805e+04	7.125e+04	6.207e+04	-
3.826e+04	204	8.44	2.73	-2.22	1.55	-1.03	2.11	7.359e+04	1.312e+04	3.990e+04	4.681e+04	-
2.997e+04	213	9.33	2.87	-2.16	0.44	0.28	2.51	6.898e+04	-1.107e+04	3.492e+04	2.300e+04	-
187 69	212	12.19	3.56	-2.92	0.60	0.04	3.23	9.661e+04	-3039.76	6.019e+04	3.338e+04	-
3.684e+04	204	10.94	3.34	-2.59	1.83	-1.08	2.58	9.541e+04	1.709e+04	5.213e+04	6.036e+04	-
4.426e+04	205	8.05	2.54	-2.03	1.47	-0.95	1.94	6.626e+04	3037.19	2.577e+04	4.353e+04	-
3.834e+04	213	7.90	2.43	-1.83	0.37	0.23	2.13	5.837e+04	-9368.36	2.954e+04	1.946e+04	-
3.004e+04	212	10.31	3.01	-2.47	0.50	0.04	2.73	8.175e+04	-2572.10	5.093e+04	2.825e+04	-
188 1	204	9.26	2.83	-2.19	1.55	-0.91	2.19	8.073e+04	1.446e+04	4.411e+04	5.107e+04	-
3.958e+04	205	6.81	2.15	-1.71	1.25	-0.81	1.64	5.607e+04	2569.93	2.181e+04	3.683e+04	-
4.799e+04	213	7.28	17.23	-14.09	14.16	-11.02	-9.31	5.326e+04	-8626.56	2.691e+04	1.772e+04	-
3.894e+04	212	9.49	18.68	-12.46	15.75	-9.53	-9.09	7.458e+04	-2459.93	4.640e+04	2.572e+04	-
3.034e+04	204	8.55	29.56	-12.29	22.73	-5.46	-15.46	7.368e+04	1.308e+04	4.017e+04	4.660e+04	-
188 3	205	6.31	26.80	-12.52	18.82	-4.53	-15.81	5.119e+04	2264.91	1.984e+04	3.361e+04	-
3.349e+04	213	7.20	7.33	-7.72	-4.70	4.31	6.03	5.299e+04	-8476.65	2.684e+04	1.768e+04	-
4.061e+04	212	9.40	7.17	-8.77	-5.12	3.52	6.70	7.422e+04	-2293.93	4.626e+04	2.566e+04	-
3.295e+04	204	8.44	6.34	-11.85	-6.36	0.86	8.35	7.328e+04	1.316e+04	4.008e+04	4.637e+04	-
2.567e+04	205	6.22	6.02	-10.68	-5.31	0.65	7.80	5.089e+04	2362.32	1.982e+04	3.344e+04	-
188 23												-
3.060e+04												-
3.711e+04												-
3.013e+04												-
2.347e+04												-
188 54												-
3.039e+04												-
3.684e+04												-
2.990e+04												-

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

2.329e+04	188	69	213	7.18	2.21	-1.66	0.34	0.21	1.93	5.306e+04	-8516.70	2.686e+04	1.769e+04	-
3.045e+04			212	9.38	2.74	-2.25	0.46	0.03	2.48	7.432e+04	-2338.28	4.630e+04	2.568e+04	-
3.691e+04			204	8.41	2.57	-1.99	1.41	-0.83	1.99	7.339e+04	1.314e+04	4.010e+04	4.643e+04	-
2.996e+04			205	6.19	1.96	-1.56	1.13	-0.73	1.49	5.097e+04	2336.30	1.982e+04	3.349e+04	-
2.334e+04	189	1	214	7.21	2.16	-1.69	0.01	0.47	1.91	4.887e+04	-1.525e+04	1.861e+04	1.502e+04	-
3.201e+04			213	9.33	2.50	-2.10	0.41	-0.01	2.29	6.909e+04	-1.092e+04	3.512e+04	2.305e+04	-
3.955e+04			205	8.04	2.08	-1.77	1.11	-0.80	1.67	6.628e+04	3188.23	2.600e+04	4.347e+04	-
3.031e+04			206	6.05	1.79	-1.40	1.08	-0.68	1.33	4.561e+04	-5775.64	9509.32	3.032e+04	-
2.349e+04	189	3	214	6.10	1.83	-1.43	9.41e-03	0.39	1.62	4.135e+04	-1.290e+04	1.574e+04	1.271e+04	-
2.708e+04			213	7.90	2.11	-1.78	0.34	-0.01	1.94	5.846e+04	-9237.44	2.972e+04	1.951e+04	-
3.346e+04			205	6.80	1.76	-1.50	0.94	-0.68	1.41	5.608e+04	2697.74	2.200e+04	3.678e+04	-
2.565e+04			206	5.12	1.52	-1.18	0.91	-0.58	1.13	3.859e+04	-4887.08	8046.34	2.566e+04	-
1.988e+04	189	21	214	5.63	9.35	-13.86	-7.38	2.87	-10.42	3.769e+04	-1.184e+04	1.434e+04	1.151e+04	-
2.472e+04			213	7.25	8.52	-14.72	-9.85	3.64	-9.47	5.326e+04	-8586.14	2.702e+04	1.766e+04	-
3.057e+04			205	6.26	11.20	-6.06	-3.33	8.48	-6.29	5.113e+04	2294.28	1.996e+04	3.347e+04	-
2.347e+04			206	4.74	11.51	-7.78	-3.90	7.63	-7.73	3.520e+04	-4554.87	7291.07	2.335e+04	-
1.818e+04	189	56	214	5.57	7.10	-4.96	2.70	-0.56	5.80	3.756e+04	-1.169e+04	1.430e+04	1.157e+04	-
2.459e+04			213	7.19	7.78	-5.10	4.02	-1.34	5.86	5.311e+04	-8328.96	2.702e+04	1.776e+04	-
3.037e+04			205	6.20	4.35	-5.91	2.38	-3.93	4.05	5.093e+04	2510.16	2.001e+04	3.343e+04	-
2.326e+04			206	4.68	4.72	-5.66	2.56	-3.50	4.22	3.504e+04	-4401.95	7323.53	2.331e+04	-
1.803e+04	189	69	214	5.54	1.66	-1.30	8.56e-03	0.36	1.47	3.759e+04	-1.173e+04	1.431e+04	1.155e+04	-
2.462e+04			213	7.18	1.92	-1.62	0.31	-0.01	1.76	5.315e+04	-8397.67	2.702e+04	1.773e+04	-
3.042e+04			205	6.18	1.60	-1.36	0.85	-0.62	1.29	5.098e+04	2452.49	2.000e+04	3.344e+04	-
2.332e+04			206	4.66	1.38	-1.07	0.83	-0.53	1.02	3.508e+04	-4442.80	7314.86	2.332e+04	-
1.807e+04	190	1	215	5.56	3.63	-1.93	-1.00	2.70	2.08	3.417e+04	-1.646e+04	8860.61	8846.59	-
2.532e+04			214	7.20	1.21	-1.86	0.20	-0.85	1.44	4.901e+04	-1.506e+04	1.870e+04	1.526e+04	-
3.199e+04			206	6.06	1.67	-1.07	0.63	-0.02	1.33	4.563e+04	-5778.24	9630.99	3.022e+04	-
2.355e+04			207	4.60	0.99	-0.80	0.93	-0.74	0.32	3.104e+04	-9987.83	393.43	2.066e+04	-
1.784e+04	190	3	215	4.71	3.07	-1.63	-0.84	2.29	1.76	2.891e+04	-1.393e+04	7497.44	7485.58	-
2.142e+04			214	6.10	1.02	-1.57	0.17	-0.72	1.22	4.147e+04	-1.274e+04	1.582e+04	1.291e+04	-
2.706e+04			206	5.12	1.42	-0.90	0.53	-0.02	1.13	3.861e+04	-4889.28	8149.30	2.557e+04	-
1.993e+04			207	3.89	0.84	-0.67	0.79	-0.62	0.27	2.627e+04	-8451.24	332.90	1.748e+04	-
1.509e+04	190	8	215	4.38	22.97	-22.30	19.81	-19.14	11.53	2.632e+04	-1.285e+04	6642.69	6822.55	-
1.958e+04			214	5.60	26.76	-25.85	24.43	-23.52	10.83	3.774e+04	-1.149e+04	1.436e+04	1.189e+04	-
2.458e+04			206	4.68	23.03	-24.51	22.31	-23.79	-5.81	3.512e+04	-4375.81	7434.14	2.331e+04	-
1.808e+04			207	3.57	18.88	-24.25	18.18	-23.55	-5.44	2.388e+04	-7510.85	396.99	1.597e+04	-
1.363e+04														-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

190	40	215	4.31	8.64	-7.56	6.73	-5.66	5.22	2.630e+04-1.273e+04	6752.73	6811.44	-	
1.951e+04		214	5.56	10.14	-10.12	9.01	-8.99	4.65	3.771e+04-1.155e+04	1.437e+04	1.179e+04	-	
2.460e+04		206	4.67	8.57	-8.81	8.44	-8.68	-1.47	3.511e+04	-4419.64	7417.82	2.327e+04	-
1.811e+04		207	3.55	7.29	-9.15	7.08	-8.95	-1.82	2.388e+04	-7620.20	337.04	1.592e+04	-
1.369e+04		190	4.28	2.79	-1.48	-0.77	2.08	1.60	2.628e+04-1.266e+04	6815.86	6805.07	-	
1.947e+04	69	214	5.54	0.93	-1.43	0.16	-0.65	1.11	3.770e+04-1.158e+04	1.438e+04	1.173e+04	-	
2.460e+04		206	4.66	1.29	-0.82	0.48	-0.02	1.02	3.510e+04	-4444.80	7408.45	2.325e+04	-
1.812e+04		207	3.54	0.76	-0.61	0.72	-0.57	0.25	2.388e+04	-7682.95	302.64	1.589e+04	-
1.372e+04		191	3.83	0.72	-1.75	0.28	-1.30	0.95	2.248e+04-1.269e+04	3243.56	6540.99	-	
1.751e+04	1	215	5.44	3.72	0.97	1.77	2.92	-1.25	3.338e+04-1.624e+04	8375.52	8759.13	-	
2.481e+04		207	4.67	0.41	-2.32	-1.14	-0.78	1.35	3.152e+04-1.006e+04	808.16	2.065e+04	-	
1.827e+04		208	3.22	1.05	0.19	0.63	0.61	-0.43	2.023e+04	-9037.59	-2557.94	1.375e+04	-
1.215e+04		191	3.24	0.61	-1.48	0.23	-1.10	0.81	1.902e+04-1.074e+04	2744.55	5534.68	-	
1.482e+04	3	215	4.61	3.15	0.82	1.50	2.47	-1.06	2.824e+04-1.374e+04	7086.98	7411.57	-	
2.099e+04		207	3.95	0.34	-1.96	-0.96	-0.66	1.14	2.667e+04	-8514.20	683.83	1.747e+04	-
1.546e+04		208	2.73	0.89	0.16	0.53	0.51	-0.36	1.712e+04	-7647.20	-2164.41	1.164e+04	-
1.028e+04		191	3.02	12.23	-26.31	11.15	-25.22	6.37	1.733e+04	-9753.96	2514.85	5064.86	-
1.348e+04	7	215	4.29	14.76	-25.40	13.10	-23.73	8.00	2.602e+04-1.249e+04	6629.26	6896.74	-	
1.926e+04		207	3.60	17.29	-26.61	15.08	-24.41	-9.59	2.423e+04	-7763.08	503.63	1.597e+04	-
1.401e+04		208	2.52	13.03	-25.37	10.78	-23.12	-9.02	1.567e+04	-6959.65	-1971.59	1.069e+04	-9381.80
191	39	216	2.97	4.73	-10.37	4.20	-9.83	2.79	1.731e+04	-9760.69	2502.27	5043.68	-
1.347e+04		215	4.21	6.04	-7.63	5.64	-7.23	2.31	2.580e+04-1.249e+04	6510.72	6795.74	-	
1.915e+04		207	3.59	5.49	-9.82	4.94	-9.28	-2.84	2.424e+04	-7748.44	578.63	1.591e+04	-
1.404e+04		208	2.49	5.16	-9.05	4.24	-8.13	-3.50	1.560e+04	-6954.78	-1969.08	1.062e+04	-9360.02
191	69	216	2.95	0.56	-1.35	0.21	-1.00	0.73	1.729e+04	-9764.55	2495.05	5031.53	-
1.347e+04		215	4.19	2.86	0.75	1.36	2.25	-0.96	2.568e+04-1.250e+04	6442.71	6737.79	-	
1.909e+04		207	3.59	0.31	-1.79	-0.88	-0.60	1.04	2.424e+04	-7740.18	621.66	1.588e+04	-
1.405e+04		208	2.48	0.80	0.14	0.48	0.47	-0.33	1.556e+04	-6952.00	-1967.65	1.058e+04	-9347.52
192	1	217	0.95	0.25	-0.59	-0.11	-0.22	0.42	7679.38	64.78	337.58	7406.58	-1415.22
1.844e+04		216	4.02	0.76	-0.05	0.61	0.10	0.31	2.346e+04-1.353e+04	3626.15	6302.84	-	
1.288e+04		208	3.33	0.03	-0.60	-0.28	-0.29	-0.32	2.074e+04	-9621.46	-2478.21	1.359e+04	-
192	3	209	1.28	0.30	-0.59	0.29	-0.58	-0.08	1.029e+04	-82.15	181.59	1.003e+04	-1632.72
1.561e+04		217	0.80	0.22	-0.50	-0.10	-0.19	0.35	6497.93	54.81	285.64	6267.10	-1197.49
1.090e+04		216	3.40	0.64	-0.04	0.52	0.08	0.26	1.985e+04-1.145e+04	3068.28	5333.18	-	
192	7	208	2.82	0.03	-0.51	-0.24	-0.24	-0.27	1.755e+04	-8141.24	-2096.95	1.150e+04	-
1.423e+04		209	1.09	0.25	-0.50	0.25	-0.49	-0.06	8706.26	-69.51	153.65	8483.09	-1381.54
192	39	217	0.87	4.50	-26.81	3.01	-25.31	6.67	5965.68	47.97	256.57	5757.08	-1091.30
1.420e+04		216	3.19	6.82	-28.13	4.13	-25.44	9.31	1.814e+04-1.040e+04	2821.83	4922.03	-	
192		208	2.58	8.75	-27.61	5.94	-24.81	-9.70	1.602e+04	-7406.57	-1922.30	1.054e+04	-9919.91
		209	1.09	4.56	-26.22	2.11	-23.77	-8.33	7982.27	-58.78	142.89	7780.60	-1257.37
		217	0.78	1.67	-9.97	1.04	-9.34	2.63	5928.52	49.15	258.54	5719.13	-1089.60
		216	3.13	2.85	-10.27	1.80	-9.23	3.55	1.808e+04-1.040e+04	2801.19	4875.20	-	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		208	2.57	3.14	-10.29	2.03	-9.18	-3.69	1.598e+04	-7403.10	-1912.15	1.049e+04	-9911.02
		209	1.02	1.79	-9.83	0.91	-8.95	-3.07	7939.38	-61.58	140.85	7736.95	-1256.46
192	69	217	0.73	0.20	-0.45	-0.09	-0.17	0.32	5907.21	49.83	259.67	5697.37	-1088.63
		216	3.09	0.58	-0.04	0.47	0.07	0.24	1.804e+04	-1.041e+04	2789.35	4848.34	-
1.419e+04													
		208	2.56	0.03	-0.46	-0.21	-0.22	-0.24	1.595e+04	-7401.12	-1906.32	1.046e+04	-9905.92
		209	0.99	0.23	-0.45	0.22	-0.45	-0.06	7914.78	-63.19	139.68	7711.90	-1255.94
193	1	218	22.60	2.45	-2.43	0.87	-0.85	2.28	1.773e+05	-9332.33	1.268e+05	4.123e+04	-
8.295e+04													
		8	24.57	7.11	-13.84	-6.91	0.18	9.86	1.822e+05	-2.772e+04	9.835e+04	5.613e+04	-
1.028e+05													
		10	36.80	12.55	-4.43	8.21	-0.09	7.41	3.010e+05	8761.10	2.809e+05	2.889e+04	-
7.402e+04													
		210	23.06	4.92	-7.74	1.50	-4.31	5.62	1.962e+05	2.306e+04	1.044e+05	1.148e+05	-
8.639e+04													
193	3	218	19.12	2.07	-2.06	0.73	-0.72	1.93	1.501e+05	-7896.59	1.073e+05	3.488e+04	-
7.019e+04													
		8	20.79	6.02	-11.71	-5.85	0.15	8.34	1.542e+05	-2.345e+04	8.322e+04	4.749e+04	-
8.699e+04													
		10	31.14	10.62	-3.75	6.95	-0.07	6.27	2.547e+05	7413.24	2.377e+05	2.445e+04	-
6.263e+04													
		210	19.51	4.16	-6.55	1.27	-3.65	4.76	1.660e+05	1.951e+04	8.837e+04	9.712e+04	-
7.310e+04													
193	7	218	17.77	51.35	-76.49	44.97	-70.12	-27.83	1.371e+05	-6769.19	9.824e+04	3.212e+04	-
6.390e+04													
		8	19.12	70.55	-3.73	67.45	-0.63	-14.85	1.409e+05	-2.103e+04	7.627e+04	4.360e+04	-
7.930e+04													
		10	28.89	102.61	-58.12	100.46	-55.98	18.46	2.330e+05	7264.81	2.176e+05	2.263e+04	-
5.685e+04													
		210	18.03	98.21	-50.20	91.14	-43.12	-31.62	1.516e+05	1.801e+04	8.088e+04	8.873e+04	-
6.668e+04													
193	39	218	17.51	18.64	-27.81	16.82	-25.98	-9.03	1.367e+05	-7029.41	9.778e+04	3.186e+04	-
6.384e+04													
		8	18.90	21.23	-0.16	21.21	-0.14	-0.59	1.404e+05	-2.121e+04	7.588e+04	4.333e+04	-
7.916e+04													
		10	28.52	42.34	-22.16	40.64	-20.45	10.35	2.321e+05	6931.02	2.166e+05	2.237e+04	-
5.690e+04													
		210	17.80	35.40	-19.28	33.96	-17.83	-8.78	1.511e+05	1.784e+04	8.053e+04	8.845e+04	-
6.654e+04													
193	69	218	17.38	1.88	-1.87	0.67	-0.66	1.76	1.364e+05	-7178.72	9.752e+04	3.171e+04	-
6.381e+04													
		8	18.90	5.47	-10.65	-5.32	0.14	7.59	1.401e+05	-2.132e+04	7.565e+04	4.317e+04	-
7.909e+04													
		10	28.31	9.66	-3.41	6.31	-0.07	5.70	2.316e+05	6739.31	2.161e+05	2.222e+04	-
5.694e+04													
		210	17.74	3.78	-5.95	1.15	-3.32	4.32	1.509e+05	1.774e+04	8.033e+04	8.829e+04	-
6.645e+04													
194	1	219	15.92	5.51	-3.52	0.83	1.15	4.51	1.165e+05	-2.081e+04	7.614e+04	1.955e+04	-
6.255e+04													
		218	23.19	4.79	-7.13	0.90	-3.24	5.59	1.775e+05	-1.751e+04	1.259e+05	3.400e+04	-
8.596e+04													
		210	22.00	6.53	-4.89	2.95	-1.30	5.30	1.870e+05	2.138e+04	1.268e+05	8.163e+04	-
7.968e+04													
		211	16.55	4.56	-4.60	2.10	-2.15	4.06	1.375e+05	8936.73	7.715e+04	6.933e+04	-
6.418e+04													
194	3	219	13.47	4.66	-2.98	0.70	0.98	3.82	9.858e+04	-1.761e+04	6.443e+04	1.654e+04	-
5.293e+04													
		218	19.62	4.05	-6.03	0.76	-2.74	4.73	1.502e+05	-1.482e+04	1.066e+05	2.877e+04	-
7.273e+04													
		210	18.62	5.53	-4.14	2.49	-1.10	4.48	1.582e+05	1.809e+04	1.073e+05	6.907e+04	-
6.742e+04													
		211	14.00	3.86	-3.89	1.78	-1.82	3.43	1.164e+05	7561.85	6.528e+04	5.866e+04	-
5.431e+04													
194	7	219	12.43	61.09	-3.04	61.00	-2.95	-2.35	9.006e+04	-1.580e+04	5.896e+04	1.530e+04	-
4.822e+04													
		218	18.18	95.84	-71.44	95.81	-71.40	2.41	1.372e+05	-1.318e+04	9.755e+04	2.650e+04	-
6.628e+04													
		210	17.20	71.18	-47.38	69.27	-45.47	-14.95	1.446e+05	1.686e+04	9.818e+04	6.323e+04	-
6.141e+04													
		211	12.95	65.70	-27.54	61.60	-23.44	-19.12	1.063e+05	7143.30	5.974e+04	5.367e+04	-
4.947e+04													
194	39	219	12.28	22.72	-0.59	22.64	-0.51	1.35	8.978e+04	-1.594e+04	5.871e+04	1.513e+04	-
4.816e+04													

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

6.618e+04	218	17.93	35.57	-27.82	35.37	-27.61	3.61	1.368e+05	-1.336e+04	9.712e+04	2.628e+04	-	
6.134e+04	210	17.00	26.88	-17.40	26.69	-17.21	-2.86	1.441e+05	1.659e+04	9.775e+04	6.295e+04	-	
4.941e+04	211	12.78	24.22	-10.33	23.48	-9.59	-4.99	1.060e+05	6972.43	5.949e+04	5.345e+04	-	
4.812e+04	194 69	219	12.25	4.24	-2.71	0.64	0.89	3.47	8.961e+04	-1.601e+04	5.857e+04	1.503e+04	-
6.612e+04	218	17.84	3.68	-5.49	0.69	-2.49	4.30	1.365e+05	-1.347e+04	9.688e+04	2.615e+04	-	
6.129e+04	210	16.93	5.02	-3.76	2.27	-1.00	4.08	1.439e+05	1.644e+04	9.750e+04	6.279e+04	-	
4.937e+04	211	12.73	3.51	-3.54	1.62	-1.65	3.12	1.058e+05	6874.41	5.935e+04	5.333e+04	-	
5.485e+04	195 1	220	12.99	3.59	-2.65	0.55	0.39	3.12	9.007e+04	-2.462e+04	4.946e+04	1.600e+04	-
6.597e+04	219	16.64	4.32	-4.48	0.24	-0.40	4.39	1.227e+05	-2.031e+04	7.874e+04	2.362e+04	-	
6.282e+04	211	16.18	4.73	-3.74	2.25	-1.27	3.85	1.341e+05	8057.89	7.633e+04	6.587e+04	-	
5.013e+04	212	12.27	3.50	-3.12	1.70	-1.32	2.95	9.695e+04	-3664.05	4.244e+04	5.085e+04	-	
4.641e+04	195 3	220	10.99	3.04	-2.24	0.47	0.33	2.64	7.622e+04	-2.083e+04	4.185e+04	1.354e+04	-
5.582e+04	219	14.08	3.66	-3.79	0.21	-0.34	3.71	1.038e+05	-1.719e+04	6.662e+04	1.999e+04	-	
5.316e+04	211	13.69	4.00	-3.17	1.90	-1.07	3.26	1.135e+05	6818.22	6.459e+04	5.573e+04	-	
4.242e+04	212	10.39	2.97	-2.64	1.44	-1.11	2.50	8.204e+04	-3100.35	3.591e+04	4.303e+04	-	
4.230e+04	195 7	220	10.10	49.11	-20.81	49.11	-20.80	-0.54	6.960e+04	-1.883e+04	3.826e+04	1.251e+04	-
5.086e+04	219	12.99	62.07	-28.17	62.05	-28.15	-1.24	9.483e+04	-1.542e+04	6.096e+04	1.844e+04	-	
4.841e+04	211	12.64	59.22	-25.11	55.90	-21.79	-16.40	1.036e+05	6474.06	5.911e+04	5.100e+04	-	
3.863e+04	212	9.57	54.71	-22.48	51.73	-19.51	-14.87	7.487e+04	-2654.39	3.285e+04	3.937e+04	-	
4.216e+04	195 38	220	10.02	8.46	-17.79	-17.32	7.99	3.47	6.918e+04	-1.898e+04	3.797e+04	1.223e+04	-
5.070e+04	219	12.85	10.62	-23.14	-22.37	9.84	5.06	9.419e+04	-1.570e+04	6.042e+04	1.807e+04	-	
4.829e+04	211	12.50	10.18	-21.58	-18.02	6.61	10.02	1.030e+05	6097.88	5.857e+04	5.054e+04	-	
3.854e+04	212	9.48	8.56	-19.91	-17.08	5.73	8.52	7.447e+04	-2878.33	3.257e+04	3.902e+04	-	
4.219e+04	195 69	220	9.99	2.76	-2.04	0.43	0.30	2.40	6.929e+04	-1.894e+04	3.804e+04	1.231e+04	-
5.074e+04	219	12.80	3.32	-3.45	0.19	-0.31	3.38	9.436e+04	-1.562e+04	6.057e+04	1.817e+04	-	
4.833e+04	211	12.44	3.64	-2.88	1.73	-0.97	2.96	1.032e+05	6198.38	5.872e+04	5.067e+04	-	
3.856e+04	212	9.44	2.70	-2.40	1.31	-1.01	2.27	7.458e+04	-2818.50	3.265e+04	3.911e+04	-	
4.544e+04	196 1	221	10.33	2.69	-2.26	0.40	0.03	2.47	6.732e+04	-2.566e+04	3.065e+04	1.102e+04	-
5.499e+04	220	13.03	3.23	-2.91	0.39	-0.07	3.06	9.068e+04	-2.424e+04	4.988e+04	1.656e+04	-	
5.002e+04	212	12.23	3.17	-2.74	1.49	-1.05	2.67	9.662e+04	-3693.17	4.268e+04	5.025e+04	-	
3.963e+04	213	9.40	2.46	-2.24	1.24	-1.02	2.06	6.923e+04	-1.161e+04	2.085e+04	3.677e+04	-	
3.845e+04	196 3	221	8.74	2.28	-1.91	0.34	0.03	2.09	5.696e+04	-2.171e+04	2.593e+04	9321.10	-
4.653e+04	220	11.02	2.73	-2.46	0.33	-0.06	2.59	7.673e+04	-2.051e+04	4.221e+04	1.401e+04	-	
4.232e+04	212	10.35	2.68	-2.32	1.26	-0.89	2.26	8.176e+04	-3124.99	3.611e+04	4.252e+04	-	
3.353e+04	213	7.96	2.08	-1.90	1.05	-0.86	1.74	5.858e+04	-9823.07	1.764e+04	3.112e+04	-	
3.511e+04	196 23	221	8.06	12.86	-13.17	6.10	-11.41	5.195e+04	-1.988e+04	2.362e+04	8452.66	-	
	220	10.15	14.00	-12.54	6.89	-5.42	-11.76	6.997e+04	-1.883e+04	3.843e+04	1.271e+04	-	



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.626e+04	214	6.13	1.15	-0.70	0.06	0.39	0.91	4.137e+04-1.333e+04	6383.57	2.166e+04	-
2.064e+04	215	4.85	1.40	-4.52	0.02	-3.14	2.50	2.987e+04-1.419e+04	128.30	1.556e+04	-
198 21 2.222e+04	223	4.90	11.87	-11.38	-7.26	7.75	-8.88	2.729e+04-1.737e+04	7211.84	2705.16	-
2.848e+04	222	6.34	9.98	-14.43	-12.14	7.69	-7.12	3.832e+04-1.929e+04	1.384e+04	5186.73	-
2.400e+04	214	5.62	12.81	-6.46	-6.44	12.79	-0.62	3.775e+04-1.224e+04	5778.37	1.973e+04	-
1.879e+04	215	4.43	10.67	-7.96	-7.76	10.46	-1.95	2.709e+04-1.295e+04	158.91	1.398e+04	-
198 56 2.208e+04	223	4.83	5.38	-4.34	3.74	-2.70	3.64	2.718e+04-1.720e+04	7217.09	2765.52	-
2.837e+04	222	6.31	6.99	-6.34	4.74	-4.09	4.99	3.828e+04-1.909e+04	1.384e+04	5346.59	-
2.383e+04	214	5.58	2.69	-4.45	2.43	-4.18	1.35	3.756e+04-1.207e+04	5812.32	1.968e+04	-
1.875e+04	215	4.44	4.08	-8.95	2.85	-7.71	3.82	2.718e+04-1.288e+04	101.22	1.420e+04	-
198 69 2.212e+04	223	4.81	0.91	-0.01	0.80	0.10	0.30	2.721e+04-1.725e+04	7215.69	2749.39	-
2.840e+04	222	6.29	1.49	-2.21	0.23	-0.95	1.76	3.829e+04-1.915e+04	1.384e+04	5303.88	-
2.387e+04	214	5.57	1.04	-0.63	0.06	0.35	0.82	3.761e+04-1.211e+04	5803.25	1.969e+04	-
1.876e+04	215	4.41	1.27	-4.11	0.01	-2.86	2.28	2.716e+04-1.290e+04	116.63	1.414e+04	-
199 1 2.006e+04	224	4.34	0.03	-1.02	-0.11	-0.88	0.37	2.374e+04-1.643e+04	4663.10	2650.93	-
2.930e+04	223	6.39	1.94	-1.38	0.48	0.08	1.65	3.609e+04-2.284e+04	9705.23	3546.19	-
2.383e+04	215	5.60	0.77	-3.71	0.68	-3.62	-0.63	3.462e+04-1.649e+04	-165.10	1.829e+04	-
1.656e+04	216	3.92	1.13	-0.05	0.69	0.39	0.57	2.250e+04-1.357e+04	-2678.39	1.161e+04	-
199 3 1.697e+04	224	3.67	0.03	-0.87	-0.10	-0.74	0.31	2.009e+04-1.390e+04	3945.70	2243.10	-
2.480e+04	223	5.41	1.64	-1.17	0.40	0.07	1.39	3.054e+04-1.933e+04	8212.12	3000.63	-
2.016e+04	215	4.74	0.65	-3.14	0.58	-3.06	-0.53	2.929e+04-1.395e+04	-139.70	1.548e+04	-
1.401e+04	216	3.31	0.96	-0.04	0.59	0.33	0.48	1.904e+04-1.148e+04	-2266.33	9826.43	-
199 8 1.540e+04	224	3.39	12.41	-26.50	10.85	-24.94	7.63	1.828e+04-1.256e+04	3581.04	2138.97	-
2.259e+04	223	4.99	18.36	-26.91	15.82	-24.36	10.43	2.779e+04-1.762e+04	7354.77	2817.59	-
1.819e+04	215	4.30	15.29	-30.44	12.70	-27.84	-10.59	2.664e+04-1.239e+04	51.97	1.420e+04	-
1.272e+04	216	3.02	12.13	-24.10	10.88	-22.85	-6.61	1.733e+04-1.040e+04	-2041.36	8978.63	-
199 40 1.542e+04	224	3.36	4.52	-10.14	3.90	-9.52	2.96	1.827e+04-1.261e+04	3584.83	2075.56	-
2.256e+04	223	4.94	7.31	-10.16	6.00	-8.84	4.61	2.777e+04-1.759e+04	7425.17	2760.56	-
1.828e+04	215	4.30	5.93	-12.89	4.96	-11.92	-4.17	2.663e+04-1.258e+04	-61.75	1.412e+04	-
1.273e+04	216	3.01	4.66	-8.49	4.31	-8.14	-2.13	1.732e+04-1.042e+04	-2053.39	8949.71	-
199 69 1.543e+04	224	3.34	0.03	-0.79	-0.09	-0.68	0.28	1.826e+04-1.263e+04	3587.00	2039.18	-
2.254e+04	223	4.92	1.49	-1.06	0.37	0.06	1.27	2.776e+04-1.757e+04	7465.56	2727.84	-
1.833e+04	215	4.31	0.59	-2.85	0.53	-2.78	-0.48	2.663e+04-1.269e+04	-127.00	1.407e+04	-
1.274e+04	216	3.01	0.87	-0.04	0.53	0.30	0.44	1.731e+04-1.044e+04	-2060.30	8933.12	-
200 1 2.128e+04	225	0.73	0.40	-0.35	-0.08	0.13	0.36	5726.16 -261.10	348.20	5116.86	-1810.19
1.733e+04	224	4.60	0.58	-0.58	0.25	-0.25	0.53	2.515e+04-1.747e+04	5030.34	2648.50	-
2.128e+04	216	4.06	6.45e-03	-0.93	3.60e-03	-0.93	-0.05	2.313e+04-1.433e+04	-2692.52	1.150e+04	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		217	1.11	0.27	-0.80	0.27	-0.80	-0.01	8724.09	-395.14	186.18	8142.77	-2227.84
200	3	225	0.62	0.34	-0.30	-0.07	0.11	0.30	4845.21	-220.93	294.63	4329.65	-1531.70
		224	3.90	0.49	-0.49	0.21	-0.21	0.45	2.128e+04	-1.478e+04	4256.44	2241.03	-
1.800e+04													
1.467e+04		216	3.43	5.46e-03	-0.79	3.04e-03	-0.79	-0.04	1.957e+04	-1.212e+04	-2278.29	9730.31	-
		217	0.94	0.23	-0.67	0.23	-0.67	-0.01	7381.92	-334.35	157.54	6890.04	-1885.10
200	7	225	0.69	4.20	-26.03	2.90	-24.72	6.14	4457.54	-193.85	271.30	3992.38	-1395.44
		224	3.61	5.95	-26.82	3.43	-24.30	8.74	1.940e+04	-1.344e+04	3861.32	2094.08	-
1.640e+04													
1.334e+04		216	3.15	8.59	-25.37	5.98	-22.76	-9.04	1.786e+04	-1.099e+04	-2050.81	8917.66	-
		217	0.93	4.56	-23.28	2.03	-20.75	-8.00	6767.95	-302.49	140.61	6324.85	-1713.65
200	39	225	0.61	1.57	-9.51	1.02	-8.95	2.42	4423.97	-198.29	269.11	3956.58	-1393.54
		224	3.57	2.41	-10.02	1.37	-8.98	3.44	1.936e+04	-1.344e+04	3866.51	2058.00	-
1.638e+04													
1.334e+04		216	3.13	3.11	-9.68	2.18	-8.75	-3.32	1.782e+04	-1.101e+04	-2063.75	8871.96	-
		217	0.88	1.75	-8.83	0.87	-7.95	-2.92	6731.65	-303.41	142.27	6285.97	-1713.70
200	69	225	0.56	0.30	-0.27	-0.06	0.10	0.28	4404.73	-200.84	267.85	3936.04	-1392.45
		224	3.54	0.45	-0.45	0.19	-0.19	0.41	1.934e+04	-1.344e+04	3869.49	2037.30	-
1.637e+04													
1.333e+04		216	3.12	4.96e-03	-0.72	2.77e-03	-0.71	-0.04	1.779e+04	-1.102e+04	-2071.17	8845.74	-
		217	0.85	0.21	-0.61	0.21	-0.61	-0.01	6710.84	-303.95	143.22	6263.67	-1713.72
201	1	226	24.52	-0.65	-1.59	-0.65	-1.59	-0.02	7.493e+04	-1.494e+05	7.035e+04	-1.448e+05	-
3.174e+04													
2.505e+05		6	60.44	8.38	-5.72	4.13	-1.47	6.47	4.677e+05	-3.693e+04	1.856e+05	2.451e+05	-
5.757e+04		8	13.92	0.89	-6.66	-4.75	-1.02	3.28	1.074e+05	-8735.47	4.160e+04	5.710e+04	-
1.398e+05		218	33.11	6.65	-5.18	2.43	-0.96	5.67	2.517e+05	-2.798e+04	1.153e+05	1.085e+05	-
201	3	226	20.75	-0.55	-1.34	-0.55	-1.34	-0.02	6.341e+04	-1.264e+05	5.952e+04	-1.225e+05	-
2.686e+04		6	51.14	7.09	-4.84	3.49	-1.24	5.47	3.957e+05	-3.125e+04	1.571e+05	2.074e+05	-
2.120e+05		8	11.78	0.75	-5.63	-4.02	-0.86	2.77	9.091e+04	-7391.56	3.520e+04	4.832e+04	-
4.871e+04		218	28.02	5.63	-4.39	2.06	-0.81	4.80	2.130e+05	-2.367e+04	9.754e+04	9.177e+04	-
1.183e+05		201	19.12	71.16	-5.45	69.18	-3.47	12.15	5.809e+04	-1.149e+05	5.458e+04	-1.114e+05	-
2.439e+04	7	226	19.12	71.16	-5.45	69.18	-3.47	12.15	5.809e+04	-1.149e+05	5.458e+04	-1.114e+05	-
1.935e+05		6	47.01	106.27	-43.41	89.37	-26.51	-47.37	3.616e+05	-2.800e+04	1.441e+05	1.895e+05	-
4.433e+04		8	10.86	66.18	-59.27	65.15	-58.24	11.34	8.310e+04	-6342.25	3.245e+04	4.431e+04	-
1.079e+05		218	25.88	72.22	-4.82	37.71	29.69	-38.31	1.946e+05	-2.122e+04	8.939e+04	8.399e+04	-
201	39	226	18.96	25.61	-2.75	24.90	-2.04	4.42	5.781e+04	-1.149e+05	5.428e+04	-1.114e+05	-
2.441e+04		6	46.64	38.66	-14.44	34.60	-10.38	-14.11	3.604e+05	-2.826e+04	1.433e+05	1.889e+05	-
1.930e+05		8	10.76	22.18	-22.48	21.43	-21.73	5.74	8.281e+04	-6582.03	3.216e+04	4.406e+04	-
4.430e+04		218	25.58	24.07	1.22	14.94	10.35	-11.20	1.940e+05	-2.141e+04	8.894e+04	8.363e+04	-
1.077e+05		201	18.86	-0.50	-1.22	-0.50	-1.22	-0.01	5.764e+04	-1.149e+05	5.411e+04	-1.114e+05	-
2.442e+04	69	226	18.86	-0.50	-1.22	-0.50	-1.22	-0.01	5.764e+04	-1.149e+05	5.411e+04	-1.114e+05	-
1.927e+05		6	46.49	6.44	-4.40	3.17	-1.13	4.98	3.598e+05	-2.841e+04	1.428e+05	1.886e+05	-
4.428e+04		8	10.71	0.68	-5.12	-3.66	-0.78	2.52	8.264e+04	-6719.60	3.200e+04	4.392e+04	-
1.075e+05		218	25.47	5.12	-3.99	1.87	-0.74	4.36	1.936e+05	-2.152e+04	8.867e+04	8.342e+04	-
6.794e+04	1	227	16.30	6.50	-1.16	1.12	4.23	3.50	9.627e+04	-5.327e+04	5.273e+04	-9732.92	-
8.658e+04		226	20.69	4.25	-11.81	-0.56	-6.99	7.36	1.407e+05	-4.313e+04	7.958e+04	1.796e+04	-
8.769e+04		218	21.35	7.78	-3.58	4.65	-0.44	5.08	1.604e+05	-2.125e+04	9.317e+04	4.596e+04	-
7.230e+04		219	16.92	3.68	-6.43	1.17	-3.92	4.36	1.259e+05	-1.872e+04	5.265e+04	5.451e+04	-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

202	3	227	13.79	5.50	-0.98	0.94	3.58	2.96	8.146e+04	-4.508e+04	4.462e+04	-8235.54	-
5.748e+04		226	17.51	3.60	-9.99	-0.48	-5.92	6.23	1.190e+05	-3.650e+04	6.734e+04	1.519e+04	-
7.326e+04		218	18.06	6.59	-3.03	3.93	-0.37	4.30	1.357e+05	-1.798e+04	7.884e+04	3.889e+04	-
7.420e+04		219	14.32	3.11	-5.44	0.99	-3.32	3.69	1.065e+05	-1.584e+04	4.455e+04	4.612e+04	-
6.118e+04		227	12.72	10.41	-31.03	-2.08	-18.54	-19.02	7.423e+04	-4.128e+04	4.058e+04	-7628.85	-
5.249e+04	23	226	16.16	50.66	-23.94	-0.89	27.61	-34.47	1.085e+05	-3.352e+04	6.121e+04	1.373e+04	-
6.690e+04		218	16.60	21.02	-19.00	1.22	0.81	-20.01	1.237e+05	-1.662e+04	7.170e+04	3.538e+04	-
6.777e+04		219	13.27	38.57	-19.25	6.03	13.29	-28.68	9.713e+04	-1.461e+04	4.050e+04	4.201e+04	-
5.587e+04		227	12.58	27.55	-1.18	17.87	8.49	13.58	7.408e+04	-4.082e+04	4.063e+04	-7377.25	-
5.219e+04	56	226	15.96	18.00	-27.09	10.15	-19.24	17.10	1.083e+05	-3.298e+04	6.136e+04	1.392e+04	-
6.652e+04		218	16.48	40.18	-8.90	29.58	1.70	20.19	1.234e+05	-1.616e+04	7.181e+04	3.543e+04	-
6.736e+04		219	13.04	13.60	-19.85	12.07	-18.32	6.98	9.682e+04	-1.426e+04	4.058e+04	4.198e+04	-
5.554e+04		227	12.54	5.00	-0.89	0.86	3.26	2.69	7.405e+04	-4.098e+04	4.056e+04	-7486.86	-
5.226e+04	69	226	15.91	3.27	-9.09	-0.43	-5.38	5.66	1.082e+05	-3.318e+04	6.122e+04	1.381e+04	-
6.660e+04		218	16.42	5.99	-2.75	3.57	-0.34	3.91	1.234e+05	-1.634e+04	7.167e+04	3.535e+04	-
6.746e+04		219	13.02	2.83	-4.94	0.90	-3.02	3.36	9.683e+04	-1.440e+04	4.050e+04	4.193e+04	-
5.561e+04		228	13.34	3.33	-2.31	0.65	0.37	2.82	7.864e+04	-4.374e+04	3.588e+04	-981.66	-
5.835e+04	1	227	16.26	3.81	-3.94	0.58	-0.71	3.83	1.011e+05	-4.685e+04	5.298e+04	1235.17	-
6.928e+04		219	16.53	4.35	-3.42	1.77	-0.85	3.66	1.210e+05	-2.158e+04	5.359e+04	4.586e+04	-
7.120e+04		220	13.06	3.10	-3.10	1.57	-1.57	2.67	9.075e+04	-2.456e+04	2.909e+04	3.710e+04	-
5.752e+04		228	11.28	2.82	-1.96	0.55	0.31	2.38	6.654e+04	-3.701e+04	3.036e+04	-830.63	-
4.937e+04	3	227	13.76	3.23	-3.34	0.49	-0.60	3.24	8.551e+04	-3.964e+04	4.483e+04	1045.14	-
5.862e+04		219	13.99	3.68	-2.90	1.50	-0.72	3.09	1.024e+05	-1.826e+04	4.534e+04	3.881e+04	-
6.024e+04		220	11.05	2.62	-2.62	1.33	-1.33	2.26	7.679e+04	-2.079e+04	2.461e+04	3.139e+04	-
4.867e+04		228	10.37	45.08	-20.32	45.05	-20.30	-1.24	6.080e+04	-3.360e+04	2.779e+04	-589.39	-
4.502e+04	7	227	12.68	55.74	-20.23	55.39	-19.88	-5.14	7.818e+04	-3.592e+04	4.109e+04	1170.07	-
5.344e+04		219	12.91	61.67	-19.30	58.38	-16.01	-15.99	9.356e+04	-1.640e+04	4.157e+04	3.559e+04	-
5.490e+04		220	10.22	53.63	-23.19	47.97	-17.53	-20.07	7.012e+04	-1.879e+04	2.255e+04	2.878e+04	-
4.435e+04		228	10.29	8.27	-16.23	-15.74	7.79	3.41	6.038e+04	-3.367e+04	2.753e+04	-815.54	-
4.484e+04	38	227	12.55	7.77	-20.85	-19.58	6.50	5.89	7.758e+04	-3.608e+04	4.063e+04	869.95	-
5.324e+04		219	12.77	8.31	-22.79	-19.42	4.94	9.67	9.293e+04	-1.667e+04	4.109e+04	3.516e+04	-
5.472e+04		220	10.10	8.89	-19.98	-15.84	4.75	10.12	6.970e+04	-1.893e+04	2.231e+04	2.845e+04	-
4.421e+04		228	10.26	2.56	-1.78	0.50	0.28	2.17	6.049e+04	-3.365e+04	2.760e+04	-755.12	-
4.489e+04	69	227	12.50	2.93	-3.03	0.44	-0.54	2.94	7.774e+04	-3.603e+04	4.075e+04	950.13	-
5.329e+04		219	12.72	3.34	-2.63	1.36	-0.65	2.81	9.310e+04	-1.660e+04	4.122e+04	3.528e+04	-
5.477e+04		220	10.05	2.38	-2.38	1.21	-1.21	2.05	6.981e+04	-1.890e+04	2.238e+04	2.854e+04	-
4.425e+04		229	10.83	2.32	-1.95	0.53	-0.15	2.11	6.151e+04	-3.837e+04	2.424e+04	-1092.47	-
204	1												



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

3.710e+04	229	8.32	1.62	-1.53	0.38	-0.29	1.54	4.730e+04-2.943e+04	1.869e+04	-823.75	-	
3.555e+04	221	7.97	1.48	-1.58	0.70	-0.80	1.33	5.179e+04-2.001e+04	1.090e+04	2.089e+04	-	
2.823e+04	222	6.30	1.33	-1.56	0.84	-1.08	1.08	3.810e+04-1.954e+04	3497.03	1.506e+04	-	
206 1	231	6.80	1.01	-0.90	0.33	-0.22	0.92	3.548e+04-2.765e+04	9872.01	-2042.22	-	
3.100e+04	230	8.70	1.48	-1.55	0.34	-0.41	1.47	4.735e+04-3.320e+04	1.590e+04	-1757.83	-	
3.929e+04	222	8.19	1.18	-1.51	0.81	-1.15	0.92	4.951e+04-2.540e+04	4588.54	1.952e+04	-	
3.670e+04	223	6.37	1.11	-1.68	0.77	-1.35	0.91	3.582e+04-2.299e+04	-770.76	1.359e+04	-	
2.851e+04	206 3	231	5.76	0.86	-0.76	0.28	-0.19	0.77	3.002e+04-2.340e+04	8353.24	-1728.03	-
2.623e+04	230	7.36	1.25	-1.31	0.28	-0.34	1.24	4.006e+04-2.809e+04	1.345e+04	-1487.40	-	
3.325e+04	222	6.93	1.00	-1.28	0.69	-0.97	0.78	4.189e+04-2.149e+04	3882.61	1.652e+04	-	
3.106e+04	223	5.39	0.94	-1.42	0.65	-1.14	0.77	3.031e+04-1.946e+04	-652.18	1.150e+04	-	
2.413e+04	206 23	231	5.30	6.01	-7.36	-0.04	-1.31	-6.66	2.739e+04-2.136e+04	7622.68	-1595.79	-
2.394e+04	230	6.75	3.75	-7.46	-2.78	-0.94	-5.53	3.653e+04-2.567e+04	1.225e+04	-1391.60	-	
3.034e+04	222	6.36	8.68	-1.67	3.41	3.60	-5.18	3.822e+04-1.966e+04	3520.36	1.504e+04	-	
2.836e+04	223	4.97	9.64	-5.27	0.86	3.51	-7.33	2.763e+04-1.779e+04	-617.66	1.046e+04	-	
2.202e+04	206 56	231	5.25	5.99	-6.48	4.25	-4.74	4.32	2.728e+04-2.123e+04	7587.52	-1543.99	-
2.382e+04	230	6.71	7.87	-6.80	6.13	-5.05	4.75	3.641e+04-2.549e+04	1.223e+04	-1313.50	-	
3.020e+04	222	6.30	4.65	-7.14	4.63	-7.13	0.44	3.806e+04-1.948e+04	3539.22	1.504e+04	-	
2.819e+04	223	4.91	4.75	-7.20	4.60	-7.04	1.34	2.753e+04-1.765e+04	-589.34	1.047e+04	-	
2.190e+04	206 69	231	5.23	0.78	-0.69	0.25	-0.17	0.70	2.729e+04-2.127e+04	7593.86	-1570.94	-
2.384e+04	230	6.69	1.14	-1.19	0.26	-0.31	1.13	3.642e+04-2.554e+04	1.223e+04	-1352.18	-	
3.023e+04	222	6.30	0.91	-1.16	0.62	-0.88	0.71	3.808e+04-1.954e+04	3529.65	1.502e+04	-	
2.823e+04	223	4.90	0.85	-1.29	0.60	-1.03	0.70	2.755e+04-1.769e+04	-592.89	1.046e+04	-	
2.193e+04	207 1	232	4.70	0.44	-0.76	-0.08	-0.25	0.60	2.400e+04-1.963e+04	5629.85	-1257.44	-
2.154e+04	231	6.86	1.15	-0.86	0.58	-0.29	0.91	3.577e+04-2.790e+04	9962.59	-2096.65	-	
3.126e+04	223	6.40	0.23	-1.42	0.18	-1.38	0.26	3.598e+04-2.317e+04	-766.36	1.358e+04	-	
2.869e+04	224	4.44	0.81	-0.83	0.76	-0.79	0.28	2.383e+04-1.728e+04	-2534.38	9085.64	-	
1.972e+04	207 3	232	3.97	0.37	-0.65	-0.07	-0.21	0.50	2.031e+04-1.661e+04	4763.72	-1063.99	-
1.823e+04	231	5.80	0.97	-0.73	0.49	-0.24	0.77	3.026e+04-2.361e+04	8429.88	-1774.09	-	
2.645e+04	223	5.42	0.19	-1.20	0.15	-1.17	0.22	3.044e+04-1.961e+04	-648.46	1.149e+04	-	
2.428e+04	224	3.75	0.69	-0.71	0.65	-0.66	0.24	2.016e+04-1.462e+04	-2144.48	7687.85	-	
1.668e+04	207 8	232	3.65	12.18	-27.02	10.62	-25.47	7.65	1.851e+04-1.507e+04	4331.07	-894.45	-
1.658e+04	231	5.32	16.80	-27.47	14.69	-25.36	9.43	2.758e+04-2.143e+04	7658.48	-1516.25	-	
2.407e+04	223	4.96	16.47	-27.92	14.21	-25.67	-9.75	2.772e+04-1.775e+04	-569.84	1.054e+04	-	
2.205e+04	224	3.43	13.23	-25.68	11.56	-24.02	-7.88	1.836e+04-1.327e+04	-1963.79	7058.45	-	
1.516e+04	207 40	232	3.63	4.52	-10.09	3.83	-9.41	3.08	1.848e+04-1.509e+04	4330.80	-940.72	-
1.657e+04	231	5.29	6.58	-10.33	5.64	-9.39	3.88	2.754e+04-2.145e+04	7661.69	-1577.61	-	



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.658e+04	226	12.37	36.35	5.42	22.41	19.36	-15.39	1.009e+05	4772.77	4.105e+04	6.459e+04	-
209 69	234	14.86	5.39	-5.87	1.08	-1.56	5.47	6.285e+04	-7.501e+04	1.537e+04	-2.753e+04	-
6.551e+04	4	19.79	5.70	2.92	3.70	4.93	-1.25	9.812e+04	-8.602e+04	3.241e+04	-2.031e+04	-
8.822e+04	6	34.01	7.12	-8.26	1.45	-2.59	7.42	1.555e+05	-1.607e+05	5.330e+04	-5.850e+04	-
1.479e+05	226	12.24	6.08	1.01	1.64	5.45	-1.67	1.008e+05	4685.57	4.094e+04	6.456e+04	-
4.659e+04	210 1	235	15.85	5.67	-2.77	1.67	1.22	7.654e+04	-7.079e+04	2.441e+04	-1.866e+04	-
7.045e+04	234	18.46	4.48	-5.40	-0.41	-0.51	4.94	9.207e+04	-7.939e+04	3.443e+04	-2.175e+04	-
8.099e+04	226	21.55	11.78	-3.71	5.09	2.98	7.67	1.318e+05	-6.467e+04	4.254e+04	2.459e+04	-
9.782e+04	227	15.71	2.27	-4.86	1.52	-4.10	2.20	9.981e+04	-4.258e+04	2.618e+04	3.106e+04	-
7.115e+04	210 3	235	13.41	4.80	-2.35	1.41	1.03	6.476e+04	-5.990e+04	2.065e+04	-1.579e+04	-
5.961e+04	234	15.62	3.79	-4.57	-0.35	-0.43	4.18	7.790e+04	-6.717e+04	2.913e+04	-1.841e+04	-
6.853e+04	226	18.24	9.97	-3.14	4.30	2.52	6.49	1.115e+05	-5.472e+04	3.599e+04	2.081e+04	-
8.277e+04	227	13.29	1.92	-4.12	1.28	-3.47	1.86	8.445e+04	-3.603e+04	2.215e+04	2.628e+04	-
6.020e+04	210 23	235	12.39	20.82	-35.59	-18.45	3.68	5.899e+04	-5.478e+04	1.872e+04	-1.451e+04	-
5.440e+04	234	14.36	14.29	-29.89	-15.15	-0.45	-20.83	7.092e+04	-6.147e+04	2.638e+04	-1.693e+04	-
6.255e+04	226	16.87	23.34	-50.46	-18.36	-8.75	-36.59	1.016e+05	-5.017e+04	3.259e+04	1.884e+04	-
7.557e+04	227	12.23	25.55	-14.10	-8.82	20.27	-13.48	7.697e+04	-3.301e+04	2.007e+04	2.389e+04	-
5.495e+04	210 54	235	12.25	18.73	-10.31	8.48	-0.06	5.884e+04	-5.433e+04	1.880e+04	-1.429e+04	-
5.411e+04	234	14.24	15.43	-10.70	5.10	-0.37	12.78	7.078e+04	-6.092e+04	2.652e+04	-1.666e+04	-
6.221e+04	226	16.67	30.76	-12.41	12.03	6.32	21.39	1.013e+05	-4.959e+04	3.277e+04	1.894e+04	-
7.513e+04	227	12.12	7.52	-14.41	4.81	-11.70	7.22	7.671e+04	-3.266e+04	2.016e+04	2.389e+04	-
5.465e+04	210 69	235	12.19	4.36	-2.13	1.29	0.94	5.888e+04	-5.445e+04	1.878e+04	-1.435e+04	-
5.419e+04	234	14.20	3.45	-4.15	-0.31	-0.39	3.80	7.082e+04	-6.107e+04	2.649e+04	-1.673e+04	-
6.230e+04	226	16.58	9.06	-2.86	3.91	2.29	5.90	1.014e+05	-4.975e+04	3.272e+04	1.892e+04	-
7.525e+04	227	12.09	1.75	-3.74	1.17	-3.16	1.69	7.678e+04	-3.275e+04	2.013e+04	2.389e+04	-
5.473e+04	211 1	236	13.09	2.99	-2.29	0.65	0.06	6.429e+04	-5.741e+04	2.036e+04	-1.348e+04	-
5.845e+04	235	15.56	3.72	-3.25	0.67	-0.20	3.46	7.683e+04	-6.776e+04	2.594e+04	-1.687e+04	-
6.906e+04	227	16.34	4.46	-3.12	2.18	-0.84	3.48	1.001e+05	-4.899e+04	2.478e+04	2.630e+04	-
7.452e+04	228	13.28	2.72	-2.64	1.62	-1.54	2.16	7.870e+04	-4.315e+04	1.305e+04	2.250e+04	-
6.074e+04	211 3	236	11.08	2.53	-1.93	0.55	0.05	5.440e+04	-4.857e+04	1.723e+04	-1.141e+04	-
4.945e+04	235	13.16	3.15	-2.75	0.57	-0.17	2.93	6.501e+04	-5.734e+04	2.195e+04	-1.427e+04	-
5.843e+04	227	13.82	3.77	-2.64	1.84	-0.71	2.94	8.467e+04	-4.145e+04	2.097e+04	2.225e+04	-
6.306e+04	228	11.24	2.30	-2.23	1.37	-1.31	1.83	6.659e+04	-3.652e+04	1.104e+04	1.903e+04	-
5.140e+04	211 7	236	10.18	35.00	-17.89	34.66	-17.55	4.973e+04	-4.417e+04	1.581e+04	-1.024e+04	-
4.511e+04	235	12.10	42.84	-14.86	42.35	-14.37	-5.30	5.949e+04	-5.210e+04	2.020e+04	-1.281e+04	-
5.329e+04	227	12.74	57.14	-19.61	52.69	-15.15	-17.94	7.741e+04	-3.757e+04	1.933e+04	2.051e+04	-
5.749e+04	228	10.38	47.62	-17.69	41.37	-11.44	-19.21	6.084e+04	-3.315e+04	1.017e+04	1.752e+04	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.685e+04	211	38	236	10.10	7.40	-12.90	-11.96	6.46	4.28	4.935e+04	-4.415e+04	1.561e+04	-1.042e+04	-
4.490e+04			235	12.00	6.49	-16.19	-14.73	5.03	5.56	5.896e+04	-5.213e+04	1.986e+04	-1.303e+04	-
5.306e+04			227	12.62	8.69	-20.98	-16.92	4.64	10.19	7.681e+04	-3.772e+04	1.896e+04	2.013e+04	-
5.726e+04			228	10.26	6.81	-17.64	-13.38	2.55	9.28	6.042e+04	-3.321e+04	9985.08	1.723e+04	-
4.668e+04	211	69	236	10.07	2.30	-1.76	0.50	0.04	2.02	4.945e+04	-4.416e+04	1.566e+04	-1.037e+04	-
4.496e+04			235	11.97	2.86	-2.50	0.52	-0.15	2.66	5.910e+04	-5.212e+04	1.995e+04	-1.297e+04	-
5.312e+04			227	12.57	3.43	-2.40	1.68	-0.65	2.67	7.697e+04	-3.768e+04	1.906e+04	2.023e+04	-
5.732e+04			228	10.22	2.09	-2.03	1.25	-1.19	1.66	6.054e+04	-3.320e+04	1.004e+04	1.730e+04	-
4.672e+04	212	1	237	10.81	1.97	-1.78	0.37	-0.18	1.85	5.304e+04	-4.745e+04	1.607e+04	-1.048e+04	-
4.846e+04			236	13.04	2.63	-2.34	0.52	-0.23	2.46	6.423e+04	-5.703e+04	2.046e+04	-1.326e+04	-
5.824e+04			228	13.32	2.67	-2.38	1.41	-1.12	2.19	7.861e+04	-4.359e+04	1.305e+04	2.197e+04	-
6.094e+04			229	10.83	2.05	-1.95	1.31	-1.21	1.55	6.134e+04	-3.860e+04	5466.83	1.727e+04	-
4.962e+04	212	3	237	9.15	1.67	-1.50	0.32	-0.15	1.57	4.488e+04	-4.015e+04	1.359e+04	-8868.97	-
4.101e+04			236	11.04	2.23	-1.98	0.44	-0.20	2.08	5.435e+04	-4.826e+04	1.731e+04	-1.122e+04	-
4.928e+04			228	11.27	2.26	-2.01	1.20	-0.95	1.85	6.652e+04	-3.688e+04	1.104e+04	1.859e+04	-
5.156e+04			229	9.17	1.74	-1.65	1.11	-1.02	1.31	5.190e+04	-3.266e+04	4625.78	1.462e+04	-
4.198e+04	212	7	237	8.40	26.21	-17.14	26.03	-16.95	-2.85	4.101e+04	-3.653e+04	1.244e+04	-7960.31	-
3.740e+04			236	10.12	31.79	-16.72	31.70	-16.62	-2.16	4.969e+04	-4.388e+04	1.588e+04	-1.007e+04	-
4.495e+04			228	10.38	42.58	-19.06	38.38	-14.86	-15.53	6.078e+04	-3.348e+04	1.018e+04	1.711e+04	-
4.700e+04			229	8.46	36.37	-17.56	31.22	-12.40	-15.86	4.740e+04	-2.968e+04	4262.66	1.345e+04	-
3.827e+04	212	38	237	8.33	6.56	-9.66	-9.10	5.99	2.98	4.072e+04	-3.649e+04	1.233e+04	-8100.03	-
3.723e+04			236	10.05	6.46	-11.66	-11.01	5.81	3.37	4.930e+04	-4.387e+04	1.568e+04	-1.025e+04	-
4.474e+04			228	10.28	7.42	-15.69	-12.51	4.24	7.96	6.036e+04	-3.355e+04	9988.14	1.682e+04	-
4.683e+04			229	8.37	6.57	-13.32	-10.00	3.25	7.41	4.710e+04	-2.969e+04	4184.33	1.323e+04	-
3.813e+04	212	69	237	8.31	1.51	-1.37	0.29	-0.14	1.43	4.080e+04	-3.650e+04	1.236e+04	-8062.70	-
3.728e+04			236	10.03	2.02	-1.80	0.40	-0.18	1.89	4.941e+04	-4.387e+04	1.574e+04	-1.020e+04	-
4.480e+04			228	10.24	2.06	-1.83	1.09	-0.86	1.68	6.047e+04	-3.353e+04	1.004e+04	1.690e+04	-
4.687e+04			229	8.33	1.58	-1.50	1.01	-0.93	1.20	4.718e+04	-2.969e+04	4205.25	1.329e+04	-
3.817e+04	213	1	238	8.81	1.45	-1.32	0.14	-9.41e-03	1.38	4.296e+04	-3.899e+04	1.237e+04	-8398.57	-
3.963e+04			237	10.79	1.80	-1.81	0.36	-0.37	1.77	5.297e+04	-4.740e+04	1.606e+04	-1.049e+04	-
4.840e+04			229	10.83	1.71	-1.78	0.98	-1.05	1.42	6.131e+04	-3.859e+04	5527.73	1.719e+04	-
4.961e+04			230	8.71	1.35	-1.51	0.99	-1.14	0.96	4.713e+04	-3.352e+04	700.35	1.291e+04	-
3.986e+04	213	3	238	7.46	1.23	-1.12	0.12	-7.96e-03	1.17	3.635e+04	-3.299e+04	1.047e+04	-7106.48	-
3.354e+04			237	9.13	1.52	-1.53	0.30	-0.31	1.50	4.482e+04	-4.011e+04	1.359e+04	-8879.33	-
4.095e+04			229	9.16	1.44	-1.50	0.83	-0.88	1.20	5.188e+04	-3.265e+04	4677.31	1.455e+04	-
4.198e+04			230	7.37	1.15	-1.28	0.83	-0.96	0.81	3.988e+04	-2.836e+04	592.60	1.092e+04	-
3.373e+04														-



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

213	7	238	6.84	19.07	-17.42	19.04	-17.39	-1.09	3.320e+04	-3.002e+04	9553.79	-6373.40	-
3.059e+04		237	8.36	22.63	-17.05	22.63	-17.05	-4.42e-03	4.095e+04	-3.649e+04	1.244e+04	-7971.21	-
3.735e+04		229	8.43	31.41	-18.34	27.87	-14.81	-12.78	4.738e+04	-2.968e+04	4310.49	1.339e+04	-
3.826e+04		230	6.80	27.00	-17.54	22.47	-13.01	-13.46	3.640e+04	-2.581e+04	549.31	1.005e+04	-
3.074e+04		238	6.79	6.59	-7.05	-6.79	6.33	1.85	3.299e+04	-2.998e+04	9501.67	-6492.17	-
3.045e+04	38	237	8.31	6.08	-8.12	-7.88	5.83	1.86	4.067e+04	-3.645e+04	1.233e+04	-8108.90	-
3.718e+04		229	8.36	6.69	-11.52	-9.14	4.30	6.15	4.708e+04	-2.969e+04	4230.81	1.317e+04	-
3.812e+04		230	6.73	6.17	-9.78	-7.16	3.55	5.92	3.620e+04	-2.578e+04	534.87	9885.38	-
3.063e+04		238	6.78	1.12	-1.01	0.11	-7.24e-03	1.06	3.304e+04	-2.999e+04	9515.60	-6460.44	-
3.049e+04	69	237	8.30	1.39	-1.39	0.27	-0.28	1.36	4.075e+04	-3.646e+04	1.236e+04	-8072.12	-
3.723e+04		229	8.33	1.31	-1.37	0.75	-0.80	1.09	4.716e+04	-2.968e+04	4252.10	1.323e+04	-
3.816e+04		230	6.70	1.04	-1.16	0.76	-0.88	0.74	3.625e+04	-2.579e+04	538.73	9929.18	-
3.066e+04		239	6.96	0.85	-0.92	-0.27	0.20	0.86	3.366e+04	-3.113e+04	9182.11	-6646.21	-
3.141e+04	1	238	8.81	1.06	-1.26	0.07	-0.27	1.15	4.297e+04	-3.901e+04	1.240e+04	-8440.65	-
3.964e+04		230	8.72	0.99	-1.32	0.66	-0.99	0.81	4.718e+04	-3.356e+04	719.13	1.289e+04	-
3.991e+04		231	6.83	0.95	-1.10	0.84	-1.00	0.46	3.537e+04	-2.810e+04	-2002.16	9268.19	-
3.123e+04		239	5.89	0.72	-0.78	-0.23	0.17	0.73	2.848e+04	-2.634e+04	7769.47	-5623.72	-
2.658e+04	3	238	7.46	0.90	-1.07	0.06	-0.23	0.97	3.636e+04	-3.301e+04	1.049e+04	-7142.09	-
3.354e+04		230	7.38	0.84	-1.12	0.56	-0.83	0.69	3.992e+04	-2.840e+04	608.49	1.091e+04	-
3.377e+04		231	5.78	0.81	-0.93	0.71	-0.84	0.39	2.993e+04	-2.378e+04	-1694.13	7842.31	-
2.643e+04		239	5.42	8.71	-8.45	-3.71	3.97	-7.67	2.598e+04	-2.401e+04	7100.29	-5130.04	-
2.423e+04	23	238	6.84	7.74	-10.68	-7.14	4.20	-7.25	3.315e+04	-3.014e+04	9554.68	-6541.01	-
3.060e+04		230	6.76	9.47	-2.31	-1.26	8.42	-3.36	3.641e+04	-2.594e+04	541.15	9925.33	-
3.082e+04		231	5.33	11.02	-5.43	-3.04	8.62	-5.80	2.730e+04	-2.172e+04	-1558.86	7135.17	-
2.412e+04		239	5.37	2.85	-2.79	-1.48	1.54	-2.38	2.593e+04	-2.397e+04	7076.70	-5118.87	-
2.419e+04	55	238	6.79	2.29	-3.46	-2.57	1.40	-2.08	3.309e+04	-3.005e+04	9543.82	-6510.38	-
3.053e+04		230	6.72	2.82	-0.37	-0.14	2.59	-0.83	3.633e+04	-2.586e+04	548.79	9920.88	-
3.074e+04		231	5.28	3.51	-1.54	-0.69	2.66	-1.89	2.724e+04	-2.166e+04	-1546.95	7131.49	-
2.406e+04		239	5.36	0.66	-0.71	-0.21	0.15	0.66	2.589e+04	-2.394e+04	7063.16	-5112.47	-
2.416e+04	69	238	6.78	0.82	-0.97	0.05	-0.21	0.88	3.305e+04	-3.001e+04	9537.59	-6492.81	-
3.049e+04		230	6.70	0.76	-1.02	0.51	-0.76	0.63	3.629e+04	-2.582e+04	553.17	9918.32	-
3.070e+04		231	5.26	0.73	-0.85	0.65	-0.77	0.36	2.721e+04	-2.162e+04	-1540.12	7129.38	-
2.403e+04		240	4.82	0.06	-1.15	-0.58	-0.51	0.60	2.322e+04	-2.161e+04	5965.05	-4349.39	-
2.181e+04	1	239	7.00	0.93	0.11	0.86	0.18	0.22	3.375e+04	-3.140e+04	9056.98	-6700.61	-
3.161e+04		231	6.89	-0.05	-1.20	-0.25	-1.00	0.44	3.568e+04	-2.832e+04	-1903.22	9260.10	-
3.151e+04		232	4.74	0.89	-0.63	0.89	-0.63	-0.03	2.388e+04	-2.024e+04	-2604.57	6241.83	-
2.161e+04		240	4.08	0.05	-0.97	-0.49	-0.43	0.51	1.965e+04	-1.828e+04	5047.35	-3680.25	-
215	3												

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.846e+04														
2.674e+04	239	5.92	0.79	0.09	0.73	0.15	0.19	2.856e+04-2.657e+04	7663.60	-5669.75	-			
2.666e+04	231	5.83	-0.04	-1.02	-0.21	-0.85	0.37	3.019e+04-2.397e+04	-1610.42	7835.47	-			
1.829e+04	232	4.01	0.75	-0.53	0.75	-0.53	-0.03	2.021e+04-1.713e+04	-2203.86	5281.55	-			
1.681e+04	215 21	240	3.75	19.15	-9.13	-6.78	16.80	-7.81	1.788e+04-1.668e+04	4604.56	-3404.02	-		
2.435e+04	239	5.43	19.62	-13.37	-10.94	17.19	-8.62	2.598e+04-2.423e+04	6972.02	-5225.10	-			
2.431e+04	231	5.33	20.69	-8.58	-7.66	19.77	5.08	2.749e+04-2.188e+04	-1466.91	7070.92	-			
1.667e+04	232	3.67	19.34	-7.39	-7.27	19.22	1.77	1.839e+04-1.563e+04	-2005.44	4764.71	-			
1.679e+04	215 53	240	3.72	6.58	-3.46	-2.76	5.88	-2.55	1.787e+04-1.664e+04	4594.36	-3366.95	-		
2.433e+04	239	5.40	7.21	-4.42	-3.57	6.35	-3.03	2.597e+04-2.418e+04	6968.77	-5180.12	-			
2.427e+04	231	5.31	7.15	-3.34	-2.91	6.72	2.07	2.746e+04-2.182e+04	-1465.07	7104.11	-			
1.664e+04	232	3.65	6.75	-2.26	-2.21	6.70	0.63	1.838e+04-1.559e+04	-2004.22	4788.03	-			
1.678e+04	215 69	240	3.71	0.05	-0.88	-0.45	-0.39	0.46	1.786e+04-1.662e+04	4588.50	-3345.68	-		
2.431e+04	239	5.38	0.71	0.08	0.66	0.14	0.17	2.596e+04-2.415e+04	6966.91	-5154.32	-			
2.424e+04	231	5.30	-0.03	-0.92	-0.19	-0.77	0.34	2.745e+04-2.179e+04	-1464.02	7123.16	-			
1.663e+04	232	3.65	0.69	-0.48	0.69	-0.48	-0.03	1.837e+04-1.557e+04	-2003.51	4801.41	-			
2.286e+04	216 1	241	0.43	0.14	-0.60	-0.06	-0.40	0.33	2244.18 -1706.38	317.76	220.04	-1974.67	-	
2.277e+04		240	5.03	0.28	-0.22	0.25	-0.19	0.12	2.444e+04-2.242e+04	6166.89	-4146.62	-		
1.934e+04	232	4.98	-0.13	-0.88	-0.14	-0.88	-0.05	2.477e+04-2.157e+04	-2692.73	5893.67	-			
1.927e+04	233	0.71	0.28	-0.48	0.26	-0.46	-0.11	4988.80 -1208.68	145.27	3634.85	-2560.84	-		
	216 3	241	0.36	0.12	-0.51	-0.05	-0.34	0.28	1898.92 -1443.86	268.88	186.19	-1670.88	-	
		240	4.26	0.23	-0.19	0.21	-0.16	0.10	2.068e+04-1.897e+04	5218.14	-3508.68	-		
1.763e+04	232	4.21	-0.11	-0.74	-0.12	-0.74	-0.04	2.096e+04-1.825e+04	-2278.46	4986.95	-			
1.752e+04	233	0.60	0.24	-0.41	0.22	-0.39	-0.09	4221.29 -1022.73	122.92	3075.64	-2166.86	-		
	216 8	241	0.41	3.98	-29.40	2.21	-27.63	7.47	1776.39 -1277.49	246.87	252.03	-1526.94	-	
		240	3.93	6.83	-28.52	4.00	-25.69	9.59	1.888e+04-1.724e+04	4745.47	-3101.55	-		
1.760e+04	232	3.88	8.10	-27.65	5.53	-25.08	-9.24	1.910e+04-1.657e+04	-2077.69	4606.74	-			
1.752e+04	233	0.59	4.61	-25.52	2.58	-23.49	-7.55	3893.46 -914.67	113.67	2865.11	-1971.53	-		
	216 40	241	0.36	1.49	-10.97	0.78	-10.27	2.88	1744.43 -1299.68	245.32	199.44	-1521.88	-	
		240	3.89	2.62	-10.50	1.58	-9.46	3.55	1.883e+04-1.724e+04	4744.38	-3157.57	-		
1.752e+04	232	3.85	2.87	-10.49	1.95	-9.57	-3.39	1.907e+04-1.658e+04	-2073.65	4560.26	-			
1.758e+04	233	0.56	1.81	-9.53	1.07	-8.79	-2.81	3857.89 -924.22	112.45	2821.22	-1970.48	-		
	216 69	241	0.33	0.11	-0.46	-0.05	-0.31	0.25	1726.29 -1312.60	244.43	169.26	-1518.98	-	
		240	3.87	0.21	-0.17	0.19	-0.15	0.09	1.880e+04-1.725e+04	4743.76	-3189.71	-		
1.751e+04	232	3.83	-0.10	-0.68	-0.10	-0.67	-0.04	1.905e+04-1.659e+04	-2071.33	4533.59	-			
7.878e+04	233	0.54	0.22	-0.37	0.20	-0.36	-0.08	3837.54 -929.75	111.75	2796.04	-1969.87	-		
	217 1	242	17.36	5.85	-4.83	1.21	-0.19	5.30	6.048e+04-9.931e+04	-6112.64-3.272e+04	-			
9.640e+04	1	21.21	3.65	-3.66	-0.30	0.30	3.64	7.579e+04-1.198e+05	-5488.83-3.854e+04	-				
1.326e+05	4	28.53	9.10	-4.99	6.92	-2.81	5.10	1.273e+05-1.380e+05	-7150.00	-3622.52	-			
8.236e+04	234	17.85	4.61	-1.12	2.10	1.39	2.84	9.083e+04-7.502e+04	-1724.14	1.753e+04	-			
6.666e+04	217 3	242	14.69	4.95	-4.09	1.02	-0.16	4.48	5.117e+04-8.403e+04	-5172.23-2.769e+04	-			
8.157e+04	1	17.94	3.09	-3.09	-0.26	0.25	3.08	6.413e+04-1.014e+05	-4644.40-3.261e+04	-				

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.122e+05	4	24.14	7.70	-4.22	5.85	-2.37	4.32	1.077e+05-1.168e+05	-6050.00	-3065.21	-
6.969e+04	234	15.11	3.90	-0.95	1.78	1.18	2.41	7.685e+04-6.348e+04	-1458.88	1.483e+04	-
6.082e+04	217 23	242	13.57	22.90	-46.36	-32.97	9.50	-27.35	4.654e+04-7.682e+04	-4891.20-2.539e+04	-
7.442e+04	1	16.46	26.07	-29.98	-23.67	19.76	-17.71	5.829e+04-9.272e+04	-4514.64-2.992e+04	-	-
1.024e+05	4	22.18	25.36	-53.24	-46.43	18.55	-22.11	9.800e+04-1.069e+05	-5890.27	-2986.89	-
6.359e+04	234	13.93	23.73	-29.19	-21.95	16.49	-18.18	6.996e+04-5.810e+04	-1539.36	1.340e+04	-
6.068e+04	217 55	242	13.39	6.43	-14.48	-11.43	3.37	-7.38	4.653e+04-7.655e+04	-4770.99-2.525e+04	-
7.425e+04	1	16.34	8.61	-10.04	-8.78	7.35	-4.68	5.829e+04-9.237e+04	-4328.80-2.975e+04	-	-
1.022e+05	4	21.99	6.91	-15.06	-13.54	5.39	-5.57	9.793e+04-1.064e+05	-5642.27	-2859.59	-
6.344e+04	234	13.78	8.47	-8.75	-6.97	6.69	-5.24	6.990e+04-5.785e+04	-1403.94	1.345e+04	-
6.060e+04	217 69	242	13.36	4.50	-3.72	0.93	-0.15	4.07	4.652e+04-7.639e+04	-4702.03-2.517e+04	-
7.415e+04	1	16.31	2.81	-2.81	-0.23	0.23	2.80	5.830e+04-9.217e+04	-4222.18-2.965e+04	-	-
1.020e+05	4	21.95	7.00	-3.84	5.32	-2.16	3.92	9.789e+04-1.062e+05	-5500.00	-2786.56	-
6.336e+04	234	13.73	3.55	-0.86	1.62	1.07	2.19	6.987e+04-5.771e+04	-1326.26	1.348e+04	-
6.594e+04	218 1	243	14.52	3.79	-2.82	0.77	0.20	3.30	5.537e+04-7.892e+04	885.16-2.444e+04	-
7.866e+04	242	17.29	4.48	-4.24	0.52	-0.28	4.34	6.329e+04-9.635e+04	-2962.18-3.011e+04	-	-
8.811e+04	234	19.05	6.81	-3.82	3.17	-0.19	5.04	9.163e+04-8.536e+04	-5139.83	1.141e+04	-
7.138e+04	235	15.46	3.57	-3.42	2.01	-1.86	2.91	7.672e+04-6.697e+04	-3316.29	1.306e+04	-
5.579e+04	218 3	243	12.28	3.21	-2.39	0.65	0.17	2.79	4.685e+04-6.678e+04	748.98-2.068e+04	-
6.656e+04	242	14.63	3.79	-3.59	0.44	-0.24	3.67	5.355e+04-8.153e+04	-2506.46-2.547e+04	-	-
7.455e+04	234	16.12	5.76	-3.23	2.68	-0.16	4.27	7.754e+04-7.223e+04	-4349.09	9655.97	-
6.040e+04	235	13.08	3.02	-2.89	1.70	-1.57	2.46	6.492e+04-5.667e+04	-2806.09	1.105e+04	-
5.090e+04	218 7	243	11.29	31.49	-13.70	28.67	-10.88	-10.94	4.291e+04-6.075e+04	839.75-1.868e+04	-
6.072e+04	242	13.45	34.65	-18.15	30.97	-14.47	-13.45	4.911e+04-7.414e+04	-2024.80-2.301e+04	-	-
6.800e+04	234	14.87	62.86	-32.81	53.04	-23.00	-29.03	7.101e+04-6.559e+04	-3641.37	9065.55	-
5.508e+04	235	12.04	45.67	-7.17	38.59	-0.09	-18.00	5.940e+04-5.149e+04	-2378.00	1.028e+04	-
5.066e+04	218 38	243	11.20	7.43	-12.89	-9.64	4.18	7.45	4.247e+04-6.069e+04	622.98-1.884e+04	-
6.043e+04	242	13.34	9.42	-15.19	-10.75	4.98	9.46	4.853e+04-7.411e+04	-2371.13-2.321e+04	-	-
6.769e+04	234	14.72	16.05	-23.87	-16.01	8.19	15.87	7.030e+04-6.569e+04	-4067.59	8673.38	-
5.484e+04	235	11.93	3.91	-17.79	-11.96	-1.91	9.62	5.888e+04-5.153e+04	-2614.06	9963.47	-
5.072e+04	218 69	243	11.17	2.92	-2.17	0.59	0.15	2.54	4.259e+04-6.071e+04	680.89-1.880e+04	-
6.051e+04	242	13.30	3.44	-3.26	0.40	-0.22	3.34	4.868e+04-7.412e+04	-2278.60-2.316e+04	-	-
6.778e+04	234	14.65	5.24	-2.94	2.44	-0.14	3.88	7.049e+04-6.566e+04	-3953.72	8778.15	-
5.491e+04	235	11.89	2.75	-2.63	1.55	-1.43	2.24	5.902e+04-5.152e+04	-2550.99	1.005e+04	-
5.561e+04	219 1	244	12.25	2.46	-2.24	0.37	-0.15	2.34	4.969e+04-6.396e+04	4592.69-1.886e+04	-
6.593e+04	243	14.51	3.34	-2.97	0.45	-0.08	3.14	5.590e+04-7.841e+04	1488.38-2.401e+04	-	-
	235	15.60	3.99	-3.05	2.12	-1.18	3.10	7.643e+04-6.860e+04	-4350.81	1.218e+04	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

7.204e+04												
5.994e+04	236	13.01	2.51	-2.28	1.50	-1.27	1.95	6.405e+04-5.688e+04	-4359.94	1.153e+04		-
4.705e+04	244	10.37	2.08	-1.90	0.31	-0.13	1.98	4.205e+04-5.412e+04	3886.13	1.596e+04		-
5.579e+04	243	12.28	2.82	-2.51	0.38	-0.07	2.66	4.730e+04-6.635e+04	1259.40	2.031e+04		-
6.096e+04	235	13.20	3.37	-2.58	1.80	-1.00	2.63	6.467e+04-5.805e+04	-3681.46	1.030e+04		-
5.072e+04	236	11.01	2.13	-1.93	1.27	-1.08	1.65	5.419e+04-4.813e+04	-3689.18	9755.69		-
4.293e+04	244	9.53	24.98	-13.39	23.22	-11.63	-8.03	3.847e+04-4.926e+04	3627.43	1.441e+04		-
5.090e+04	243	11.27	28.59	-13.96	26.76	-12.13	-8.64	4.332e+04-6.036e+04	1305.11	1.835e+04		-
5.559e+04	235	12.15	43.88	-16.38	37.68	-10.18	-18.31	5.917e+04-5.274e+04	-3172.38	9601.90		-
4.625e+04	236	10.14	36.93	-13.44	29.88	-6.39	-17.48	4.955e+04-4.376e+04	-3268.66	9056.75		-
4.272e+04	244	9.45	6.12	-10.12	-8.08	4.08	5.38	3.814e+04-4.918e+04	3498.36	1.455e+04		-
5.065e+04	243	11.19	6.90	-11.84	-9.28	4.33	6.44	4.288e+04-6.030e+04	1086.50	1.851e+04		-
5.535e+04	235	12.04	7.63	-16.66	-11.51	2.47	9.93	5.865e+04-5.278e+04	-3410.36	9281.89		-
4.605e+04	236	10.04	5.71	-14.04	-9.32	0.99	8.42	4.916e+04-4.375e+04	-3384.84	8800.29		-
4.277e+04	244	9.42	1.89	-1.73	0.28	-0.12	1.80	3.823e+04-4.920e+04	3532.84	1.451e+04		-
5.072e+04	243	11.16	2.57	-2.28	0.35	-0.06	2.42	4.300e+04-6.032e+04	1144.91	1.847e+04		-
5.542e+04	235	12.00	3.07	-2.34	1.63	-0.91	2.39	5.879e+04-5.277e+04	-3346.78	9367.38		-
4.611e+04	236	10.00	1.93	-1.76	1.16	-0.98	1.50	4.927e+04-4.375e+04	-3353.80	8868.81		-
4.644e+04	245	10.25	1.62	-1.95	-0.10	-0.22	1.79	4.365e+04-5.159e+04	6563.03	1.450e+04		-
5.555e+04	244	12.24	2.33	-2.30	0.28	-0.26	2.30	4.971e+04-6.385e+04	4673.33	1.881e+04		-
5.998e+04	236	13.01	2.39	-2.18	1.31	-1.11	1.94	6.391e+04-5.710e+04	-4510.68	1.132e+04		-
4.958e+04	237	10.77	1.74	-1.72	1.13	-1.11	1.32	5.275e+04-4.745e+04	-4520.91	9825.53		-
3.930e+04	245	8.67	1.37	-1.65	-0.09	-0.19	1.51	3.694e+04-4.365e+04	5553.34	1.227e+04		-
4.700e+04	244	10.36	1.97	-1.95	0.24	-0.22	1.95	4.206e+04-5.402e+04	3954.36	1.592e+04		-
5.076e+04	236	11.01	2.02	-1.85	1.11	-0.94	1.64	5.407e+04-4.832e+04	-3816.73	9574.58		-
4.196e+04	237	9.12	1.47	-1.46	0.96	-0.94	1.12	4.464e+04-4.015e+04	-3825.38	8313.91		-
3.585e+04	245	7.97	19.08	-13.40	18.08	-12.41	-5.60	3.376e+04-3.974e+04	5094.42	1.107e+04		-
4.288e+04	244	9.50	21.29	-13.10	20.42	-12.23	-5.39	3.848e+04-4.916e+04	3690.11	1.438e+04		-
4.628e+04	236	10.13	33.60	-14.86	28.62	-9.87	-14.72	4.944e+04-4.393e+04	-3384.16	8891.84		-
3.825e+04	237	8.41	28.79	-13.75	22.46	-7.42	-15.14	4.079e+04-3.653e+04	-3447.53	7707.57		-
3.568e+04	245	7.90	5.54	-7.95	-6.70	4.29	3.91	3.351e+04-3.966e+04	5031.74	1.118e+04		-
4.267e+04	244	9.43	5.68	-8.65	-7.15	4.19	4.38	3.815e+04-4.909e+04	3560.15	1.451e+04		-
4.609e+04	236	10.04	6.06	-12.68	-9.05	2.44	7.40	4.906e+04-4.392e+04	-3500.96	8635.74		-
3.810e+04	237	8.32	5.38	-10.85	-7.00	1.54	6.90	4.050e+04-3.649e+04	-3488.59	7503.61		-
3.573e+04	245	7.88	1.25	-1.50	-0.08	-0.17	1.37	3.358e+04-3.968e+04	5048.49	1.115e+04		-
4.273e+04	244	9.42	1.79	-1.77	0.22	-0.20	1.77	3.824e+04-4.911e+04	3594.87	1.447e+04		-
4.614e+04	236	10.01	1.84	-1.68	1.01	-0.85	1.49	4.916e+04-4.392e+04	-3469.76	8704.16		-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

	237	8.29	1.34	-1.32	0.87	-0.85	1.01	4.058e+04-3.650e+04	-3477.62	7558.10	-	
3.814e+04	221 1	246	8.48	1.13	-1.90	-0.82	0.04	1.45	3.762e+04-4.121e+04	7429.41-1.102e+04	-	
3.832e+04		245	10.25	1.49	-2.00	-0.06	-0.44	1.74	4.363e+04-5.157e+04	6561.54-1.450e+04	-	
4.642e+04		237	10.77	1.44	-1.58	0.80	-0.95	1.23	5.270e+04-4.747e+04	-4536.02	9771.44	-
4.957e+04		238	8.80	1.28	-1.32	0.96	-1.00	0.86	4.268e+04-3.915e+04	-4460.47	7986.31	-
4.044e+04	221 3	246	7.17	0.95	-1.61	-0.69	0.03	1.23	3.183e+04-3.487e+04	6286.42	-9321.30	-
3.243e+04		245	8.67	1.26	-1.69	-0.05	-0.38	1.47	3.692e+04-4.364e+04	5552.07-1.227e+04	-	-
3.928e+04		237	9.11	1.22	-1.34	0.68	-0.80	1.04	4.460e+04-4.017e+04	-3838.17	8268.14	-
4.195e+04		238	7.44	1.08	-1.12	0.81	-0.84	0.73	3.611e+04-3.313e+04	-3774.25	6757.65	-
3.422e+04	221 7	246	6.58	13.74	-13.67	13.34	-13.26	-3.31	2.907e+04-3.175e+04	5715.08	-8398.94	-
2.958e+04		245	7.94	14.69	-13.15	14.43	-12.89	-2.67	3.375e+04-3.973e+04	5094.57-1.108e+04	-	-
3.584e+04		237	8.38	25.44	-14.07	21.41	-10.03	-11.96	4.075e+04-3.654e+04	-3459.76	7666.78	-
3.824e+04		238	6.87	21.65	-13.84	16.14	-8.33	-12.85	3.298e+04-3.015e+04	-3424.52	6263.17	-
3.119e+04	221 39	246	6.53	4.49	-4.84	4.46	-4.82	-0.50	2.899e+04-3.172e+04	5714.98	-8446.58	-
2.952e+04		245	7.89	5.23	-4.92	5.23	-4.92	-0.13	3.363e+04-3.969e+04	5064.55-1.112e+04	-	-
3.576e+04		237	8.31	9.25	-5.18	8.20	-4.12	-3.76	4.062e+04-3.652e+04	-3478.50	7571.28	-
3.817e+04		238	6.79	7.94	-5.11	6.35	-3.53	-4.26	3.288e+04-3.013e+04	-3428.72	6187.01	-
3.114e+04	221 69	246	6.52	0.87	-1.46	-0.63	0.03	1.12	2.894e+04-3.170e+04	5714.93	-8473.91	-
2.948e+04		245	7.88	1.15	-1.54	-0.05	-0.34	1.34	3.357e+04-3.967e+04	5047.34-1.115e+04	-	-
3.571e+04		237	8.28	1.10	-1.22	0.62	-0.73	0.95	4.054e+04-3.651e+04	-3489.25	7516.49	-
3.813e+04		238	6.77	0.99	-1.02	0.74	-0.77	0.66	3.283e+04-3.011e+04	-3431.13	6143.32	-
3.110e+04	222 1	247	6.90	4.40	-3.55	-2.82	3.67	2.28	3.143e+04-3.262e+04	7745.07	-8932.72	-
3.092e+04		246	8.46	0.05	-2.32	-0.40	-1.86	0.93	3.767e+04-4.102e+04	7343.44-1.070e+04	-	-
3.829e+04		238	8.82	1.52	-1.00	0.52	4.70e-03	1.23	4.275e+04-3.932e+04	-4437.50	7865.17	-
4.057e+04		239	6.94	1.37	-1.44	1.32	-1.39	-0.38	3.320e+04-3.143e+04	-4438.88	6207.91	-
3.188e+04	222 3	247	5.84	3.72	-3.00	-2.39	3.11	1.93	2.660e+04-2.760e+04	6553.52	-7558.45	-
2.617e+04		246	7.15	0.05	-1.96	-0.34	-1.58	0.79	3.187e+04-3.471e+04	6213.68	-9052.16	-
3.240e+04		238	7.47	1.29	-0.84	0.44	3.98e-03	1.04	3.617e+04-3.327e+04	-3754.81	6655.15	-
3.433e+04		239	5.87	1.16	-1.22	1.11	-1.17	-0.32	2.809e+04-2.660e+04	-3755.97	5252.85	-
2.697e+04	222 7	247	5.31	8.45	-12.75	8.43	-12.73	-0.66	2.423e+04-2.502e+04	5865.47	-6651.84	-
2.382e+04		246	6.55	8.85	-14.43	8.85	-14.43	-0.25	2.910e+04-3.165e+04	5660.01	-8214.76	-
2.957e+04		238	6.86	18.51	-13.03	15.47	-10.00	-9.31	3.304e+04-3.025e+04	-3406.96	6191.26	-
3.128e+04		239	5.43	15.52	-14.48	10.70	-9.65	-11.03	2.568e+04-2.422e+04	-3386.56	4847.33	-
2.461e+04	222 37	247	5.31	11.39	-8.35	-8.34	11.38	0.49	2.417e+04-2.508e+04	6020.47	-6934.08	-
2.376e+04		246	6.50	6.71	-7.15	-7.07	6.64	-1.02	2.894e+04-3.154e+04	5656.13	-8265.35	-
2.943e+04		238	6.81	8.93	-9.02	-7.53	7.45	4.94	3.284e+04-3.026e+04	-3419.02	5997.76	-
3.120e+04		239	5.36	7.11	-5.97	-4.90	6.03	3.59	2.550e+04-2.421e+04	-3440.41	4737.05	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.451e+04														
222	69	247	5.31	3.38	-2.73	-2.17	2.83	1.76	2.418e+04-2.509e+04	5957.74	-6871.32		-	
2.379e+04														
		246	6.50	0.04	-1.78	-0.31	-1.43	0.72	2.897e+04-3.155e+04	5648.80	-8229.23		-	
2.946e+04														
		238	6.79	1.17	-0.77	0.40	3.61e-03	0.95	3.288e+04-3.025e+04	-3413.46	6050.13		-	
3.121e+04														
		239	5.34	1.05	-1.11	1.01	-1.07	-0.29	2.554e+04-2.418e+04	-3414.52	4775.32		-	
2.452e+04														
223	1	248	4.68	0.57	-3.69	0.46	-3.58	0.68	2.180e+04-2.176e+04	4900.15	-4861.54		-	
2.123e+04														
		247	6.64	7.76	0.58	3.40	4.94	-3.51	2.936e+04-3.222e+04	6368.81	-9227.15		-	
2.979e+04														
		239	7.13	0.02	-4.52	-2.75	-1.74	2.21	3.444e+04-3.181e+04	-3660.78	6291.22		-	
3.275e+04														
		240	4.78	2.33	-0.46	0.58	1.28	-1.35	2.244e+04-2.194e+04	-3234.88	3739.90		-	
2.192e+04														
223	3	248	3.96	0.48	-3.12	0.39	-3.03	0.58	1.845e+04-1.841e+04	4146.28	-4113.61		-	
1.796e+04														
		247	5.62	6.57	0.49	2.88	4.18	-2.97	2.485e+04-2.726e+04	5388.99	-7807.59		-	
2.521e+04														
		239	6.03	0.02	-3.82	-2.33	-1.48	1.87	2.914e+04-2.692e+04	-3097.58	5323.34		-	
2.771e+04														
		240	4.04	1.97	-0.39	0.49	1.08	-1.14	1.899e+04-1.856e+04	-2737.21	3164.53		-	
1.854e+04														
223	5	248	3.60	21.30	-8.56	-8.00	20.75	-4.04	1.671e+04-1.674e+04	3741.47	-3771.39		-	
1.630e+04														
		247	5.09	31.25	-8.63	-5.70	28.32	-10.42	2.216e+04-2.479e+04	4704.12	-7329.12		-	
2.269e+04														
		239	5.55	23.29	-20.31	-16.67	19.66	12.05	2.655e+04-2.447e+04	-2676.28	4751.59		-	
2.524e+04														
		240	3.70	24.06	-10.35	-8.49	22.20	7.77	1.713e+04-1.688e+04	-2478.07	2732.32		-	
1.680e+04														
223	37	248	3.60	5.96	-2.84	-2.69	5.81	-1.14	1.675e+04-1.674e+04	3759.18	-3751.22		-	
1.632e+04														
		247	5.10	14.74	-2.42	-0.41	12.74	-5.51	2.243e+04-2.479e+04	4828.01	-7182.13		-	
2.283e+04														
		239	5.51	8.23	-9.34	-7.42	6.31	5.47	2.651e+04-2.447e+04	-2765.05	4807.39		-	
2.521e+04														
		240	3.67	9.12	-3.21	-2.81	8.72	2.17	1.722e+04-1.688e+04	-2484.62	2824.16		-	
1.684e+04														
223	69	248	3.60	0.44	-2.84	0.35	-2.75	0.52	1.677e+04-1.674e+04	3769.35	-3739.65		-	
1.633e+04														
		247	5.11	5.97	0.45	2.62	3.80	-2.70	2.259e+04-2.479e+04	4899.08	-7097.81		-	
2.291e+04														
		239	5.49	0.01	-3.47	-2.12	-1.34	1.70	2.649e+04-2.447e+04	-2815.98	4839.40		-	
2.519e+04														
		240	3.67	1.79	-0.36	0.45	0.99	-1.04	1.726e+04-1.688e+04	-2488.37	2876.84		-	
1.686e+04														
224	1	249	0.44	-0.10	-2.07	-0.19	-1.98	0.41	1498.70 -2528.10	229.25	-1258.65	-1870.91	-	
		248	4.86	0.96	-0.85	0.96	-0.85	0.03	2.266e+04-2.257e+04	5129.22	-5034.89		-	
2.203e+04														
		240	5.04	0.21	-1.28	-0.46	-0.61	-0.74	2.360e+04-2.333e+04	-3449.75	3717.02		-	
2.319e+04														
		241	0.53	0.35	-1.08	0.31	-1.04	-0.24	3130.58 -1757.68	34.46	1338.45	-2355.56	-	
		249	0.37	-0.09	-1.75	-0.16	-1.68	0.34	1268.13 -2139.16	193.98	-1065.02	-1583.08	-	
		248	4.11	0.81	-0.72	0.81	-0.72	0.02	1.917e+04-1.909e+04	4340.11	-4260.29		-	
1.864e+04														
		240	4.27	0.18	-1.08	-0.39	-0.52	-0.63	1.997e+04-1.974e+04	-2919.02	3145.17		-	
1.962e+04														
		241	0.45	0.29	-0.91	0.26	-0.88	-0.20	2648.95 -1487.26	29.16	1132.53	-1993.17	-	
		249	0.37	3.54	-29.18	2.33	-27.97	6.18	1182.01 -1901.56	172.38	-891.93	-1447.04	-	
		248	3.79	4.90	-27.14	2.62	-24.86	8.24	1.755e+04-1.734e+04	3986.14	-3778.15		-	
1.701e+04														
		240	3.94	8.22	-25.67	5.67	-23.12	-8.94	1.824e+04-1.795e+04	-2676.31	2964.05		-	
1.787e+04														
		241	0.45	4.15	-24.25	1.84	-21.94	-7.77	2470.71 -1319.36	30.08	1121.27	-1814.79	-	
		249	0.34	1.24	-11.65	0.76	-11.16	2.45	1163.36 -1928.85	174.90	-940.39	-1442.04	-	
		248	3.75	2.20	-10.26	1.42	-9.48	3.02	1.747e+04-1.735e+04	3960.35	-3838.42		-	
1.697e+04														
		240	3.90	2.96	-9.85	1.84	-8.72	-3.62	1.819e+04-1.795e+04	-2661.91	2897.45		-	
1.785e+04														
		241	0.42	1.67	-9.36	0.82	-8.51	-2.95	2430.84 -1340.03	27.81	1063.00	-1813.00	-	



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

	224	69	249	0.34	-0.08	-1.59	-0.15	-1.52	0.31	1152.85	-1944.69	176.35	-968.20	-1439.17
			248	3.74	0.74	-0.65	0.74	-0.65	0.02	1.743e+04	-1.736e+04	3945.56	-3872.99	-
1.695e+04														
			240	3.88	0.16	-0.98	-0.36	-0.47	-0.57	1.816e+04	-1.795e+04	-2653.65	2859.25	-
1.784e+04														
			241	0.41	0.27	-0.83	0.24	-0.80	-0.18	2408.14	-1352.06	26.51	1029.58	-1811.97
	225	1	242	16.99	6.49	-4.01	-4.01	6.48	0.20	6.490e+04	-9.222e+04	6.391e+04	-9.123e+04	1.243e+04
			250	17.83	1.42	-5.82	-5.40	1.00	1.68	3.395e+04	-1.237e+05	2.729e+04	-1.170e+05	3.171e+04
			2	27.93	5.56	-3.62	-3.26	5.20	-1.78	7.310e+04	-1.794e+05	6.760e+04	-1.739e+05	3.686e+04
			1	21.82	3.65	-4.46	-4.19	3.38	1.44	7.628e+04	-1.248e+05	7.565e+04	-1.241e+05	1.121e+04
	225	3	242	14.38	5.49	-3.40	-3.39	5.49	0.17	5.491e+04	-7.804e+04	5.407e+04	-7.720e+04	1.052e+04
			250	15.08	1.20	-4.92	-4.57	0.85	1.42	2.873e+04	-1.047e+05	2.309e+04	-9.902e+04	2.683e+04
			2	23.64	4.70	-3.06	-2.76	4.40	-1.51	6.186e+04	-1.518e+05	5.720e+04	-1.471e+05	3.119e+04
			1	18.46	3.09	-3.77	-3.55	2.86	1.22	6.455e+04	-1.056e+05	6.401e+04	-1.050e+05	9485.86
	225	23	242	13.29	20.13	-54.94	11.76	-46.57	-23.62	4.994e+04	-7.134e+04	4.918e+04	-7.058e+04	9576.13
			250	13.78	44.29	-27.80	27.08	-10.59	-30.73	2.603e+04	-9.564e+04	2.090e+04	-9.051e+04	2.445e+04
			2	21.74	17.13	-85.16	-1.21	-66.82	-39.23	5.614e+04	-1.388e+05	5.192e+04	-1.345e+05	2.837e+04
			1	16.91	30.97	-17.11	20.25	-6.39	-20.01	5.869e+04	-9.655e+04	5.821e+04	-9.607e+04	8599.89
	225	55	242	13.11	5.99	-17.47	2.33	-13.81	-8.51	4.993e+04	-7.109e+04	4.916e+04	-7.033e+04	9568.72
			250	13.73	13.59	-9.73	7.23	-3.37	-10.38	2.609e+04	-9.532e+04	2.096e+04	-9.020e+04	2.441e+04
			2	21.54	6.19	-30.04	-2.03	-21.82	-15.17	5.620e+04	-1.383e+05	5.197e+04	-1.341e+05	2.836e+04
			1	16.80	9.57	-4.91	5.33	-0.68	-6.59	5.868e+04	-9.618e+04	5.820e+04	-9.570e+04	8614.90
	225	69	242	13.07	4.99	-3.09	-3.08	4.99	0.15	4.992e+04	-7.094e+04	4.916e+04	-7.018e+04	9564.47
			250	13.71	1.09	-4.48	-4.16	0.77	1.29	2.612e+04	-9.514e+04	2.099e+04	-9.001e+04	2.439e+04
			2	21.49	4.28	-2.78	-2.51	4.00	-1.37	5.623e+04	-1.380e+05	5.200e+04	-1.338e+05	2.835e+04
			1	16.78	2.81	-3.43	-3.23	2.60	1.11	5.868e+04	-9.597e+04	5.820e+04	-9.549e+04	8623.51
	226	1	243	14.46	3.30	-2.98	-2.89	3.21	-0.76	5.710e+04	-7.689e+04	4.800e+04	-6.779e+04	3.371e+04
			251	14.91	3.96	-2.26	-1.57	3.28	-1.95	3.770e+04	-9.674e+04	1.662e+04	-7.565e+04	4.889e+04
			250	18.63	5.63	-6.36	-5.69	4.96	-2.76	4.139e+04	-1.249e+05	1.959e+04	-1.031e+05	5.612e+04
			242	17.32	4.64	-3.78	-3.61	4.48	-1.16	6.418e+04	-9.576e+04	5.423e+04	-8.581e+04	3.863e+04
	226	3	243	12.24	2.79	-2.53	-2.45	2.72	-0.64	4.831e+04	-6.506e+04	4.061e+04	-5.736e+04	2.852e+04
			251	12.62	3.35	-1.91	-1.33	2.77	-1.65	3.190e+04	-8.185e+04	1.406e+04	-6.401e+04	4.137e+04
			250	15.76	4.77	-5.38	-4.81	4.20	-2.33	3.502e+04	-1.057e+05	1.657e+04	-8.721e+04	4.748e+04
			242	14.65	3.93	-3.19	-3.06	3.79	-0.98	5.431e+04	-8.103e+04	4.589e+04	-7.261e+04	3.269e+04
	226	23	243	11.26	18.35	-30.08	16.21	-27.93	-9.96	4.397e+04	-5.944e+04	3.695e+04	-5.242e+04	2.602e+04
			251	11.62	11.98	-41.20	11.33	-40.54	-5.87	2.897e+04	-7.477e+04	1.270e+04	-5.850e+04	3.773e+04
			250	14.58	36.29	-59.07	35.29	-58.08	-9.69	3.175e+04	-9.656e+04	1.495e+04	-7.976e+04	4.328e+04
			242	13.48	23.54	-32.19	21.23	-29.88	-11.10	4.940e+04	-7.408e+04	4.173e+04	-6.640e+04	2.980e+04
	226	54	243	11.16	13.90	-9.30	-8.95	13.55	2.84	3.900e+04	-5.903e+04	3.691e+04	-5.204e+04	2.590e+04
			251	11.51	18.22	-5.78	-5.77	18.22	0.09	2.901e+04	-7.428e+04	1.281e+04	-5.808e+04	3.756e+04
			250	14.40	26.39	-18.85	-18.84	26.38	0.64	3.187e+04	-9.587e+04	1.511e+04	-7.911e+04	4.312e+04
			242	13.36	15.89	-11.82	-11.53	15.59	2.83	4.936e+04	-7.351e+04	4.172e+04	-6.587e+04	2.968e+04
	226	69	243	11.12	2.54	-2.30	-2.22	2.47	-0.58	4.392e+04	-5.914e+04	3.692e+04	-5.214e+04	2.593e+04
			251	11.47	3.05	-1.74	-1.21	2.52	-1.50	2.900e+04	-7.441e+04	1.278e+04	-5.819e+04	3.761e+04
			250	14.33	4.33	-4.89	-4.38	3.82	-2.12	3.184e+04	-9.605e+04	1.507e+04	-7.928e+04	4.317e+04
			242	13.32	3.57	-2.90	-2.78	3.44	-0.89	4.937e+04	-7.366e+04	4.172e+04	-6.601e+04	2.972e+04
	227	1	244	12.24	2.26	-2.24	-2.03	2.05	-0.95	5.040e+04	-6.321e+04	3.367e+04	-4.649e+04	4.925e+04
			252	12.32	2.79	-2.44	-1.62	1.97	-1.90	3.736e+04	-7.509e+04	6140.28	-4.387e+04	5.036e+04
			251	14.98	3.82	-3.37	-2.18	2.62	-2.68	3.863e+04	-9.655e+04	4510.01	-6.243e+04	5.872e+04
			243	14.50	3.25	-2.78	-2.47	2.94	-1.34	5.688e+04	-7.748e+04	3.808e+04	-5.868e+04	4.662e+04
	227	3	244	10.36	1.91	-1.89	-1.72	1.73	-0.80	4.264e+04	-5.349e+04	2.849e+04	-3.934e+04	3.406e+04
			252	10.42	2.36	-2.07	-1.37	1.67	-1.61	3.162e+04	-6.354e+04	5195.62	-3.712e+04	4.261e+04
			251	12.67	3.23	-2.85	-1.84	2.22	-2.27	3.269e+04	-8.170e+04	3816.16	-5.282e+04	4.969e+04
			243	12.27	2.75	-2.35	-2.09	2.48	-1.13	4.813e+04	-6.556e+04	3.222e+04	-4.965e+04	3.944e+04
	227	23	244	9.52	17.59	-24.17	16.89	-23.47	-5.39	3.883e+04	-4.885e+04	2.592e+04	-3.593e+04	3.107e+04
			252	9.59	17.30	-33.10	17.28	-33.07	1.17	2.875e+04	-5.802e+04	4645.94	-3.391e+04	3.887e+04
			251	11.67	20.68	-41.36	20.67	-41.36	-0.42	2.969e+04	-7.463e+04	3358.39	-4.830e+04	4.531e+04
			243	11.27	19.44	-27.04	18.46	-26.07	-6.67	4.381e+04	-5.991e+04	2.929e+04	-4.539e+04	3.598e+04
	227	54	244	9.44	10.75	-8.33	-8.29	10.71	0.97	3.874e+04	-4.854e+04	2.590e+04	-3.570e+04	3.092e+04
			252	9.51	14.39	-8.26	-8.00	14.13	-2.42	2.874e+04	-5.767e+04	4751.49	-3.368e+04	3.869e+04
			251	11.56	18.08	-10.07	-9.82	17.83	-2.66	2.973e+04	-7.414e+04	3509.65	-4.792e+04	4.512e+04
			243	11.18	12.63	-9.37	-9.32	12.58	1.03	4.374e+04	-5.949e+04	2.929e+04	-4.505e+04	3.581e+04
	227	69	244	9.41	1.74	-1.72	-1.56	1.58	-0.73	3.877e+04	-4.862e+04	2.590e+04	-3.576e+04	3.096e+04
			252	9.47	2.15	-1.88	-1.25	1.52	-1.46	2.874e+04	-5.776e+04	4723.30	-3.375e+04	3.874e+04
			251	11.52	2.94	-2.59	-1.67	2.02	-2.06	2.972e+04	-7.427e+04	3469.24	-4.802e+04	4.517e+04
			243	11.16	2.50	-2.14	-1.90	2.26	-1.03	4.376e+04	-5.960e+04	2.929e+04	-4.514e+04	3.586e+04
	228	1	245	10.25	1.50	-1.99	-1.63	1.14	-1.05	4.393e+04	-5.130e+04	2.294e+04	-3.031e+04	3.947e+04
			253	10.12	2.08	-2.40	-1.43	1.11	-1.85	3.575e+04	-5.751e+04	533.50	-2.229e+04	4.521e+04
			252	12.32	2.73	-2.65	-1.44	1.53	-2.24	3.747e+04	-7.502e+04	-2684.40	-3.487e+04	5.390e+04
			244	12.23	2.10	-2.17	-1.77	1.71	-1.24	5.032e+04	-6.321e+04	2.617e+04	-3.906e+04	4.646e+04
	228	3	245	8.67	1.27	-1.68	-1.38	0.97	-0.89	3.717e+04	-4.341e+04	1.941e+04	-2.565e+04	3.340e+04
			253	8.56	1.76	-2.03	-1.21	0.94	-1.56	3.025e+04	-4.866e+04	451.43	-1.886e+04	3.826e+04
			252	10.42	2.31	-2.24	-1.22	1.29	-1.89	3.170e+04	-6.348e+04	-2271.41	-2.951e+04	4.560e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		244	10.35	1.78	-1.84	-1.50	1.44	-1.05	4.258e+04	-5.348e+04	2.214e+04	-3.305e+04	3.931e+04
228	23	245	7.96	16.72	-18.92	16.49	-18.69	-2.85	3.386e+04	-3.962e+04	1.765e+04	-2.341e+04	3.047e+04
		253	7.88	16.41	-25.45	15.85	-24.90	4.79	2.754e+04	-4.442e+04	340.63	-1.723e+04	3.489e+04
		252	9.58	18.71	-31.89	18.44	-31.62	3.72	2.883e+04	-5.797e+04	-2164.32	-2.697e+04	4.159e+04
		244	9.49	18.08	-20.49	17.61	-20.02	-4.27	3.877e+04	-4.884e+04	2.012e+04	-3.002e+04	3.586e+04
228	54	245	7.90	8.01	-7.73	-7.73	8.01	-0.07	3.376e+04	-3.941e+04	1.764e+04	-2.329e+04	3.033e+04
		253	7.81	10.99	-8.02	-7.28	10.24	-3.69	2.749e+04	-4.417e+04	435.82	-1.712e+04	3.474e+04
		252	9.50	13.75	-8.86	-8.24	13.13	-3.71	2.882e+04	-5.762e+04	-2028.68	-2.677e+04	4.141e+04
		244	9.42	9.09	-8.28	-8.28	9.09	0.26	3.868e+04	-4.854e+04	2.013e+04	-2.999e+04	3.569e+04
228	69	245	7.88	1.15	-1.53	-1.26	0.88	-0.81	3.379e+04	-3.946e+04	1.765e+04	-2.332e+04	3.037e+04
		253	7.78	1.60	-1.85	-1.10	0.85	-1.42	2.750e+04	-4.424e+04	410.39	-1.715e+04	3.478e+04
		252	9.48	2.10	-2.03	-1.11	1.18	-1.72	2.882e+04	-5.771e+04	-2064.92	-2.682e+04	4.146e+04
		244	9.41	1.62	-1.67	-1.36	1.31	-0.95	3.871e+04	-4.862e+04	2.013e+04	-3.004e+04	3.574e+04
229	1	246	8.49	1.01	-2.61	-1.85	0.24	-1.48	3.772e+04	-4.121e+04	1.538e+04	-1.887e+04	3.556e+04
		254	8.24	1.68	-2.48	-1.58	0.79	-1.71	3.323e+04	-4.318e+04	-1511.28	-8437.12	3.805e+04
		253	10.12	2.02	-2.60	-1.39	0.80	-2.03	3.575e+04	-5.755e+04	-5296.64	-1.651e+04	4.631e+04
		245	10.23	1.25	-1.76	-1.26	0.75	-1.12	4.389e+04	-5.122e+04	1.772e+04	-2.504e+04	4.248e+04
229	3	246	7.18	0.85	-2.21	-1.56	0.21	-1.25	3.192e+04	-3.487e+04	1.302e+04	-1.597e+04	3.009e+04
		254	6.97	1.42	-2.10	-1.34	0.67	-1.45	2.812e+04	-3.654e+04	-1278.78	-7139.10	3.220e+04
		253	8.57	1.71	-2.20	-1.17	0.68	-1.72	3.025e+04	-4.870e+04	-4481.77	-1.397e+04	3.919e+04
		245	8.66	1.06	-1.49	-1.06	0.63	-0.95	3.714e+04	-4.334e+04	1.499e+04	-2.119e+04	3.594e+04
229	7	246	6.61	15.51	-10.90	-1.80	6.40	12.55	2.912e+04	-3.175e+04	1.194e+04	-1.457e+04	2.740e+04
		254	6.41	11.76	-12.19	-8.65	8.22	8.50	2.569e+04	-3.329e+04	-1098.02	-6497.50	2.937e+04
		253	7.85	11.09	-8.86	-5.31	7.54	7.63	2.768e+04	-4.435e+04	-3981.90	-1.269e+04	3.575e+04
		245	7.96	19.00	-9.12	-0.98	10.86	12.75	3.395e+04	-3.946e+04	1.379e+04	-1.930e+04	3.276e+04
229	39	246	6.55	4.79	-3.90	-1.56	2.45	3.86	2.905e+04	-3.172e+04	1.187e+04	-1.454e+04	2.737e+04
		254	6.35	4.02	-4.57	-3.93	3.38	2.26	2.561e+04	-3.324e+04	-1139.01	-6492.79	2.931e+04
		253	7.80	3.65	-3.12	-2.61	3.14	1.79	2.756e+04	-4.430e+04	-4040.64	-1.270e+04	3.567e+04
		245	7.89	6.56	-3.20	-0.97	4.33	4.10	3.383e+04	-3.942e+04	1.369e+04	-1.928e+04	3.271e+04
229	69	246	6.53	0.77	-2.01	-1.42	0.19	-1.14	2.902e+04	-3.170e+04	1.183e+04	-1.452e+04	2.735e+04
		254	6.34	1.29	-1.90	-1.22	0.61	-1.32	2.557e+04	-3.322e+04	-1162.52	-6490.09	2.927e+04
		253	7.79	1.55	-2.00	-1.07	0.62	-1.56	2.750e+04	-4.427e+04	-4074.34	-1.270e+04	3.562e+04
		245	7.87	0.96	-1.35	-0.97	0.58	-0.86	3.377e+04	-3.940e+04	1.363e+04	-1.927e+04	3.268e+04
230	1	247	7.03	1.70	-9.33	-7.33	-0.29	-4.25	3.271e+04	-3.239e+04	1.117e+04	-1.085e+04	3.063e+04
		255	6.46	1.82	-0.63	-0.42	1.61	0.69	2.855e+04	-3.155e+04	-2094.48	-896.87	3.004e+04
		254	8.30	1.88	-4.37	-3.13	0.64	-2.50	3.360e+04	-4.331e+04	-4977.02	-4735.69	3.845e+04
		246	8.44	1.36	-1.17	0.77	-0.58	-1.07	3.732e+04	-4.117e+04	1.140e+04	-1.525e+04	3.691e+04
230	3	247	5.95	1.44	-7.90	-6.21	-0.25	-3.60	2.768e+04	-2.741e+04	9450.42	-9180.68	2.592e+04
		255	5.47	1.54	-0.53	-0.35	1.36	0.58	2.416e+04	-2.669e+04	-1772.25	-758.89	2.542e+04
		254	7.02	1.59	-3.70	-2.65	0.54	-2.11	2.843e+04	-3.665e+04	-4211.32	-4007.12	3.254e+04
		246	7.14	1.15	-0.99	0.65	-0.49	-0.91	3.158e+04	-3.484e+04	9645.97	-1.290e+04	3.124e+04
230	7	247	5.40	8.35	-11.20	-6.88	4.03	8.11	2.495e+04	-2.492e+04	8451.45	-8425.54	2.347e+04
		255	5.05	9.26	-12.40	-10.48	7.34	6.16	2.217e+04	-2.435e+04	-1517.68	-654.27	2.326e+04
		254	6.41	5.45	-9.59	-8.98	4.84	2.95	2.592e+04	-3.339e+04	-3818.31	-3645.81	2.965e+04
		246	6.56	14.14	-8.12	-2.93	8.95	9.42	2.888e+04	-3.172e+04	8952.69	-1.179e+04	2.847e+04
230	39	247	5.37	1.43	-6.20	-6.09	1.33	0.88	2.508e+04	-2.492e+04	8540.31	-8375.04	2.353e+04
		255	5.00	4.27	-4.83	-4.02	3.46	2.58	2.204e+04	-2.430e+04	-1577.07	-676.91	2.316e+04
		254	6.37	2.08	-4.81	-4.80	2.08	-0.14	2.587e+04	-3.334e+04	-3824.77	-3643.92	2.961e+04
		246	6.51	4.58	-2.30	-0.69	2.98	2.91	2.877e+04	-3.169e+04	8836.01	-1.175e+04	2.842e+04
230	69	247	5.41	1.31	-7.18	-5.64	-0.23	-3.27	2.516e+04	-2.492e+04	8591.30	-8346.07	2.356e+04
		255	4.97	1.40	-0.48	-0.32	1.24	0.53	2.196e+04	-2.427e+04	-1611.14	-689.90	2.311e+04
		254	6.38	1.45	-3.36	-2.41	0.49	-1.92	2.584e+04	-3.332e+04	-3828.47	-3642.84	2.958e+04
		246	6.49	1.05	-0.90	0.59	-0.45	-0.82	2.871e+04	-3.167e+04	8769.07	-1.173e+04	2.840e+04
231	1	248	4.72	1.17	0.28	0.53	0.93	-0.39	2.120e+04	-2.275e+04	4555.16	-6108.79	2.132e+04
		256	4.55	-0.33	-2.82	-2.82	-0.34	0.12	2.186e+04	-2.046e+04	-945.90	2348.20	2.110e+04
		255	6.68	2.41	-2.25	-0.43	0.59	-2.28	2.968e+04	-3.233e+04	-4363.16	1715.28	3.075e+04
		247	6.76	1.45	-7.38	-7.01	1.08	1.77	3.127e+04	-3.166e+04	8767.98	-9161.81	3.016e+04
231	3	248	4.00	0.99	0.24	0.45	0.78	-0.33	1.794e+04	-1.925e+04	3854.37	-5168.97	1.804e+04
		256	3.85	-0.28	-2.39	-2.39	-0.29	0.10	1.850e+04	-1.731e+04	-800.38	1986.94	1.785e+04
		255	5.65	2.04	-1.90	-0.36	0.50	-1.93	2.511e+04	-2.735e+04	-3691.90	1451.39	2.611e+04
		247	5.72	1.23	-6.24	-5.93	0.91	1.50	2.646e+04	-2.679e+04	7419.06	-7752.30	2.552e+04
231	21	248	3.67	25.12	-8.18	23.43	-6.49	-7.31	1.630e+04	-1.756e+04	3473.66	-4728.83	1.643e+04
		256	3.55	22.59	-11.28	21.42	-10.11	6.19	1.682e+04	-1.584e+04	-835.11	1816.72	1.628e+04
		255	5.15	23.99	-14.90	23.03	-13.94	6.03	2.283e+04	-2.482e+04	-3436.24	1447.33	2.370e+04
		247	5.27	21.35	-10.25	18.67	-7.57	-8.80	2.407e+04	-2.470e+04	6601.99	-7241.13	2.338e+04
231	39	248	3.65	2.46	-3.05	-1.76	1.16	2.34	1.634e+04	-1.749e+04	3555.32	-4699.96	1.640e+04
		256	3.51	1.69	-6.21	-6.06	1.54	1.08	1.684e+04	-1.577e+04	-729.66	1799.71	1.626e+04
		255	5.13	1.26	-4.36	-3.94	0.84	-1.48	2.285e+04	-2.487e+04	-3327.31	1316.67	2.375e+04
		247	5.22	4.67	-7.66	-6.43	3.43	3.70	2.408e+04	-2.442e+04	6700.79	-7042.51	2.325e+04
231	69	248	3.63	0.90	0.22	0.41	0.71	-0.30	1.630e+04	-1.750e+04	3503.97	-4699.07	1.640e+04
		256	3.50	-0.26	-2.17	-2.17	-0.26	0.09	1.682e+04	-1.574e+04	-727.62	1806.31	1.623e+04
		255	5.14	1.86	-1.73	-0.33	0.45	-1.75	2.283e+04	-2.487e+04	-3356.27	1319.45	2.373e+04
		247	5.20	1.12	-5.68	-5.39	0.83	1.36	2.405e+04	-2.435e+04	6744.60	-7047.55	2.320e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

232	1	249	0.44	0.21	-1.89	-1.88	0.20	0.14	2021.31	-2029.19	57.38	-65.26	2024.32
		257	0.52	0.01	-1.08	-1.00	-0.07	-0.29	2235.38	-2537.68	-61.85	-240.46	2384.86
		256	4.80	0.26	-1.58	-1.42	0.10	-0.52	2.323e+04	-2.144e+04	-1966.31	3757.13	2.215e+04
		248	4.90	0.28	-1.92	-1.92	0.28	0.10	2.195e+04	-2.371e+04	3239.98	-4997.73	2.245e+04
232	3	249	0.37	0.18	-1.60	-1.59	0.17	0.12	1710.34	-1717.01	48.55	-55.22	1712.89
		257	0.44	8.77e-03	-0.91	-0.84	-0.06	-0.24	1891.47	-2147.27	-52.33	-203.46	2017.96
		256	4.06	0.22	-1.34	-1.20	0.08	-0.44	1.966e+04	-1.814e+04	-1663.80	3179.11	1.875e+04
		248	4.15	0.24	-1.63	-1.62	0.23	0.09	1.857e+04	-2.006e+04	2741.52	-4228.85	1.900e+04
232	21	249	0.40	25.31	-2.97	23.92	-1.58	-6.12	1533.12	-1594.39	-14.81	-46.45	1563.68
		257	0.46	24.46	-3.76	22.90	-2.20	6.44	1683.69	-1992.58	-120.35	-188.54	1837.82
		256	3.75	25.04	-6.76	23.07	-4.79	7.67	1.788e+04	-1.656e+04	-1594.61	2912.14	1.707e+04
		248	3.84	25.66	-5.50	22.92	-2.76	-8.83	1.688e+04	-1.834e+04	2419.56	-3882.86	1.732e+04
232	53	249	0.35	8.33	-1.01	7.80	-0.48	-2.16	1546.86	-1573.05	22.65	-48.83	1559.54
		257	0.41	8.39	-1.37	7.86	-0.84	2.21	1706.38	-1966.76	-74.10	-186.27	1835.71
		256	3.71	8.36	-2.34	7.72	-1.70	2.54	1.787e+04	-1.652e+04	-1542.46	2898.13	1.705e+04
		248	3.79	8.49	-1.94	7.42	-0.87	-3.17	1.688e+04	-1.827e+04	2465.78	-3858.43	1.729e+04
232	69	249	0.34	0.16	-1.45	-1.44	0.16	0.11	1554.86	-1560.91	44.14	-50.20	1557.17
		257	0.40	7.97e-03	-0.83	-0.77	-0.06	-0.22	1719.52	-1952.06	-47.58	-184.97	1834.51
		256	3.69	0.20	-1.21	-1.09	0.08	-0.40	1.787e+04	-1.649e+04	-1512.54	2890.10	1.704e+04
		248	3.77	0.22	-1.48	-1.48	0.21	0.08	1.688e+04	-1.824e+04	2492.29	-3844.41	1.727e+04
233	1	250	17.79	4.41	-2.57	-2.32	4.16	-1.29	4.403e+04	-1.161e+05	4.090e+04	-1.129e+05	2.217e+04
		258	18.00	2.39	-5.53	-5.16	2.02	1.67	-3.601e+04	-1.598e+05	5.865e+04	-1.372e+05	
4.787e+04		19	41.15	7.70	-4.14	-3.05	6.61	-3.43	9.878e+04	-2.710e+05	9.645e+04	-2.686e+05	2.924e+04
		2	25.45	3.31	-5.29	-5.28	3.30	0.25	6.153e+04	-1.672e+05	4.978e+04	-1.555e+05	5.049e+04
233	3	250	15.05	3.73	-2.18	-1.97	3.52	-1.09	3.726e+04	-9.822e+04	3.461e+04	-9.557e+04	1.876e+04
		258	15.23	2.02	-4.68	-4.37	1.71	1.42	-3.047e+04	-1.352e+05	-4.963e+04	-1.161e+05	
4.050e+04		19	34.82	6.52	-3.51	-2.58	5.59	-2.90	8.358e+04	-2.293e+05	8.161e+04	-2.273e+05	2.474e+04
		2	21.53	2.80	-4.47	-4.47	2.79	0.21	5.206e+04	-1.415e+05	4.212e+04	-1.316e+05	4.272e+04
233	7	250	13.93	46.06	-36.64	24.51	-15.09	36.30	3.437e+04	-8.933e+04	3.193e+04	-8.689e+04	1.721e+04
		258	13.96	30.95	13.35	25.77	18.53	-8.02	-2.762e+04	-1.231e+05	-4.512e+04	-1.056e+05	
3.695e+04		19	31.94	36.65	-45.14	17.79	-26.28	34.45	7.700e+04	-2.086e+05	7.514e+04	-2.068e+05	2.297e+04
		2	19.73	43.42	20.87	20.87	43.41	0.37	4.787e+04	-1.288e+05	3.879e+04	-1.197e+05	3.900e+04
233	39	250	13.74	15.97	-11.64	7.80	-3.47	12.60	3.405e+04	-8.930e+04	3.163e+04	-8.688e+04	1.711e+04
		258	13.89	9.46	5.16	6.87	7.74	-2.11	-2.767e+04	-1.230e+05	-4.512e+04	-1.056e+05	
3.687e+04		19	31.72	11.59	-12.95	4.99	-6.35	10.88	7.635e+04	-2.085e+05	7.454e+04	-2.067e+05	2.266e+04
		2	19.63	17.44	5.02	5.03	17.44	0.26	4.752e+04	-1.287e+05	3.847e+04	-1.197e+05	3.890e+04
233	69	250	13.68	3.39	-1.98	-1.79	3.20	-0.99	3.387e+04	-8.929e+04	3.146e+04	-8.688e+04	1.705e+04
		258	13.85	1.84	-4.26	-3.97	1.56	1.29	-2.770e+04	-1.229e+05	-4.512e+04	-1.055e+05	
3.682e+04		19	31.65	5.92	-3.19	-2.35	5.08	-2.64	7.598e+04	-2.084e+05	7.419e+04	-2.066e+05	2.249e+04
		2	19.57	2.54	-4.07	-4.06	2.54	0.19	4.733e+04	-1.287e+05	3.829e+04	-1.196e+05	3.884e+04
234	1	251	15.05	3.02	-5.01	-4.90	2.90	-0.96	3.948e+04	-9.653e+04	2.519e+04	-8.223e+04	4.172e+04
		259	14.71	5.79	-1.05	0.83	3.90	-3.06	6294.00	-1.152e+05	-1.990e+04	-8.896e+04	
4.995e+04		258	20.95	3.97	-8.31	-6.23	1.89	-4.61	9084.83	-1.640e+05	-1.685e+04	-1.380e+05	
6.177e+04		250	18.41	9.16	-2.64	-1.07	7.59	-4.01	3.847e+04	-1.251e+05	2.551e+04	-1.121e+05	4.418e+04
		251	12.74	2.56	-4.24	-4.14	2.46	-0.81	3.341e+04	-8.168e+04	2.131e+04	-6.958e+04	3.530e+04
		259	12.45	4.90	-0.89	0.71	3.30	-2.59	5325.69	-9.744e+04	-1.684e+04	-7.527e+04	
4.227e+04		258	17.73	3.36	-7.03	-5.27	1.60	-3.90	7687.16	-1.387e+05	-1.426e+04	-1.168e+05	
5.227e+04		250	15.58	7.75	-2.23	-0.90	6.42	-3.39	3.255e+04	-1.058e+05	2.158e+04	-9.488e+04	3.739e+04
		251	11.75	36.91	-14.87	18.22	3.82	24.87	3.071e+04	-7.435e+04	1.966e+04	-6.330e+04	3.222e+04
		259	11.42	14.83	-18.51	-3.70	0.01	16.57	5099.27	-8.874e+04	-1.516e+04	-6.848e+04	
3.861e+04		258	16.33	51.39	-18.35	31.77	1.28	31.36	7391.77	-1.263e+05	-1.270e+04	-1.062e+05	
4.778e+04		250	14.29	32.06	-12.43	17.36	2.27	20.92	3.000e+04	-9.631e+04	1.997e+04	-8.628e+04	3.415e+04
		251	11.62	7.04	-17.17	-11.78	1.65	-10.07	3.025e+04	-7.422e+04	1.927e+04	-6.324e+04	3.204e+04
		259	11.34	12.45	-6.14	2.22	4.09	-9.25	4747.58	-8.852e+04	-1.537e+04	-6.841e+04	
3.836e+04		258	16.18	10.70	-27.31	-18.12	1.51	-16.27	6841.27	-1.260e+05	-1.306e+04	-1.062e+05	
4.742e+04		250	14.20	13.75	-14.06	-7.45	7.14	-11.84	2.945e+04	-9.620e+04	1.950e+04	-8.625e+04	3.393e+04
		251	11.58	2.32	-3.86	-3.77	2.23	-0.74	3.037e+04	-7.426e+04	1.937e+04	-6.326e+04	3.209e+04
		259	11.32	4.45	-0.81	0.64	3.00	-2.35	4841.54	-8.858e+04	-1.531e+04	-6.843e+04	
3.843e+04		258	16.11	3.05	-6.39	-4.79	1.45	-3.55	6988.33	-1.261e+05	-1.296e+04	-1.062e+05	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

4.751e+04		250	14.16	7.05	-2.03	-0.82	5.84	-3.08	2.959e+04-9.623e+04	1.962e+04-8.625e+04	3.399e+04		
	235	1	252	12.36	2.67	-2.68	-2.32	2.32	-1.33	3.757e+04-7.527e+04	1.705e+04-5.475e+04	4.352e+04	
			260	11.63	3.15	-2.41	-1.27	2.01	-2.24	1.688e+04-8.405e+04	-1.631e+04-5.086e+04		
4.741e+04		259	15.11	4.18	-3.64	-2.10	2.64	-3.12	1.067e+04-1.159e+05	-2.480e+04-8.047e+04			
5.686e+04		251	14.96	3.83	-2.73	-2.08	3.18	-1.96	3.798e+04-9.687e+04	1.651e+04-7.539e+04	4.935e+04		
	235	3	252	10.46	2.26	-2.27	-1.97	1.96	-1.13	3.179e+04-6.369e+04	1.443e+04-4.633e+04	3.683e+04	
			260	9.84	2.66	-2.04	-1.07	1.70	-1.90	1.428e+04-7.112e+04	-1.380e+04-4.304e+04		
4.012e+04		259	12.78	3.54	-3.08	-1.77	2.23	-2.64	9029.25-9.811e+04	-2.098e+04-6.809e+04			
4.811e+04		251	12.66	3.24	-2.31	-1.76	2.69	-1.66	3.214e+04-8.197e+04	1.397e+04-6.379e+04	4.176e+04		
	235	23	252	9.61	21.32	-33.25	20.03	-31.96	-8.28	2.891e+04-5.816e+04	1.307e+04-4.231e+04	3.359e+04	
			260	9.08	20.56	-41.55	20.32	-41.32	3.82	1.292e+04-6.493e+04	-1.269e+04-3.932e+04		
3.658e+04		259	11.80	22.44	-52.52	22.43	-52.51	0.89	8081.83-8.959e+04	-1.927e+04-6.224e+04			
4.386e+04		251	11.64	19.48	-40.02	18.20	-38.75	-8.61	2.919e+04-7.487e+04	1.261e+04-5.830e+04	3.808e+04		
	235	54	252	9.53	14.19	-9.85	-9.74	14.09	1.62	2.890e+04-5.781e+04	1.314e+04-4.204e+04	3.344e+04	
			260	8.98	17.70	-9.27	-8.74	17.17	-3.75	1.300e+04-6.455e+04	-1.249e+04-3.906e+04		
3.643e+04		259	11.67	22.31	-10.77	-10.38	21.91	-3.60	8254.55-8.904e+04	-1.900e+04-6.178e+04			
4.369e+04		251	11.54	17.51	-8.86	-8.82	17.47	1.08	2.923e+04-7.438e+04	1.273e+04-5.788e+04	3.792e+04		
	235	69	252	9.51	2.06	-2.06	-1.79	1.78	-1.03	2.890e+04-5.790e+04	1.312e+04-4.212e+04	3.348e+04	
			260	8.94	2.42	-1.85	-0.97	1.54	-1.73	1.298e+04-6.465e+04	-1.254e+04-3.913e+04		
3.647e+04		259	11.62	3.22	-2.80	-1.61	2.03	-2.40	8208.41-8.919e+04	-1.907e+04-6.190e+04			
4.374e+04		251	11.50	2.95	-2.10	-1.60	2.45	-1.51	2.922e+04-7.451e+04	1.270e+04-5.799e+04	3.796e+04		
	236	1	253	10.13	1.97	-2.36	-1.98	1.59	-1.22	3.559e+04-5.778e+04	1.225e+04-3.444e+04	4.043e+04	
			261	9.06	2.22	-2.22	-1.25	1.24	-1.84	2.201e+04-5.944e+04	-1.192e+04-2.551e+04		
4.015e+04		260	11.67	3.04	-2.75	-1.38	1.67	-2.46	1.714e+04-8.422e+04	-2.181e+04-4.527e+04			
4.930e+04		252	12.32	2.59	-2.44	-1.86	2.01	-1.60	3.735e+04-7.516e+04	1.146e+04-4.927e+04	4.736e+04		
	236	3	253	8.57	1.67	-2.00	-1.68	1.35	-1.04	3.011e+04-4.889e+04	1.037e+04-2.914e+04	3.421e+04	
			261	7.67	1.88	-1.88	-1.05	1.05	-1.56	1.862e+04-5.030e+04	-1.009e+04-2.159e+04		
3.398e+04		260	9.87	2.57	-2.33	-1.17	1.41	-2.09	1.450e+04-7.126e+04	-1.846e+04-3.831e+04			
4.172e+04		252	10.43	2.19	-2.06	-1.57	1.70	-1.36	3.161e+04-6.360e+04	9696.70-4.169e+04	4.007e+04		
	236	7	253	7.90	18.97	-9.15	4.98	4.84	14.06	2.756e+04-4.453e+04	9567.86-2.654e+04	3.120e+04	
			261	7.07	12.89	-11.68	-1.75	2.96	12.05	1.711e+04-4.583e+04	-9091.16-1.963e+04	3.102e+04	
			260	9.08	14.89	-9.66	2.07	3.15	12.26	1.341e+04-6.492e+04	-1.668e+04-3.483e+04		
3.810e+04		252	9.58	20.47	-8.11	5.62	6.73	14.28	2.898e+04-5.791e+04	9000.74-3.793e+04	3.656e+04		
	236	38	253	7.82	4.69	-8.68	-3.90	-0.09	-6.41	2.731e+04-4.441e+04	9374.75-2.648e+04	3.106e+04	
			261	7.00	6.12	-6.56	-0.67	0.23	-6.32	1.686e+04-4.568e+04	-9198.41-1.962e+04	3.084e+04	
			260	9.00	6.39	-8.00	-2.21	0.60	-7.06	1.310e+04-6.474e+04	-1.681e+04-3.482e+04		
3.786e+04		252	9.50	4.95	-9.30	-4.00	-0.35	-6.89	2.864e+04-5.778e+04	8747.54-3.789e+04	3.638e+04		
	236	69	253	7.79	1.52	-1.82	-1.52	1.22	-0.94	2.738e+04-4.445e+04	9426.34-2.649e+04	3.110e+04	
			261	6.97	1.71	-1.71	-0.96	0.96	-1.41	1.693e+04-4.572e+04	-9169.76-1.963e+04	3.089e+04	
			260	8.98	2.34	-2.12	-1.06	1.28	-1.90	1.318e+04-6.478e+04	-1.678e+04-3.482e+04		
3.792e+04		252	9.48	1.99	-1.87	-1.43	1.54	-1.23	2.873e+04-5.782e+04	8815.18-3.790e+04	3.643e+04		
	237	1	254	8.23	1.47	-2.56	-2.31	1.22	-0.98	3.281e+04-4.349e+04	9481.18-2.017e+04	3.515e+04	
			262	7.06	1.50	-1.70	-1.00	0.79	-1.32	2.482e+04-4.023e+04	-6275.09	-9134.69	3.249e+04
			261	9.08	2.13	-2.39	-1.29	1.02	-1.94	2.193e+04-5.967e+04	-1.560e+04-2.215e+04		
4.067e+04		253	10.10	1.85	-2.25	-1.71	1.31	-1.38	3.557e+04-5.755e+04	8600.18-3.057e+04	4.224e+04		
	237	3	254	6.96	1.24	-2.17	-1.95	1.03	-0.83	2.776e+04-3.680e+04	8022.54-1.707e+04	2.974e+04	
			262	5.97	1.27	-1.44	-0.84	0.67	-1.12	2.100e+04-3.404e+04	-5309.69	-7729.36	2.750e+04
			261	7.69	1.80	-2.02	-1.09	0.87	-1.64	1.855e+04-5.049e+04	-1.320e+04-1.874e+04		
3.441e+04		253	8.55	1.56	-1.90	-1.45	1.11	-1.17	3.010e+04-4.869e+04	7277.07-2.587e+04	3.574e+04		
	237	7	254	6.42	14.15	-7.89	2.10	4.16	10.97	2.536e+04-3.353e+04	7385.04-1.555e+04	2.712e+04	
			262	5.52	9.74	-11.05	-4.65	3.33	9.60	1.924e+04-3.103e+04	-4766.64	-7025.80	2.511e+04
			261	7.06	9.00	-7.19	-0.53	2.33	7.97	1.705e+04-4.601e+04	-1.193e+04-1.703e+04		
3.142e+04													



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		253	7.85	15.33	-6.61	2.03	6.70	10.72	2.755e+04	-4.435e+04	6749.23	-2.355e+04	3.260e+04	
	237	38	254	6.35	3.52	-6.95	-3.19	-0.24	-5.03	2.519e+04	-3.343e+04	7259.75	-1.550e+04	2.701e+04
			262	5.45	5.05	-4.78	0.65	-0.38	-4.89	1.904e+04	-3.092e+04	-4848.99	-7027.01	2.495e+04
			261	7.00	4.52	-5.46	-1.16	0.22	-4.94	1.680e+04	-4.586e+04	-1.202e+04	-1.704e+04	
		3.123e+04												
			253	7.79	3.61	-7.21	-2.53	-1.07	-5.36	2.730e+04	-4.424e+04	6566.78	-2.351e+04	3.245e+04
	237	69	254	6.33	1.13	-1.97	-1.78	0.94	-0.75	2.524e+04	-3.346e+04	7293.22	-1.551e+04	2.704e+04
			262	5.43	1.15	-1.31	-0.77	0.61	-1.02	1.909e+04	-3.095e+04	-4826.99	-7026.69	2.500e+04
			261	6.99	1.63	-1.84	-0.99	0.79	-1.49	1.687e+04	-4.590e+04	-1.200e+04	-1.704e+04	
		3.128e+04												
			253	7.77	1.42	-1.73	-1.31	1.01	-1.06	2.736e+04	-4.427e+04	6615.52	-2.352e+04	3.249e+04
	238	1	255	6.52	0.88	-2.56	-2.39	0.71	-0.74	2.875e+04	-3.189e+04	7665.91	-1.081e+04	2.888e+04
			263	5.47	0.83	-1.26	-0.99	0.57	-0.69	2.474e+04	-2.616e+04	-1144.34	-273.62	2.544e+04
			262	7.08	1.36	-2.14	-1.23	0.45	-1.53	2.481e+04	-4.039e+04	-8536.14	-7047.05	3.259e+04
			254	8.20	1.34	-1.94	-1.79	1.19	-0.68	3.271e+04	-4.335e+04	7016.97	-1.765e+04	3.598e+04
	238	3	255	5.52	0.74	-2.17	-2.02	0.60	-0.63	2.433e+04	-2.698e+04	6486.54	-9143.02	2.443e+04
			263	4.63	0.71	-1.06	-0.84	0.48	-0.59	2.093e+04	-2.213e+04	-968.29	-231.53	2.153e+04
			262	5.99	1.15	-1.81	-1.04	0.38	-1.30	2.099e+04	-3.418e+04	-7222.88	-5962.89	2.758e+04
			254	6.94	1.14	-1.64	-1.51	1.01	-0.58	2.768e+04	-3.668e+04	5937.44	-1.493e+04	3.044e+04
	238	7	255	5.08	9.54	-6.88	-0.01	2.67	8.10	2.219e+04	-2.459e+04	5955.62	-8353.43	2.227e+04
			263	4.28	7.14	-10.17	-6.31	3.28	7.20	1.915e+04	-2.018e+04	-833.92	-199.62	1.966e+04
			262	5.49	3.07	-5.70	-3.26	0.63	3.93	1.922e+04	-3.115e+04	-6518.36	-5419.37	2.518e+04
			254	6.37	11.88	-5.51	-0.26	6.63	7.98	2.531e+04	-3.342e+04	5493.17	-1.360e+04	2.777e+04
	238	39	255	5.03	2.95	-2.80	-1.17	1.32	2.59	2.214e+04	-2.455e+04	5918.28	-8327.00	2.223e+04
			263	4.23	2.47	-3.78	-2.78	1.48	2.29	1.907e+04	-2.014e+04	-863.37	-206.52	1.960e+04
			262	5.45	0.64	-1.98	-1.79	0.45	0.69	1.913e+04	-3.110e+04	-6548.80	-5420.29	2.511e+04
			254	6.32	4.27	-2.24	-0.97	3.00	2.58	2.522e+04	-3.337e+04	5432.49	-1.359e+04	2.771e+04
	238	69	255	5.02	0.67	-1.97	-1.84	0.54	-0.57	2.211e+04	-2.453e+04	5896.85	-8311.84	2.221e+04
			263	4.21	0.64	-0.97	-0.76	0.44	-0.53	1.903e+04	-2.012e+04	-880.26	-210.48	1.957e+04
			262	5.44	1.04	-1.64	-0.95	0.34	-1.18	1.908e+04	-3.107e+04	-6566.26	-5420.81	2.507e+04
			254	6.31	1.03	-1.49	-1.37	0.92	-0.52	2.517e+04	-3.334e+04	5397.67	-1.358e+04	2.767e+04
	239	1	256	4.52	0.90	-1.51	-1.51	0.90	-0.08	2.104e+04	-2.104e+04	5364.13	-5366.65	2.035e+04
			264	3.86	2.67e-03	-1.33	-1.20	-0.13	-0.40	2.026e+04	-1.555e+04	2362.43	2348.83	1.790e+04
			263	5.51	1.14	-1.42	-0.98	0.70	-0.96	2.492e+04	-2.637e+04	-2498.49	1052.74	2.559e+04
			255	6.54	0.28	-2.44	-2.44	0.28	-0.04	2.884e+04	-3.204e+04	6121.07	-9324.15	2.444e+04
	239	3	256	3.83	0.76	-1.28	-1.27	0.76	-0.07	1.780e+04	-1.781e+04	4538.88	-4541.01	1.722e+04
			264	3.26	2.26e-03	-1.13	-1.02	-0.11	-0.34	1.714e+04	-1.316e+04	1998.98	1987.47	1.515e+04
			263	4.67	0.96	-1.20	-0.83	0.59	-0.82	2.109e+04	-2.231e+04	-2114.11	890.78	2.165e+04
			255	5.54	0.24	-2.06	-2.06	0.24	-0.03	2.440e+04	-2.711e+04	5179.37	-7889.67	2.491e+04
	239	8	256	3.53	9.09	-18.00	-14.60	5.69	8.98	1.625e+04	-1.619e+04	4205.63	-4141.56	1.568e+04
			264	2.98	8.46	-18.88	-18.88	8.45	-0.30	1.566e+04	-1.198e+04	1879.98	1804.91	1.382e+04
			263	4.28	7.38	-18.98	-18.17	6.57	-4.55	1.929e+04	-2.031e+04	-1839.69	814.55	1.976e+04
			255	5.09	15.20	-17.91	-14.85	12.13	9.59	2.227e+04	-2.465e+04	4798.64	-7182.53	2.268e+04
	239	40	256	3.49	3.60	-7.14	-6.06	2.52	3.23	1.621e+04	-1.619e+04	4155.19	-4133.07	1.566e+04
			264	2.97	3.03	-7.48	-7.47	3.02	-0.30	1.561e+04	-1.197e+04	1840.12	1806.10	1.379e+04
			263	4.26	3.18	-7.55	-7.10	2.74	-2.13	1.921e+04	-2.029e+04	-1891.94	811.53	1.971e+04
			255	5.05	5.56	-7.60	-6.61	4.56	3.08	2.221e+04	-2.465e+04	4741.37	-7176.11	2.266e+04
	239	69	256	3.48	0.69	-1.16	-1.16	0.69	-0.06	1.619e+04	-1.619e+04	4126.26	-4128.20	1.565e+04
			264	2.97	2.06e-03	-1.03	-0.92	-0.10	-0.31	1.558e+04	-1.196e+04	1817.26	1806.79	1.377e+04
			263	4.24	0.87	-1.09	-0.76	0.54	-0.74	1.917e+04	-2.028e+04	-1921.92	809.80	1.968e+04
			255	5.03	0.22	-1.88	-1.88	0.22	-0.03	2.218e+04	-2.465e+04	4708.52	-7172.42	2.265e+04
	240	1	257	0.34	0.22	-1.32	-1.28	0.18	0.25	2135.75	-941.15	1258.76	-64.15	1389.00
			265	0.78	7.96e-03	-1.19	-1.11	-0.07	-0.30	4856.34	-2236.56	3242.69	-622.92	2973.48
			264	4.06	0.49	-1.14	-0.99	0.34	-0.48	2.149e+04	-1.616e+04	2223.48	3111.65	1.882e+04
			256	4.74	0.10	-1.92	-1.89	0.08	0.22	2.173e+04	-2.245e+04	4045.40	-4761.25	2.164e+04
	240	3	257	0.29	0.19	-1.12	-1.08	0.15	0.21	1807.18	-796.36	1065.10	-54.28	1175.31
			265	0.66	6.73e-03	-1.01	-0.94	-0.06	-0.25	4109.21	-1892.47	2743.82	-527.09	2516.02
			264	3.43	0.42	-0.97	-0.84	0.29	-0.40	1.818e+04	-1.367e+04	1881.41	2632.94	1.592e+04
			256	4.01	0.08	-1.62	-1.60	0.06	0.19	1.839e+04	-1.899e+04	3423.03	-4028.75	1.831e+04
	240	21	257	0.29	26.87	-2.92	25.17	-1.22	-6.90	1599.53	-748.05	902.69	-51.21	1072.52
			265	0.70	24.10	-4.83	22.41	-3.14	6.78	3695.70	-1735.52	2441.77	-481.59	2288.68
			264	3.20	26.60	-6.55	23.67	-3.63	9.40	1.650e+04	-1.245e+04	1655.32	2397.84	1.447e+04
			256	3.70	25.97	-7.87	23.44	-5.33	-8.91	1.671e+04	-1.733e+04	3042.24	-3661.93	1.669e+04
	240	53	257	0.26	9.15	-0.96	8.55	-0.36	-2.39	1626.99	-732.65	944.37	-50.03	1069.94
			265	0.63	8.21	-1.76	7.63	-1.18	2.33	3721.06	-1725.91	2475.20	-480.05	2287.79
			264	3.14	9.14	-2.15	8.15	-1.16	3.19	1.652e+04	-1.244e+04	1690.30	2395.13	1.447e+04
			256	3.67	8.56	-2.85	7.62	-1.91	-3.14	1.671e+04	-1.729e+04	3086.47	-3662.29	1.666e+04
	240	69	257	0.26	0.17	-1.02	-0.98	0.14	0.19	1642.89	-723.96	968.27	-49.35	1068.46
			265	0.60	6.12e-03	-0.92	-0.85	-0.06	-0.23	3735.64	-1720.43	2494.38	-479.17	2287.29
			264	3.12	0.38	-0.88	-0.76	0.26	-0.37	1.653e+04	-1.243e+04	1710.37	2393.58	1.448e+04
			256	3.65	0.08	-1.47	-1.46	0.06	0.17	1.672e+04	-1.727e+04	3111.85	-3662.50	1.665e+04
	241	1	258	22.59	4.80	0.37	1.37	3.80	1.85	9.904e+04	-1.111e+05	9.232e+04	-1.044e+05	-
		3.698e+04												

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.037e+05	266	32.74	7.36	-5.42	-0.63	2.57	-6.18-3.343e+04-2.789e+05-9.058e+04-2.217e+05		
3.121e+04	28	13.05	7.25	-3.22	-3.21	7.23	0.41-5.357e+04-1.211e+05-7.442e+04-1.003e+05		
2.165e+05	19	63.66	8.59	-7.07	-3.98	5.50	-6.23-3.256e+04-5.286e+05-1.595e+05-4.016e+05		
3.129e+04	241 3	258	19.11	4.06	0.31	1.16	3.21	1.57 8.380e+04-9.403e+04 7.811e+04-8.834e+04	-
8.778e+04	266	27.70	6.23	-4.59	-0.54	2.18	-5.23-2.829e+04-2.360e+05-7.665e+04-1.876e+05		
2.641e+04	28	11.04	6.13	-2.73	-2.71	6.12	0.35-4.533e+04-1.025e+05-6.297e+04-8.485e+04		
1.832e+05	19	53.87	7.26	-5.98	-3.37	4.65	-5.27-2.755e+04-4.473e+05-1.350e+05-3.398e+05		
2.862e+04	241 23	258	17.70	11.27	-63.63	0.94	-53.30	-25.83 7.624e+04-8.595e+04 7.102e+04-8.073e+04	-
8.002e+04	266	25.51	2.90	-56.52	-10.14	-43.49	24.59-2.604e+04-2.155e+05-7.010e+04-1.714e+05		
2.399e+04	28	10.14	56.83	-55.32	45.75	-44.23	-33.47-4.161e+04-9.360e+04-5.761e+04-7.760e+04		
1.671e+05	19	49.48	40.71	-93.25	39.65	-92.19	11.85-2.544e+04-4.085e+05-1.233e+05-3.106e+05		
2.851e+04	241 55	258	17.48	4.32	-20.88	1.01	-17.58	-8.51 7.620e+04-8.565e+04 7.101e+04-8.046e+04	-
7.988e+04	266	25.26	-1.34	-17.26	-4.00	-14.60	5.94-2.583e+04-2.149e+05-6.983e+04-1.709e+05		
2.400e+04	28	10.07	19.58	-17.06	15.11	-12.59	-12.00-4.136e+04-9.333e+04-5.738e+04-7.731e+04		
1.667e+05	19	49.11	12.54	-30.96	12.51	-30.92	1.27-2.519e+04-4.073e+05-1.229e+05-3.096e+05		
2.845e+04	241 69	258	17.38	3.69	0.28	1.05	2.92	1.42 7.618e+04-8.548e+04 7.101e+04-8.031e+04	-
7.980e+04	266	25.18	5.66	-4.17	-0.49	1.98	-4.76-2.571e+04-2.145e+05-6.968e+04-1.706e+05		
2.401e+04	28	10.04	5.57	-2.48	-2.47	5.56	0.32-4.121e+04-9.318e+04-5.725e+04-7.714e+04		
1.665e+05	19	48.97	6.60	-5.44	-3.06	4.23	-4.79-2.505e+04-4.066e+05-1.227e+05-3.090e+05		
4.945e+04	242 1	259	14.97	3.41	-4.84	-4.77	3.35	-0.73 1.473e+04-1.125e+05 -1247.11-9.652e+04 4.216e+04	
5.556e+04	267	15.16	6.43	-4.30	-1.23	3.37	-4.85-2.624e+04-1.330e+05-5.957e+04-9.963e+04		
5.597e+04	266	21.22	3.59	-0.79	0.15	2.65	-1.80-3.459e+04-1.857e+05-5.896e+04-1.613e+05		
4.185e+04	258	20.81	10.56	-2.71	2.86	4.99	-6.55 -7946.62-1.714e+05-3.012e+04-1.492e+05		
4.701e+04	242 3	259	12.66	2.89	-4.09	-4.04	2.83	-0.62 1.246e+04-9.519e+04 -1055.25-8.167e+04 3.567e+04	
4.736e+04	267	12.82	5.44	-3.64	-1.04	2.85	-4.10-2.220e+04-1.125e+05-5.040e+04-8.430e+04		
3.813e+04	266	17.95	3.04	-0.67	0.13	2.24	-1.52-2.927e+04-1.571e+05-4.989e+04-1.365e+05		
4.277e+04	258	17.61	8.94	-2.29	2.42	4.22	-5.54 -6724.07-1.450e+05-2.549e+04-1.262e+05		
4.309e+04	242 23	259	11.65	17.22	-61.69	10.79	-55.27	-21.58 1.121e+04-8.693e+04 -1107.88-7.461e+04 3.251e+04	
3.807e+04	267	11.90	50.20	-59.09	47.66	-56.55	16.47-2.041e+04-1.027e+05-4.610e+04-7.702e+04		
4.277e+04	266	16.49	3.18	-106.53	-16.10	-87.26	-41.75-2.691e+04-1.435e+05-4.567e+04-1.247e+05		
4.315e+04	258	16.23	14.19	-40.81	13.70	-40.32	5.15 -6347.61-1.325e+05-2.343e+04-1.154e+05		
3.807e+04	242 55	259	11.54	4.54	-21.44	1.60	-18.51	-8.22 1.129e+04-8.668e+04 -1013.48-7.438e+04 3.246e+04	
4.277e+04	267	11.71	17.14	-19.34	16.77	-18.97	3.64-2.027e+04-1.024e+05-4.592e+04-7.677e+04		
4.277e+04	266	16.36	2.14	-38.45	-5.80	-30.51	-16.10-2.672e+04-1.430e+05-4.547e+04-1.243e+05		
3.804e+04	258	16.05	6.49	-12.35	6.39	-12.26	-1.32 -6198.40-1.320e+05-2.327e+04-1.150e+05		
4.274e+04	242 69	259	11.51	2.63	-3.72	-3.67	2.58	-0.56 1.133e+04-8.653e+04 -959.32-7.425e+04 3.243e+04	
4.305e+04	267	11.66	4.95	-3.30	-0.95	2.59	-3.73-2.019e+04-1.023e+05-4.582e+04-7.663e+04		
	266	16.32	2.76	-0.61	0.11	2.04	-1.39-2.661e+04-1.428e+05-4.535e+04-1.241e+05		
	258	16.01	8.12	-2.08	2.20	3.84	-5.04 -6112.79-1.318e+05-2.317e+04-1.148e+05		



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

243	1	260	11.66	2.93	-2.80	-2.32	2.45	-1.59	1.712e+04	-8.413e+04	-5747.23	-6.126e+04	4.233e+04
		268	10.27	3.36	-2.77	-1.06	1.65	-2.75	-8463.91	-8.656e+04	-4.006e+04	-5.497e+04	
3.833e+04													
4.921e+04		267	14.80	4.19	-3.39	-1.35	2.15	-3.37	-2.348e+04	-1.292e+05	-5.706e+04	-9.559e+04	
4.902e+04		259	15.07	4.62	-2.80	-1.59	3.41	-2.75	9007.28	-1.166e+05	-1.454e+04	-9.302e+04	
		243	9.86	2.48	-2.37	-1.96	2.08	-1.34	1.448e+04	-7.118e+04	-4863.04	-5.184e+04	3.582e+04
3.243e+04		268	8.69	2.84	-2.34	-0.90	1.40	-2.32	-7161.77	-7.325e+04	-3.390e+04	-4.651e+04	
4.164e+04		267	12.52	3.55	-2.87	-1.14	1.82	-2.85	-1.987e+04	-1.093e+05	-4.828e+04	-8.088e+04	
4.147e+04		259	12.75	3.91	-2.37	-1.34	2.89	-2.32	7621.55	-9.863e+04	-1.230e+04	-7.871e+04	
		243	9.07	22.54	-40.97	21.49	-39.92	-8.09	1.310e+04	-6.499e+04	-4541.90	-4.734e+04	3.266e+04
2.956e+04		268	8.03	24.47	-46.41	23.59	-45.54	7.85	-6642.25	-6.686e+04	-3.101e+04	-4.249e+04	
3.794e+04		267	11.56	20.82	-54.54	20.68	-54.40	3.26	-1.828e+04	-9.978e+04	-4.416e+04	-7.391e+04	
3.781e+04		259	11.77	22.95	-50.70	22.53	-50.29	-5.51	6798.84	-9.007e+04	-1.136e+04	-7.191e+04	
		243	8.99	17.19	-10.33	-10.27	17.13	1.28	1.319e+04	-6.461e+04	-4376.85	-4.705e+04	3.253e+04
2.946e+04		268	7.94	19.46	-10.84	-9.71	18.33	-5.74	-6462.74	-6.649e+04	-3.074e+04	-4.221e+04	
3.782e+04		267	11.43	22.79	-9.66	-8.96	22.09	-4.72	-1.798e+04	-9.920e+04	-4.379e+04	-7.339e+04	
3.767e+04		259	11.64	21.94	-9.91	-9.88	21.91	-0.88	6976.01	-8.952e+04	-1.112e+04	-7.142e+04	
		243	8.97	2.26	-2.15	-1.78	1.89	-1.22	1.317e+04	-6.471e+04	-4420.95	-4.713e+04	3.256e+04
2.949e+04		268	7.90	2.58	-2.13	-0.82	1.27	-2.11	-6510.70	-6.659e+04	-3.081e+04	-4.228e+04	
3.785e+04		267	11.38	3.23	-2.61	-1.04	1.66	-2.59	-1.806e+04	-9.936e+04	-4.389e+04	-7.353e+04	
3.770e+04		259	11.59	3.56	-2.16	-1.22	2.62	-2.11	6928.68	-8.967e+04	-1.119e+04	-7.155e+04	
		244	9.03	2.11	-2.24	-1.81	1.68	-1.30	2.141e+04	-5.962e+04	-1946.13	-3.626e+04	3.670e+04
2.925e+04		269	7.06	2.31	-2.28	-0.94	0.98	-2.08	3524.32	-5.499e+04	-2.500e+04	-2.646e+04	
3.878e+04		268	10.29	3.10	-2.89	-1.15	1.36	-2.72	-8446.36	-8.673e+04	-4.228e+04	-5.290e+04	
		260	11.62	3.02	-2.56	-1.80	2.27	-1.91	1.665e+04	-8.415e+04	-9245.14	-5.825e+04	4.404e+04
		244	7.64	1.79	-1.89	-1.53	1.42	-1.10	1.812e+04	-5.045e+04	-1646.73	-3.068e+04	3.106e+04
2.475e+04		269	5.97	1.95	-1.93	-0.80	0.83	-1.76	2982.12	-4.653e+04	-2.116e+04	-2.239e+04	
3.281e+04		268	8.70	2.62	-2.44	-0.97	1.15	-2.30	-7146.92	-7.339e+04	-3.577e+04	-4.476e+04	
		260	9.83	2.56	-2.16	-1.53	1.92	-1.61	1.409e+04	-7.120e+04	-7822.81	-4.929e+04	3.726e+04
		244	7.05	16.51	-7.90	8.59	0.01	11.43	1.665e+04	-4.597e+04	-1383.38	-2.793e+04	2.836e+04
2.263e+04		269	5.54	12.06	-14.13	1.47	-3.55	12.85	2858.54	-4.242e+04	-1.920e+04	-2.036e+04	
3.000e+04		268	8.01	13.22	-12.20	5.45	-4.44	11.71	-6322.23	-6.689e+04	-3.250e+04	-4.071e+04	
		260	9.04	16.72	-8.76	7.55	0.41	12.23	1.303e+04	-6.486e+04	-6972.90	-4.486e+04	3.403e+04
		244	6.96	12.71	-9.86	-9.85	12.70	0.52	1.648e+04	-4.579e+04	-1466.03	-2.785e+04	2.820e+04
2.248e+04		269	5.46	15.14	-9.68	-8.55	14.01	-5.18	2733.67	-4.224e+04	-1.918e+04	-2.032e+04	
2.981e+04		268	7.94	17.46	-10.60	-9.50	16.36	-5.44	-6449.01	-6.662e+04	-3.245e+04	-4.062e+04	
		260	8.97	16.34	-10.00	-10.00	16.34	0.04	1.283e+04	-6.463e+04	-7064.84	-4.474e+04	3.384e+04
		244	6.95	1.63	-1.72	-1.39	1.29	-1.00	1.647e+04	-4.586e+04	-1497.02	-2.789e+04	2.823e+04
2.250e+04		269	5.43	1.77	-1.75	-0.73	0.75	-1.60	2711.02	-4.230e+04	-1.923e+04	-2.035e+04	
2.983e+04		268	7.91	2.38	-2.22	-0.88	1.05	-2.09	-6497.20	-6.672e+04	-3.252e+04	-4.069e+04	
		260	8.94	2.32	-1.97	-1.39	1.75	-1.47	1.280e+04	-6.473e+04	-7111.65	-4.481e+04	3.387e+04
		245	6.95	1.26	-1.90	-1.71	1.07	-0.76	2.393e+04	-4.008e+04	2752.81	-1.891e+04	3.012e+04
		270	4.91	1.78	-1.70	-0.35	0.43	-1.69	1.119e+04	-3.272e+04	-1.235e+04	-9172.53	2.190e+04
2.921e+04		269	7.06	2.18	-2.46	-1.09	0.80	-2.12	3330.85	-5.510e+04	-2.647e+04	-2.530e+04	
		261	8.99	2.08	-2.10	-1.53	1.52	-1.43	2.121e+04	-5.946e+04	-3922.89	-3.433e+04	3.736e+04
		245	5.88	1.07	-1.61	-1.44	0.90	-0.64	2.025e+04	-3.392e+04	2329.30	-1.600e+04	2.548e+04
		270	4.16	1.50	-1.44	-0.30	0.37	-1.43	9472.66	-2.768e+04	-1.045e+04	-7761.37	1.853e+04
		269	5.97	1.84	-2.08	-0.92	0.68	-1.79	2818.42	-4.662e+04	-2.239e+04	-2.141e+04	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.471e+04		261	7.61	1.76	-1.78	-1.30	1.28	-1.21	1.794e+04-5.031e+04	-3319.37-2.905e+04	3.161e+04
245	7	262	5.44	13.66	-6.20	7.44	0.03	9.21	1.855e+04-3.092e+04	2202.70-1.458e+04	2.327e+04
		270	3.87	9.90	-11.29	0.84	-2.23	10.49	8736.84-2.524e+04	-9455.50	-7047.78
		269	5.50	8.36	-8.58	3.68	-3.90	7.58	2708.84-4.251e+04	-2.034e+04	-1.946e+04
2.260e+04		261	7.00	12.73	-5.54	5.45	1.74	8.94	1.649e+04-4.585e+04	-2908.57-2.645e+04	2.886e+04
245	38	262	5.37	3.32	-6.71	-4.50	1.11	-4.15	1.836e+04-3.080e+04	2086.51-1.453e+04	2.313e+04
		270	3.80	5.98	-5.39	-0.67	1.27	-5.60	8565.83-2.514e+04	-9515.24	-7058.71
		269	5.45	5.41	-5.63	-2.48	2.26	-4.98	2508.74-4.234e+04	-2.037e+04	-1.946e+04
2.242e+04		261	6.94	3.96	-6.60	-3.60	0.96	-4.76	1.625e+04-4.570e+04	-3057.35-2.640e+04	2.869e+04
245	69	262	5.35	0.97	-1.46	-1.31	0.82	-0.58	1.841e+04-3.083e+04	2117.55-1.454e+04	2.317e+04
		270	3.78	1.37	-1.31	-0.27	0.33	-1.30	8611.51-2.517e+04	-9499.28	-7055.79
		269	5.43	1.67	-1.89	-0.84	0.62	-1.63	2562.20-4.238e+04	-2.036e+04	-1.946e+04
2.247e+04		261	6.92	1.60	-1.61	-1.18	1.17	-1.10	1.631e+04-4.574e+04	-3017.61-2.641e+04	2.874e+04
246	1	263	5.34	0.75	-1.56	-1.53	0.73	-0.24	2.382e+04-2.586e+04	6480.46	-8519.80
		271	3.55	0.98	-1.11	-0.06	-0.08	-1.05	1.482e+04-1.813e+04	-2958.84	-356.21
		270	4.88	1.08	-1.72	-0.70	0.06	-1.35	1.111e+04-3.255e+04	-1.312e+04	-8313.10
		262	6.96	1.37	-1.73	-1.42	1.06	-0.92	2.383e+04-4.024e+04	1459.79-1.788e+04	3.054e+04
246	3	263	4.52	0.63	-1.32	-1.30	0.61	-0.20	2.016e+04-2.188e+04	5483.46	-7209.06
		271	3.01	0.83	-0.94	-0.05	-0.07	-0.88	1.254e+04-1.534e+04	-2503.63	-301.41
		270	4.13	0.92	-1.46	-0.59	0.05	-1.14	9403.49-2.754e+04	-1.110e+04	-7034.16
		262	5.89	1.16	-1.46	-1.20	0.90	-0.78	2.016e+04-3.405e+04	1235.21-1.513e+04	2.584e+04
246	7	263	4.19	10.93	-4.95	6.23	-0.24	7.25	1.844e+04-1.996e+04	5053.98	-6583.26
		271	2.80	7.95	-8.33	0.77	-1.15	8.08	1.151e+04-1.398e+04	-2225.99	-253.26
		270	3.80	4.83	-6.75	2.33	-4.24	4.77	8674.23-2.513e+04	1.006e+04	-6392.03
		262	5.41	9.67	-1.86	5.01	2.79	5.66	1.847e+04-3.103e+04	1208.12-1.377e+04	2.359e+04
246	37	263	4.13	3.80	-5.70	1.02	-2.92	-4.33	1.829e+04-1.988e+04	4947.43	-6546.79
		271	2.74	4.95	-4.39	4.34	-3.78	-2.31	1.135e+04-1.394e+04	-2308.38	-276.87
		270	3.75	3.71	-3.45	3.45	-3.19	-1.34	8489.80-2.502e+04	-1.013e+04	-6402.70
		262	5.37	4.15	-7.20	1.72	-4.77	-4.66	1.827e+04-3.095e+04	1072.36-1.375e+04	2.347e+04
246	69	263	4.11	0.58	-1.20	-1.18	0.56	-0.18	1.833e+04-1.989e+04	4984.97	-6553.69
		271	2.73	0.75	-0.86	-0.04	-0.06	-0.80	1.140e+04-1.395e+04	-2276.03	-274.01
		270	3.75	0.83	-1.33	-0.54	0.05	-1.04	8548.63-2.504e+04	-1.009e+04	-6394.69
		262	5.36	1.05	-1.33	-1.10	0.82	-0.71	1.833e+04-3.095e+04	1122.92-1.375e+04	2.349e+04
247	1	264	3.71	0.86	-1.21	-1.19	0.84	0.21	1.915e+04-1.528e+04	7703.50	-3835.92
		272	2.50	-0.28	-1.41	-1.09	-0.60	-0.50	1.398e+04	-9097.75	2917.83
		271	3.52	0.82	-0.11	-0.03	0.74	-0.26	1.468e+04-1.807e+04	-3418.91	33.47
		263	5.41	0.09	-1.68	-1.54	-0.05	-0.48	2.408e+04-2.624e+04	5728.68	-7890.23
247	3	264	3.14	0.73	-1.02	-1.01	0.71	0.18	1.620e+04-1.293e+04	6518.35	-3245.78
		272	2.12	-0.24	-1.19	-0.93	-0.51	-0.43	1.183e+04	-7698.10	2468.93
		271	2.98	0.70	-0.10	-0.03	0.63	-0.22	1.242e+04-1.529e+04	-2892.92	28.32
		263	4.58	0.07	-1.42	-1.30	-0.04	-0.40	2.038e+04-2.220e+04	4847.34	-6676.35
247	8	264	2.91	9.69	-12.72	-8.30	5.27	8.92	1.482e+04-1.177e+04	6005.98	-2957.18
		272	1.94	5.97	-12.97	-12.92	5.92	0.97	1.084e+04	-7027.37	2307.71
		271	2.74	4.29	-12.39	-12.01	3.91	-2.49	1.145e+04-1.393e+04	-2542.52	58.62
		263	4.21	13.08	-11.36	-9.00	10.72	7.22	1.863e+04-2.022e+04	4506.55	-6097.07
247	53	264	2.86	8.06	-3.77	7.32	-3.04	-2.86	1.472e+04-1.176e+04	5904.55	-2951.04
		272	1.94	7.75	-4.80	7.42	-4.47	2.00	1.074e+04	-6998.82	2223.89
		271	2.73	9.39	-4.73	8.70	-4.05	3.03	1.126e+04-1.391e+04	-2660.43	15.88
		263	4.17	8.44	-6.49	7.41	-5.46	-3.79	1.851e+04-2.020e+04	4376.52	-6065.89
247	69	264	2.85	0.66	-0.93	-0.91	0.65	0.16	1.473e+04-1.175e+04	5925.77	-2950.71
		272	1.92	-0.22	-1.08	-0.84	-0.46	-0.39	1.075e+04	-6998.27	2244.48
		271	2.71	0.63	-0.09	-0.03	0.57	-0.20	1.130e+04-1.390e+04	-2629.93	25.74
		263	4.16	0.07	-1.29	-1.18	-0.04	-0.37	1.852e+04-2.019e+04	4406.68	-6069.41
248	1	265	0.57	0.22	-1.15	-1.11	0.19	0.22	4343.44	-327.67	4339.18
		273	0.84	-6.00e-03	-1.40	-1.36	-0.05	-0.26	5280.08	-2350.06	3797.51
		272	2.59	0.24	-0.68	-0.68	0.24	-0.03	1.452e+04	-9403.50	3160.38
		264	3.93	-0.04	-1.49	-1.49	-0.04	0.01	1.994e+04-1.661e+04	7140.92	-3815.74
248	3	265	0.48	0.19	-0.97	-0.94	0.16	0.19	3675.22	-277.26	3671.61
		273	0.71	-5.08e-03	-1.19	-1.15	-0.05	-0.22	4467.76	-1988.52	3213.28
		272	2.19	0.20	-0.58	-0.58	0.20	-0.02	1.228e+04	-7956.81	2674.16
		264	3.33	-0.04	-1.26	-1.26	-0.04	9.49e-03	1.687e+04-1.406e+04	6042.31	-3228.70
248	21	265	0.53	24.21	-4.19	21.97	-1.94	-7.67	3288.87	-254.15	3285.59
		273	0.75	23.13	-4.51	21.47	-2.84	6.58	4016.11	-1819.80	2866.35
		272	2.07	26.07	-6.77	22.89	-3.59	9.72	1.111e+04	-7231.85	2371.02
		264	3.06	25.45	-8.65	22.81	-6.00	-9.12	1.531e+04-1.281e+04	5438.04	-2931.84
248	55	265	0.47	7.85	-1.08	7.53	-0.76	-1.67	3333.87	-252.58	3330.57
		273	0.68	6.28	-1.55	5.37	-0.64	2.51	4055.48	-1811.70	2912.24
		272	2.02	7.89	-2.77	6.92	-1.80	3.07	1.117e+04	-7240.06	2421.71
		264	3.04	7.93	-1.94	7.09	-1.11	-2.75	1.535e+04-1.280e+04	5486.76	-2937.37

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

248	69	265	0.43	0.17	-0.88	-0.85	0.14	0.17	3341.11	-252.06	3337.83	-248.78	108.47
		273	0.65	-4.62e-03	-1.08	-1.04	-0.04	-0.20	4061.60	-1807.74	2921.16	-667.31	2322.29
		272	1.99	0.18	-0.52	-0.52	0.18	-0.02	1.117e+04	-7233.46	2431.06	1501.56	9188.03
		264	3.02	-0.03	-1.14	-1.14	-0.03	8.62e-03	1.534e+04	-1.278e+04	5493.01	-2935.18	1.341e+04
249	1	266	22.00	2.53	-5.28	-4.02	1.27	-2.87	-5.760e+04	-1.989e+05	-7.530e+04	-1.812e+05	
4.678e+04		274	22.88	7.95	-3.75	0.17	4.03	-5.52	-6.638e+04	-2.083e+05	-1.265e+05	-1.482e+05	
7.011e+04		37	41.72	2.38	-8.31	-3.47	-2.46	-5.32	-8.339e+04	-3.703e+05	-8.347e+04	-3.702e+05	4511.87
		28	23.84	14.82	-5.43	-1.48	10.88	-8.02	-3.243e+04	-2.058e+05	-8.448e+04	-1.538e+05	
7.947e+04		249	18.61	2.14	-4.47	-3.40	1.07	-2.43	-4.874e+04	-1.683e+05	-6.372e+04	-1.533e+05	
3.958e+04	3	266	18.61	2.14	-4.47	-3.40	1.07	-2.43	-4.874e+04	-1.683e+05	-6.372e+04	-1.533e+05	
5.933e+04		274	19.36	6.73	-3.18	0.14	3.41	-4.67	-5.617e+04	-1.762e+05	-1.070e+05	-1.254e+05	
		37	35.30	2.01	-7.03	-2.94	-2.09	-4.50	-7.056e+04	-3.133e+05	-7.062e+04	-3.133e+05	3817.73
		28	20.17	12.54	-4.59	-1.25	9.21	-6.79	-2.744e+04	-1.742e+05	-7.148e+04	-1.301e+05	
6.725e+04		249	17.21	73.01	-41.67	70.53	-39.19	16.68	-4.473e+04	-1.537e+05	-5.832e+04	-1.401e+05	
3.600e+04	23	266	17.21	73.01	-41.67	70.53	-39.19	16.68	-4.473e+04	-1.537e+05	-5.832e+04	-1.401e+05	
5.410e+04		274	17.83	46.80	-81.84	45.41	-80.44	13.33	-5.136e+04	-1.609e+05	-9.768e+04	-1.145e+05	
		37	32.67	52.89	-86.14	47.72	-80.97	-26.30	-6.461e+04	-2.863e+05	-6.465e+04	-2.863e+05	3246.60
		28	18.53	4.34	-58.11	4.07	-57.84	4.12	-2.528e+04	-1.590e+05	-6.538e+04	-1.189e+05	
6.128e+04		249	17.01	24.32	-14.24	23.75	-13.67	4.68	-4.446e+04	-1.533e+05	-5.807e+04	-1.397e+05	
3.599e+04	55	266	17.01	24.32	-14.24	23.75	-13.67	4.68	-4.446e+04	-1.533e+05	-5.807e+04	-1.397e+05	
5.400e+04		274	17.65	16.74	-27.46	16.64	-27.36	2.16	-5.117e+04	-1.605e+05	-9.743e+04	-1.142e+05	
		37	32.30	18.71	-33.73	15.70	-30.72	-12.19	-6.432e+04	-2.854e+05	-6.437e+04	-2.853e+05	3388.98
		28	18.33	1.11	-16.12	0.76	-15.77	-2.42	-2.507e+04	-1.586e+05	-6.513e+04	-1.185e+05	
6.119e+04		249	16.92	1.95	-4.06	-3.09	0.98	-2.21	-4.431e+04	-1.530e+05	-5.792e+04	-1.394e+05	
3.598e+04	69	266	16.92	1.95	-4.06	-3.09	0.98	-2.21	-4.431e+04	-1.530e+05	-5.792e+04	-1.394e+05	
5.393e+04		274	17.60	6.11	-2.89	0.13	3.10	-4.25	-5.106e+04	-1.602e+05	-9.729e+04	-1.140e+05	
		37	32.09	1.83	-6.40	-2.67	-1.90	-4.09	-6.415e+04	-2.849e+05	-6.420e+04	-2.848e+05	3470.67
		28	18.34	11.40	-4.17	-1.14	8.37	-6.17	-2.495e+04	-1.583e+05	-6.498e+04	-1.183e+05	
6.113e+04		250	14.16	4.34	-3.27	-1.49	2.56	-3.22	-2.483e+04	-1.244e+05	-4.423e+04	-1.050e+05	
3.943e+04	1	267	14.16	4.34	-3.27	-1.49	2.56	-3.22	-2.483e+04	-1.244e+05	-4.423e+04	-1.050e+05	
3.760e+04		275	14.56	4.20	-3.45	-0.39	1.14	-3.75	-5.823e+04	-1.350e+05	-8.887e+04	-1.044e+05	
4.986e+04		274	21.67	4.32	-5.58	-1.91	0.65	-4.78	-8.405e+04	-2.008e+05	-1.121e+05	-1.728e+05	
6.003e+04		266	22.84	6.49	-3.80	-2.10	4.79	-3.81	-3.825e+04	-2.000e+05	-6.492e+04	-1.734e+05	
3.336e+04	3	267	11.98	3.67	-2.77	-1.26	2.17	-2.72	-2.101e+04	-1.052e+05	-3.743e+04	-8.881e+04	
3.181e+04		275	12.32	3.56	-2.92	-0.33	0.97	-3.17	-4.928e+04	-1.142e+05	-7.519e+04	-8.832e+04	
4.219e+04		274	18.34	3.65	-4.72	-1.62	0.55	-4.04	-7.112e+04	-1.699e+05	-9.482e+04	-1.462e+05	
5.080e+04		266	19.32	5.49	-3.21	-1.78	4.06	-3.23	-3.237e+04	-1.693e+05	-5.494e+04	-1.467e+05	
3.039e+04	23	267	11.07	5.47	-52.86	5.15	-52.54	-4.33	-1.933e+04	-9.607e+04	-3.427e+04	-8.113e+04	
2.897e+04		275	11.35	27.41	-54.15	26.60	-53.34	8.10	-4.510e+04	-1.043e+05	-6.868e+04	-8.068e+04	
3.841e+04		274	16.90	44.22	-59.73	44.03	-59.55	4.38	-6.508e+04	-1.551e+05	-8.662e+04	-1.336e+05	
4.628e+04		266	17.89	69.60	-84.96	68.46	-83.82	-13.19	-2.974e+04	-1.546e+05	-5.027e+04	-1.340e+05	
3.031e+04	54	267	10.94	21.97	-3.57	-3.44	21.84	-1.80	-1.901e+04	-9.551e+04	-3.393e+04	-8.059e+04	
2.890e+04		275	11.23	22.12	-11.58	-10.10	20.64	-6.89	-4.469e+04	-1.037e+05	-6.824e+04	-8.015e+04	
3.834e+04		274	16.71	23.44	-19.11	-18.06	22.39	-6.61	-6.449e+04	-1.542e+05	-8.605e+04	-1.327e+05	
4.614e+04		266	17.65	35.60	-27.18	-27.17	35.59	0.81	-2.931e+04	-1.536e+05	-4.982e+04	-1.331e+05	
3.033e+04	69	267	10.89	3.34	-2.51	-1.15	1.97	-2.47	-1.910e+04	-9.566e+04	-3.402e+04	-8.074e+04	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.892e+04	275	11.20	3.23	-2.65	-0.30	0.88	-2.88-4.480e+04-1.039e+05-6.836e+04-8.029e+04
3.836e+04	274	16.67	3.32	-4.29	-1.47	0.50	-3.68-6.465e+04-1.545e+05-8.620e+04-1.329e+05
4.618e+04	266	17.57	4.99	-2.92	-1.62	3.69	-2.93-2.942e+04-1.539e+05-4.994e+04-1.334e+05
3.518e+04	251 1 268	10.19	2.98	-2.80	-1.85	2.03	-2.14 -8948.63-8.614e+04-3.167e+04-6.342e+04
2.358e+04	276	8.92	2.93	-2.93	-0.70	0.70	-2.84-3.495e+04-8.265e+04-6.234e+04-5.526e+04
3.587e+04	275	14.22	3.79	-3.92	-0.72	0.59	-3.80-5.873e+04-1.321e+05-8.781e+04-1.030e+05
4.416e+04	267	14.86	4.79	-3.40	-1.72	3.11	-3.31-2.449e+04-1.300e+05-4.839e+04-1.061e+05
2.977e+04	251 3 268	8.62	2.53	-2.37	-1.57	1.72	-1.81 -7571.91-7.289e+04-2.680e+04-5.366e+04
1.996e+04	276	7.55	2.48	-2.48	-0.59	0.59	-2.41-2.958e+04-6.994e+04-5.275e+04-4.676e+04
3.035e+04	275	12.03	3.21	-3.32	-0.61	0.50	-3.22-4.969e+04-1.117e+05-7.430e+04-8.713e+04
3.737e+04	267	12.57	4.06	-2.87	-1.45	2.64	-2.80-2.072e+04-1.100e+05-4.094e+04-8.978e+04
2.713e+04	251 23 268	7.93	22.28	-42.84	21.89	-42.45	-5.03 -7017.43-6.653e+04-2.455e+04-4.900e+04
1.816e+04	276	6.94	22.98	-46.82	22.15	-46.00	7.54-2.708e+04-6.382e+04-4.819e+04-4.271e+04
2.764e+04	275	11.09	25.00	-49.98	24.20	-49.18	7.71-4.548e+04-1.020e+05-6.787e+04-7.961e+04
3.404e+04	267	11.61	28.67	-55.22	28.43	-54.98	-4.49-1.906e+04-1.004e+05-3.748e+04-8.201e+04
2.704e+04	251 54 268	7.86	17.62	-9.93	-9.92	17.61	-0.42 -6834.75-6.616e+04-2.430e+04-4.870e+04
1.813e+04	276	6.88	18.70	-10.00	-8.81	17.50	-5.73-2.682e+04-6.349e+04-4.787e+04-4.243e+04
2.758e+04	275	10.97	20.10	-11.13	-9.57	18.55	-6.80-4.506e+04-1.014e+05-6.743e+04-7.907e+04
3.394e+04	267	11.48	23.41	-12.26	-12.17	23.31	-1.83-1.876e+04-9.984e+04-3.713e+04-8.147e+04
2.706e+04	251 69 268	7.84	2.30	-2.15	-1.42	1.57	-1.65 -6883.56-6.626e+04-2.436e+04-4.878e+04
1.814e+04	276	6.86	2.25	-2.25	-0.54	0.54	-2.19-2.689e+04-6.358e+04-4.796e+04-4.251e+04
2.759e+04	275	10.94	2.92	-3.02	-0.55	0.45	-2.92-4.518e+04-1.016e+05-6.754e+04-7.921e+04
3.397e+04	267	11.43	3.69	-2.61	-1.32	2.40	-2.54-1.884e+04-1.000e+05-3.722e+04-8.161e+04
2.743e+04	252 1 269	6.96	2.17	-2.28	-1.60	1.49	-1.60 2425.41-5.477e+04-1.809e+04-3.426e+04
1.429e+04	277	5.37	2.00	-2.47	-0.76	0.29	-2.17-1.698e+04-4.913e+04-4.042e+04-2.570e+04
2.327e+04	276	8.89	2.77	-3.07	-0.79	0.49	-2.85-3.540e+04-8.245e+04-6.238e+04-5.548e+04
3.552e+04	268	10.21	3.11	-2.74	-1.65	2.02	-2.28 -9303.86-8.650e+04-3.281e+04-6.299e+04
2.321e+04	252 3 269	5.89	1.84	-1.93	-1.35	1.26	-1.36 2052.27-4.635e+04-1.531e+04-2.899e+04
1.209e+04	277	4.54	1.69	-2.09	-0.64	0.25	-1.84-1.437e+04-4.157e+04-3.420e+04-2.175e+04
1.969e+04	276	7.52	2.34	-2.60	-0.67	0.41	-2.41-2.996e+04-6.977e+04-5.278e+04-4.694e+04
3.006e+04	268	8.64	2.63	-2.32	-1.39	1.71	-1.93 -7872.49-7.319e+04-2.776e+04-5.330e+04
2.123e+04	252 7 269	5.44	17.08	-9.56	13.20	-5.68	9.40 2011.56-4.225e+04-1.385e+04-2.639e+04
1.111e+04	277	4.19	13.05	-17.44	5.47	-9.86	13.18-1.297e+04-3.792e+04-3.112e+04-1.977e+04
1.806e+04	276	6.91	13.26	-16.17	7.98	-10.89	11.29-2.713e+04-6.363e+04-4.805e+04-4.271e+04
2.749e+04	268	7.95	15.10	-11.56	10.15	-6.61	10.37 -6983.23-6.671e+04-2.517e+04-4.852e+04
2.108e+04	252 54 269	5.36	13.70	-10.27	-10.26	13.69	0.40 1889.45-4.207e+04-1.387e+04-2.631e+04
	277	4.12	14.64	-9.87	-8.71	13.48	-5.21-1.303e+04-3.774e+04-3.103e+04-1.974e+04





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		279	1.57	29.66	-11.66	27.12	-9.12	9.92	-1362.10	-1.253e+04	-1.170e+04	-2193.48	2931.72
		271	2.80	23.27	-18.89	19.98	-15.60	-11.32	1.172e+04	-1.373e+04	1804.91	-3811.49	1.241e+04
255	53	272	1.73	8.40	-3.69	8.04	-3.33	-2.04	9494.60	-6469.12	4564.92	-1539.43	7375.25
		280	0.82	4.42	-3.05	4.30	-2.93	0.95	1528.83	-5630.72	-4379.32	277.43	2719.09
		279	1.52	14.53	-3.92	12.74	-2.13	5.46	-1171.79	-1.249e+04	-1.159e+04	-2068.27	3056.13
		271	2.76	8.23	-8.62	6.32	-6.70	-5.35	1.170e+04	-1.373e+04	1852.53	-3890.39	1.239e+04
255	69	272	1.74	1.89	-0.47	0.81	0.61	1.18	9535.45	-6473.60	4602.60	-1540.75	7391.70
		280	0.82	0.34	-3.69	-3.53	0.17	-0.80	1543.67	-5627.80	-4369.96	285.83	2727.34
		279	1.49	6.37	-1.07e-03	4.49	1.88	2.91	-1061.79	-1.246e+04	-1.153e+04	-1996.44	3127.51
		271	2.75	0.37	-3.49	-1.52	-1.60	-1.93	1.168e+04	-1.374e+04	1879.85	-3935.65	1.237e+04
256	1	273	0.57	0.23	-1.68	-1.65	0.20	0.26	4032.32	-888.40	3844.20	-700.28	-943.56
		281	0.67	-0.10	-2.13	-2.07	-0.16	-0.35	212.37	-5260.74	-4306.69	-741.69	2076.40
		280	1.03	0.68	-1.04	-1.03	0.67	-0.14	1239.87	-7607.79	-6198.66	-169.26	3237.57
		272	2.47	0.08	-1.31	-1.09	-0.14	0.51	1.367e+04	-9212.74	6596.40	-2137.41	1.058e+04
256	3	273	0.48	0.20	-1.42	-1.39	0.17	0.22	3411.96	-751.72	3252.78	-592.54	-798.39
		281	0.57	-0.08	-1.81	-1.75	-0.14	-0.29	179.70	-4451.40	-3644.12	-627.58	1756.95
		280	0.87	0.58	-0.88	-0.87	0.57	-0.12	1049.12	-6437.36	-5245.02	-143.22	2739.48
		272	2.09	0.07	-1.11	-0.92	-0.12	0.43	1.157e+04	-7795.40	5581.57	-1808.58	8949.05
256	24	273	0.55	5.61	-22.31	-19.50	2.81	8.39	3158.83	-675.59	3017.99	-534.75	-721.25
		281	0.57	3.47	-25.54	-24.08	2.01	-6.34	173.11	-4001.13	-3254.34	-573.68	1599.87
		280	0.84	6.56	-24.35	-22.36	4.57	-7.59	1035.18	-5823.22	-4695.40	-92.65	2542.26
		272	1.93	7.48	-25.05	-22.53	4.96	8.69	1.058e+04	-7098.23	5144.59	-1661.19	8158.72
256	56	273	0.48	2.13	-8.93	-7.92	1.12	3.19	3122.57	-680.53	2979.28	-537.24	-724.15
		281	0.53	1.21	-10.35	-9.79	0.65	-2.48	166.88	-4030.07	-3291.51	-571.67	1598.19
		280	0.81	2.70	-9.36	-8.65	2.00	-2.83	983.36	-5841.53	-4741.66	-116.51	2509.33
		272	1.91	2.76	-9.76	-8.75	1.74	3.42	1.054e+04	-7090.91	5099.83	-1650.37	8143.96
256	69	273	0.44	0.18	-1.30	-1.27	0.15	0.20	3101.78	-683.38	2957.07	-538.67	-725.81
		281	0.52	-0.08	-1.64	-1.59	-0.12	-0.27	163.36	-4046.73	-3312.84	-570.53	1597.23
		280	0.79	0.53	-0.80	-0.79	0.52	-0.11	953.75	-5852.15	-4768.20	-130.20	2490.44
		272	1.90	0.06	-1.01	-0.84	-0.11	0.39	1.052e+04	-7086.73	5074.15	-1644.16	8135.50
257	1	274	16.15	3.70	-6.94	-3.29	0.04	-5.05	-6.058e+04	-1.495e+05	-6.091e+04	-1.492e+05	5383.29
		282	27.28	1.78	-2.11	-0.65	0.32	-1.89	-1.117e+05	-2.534e+05	-1.690e+05	-1.961e+05	
6.954e+04													
		46	22.65	5.71	-12.65	0.94	-7.87	-8.06	-1.275e+05	-2.093e+05	-1.558e+05	-1.810e+05	
3.891e+04		37	56.62	10.63	-3.88	0.46	6.29	-6.64	-9.108e+04	-4.950e+05	-1.925e+05	-3.935e+05	
1.752e+05													
257	3	274	13.67	3.13	-5.88	-2.78	0.03	-4.28	-5.126e+04	-1.265e+05	-5.154e+04	-1.262e+05	4555.09
		282	23.08	1.51	-1.79	-0.55	0.27	-1.60	-9.454e+04	-2.144e+05	-1.430e+05	-1.660e+05	
5.884e+04													
		46	19.17	4.83	-10.70	0.79	-6.66	-6.82	-1.079e+05	-1.771e+05	-1.319e+05	-1.531e+05	
3.292e+04		37	47.91	8.99	-3.28	0.39	5.32	-5.62	-7.707e+04	-4.188e+05	-1.629e+05	-3.330e+05	
1.482e+05													
257	23	274	12.86	47.56	-85.57	46.91	-84.92	-9.26	-4.691e+04	-1.156e+05	-4.715e+04	-1.153e+05	4057.31
		282	21.16	77.20	-39.20	74.97	-36.97	-15.96	-8.643e+04	-1.957e+05	-1.305e+05	-1.516e+05	
5.361e+04													
		46	17.65	1.23	-64.72	1.21	-64.69	-1.31	-9.865e+04	-1.616e+05	-1.204e+05	-1.399e+05	
2.992e+04		37	44.08	52.91	-82.91	46.53	-76.53	28.73	-7.049e+04	-3.824e+05	-1.487e+05	-3.042e+05	
1.352e+05													
257	55	274	12.58	16.22	-31.66	15.49	-30.94	-5.85	-4.671e+04	-1.152e+05	-4.696e+04	-1.150e+05	4110.49
		282	21.04	28.11	-14.42	27.01	-13.32	-6.74	-8.612e+04	-1.952e+05	-1.302e+05	-1.511e+05	
5.354e+04													
		46	17.50	1.57	-28.10	0.90	-27.43	-4.42	-9.829e+04	-1.612e+05	-1.200e+05	-1.395e+05	
2.993e+04		37	43.69	18.40	-26.04	17.19	-24.83	7.23	-7.022e+04	-3.814e+05	-1.483e+05	-3.033e+05	
1.349e+05													
257	69	274	12.43	2.84	-5.34	-2.53	0.03	-3.89	-4.660e+04	-1.150e+05	-4.685e+04	-1.148e+05	4140.99
		282	20.98	1.37	-1.62	-0.50	0.25	-1.45	-8.594e+04	-1.949e+05	-1.300e+05	-1.509e+05	
5.349e+04													
		46	17.42	4.39	-9.73	0.72	-6.06	-6.20	-9.809e+04	-1.610e+05	-1.199e+05	-1.392e+05	
2.993e+04		37	43.56	8.17	-2.98	0.35	4.84	-5.11	-7.006e+04	-3.808e+05	-1.481e+05	-3.027e+05	
1.348e+05													
258	1	275	13.82	3.49	-4.11	-1.84	1.22	-3.48	-5.895e+04	-1.284e+05	-7.934e+04	-1.080e+05	
3.164e+04													
		283	14.27	3.94	-3.40	0.62	-0.09	-3.65	-8.766e+04	-1.302e+05	-1.158e+05	-1.021e+05	
2.018e+04													
		282	21.44	3.52	-6.27	-2.43	-0.31	-4.78	-1.218e+05	-1.978e+05	-1.439e+05	-1.758e+05	
3.451e+04													
		274	23.01	5.41	-4.37	-1.08	2.12	-4.62	-8.405e+04	-2.126e+05	-1.121e+05	-1.845e+05	
5.309e+04													



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

258	3	275	11.69	2.95	-3.48	-1.56	1.03	-2.94-4.988e+04-1.087e+05-6.713e+04-9.141e+04	
2.677e+04		283	12.07	3.33	-2.88	0.52	-0.07	-3.09-7.417e+04-1.102e+05-9.794e+04-8.643e+04	
1.707e+04		282	18.14	2.98	-5.30	-2.06	-0.27	-4.04-1.031e+05-1.674e+05-1.218e+05-1.487e+05	
2.920e+04		274	19.47	4.58	-3.70	-0.91	1.80	-3.91-7.112e+04-1.799e+05-9.487e+04-1.561e+05	
4.493e+04		275	10.77	28.93	-53.40	28.68	-53.15	-4.49-4.566e+04-9.918e+04-6.134e+04-8.350e+04	
2.436e+04	23	283	11.13	2.08	-57.50	0.64	-56.05	9.18-6.779e+04-1.005e+05-8.938e+04-7.896e+04	
1.552e+04		282	16.75	75.82	-93.45	73.90	-91.52	17.96-9.421e+04-1.528e+05-1.111e+05-1.359e+05	
2.655e+04		274	17.91	43.72	-57.82	43.71	-57.81	-0.97-6.507e+04-1.642e+05-8.666e+04-1.426e+05	
4.091e+04		275	10.66	9.94	-19.17	9.56	-18.78	-3.34-4.546e+04-9.893e+04-6.114e+04-8.324e+04	
2.435e+04	55	283	11.02	0.65	-20.59	0.53	-20.48	1.56-6.756e+04-1.003e+05-8.917e+04-7.871e+04	
1.552e+04		282	16.58	26.05	-33.82	25.75	-33.52	4.21-9.390e+04-1.524e+05-1.109e+05-1.355e+05	
2.655e+04		274	17.75	15.60	-20.23	15.41	-20.04	-2.61-6.480e+04-1.638e+05-8.639e+04-1.422e+05	
4.087e+04		275	10.63	2.68	-3.16	-1.42	0.94	-2.67-4.534e+04-9.879e+04-6.103e+04-8.310e+04	
2.434e+04	69	283	10.98	3.03	-2.62	0.47	-0.07	-2.81-6.743e+04-1.002e+05-8.904e+04-7.857e+04	
1.552e+04		282	16.49	2.71	-4.82	-1.87	-0.24	-3.67-9.372e+04-1.522e+05-1.107e+05-1.352e+05	
2.654e+04		274	17.70	4.16	-3.36	-0.83	1.63	-3.56-6.465e+04-1.635e+05-8.624e+04-1.419e+05	
4.084e+04		276	8.81	2.71	-3.04	-1.43	1.10	-2.58-3.603e+04-8.174e+04-5.743e+04-6.034e+04	
2.281e+04	1	284	9.08	2.46	-2.82	-0.22	-0.14	-2.64-5.174e+04-8.383e+04-8.267e+04-5.290e+04	5994.56
		283	13.93	3.25	-4.25	-0.58	-0.41	-3.75-8.845e+04-1.264e+05-1.119e+05-1.029e+05	
1.842e+04		275	14.30	3.92	-3.57	-1.30	1.66	-3.44-5.973e+04-1.328e+05-8.156e+04-1.110e+05	
3.344e+04		276	7.45	2.29	-2.57	-1.21	0.93	-2.18-3.049e+04-6.917e+04-4.859e+04-5.106e+04	
1.930e+04	3	284	7.69	2.08	-2.38	-0.19	-0.12	-2.23-4.378e+04-7.093e+04-6.995e+04-4.476e+04	5072.32
		283	11.79	2.75	-3.59	-0.49	-0.35	-3.17-7.484e+04-1.069e+05-9.470e+04-8.707e+04	
1.559e+04		275	12.10	3.32	-3.02	-1.10	1.40	-2.91-5.054e+04-1.124e+05-6.901e+04-9.389e+04	
2.829e+04		276	6.82	25.06	-44.82	24.55	-44.31	-5.97-2.792e+04-6.312e+04-4.441e+04-4.663e+04	
1.757e+04	23	284	7.05	21.03	-46.72	19.98	-45.67	8.38-4.001e+04-6.472e+04-6.384e+04-4.089e+04	4584.67
		283	10.81	29.50	-57.15	28.83	-56.49	7.55-6.841e+04-9.756e+04-8.643e+04-7.954e+04	
1.416e+04		275	11.12	24.68	-50.93	24.20	-50.45	-6.04-4.626e+04-1.026e+05-6.305e+04-8.576e+04	
2.575e+04		276	6.78	8.73	-16.10	8.25	-15.61	-3.44-2.779e+04-6.296e+04-4.426e+04-4.650e+04	
1.755e+04	55	284	7.01	7.30	-16.85	7.17	-16.72	1.76-3.987e+04-6.457e+04-6.368e+04-4.076e+04	4601.53
		283	10.74	10.25	-20.82	10.23	-20.80	0.92-6.817e+04-9.734e+04-8.621e+04-7.930e+04	
1.417e+04		275	11.03	8.76	-18.15	8.18	-17.58	-3.88-4.606e+04-1.023e+05-6.285e+04-8.550e+04	
2.573e+04		276	6.77	2.08	-2.34	-1.10	0.85	-1.98-2.772e+04-6.288e+04-4.418e+04-4.642e+04	
1.754e+04	69	284	6.99	1.89	-2.17	-0.17	-0.11	-2.03-3.980e+04-6.449e+04-6.359e+04-4.069e+04	4611.20
		283	10.72	2.50	-3.27	-0.45	-0.32	-2.88-6.804e+04-9.721e+04-8.609e+04-7.916e+04	
1.417e+04		275	11.00	3.02	-2.74	-1.00	1.28	-2.65-4.595e+04-1.021e+05-6.274e+04-8.536e+04	
2.572e+04		277	5.25	1.87	-2.54	-1.46	0.79	-1.89-1.789e+04-4.832e+04-3.683e+04-2.938e+04	
1.475e+04	1	285	6.50	1.78	-2.71	-0.77	-0.15	-2.23-2.554e+04-6.032e+04-6.029e+04-2.557e+04	-880.33
		284	9.01	2.41	-3.12	-0.58	-0.13	-2.76-5.213e+04-8.297e+04-8.173e+04-5.336e+04	6051.44
		276	8.89	2.73	-2.87	-1.32	1.18	-2.51-3.666e+04-8.256e+04-5.732e+04-6.190e+04	
2.283e+04									

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

260	3	277	4.44	1.58	-2.15	-1.24	0.67	-1.60-1.514e+04-4.088e+04-3.116e+04-2.486e+04	
1.248e+04		285	5.50	1.51	-2.30	-0.66	-0.13	-1.88-2.161e+04-5.104e+04-5.102e+04-2.163e+04	-744.90
		284	7.62	2.04	-2.64	-0.49	-0.11	-2.33-4.411e+04-7.020e+04-6.916e+04-4.515e+04	5120.45
		276	7.52	2.31	-2.43	-1.12	1.00	-2.12-3.102e+04-6.986e+04-4.851e+04-5.237e+04	
1.932e+04									
260	23	277	4.11	24.81	-36.16	23.91	-35.25	-7.39-1.386e+04-3.731e+04-2.849e+04-2.268e+04	
1.136e+04		285	5.13	23.19	-33.43	22.40	-32.64	6.65-1.973e+04-4.658e+04-4.656e+04-1.975e+04	-710.23
		284	7.00	24.58	-40.70	23.84	-39.96	6.92-4.031e+04-6.406e+04-6.312e+04-4.125e+04	4628.10
		276	6.87	25.17	-41.51	24.21	-40.54	-7.97-2.840e+04-6.375e+04-4.432e+04-4.783e+04	
1.759e+04									
260	55	277	4.06	8.62	-13.08	8.00	-12.46	-3.62-1.379e+04-3.722e+04-2.839e+04-2.263e+04	
1.135e+04		285	5.05	7.88	-12.06	7.79	-11.98	1.33-1.968e+04-4.646e+04-4.645e+04-1.970e+04	-689.23
		284	6.95	8.47	-14.69	8.41	-14.63	1.17-4.018e+04-6.391e+04-6.296e+04-4.112e+04	4645.16
		276	6.84	8.92	-14.94	8.18	-14.21	-4.13-2.827e+04-6.359e+04-4.418e+04-4.769e+04	
1.757e+04									
260	69	277	4.04	1.44	-1.95	-1.13	0.61	-1.45-1.376e+04-3.717e+04-2.833e+04-2.260e+04	
1.135e+04		285	5.00	1.37	-2.09	-0.60	-0.12	-1.71-1.965e+04-4.640e+04-4.638e+04-1.967e+04	-677.18
		284	6.93	1.85	-2.40	-0.45	-0.10	-2.12-4.010e+04-6.382e+04-6.287e+04-4.105e+04	4654.96
		276	6.84	2.10	-2.21	-1.01	0.91	-1.93-2.820e+04-6.351e+04-4.410e+04-4.761e+04	
1.756e+04									
261	1	278	3.10	1.34	-3.05	-2.00	0.29	-1.87 -6166.69-2.746e+04-2.134e+04-1.230e+04	9642.28
		286	5.13	1.37	-2.74	-1.34	-0.03	-1.95-1.173e+04-4.593e+04-4.548e+04-1.218e+04	-3889.49
		285	6.46	1.75	-2.95	-1.09	-0.11	-2.30-2.526e+04-5.992e+04-5.991e+04-2.528e+04	-753.31
		277	5.35	1.83	-2.25	-1.13	0.72	-1.82-1.829e+04-4.921e+04-3.695e+04-3.055e+04	
1.513e+04									
261	3	278	2.62	1.13	-2.58	-1.69	0.24	-1.58 -5217.97-2.324e+04-1.805e+04-1.040e+04	8158.85
		286	4.34	1.16	-2.32	-1.14	-0.03	-1.65 -9926.99-3.886e+04-3.849e+04-1.031e+04	-3291.10
		285	5.47	1.48	-2.50	-0.92	-0.10	-1.95-2.138e+04-5.071e+04-5.069e+04-2.139e+04	-637.42
		277	4.53	1.55	-1.90	-0.96	0.61	-1.54-1.547e+04-4.164e+04-3.127e+04-2.585e+04	
1.280e+04									
261	23	278	2.49	24.32	-28.08	23.19	-26.94	-7.63 -4742.92-2.122e+04-1.652e+04 -9439.26	7436.74
		286	4.09	23.65	-21.25	23.24	-20.85	4.22 -9053.61-3.547e+04-3.512e+04 -9403.50	-3019.85
		285	5.10	23.93	-29.60	23.15	-28.82	6.40-1.952e+04-4.628e+04-4.627e+04-1.953e+04	-611.49
		277	4.20	26.90	-30.41	25.19	-28.71	-9.73-1.417e+04-3.800e+04-2.858e+04-2.358e+04	
1.165e+04									
261	55	278	2.42	8.24	-10.44	7.48	-9.68	-3.70 -4743.39-2.116e+04-1.645e+04 -9451.43	7424.29
		286	3.99	7.84	-7.64	7.82	-7.62	0.59 -9035.14-3.538e+04-3.503e+04 -9381.79	-3002.10
		285	5.01	7.99	-10.64	7.91	-10.56	1.21-1.946e+04-4.616e+04-4.615e+04-1.948e+04	-591.14
		277	4.14	9.63	-11.11	8.63	-10.12	-4.44-1.410e+04-3.791e+04-2.848e+04-2.353e+04	
1.164e+04									
261	69	278	2.38	1.03	-2.35	-1.54	0.22	-1.44 -4743.60-2.113e+04-1.641e+04 -9458.41	7417.14
		286	3.95	1.05	-2.11	-1.03	-0.03	-1.50 -9024.54-3.533e+04-3.499e+04 -9369.33	-2991.91
		285	4.97	1.35	-2.27	-0.84	-0.09	-1.77-1.943e+04-4.610e+04-4.608e+04-1.945e+04	-579.47
		277	4.11	1.41	-1.73	-0.87	0.55	-1.40-1.407e+04-3.786e+04-2.842e+04-2.350e+04	
1.164e+04									
262	1	279	1.88	2.36	-10.89	-8.55	0.02	-5.06 1570.79-1.420e+04 -9158.33 -3472.95	7356.28
		287	4.26	1.58	-1.13	-0.87	1.32	0.80 -4804.39-3.647e+04-3.558e+04 -5698.77	-5246.43
		286	5.10	1.68	-5.22	-3.47	-0.06	-3.00-1.133e+04-4.544e+04-4.510e+04-1.167e+04	-3399.53
		278	3.19	1.93	-0.71	1.39	-0.16	-1.07 -6696.33-2.832e+04-2.208e+04-1.294e+04	9796.86
		279	1.59	2.00	-9.22	-7.23	0.01	-4.28 1329.13-1.202e+04 -7749.36 -2938.65	6224.55
		287	3.60	1.34	-0.96	-0.74	1.12	0.68 -4065.25-3.086e+04-3.011e+04 -4822.04	-4439.28
		286	4.31	1.42	-4.41	-2.94	-0.05	-2.54 -9587.68-3.845e+04-3.816e+04 -9877.26	-2876.52
		278	2.70	1.64	-0.60	1.18	-0.14	-0.90 -5666.12-2.396e+04-1.868e+04-1.095e+04	8289.65
		279	1.52	20.02	-31.06	-30.91	19.87	2.80 1030.04-1.084e+04 -6971.03 -2843.85	5567.34
		287	3.40	13.31	-26.43	-25.99	12.87	-4.14 -3622.18-2.793e+04-2.726e+04 -4291.05	-3976.64
		286	4.05	22.05	-28.47	-26.93	20.50	-8.69 -8695.10-3.483e+04-3.457e+04 -8955.71	-2597.00
		278	2.54	20.11	-26.61	-25.22	18.72	7.94 -5142.82-2.169e+04-1.687e+04 -9964.35	7520.60
		279	1.46	7.34	-15.54	-15.45	7.25	-1.45 1143.18-1.090e+04 -7017.95 -2734.33	5625.38
		287	3.32	5.42	-9.98	-9.90	5.34	-1.12 -3668.92-2.801e+04-2.733e+04 -4349.91	-4014.18
		286	3.97	8.52	-12.58	-11.51	7.44	-4.63 -8708.43-3.491e+04-3.465e+04 -8970.72	-2608.45
		278	2.47	7.11	-8.88	-8.52	6.75	2.37 -5148.06-2.175e+04-1.694e+04 -9956.28	7530.41
		279	1.45	1.82	-8.38	-6.57	0.01	-3.89 1208.30-1.092e+04 -7044.87 -2671.50	5658.68
		287	3.28	1.22	-0.87	-0.67	1.02	0.62 -3695.68-2.806e+04-2.737e+04 -4383.67	-4035.71
		286	3.92	1.29	-4.01	-2.67	-0.05	-2.31 -8716.07-3.496e+04-3.469e+04 -8979.33	-2615.02
		278	2.45	1.49	-0.54	1.07	-0.12	-0.82 -5151.02-2.178e+04-1.698e+04 -9951.65	7536.04
		280	1.04	1.69	0.05	1.23	0.51	-0.74 1105.31 -7708.66 -5688.93 -914.41	3704.39
		288	3.46	-0.31	-3.85	-3.70	-0.46	0.71 25.56-2.780e+04-2.701e+04 -763.60	-4619.36
		287	4.23	3.14	-2.63	-0.78	1.28	-2.69 -5120.60-3.629e+04-3.575e+04 -5670.31	-4103.03
		279	1.61	1.08	-9.50	-8.61	0.19	2.93 -56.54-1.270e+04 -8995.89 -3761.28	5754.83

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

263	3	280	0.88	1.43	0.04	1.04	0.43	-0.62	935.27	-6522.71	-4813.71	-773.74	3134.49
		288	2.93	-0.26	-3.26	-3.13	-0.39	0.60	21.63-2.353e+04	-2.286e+04	-646.12	-3908.69	
		287	3.58	2.66	-2.23	-0.66	1.09	-2.28	-4332.81-3.071e+04	-3.025e+04	-4797.96	-3471.79	
		279	1.36	0.91	-8.04	-7.29	0.16	2.48	-47.84-1.075e+04	-7611.91	-3182.62	4869.47	
263	23	280	0.92	25.84	-11.72	24.45	-10.34	-7.07	825.71	-5951.35	-4404.37	-721.27	2844.44
		288	2.79	24.30	-7.90	23.30	-6.90	5.58	13.39-2.149e+04	-2.089e+04	-588.26	-3546.36	
		287	3.40	24.91	-14.14	24.56	-13.79	3.67	-3818.77-2.803e+04	-2.759e+04	-4257.34	-3228.98	
		279	1.33	21.14	-10.13	19.49	-8.47	-7.01	-91.35-1.002e+04	-7037.18	-3072.66	4550.57	
263	54	280	0.83	4.57	-7.89	-7.62	4.31	1.81	859.19	-5921.86	-4365.80	-696.88	2851.39
		288	2.71	2.15	-12.50	-12.38	2.03	-1.29	21.96-2.135e+04	-2.074e+04	-587.07	-3555.91	
		287	3.30	7.39	-10.78	-9.77	6.38	-4.17	-3982.68-2.788e+04	-2.746e+04	-4399.85	-3129.63	
		279	1.28	4.80	-17.65	-16.14	3.29	5.63	-25.73	-9679.35	-6877.17	-2827.90	4381.66
263	69	280	0.80	1.30	0.04	0.95	0.39	-0.57	850.24	-5929.74	-4376.10	-703.40	2849.53
		288	2.66	-0.24	-2.96	-2.85	-0.35	0.55	19.66-2.139e+04	-2.078e+04	-587.39	-3553.35	
		287	3.25	2.41	-2.03	-0.60	0.99	-2.07	-3938.92-2.792e+04	-2.750e+04	-4361.78	-3156.17	
		279	1.24	0.83	-7.30	-6.62	0.15	2.25	-43.49	-9769.72	-6919.92	-2893.29	4426.79
264	1	281	0.72	0.15	-1.65	-1.65	0.15	0.03	-752.88	-6096.13	-5896.73	-952.29	-1012.77
		289	2.85	-0.10	-1.43	-1.41	-0.12	-0.14	-174.98-2.305e+04	-2.305e+04	-179.27	-313.32	
		288	3.51	0.20	-1.84	-1.80	0.16	-0.27	-653.18-2.859e+04	-2.778e+04	-1469.80	-4706.36	
		280	0.92	0.09	-2.16	-2.15	0.08	0.11	1420.09	-6523.12	-4157.24	-945.79	3632.53
264	3	281	0.61	0.12	-1.40	-1.40	0.12	0.02	-637.06	-5158.26	-4989.54	-805.78	-856.96
		289	2.41	-0.09	-1.21	-1.19	-0.10	-0.12	-148.06-1.951e+04	-1.950e+04	-151.69	-265.11	
		288	2.97	0.17	-1.55	-1.52	0.14	-0.23	-552.69-2.419e+04	-2.350e+04	-1243.68	-3982.30	
		280	0.77	0.08	-1.82	-1.82	0.07	0.09	1201.61	-5519.56	-3517.67	-800.28	3073.68
264	23	281	0.64	22.91	-5.13	21.42	-3.63	-6.30	-578.13	-4733.72	-4581.54	-730.31	-780.54
		289	2.32	27.30	-1.95	25.80	-0.45	6.44	-137.47-1.781e+04	-1.781e+04	-140.77	-241.33	
		288	2.84	25.48	-7.75	24.38	-6.65	5.95	-492.88-2.208e+04	-2.146e+04	-1121.92	-3631.31	
		280	0.82	26.50	-4.97	23.76	-2.23	-8.87	1069.01	-5079.60	-3253.54	-757.06	2809.49
264	54	281	0.59	1.95	-10.01	-9.54	1.48	2.33	-579.50	-4673.15	-4519.32	-733.34	-778.51
		289	2.24	0.58	-11.43	-10.89	0.04	-2.49	-133.55-1.771e+04	-1.770e+04	-136.86	-240.90	
		288	2.75	3.03	-11.21	-10.78	2.60	-2.45	-505.93-2.196e+04	-2.133e+04	-1133.78	-3616.25	
		280	0.75	1.78	-11.80	-10.92	0.90	3.35	1100.90	-4995.25	-3177.59	-716.76	2788.70
264	69	281	0.55	0.11	-1.27	-1.27	0.11	0.02	-579.14	-4689.33	-4535.94	-732.53	-779.05
		289	2.19	-0.08	-1.10	-1.09	-0.09	-0.11	-134.60-1.773e+04	-1.773e+04	-137.90	-241.01	
		288	2.70	0.16	-1.41	-1.39	0.13	-0.21	-502.45-2.200e+04	-2.137e+04	-1130.62	-3620.27	
		280	0.70	0.07	-1.66	-1.65	0.07	0.08	1092.37	-5017.78	-3197.88	-727.53	2794.25
265	1	282	24.28	5.24	-5.08	0.81	-0.66	-5.11	-1.431e+05	-2.231e+05	-1.587e+05	-2.076e+05	
3.167e+04		290	24.20	-1.01	-2.03	-1.97	-1.07	0.24	-1.148e+05	-2.253e+05	-2.136e+05	-1.265e+05	
3.400e+04		55	50.54	6.55	-5.61	1.31	-0.37	-6.02	-1.255e+05	-4.556e+05	-1.302e+05	-4.510e+05	
3.902e+04		46	23.91	0.50	-5.56	0.10	-5.17	-1.49	-9.365e+04	-2.218e+05	-1.523e+05	-1.631e+05	
6.385e+04		265	20.55	4.43	-4.30	0.69	-0.56	-4.32	-1.211e+05	-1.888e+05	-1.343e+05	-1.756e+05	
2.679e+04	3	282	20.55	4.43	-4.30	0.69	-0.56	-4.32	-1.211e+05	-1.888e+05	-1.343e+05	-1.756e+05	
2.877e+04		290	20.48	-0.86	-1.72	-1.67	-0.91	0.20	-9.717e+04	-1.906e+05	-1.807e+05	-1.071e+05	
3.301e+04		55	42.76	5.54	-4.75	1.11	-0.31	-5.10	-1.062e+05	-3.855e+05	-1.101e+05	-3.816e+05	
5.402e+04		46	20.23	0.42	-4.71	0.09	-4.37	-1.26	-7.924e+04	-1.877e+05	-1.289e+05	-1.380e+05	
2.430e+04	265	282	18.86	-3.34	-57.53	-15.13	-45.73	-22.36	-1.107e+05	-1.724e+05	-1.226e+05	-1.605e+05	
2.630e+04		290	18.78	12.45	-73.35	-2.14	-58.76	32.23	-8.868e+04	-1.738e+05	-1.647e+05	-9.778e+04	
2.982e+04		55	39.56	42.72	-109.21	42.43	-108.92	-6.59	-9.713e+04	-3.521e+05	-1.007e+05	-3.486e+05	
4.924e+04		46	18.64	63.89	-56.33	49.53	-41.98	38.98	-7.241e+04	-1.713e+05	-1.176e+05	-1.260e+05	
2.434e+04	265	282	18.74	1.14	-23.25	-5.12	-16.99	-10.65	-1.103e+05	-1.719e+05	-1.223e+05	-1.600e+05	
2.621e+04		290	18.67	3.74	-27.43	-1.74	-21.94	11.87	-8.846e+04	-1.735e+05	-1.645e+05	-9.750e+04	
2.994e+04		55	39.12	16.61	-40.40	16.11	-39.89	-5.35	-9.675e+04	-3.511e+05	-1.003e+05	-3.475e+05	
4.916e+04		46	18.48	22.60	-22.33	18.11	-17.83	13.48	-7.218e+04	-1.708e+05	-1.173e+05	-1.257e+05	
2.436e+04	265	282	18.68	4.03	-3.91	0.63	-0.51	-3.93	-1.101e+05	-1.716e+05	-1.221e+05	-1.597e+05	
2.615e+04		290	18.61	-0.78	-1.56	-1.51	-0.83	0.19	-8.833e+04	-1.733e+05	-1.643e+05	-9.733e+04	
		55	38.88	5.04	-4.32	1.00	-0.29	-4.63	-9.653e+04	-3.505e+05	-1.001e+05	-3.469e+05	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

3.001e+04										
4.911e+04	46	18.39	0.38	-4.28	0.08	-3.98	-1.15-7.204e+04-1.706e+05-1.172e+05-1.255e+05			
1.774e+04	266 1	283	13.80	2.80	-5.77	-2.32	-0.65	-4.20-8.901e+04-1.248e+05-1.094e+05-1.045e+05		
2.030e+04		291	14.48	4.61	-1.45	3.59	-0.43	-2.27-9.493e+04-1.303e+05-1.303e+05-9.494e+04	-684.13	
3.512e+04		290	21.69	3.06	-10.27	-4.31	-2.90	-6.63-1.466e+05-1.936e+05-1.583e+05-1.820e+05		
1.501e+04		282	22.14	5.76	-3.37	0.36	2.03	-4.49-1.243e+05-2.045e+05-1.450e+05-1.838e+05		
1.501e+04	266 3	283	11.68	2.37	-4.88	-1.96	-0.55	-3.56-7.531e+04-1.056e+05-9.256e+04-8.838e+04		
1.718e+04		291	12.25	3.90	-1.23	3.04	-0.36	-1.92-8.032e+04-1.102e+05-1.102e+05-8.033e+04	-578.88	
2.972e+04		290	18.35	2.59	-8.69	-3.64	-2.45	-5.61-1.241e+05-1.638e+05-1.339e+05-1.540e+05		
1.363e+04		282	18.74	4.87	-2.85	0.30	1.71	-3.80-1.051e+05-1.730e+05-1.227e+05-1.555e+05		
1.363e+04	266 23	283	10.70	55.12	-60.78	53.34	-59.00	-14.24-6.885e+04-9.637e+04-8.449e+04-8.073e+04		
1.560e+04		291	11.23	14.46	-73.36	3.22	-62.12	29.34-7.337e+04-1.005e+05-1.005e+05-7.339e+04	-571.33	
2.703e+04		290	16.84	17.10	-44.36	17.04	-44.30	1.97-1.133e+05-1.495e+05-1.222e+05-1.406e+05		
1.364e+04		282	17.53	4.06	-122.33	-21.80	-96.47	50.98-9.607e+04-1.579e+05-1.120e+05-1.420e+05		
1.364e+04	266 55	283	10.65	19.58	-23.10	18.31	-21.83	-7.25-6.861e+04-9.615e+04-8.427e+04-8.049e+04		
1.561e+04		291	11.16	6.10	-26.03	2.93	-22.86	9.59-7.315e+04-1.003e+05-1.003e+05-7.316e+04	-542.68	
2.702e+04		290	16.74	4.40	-17.86	4.11	-17.57	-2.52-1.130e+05-1.492e+05-1.219e+05-1.402e+05		
1.365e+04		282	17.20	0.07	-42.02	-7.77	-34.18	16.39-9.576e+04-1.575e+05-1.117e+05-1.416e+05		
1.365e+04	266 69	283	10.62	2.15	-4.44	-1.78	-0.50	-3.23-6.847e+04-9.602e+04-8.415e+04-8.035e+04		
1.562e+04		291	11.14	3.55	-1.12	2.76	-0.33	-1.74-7.302e+04-1.002e+05-1.002e+05-7.303e+04	-526.25	
2.701e+04		290	16.69	2.35	-7.90	-3.31	-2.23	-5.10-1.128e+05-1.490e+05-1.217e+05-1.400e+05		
1.002e+04		282	17.03	4.43	-2.60	0.28	1.56	-3.45-9.559e+04-1.573e+05-1.115e+05-1.414e+05		
1.002e+04	267 1	284	9.00	2.32	-3.18	-1.29	0.43	-2.61-5.188e+04-8.292e+04-8.070e+04-5.410e+04	7993.17	
1.831e+04		292	10.72	2.27	-2.52	0.10	-0.35	-2.38-4.803e+04-9.976e+04-9.774e+04-5.005e+04	-	
1.831e+04		291	14.06	2.78	-3.86	-0.47	-0.61	-3.32-9.691e+04-1.247e+05-1.247e+05-9.692e+04	519.11	
1.550e+04		283	14.06	3.45	-3.42	-0.52	0.55	-3.40-9.045e+04-1.271e+05-1.099e+05-1.077e+05		
1.550e+04	267 3	284	7.61	1.96	-2.69	-1.09	0.37	-2.21-4.390e+04-7.016e+04-6.829e+04-4.577e+04	6763.45	
1.407e+04		292	9.07	1.92	-2.13	0.08	-0.30	-2.02-4.064e+04-8.441e+04-8.270e+04-4.235e+04	-8479.05	
1.407e+04		291	11.89	2.35	-3.27	-0.40	-0.52	-2.81-8.200e+04-1.055e+05-1.055e+05-8.201e+04	439.25	
1.407e+04		283	11.89	2.92	-2.90	-0.44	0.47	-2.87-7.653e+04-1.076e+05-9.296e+04-9.114e+04		
1.407e+04	267 23	284	7.01	27.18	-47.77	26.48	-47.07	-7.21-4.012e+04-6.403e+04-6.234e+04-4.181e+04	6125.21	
1.407e+04		292	8.37	23.11	-44.94	20.30	-42.13	13.54-3.711e+04-7.701e+04-7.543e+04-3.869e+04	-7775.84	
1.407e+04		291	10.86	23.73	-54.92	22.37	-53.56	10.24-7.491e+04-9.622e+04-9.621e+04-7.491e+04	347.99	
1.407e+04		283	10.93	20.83	-58.40	20.80	-58.37	-1.51-6.995e+04-9.815e+04-8.485e+04-8.325e+04		
1.408e+04	267 55	284	6.95	9.60	-17.52	9.02	-16.95	-3.90-3.998e+04-6.387e+04-6.217e+04-4.168e+04	6140.07	
1.408e+04		292	8.28	8.05	-16.13	7.45	-15.53	3.77-3.700e+04-7.684e+04-7.527e+04-3.857e+04	-7732.88	
1.408e+04		291	10.83	8.09	-19.98	7.93	-19.82	2.11-7.468e+04-9.601e+04-9.601e+04-7.469e+04	380.61	
1.408e+04		283	10.85	7.50	-21.18	7.33	-21.01	-2.21-6.971e+04-9.792e+04-8.464e+04-8.300e+04		
1.409e+04	267 69	284	6.92	1.79	-2.44	-0.99	0.33	-2.01-3.991e+04-6.378e+04-6.208e+04-4.161e+04	6148.59	
1.409e+04		292	8.24	1.74	-1.94	0.07	-0.27	-1.83-3.694e+04-7.674e+04-7.518e+04-3.850e+04	-7708.23	
1.409e+04		291	10.81	2.14	-2.97	-0.36	-0.47	-2.55-7.455e+04-9.590e+04-9.589e+04-7.456e+04	399.32	
1.409e+04		283	10.81	2.66	-2.63	-0.40	0.42	-2.61-6.957e+04-9.780e+04-8.451e+04-8.286e+04		
1.250e+04	268 1	285	6.45	1.76	-2.77	-1.54	0.53	-2.01-2.508e+04-5.977e+04-5.949e+04-2.536e+04	3092.60	
1.250e+04		293	9.04	1.55	-2.33	-0.73	-0.04	-1.91-2.334e+04-8.167e+04-7.886e+04-2.615e+04	-	
1.058e+04		292	10.62	2.15	-2.82	-0.53	-0.14	-2.48-4.796e+04-9.881e+04-9.738e+04-4.940e+04	-8427.63	
1.058e+04		284	9.11	2.43	-2.92	-1.08	0.59	-2.54-5.293e+04-8.392e+04-8.086e+04-5.598e+04	9237.19	
1.058e+04	268 3	285	5.46	1.49	-2.34	-1.30	0.45	-1.70-2.122e+04-5.057e+04-5.034e+04-2.145e+04	2616.82	
1.058e+04		293	7.65	1.31	-1.97	-0.62	-0.04	-1.62-1.975e+04-6.911e+04-6.672e+04-2.213e+04	-	
1.058e+04		292	8.98	1.82	-2.39	-0.45	-0.12	-2.10-4.058e+04-8.361e+04-8.240e+04-4.180e+04	-7131.07	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		284	7.71	2.06	-2.47	-0.92	0.50	-2.15-4.479e+04-7.101e+04-6.842e+04-4.737e+04	7816.08
268	23	285	5.10	24.29	-35.35	23.44	-34.50	-7.06-1.937e+04-4.616e+04-4.595e+04-1.958e+04	2357.28
		293	7.11	23.49	-28.59	22.36	-27.47	7.57-1.802e+04-6.304e+04-6.085e+04-2.021e+04	-9683.55
		292	8.29	24.51	-39.42	22.89	-37.81	10.04-3.706e+04-7.628e+04-7.516e+04-3.818e+04	-6548.31
		284	7.10	25.87	-42.10	24.68	-40.91	-8.93-4.093e+04-6.479e+04-6.246e+04-4.326e+04	7085.07
268	55	285	5.00	8.40	-12.93	7.79	-12.32	-3.56-1.932e+04-4.604e+04-4.583e+04-1.953e+04	2371.03
		293	7.00	7.98	-10.22	7.79	-10.03	1.83-1.797e+04-6.290e+04-6.073e+04-2.015e+04	-9641.09
		292	8.21	8.36	-14.12	8.09	-13.85	2.45-3.695e+04-7.611e+04-7.500e+04-3.807e+04	-6506.68
		284	7.04	9.31	-15.47	8.47	-14.62	-4.50-4.079e+04-6.464e+04-6.230e+04-4.314e+04	7098.07
268	69	285	4.96	1.35	-2.13	-1.19	0.41	-1.55-1.929e+04-4.597e+04-4.576e+04-1.950e+04	2378.92
		293	6.95	1.20	-1.79	-0.56	-0.03	-1.47-1.795e+04-6.282e+04-6.066e+04-2.012e+04	-9616.73
		292	8.17	1.65	-2.17	-0.41	-0.11	-1.91-3.689e+04-7.601e+04-7.491e+04-3.800e+04	-6482.79
		284	7.01	1.87	-2.25	-0.83	0.45	-1.96-4.072e+04-6.455e+04-6.220e+04-4.306e+04	7105.53
269	1	286	5.08	1.35	-3.10	-2.41	0.67	-1.61-1.145e+04-4.536e+04-4.531e+04-1.150e+04	1303.28
		294	7.94	0.97	-1.83	-1.05	0.19	-1.25-1.103e+04-6.882e+04-6.609e+04-1.376e+04	-
1.226e+04									
1.097e+04		293	9.03	1.56	-2.49	-1.05	0.12	-1.94-2.321e+04-8.153e+04-7.939e+04-2.536e+04	-
		285	6.49	1.78	-2.61	-1.41	0.57	-1.96-2.555e+04-6.015e+04-5.957e+04-2.613e+04	4449.93
269	3	286	4.30	1.15	-2.62	-2.04	0.57	-1.36 -9684.39-3.839e+04-3.834e+04 -9726.82	1102.78
		294	6.72	0.82	-1.55	-0.89	0.16	-1.06 -9335.33-5.823e+04-5.592e+04-1.164e+04	-
1.037e+04									
		293	7.64	1.32	-2.11	-0.89	0.10	-1.64-1.964e+04-6.899e+04-6.717e+04-2.145e+04	-9281.92
		285	5.49	1.50	-2.21	-1.19	0.48	-1.66-2.162e+04-5.090e+04-5.041e+04-2.211e+04	3765.33
269	23	286	4.05	23.42	-24.50	22.40	-23.48	-6.93 -8826.47-3.503e+04-3.500e+04 -8863.79	988.27
		294	6.26	24.26	-18.19	23.67	-17.61	4.95 -8504.44-5.311e+04-5.100e+04-1.062e+04	-9488.18
		293	7.10	24.11	-27.80	23.05	-26.75	7.32-1.792e+04-6.293e+04-6.126e+04-1.959e+04	-8501.74
		285	5.13	26.22	-28.41	24.37	-26.57	-9.86-1.974e+04-4.646e+04-4.601e+04-2.018e+04	3405.32
269	55	286	3.95	7.67	-8.92	6.99	-8.23	-3.31 -8812.18-3.495e+04-3.491e+04 -8850.30	997.33
		294	6.16	8.21	-6.42	8.12	-6.33	1.19 -8493.15-5.300e+04-5.090e+04-1.060e+04	-9450.63
		293	6.99	8.06	-9.86	7.89	-9.69	1.72-1.788e+04-6.279e+04-6.114e+04-1.954e+04	-8461.31
		285	5.04	9.31	-10.51	8.20	-9.41	-4.55-1.968e+04-4.634e+04-4.589e+04-2.013e+04	3416.57
269	69	286	3.90	1.04	-2.38	-1.86	0.51	-1.24 -8803.99-3.490e+04-3.486e+04 -8842.56	1002.52
		294	6.11	0.74	-1.41	-0.81	0.15	-0.96 -8486.67-5.294e+04-5.084e+04-1.059e+04	-9429.09
		293	6.94	1.20	-1.92	-0.81	0.09	-1.49-1.786e+04-6.271e+04-6.107e+04-1.950e+04	-8438.11
		285	4.99	1.37	-2.01	-1.08	0.44	-1.51-1.965e+04-4.627e+04-4.582e+04-2.010e+04	3423.03
270	1	287	4.16	0.79	-3.02	-2.75	0.52	-0.98 -4505.38-3.550e+04-3.549e+04 -4509.42	353.94
		295	7.08	0.52	-1.58	-1.36	0.30	-0.65 -3868.15-5.888e+04-5.644e+04 -6309.19	-
1.133e+04									
1.091e+04		294	7.94	1.00	-2.31	-1.37	0.06	-1.50-1.124e+04-6.887e+04-6.672e+04-1.339e+04	-
		286	5.08	1.34	-2.32	-2.01	1.02	-1.03-1.143e+04-4.544e+04-4.532e+04-1.155e+04	2065.03
270	3	287	3.52	0.67	-2.56	-2.33	0.44	-0.83 -3812.24-3.004e+04-3.003e+04 -3815.66	299.49
		295	5.99	0.44	-1.34	-1.15	0.25	-0.55 -3273.05-4.982e+04-4.776e+04 -5338.55	-9585.35
		294	6.72	0.85	-1.96	-1.16	0.05	-1.27 -9509.73-5.827e+04-5.645e+04-1.133e+04	-9235.59
		286	4.30	1.13	-1.97	-1.70	0.86	-0.87 -9669.00-3.845e+04-3.834e+04 -9775.47	1747.33
270	23	287	3.34	23.69	-16.34	22.56	-15.20	-6.64 -3445.75-2.741e+04-2.741e+04 -3448.89	274.24
		295	5.59	25.28	-11.43	24.79	-10.94	4.23 -2978.30-4.543e+04-4.354e+04 -4873.38	-8767.33
		294	6.26	24.19	-19.17	23.62	-18.61	4.92 -8662.44-5.314e+04-5.148e+04-1.033e+04	-8446.81
		286	4.05	25.45	-18.08	23.72	-16.35	-8.51 -8817.91-3.510e+04-3.500e+04 -8912.00	1569.58
270	55	287	3.24	7.53	-5.94	6.88	-5.29	-2.90 -3458.41-2.735e+04-2.734e+04 -3461.53	272.98
		295	5.49	8.49	-3.97	8.37	-3.84	1.22 -2976.52-4.534e+04-4.346e+04 -4860.57	-8733.41
		294	6.16	8.02	-6.83	7.94	-6.76	1.06 -8651.49-5.304e+04-5.138e+04-1.031e+04	-8414.52
		286	3.95	8.59	-6.39	7.67	-5.46	-3.61 -8800.18-3.501e+04-3.491e+04 -8895.98	1581.59
270	69	287	3.20	0.61	-2.33	-2.12	0.40	-0.75 -3465.68-2.731e+04-2.730e+04 -3468.79	272.26
		295	5.45	0.40	-1.22	-1.04	0.23	-0.50 -2975.50-4.529e+04-4.341e+04 -4853.22	-8713.95
		294	6.11	0.77	-1.78	-1.05	0.04	-1.15 -8645.21-5.297e+04-5.132e+04-1.030e+04	-8395.99
		286	3.91	1.03	-1.79	-1.54	0.79	-0.79 -8790.00-3.495e+04-3.486e+04 -8886.80	1588.48
271	1	288	3.51	0.80	-1.82	-1.80	0.78	-0.22 -127.55-2.826e+04-2.825e+04 -137.15	-519.65
		296	6.36	-0.18	-1.68	-1.65	-0.21	-0.22 600.32-5.097e+04-4.914e+04 -1230.09	-9541.74
		295	7.07	0.96	-1.77	-1.34	0.52	-1.00 -4151.58-5.894e+04-5.694e+04 -6152.12	-
1.028e+04									
		287	4.15	0.21	-2.86	-2.86	0.21	-0.04 -4355.81-3.537e+04-3.536e+04 -4364.21	510.42
271	3	288	2.97	0.67	-1.54	-1.52	0.66	-0.19 -107.92-2.392e+04-2.391e+04 -116.05	-439.70
		296	5.38	-0.15	-1.42	-1.39	-0.18	-0.18 507.97-4.313e+04-4.158e+04 -1040.85	-8073.78
		295	5.98	0.81	-1.50	-1.13	0.44	-0.85 -3512.87-4.987e+04-4.818e+04 -5205.64	-8695.65
		287	3.52	0.18	-2.42	-2.42	0.18	-0.03 -3685.69-2.993e+04-2.992e+04 -3692.80	431.89
271	23	288	2.83	25.07	-9.95	23.77	-8.65	-6.62 -82.62-2.183e+04-2.182e+04 -90.33	-409.53
		296	5.04	27.01	-6.51	26.25	-5.76	4.97 464.26-3.932e+04-3.791e+04 -951.75	-7370.98
		295	5.59	25.11	-11.80	24.66	-11.35	4.06 -3180.42-4.548e+04-4.393e+04 -4733.14	-7954.28
		287	3.32	24.91	-11.48	23.41	-9.98	-7.23 -3370.72-2.732e+04-2.731e+04 -3377.15	392.56
271	54	288	2.74	4.29	-10.87	-10.55	3.97	2.18 -103.76-2.171e+04-2.170e+04 -111.03	-396.16
		296	4.94	2.18	-11.61	-11.30	1.87	-2.04 460.89-3.917e+04-3.776e+04 -944.21	-7328.43



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		295	5.49	5.10	-10.81	-10.40	4.69	-2.53	-3198.29-4.529e+04-4.376e+04	-4732.13	-7887.22
		287	3.24	4.28	-11.96	-11.54	3.85	2.60	-3343.30-2.717e+04-2.716e+04	-3349.77	392.65
271	69	288	2.70	0.61	-1.40	-1.38	0.60	-0.17	-98.11-2.174e+04-2.173e+04	-105.50	-399.73
		296	4.89	-0.14	-1.29	-1.27	-0.17	-0.17	461.79-3.921e+04-3.780e+04	-946.22	-7339.80
		295	5.44	0.74	-1.37	-1.03	0.40	-0.77	-3193.52-4.534e+04-4.380e+04	-4732.40	-7905.14
		287	3.20	0.16	-2.20	-2.20	0.16	-0.03	-3350.63-2.721e+04-2.720e+04	-3357.09	392.63
272	1	289	3.14	0.07	-1.55	-1.55	0.06	0.10	-517.97-2.553e+04-2.552e+04	-523.09	357.77
		297	5.44	-0.09	-1.66	-1.65	-0.10	-0.12	282.56-4.364e+04-4.342e+04	54.21	-3158.86
		296	6.46	0.39	-1.56	-1.43	0.25	-0.49	542.01-5.181e+04-5.009e+04	-1180.28	-9338.24
		288	3.40	0.15	-2.24	-2.21	0.12	0.28	-164.00-2.740e+04-2.739e+04	-170.66	-425.86
272	3	289	2.66	0.06	-1.32	-1.31	0.05	0.09	-438.28-2.160e+04-2.160e+04	-442.62	302.73
		297	4.60	-0.07	-1.40	-1.39	-0.08	-0.10	239.09-3.693e+04-3.674e+04	45.87	-2672.88
		296	5.47	0.33	-1.32	-1.21	0.22	-0.41	458.63-4.384e+04-4.238e+04	-998.70	-7901.59
		288	2.87	0.13	-1.90	-1.87	0.10	0.24	-138.77-2.318e+04-2.317e+04	-144.41	-360.34
272	23	289	2.54	25.67	-4.31	24.37	-3.01	-6.10	-400.63-1.971e+04-1.971e+04	-404.56	275.58
		297	4.32	30.16	-1.28	29.04	-0.16	5.82	216.78-3.367e+04-3.349e+04	40.64	-2436.71
		296	5.12	26.83	-6.00	26.00	-5.17	5.17	424.31-3.997e+04-3.864e+04	-910.40	-7220.40
		288	2.74	26.73	-5.02	24.94	-3.23	-7.33	-120.82-2.116e+04-2.115e+04	-125.96	-328.62
272	54	289	2.46	1.61	-10.96	-10.51	1.17	2.33	-397.64-1.961e+04-1.961e+04	-401.58	275.07
		297	4.23	0.36	-12.71	-12.32	-0.04	-2.25	217.56-3.354e+04-3.336e+04	42.08	-2427.41
		296	5.02	2.57	-11.40	-10.97	2.15	-2.39	414.25-3.981e+04-3.849e+04	-907.00	-7169.72
		288	2.65	1.96	-12.07	-11.41	1.30	2.96	-128.10-2.104e+04-2.104e+04	-133.22	-327.21
272	69	289	2.42	0.05	-1.20	-1.19	0.05	0.08	-398.44-1.964e+04-1.963e+04	-402.38	275.21
		297	4.18	-0.07	-1.27	-1.27	-0.07	-0.09	217.35-3.357e+04-3.340e+04	41.70	-2429.89
		296	4.97	0.30	-1.20	-1.10	0.20	-0.37	416.93-3.986e+04-3.853e+04	-907.91	-7183.26
		288	2.61	0.12	-1.72	-1.70	0.09	0.22	-126.16-2.107e+04-2.107e+04	-131.28	-327.59
273	1	290	17.35	5.65	0.59	3.78	2.46	2.44	-9.221e+04-1.609e+05-9.967e+04-1.534e+05		-
2.137e+04		298	23.10	4.45	-6.01	1.90	-3.46	-4.49	-1.493e+05-2.087e+05-1.941e+05-1.639e+05		
2.563e+04		64	23.83	4.93	2.36	3.93	3.36	1.25	-1.835e+05-1.997e+05-1.981e+05-1.850e+05		-4789.19
		55	60.69	6.58	-8.63	2.81	-4.86	-6.57	-1.730e+05-5.523e+05-3.572e+05-3.681e+05		
1.896e+05		273	14.68	4.78	0.50	3.20	2.09	2.07	-7.802e+04-1.362e+05-8.433e+04-1.298e+05		-
1.808e+04	3	290	19.54	3.76	-5.08	1.61	-2.93	-3.80	-1.263e+05-1.766e+05-1.642e+05-1.387e+05		
2.169e+04		64	20.16	4.17	2.00	3.33	2.84	1.06	-1.552e+05-1.690e+05-1.676e+05-1.566e+05		-4052.39
		55	51.36	5.56	-7.31	2.37	-4.12	-5.56	-1.464e+05-4.674e+05-3.022e+05-3.115e+05		
1.604e+05		273	13.76	18.09	-99.39	14.48	-95.78	-20.27	-7.121e+04-1.244e+05-7.698e+04-1.186e+05		-
1.655e+04	23	290	18.00	50.53	-77.05	-8.59	-17.93	63.62	-1.153e+05-1.611e+05-1.497e+05-1.267e+05		
1.977e+04		64	18.64	17.77	-140.03	14.34	-136.60	-23.02	-1.417e+05-1.541e+05-1.528e+05-1.430e+05		-3752.82
		55	47.26	44.79	-91.20	-7.97	-38.44	66.27	-1.336e+05-4.264e+05-2.755e+05-2.845e+05		
1.463e+05		273	13.48	8.05	-34.63	7.13	-33.71	-6.19	-7.103e+04-1.240e+05-7.678e+04-1.182e+05		-
1.648e+04	55	290	17.84	16.00	-26.43	-2.20	-8.23	21.00	-1.150e+05-1.607e+05-1.494e+05-1.263e+05		
1.973e+04		64	18.43	8.22	-49.23	7.15	-48.16	-7.78	-1.413e+05-1.538e+05-1.525e+05-1.426e+05		-3709.08
		55	46.86	13.26	-31.19	-1.53	-16.39	20.95	-1.333e+05-4.254e+05-2.750e+05-2.836e+05		
1.460e+05		273	13.35	4.35	0.46	2.91	1.90	1.88	-7.093e+04-1.238e+05-7.667e+04-1.180e+05		-
1.644e+04	69	290	17.77	3.42	-4.62	1.46	-2.66	-3.45	-1.148e+05-1.606e+05-1.493e+05-1.261e+05		
1.972e+04		64	18.33	3.79	1.82	3.03	2.58	0.96	-1.411e+05-1.536e+05-1.524e+05-1.423e+05		-3683.99
		55	46.69	5.06	-6.64	2.16	-3.74	-5.05	-1.331e+05-4.249e+05-2.748e+05-2.832e+05		
1.459e+05		274	13.57	1.47	-4.66	-2.57	-0.61	-2.90	-9.429e+04-1.200e+05-1.199e+05-9.438e+04		-1510.88
1.550e+04	1	299	14.48	3.95	-2.51	2.17	-0.73	-2.89	-8.219e+04-1.337e+05-1.285e+05-8.738e+04		-
		298	18.97	2.98	-5.26	0.87	-3.15	-3.59	-1.505e+05-1.554e+05-1.554e+05-1.505e+05		133.57
		290	23.05	9.17	-3.46	5.24	0.47	-5.84	-1.540e+05-2.063e+05-1.753e+05-1.850e+05		
2.572e+04		291	11.48	1.24	-3.94	-2.18	-0.52	-2.46	-7.979e+04-1.015e+05-1.014e+05-7.986e+04		-1278.44
1.312e+04	3	299	12.25	3.34	-2.13	1.84	-0.62	-2.44	-6.955e+04-1.131e+05-1.087e+05-7.394e+04		-
		298	16.05	2.52	-4.45	0.74	-2.66	-3.04	-1.274e+05-1.315e+05-1.315e+05-1.274e+05		113.02
2.176e+04		290	19.50	7.76	-2.92	4.44	0.39	-4.94	-1.303e+05-1.746e+05-1.483e+05-1.565e+05		



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

274	7	291	10.48	23.60	-38.18	21.54	-36.12	11.11-7.269e+04-9.252e+04-9.247e+04-7.274e+04	-1045.40
		299	11.24	33.28	-53.33	5.93	-25.97	40.26-6.342e+04-1.032e+05-9.922e+04-6.735e+04	-
1.187e+04									
		298	14.77	-9.96	-50.04	-14.77	-45.23	13.02-1.160e+05-1.200e+05-1.200e+05-1.161e+05	209.91
		290	17.96	14.62	-65.56	-22.51	-28.43	39.98-1.186e+05-1.593e+05-1.353e+05-1.426e+05	-
2.000e+04									
274	39	291	10.44	6.93	-13.81	6.59	-13.47	2.63-7.259e+04-9.236e+04-9.230e+04-7.265e+04	-1119.63
		299	11.18	11.48	-18.09	3.22	-9.83	13.27-6.329e+04-1.030e+05-9.899e+04-6.726e+04	-
1.190e+04									
		298	14.66	-4.31	-18.68	-4.96	-18.03	2.99-1.159e+05-1.197e+05-1.197e+05-1.159e+05	141.81
		290	17.79	4.04	-19.82	-5.64	-10.14	11.72-1.185e+05-1.589e+05-1.350e+05-1.424e+05	-
1.986e+04									
274	69	291	10.44	1.13	-3.58	-1.98	-0.47	-2.23-7.253e+04-9.227e+04-9.220e+04-7.260e+04	-1162.22
		299	11.14	3.04	-1.93	1.67	-0.56	-2.22-6.322e+04-1.029e+05-9.886e+04-6.722e+04	-
1.193e+04									
		298	14.59	2.29	-4.04	0.67	-2.42	-2.76-1.158e+05-1.195e+05-1.195e+05-1.158e+05	102.75
		290	17.73	7.05	-2.66	4.03	0.36	-4.49-1.184e+05-1.587e+05-1.348e+05-1.423e+05	-
1.979e+04									
275	1	292	10.57	2.01	-2.86	-1.06	0.22	-2.35-4.723e+04-9.833e+04-9.774e+04-4.782e+04	-5478.88
		300	11.97	2.08	-2.34	0.11	-0.38	-2.19-4.011e+04-1.101e+05-1.032e+05-4.707e+04	-
2.094e+04									
		299	14.06	2.57	-3.09	0.19	-0.71	-2.80-8.013e+04-1.297e+05-1.256e+05-8.428e+04	-
1.374e+04									
		291	14.30	3.50	-3.22	-0.02	0.31	-3.36-9.753e+04-1.273e+05-1.268e+05-9.798e+04	3618.60
		292	8.94	1.70	-2.42	-0.90	0.19	-1.99-3.996e+04-8.320e+04-8.270e+04-4.047e+04	-4635.98
		300	10.13	1.76	-1.98	0.10	-0.32	-1.86-3.394e+04-9.317e+04-8.728e+04-3.983e+04	-
1.772e+04									
		299	11.90	2.17	-2.62	0.16	-0.60	-2.37-6.780e+04-1.098e+05-1.063e+05-7.131e+04	-
1.163e+04									
		291	12.10	2.96	-2.73	-0.02	0.26	-2.84-8.253e+04-1.077e+05-1.073e+05-8.291e+04	3061.89
		292	8.25	23.21	-44.94	23.17	-44.90	-1.49-3.649e+04-7.591e+04-7.544e+04-3.696e+04	-4276.56
		300	9.36	23.85	-36.67	19.59	-32.40	15.48-3.098e+04-8.496e+04-7.956e+04-3.638e+04	-
1.620e+04									
		299	10.90	21.51	-46.80	17.12	-42.40	16.76-6.189e+04-1.001e+05-9.688e+04-6.514e+04	-
1.065e+04									
		291	11.05	24.19	-58.65	24.16	-58.62	1.55-7.539e+04-9.822e+04-9.789e+04-7.572e+04	2729.20
		292	8.16	8.05	-16.38	7.93	-16.26	-1.69-3.639e+04-7.574e+04-7.528e+04-3.685e+04	-4237.14
		300	9.26	8.23	-13.03	7.20	-12.00	4.57-3.090e+04-8.480e+04-7.943e+04-3.627e+04	-
1.614e+04									
		299	10.84	7.30	-16.78	6.33	-15.81	4.74-6.173e+04-9.992e+04-9.671e+04-6.494e+04	-
1.060e+04									
		291	11.01	8.83	-21.26	8.79	-21.22	-1.08-7.516e+04-9.801e+04-9.767e+04-7.550e+04	2763.73
		292	8.13	1.55	-2.20	-0.82	0.17	-1.81-3.633e+04-7.564e+04-7.518e+04-3.679e+04	-4214.52
		300	9.21	1.60	-1.80	0.09	-0.29	-1.69-3.086e+04-8.470e+04-7.935e+04-3.621e+04	-
1.611e+04									
		299	10.82	1.98	-2.38	0.14	-0.55	-2.15-6.164e+04-9.980e+04-9.661e+04-6.483e+04	-
1.057e+04									
		291	11.00	2.69	-2.48	-0.02	0.23	-2.58-7.503e+04-9.789e+04-9.755e+04-7.537e+04	2783.54
		293	8.96	1.54	-2.40	-1.35	0.49	-1.74-2.291e+04-8.090e+04-8.045e+04-2.337e+04	-5107.38
		301	10.68	1.47	-1.98	-0.52	3.09e-03	-1.71-2.019e+04-9.437e+04-8.891e+04-2.565e+04	-
1.937e+04									
		300	11.91	1.95	-2.41	-0.39	-0.07	-2.17-3.999e+04-1.095e+05-1.048e+05-4.468e+04	-
1.743e+04									
		292	10.65	2.28	-2.72	-0.98	0.54	-2.38-4.836e+04-9.914e+04-9.908e+04-4.842e+04	-1750.24
		293	7.58	1.30	-2.03	-1.15	0.41	-1.47-1.939e+04-6.845e+04-6.807e+04-1.977e+04	-4321.63
		301	9.03	1.24	-1.68	-0.44	2.61e-03	-1.44-1.708e+04-7.985e+04-7.523e+04-2.171e+04	-
1.639e+04									
		300	10.07	1.65	-2.04	-0.33	-0.06	-1.84-3.384e+04-9.267e+04-8.871e+04-3.780e+04	-
1.475e+04									
		292	9.01	1.93	-2.30	-0.83	0.46	-2.02-4.092e+04-8.389e+04-8.384e+04-4.097e+04	-1480.97
		293	7.04	23.24	-31.02	23.05	-30.82	-3.25-1.769e+04-6.245e+04-6.209e+04-1.805e+04	-3980.11
		301	8.37	23.11	-24.07	21.22	-22.17	9.26-1.558e+04-7.281e+04-6.857e+04-1.982e+04	-
1.499e+04									
		300	9.31	24.15	-33.66	21.14	-30.65	12.84-3.088e+04-8.451e+04-8.087e+04-3.453e+04	-
1.350e+04									
		292	8.32	24.46	-39.14	24.04	-38.72	-5.15-3.737e+04-7.653e+04-7.648e+04-3.742e+04	-1401.70
		293	6.94	7.96	-11.22	7.74	-11.00	-2.04-1.765e+04-6.231e+04-6.196e+04-1.800e+04	-3947.48
		301	8.26	7.89	-8.49	7.48	-8.08	2.54-1.555e+04-7.267e+04-6.846e+04-1.976e+04	-
1.494e+04									
		300	9.21	8.19	-11.88	7.52	-11.21	3.62-3.081e+04-8.434e+04-8.072e+04-3.442e+04	-
1.344e+04									
		292	8.23	8.70	-14.26	8.29	-13.85	-3.04-3.726e+04-7.636e+04-7.631e+04-3.731e+04	-1366.52
		293	6.89	1.18	-1.85	-1.04	0.37	-1.34-1.763e+04-6.223e+04-6.188e+04-1.797e+04	-3928.75

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.490e+04	301	8.21	1.13	-1.53	-0.40	2.37e-03	-1.31-1.553e+04-7.259e+04-6.839e+04-1.973e+04	-
1.341e+04	300	9.16	1.50	-1.86	-0.30	-0.05	-1.67-3.076e+04-8.425e+04-8.064e+04-3.437e+04	-
	292	8.19	1.76	-2.09	-0.75	0.41	-1.83-3.720e+04-7.626e+04-7.622e+04-3.725e+04	-1346.34
	277 1 294	7.90	1.00	-2.16	-1.68	0.52	-1.13-1.108e+04-6.849e+04-6.827e+04-1.130e+04	-3555.10
	302	9.70	1.01	-1.60	-0.74	0.14	-1.23 -9450.94-8.250e+04-7.855e+04-1.339e+04	-
1.651e+04	301	10.67	1.47	-2.04	-0.76	0.19	-1.69-2.048e+04-9.441e+04-9.066e+04-2.423e+04	-
1.622e+04	293	8.96	1.58	-2.30	-1.38	0.66	-1.65-2.303e+04-8.094e+04-8.085e+04-2.312e+04	-2287.55
	277 3 294	6.69	0.85	-1.83	-1.43	0.44	-0.96 -9373.43-5.795e+04-5.776e+04 -9560.43	-3008.16
	302	8.21	0.85	-1.36	-0.62	0.12	-1.04 -7996.95-6.980e+04-6.647e+04-1.133e+04	-
1.397e+04	301	9.03	1.25	-1.72	-0.64	0.16	-1.43-1.733e+04-7.989e+04-7.671e+04-2.050e+04	-
1.373e+04	293	7.58	1.34	-1.95	-1.17	0.56	-1.40-1.949e+04-6.849e+04-6.841e+04-1.956e+04	-1935.62
	277 23 294	6.23	23.58	-20.61	23.17	-20.20	-4.23 -8539.01-5.286e+04-5.268e+04 -8713.19	-2772.82
	302	7.62	24.11	-16.33	23.06	-15.29	6.42 -7276.18-6.364e+04-6.058e+04-1.034e+04	-
1.277e+04	301	8.37	24.09	-23.73	22.49	-22.13	8.60-1.580e+04-7.284e+04-6.993e+04-1.872e+04	-
1.256e+04	293	7.04	24.13	-25.91	23.34	-25.12	-6.24-1.778e+04-6.247e+04-6.240e+04-1.786e+04	-1804.41
	277 55 294	6.12	7.92	-7.40	7.62	-7.11	-2.10 -8527.76-5.275e+04-5.257e+04 -8699.28	-2748.59
	302	7.51	8.27	-5.72	8.05	-5.50	1.74 -7272.23-6.352e+04-6.048e+04-1.031e+04	-
1.272e+04	301	8.26	8.16	-8.30	7.83	-7.97	2.31-1.577e+04-7.270e+04-6.981e+04-1.867e+04	-
1.251e+04	293	6.94	8.39	-9.38	7.83	-8.83	-3.08-1.774e+04-6.234e+04-6.227e+04-1.781e+04	-1775.97
	277 69 294	6.08	0.77	-1.66	-1.30	0.40	-0.87 -8521.30-5.268e+04-5.251e+04 -8691.30	-2734.69
	302	7.46	0.78	-1.23	-0.57	0.11	-0.95 -7269.95-6.346e+04-6.043e+04-1.030e+04	-
1.270e+04	301	8.21	1.13	-1.57	-0.58	0.15	-1.30-1.575e+04-7.263e+04-6.974e+04-1.864e+04	-
1.248e+04	293	6.89	1.22	-1.77	-1.06	0.51	-1.27-1.772e+04-6.226e+04-6.219e+04-1.779e+04	-1759.65
	278 1 295	7.08	0.43	-1.84	-1.72	0.31	-0.51 -3884.85-5.886e+04-5.875e+04 -3992.90	-2434.94
	303	8.91	0.78	-1.42	-0.94	0.30	-0.91 -2993.48-7.326e+04-7.043e+04 -5827.61	-
1.382e+04	302	9.70	0.88	-1.66	-0.95	0.17	-1.14 -9738.65-8.263e+04-7.981e+04-1.256e+04	-
1.406e+04	294	7.90	1.07	-2.02	-1.64	0.70	-1.01-1.091e+04-6.842e+04-6.837e+04-1.096e+04	-1652.27
	278 3 295	5.99	0.36	-1.56	-1.45	0.26	-0.43 -3287.18-4.981e+04-4.971e+04 -3378.61	-2060.33
	303	7.54	0.66	-1.21	-0.79	0.25	-0.77 -2532.94-6.199e+04-5.960e+04 -4931.06	-
1.170e+04	302	8.21	0.74	-1.41	-0.80	0.14	-0.97 -8240.40-6.992e+04-6.753e+04-1.063e+04	-
1.190e+04	294	6.69	0.91	-1.71	-1.39	0.59	-0.86 -9233.00-5.790e+04-5.786e+04 -9273.20	-1398.07
	278 23 295	5.59	24.50	-13.33	23.89	-12.72	-4.76 -2992.39-4.542e+04-4.533e+04 -3077.25	-1895.52
	303	7.01	25.60	-10.61	24.86	-9.87	5.12 -2274.85-5.652e+04-5.432e+04 -4477.86	-
1.071e+04	302	7.62	24.55	-16.00	23.62	-15.08	6.05 -7500.66-6.375e+04-6.156e+04 -9691.63	-
1.088e+04	294	6.22	24.36	-17.33	23.46	-16.43	-6.04 -8410.53-5.280e+04-5.277e+04 -8449.11	-1308.10
	278 55 295	5.49	8.18	-4.80	7.87	-4.49	-1.99 -2989.82-4.533e+04-4.525e+04 -3073.57	-1881.23
	303	6.90	8.77	-3.62	8.60	-3.45	1.42 -2292.54-5.642e+04-5.423e+04 -4480.99	-
1.066e+04	302	7.51	8.34	-5.61	8.15	-5.41	1.65 -7494.70-6.363e+04-6.145e+04 -9672.81	-
1.084e+04	294	6.12	8.28	-6.17	7.75	-5.65	-2.70 -8399.80-5.269e+04-5.266e+04 -8437.08	-1284.51
	278 69 295	5.44	0.33	-1.42	-1.32	0.24	-0.39 -2988.34-4.528e+04-4.520e+04 -3071.46	-1873.03
	303	6.85	0.60	-1.10	-0.72	0.23	-0.70 -2302.68-5.636e+04-5.418e+04 -4482.78	-
1.063e+04	302	7.46	0.68	-1.28	-0.73	0.13	-0.88 -7491.27-6.356e+04-6.139e+04 -9662.00	-
1.082e+04	294	6.08	0.83	-1.55	-1.26	0.54	-0.78 -8393.63-5.263e+04-5.260e+04 -8430.18	-1270.98
	279 1 296	6.38	0.26	-1.68	-1.66	0.24	-0.20 805.72-5.100e+04-5.097e+04 779.00	-1176.11
	304	8.20	0.17	-1.19	-1.07	0.05	-0.39 1054.74-6.557e+04-6.375e+04 -766.08	-
1.086e+04	303	8.92	0.52	-1.44	-0.97	0.05	-0.84 -2991.34-7.332e+04-7.124e+04 -5062.92	-
1.189e+04	295	7.08	0.51	-1.82	-1.75	0.44	-0.38 -3879.28-5.887e+04-5.885e+04 -3904.31	-1173.05
	279 3 296	5.40	0.22	-1.42	-1.40	0.21	-0.17 681.76-4.315e+04-4.313e+04 659.16	-995.17
	304	6.94	0.14	-1.01	-0.91	0.04	-0.33 892.47-5.549e+04-5.394e+04 -648.22	-9191.67

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.006e+04	303	7.54	0.44	-1.22	-0.82	0.04	-0.71	-2531.13-6.204e+04-6.028e+04	-4284.01	-
	295	5.99	0.43	-1.54	-1.48	0.37	-0.32	-3282.46-4.982e+04-4.979e+04	-3303.65	-992.58
279	23	296	5.04	25.84	-7.87	24.92	-6.94	621.57-3.935e+04-3.932e+04	600.05	-927.11
	304	6.46	27.82	-6.05	27.03	-5.26	5.11	832.08-5.057e+04-4.916e+04	-578.02	-8396.28
	303	7.01	25.65	-9.88	24.96	-9.18	4.93	-2315.51-5.656e+04-5.495e+04	-3929.28	-9215.98
	295	5.59	25.38	-10.94	24.43	-9.99	-5.78	-2967.13-4.543e+04-4.541e+04	-2987.18	-922.53
279	55	296	4.95	8.67	-2.81	8.27	-2.41	620.43-3.927e+04-3.925e+04	599.53	-912.87
	304	6.36	9.57	-2.14	9.33	-1.90	1.67	818.90-5.049e+04-4.908e+04	-585.18	-8370.73
	303	6.91	8.79	-3.48	8.63	-3.32	1.39	-2306.32-5.646e+04-5.486e+04	-3907.21	-9172.03
	295	5.49	8.49	-3.87	8.05	-3.43	-2.30	-2977.89-4.534e+04-4.532e+04	-2997.43	-909.70
279	69	296	4.91	0.20	-1.29	-1.27	0.19	619.78-3.923e+04-3.921e+04	599.23	-904.70
	304	6.31	0.13	-0.92	-0.83	0.04	-0.30	811.34-5.044e+04-4.904e+04	-589.29	-8356.07
	303	6.86	0.40	-1.11	-0.74	0.04	-0.65	-2301.03-5.640e+04-5.480e+04	-3894.55	-9146.82
	295	5.45	0.39	-1.40	-1.35	0.34	-0.29	-2984.06-4.529e+04-4.527e+04	-3003.32	-902.34
280	1	297	5.67	0.06	-1.65	-1.65	0.06	93.55-4.564e+04-4.552e+04	-20.57	2281.66
	305	7.21	-0.09	-1.25	-1.24	-0.10	-0.10	434.18-5.786e+04-5.742e+04	-8.68	-5061.56
	304	8.28	0.31	-1.23	-1.08	0.16	-0.45	1175.01-6.614e+04-6.470e+04	-274.14	-9770.16
	296	6.34	0.09	-1.68	-1.68	0.09	5.45e-03	846.53-5.063e+04-5.063e+04	845.34	-246.85
280	3	297	4.80	0.05	-1.40	-1.39	0.05	79.16-3.862e+04-3.852e+04	-17.41	1930.63
	305	6.10	-0.08	-1.05	-1.05	-0.09	-0.09	367.38-4.896e+04-4.858e+04	-7.34	-4282.86
	304	7.01	0.26	-1.04	-0.92	0.14	-0.38	994.24-5.597e+04-5.474e+04	-231.97	-8267.06
	296	5.36	0.08	-1.42	-1.42	0.08	4.61e-03	716.29-4.284e+04-4.284e+04	715.29	-208.87
280	23	297	4.50	27.41	-2.81	26.34	-1.74	70.82-3.521e+04-3.512e+04	-16.88	1756.73
	305	5.70	30.84	-1.45	29.97	-0.59	5.21	333.53-4.463e+04-4.429e+04	-8.21	-3904.93
	304	6.52	27.62	-4.77	26.75	-3.90	5.25	914.30-5.102e+04-4.990e+04	-212.08	-7565.22
	296	5.01	27.23	-4.89	26.08	-3.73	-5.98	658.80-3.906e+04-3.906e+04	657.75	-203.82
280	55	297	4.40	9.21	-1.02	8.80	-0.61	71.55-3.514e+04-3.505e+04	-16.21	1755.71
	305	5.59	10.64	-0.58	10.32	-0.26	1.85	333.82-4.455e+04-4.421e+04	-7.23	-3897.67
	304	6.42	9.48	-1.61	9.22	-1.34	1.69	907.66-5.093e+04-4.981e+04	-211.32	-7533.63
	296	4.92	9.14	-1.77	8.69	-1.32	-2.18	653.95-3.899e+04-3.899e+04	652.99	-194.96
280	69	297	4.36	0.05	-1.27	-1.27	0.04	71.96-3.510e+04-3.502e+04	-15.82	1755.12
	305	5.54	-0.07	-0.96	-0.95	-0.08	-0.08	333.98-4.451e+04-4.417e+04	-6.67	-3893.51
	304	6.37	0.24	-0.95	-0.83	0.13	-0.35	903.86-5.088e+04-4.977e+04	-210.88	-7515.51
	296	4.88	0.07	-1.29	-1.29	0.07	4.19e-03	651.18-3.895e+04-3.895e+04	650.27	-189.88
281	1	298	18.94	3.40	-1.03	3.23	-0.85	-0.85-1.509e+05-1.546e+05-1.544e+05-1.511e+05	-911.96	-
	306	17.30	3.50	-4.18	2.97	-3.64	-1.95	-1.211e+05-1.526e+05-1.454e+05-1.283e+05	-	-
1.322e+04										
	73	24.21	2.59	-3.17	2.56	-3.13	-0.44	-1.728e+05-2.119e+05-1.809e+05-2.038e+05		
1.583e+04										
	64	31.84	6.05	-4.24	3.09	-1.28	-4.66	-1.959e+05-2.906e+05-2.387e+05-2.478e+05		
4.714e+04										
281	3	298	16.03	2.87	-0.87	2.73	-0.72	-0.72-1.277e+05-1.308e+05-1.306e+05-1.279e+05	-771.66	-
	306	14.64	2.96	-3.53	2.51	-3.08	-1.65	-1.025e+05-1.291e+05-1.230e+05-1.085e+05	-	-
1.119e+04										
	73	20.49	2.19	-2.68	2.16	-2.65	-0.38	-1.462e+05-1.793e+05-1.531e+05-1.724e+05		
1.340e+04										
	64	26.94	5.12	-3.59	2.61	-1.08	-3.94	-1.658e+05-2.459e+05-2.020e+05-2.097e+05		
3.989e+04										
281	23	298	14.67	55.45	-40.89	27.84	-13.28	43.56-1.166e+05-1.193e+05-1.191e+05-1.168e+05	-729.34	-
	306	13.39	21.30	-73.55	-0.70	-51.55	40.03	-9.351e+04-1.177e+05-1.121e+05-9.911e+04	-	-
1.019e+04										
	73	18.72	41.54	-32.57	19.21	-10.24	34.00	-1.333e+05-1.636e+05-1.395e+05-1.574e+05		
1.222e+04										
	64	24.92	24.09	-113.58	-9.35	-80.14	59.04	-1.513e+05-2.243e+05-1.841e+05-1.915e+05		
3.634e+04										
281	55	298	14.61	20.88	-14.41	11.73	-5.26	15.46-1.162e+05-1.191e+05-1.189e+05-1.164e+05	-711.66	-
	306	13.34	7.76	-27.14	1.20	-20.57	13.64	-9.327e+04-1.175e+05-1.119e+05-9.883e+04	-	-
1.018e+04										
	73	18.66	15.42	-12.43	8.25	-5.26	12.18	-1.331e+05-1.632e+05-1.393e+05-1.570e+05		
1.219e+04										
	64	24.63	7.91	-39.65	-1.90	-29.84	19.24	-1.509e+05-2.238e+05-1.838e+05-1.909e+05		
3.629e+04										
281	69	298	14.57	2.61	-0.79	2.48	-0.66	-0.66-1.160e+05-1.189e+05-1.187e+05-1.162e+05	-701.51	-
	306	13.30	2.70	-3.21	2.28	-2.80	-1.50	-9.314e+04-1.174e+05-1.118e+05-9.867e+04	-	-
1.017e+04										
	73	18.62	1.99	-2.43	1.97	-2.41	-0.34	-1.329e+05-1.630e+05-1.392e+05-1.567e+05		
1.218e+04										
	64	24.49	4.65	-3.26	2.37	-0.98	-3.58	-1.507e+05-2.235e+05-1.836e+05-1.906e+05		
3.626e+04										
282	1	299	13.99	2.44	-3.28	0.08	-0.92	-2.82-7.827e+04-1.293e+05-1.242e+05-8.339e+04	-	-
1.535e+04										
	307	13.57	2.24	-2.42	1.19	-1.38	-1.94	-6.282e+04-1.264e+05-1.126e+05-7.663e+04	-	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

2.621e+04										
1.309e+04	306	16.91	2.79	-3.52	1.69	-2.42	-2.39-1.183e+05-1.492e+05-1.420e+05-1.255e+05		-	
	298	19.80	5.08	-3.59	2.88	-1.39	-3.77-1.528e+05-1.657e+05-1.635e+05-1.551e+05	4916.67		
	282 3 299	11.84	2.06	-2.78	0.06	-0.78	-2.38-6.622e+04-1.094e+05-1.051e+05-7.056e+04	-		
1.299e+04	307	11.48	1.89	-2.05	1.01	-1.16	-1.64-5.316e+04-1.069e+05-9.526e+04-6.484e+04	-		
2.218e+04	306	14.31	2.36	-2.98	1.43	-2.05	-2.02-1.001e+05-1.263e+05-1.202e+05-1.062e+05	-		
1.107e+04	298	16.75	4.30	-3.04	2.43	-1.18	-3.19-1.293e+05-1.402e+05-1.383e+05-1.312e+05	4160.26		
	282 7 299	10.84	21.57	-42.26	8.45	-29.15	25.79-6.040e+04-9.976e+04-9.587e+04-6.429e+04	-		
1.174e+04	307	10.54	19.07	-41.69	-2.89	-19.73	29.19-4.850e+04-9.751e+04-8.694e+04-5.908e+04	-		
2.016e+04	306	13.06	25.51	-45.47	1.64	-21.60	33.53-9.132e+04-1.151e+05-1.097e+05-9.678e+04	-		
1.001e+04	298	15.35	25.84	-57.01	11.47	-42.64	31.37-1.178e+05-1.280e+05-1.262e+05-1.196e+05	3917.41		
	282 39 299	10.79	6.73	-14.69	3.12	-11.08	8.02-6.028e+04-9.959e+04-9.567e+04-6.420e+04	-		
1.178e+04	307	10.47	6.21	-14.54	-0.47	-7.87	9.69-4.839e+04-9.733e+04-8.672e+04-5.899e+04	-		
2.016e+04	306	13.03	8.42	-16.05	1.42	-9.06	11.06-9.111e+04-1.149e+05-1.094e+05-9.662e+04	-		
1.005e+04	298	15.27	9.20	-19.84	5.59	-16.22	9.59-1.176e+05-1.277e+05-1.259e+05-1.194e+05	3831.40		
	282 69 299	10.76	1.88	-2.53	0.06	-0.71	-2.17-6.020e+04-9.949e+04-9.555e+04-6.415e+04	-		
1.181e+04	307	10.44	1.72	-1.86	0.92	-1.06	-1.49-4.833e+04-9.722e+04-8.660e+04-5.895e+04	-		
2.016e+04	306	13.01	2.14	-2.71	1.30	-1.86	-1.84-9.098e+04-1.148e+05-1.092e+05-9.653e+04	-		
1.007e+04	298	15.23	3.91	-2.76	2.21	-1.07	-2.90-1.175e+05-1.275e+05-1.257e+05-1.193e+05	3782.05		
	283 1 300	11.84	1.89	-2.46	-0.62	0.06	-2.15-3.929e+04-1.088e+05-1.056e+05-4.253e+04	-		
1.466e+04	308	11.98	1.55	-1.90	0.02	-0.37	-1.71-3.236e+04-1.086e+05-9.823e+04-4.272e+04	-		
2.612e+04	307	13.51	2.01	-2.46	0.48	-0.93	-2.12-6.198e+04-1.258e+05-1.172e+05-7.057e+04	-		
2.179e+04	299	14.16	3.04	-3.03	0.04	-0.04	-3.04-8.092e+04-1.306e+05-1.291e+05-8.241e+04	-8473.94		
	283 3 300	10.02	1.60	-2.08	-0.53	0.05	-1.82-3.325e+04-9.208e+04-8.934e+04-3.599e+04	-		
1.240e+04	308	10.13	1.31	-1.61	0.01	-0.32	-1.45-2.738e+04-9.188e+04-8.312e+04-3.614e+04	-		
2.210e+04	307	11.43	1.70	-2.08	0.41	-0.78	-1.79-5.244e+04-1.065e+05-9.918e+04-5.971e+04	-		
1.843e+04	299	11.98	2.57	-2.57	0.04	-0.03	-2.57-6.847e+04-1.105e+05-1.093e+05-6.973e+04	-7170.25		
	283 23 300	9.24	21.39	-36.66	21.01	-36.28	4.72-3.034e+04-8.397e+04-8.144e+04-3.287e+04	-		
1.136e+04	308	9.36	21.46	-28.83	16.81	-24.18	14.57-2.498e+04-8.376e+04-7.573e+04-3.301e+04	-		
2.019e+04	307	10.52	23.94	-35.24	18.08	-29.39	17.67-4.786e+04-9.706e+04-9.037e+04-5.454e+04	-		
1.686e+04	299	10.98	23.14	-47.86	22.79	-47.50	4.99-6.251e+04-1.008e+05-9.961e+04-6.368e+04	-6603.10		
	283 55 300	9.15	7.38	-13.22	7.35	-13.19	0.67-3.027e+04-8.380e+04-8.130e+04-3.277e+04	-		
1.131e+04	308	9.26	7.36	-10.22	6.14	-9.00	4.48-2.492e+04-8.361e+04-7.562e+04-3.291e+04	-		
2.013e+04	307	10.43	8.33	-12.67	6.83	-11.17	5.41-4.774e+04-9.688e+04-9.024e+04-5.438e+04	-		
1.679e+04	299	10.92	8.33	-17.34	8.33	-17.33	0.34-6.234e+04-1.006e+05-9.943e+04-6.350e+04	-6549.29		
	283 69 300	9.11	1.46	-1.89	-0.48	0.05	-1.65-3.023e+04-8.371e+04-8.122e+04-3.272e+04	-		
1.128e+04	308	9.21	1.19	-1.46	0.01	-0.29	-1.32-2.489e+04-8.353e+04-7.557e+04-3.286e+04	-		
2.009e+04	307	10.39	1.55	-1.89	0.37	-0.71	-1.63-4.768e+04-9.678e+04-9.017e+04-5.429e+04	-		
1.676e+04	299	10.89	2.34	-2.33	0.03	-0.03	-2.34-6.225e+04-1.005e+05-9.932e+04-6.339e+04	-6518.41		
	284 1 301	10.60	1.49	-2.07	-1.05	0.47	-1.61-2.005e+04-9.371e+04-9.235e+04-2.141e+04	-9923.79		
	309	10.93	1.32	-1.63	-0.57	0.26	-1.42-1.712e+04-9.545e+04-8.886e+04-2.371e+04	-		
2.174e+04	308	11.96	1.51	-1.88	-0.34	-0.03	-1.69-3.222e+04-1.084e+05-1.022e+05-3.848e+04	-		
2.093e+04	300	11.85	2.08	-2.43	-0.85	0.50	-2.15-4.007e+04-1.091e+05-1.080e+05-4.116e+04	-8613.89		

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

284	3	301	8.97	1.26	-1.75	-0.89	0.40	-1.36-1.696e+04-7.929e+04-7.814e+04-1.811e+04	-8397.05
		309	9.25	1.12	-1.38	-0.48	0.22	-1.20-1.449e+04-8.076e+04-7.519e+04-2.006e+04	-
1.839e+04									
		308	10.12	1.28	-1.59	-0.28	-0.03	-1.43-2.726e+04-9.173e+04-8.643e+04-3.256e+04	-
1.771e+04									
		300	10.03	1.76	-2.05	-0.72	0.42	-1.82-3.390e+04-9.229e+04-9.137e+04-3.483e+04	-7288.68
284	23	301	8.31	22.62	-25.09	22.61	-25.08	0.70-1.546e+04-7.230e+04-7.123e+04-1.653e+04	-7704.75
		309	8.56	22.10	-20.31	19.69	-17.90	9.82-1.319e+04-7.361e+04-6.850e+04-1.830e+04	-
1.681e+04									
		308	9.35	24.11	-25.86	20.48	-22.23	12.96-2.487e+04-8.362e+04-7.875e+04-2.973e+04	-
1.620e+04									
		300	9.25	22.19	-33.08	22.18	-33.07	-0.75-3.094e+04-8.417e+04-8.331e+04-3.180e+04	-6704.23
284	55	301	8.20	7.74	-8.93	7.73	-8.91	-0.53-1.544e+04-7.216e+04-7.111e+04-1.649e+04	-7659.59
		309	8.46	7.50	-7.00	6.90	-6.40	2.89-1.318e+04-7.349e+04-6.841e+04-1.826e+04	-
1.675e+04									
		308	9.25	8.23	-9.05	7.30	-8.12	3.90-2.481e+04-8.348e+04-7.864e+04-2.965e+04	-
1.613e+04									
		300	9.16	7.76	-11.90	7.67	-11.81	-1.33-3.087e+04-8.400e+04-8.315e+04-3.171e+04	-6654.56
284	69	301	8.16	1.14	-1.59	-0.81	0.36	-1.24-1.542e+04-7.208e+04-7.104e+04-1.647e+04	-7633.68
		309	8.41	1.02	-1.25	-0.44	0.20	-1.09-1.317e+04-7.342e+04-6.835e+04-1.824e+04	-
1.672e+04									
		308	9.20	1.16	-1.45	-0.26	-0.03	-1.30-2.478e+04-8.339e+04-7.858e+04-2.960e+04	-
1.610e+04									
		300	9.12	1.60	-1.87	-0.65	0.38	-1.65-3.082e+04-8.390e+04-8.306e+04-3.166e+04	-6626.07
285	1	302	9.67	1.00	-1.73	-1.14	0.40	-1.13 -9554.00-8.231e+04-8.189e+04 -9975.24	-5520.15
		310	10.08	1.54	-1.52	-0.81	0.83	-1.29 -8161.35-8.504e+04-8.111e+04-1.210e+04	-
1.694e+04									
		309	10.93	1.31	-1.62	-0.79	0.48	-1.32-1.723e+04-9.548e+04-9.149e+04-2.123e+04	-
1.722e+04									
		301	10.59	1.56	-2.04	-1.19	0.71	-1.53-2.016e+04-9.367e+04-9.328e+04-2.055e+04	-5340.33
285	3	302	8.19	0.84	-1.47	-0.96	0.34	-0.95 -8084.15-6.965e+04-6.929e+04 -8440.58	-4670.90
		310	8.53	1.30	-1.29	-0.69	0.70	-1.09 -6905.76-7.196e+04-6.863e+04-1.023e+04	-
1.433e+04									
		309	9.25	1.11	-1.37	-0.67	0.40	-1.12-1.458e+04-8.079e+04-7.741e+04-1.796e+04	-
1.457e+04									
		301	8.96	1.32	-1.72	-1.00	0.60	-1.29-1.706e+04-7.926e+04-7.893e+04-1.739e+04	-4518.74
285	23	302	7.59	23.48	-17.00	23.41	-16.93	-1.74 -7365.86-6.349e+04-6.316e+04 -7697.15	-4299.44
		310	7.91	23.51	-14.25	22.10	-12.85	7.14 -6228.99-6.558e+04-6.252e+04 -9287.39	-
1.312e+04									
		309	8.56	23.87	-18.58	21.88	-16.59	8.97-1.328e+04-7.363e+04-7.053e+04-1.638e+04	-
1.333e+04									
		301	8.30	22.64	-22.89	22.47	-22.72	-2.75-1.555e+04-7.227e+04-7.196e+04-1.586e+04	-4170.56
285	55	302	7.49	8.08	-6.07	7.98	-5.97	-1.19 -7355.30-6.338e+04-6.306e+04 -7681.97	-4265.65
		310	7.80	7.98	-4.59	7.66	-4.28	1.97 -6260.12-6.548e+04-6.244e+04 -9298.12	-
1.306e+04									
		309	8.46	8.09	-6.31	7.59	-5.81	2.63-1.326e+04-7.352e+04-7.043e+04-1.635e+04	-
1.327e+04									
		301	8.20	7.81	-8.13	7.61	-7.94	-1.75-1.553e+04-7.214e+04-7.183e+04-1.583e+04	-4130.77
285	69	302	7.44	0.77	-1.33	-0.88	0.31	-0.87 -7349.23-6.332e+04-6.300e+04 -7673.26	-4246.27
		310	7.76	1.19	-1.17	-0.62	0.64	-0.99 -6277.96-6.542e+04-6.239e+04 -9304.27	-
1.303e+04									
		309	8.41	1.01	-1.24	-0.61	0.37	-1.01-1.326e+04-7.345e+04-7.038e+04-1.633e+04	-
1.324e+04									
		301	8.15	1.20	-1.57	-0.91	0.55	-1.18-1.551e+04-7.206e+04-7.176e+04-1.581e+04	-4107.95
286	1	303	8.93	-0.46	-1.43	-1.40	-0.48	-0.14 -2894.35-7.338e+04-7.329e+04 -2979.06	-2442.02
		311	9.36	2.91	-1.32	-0.16	1.75	-1.89 -1966.38-7.637e+04-7.414e+04 -4195.83	-
1.268e+04									
		310	10.08	1.51	-1.69	-1.19	1.00	-1.16 -8389.97-8.507e+04-8.266e+04-1.079e+04	-
1.336e+04									
		302	9.68	1.17	-1.57	-0.95	0.55	-1.14 -9422.27-8.231e+04-8.225e+04 -9481.03	-2068.67
286	3	303	7.55	-0.39	-1.21	-1.19	-0.41	-0.12 -2449.07-6.209e+04-6.202e+04 -2520.74	-2066.32
		311	7.92	2.46	-1.11	-0.13	1.48	-1.60 -1663.86-6.462e+04-6.273e+04 -3550.32	-
1.073e+04									
		310	8.53	1.27	-1.43	-1.01	0.85	-0.98 -7099.21-7.198e+04-6.994e+04 -9133.44	-
1.131e+04									
		302	8.19	0.99	-1.32	-0.80	0.46	-0.97 -7972.69-6.965e+04-6.960e+04 -8022.41	-1750.41
286	7	303	7.00	23.62	-9.43	23.62	-9.42	-0.28 -2303.99-5.658e+04-5.652e+04 -2362.19	-1776.43
		311	7.33	23.39	-9.02	21.41	-7.04	7.76 -1313.45-5.876e+04-5.700e+04 -3080.93	-9920.61
		310	7.90	23.05	-13.88	21.12	-11.95	8.22 -6400.09-6.565e+04-6.381e+04 -8240.34	-
1.028e+04									
		302	7.58	22.92	-11.85	22.88	-11.80	-1.27 -7251.22-6.340e+04-6.335e+04 -7295.21	-1571.04
286	39	303	6.91	7.93	-3.67	7.92	-3.67	-0.17 -2254.75-5.649e+04-5.643e+04 -2317.32	-1841.27
		311	7.24	8.10	-2.08	7.73	-1.71	1.91 -1440.07-5.875e+04-5.702e+04 -3174.11	-9817.03



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		310	7.80	7.63	-4.38	7.12	-3.87	2.43	-6434.25-6.551e+04-6.367e+04	-8280.23	-	
1.028e+04		302	7.49	7.96	-4.12	7.88	-4.03	-1.02	-7249.11-6.335e+04-6.330e+04	-7293.87	-1583.90	
	286	69	303	6.87	-0.36	-1.10	-1.08	-0.37	-2226.42-5.644e+04-5.638e+04	-2291.58	-1878.48	
			311	7.20	2.24	-1.01	-0.12	1.35	-1512.60-5.875e+04-5.703e+04	-3227.56	-9757.60	
			310	7.75	1.16	-1.30	-0.91	0.77	-6453.82-6.544e+04-6.359e+04	-8303.12	-	
1.028e+04		302	7.45	0.90	-1.20	-0.73	0.42	-0.88	-7247.90-6.332e+04-6.327e+04	-7293.10	-1591.28	
	287	1	304	8.20	0.45	-1.62	-1.47	0.30	1375.50-6.540e+04-6.539e+04	1373.98	318.54	
			312	8.71	-0.03	-0.81	-0.43	-0.41	1348.32-6.956e+04-6.823e+04	15.53	-9629.78	
			311	9.40	0.43	-2.73	-0.72	-1.57	-1067.28-7.630e+04-7.492e+04	-2445.57	-	
1.009e+04		303	8.92	1.54	-1.36	-1.35	1.53	-0.21	-3374.35-7.350e+04-7.350e+04	-3374.50	101.63	
	287	3	304	6.94	0.38	-1.37	-1.24	0.26	1163.88-5.533e+04-5.533e+04	1162.60	269.54	
			312	7.37	-0.03	-0.68	-0.37	-0.34	1140.89-5.886e+04-5.773e+04	13.14	-8148.27	
			311	7.95	0.37	-2.31	-0.61	-1.33	-903.08-6.456e+04-6.340e+04	-2069.33	-8537.06	
			303	7.55	1.30	-1.15	-1.14	1.29	-2855.22-6.219e+04-6.219e+04	-2855.35	86.00	
	287	23	304	6.46	26.20	-6.21	25.64	-5.65	1065.07-5.049e+04-5.048e+04	1064.39	186.01	
			312	6.84	26.94	-5.51	26.15	-4.72	1015.30-5.358e+04-5.255e+04	-16.93	-7435.97	
			311	7.39	26.63	-7.97	25.58	-6.93	-966.97-5.899e+04-5.788e+04	-2084.60	-7975.14	
			303	7.01	25.15	-10.31	24.54	-9.70	-2455.68-5.667e+04-5.667e+04	-2455.93	115.87	
	287	55	304	6.35	8.93	-2.21	8.63	-1.91	1060.61-5.037e+04-5.037e+04	1059.64	223.52	
			312	6.75	9.55	-2.15	9.32	-1.92	1029.20-5.354e+04-5.251e+04	1.42	-7417.89	
			311	7.29	9.13	-3.45	8.97	-3.29	-874.36-5.880e+04-5.772e+04	-1955.36	-7839.04	
			303	6.91	8.57	-3.07	8.29	-2.79	-2544.63-5.658e+04-5.658e+04	-2544.79	91.92	
	287	69	304	6.31	0.35	-1.25	-1.13	0.23	1058.07-5.030e+04-5.030e+04	1056.90	245.03	
			312	6.70	-0.03	-0.62	-0.33	-0.31	1037.17-5.351e+04-5.248e+04	11.95	-7407.52	
			311	7.23	0.33	-2.10	-0.56	-1.21	-820.98-5.869e+04-5.763e+04	-1881.21	-7760.96	
			303	6.86	1.18	-1.05	-1.03	1.17	-2595.66-5.654e+04-5.654e+04	-2595.77	78.18	
	288	1	305	7.31	0.01	-1.25	-1.25	0.01	-6.72e-03	397.26-5.873e+04-5.852e+04	184.78	3538.18
			313	7.80	4.69e-03	-0.17	-0.12	-0.05	-0.08	433.54-6.273e+04-6.220e+04	-94.65	-5751.82
			312	8.75	0.04	-0.93	-0.58	-0.30	-0.46	1579.68-6.979e+04-6.898e+04	766.32	-7575.54
			304	8.20	0.41	-1.39	-1.31	0.34	-0.36	1344.37-6.540e+04-6.532e+04	1265.50	2293.06
	288	3	305	6.19	0.01	-1.06	-1.06	0.01	-5.69e-03	336.14-4.970e+04-4.952e+04	156.36	2993.84
			313	6.60	3.97e-03	-0.14	-0.10	-0.04	-0.07	366.84-5.308e+04-5.263e+04	-80.09	-4866.92
			312	7.41	0.03	-0.78	-0.49	-0.26	-0.39	1336.65-5.905e+04-5.837e+04	648.43	-6410.07
			304	6.94	0.35	-1.17	-1.11	0.28	-0.30	1137.54-5.534e+04-5.527e+04	1070.81	1940.28
	288	23	305	5.76	27.51	-1.72	26.61	-0.83	-5.03	302.76-4.531e+04-4.515e+04	139.66	2722.61
			313	6.16	29.97	-1.75	29.27	-1.04	4.66	338.82-4.836e+04-4.795e+04	-68.60	-4435.74
			312	6.88	27.38	-3.49	26.43	-2.54	5.34	1187.09-5.383e+04-5.319e+04	550.59	-5883.05
			304	6.45	27.13	-4.90	26.34	-4.11	-4.97	1054.80-5.046e+04-5.040e+04	996.46	1732.57
	288	55	305	5.67	9.44	-0.64	9.09	-0.30	-1.84	304.55-4.523e+04-4.506e+04	141.24	2722.02
			313	6.06	10.86	-0.65	10.61	-0.40	1.66	335.43-4.829e+04-4.789e+04	-71.27	-4428.58
			312	6.78	9.63	-1.35	9.35	-1.07	1.72	1204.90-5.374e+04-5.311e+04	575.30	-5847.65
			304	6.35	9.33	-1.71	8.96	-1.34	-1.99	1041.66-5.036e+04-5.030e+04	981.85	1752.47
	288	69	305	5.62	0.01	-0.96	-0.96	0.01	-5.17e-03	305.58-4.518e+04-4.502e+04	142.14	2721.68
			313	6.00	3.61e-03	-0.13	-0.09	-0.04	-0.06	333.49-4.825e+04-4.785e+04	-72.81	-4424.48
			312	6.73	0.03	-0.71	-0.45	-0.23	-0.36	1215.14-5.369e+04-5.306e+04	589.48	-5827.34
			304	6.31	0.32	-1.07	-1.01	0.26	-0.27	1034.13-5.031e+04-5.025e+04	973.46	1763.89
	289	1	73	24.21	2.84	-3.52	1.76	-2.44	2.39-1.728e+05-2.119e+05-2.116e+05-1.731e+05	-3297.00	-	
			306	17.30	3.92	-3.73	1.53	-1.35	3.54-1.211e+05-1.526e+05-1.212e+05-1.525e+05	1865.74	-	
			314	18.95	0.34	-4.05	-0.29	-3.42	1.54-1.509e+05-1.546e+05-1.512e+05-1.543e+05	1072.48	-	
			74	31.83	3.21	-4.83	-2.40	0.77	3.70-1.959e+05-2.906e+05-2.876e+05-1.989e+05	-	-	
1.665e+04		289	3	73	20.49	2.40	-2.98	1.49	2.02-1.462e+05-1.793e+05-1.790e+05-1.465e+05	-2789.77	-	
			306	14.64	3.32	-3.16	1.30	-1.14	3.00-1.025e+05-1.291e+05-1.025e+05-1.290e+05	1578.71	-	
			314	16.03	0.29	-3.42	-0.24	-2.89	1.30-1.277e+05-1.308e+05-1.279e+05-1.305e+05	907.48	-	
			74	26.94	2.72	-4.09	-2.03	0.65	3.13-1.658e+05-2.459e+05-2.433e+05-1.683e+05	-	-	
1.409e+04		289	7	73	18.71	41.20	-30.60	-30.01	40.62	6.44-1.333e+05-1.636e+05-1.634e+05-1.335e+05	-2676.23	
			306	13.40	19.32	-72.26	-72.26	19.32	-0.41-9.351e+04-1.177e+05-9.359e+04-1.176e+05	1342.04	-	
			314	14.66	52.70	-41.34	-41.12	52.48	4.55-1.166e+05-1.193e+05-1.168e+05-1.191e+05	722.93	-	
			74	24.94	24.75	-119.44	-119.44	24.75	-0.54-1.513e+05-2.243e+05-2.221e+05-1.535e+05	-	-	
1.267e+04		289	39	73	18.65	14.12	-10.59	-10.08	13.61	3.52-1.331e+05-1.632e+05-1.630e+05-1.333e+05	-2587.22	
			306	13.34	6.46	-25.67	-25.59	6.38	1.58-9.327e+04-1.175e+05-9.336e+04-1.174e+05	1401.23	-	
			314	14.60	17.64	-15.31	-15.13	17.46	2.41-1.162e+05-1.191e+05-1.165e+05-1.188e+05	787.78	-	
			74	24.65	9.45	-44.76	-44.71	9.40	1.61-1.509e+05-2.238e+05-2.215e+05-1.532e+05	-	-	
1.276e+04		289	69	73	18.62	2.18	-2.71	1.35	1.84-1.329e+05-1.630e+05-1.628e+05-1.331e+05	-2536.15	-	
			306	13.31	3.01	-2.87	1.18	-1.04	2.73-9.314e+04-1.174e+05-9.322e+04-1.173e+05	1435.19	-	
			314	14.58	0.26	-3.11	-0.22	-2.63	1.18-1.161e+05-1.189e+05-1.163e+05-1.187e+05	824.99	-	
			74	24.49	2.47	-3.72	-1.84	0.59	2.84-1.507e+05-2.236e+05-2.212e+05-1.530e+05	-	-	





**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

293	39	309	8.46	8.09	-6.36	-5.95	7.68	2.41-1.326e+04-7.352e+04-1.403e+04-7.275e+04	-6736.23
		310	7.80	7.90	-4.50	-4.32	7.72	1.47 -6260.01-6.548e+04 -7014.18-6.472e+04	-6640.07
		318	7.49	8.25	-6.09	-5.87	8.02	-1.79 -7356.44-6.339e+04 -7441.42-6.331e+04	2180.50
		317	8.20	7.80	-7.98	-7.73	7.54	-2.00-1.553e+04-7.214e+04-1.563e+04-7.204e+04	2383.35
293	69	309	8.41	1.00	-1.28	0.88	-1.16	0.51-1.326e+04-7.345e+04-1.401e+04-7.269e+04	-6710.10
		310	7.76	1.10	-1.08	1.09	-1.07	0.10 -6277.85-6.542e+04 -7027.13-6.467e+04	-6614.34
		318	7.44	0.23	-0.64	0.15	-0.56	0.26 -7350.37-6.333e+04 -7436.45-6.324e+04	2193.37
		317	8.15	0.60	-0.83	0.40	-0.63	0.50-1.551e+04-7.207e+04-1.561e+04-7.196e+04	2399.14
294	1	310	10.08	1.38	-1.61	1.37	-1.60	0.16 -8389.53-8.507e+04 -9336.55-8.412e+04	-8468.77
		311	9.36	2.51	-0.97	2.22	-0.68	-0.97 -1966.01-7.636e+04 -2821.10-7.551e+04	-7929.89
		319	8.93	-0.13	-1.43	-0.77	-0.79	0.65 -2894.93-7.339e+04 -2967.06-7.332e+04	2253.73
		318	9.68	0.41	-0.53	0.36	-0.48	0.20 -9423.67-8.232e+04 -9530.08-8.222e+04	2783.06
294	3	310	8.53	1.17	-1.37	1.16	-1.36	0.14 -7098.83-7.198e+04 -7900.16-7.118e+04	-7165.88
		311	7.92	2.13	-0.82	1.88	-0.57	-0.82 -1663.55-6.461e+04 -2387.09-6.389e+04	-6709.91
		319	7.55	-0.11	-1.21	-0.65	-0.67	0.55 -2449.56-6.210e+04 -2510.59-6.204e+04	1907.00
		318	8.19	0.34	-0.45	0.31	-0.41	0.17 -7973.88-6.966e+04 -8063.91-6.957e+04	2354.90
294	7	310	7.90	24.12	-12.76	-12.02	23.38	5.18 -6410.62-6.558e+04 -7153.77-6.484e+04	-6589.53
		311	7.37	25.86	-9.37	-9.04	25.53	3.40 -1324.71-5.895e+04 -1997.23-5.828e+04	-6188.89
		319	7.01	24.74	-11.08	-10.48	24.14	-4.58 -2299.41-5.660e+04 -2354.07-5.655e+04	1721.93
		318	7.60	24.13	-15.66	-14.88	23.35	-5.51 -7259.36-6.350e+04 -7338.36-6.342e+04	2106.34
294	39	310	7.79	8.07	-4.04	-3.71	7.74	1.97 -6437.87-6.549e+04 -7171.69-6.476e+04	-6541.81
		311	7.25	9.03	-2.26	-2.21	8.97	0.76 -1443.93-5.882e+04 -2107.06-5.815e+04	-6132.35
		319	6.92	8.56	-4.34	-4.20	8.41	-1.35 -2253.32-5.651e+04 -2308.50-5.645e+04	1729.37
		318	7.50	8.54	-5.51	-5.25	8.28	-1.91 -7252.77-6.339e+04 -7333.57-6.331e+04	2128.24
294	69	310	7.75	1.06	-1.24	1.05	-1.23	0.13 -6453.48-6.544e+04 -7181.96-6.471e+04	-6514.44
		311	7.20	1.93	-0.75	1.71	-0.52	-0.75 -1512.32-5.874e+04 -2170.08-5.808e+04	-6099.92
		319	6.87	-0.10	-1.10	-0.59	-0.61	0.50 -2226.87-5.646e+04 -2282.35-5.640e+04	1733.64
		318	7.44	0.31	-0.40	0.28	-0.37	0.15 -7248.98-6.333e+04 -7330.83-6.324e+04	2140.81
295	1	311	9.39	-0.34	-2.12	-1.40	-1.06	-0.88 -1066.30-7.629e+04 -1930.82-7.542e+04	-8017.71
		312	8.71	-0.24	-0.61	-0.24	-0.61	-8.79e-03 1348.47-6.957e+04 505.70-6.872e+04	-7684.70
		320	8.20	0.15	-0.89	0.13	-0.87	-0.15 1376.39-6.540e+04 1303.29-6.533e+04	2208.27
		319	8.92	1.53	-0.92	1.38	-0.77	0.60 -3377.16-7.351e+04 -3438.98-7.345e+04	2081.30
295	3	311	7.95	-0.28	-1.80	-1.18	-0.90	-0.74 -902.25-6.455e+04 -1633.77-6.382e+04	-6784.21
		312	7.37	-0.20	-0.51	-0.20	-0.51	-7.44e-03 1141.02-5.886e+04 427.90-5.815e+04	-6502.44
		320	6.94	0.13	-0.76	0.11	-0.74	-0.13 1164.64-5.534e+04 1102.78-5.528e+04	1868.54
		319	7.55	1.30	-0.78	1.17	-0.65	0.50 -2857.60-6.220e+04 -2909.91-6.215e+04	1761.10
295	7	311	7.39	26.60	-8.07	-7.17	25.71	5.51 -966.22-5.898e+04 -1676.52-5.827e+04	-6380.08
		312	6.84	26.91	-5.48	-4.86	26.30	4.41 1015.42-5.359e+04 361.70-5.293e+04	-5938.62
		320	6.46	26.60	-6.28	-5.54	25.86	-4.86 1065.76-5.049e+04 1013.21-5.044e+04	1645.11
		319	7.01	25.43	-10.25	-9.53	24.71	-5.04 -2457.89-5.668e+04 -2507.92-5.663e+04	1646.33
295	39	311	7.28	9.05	-3.50	-3.30	8.85	1.58 -873.61-5.879e+04 -1554.97-5.811e+04	-6244.98
		312	6.75	9.52	-2.12	-1.89	9.29	1.60 1029.31-5.354e+04 379.04-5.289e+04	-5921.27
		320	6.36	9.30	-2.26	-1.96	9.00	-1.85 1061.30-5.038e+04 1006.43-5.032e+04	1679.15
		319	6.91	8.84	-3.00	-2.80	8.63	-1.54 -2546.81-5.660e+04 -2595.26-5.655e+04	1617.52
295	69	311	7.23	-0.26	-1.63	-1.07	-0.82	-0.67 -820.23-5.868e+04 -1485.24-5.802e+04	-6167.47
		312	6.70	-0.19	-0.47	-0.19	-0.47	-6.76e-03 1037.29-5.351e+04 389.00-5.286e+04	-5911.31
		320	6.31	0.11	-0.69	0.10	-0.67	-0.12 1058.76-5.031e+04 1002.53-5.026e+04	1698.67
		319	6.86	1.18	-0.71	1.06	-0.59	0.46 -2597.82-5.655e+04 -2645.37-5.650e+04	1601.00
296	1	312	8.75	-0.29	-0.77	-0.34	-0.72	-0.14 1580.05-6.979e+04 727.43-6.894e+04	-7754.03
		313	7.80	0.06	-0.23	0.06	-0.23	-0.02 433.55-6.273e+04 -124.60-6.217e+04	-5911.29
		321	7.31	-0.10	-0.62	-0.10	-0.62	2.09e-03 397.39-5.874e+04 202.63-5.855e+04	3388.25
		320	8.20	0.35	-0.72	0.34	-0.71	-0.10 1344.56-6.541e+04 1277.00-6.535e+04	2122.61
296	3	312	7.41	-0.25	-0.65	-0.29	-0.61	-0.12 1336.96-5.905e+04 615.52-5.833e+04	-6561.10
		313	6.60	0.05	-0.19	0.05	-0.19	-0.01 366.85-5.308e+04 -105.43-5.261e+04	-5001.86
		321	6.19	-0.09	-0.52	-0.09	-0.52	1.77e-03 336.25-4.971e+04 171.46-4.954e+04	2866.98
		320	6.94	0.29	-0.61	0.28	-0.60	-0.09 1137.70-5.535e+04 1080.54-5.529e+04	1796.06
296	7	312	6.88	27.37	-3.61	-2.54	26.30	5.66 1187.37-5.382e+04 520.39-5.316e+04	-6020.56
		313	6.16	29.91	-1.68	-0.94	29.17	4.79 338.83-4.836e+04 -91.69-4.793e+04	-4558.69
		321	5.77	27.98	-1.79	-0.94	27.13	-4.95 302.86-4.532e+04 153.39-4.517e+04	2606.96
		320	6.46	27.53	-4.83	-4.14	26.83	-4.69 1054.95-5.046e+04 1005.14-5.041e+04	1601.03
296	39	312	6.78	9.61	-1.46	-1.09	9.23	2.00 1205.19-5.374e+04 545.28-5.308e+04	-5985.03
		313	6.06	10.79	-0.58	-0.31	10.52	1.74 335.44-4.829e+04 -94.33-4.786e+04	-4551.36
		321	5.67	9.91	-0.71	-0.39	9.59	-1.80 304.65-4.523e+04 154.97-4.508e+04	2606.57
		320	6.36	9.72	-1.62	-1.34	9.44	-1.76 1041.80-5.037e+04 990.63-5.032e+04	1621.20
296	69	312	6.73	-0.23	-0.59	-0.26	-0.56	-0.11 1215.42-5.369e+04 559.56-5.303e+04	-5964.64
		313	6.00	0.05	-0.18	0.05	-0.17	-0.01 333.50-4.825e+04 -95.84-4.783e+04	-4547.15
		321	5.62	-0.08	-0.47	-0.08	-0.47	1.61e-03 305.68-4.519e+04 155.87-4.504e+04	2606.35
		320	6.31	0.27	-0.55	0.26	-0.55	-0.08 1034.27-5.032e+04 982.31-5.027e+04	1632.78
297	1	74	23.83	-0.71	-4.93	-0.71	-4.93	0.04-1.835e+05-1.997e+05-1.835e+05-1.996e+05	1036.86
		314	23.10	3.73	-3.57	0.13	0.04	3.65-1.493e+05-2.087e+05-1.857e+05-1.723e+05	-
2.896e+04									
3.401e+04		322	17.35	0.10	-5.36	-0.18	-5.08	-1.21-9.223e+04-1.609e+05-1.314e+05-1.218e+05	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.338e+05	75	60.69	6.64	-6.31	-0.81	1.13	6.40-1.730e+05-5.524e+05-4.971e+05-2.283e+05		
297	3	74	20.16	-0.60	-4.17	-0.60	-4.17	0.03-1.552e+05-1.690e+05-1.553e+05-1.689e+05	877.34
		314	19.54	3.16	-3.02	0.11	0.03	3.09-1.263e+05-1.766e+05-1.571e+05-1.458e+05	
2.451e+04		322	14.68	0.08	-4.54	-0.15	-4.30	-1.02-7.804e+04-1.362e+05-1.112e+05-1.030e+05	-
2.878e+04		75	51.35	5.62	-5.34	-0.68	0.96	5.42-1.464e+05-4.674e+05-4.206e+05-1.931e+05	
1.133e+05	75	74	18.67	13.02	-144.34	-102.46	-28.86	-69.54-1.417e+05-1.541e+05-1.418e+05-1.541e+05	653.83
297	7	314	18.01	56.84	-81.86	-60.59	35.57	49.98-1.153e+05-1.611e+05-1.434e+05-1.329e+05	
2.227e+04		322	13.78	14.37	-104.21	-67.49	-22.35	-54.82-7.122e+04-1.244e+05-1.015e+05-9.410e+04	-
2.632e+04		75	47.30	53.45	-99.14	-81.54	35.86	48.74-1.336e+05-4.264e+05-3.839e+05-1.761e+05	
1.031e+05	74	74	18.45	2.88	-53.52	-37.70	-12.93	-25.33-1.413e+05-1.538e+05-1.414e+05-1.537e+05	745.18
297	39	314	17.85	22.06	-31.10	-22.03	12.98	20.00-1.150e+05-1.607e+05-1.431e+05-1.327e+05	
2.227e+04		322	13.50	4.08	-39.41	-24.69	-10.63	-20.58-7.105e+04-1.240e+05-1.012e+05-9.382e+04	-
2.622e+04		75	46.91	22.00	-38.50	-30.12	13.63	20.90-1.333e+05-4.254e+05-3.829e+05-1.758e+05	
1.030e+05	74	74	18.33	-0.55	-3.79	-0.55	-3.79	0.03-1.411e+05-1.536e+05-1.412e+05-1.536e+05	797.58
297	69	314	17.77	2.87	-2.75	0.10	0.03	2.81-1.148e+05-1.606e+05-1.429e+05-1.325e+05	
2.228e+04		322	13.35	0.08	-4.13	-0.14	-3.91	-0.93-7.095e+04-1.238e+05-1.011e+05-9.367e+04	-
2.616e+04		75	46.69	5.11	-4.86	-0.62	0.87	4.93-1.331e+05-4.249e+05-3.824e+05-1.756e+05	
1.030e+05	314	314	18.97	5.01	-2.55	2.27	0.20	3.64-1.505e+05-1.554e+05-1.509e+05-1.550e+05	1312.75
298	1	315	14.49	1.31	-3.83	0.20	-2.72	2.11-8.220e+04-1.337e+05-8.242e+04-1.335e+05	-3385.84
		323	13.57	2.78	-0.67	0.03	2.08	1.39-9.431e+04-1.200e+05-9.530e+04-1.190e+05	4948.11
		322	23.05	1.95	-7.67	-2.84	-2.89	4.81-1.540e+05-2.063e+05-1.970e+05-1.633e+05	
2.000e+04	314	314	16.05	4.24	-2.16	1.92	0.17	3.08-1.274e+05-1.315e+05-1.277e+05-1.312e+05	1110.79
298	3	315	12.26	1.11	-3.24	0.17	-2.30	1.79-6.955e+04-1.131e+05-6.974e+04-1.130e+05	-2864.94
		323	11.48	2.36	-0.57	0.03	1.76	1.18-7.980e+04-1.015e+05-8.064e+04-1.007e+05	4186.87
		322	19.50	1.65	-6.49	-2.40	-2.44	4.07-1.303e+05-1.746e+05-1.667e+05-1.382e+05	
1.693e+04	314	314	14.76	-7.64	-49.64	-47.21	-10.07	9.80-1.160e+05-1.200e+05-1.164e+05-1.196e+05	1145.45
298	23	315	11.24	34.09	-56.64	-44.12	21.56	31.30-6.342e+04-1.032e+05-6.358e+04-1.030e+05	-2496.78
		323	10.49	27.52	-38.49	-38.43	27.46	-1.93-7.270e+04-9.254e+04-7.352e+04-9.172e+04	3938.37
		322	17.99	18.41	-77.38	-52.53	-6.44	41.99-1.186e+05-1.593e+05-1.520e+05-1.259e+05	
1.560e+04	314	314	14.65	-1.60	-18.08	-16.10	-3.58	5.35-1.159e+05-1.197e+05-1.162e+05-1.194e+05	1059.25
298	55	315	11.17	12.05	-21.51	-15.99	6.53	12.44-6.330e+04-1.030e+05-6.346e+04-1.028e+05	-2565.23
		323	10.46	11.03	-14.00	-14.00	11.03	-0.02-7.260e+04-9.238e+04-7.338e+04-9.160e+04	3854.41
		322	17.83	7.40	-31.70	-20.54	-3.76	17.66-1.185e+05-1.589e+05-1.517e+05-1.257e+05	
1.547e+04	314	314	14.60	3.85	-1.96	1.74	0.15	2.80-1.158e+05-1.195e+05-1.161e+05-1.192e+05	1009.81
298	69	315	11.15	1.00	-2.95	0.15	-2.09	1.63-6.323e+04-1.029e+05-6.340e+04-1.027e+05	-2604.49
		323	10.44	2.14	-0.52	0.02	1.60	1.07-7.254e+04-9.229e+04-7.331e+04-9.152e+04	3806.24
		322	17.73	1.50	-5.90	-2.18	-2.22	3.70-1.184e+05-1.587e+05-1.516e+05-1.256e+05	
1.539e+04	315	315	14.06	1.97	-2.16	0.91	-1.10	1.80-8.013e+04-1.298e+05-8.085e+04-1.290e+05	-5921.88
299	1	316	11.97	1.13	-1.86	0.69	-1.41	1.06-4.012e+04-1.101e+05-4.163e+04-1.086e+05	-
1.019e+04	324	324	10.56	0.76	-1.18	-0.26	-0.16	0.97-4.724e+04-9.835e+04-4.745e+04-9.814e+04	3306.22
		323	14.30	1.54	-2.54	-0.49	-0.52	2.04-9.755e+04-1.273e+05-1.001e+05-1.248e+05	8292.29
		315	11.90	1.67	-1.82	0.77	-0.93	1.52-6.780e+04-1.098e+05-6.841e+04-1.092e+05	-5010.82
		316	10.13	0.96	-1.57	0.58	-1.20	0.90-3.394e+04-9.318e+04-3.523e+04-9.190e+04	-8624.04
		324	8.94	0.65	-1.00	-0.22	-0.13	0.82-3.997e+04-8.322e+04-4.015e+04-8.304e+04	2797.57
		323	12.10	1.30	-2.15	-0.41	-0.44	1.73-8.254e+04-1.077e+05-8.468e+04-1.056e+05	7016.55
		315	10.90	21.88	-47.13	-45.88	20.63	9.20-6.190e+04-1.001e+05-6.247e+04-9.956e+04	-4639.11
		316	9.36	23.96	-36.97	-35.84	22.83	8.22-3.098e+04-8.497e+04-3.217e+04-8.378e+04	-7920.15
		324	8.25	23.54	-45.06	-43.36	21.84	-10.67-3.650e+04-7.592e+04-3.666e+04-7.577e+04	2499.12
		323	11.05	23.80	-59.02	-58.11	22.90	-8.60-7.540e+04-9.823e+04-7.731e+04-9.632e+04	6326.25
		315	10.84	7.73	-17.03	-16.28	6.98	4.23-6.173e+04-9.993e+04-6.229e+04-9.937e+04	-4585.85
		316	9.26	8.22	-13.32	-12.73	7.63	3.52-3.090e+04-8.480e+04-3.208e+04-8.363e+04	-7869.24
		324	8.17	8.36	-16.41	-15.93	7.88	-3.42-3.640e+04-7.575e+04-3.656e+04-7.559e+04	2527.16
		323	11.02	8.25	-21.58	-21.42	8.10	-2.14-7.517e+04-9.803e+04-7.710e+04-9.609e+04	6359.57
299	69	315	10.82	1.52	-1.66	0.70	-0.85	1.39-6.164e+04-9.981e+04-6.219e+04-9.926e+04	-4555.29

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		316	9.21	0.87	-1.43	0.53	-1.09	0.82-3.086e+04-8.471e+04-3.202e+04-8.354e+04	-7840.04	
		324	8.13	0.59	-0.91	-0.20	-0.12	0.75-3.634e+04-7.565e+04-3.650e+04-7.549e+04	2543.25	
		323	11.00	1.18	-1.96	-0.38	-0.40	1.57-7.504e+04-9.791e+04-7.698e+04-9.596e+04	6378.68	
1.028e+04	300	1	316	11.91	1.17	-1.64	0.75	-1.22	1.00-3.999e+04-1.095e+05-4.155e+04-1.080e+05	-
1.183e+04		317	10.68	0.78	-1.22	0.66	-1.10		0.47-2.019e+04-9.438e+04-2.213e+04-9.244e+04	-
		325	8.96	0.26	-0.97	-0.13	-0.58		0.57-2.292e+04-8.092e+04-2.295e+04-8.089e+04	1384.64
		324	10.65	0.76	-1.25	-0.06	-0.43		0.99-4.837e+04-9.916e+04-4.868e+04-9.886e+04	3941.51
1.001e+04	300	3	316	10.07	0.99	-1.39	0.63	-1.04	0.85-3.384e+04-9.268e+04-3.516e+04-9.137e+04	-8701.12
		317	9.03	0.66	-1.03	0.56	-0.93		0.40-1.709e+04-7.986e+04-1.873e+04-7.822e+04	-
		325	7.58	0.22	-0.82	-0.11	-0.49		0.48-1.939e+04-6.847e+04-1.942e+04-6.845e+04	1171.62
		324	9.01	0.65	-1.06	-0.05	-0.36		0.84-4.093e+04-8.391e+04-4.119e+04-8.365e+04	3335.13
	300	7	316	9.31	24.52	-34.07	-32.62	23.07	9.11-3.089e+04-8.452e+04-3.210e+04-8.330e+04	-7990.23
		317	8.37	23.33	-24.17	-23.46	22.61		5.79-1.558e+04-7.282e+04-1.709e+04-7.131e+04	-9175.65
		325	7.05	23.58	-31.25	-30.18	22.50		-7.59-1.770e+04-6.246e+04-1.772e+04-6.244e+04	1029.99
		324	8.32	24.44	-39.10	-37.61	22.96		-9.59-3.737e+04-7.655e+04-3.760e+04-7.632e+04	2988.80
	300	39	316	9.21	8.54	-12.25	-11.53	7.81	3.81-3.081e+04-8.435e+04-3.201e+04-8.315e+04	-7939.31
		317	8.27	8.04	-8.56	-8.23	7.70		2.34-1.555e+04-7.268e+04-1.705e+04-7.118e+04	-9128.80
		325	6.95	8.24	-11.38	-11.06	7.92		-2.49-1.765e+04-6.233e+04-1.768e+04-6.230e+04	1052.31
		324	8.24	8.57	-14.15	-13.74	8.16		-3.01-3.727e+04-7.638e+04-3.750e+04-7.614e+04	3016.21
	300	69	316	9.16	0.90	-1.26	0.58	-0.94	0.77-3.076e+04-8.426e+04-3.196e+04-8.306e+04	-7910.11
		317	8.21	0.60	-0.94	0.51	-0.85		0.36-1.553e+04-7.260e+04-1.702e+04-7.111e+04	-9101.92
		325	6.89	0.20	-0.75	-0.10	-0.45		0.44-1.763e+04-6.225e+04-1.766e+04-6.222e+04	1065.11
		324	8.19	0.59	-0.96	-0.04	-0.33		0.76-3.721e+04-7.628e+04-3.744e+04-7.604e+04	3031.93
1.163e+04	301	1	317	10.67	0.71	-1.24	0.60	-1.12	0.46-2.048e+04-9.442e+04-2.236e+04-9.255e+04	-
1.200e+04		318	9.70	0.53	-0.89	0.49	-0.86		0.21 -9452.54-8.251e+04-1.148e+04-8.048e+04	-
		326	7.90	0.10	-0.92	-0.05	-0.77		0.36-1.108e+04-6.851e+04-1.108e+04-6.851e+04	286.92
		325	8.96	0.42	-0.82	0.13	-0.53		0.52-2.304e+04-8.096e+04-2.308e+04-8.092e+04	1592.76
1.015e+04	301	3	317	9.03	0.60	-1.05	0.50	-0.95	0.39-1.733e+04-7.990e+04-1.892e+04-7.831e+04	-9843.68
		318	8.21	0.44	-0.75	0.42	-0.73		0.18 -7998.30-6.981e+04 -9712.96-6.810e+04	-
		326	6.68	0.09	-0.78	-0.04	-0.65		0.31 -9377.13-5.797e+04 -9378.34-5.797e+04	242.77
		325	7.58	0.35	-0.69	0.11	-0.45		0.44-1.949e+04-6.850e+04-1.953e+04-6.847e+04	1347.72
	301	7	317	8.37	24.41	-24.02	-22.94	23.33	7.13-1.580e+04-7.285e+04-1.727e+04-7.139e+04	-9022.19
		318	7.62	24.38	-16.41	-15.82	23.79		4.86 -7277.42-6.365e+04 -8854.07-6.207e+04	-9294.73
		326	6.23	24.06	-20.82	-19.99	23.22		-6.07 -8542.39-5.287e+04 -8543.23-5.287e+04	192.77
		325	7.05	24.38	-25.89	-24.63	23.12		-7.87-1.779e+04-6.249e+04-1.782e+04-6.246e+04	1190.39
	301	39	317	8.26	8.44	-8.56	-8.07	7.96	2.83-1.577e+04-7.271e+04-1.722e+04-7.126e+04	-8975.56
		318	7.52	8.50	-5.78	-5.53	8.25		1.87 -7273.46-6.353e+04 -8838.75-6.197e+04	-9252.72
		326	6.13	8.35	-7.57	-7.31	8.09		-2.03 -8531.13-5.276e+04 -8532.13-5.276e+04	210.52
		325	6.94	8.56	-9.31	-8.92	8.17		-2.61-1.775e+04-6.236e+04-1.778e+04-6.232e+04	1212.51
	301	69	317	8.21	0.55	-0.95	0.46	-0.86	0.36-1.576e+04-7.263e+04-1.720e+04-7.119e+04	-8948.80
		318	7.16	0.40	-0.69	0.38	-0.66		0.16 -7271.19-6.347e+04 -8829.96-6.191e+04	-9228.62
		326	6.08	0.08	-0.71	-0.04	-0.59		0.28 -8524.66-5.270e+04 -8525.76-5.270e+04	220.70
		325	6.89	0.32	-0.63	0.10	-0.41		0.40-1.772e+04-6.228e+04-1.776e+04-6.224e+04	1225.20
1.188e+04	302	1	318	9.70	0.38	-1.02	0.33	-0.97	0.27 -9740.69-8.264e+04-1.173e+04-8.065e+04	-
1.173e+04		319	8.91	0.48	-0.81	0.48	-0.81	-4.90e-03	-2994.03-7.328e+04 -5009.89-7.126e+04	-
		327	7.07	0.01	-0.85	-0.15	-0.68		0.34 -3886.18-5.889e+04 -3894.58-5.888e+04	-679.86
		326	7.90	0.36	-0.77	0.25	-0.66		0.33-1.092e+04-6.845e+04-1.092e+04-6.845e+04	184.39
1.005e+04	302	3	318	8.21	0.32	-0.86	0.28	-0.82	0.23 -8242.13-6.993e+04 -9927.12-6.824e+04	-
		319	7.54	0.41	-0.69	0.41	-0.69	-4.15e-03	-2533.41-6.200e+04 -4239.14-6.030e+04	-9926.21
		327	5.99	0.01	-0.72	-0.13	-0.58		0.29 -3288.30-4.983e+04 -3295.42-4.982e+04	-575.27
		326	6.68	0.30	-0.65	0.21	-0.56		0.28 -9236.35-5.792e+04 -9236.85-5.792e+04	156.02
	302	7	318	7.62	24.87	-16.21	-15.36	24.02	5.86 -7502.25-6.376e+04 -9050.21-6.221e+04	-9202.27
		319	7.01	25.91	-10.66	-10.06	25.31		4.67 -2275.28-5.653e+04 -3844.33-5.496e+04	-9091.94
		327	5.59	25.13	-13.50	-12.76	24.38		-5.32 -2993.42-4.544e+04 -3000.32-4.543e+04	-541.19
		326	6.23	24.82	-17.37	-16.39	23.85		-6.33 -8413.59-5.282e+04 -8413.86-5.282e+04	109.63
	302	39	318	7.52	8.65	-5.80	-5.44	8.28	2.27 -7496.27-6.364e+04 -9033.97-6.210e+04	-9163.27
		319	6.91	9.06	-3.66	-3.43	8.83		1.70 -2292.97-5.643e+04 -3850.33-5.487e+04	-9048.66
		327	5.49	8.79	-4.96	-4.72	8.55		-1.77 -2990.85-4.535e+04 -2997.47-4.534e+04	-529.61
		326	6.13	8.69	-6.17	-5.86	8.37		-2.15 -8402.85-5.271e+04 -8403.23-5.271e+04	130.10
	302	69	318	7.46	0.29	-0.78	0.25	-0.74	0.21 -7492.84-6.357e+04 -9024.65-6.204e+04	-9140.90
		319	6.85	0.37	-0.62	0.37	-0.62	-3.77e-03	-2303.10-5.637e+04 -3853.77-5.482e+04	-9023.82
		327	5.44	9.83e-03	-0.65	-0.12	-0.52		0.26 -2989.37-4.530e+04 -2995.83-4.529e+04	-522.97
		326	6.08	0.27	-0.59	0.19	-0.51		0.25 -8396.68-5.265e+04 -8397.14-5.265e+04	141.84
303	1	319	8.91	0.06	-0.74	0.06	-0.74		0.02 -2991.31-7.333e+04 -4967.03-7.135e+04	-

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1.162e+04												
1.061e+04	320	8.20	0.17	-0.82	0.16	-0.81	0.10	1054.26-6.558e+04	-678.93-6.385e+04	-		
	328	6.38	-0.02	-0.57	-0.08	-0.51	0.16	806.63-5.102e+04	788.65-5.101e+04	-965.27		
	327	7.08	0.26	-0.84	0.15	-0.73	0.33	-3881.20-5.890e+04	-3897.66-5.888e+04	-951.35		
	303 3	319	7.54	0.05	-0.62	0.05	-0.62	0.02	-2531.11-6.205e+04	-4202.87-6.037e+04	-9833.65	
		320	6.94	0.14	-0.69	0.13	-0.69	0.08	892.06-5.549e+04	-574.48-5.403e+04	-8974.58	
		328	5.40	-0.02	-0.48	-0.06	-0.43	0.14	682.53-4.317e+04	667.32-4.316e+04	-816.77	
		327	5.99	0.22	-0.71	0.13	-0.62	0.28	-3284.09-4.984e+04	-3298.02-4.982e+04	-804.99	
	303 7	319	7.01	26.03	-10.06	-9.22	25.18	5.45	-2315.49-5.657e+04	-3854.94-5.503e+04	-9008.38	
		320	6.46	28.14	-6.08	-5.22	27.28	5.35	831.70-5.058e+04	-510.66-4.924e+04	-8198.36	
		328	5.05	26.61	-7.99	-7.14	25.76	-5.36	622.27-3.936e+04	607.65-3.935e+04	-764.44	
		327	5.59	25.98	-10.97	-10.16	25.18	-5.38	-2968.62-4.545e+04	-2981.92-4.543e+04	-751.35	
	303 39	319	6.91	9.14	-3.65	-3.33	8.82	2.00	-2306.30-5.647e+04	-3833.24-5.494e+04	-8964.73	
		320	6.36	9.89	-2.17	-1.83	9.55	2.00	818.52-5.050e+04	-518.03-4.916e+04	-8173.16	
		328	4.96	9.43	-2.93	-2.64	9.14	-1.87	621.13-3.929e+04	607.02-3.928e+04	-750.51	
		327	5.49	9.08	-3.89	-3.63	8.82	-1.80	-2979.37-4.536e+04	-2992.26-4.534e+04	-738.93	
	303 69	319	6.86	0.04	-0.57	0.04	-0.57	0.02	-2301.01-5.641e+04	-3820.79-5.489e+04	-8939.68	
		320	6.31	0.13	-0.63	0.12	-0.62	0.08	810.97-5.045e+04	-522.25-4.912e+04	-8158.71	
		328	4.91	-0.02	-0.44	-0.06	-0.40	0.13	620.49-3.925e+04	606.65-3.923e+04	-742.52	
		327	5.44	0.20	-0.65	0.12	-0.56	0.25	-2985.54-4.531e+04	-2998.20-4.529e+04	-731.80	
1.096e+04	304 1	320	8.28	0.06	-0.74	0.06	-0.74	-0.01	1175.20-6.616e+04	-660.32-6.432e+04	-	
		321	7.20	0.01	-0.86	0.01	-0.86	0.02	434.27-5.787e+04	-217.07-5.722e+04	-6127.99	
		329	5.67	-0.10	-0.49	-0.11	-0.49	9.45e-03	94.03-4.566e+04	49.02-4.561e+04	1434.29	
		328	6.34	0.10	-0.63	0.06	-0.58	0.17	847.05-5.066e+04	818.76-5.063e+04	-1206.58	
	304 3	320	7.00	0.05	-0.63	0.05	-0.63	-0.01	994.40-5.598e+04	-558.73-5.442e+04	-9277.54	
		321	6.10	0.01	-0.73	0.01	-0.73	0.02	367.46-4.897e+04	-183.68-4.842e+04	-5185.22	
		329	4.80	-0.09	-0.42	-0.09	-0.42	7.99e-03	79.57-3.863e+04	41.48-3.859e+04	1213.63	
		328	5.36	0.09	-0.53	0.05	-0.49	0.15	716.73-4.286e+04	692.80-4.284e+04	-1020.95	
	304 7	320	6.52	27.99	-4.96	-3.76	26.79	6.17	914.44-5.103e+04	-511.03-4.961e+04	-8486.21	
		321	5.70	31.16	-1.39	-0.29	30.06	5.89	333.60-4.464e+04	-168.98-4.413e+04	-4727.45	
		329	4.50	28.28	-2.91	-2.07	27.44	-5.05	71.19-3.522e+04	36.68-3.519e+04	1103.05	
		328	5.02	28.00	-4.84	-3.97	27.14	-5.27	659.19-3.908e+04	636.74-3.905e+04	-944.25	
	304 39	320	6.42	9.85	-1.79	-1.34	9.41	2.24	907.80-5.094e+04	-509.07-4.952e+04	-8453.11	
		321	5.60	10.96	-0.52	-0.10	10.54	2.16	333.89-4.456e+04	-167.71-4.406e+04	-4718.80	
		329	4.41	10.07	-1.12	-0.81	9.76	-1.84	71.91-3.516e+04	37.33-3.512e+04	1103.21	
		328	4.92	9.91	-1.72	-1.42	9.61	-1.83	654.35-3.901e+04	632.34-3.898e+04	-934.01	
	304 69	320	6.37	0.05	-0.57	0.05	-0.57	-0.01	904.00-5.089e+04	-507.94-4.948e+04	-8434.13	
		321	5.54	0.01	-0.66	0.01	-0.66	0.02	334.05-4.452e+04	-166.98-4.401e+04	-4713.83	
		329	4.36	-0.08	-0.38	-0.08	-0.38	7.27e-03	72.33-3.512e+04	37.71-3.509e+04	1103.30	
		328	4.87	0.08	-0.48	0.04	-0.45	0.13	651.57-3.897e+04	629.82-3.894e+04	-928.14	
3.316e+04	305 1	75	50.54	4.74	-5.63	-1.57	0.68	5.06-1.255e+05-4.556e+05-4.523e+05-1.289e+05	-	-		
4.933e+04	322	24.20	1.66	-0.13	1.19	0.34	-0.78-1.148e+05-2.253e+05-1.452e+05-1.950e+05	-	-			
1.821e+04	330	24.29	3.80	-4.54	-1.68	0.95	3.96-1.432e+05-2.232e+05-2.188e+05-1.476e+05	-	-			
5.544e+04	76	23.91	4.48	-1.02	3.51	-0.05	2.10-9.367e+04-2.218e+05-1.899e+05-1.256e+05	-	-			
2.806e+04	305 3	75	42.76	4.01	-4.76	-1.33	0.57	4.28-1.062e+05-3.855e+05-3.827e+05-1.090e+05	-	-		
4.174e+04	322	20.47	1.40	-0.11	1.01	0.29	-0.66-9.718e+04-1.907e+05-1.229e+05-1.650e+05	-	-			
1.541e+04	330	20.55	3.22	-3.84	-1.42	0.80	3.35-1.211e+05-1.888e+05-1.851e+05-1.249e+05	-	-			
4.691e+04	76	20.23	3.79	-0.86	2.97	-0.04	1.77-7.926e+04-1.877e+05-1.607e+05-1.063e+05	-	-			
2.594e+04	305 7	75	39.56	40.56	-107.77	-101.39	34.17	-30.11-9.715e+04-3.521e+05-3.495e+05-9.982e+04	-	-		
3.807e+04	322	18.77	13.77	-71.64	-68.45	10.58	16.19-8.869e+04-1.738e+05-1.122e+05-1.503e+05	-	-			
1.389e+04	330	18.88	-9.67	-51.50	-36.95	-24.23	-19.93-1.107e+05-1.724e+05-1.691e+05-1.141e+05	-	-			
4.274e+04	76	18.64	65.48	-51.83	-48.56	62.20	19.33-7.243e+04-1.713e+05-1.467e+05-9.705e+04	-	-			
2.567e+04	305 39	75	39.12	14.18	-39.12	-37.73	12.79	-8.50-9.677e+04-3.511e+05-3.485e+05-9.938e+04	-	-		
3.799e+04	322	18.66	5.06	-25.41	-24.37	4.02	5.52-8.847e+04-1.735e+05-1.119e+05-1.501e+05	-	-			
1.396e+04	330	18.75	-5.23	-17.43	-14.29	-8.37	-5.33-1.104e+05-1.719e+05-1.686e+05-1.137e+05	-	-			
	76	18.48	24.27	-17.60	-15.98	22.65	8.07-7.219e+04-1.709e+05-1.463e+05-9.678e+04	-	-			



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

4.268e+04	305	69	75	38.87	3.65	-4.33	-1.21	0.52	3.89-9.655e+04-3.505e+05-3.479e+05-9.913e+04	-
2.551e+04			322	18.61	1.27	-0.10	0.92	0.26	-0.60-8.834e+04-1.733e+05-1.117e+05-1.500e+05	
3.794e+04			330	18.68	2.93	-3.49	-1.29	0.73	3.05-1.101e+05-1.717e+05-1.683e+05-1.135e+05	
1.401e+04			76	18.39	3.45	-0.78	2.70	-0.04	1.61-7.206e+04-1.706e+05-1.461e+05-9.663e+04	
4.264e+04	306	1	322	21.69	7.78	-2.31	1.12	4.35	4.78-1.466e+05-1.936e+05-1.874e+05-1.529e+05	
1.598e+04			323	14.48	0.56	-4.24	-0.05	-3.63	1.61-9.494e+04-1.303e+05-9.552e+04-1.297e+05	4478.17
			331	13.81	3.61	-2.24	-0.58	1.95	2.64-8.904e+04-1.249e+05-1.097e+05-1.042e+05	
1.769e+04			330	22.14	1.91	-4.36	-2.67	0.22	2.78-1.243e+05-2.045e+05-1.932e+05-1.357e+05	
2.797e+04	306	3	322	18.35	6.58	-1.95	0.95	3.68	4.04-1.241e+05-1.639e+05-1.586e+05-1.294e+05	
1.352e+04			323	12.25	0.48	-3.59	-0.04	-3.07	1.36-8.033e+04-1.103e+05-8.082e+04-1.098e+05	3789.22
			331	11.68	3.05	-1.90	-0.49	1.65	2.23-7.534e+04-1.057e+05-9.286e+04-8.814e+04	
1.497e+04			330	18.73	1.61	-3.69	-2.26	0.19	2.35-1.052e+05-1.731e+05-1.634e+05-1.148e+05	
2.367e+04	306	7	322	16.84	24.32	-42.02	-41.99	24.29	1.37-1.133e+05-1.495e+05-1.448e+05-1.181e+05	
1.224e+04			323	11.25	11.46	-75.41	-69.45	5.49	21.97-7.338e+04-1.006e+05-7.382e+04-1.001e+05	3396.40
			331	10.70	56.63	-59.02	-53.33	50.93	-25.03-6.888e+04-9.639e+04-8.479e+04-8.048e+04	
1.359e+04			330	17.56	7.63	-129.53	-114.26	-7.64	43.14-9.609e+04-1.580e+05-1.493e+05-1.048e+05	
2.150e+04	306	39	322	16.74	11.29	-15.07	-14.76	10.98	2.84-1.130e+05-1.492e+05-1.444e+05-1.178e+05	
1.227e+04			323	11.18	2.96	-28.08	-25.34	0.23	8.80-7.316e+04-1.003e+05-7.360e+04-9.991e+04	3427.12
			331	10.65	21.03	-21.23	-19.73	19.52	-7.84-6.863e+04-9.617e+04-8.455e+04-8.025e+04	
1.360e+04			330	17.22	3.59	-49.23	-42.96	-2.67	17.09-9.579e+04-1.576e+05-1.488e+05-1.045e+05	
2.151e+04	306	69	322	16.69	5.99	-1.78	0.86	3.35	3.68-1.128e+05-1.490e+05-1.441e+05-1.176e+05	
1.229e+04			323	11.14	0.43	-3.26	-0.04	-2.79	1.24-7.303e+04-1.002e+05-7.347e+04-9.979e+04	3444.75
			331	10.62	2.77	-1.72	-0.45	1.50	2.03-6.849e+04-9.605e+04-8.442e+04-8.012e+04	
1.361e+04			330	17.03	1.47	-3.35	-2.06	0.17	2.14-9.561e+04-1.573e+05-1.486e+05-1.044e+05	
2.152e+04	307	1	323	14.06	2.14	-1.98	0.43	-0.27	2.03-9.693e+04-1.247e+05-9.730e+04-1.243e+05	3198.26
			324	10.72	0.74	-1.81	0.15	-1.22	1.08-4.804e+04-9.978e+04-4.857e+04-9.925e+04	-5206.64
			332	9.00	1.00	-1.59	-0.95	0.36	1.11-5.191e+04-8.295e+04-5.592e+04-7.893e+04	
1.042e+04			331	14.06	1.58	-2.60	-1.08	0.05	2.01-9.048e+04-1.272e+05-1.113e+05-1.063e+05	
1.817e+04	307	3	323	11.89	1.81	-1.68	0.37	-0.23	1.72-8.202e+04-1.055e+05-8.233e+04-1.052e+05	2706.22
			324	9.07	0.63	-1.53	0.12	-1.03	0.91-4.065e+04-8.443e+04-4.109e+04-8.398e+04	-4405.62
			332	7.62	0.85	-1.34	-0.80	0.31	0.94-4.392e+04-7.019e+04-4.732e+04-6.679e+04	8814.61
			331	11.90	1.34	-2.20	-0.91	0.05	1.70-7.656e+04-1.076e+05-9.419e+04-8.997e+04	
1.538e+04	307	7	323	10.86	24.79	-55.12	-54.55	24.22	6.74-7.492e+04-9.623e+04-7.520e+04-9.596e+04	2406.55
			324	8.37	23.20	-45.57	-44.11	21.74	9.91-3.712e+04-7.702e+04-3.753e+04-7.660e+04	-4065.88
			332	7.01	27.79	-48.21	-46.43	26.00	-11.52-4.014e+04-6.405e+04-4.321e+04-6.098e+04	7996.56
			331	10.94	21.09	-59.37	-59.05	20.76	-5.12-6.998e+04-9.817e+04-8.601e+04-8.213e+04	
1.396e+04	307	39	323	10.83	9.11	-20.09	-19.68	8.70	3.45-7.469e+04-9.603e+04-7.497e+04-9.574e+04	2440.64
			324	8.29	8.04	-16.72	-16.01	7.33	4.14-3.701e+04-7.685e+04-3.742e+04-7.644e+04	-4027.26
			332	6.95	10.14	-17.88	-17.39	9.66	-3.66-4.001e+04-6.389e+04-4.309e+04-6.081e+04	8007.19
			331	10.86	7.62	-22.08	-22.05	7.60	-0.88-6.974e+04-9.795e+04-8.577e+04-8.191e+04	
1.397e+04	307	69	323	10.81	1.65	-1.53	0.33	-0.21	1.56-7.456e+04-9.591e+04-7.485e+04-9.562e+04	2460.20
			324	8.25	0.57	-1.39	0.11	-0.94	0.83-3.695e+04-7.675e+04-3.736e+04-7.635e+04	-4005.11
			332	6.92	0.77	-1.22	-0.73	0.28	0.86-3.993e+04-6.381e+04-4.302e+04-6.072e+04	8013.28
			331	10.82	1.21	-2.00	-0.83	0.04	1.55-6.960e+04-9.782e+04-8.563e+04-8.179e+04	
1.398e+04	308	1	324	10.61	0.89	-1.47	0.24	-0.82	1.06-4.797e+04-9.884e+04-4.856e+04-9.825e+04	-5416.68
			325	9.04	0.44	-1.12	0.22	-0.90	0.54-2.334e+04-8.169e+04-2.482e+04-8.022e+04	-9170.00
			333	6.45	2.62e-03	-0.99	-0.79	-0.19	0.39-2.509e+04-5.979e+04-2.588e+04-5.901e+04	5159.38



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		332	9.12	0.75	-1.40	-0.74	0.08	1.00-5.296e+04-8.395e+04-5.724e+04-7.967e+04		
1.069e+04										
	308	3	324	8.98	0.76	-1.24	0.20	-0.69	0.89-4.059e+04-8.363e+04-4.109e+04-8.314e+04	-4583.35
			325	7.65	0.37	-0.94	0.19	-0.76	0.45-1.975e+04-6.913e+04-2.100e+04-6.788e+04	-7759.23
			333	5.46	2.22e-03	-0.83	-0.67	-0.16	0.33-2.123e+04-5.059e+04-2.190e+04-4.993e+04	4365.63
			332	7.71	0.63	-1.19	-0.62	0.07	0.84-4.481e+04-7.103e+04-4.843e+04-6.741e+04	9047.05
	308	7	324	8.30	25.14	-40.00	-38.75	23.90	8.91-3.707e+04-7.630e+04-3.753e+04-7.584e+04	-4227.72
			325	7.11	23.93	-28.93	-28.17	23.17	6.29-1.802e+04-6.306e+04-1.918e+04-6.191e+04	-7113.81
			333	5.10	24.88	-35.93	-34.61	23.57	-8.83-1.939e+04-4.618e+04-1.994e+04-4.558e+04	3954.07
			332	7.10	26.06	-42.38	-40.80	24.48	-10.27-4.095e+04-6.481e+04-4.422e+04-6.154e+04	8208.30
	308	39	324	8.21	8.93	-14.63	-14.01	8.31	3.76-3.696e+04-7.613e+04-3.741e+04-7.567e+04	-4188.93
			325	7.01	8.36	-10.51	-10.16	8.00	2.56-1.798e+04-6.292e+04-1.912e+04-6.178e+04	-7075.71
			333	5.10	8.92	-13.42	-13.01	8.50	-3.03-1.933e+04-4.606e+04-1.994e+04-4.546e+04	3963.40
			332	7.04	9.40	-15.66	-15.23	8.96	-3.26-4.081e+04-6.466e+04-4.410e+04-6.138e+04	8218.66
	308	69	324	8.17	0.69	-1.13	0.18	-0.63	0.81-3.690e+04-7.603e+04-3.735e+04-7.558e+04	-4166.68
			325	6.95	0.34	-0.86	0.17	-0.69	0.41-1.796e+04-6.284e+04-1.909e+04-6.170e+04	-7053.84
			333	4.96	2.02e-03	-0.76	-0.61	-0.15	0.30-1.930e+04-4.599e+04-1.991e+04-4.539e+04	3968.75
			332	7.01	0.58	-1.08	-0.57	0.06	0.77-4.074e+04-6.457e+04-4.403e+04-6.128e+04	8224.59
	309	1	325	9.03	0.35	-1.19	0.16	-1.01	0.50-2.322e+04-8.155e+04-2.467e+04-8.010e+04	-9084.81
			326	7.94	0.42	-0.85	0.29	-0.72	0.38-1.104e+04-6.885e+04-1.298e+04-6.690e+04	-
1.043e+04										
			334	5.07	-0.39	-1.01	-0.39	-1.00	-0.05-1.145e+04-4.540e+04-1.163e+04-4.522e+04	2457.61
			333	6.49	0.09	-0.57	-0.45	-0.03	0.25-2.556e+04-6.018e+04-2.649e+04-5.925e+04	5584.27
	309	3	325	7.64	0.29	-1.01	0.14	-0.85	0.42-1.965e+04-6.901e+04-2.088e+04-6.778e+04	-7687.15
			326	6.72	0.35	-0.72	0.24	-0.61	0.32 -9338.78-5.825e+04-1.099e+04-5.661e+04	-8824.11
			334	4.29	-0.33	-0.85	-0.33	-0.85	-0.04 -9692.42-3.841e+04 -9843.80-3.826e+04	2079.52
			333	5.49	0.08	-0.48	-0.38	-0.03	0.21-2.163e+04-5.092e+04-2.241e+04-5.014e+04	4725.15
	309	7	325	7.10	24.70	-28.33	-27.26	23.64	7.42-1.793e+04-6.295e+04-1.906e+04-6.182e+04	-7048.01
			326	6.27	24.82	-18.41	-17.88	24.29	4.74 -8507.57-5.313e+04-1.002e+04-5.162e+04	-8076.74
			334	4.05	24.16	-24.97	-23.84	23.03	-7.38 -8833.78-3.506e+04 -8969.31-3.492e+04	1880.31
			333	5.13	26.65	-28.56	-26.70	24.80	-9.95-1.975e+04-4.648e+04-2.045e+04-4.577e+04	4281.81
	309	39	325	7.00	8.60	-10.33	-9.86	8.13	2.95-1.789e+04-6.281e+04-1.901e+04-6.169e+04	-7010.08
			326	6.16	8.75	-6.62	-6.38	8.50	1.91 -8496.28-5.302e+04 -9999.51-5.152e+04	-8041.90
			334	3.95	8.33	-9.31	-8.88	7.90	-2.71 -8819.49-3.497e+04 -8956.34-3.483e+04	1886.77
			333	5.04	9.65	-10.58	-9.95	9.03	-3.50-1.970e+04-4.636e+04-2.040e+04-4.565e+04	4290.57
	309	69	325	6.94	0.27	-0.92	0.12	-0.77	0.38-1.786e+04-6.273e+04-1.898e+04-6.162e+04	-6988.32
			326	6.11	0.32	-0.65	0.22	-0.56	0.29 -8489.80-5.296e+04 -9987.36-5.146e+04	-8021.91
			334	3.90	-0.30	-0.78	-0.30	-0.77	-0.04 -8811.29-3.492e+04 -8948.91-3.478e+04	1890.47
			333	4.99	0.07	-0.44	-0.35	-0.02	0.19-1.966e+04-4.629e+04-2.038e+04-4.558e+04	4295.59
	310	1	326	7.94	-0.04	-1.00	-0.07	-0.98	0.14-1.124e+04-6.889e+04-1.311e+04-6.702e+04	-
1.020e+04										
			327	7.08	0.45	-0.89	0.33	-0.76	0.39 -3869.70-5.890e+04 -6018.34-5.676e+04	-
1.066e+04										
			335	4.16	-0.26	-1.25	-0.27	-1.24	-0.10 -4508.26-3.553e+04 -4526.89-3.551e+04	760.10
			334	5.08	0.36	-0.60	0.27	-0.51	0.29-1.144e+04-4.547e+04-1.162e+04-4.529e+04	2505.44
	310	3	326	6.72	-0.04	-0.85	-0.06	-0.83	0.12 -9513.53-5.829e+04-1.109e+04-5.671e+04	-8634.50
			327	5.99	0.38	-0.75	0.28	-0.64	0.33 -3274.36-4.984e+04 -5092.44-4.802e+04	-9019.89
			335	3.52	-0.22	-1.06	-0.23	-1.05	-0.08 -3814.68-3.006e+04 -3830.45-3.005e+04	643.16
			334	4.30	0.31	-0.51	0.23	-0.43	0.24 -9676.44-3.848e+04 -9833.35-3.832e+04	2119.99
	310	7	326	6.27	24.80	-19.57	-18.85	24.08	5.60 -8665.90-5.316e+04-1.012e+04-5.171e+04	-7898.66
			327	5.60	25.93	-11.59	-11.04	25.37	4.54 -2979.50-4.545e+04 -4648.24-4.378e+04	-8251.84
			335	3.35	24.61	-16.69	-15.64	23.56	-6.50 -3447.98-2.744e+04 -3462.42-2.743e+04	588.40
			334	4.06	26.18	-18.22	-16.71	24.67	-8.05 -8824.67-3.512e+04 -8964.14-3.498e+04	1909.98
	310	39	326	6.16	8.59	-7.19	-6.91	8.30	2.11 -8654.95-5.306e+04-1.010e+04-5.161e+04	-7867.45
			327	5.50	9.14	-4.13	-3.86	8.88	1.84 -2977.72-4.536e+04 -4636.32-4.370e+04	-8218.83
			335	3.25	8.39	-6.24	-5.83	7.98	-2.42 -3460.63-2.737e+04 -3475.01-2.736e+04	586.04
			334	3.96	9.26	-6.47	-5.96	8.74	-2.79 -8806.94-3.503e+04 -8948.42-3.489e+04	1920.96
	310	69	326	6.11	-0.03	-0.77	-0.05	-0.75	0.11 -8648.66-5.299e+04-1.008e+04-5.156e+04	-7849.55
			327	5.44	0.35	-0.68	0.25	-0.59	0.30 -2976.69-4.531e+04 -4629.49-4.366e+04	-8199.90
			335	3.20	-0.20	-0.96	-0.21	-0.95	-0.08 -3467.89-2.733e+04 -3482.23-2.732e+04	584.69
			334	3.91	0.28	-0.46	0.21	-0.39	0.22 -8796.76-3.498e+04 -8939.41-3.484e+04	1927.26
	311	1	327	7.07	0.34	-0.67	0.34	-0.66	0.05 -4151.97-5.897e+04 -6228.84-5.689e+04	-
1.047e+04										
			328	6.36	-3.07e-03	-1.11	-0.16	-0.95	0.38 599.96-5.099e+04 -1300.66-4.909e+04	-9718.41
			336	3.50	0.28	-0.20	0.24	-0.16	0.13 -125.55-2.830e+04 -139.48-2.828e+04	-626.36
			335	4.15	0.02	-1.62	-0.24	-1.36	0.60 -4360.32-3.541e+04 -4365.23-3.540e+04	390.65
	311	3	327	5.98	0.29	-0.56	0.28	-0.56	0.04 -3513.21-4.990e+04 -5270.56-4.814e+04	-8855.60
			328	5.38	-2.60e-03	-0.94	-0.13	-0.81	0.32 507.66-4.315e+04 -1100.56-4.154e+04	-8223.27
			336	2.96	0.24	-0.17	0.21	-0.13	0.11 -106.23-2.394e+04 -118.02-2.393e+04	-529.99
			335	3.51	0.02	-1.37	-0.20	-1.15	0.51 -3689.50-2.996e+04 -3693.66-2.996e+04	330.55
	311	7	327	5.60	25.82	-12.13	-11.46	25.15	5.01 -3180.72-4.550e+04 -4792.51-4.389e+04	-8100.12
			328	5.05	27.68	-6.60	-5.67	26.75	5.55 463.97-3.934e+04 -1006.25-3.787e+04	-7507.23
			336	2.84	26.18	-10.20	-9.10	25.09	-6.22 -81.07-2.185e+04 -92.20-2.184e+04	-491.96

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

		335	3.33	25.83	-11.58	-10.37	24.63	-6.61	-3374.20-2.734e+04	-3377.96-2.734e+04	300.12
311	39	327	5.49	9.11	-4.27	-4.01	8.84	1.85	-3189.05-4.541e+04	-4791.81-4.381e+04	-8068.62
		328	4.95	9.70	-2.56	-2.15	9.29	2.21	462.40-3.927e+04	-1002.60-3.780e+04	-7487.19
		336	2.74	9.45	-3.58	-3.20	9.07	-2.20	-90.92-2.180e+04	-101.79-2.179e+04	-485.51
		335	3.24	8.67	-4.25	-3.90	8.31	-2.12	-3361.42-2.728e+04	-3365.19-2.727e+04	300.36
311	69	327	5.44	0.26	-0.51	0.26	-0.51	0.04	-3193.83-4.536e+04	-4791.42-4.376e+04	-8050.54
		328	4.89	-2.36e-03	-0.85	-0.12	-0.73	0.29	461.51-3.923e+04	-1000.50-3.776e+04	-7475.70
		336	2.69	0.22	-0.15	0.19	-0.12	0.10	-96.57-2.177e+04	-107.29-2.176e+04	-481.81
		335	3.19	0.02	-1.24	-0.18	-1.04	0.46	-3354.09-2.724e+04	-3357.87-2.723e+04	300.50
312	1	328	6.46	0.06	-0.65	0.04	-0.63	0.12	542.53-5.184e+04	-1522.59-4.977e+04	-
1.019e+04		329	5.43	0.06	-0.83	0.05	-0.82	0.10	282.77-4.367e+04	-69.62-4.331e+04	-3919.55
		337	3.14	0.12	-0.19	-0.19	0.12	0.03	-517.07-2.556e+04	-517.31-2.556e+04	-77.63
		336	3.39	0.19	-0.76	0.07	-0.63	0.32	-162.37-2.743e+04	-192.59-2.740e+04	-907.22
312	3	328	5.47	0.05	-0.55	0.03	-0.53	0.10	459.06-4.386e+04	-1288.34-4.211e+04	-8625.04
		329	4.60	0.05	-0.71	0.05	-0.70	0.08	239.27-3.695e+04	-58.91-3.665e+04	-3316.54
		337	2.65	0.10	-0.16	-0.16	0.10	0.02	-437.52-2.162e+04	-437.72-2.162e+04	-65.69
		336	2.87	0.16	-0.64	0.06	-0.54	0.27	-137.39-2.321e+04	-162.96-2.318e+04	-767.65
312	7	328	5.12	27.59	-6.30	-5.13	26.42	6.19	424.70-3.999e+04	-1175.04-3.839e+04	-7879.84
		329	4.33	30.84	-1.21	0.17	29.46	6.51	216.94-3.369e+04	-54.88-3.341e+04	-3023.52
		337	2.55	26.93	-4.46	-3.41	25.87	-5.65	-399.93-1.974e+04	-400.12-1.974e+04	-60.65
		336	2.74	27.87	-4.98	-3.52	26.41	-6.76	-119.57-2.118e+04	-146.89-2.116e+04	-700.48
312	39	328	5.02	9.78	-2.31	-1.85	9.32	2.31	420.02-3.992e+04	-1172.61-3.832e+04	-7855.13
		329	4.23	10.88	-0.45	0.09	10.34	2.42	217.31-3.362e+04	-54.04-3.335e+04	-3018.13
		337	2.46	9.86	-1.71	-1.33	9.49	-2.05	-398.54-1.969e+04	-398.73-1.969e+04	-60.06
		336	2.66	9.80	-1.73	-1.25	9.32	-2.31	-122.96-2.113e+04	-146.23-2.111e+04	-698.82
312	69	328	4.97	0.04	-0.50	0.03	-0.48	0.09	417.33-3.987e+04	-1171.22-3.828e+04	-7840.94
		329	4.18	0.05	-0.64	0.04	-0.63	0.07	217.52-3.359e+04	-53.55-3.332e+04	-3015.04
		337	2.41	0.09	-0.15	-0.14	0.09	0.02	-397.74-1.966e+04	-397.93-1.966e+04	-59.71
		336	2.61	0.15	-0.58	0.05	-0.49	0.25	-124.90-2.110e+04	-148.15-2.108e+04	-697.86
313	1	76	22.65	11.21	-5.06	6.13	0.02	7.54	-1.275e+05-2.093e+05	-1.865e+05-1.504e+05	
3.669e+04		330	27.28	0.83	-2.41	-1.33	-0.26	1.53	-1.118e+05-2.534e+05	-2.060e+05-1.592e+05	
6.686e+04		82	16.16	5.42	-3.11	-0.94	3.25	3.72	-6.064e+04-1.495e+05	-1.495e+05-6.065e+04	-1031.61
		77	56.62	3.23	-10.73	-7.75	0.25	5.72	-9.112e+04-4.950e+05	-4.177e+05-1.684e+05	
1.589e+05		76	19.17	9.48	-4.28	5.19	0.01	6.38	-1.079e+05-1.771e+05	-1.578e+05-1.272e+05	
3.104e+04	3	330	23.09	0.70	-2.04	-1.12	-0.22	1.29	-9.456e+04-2.144e+05	-1.743e+05-1.347e+05	
5.657e+04		82	13.67	4.59	-2.63	-0.79	2.75	3.15	-5.131e+04-1.265e+05	-1.265e+05-5.132e+04	-872.90
		77	47.91	2.73	-9.08	-6.56	0.21	4.84	-7.710e+04-4.188e+05	-3.535e+05-1.425e+05	
1.344e+05		76	17.66	1.67	-54.87	-54.16	0.96	6.30	-9.867e+04-1.616e+05	-1.441e+05-1.162e+05	
2.820e+04	7	330	21.14	76.60	-39.71	-35.69	72.58	-21.25	-8.645e+04-1.957e+05	-1.592e+05-1.229e+05	
5.153e+04		82	12.86	51.55	-85.17	-84.08	50.47	-12.14	-4.696e+04-1.156e+05	-1.156e+05-4.697e+04	-895.32
		77	44.16	56.13	-97.18	-91.61	50.56	28.69	-7.052e+04-3.824e+05	-3.229e+05-1.301e+05	
1.226e+05		76	17.51	2.24	-18.63	-16.75	0.36	5.98	-9.831e+04-1.612e+05	-1.437e+05-1.159e+05	
2.821e+04	39	330	21.03	27.52	-14.85	-13.66	26.33	-7.00	-8.614e+04-1.952e+05	-1.588e+05-1.226e+05	
5.147e+04		82	12.59	20.12	-31.24	-31.11	19.98	-2.61	-4.676e+04-1.152e+05	-1.152e+05-4.677e+04	-830.65
		77	43.78	21.55	-40.17	-37.18	18.55	13.25	-7.025e+04-3.814e+05	-3.219e+05-1.297e+05	
1.223e+05		76	17.43	8.62	-3.89	4.71	0.01	5.80	-9.811e+04-1.610e+05	-1.434e+05-1.157e+05	
2.822e+04	69	330	20.99	0.64	-1.85	-1.02	-0.20	1.18	-8.596e+04-1.950e+05	-1.585e+05-1.224e+05	
5.143e+04		82	12.43	4.17	-2.39	-0.72	2.50	2.86	-4.664e+04-1.150e+05	-1.150e+05-4.665e+04	-793.55
		77	43.55	2.49	-8.25	-5.96	0.19	4.40	-7.009e+04-3.808e+05	-3.213e+05-1.295e+05	
1.222e+05		330	21.44	4.38	-2.85	-0.08	1.61	3.51	-1.219e+05-1.979e+05	-1.790e+05-1.407e+05	
3.282e+04	1	331	14.27	1.71	-3.35	-0.73	-0.91	2.53	-8.769e+04-1.303e+05	-1.041e+05-1.138e+05	
2.073e+04		84	13.82	2.43	-3.02	-1.92	1.33	2.18	-5.899e+04-1.285e+05	-1.110e+05-7.643e+04	
3.012e+04		82	23.01	2.96	-5.07	-3.05	0.94	3.48	-8.409e+04-2.126e+05	-1.894e+05-1.072e+05	
4.938e+04											

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

314	3	330	18.14	3.70	-2.41	-0.07	1.36	2.97-1.031e+05-1.674e+05-1.515e+05-1.191e+05	
2.777e+04		331	12.08	1.45	-2.83	-0.61	-0.77	2.14-7.420e+04-1.102e+05-8.812e+04-9.631e+04	
1.754e+04		84	11.69	2.05	-2.55	-1.63	1.13	1.84-4.992e+04-1.087e+05-9.395e+04-6.467e+04	
2.548e+04		82	19.47	2.50	-4.29	-2.58	0.80	2.95-7.115e+04-1.799e+05-1.603e+05-9.074e+04	
4.178e+04		330	16.77	80.16	-94.48	-92.97	78.65	16.18-9.424e+04-1.528e+05-1.384e+05-1.087e+05	
314	7	331	11.15	2.61	-59.68	-57.60	0.53	11.19-6.782e+04-1.006e+05-8.049e+04-8.790e+04	
2.524e+04		84	10.79	30.95	-55.36	-55.16	30.74	-4.18-4.569e+04-9.922e+04-8.581e+04-5.910e+04	
1.595e+04		82	17.95	45.29	-61.81	-61.81	45.29	0.27-6.511e+04-1.642e+05-1.464e+05-8.290e+04	
2.319e+04		330	16.59	30.36	-34.83	-33.93	29.46	7.62-9.392e+04-1.524e+05-1.380e+05-1.084e+05	
3.804e+04		331	11.04	1.01	-22.61	-21.35	-0.25	5.31-6.759e+04-1.003e+05-8.025e+04-8.768e+04	
2.524e+04	39	84	10.69	11.87	-21.05	-21.05	11.86	-0.46-4.549e+04-9.896e+04-8.556e+04-5.890e+04	
1.595e+04		82	17.79	17.05	-24.11	-24.03	16.97	1.80-6.484e+04-1.638e+05-1.460e+05-8.264e+04	
2.318e+04		330	16.49	3.37	-2.19	-0.06	1.24	2.70-9.374e+04-1.522e+05-1.377e+05-1.082e+05	
3.800e+04		331	10.98	1.31	-2.57	-0.56	-0.70	1.94-6.745e+04-1.002e+05-8.011e+04-8.755e+04	
2.524e+04	69	84	10.63	1.87	-2.32	-1.48	1.03	1.68-4.538e+04-9.882e+04-8.541e+04-5.879e+04	
1.595e+04		82	17.70	2.28	-3.90	-2.35	0.72	2.68-6.469e+04-1.635e+05-1.457e+05-8.249e+04	
2.317e+04		331	13.93	2.38	-2.52	-0.12	-0.02	2.45-8.848e+04-1.264e+05-1.041e+05-1.108e+05	
3.798e+04		332	9.09	0.76	-2.03	-0.60	-0.66	1.40-5.176e+04-8.386e+04-5.333e+04-8.229e+04	6914.45
1.867e+04		86	8.81	1.35	-2.35	-1.77	0.76	1.35-3.608e+04-8.178e+04-6.182e+04-5.604e+04	
2.267e+04		84	14.30	1.91	-3.41	-2.21	0.71	2.22-5.978e+04-1.328e+05-1.131e+05-7.953e+04	
3.244e+04		331	11.79	2.02	-2.13	-0.10	-0.02	2.07-7.487e+04-1.070e+05-8.809e+04-9.374e+04	
1.579e+04	3	332	7.69	0.65	-1.72	-0.51	-0.56	1.18-4.380e+04-7.095e+04-4.513e+04-6.963e+04	5850.69
1.918e+04		86	7.45	1.14	-1.99	-1.50	0.65	1.14-3.053e+04-6.920e+04-5.231e+04-4.742e+04	
2.745e+04		84	12.10	1.61	-2.89	-1.87	0.60	1.88-5.058e+04-1.124e+05-9.568e+04-6.729e+04	
1.435e+04		331	10.82	30.89	-57.89	-56.84	29.84	9.59-6.844e+04-9.758e+04-8.047e+04-8.556e+04	
1.746e+04		332	7.04	21.54	-47.89	-46.60	20.24	9.40-4.003e+04-6.474e+04-4.122e+04-6.355e+04	5294.01
2.499e+04		86	6.84	26.28	-46.55	-46.18	25.91	-5.18-2.795e+04-6.315e+04-4.777e+04-4.334e+04	
1.436e+04		84	11.15	25.67	-53.33	-53.11	25.46	-4.10-4.629e+04-1.026e+05-8.739e+04-6.149e+04	
1.744e+04		331	10.76	11.55	-21.46	-20.78	10.87	4.69-6.820e+04-9.736e+04-8.022e+04-8.534e+04	
2.497e+04		332	7.00	7.73	-17.96	-17.28	7.06	4.11-3.989e+04-6.459e+04-4.109e+04-6.339e+04	5309.77
2.496e+04	39	86	6.80	9.87	-17.75	-17.70	9.82	-1.23-2.783e+04-6.300e+04-4.763e+04-4.319e+04	
1.436e+04		84	11.05	9.63	-20.45	-20.44	9.63	-0.41-4.610e+04-1.023e+05-8.713e+04-6.129e+04	
1.744e+04		331	10.72	1.83	-1.94	-0.09	-0.01	1.88-6.806e+04-9.723e+04-8.008e+04-8.522e+04	
2.496e+04		332	6.99	0.59	-1.56	-0.46	-0.51	1.07-3.982e+04-6.450e+04-4.102e+04-6.330e+04	5318.81
1.488e+04		86	6.78	1.04	-1.81	-1.36	0.59	1.04-2.776e+04-6.291e+04-4.756e+04-4.311e+04	
2.272e+04		84	11.00	1.47	-2.62	-1.70	0.54	1.71-4.598e+04-1.022e+05-8.698e+04-6.118e+04	
1.488e+04		332	9.01	0.99	-1.73	-0.40	-0.34	1.36-5.216e+04-8.299e+04-5.364e+04-8.151e+04	6595.48
2.272e+04	1	333	6.51	0.11	-1.19	-0.58	-0.51	0.65-2.556e+04-6.034e+04-2.556e+04-6.034e+04	-211.15
		88	5.25	0.70	-1.72	-1.59	0.57	0.54-1.793e+04-4.834e+04-2.999e+04-3.629e+04	
		86	8.89	1.15	-2.19	-1.64	0.61	1.23-3.671e+04-8.260e+04-6.283e+04-5.648e+04	

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

316	3	332	7.62	0.84	-1.47	-0.34	-0.29	1.15-4.413e+04-7.022e+04-4.539e+04-6.897e+04	5580.79			
		333	5.50	0.09	-1.01	-0.49	-0.43	0.55-2.163e+04-5.106e+04-2.163e+04-5.106e+04	-178.67			
		88	4.44	0.59	-1.45	-1.34	0.48	0.46-1.517e+04-4.091e+04-2.538e+04-3.070e+04				
1.259e+04		86	7.53	0.98	-1.85	-1.39	0.51	1.04-3.106e+04-6.989e+04-5.317e+04-4.779e+04				
1.923e+04		316	23	332	6.95	16.38	-23.82	-18.09	10.65	14.06-4.012e+04-6.404e+04-4.131e+04-6.285e+04	5200.70	
		333	5.07	17.31	-20.64	-14.92	-14.92	11.59	13.57-1.968e+04-4.652e+04-1.968e+04-4.652e+04	-69.50		
		88	4.07	21.54	-16.31	-14.14	19.37	8.79-1.371e+04-3.732e+04-2.311e+04-2.792e+04				
1.156e+04		86	6.91	18.07	-17.42	-14.87	15.52	9.17-2.814e+04-6.375e+04-4.842e+04-4.347e+04				
1.763e+04		316	55	332	6.94	6.28	-9.35	-6.79	3.71	5.79-4.012e+04-6.391e+04-4.128e+04-6.275e+04	5119.83	
		333	5.03	6.29	-8.03	-5.72	-5.72	3.98	5.27-1.967e+04-4.645e+04-1.967e+04-4.645e+04	-128.55		
		88	4.05	8.19	-6.79	-5.93	7.34	3.47-1.376e+04-3.724e+04-2.308e+04-2.791e+04				
1.149e+04		86	6.87	7.12	-7.39	-6.22	5.96	3.94-2.820e+04-6.362e+04-4.836e+04-4.345e+04				
1.753e+04		316	69	332	6.93	0.76	-1.33	-0.31	-0.27	1.05-4.012e+04-6.384e+04-4.126e+04-6.270e+04	5073.44	
		333	5.00	0.08	-0.92	-0.44	-0.39	0.50-1.966e+04-4.642e+04-1.966e+04-4.642e+04	-162.42			
		88	4.04	0.54	-1.32	-1.22	0.44	0.42-1.379e+04-3.719e+04-2.307e+04-2.791e+04				
1.144e+04		86	6.84	0.89	-1.68	-1.26	0.47	0.95-2.824e+04-6.354e+04-4.833e+04-4.345e+04				
1.748e+04		317	1	333	6.46	-0.06	-1.14	-0.59	-0.61	0.54-2.528e+04-5.995e+04-2.528e+04-5.995e+04	-399.94	
		334	5.13	-0.33	-0.64	-0.33	-0.64	-0.02-1.174e+04-4.596e+04-1.212e+04-4.559e+04	-3551.03			
		90	3.10	0.07	-1.60	-1.52	-4.12e-03	-0.35	-6197.75-2.748e+04-1.251e+04-2.116e+04	9721.16		
		88	5.35	0.92	-1.32	-1.23	0.84	0.43-1.833e+04-4.924e+04-3.090e+04-3.667e+04				
1.518e+04		317	3	333	5.47	-0.05	-0.97	-0.50	-0.51	0.46-2.139e+04-5.073e+04-2.139e+04-5.072e+04	-338.41	
		334	4.34	-0.28	-0.54	-0.28	-0.54	-0.01	-9935.92-3.889e+04-1.025e+04-3.858e+04	-3004.72		
		90	2.62	0.06	-1.36	-1.29	-3.49e-03	-0.30	-5244.25-2.325e+04-1.059e+04-1.791e+04	8225.59		
		88	4.52	0.78	-1.12	-1.04	0.71	0.37-1.551e+04-4.166e+04-2.615e+04-3.103e+04				
1.285e+04		317	7	333	5.10	24.88	-30.54	-29.35	23.69	8.03-1.953e+04-4.630e+04-1.953e+04-4.630e+04	-338.61	
		334	4.10	24.51	-21.79	-21.19	23.91	5.24	-9061.73-3.549e+04	-9352.84-3.520e+04	-2758.48	
		90	2.49	25.50	-29.11	-28.19	24.59	-7.00	-4766.78-2.122e+04	-9606.91-1.638e+04	7498.74	
		88	4.19	27.80	-31.29	-30.02	26.53	-8.58-1.420e+04-3.802e+04-2.386e+04-2.836e+04				
1.169e+04		317	39	333	5.02	8.85	-11.50	-10.99	8.34	3.19-1.948e+04-4.618e+04-1.948e+04-4.618e+04	-318.93	
		334	4.00	8.62	-8.10	-7.88	8.40	1.90	-9043.26-3.540e+04	-9331.49-3.512e+04	-2741.37	
		90	2.42	9.33	-11.39	-11.02	8.96	-2.73	-4767.27-2.117e+04	-9618.78-1.632e+04	7485.44	
		88	4.14	10.47	-11.93	-11.55	10.08	-2.92-1.414e+04-3.793e+04-2.380e+04-2.826e+04				
1.168e+04		317	69	333	4.97	-0.04	-0.88	-0.45	-0.47	0.42-1.945e+04-4.612e+04-1.945e+04-4.611e+04	-307.64	
		334	3.95	-0.25	-0.49	-0.25	-0.49	-0.01	-9032.66-3.536e+04	-9319.23-3.507e+04	-2731.56	
		90	2.38	0.06	-1.23	-1.17	-3.17e-03	-0.27	-4767.50-2.114e+04	-9625.60-1.628e+04	7477.81	
		88	4.11	0.71	-1.01	-0.95	0.64	0.33-1.410e+04-3.788e+04-2.377e+04-2.821e+04				
1.168e+04		318	1	334	5.09	-0.15	-3.11	-0.58	-2.68	-1.04-1.134e+04-4.547e+04-1.166e+04-4.515e+04	-3297.72	
		335	4.26	2.73	-1.45	-1.15	0.13	2.03	-4810.95-3.651e+04	-5672.79-3.564e+04	-5155.00	
		92	1.88	1.01	-8.80	-1.29	-6.50	-4.16	1548.04-1.421e+04	-3521.58	-9139.63	
		90	3.19	3.39	-1.41	-1.41	3.38	0.15	-6726.33-2.833e+04-1.302e+04-2.203e+04	9815.59		
		318	3	334	4.31	-0.13	-2.63	-0.49	-2.27	-0.88	-9595.29-3.848e+04	-9867.43-3.821e+04
		335	3.61	2.31	-1.23	0.98	0.11	1.72	-4070.80-3.089e+04	-4800.05-3.016e+04	-4361.92	
		92	1.59	0.86	-7.45	-1.09	-5.50	-3.52	1309.88-1.202e+04	-2979.80	-7733.53	
		90	2.70	2.87	-1.20	-1.19	2.86	0.13	-5691.51-2.397e+04-1.102e+04-1.864e+04	8305.50		
		318	7	334	4.05	22.91	-21.71	-21.04	22.24	5.43	-8743.97-3.510e+04	-8993.90-3.485e+04
		335	3.43	26.48	-12.02	-11.00	25.46	6.19	-3773.97-2.821e+04	-4455.89-2.752e+04	-4024.39	
		92	1.58	21.67	-23.17	-20.80	19.29	-10.04	1370.29-1.101e+04	-2537.22	-7103.80	
		90	2.58	30.38	-21.40	-19.86	28.83	-8.80	-5181.99-2.188e+04-1.000e+04-1.706e+04	7566.32		
		318	39	334	3.96	6.94	-8.10	-7.95	6.80	1.47	-8730.64-3.502e+04	-8978.96-3.478e+04
		335	3.33	10.12	-4.22	-3.44	9.35	3.25	-3727.46-2.813e+04	-4397.30-2.746e+04	-3986.89	
		92	1.49	6.12	-10.48	-8.22	3.86	-5.69	1256.11-1.096e+04	-2646.32	-7057.21	
		90	2.50	12.64	-8.41	-7.93	12.16	-3.14	-5177.01-2.182e+04-1.001e+04-1.699e+04	7556.24		
		318	69	334	3.92	-0.12	-2.39	-0.44	-2.06	-0.80	-8722.99-3.498e+04	-8970.39-3.473e+04
		335	3.28	2.10	-1.11	0.89	0.10	1.56	-3700.73-2.808e+04	-4363.69-2.742e+04	-3965.38	
		92	1.45	0.78	-6.77	-1.00	-5.00	-3.20	1190.80-1.093e+04	-2708.90	-7030.48	
		90	2.45	2.61	-1.09	-1.08	2.60	0.12	-5174.10-2.179e+04-1.002e+04-1.695e+04	7550.45		
		319	1	335	4.22	1.91	-0.87	0.74	0.30	-1.37	-5116.83-3.633e+04	-5689.05-3.575e+04
		336	3.46	0.23	-3.33	-0.49	-2.61	1.43	24.65-2.784e+04	-787.02-2.703e+04	-4685.83	
		94	1.04	3.32	-0.32	-0.27	3.27	-0.39	1091.90	-7710.35	-898.46	
		92	1.61	1.10	-8.01	-0.37	-6.55	3.35	-79.42-1.273e+04	-3749.79	-9056.25	
										5740.06		

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

319	3	335	3.57	1.61	-0.74	0.62	0.25	-1.16	-4329.63-3.074e+04	-4813.81-3.025e+04	-3542.92	
		336	2.93	0.20	-2.82	-0.41	-2.21	1.21	20.86-2.356e+04	-665.94-2.287e+04	-3964.93	
		94	0.88	2.81	-0.27	-0.23	2.77	-0.33	923.92 -6524.14	-760.23 -4840.00	3115.65	
		92	1.36	0.93	-6.78	-0.31	-5.54	2.83	-67.20-1.077e+04	-3172.90 -7662.98	4856.97	
319	7	335	3.41	25.93	-14.76	-14.19	25.37	4.78	-3815.82-2.806e+04	-4272.06-2.760e+04	-3294.10	
		336	2.80	25.32	-8.09	-6.89	24.13	6.21	12.66-2.152e+04	-606.25-2.090e+04	-3597.71	
		94	0.93	27.24	-12.16	-10.97	26.06	-6.73	815.40 -5952.64	-709.01 -4428.23	2827.28	
		92	1.34	22.51	-10.32	-8.93	21.12	-6.61	-109.10-1.004e+04	-3063.31 -7084.27	4539.40	
319	38	335	3.30	6.60	-9.58	5.95	-8.93	-3.18	-3979.81-2.790e+04	-4414.16-2.747e+04	-3194.12	
		336	2.71	2.04	-11.57	2.00	-11.53	-0.76	21.27-2.138e+04	-605.09-2.075e+04	-3606.95	
		94	0.83	4.12	-6.47	3.71	-6.06	2.04	848.87 -5923.17	-684.60 -4389.70	2834.28	
		92	1.28	4.69	-16.39	2.87	-14.57	5.92	-43.27 -9699.33	-2819.25 -6923.35	4370.24	
319	69	335	3.25	1.47	-0.67	0.57	0.23	-1.06	-3936.03-2.794e+04	-4376.19-2.750e+04	-3220.83	
		336	2.66	0.18	-2.56	-0.38	-2.00	1.10	18.96-2.141e+04	-605.40-2.079e+04	-3604.48	
		94	0.80	2.55	-0.24	-0.21	2.52	-0.30	839.92 -5931.04	-691.12 -4400.00	2832.41	
		92	1.24	0.84	-6.16	-0.28	-5.04	2.57	-61.09 -9789.71	-2884.45 -6966.34	4415.43	
320	1	336	3.51	0.12	-0.95	-0.23	-0.60	0.50	-651.80-2.863e+04	-1537.37-2.774e+04	-4898.08	
		337	2.85	0.16	-0.39	0.05	-0.28	0.22	-173.45-2.308e+04	-183.24-2.307e+04	-473.33	
		96	0.72	0.44	-0.22	-0.20	0.42	-0.11	-754.23 -6112.37	-967.39 -5899.21	-1047.22	
		94	0.91	0.05	-0.12	0.05	-0.12	-0.01	1404.62 -6527.46	-896.95 -4225.89	3599.86	
320	3	336	2.97	0.10	-0.81	-0.19	-0.51	0.43	-551.53-2.422e+04	-1300.86-2.347e+04	-4144.53	
		337	2.41	0.14	-0.33	0.04	-0.23	0.19	-146.77-1.953e+04	-155.05-1.952e+04	-400.51	
		96	0.61	0.37	-0.18	-0.17	0.36	-0.09	-638.20 -5172.00	-818.56 -4991.64	-886.11	
		94	0.77	0.04	-0.10	0.04	-0.10	-0.01	1188.52 -5523.24	-758.96 -3575.76	3046.04	
320	7	336	2.85	26.58	-8.24	-6.87	25.21	6.76	-491.83-2.211e+04	-1174.06-2.143e+04	-3779.46	
		337	2.33	28.26	-1.90	-0.23	26.59	6.90	-136.29-1.783e+04	-143.82-1.783e+04	-364.92	
		96	0.65	24.46	-5.34	-3.98	23.10	-6.22	-579.16 -4746.24	-741.95 -4583.45	-807.38	
		94	0.83	27.99	-4.91	-2.37	25.45	-8.77	1057.11 -5082.98	-719.29 -3306.58	2784.18	
320	39	336	2.75	9.50	-3.22	-2.62	8.90	2.71	-497.90-2.205e+04	-1179.48-2.137e+04	-3772.02	
		337	2.24	10.23	-0.73	-0.06	9.56	2.63	-134.47-1.778e+04	-142.00-1.778e+04	-364.40	
		96	0.59	9.13	-2.05	-1.55	8.63	-2.32	-579.81 -4718.01	-743.35 -4554.48	-806.22	
		94	0.75	10.15	-1.78	-0.84	9.22	-3.20	1071.96 -5043.68	-700.66 -3271.06	2774.61	
320	69	336	2.70	0.09	-0.73	-0.18	-0.46	0.39	-501.39-2.202e+04	-1182.60-2.134e+04	-3767.76	
		337	2.19	0.13	-0.30	0.04	-0.21	0.17	-133.43-1.776e+04	-140.95-1.775e+04	-364.10	
		96	0.55	0.34	-0.17	-0.15	0.32	-0.08	-580.18 -4701.82	-744.15 -4537.86	-805.56	
		94	0.70	0.04	-0.09	0.04	-0.09	-0.01	1080.47 -5021.13	-689.96 -3250.69	2769.13	
<b>Elem.</b>		<b>Von Mises</b>	<b>N max</b>	<b>N min</b>	<b>N 1</b>	<b>N 2</b>	<b>N 1-2</b>	<b>M max</b>	<b>M min</b>	<b>M 1</b>	<b>M 2</b>	<b>M 1-2</b>
2.542e+05				-161.71	-119.44	-136.60	-92.62		-6.636e+05-4.971e+05-4.510e+05			-
		73.18	175.95		143.99	171.10	84.80	6.474e+05		4.764e+05	3.960e+05	2.474e+05



## VERIFICHE ELEMENTI PARETE E/O GUSCIO IN C.A.

### LEGENDA TABELLA VERIFICHE ELEMENTI PARETE E GUSCIO IN C.A.

Per le pareti in c.a., in ottemperanza al cap. 7 del DM 17-01-18, viene effettuata una doppia progettazione: sia come *Singolo Elemento* sia come *Parete Sismica* o *Parete Debolmente Armata*.

Per la progettazione come *Singolo Elemento* di ogni elemento vengono riportati il codice dello stato di verifica con le sigle **Ok** e **NV**, il rapporto  $x/d$ , la verifica per sollecitazioni ultime (verifica a compressione media gli sforzi membranali, verifica a presso-flessionale e verifica a sollecitazioni taglianti), gli sforzi membranali e flessionali, il quantitativo di armatura nella direzione principale e secondaria sia inferiore che superiore e il quantitativo di armatura a taglio.

Per la progettazione come *Parete Sismica* o *Parete Debolmente Armata* vengono riportate invece le caratteristiche geometriche della parete e delle zone dissipative (quest'ultime solo nel caso di parete sismica), i coefficienti di verifica a compressione assiale, presso-flessione e sollecitazioni taglianti.

Inoltre vengono riportate per ogni quota significativa l'armatura principale e secondaria, l'armatura in zona confinata (solo per parete sismica) e non confinata, l'armatura concentrata all'estremità (per pareti debolmente armate), lo sforzo assiale aggiuntivo per  $q$  superiore a 2 e i valori di iniluppo di taglio e momento. Per le pareti debolmente armate viene riportato anche lo stato di verifica relativo alla snellezza.

Le azioni derivate dall'analisi, in ogni combinazione di calcolo, sono elaborate come previsto al punto 7.4.4.5.1: traslazione del momento, incremento e variazione diagramma taglio, incremento e decremento sforzo assiale

La progettazione nel caso dei gusci viene effettuata una progettazione come *Singolo Elemento*, riportando in tabella il rapporto  $x/d$ , la verifica per sollecitazioni ultime, (verifica a compressione media gli sforzi membranali, verifica a presso-flessionale e verifica a sollecitazioni taglianti) di ogni elemento.

Per ogni elemento, viene riportata inoltre la maglia di armatura necessaria in relazione alle risultanze della progettazione dei nodi dell'elemento stesso. Le quantità di armature necessarie sono armature (disposte rispettivamente in direzione principale e secondaria, inferiore e superiore) distribuite nell'elemento ed espresse in centimetri quadri per sviluppo lineare pari ad un metro.

Nel caso dei gusci viene effettuata, inoltre, la verifica a punzonamento, riportando in tabella il codice dello stato di verifica, il coefficiente di verifica per piastre prive di armature a taglio lungo il perimetro resistente e lungo il perimetro del pilastro, coefficiente di incremento dovuto ai momenti flettenti, fattore di amplificazione per le fondazioni, il fattore di amplificazione dell'altezza utile per individuare il perimetro di verifica lungo il quale l'armatura a taglio non è richiesta, il quantitativo di armatura a punzonamento, il numero di serie di armature, il numero di braccia di armatura ed il riferimento alla combinazione più gravosa.

### Simbologia adottata nelle tabelle di verifica

**Per gli elementi con progettazione "Singolo Elemento ..." è presente una tabella con i simboli di seguito descritti:**

Macro Guscio	Numero del macroelemento di tipo guscio (elementi non verticali contigui ed analoghi per proprietà)
Macro Setto	Numero del macroelemento di tipo setto (elementi verticali contigui ed analoghi per proprietà)
Spessore	Spessore della parete
Id Materiale	Codice del materiale assegnato all'elemento
Id Criterio	Codice del criterio di progetto assegnato all'elemento
Progettazione	Sigla tipo di Elemento: - Singolo Elemento; - Singolo Elemento FONDAZIONE; - Singolo Elemento NON DISSIPATIVO

**Per gli elementi con progettazione "Parete Sismica o Parete Debolmente Armata" è presente una tabella con i simboli di seguito descritti:**

Parete	Numero della PARETE SISMICA
Parete PDA	Numero della PARETE DEBOLMENTE ARMATA
H totale	Altezza complessiva della parete
Spessore	Spessore della parete
H critica	Altezza come da punto 7.4.4.5.1 per traslazione momento (solo in Parete Sismica)
H critica V	Altezza della zona dissipativa (solo in Parete Sismica)
L totale	Larghezza di base della parete
L confinata	Lunghezza della zona dissipativa (solo in Parete Sismica)
Verif. N	Verifica di cui al punto 7.4.4.5.1 compressione semplice
Verif. N-M	Verifica di cui al punto 7.4.4.5.1 presso-flessione
Fattore V	Fattore di amplificazione del taglio di cui al punto 7.4.4.5.1
Diagramma V	Diagramma elaborato per effetto modi superiori come da fig. 7.4.4
Verif. V	Verifica di cui al punto 7.4.4.5.1 taglio (compressione cls, trazione acciaio, scorrimento in zona critica) (solo in Parete Sismica)
Verifica Snellezza	Verifica di cui al punto 7.4.4.5.1 limitazione compressione per prevenire l'instabilità (solo in Parete Debolmente Armata)
Prog. composta	Sigla per la progettazione composta



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

**Per le verifiche degli elementi con progettazione "Singolo Elemento ..." e Progettazione Composta è presente una tabella con i simboli di seguito descritti:**

Nodo	numero del nodo
Stato	codice di verifica dell'elemento <b>ok</b> o <b>NV</b>
x/d	rapporto tra posizione dell'asse neutro e altezza utile alla rottura della sezione (per sola flessione)
V N/M	Verifica delle sollecitazioni Normali (momento e sforzo normale)
Ver. rid	Rapporto Nd/Nu (Nu ottenuto con riduzione del 25% di fcd)
Af pr+	quantità di armatura richiesta in direzione principale relativa alla faccia positiva (estradosso piastre) (valore derivante da calcolo o minimo normativo)
Af pr-	quantità di armatura richiesta in direzione principale relativa alla faccia negativa (intradosso piastre) (valore derivante da calcolo o minimo normativo)
Af sec+	quantità di armatura richiesta in direzione secondaria relativa alla faccia positiva (estradosso piastre) (valore derivante da calcolo o minimo normativo)
Af sec-	quantità di armatura richiesta in direzione secondaria relativa alla faccia negativa (intradosso piastre) (valore derivante da calcolo o minimo normativo)
Nz No Nzo	Sforzi membranali per pareti e/o setti verticali
Mz Mo Mzo	Sforzi flessionali per pareti e/o setti verticali
Nx Ny Nxy	Sforzi membranali per gusci orizzontali
Mx Mx Mxy	Sforzi flessionali per gusci orizzontali

Nodo	numero del nodo
Stato	codice di verifica dell'elemento <b>ok</b> o <b>NV</b>
Max tau	Tensione tangenziale Massima
Ver V pr	Verifica a taglio nella direzione principale lato calcestruzzo
Ver V sec	Verifica a taglio nella direzione secondaria lato calcestruzzo
Af V pr	Armatura nella direzione principale
V pr-	Verifica dell'armatura nella direzione principale
Af V sec	Armatura nella direzione secondaria
V sec-	Verifica dell'armatura nella direzione secondaria

**Per le verifiche degli elementi con progettazione "Parete Sismica o Parete Debolmente Armata", oltre alla tabella con le verifiche per gli elementi con progettazione "Singolo Elemento ...", è presente una tabella con i simboli di seguito descritti:**

Quota	Ascissa verticale di riferimento
Af conf.	Numero e diametro armatura presente in una zona confinata
Af std	Diametro e passo armatura in zona non confinata (doppia maglia)
Af estremi	Diametro dei ferri di estremità del pannello; se posto uguale 0, viene utilizzato il diametro standard
Af V (ori)	Diametro e passo armatura orizzontale (doppia maglia)
Ver. N	Rapporto tra azione di calcolo e resistenza a compressione (normalizzato a 1 in quanto da confrontare con 40% in CDB e 35 % in CDA)
Ver. N/M	Rapporto tra azione di calcolo e resistenza a pressoflessione
Ver. V acc(7)	Rapporto tra azione di calcolo e resistenza a taglio-trazione per alfaS minore di 2 secondo paragrafo 7.4.4.5.1
Ver. V cls	Rapporto tra azione di calcolo e resistenza a taglio-compressione
Ver. V acc	Rapporto tra azione di calcolo e resistenza a taglio-trazione
Ver. V scorr.	Rapporto tra azione di calcolo e resistenza a taglio scorrimento
N add	Sforzo assiale di cui al punto 7.4.4.5.1 da sommare e sottrarre nelle verifiche quando q supera 2
N invil M invil	Involuppo del Momento e Sforzo Normale come al punto 7.4.4.5.1 (informativo) (solo in Parete Sismica)

Quota	Ascissa verticale di riferimento
N v.N	Valore dello sforzo assiale per cui Ver. N attinge il massimo valore
N v.M/N, M v.M/N	Valore dello sforzo assiale e momento per cui Ver. N/M attinge il massimo valore
N v.M/N, M v.M/N Mo v.M/N	Valore dello sforzo assiale e dei momenti per cui Ver. N/M attinge il massimo valore (per le pareti estese debolmente armate)
N v.Vcls, V v.Vcls,	Valore dello sforzo assiale e taglio per cui Ver. V. cls attinge il massimo valore
N v.Vacc, M v.Vacc, V v.Vacc,	Valore dello sforzo assiale, momento e taglio per cui Ver. V. acc attinge il massimo valore
N v.Vscorr, M v.Vscorr, V v.Vscorr,	Valore dello sforzo assiale, momento e taglio per cui Ver. V. scorr.e
N v.N	Valore dello sforzo assiale per cui Ver. N attinge il massimo valore
N v.M/N, M v.M/N	Valore dello sforzo assiale e momento per cui Ver. N/M attinge il massimo valore
N v.M/N, M v.M/N Mo v.M/N	Valore dello sforzo assiale e dei momenti per cui Ver. N/M attinge il massimo valore (per le pareti estese debolmente armate)
N v.Vcls, V v.Vcls,	Valore dello sforzo assiale e taglio per cui Ver. V. cls attinge il massimo valore

Quota	Ascissa verticale di riferimento
CtgT Vcls	Valore di ctg(teta) adottato nella verifica V compressione cls
Vrsd Vcls	Valore della resistenza a taglio trazione (armatura di calcolo)
Vrcd Vcls	Valore della resistenza a taglio compressione
CtgT Vacc	Valore di ctg(teta) adottato nella verifica V trazione armatura
Vrsd Vacc	Valore della resistenza a taglio trazione (armatura presente)
Vrcd Vacc	Valore della resistenza a taglio compressione

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Vdd	Valore del contributo alla resistenza allo scorrimento come da [7.4.20]
Vid	Valore del contributo alla resistenza allo scorrimento come da [7.4.21]
A s.i.	Somma delle aree di armature
Incl.	Angolo di inclinazione delle armature
Dist.	Distanza alla base tra le armature inclinate

Quota	Ascissa verticale di riferimento
V[7.4.16]	Verifica a taglio-trazione dell'armatura dell'anima (7.4.16)
N M V	Sollecitazioni di calcolo della condizione più gravosa
Alfas	Rapporto di Taglio
Vrd,c	Resistenza a taglio degli elementi non armati
VRd,s	Resistenza a taglio nei confronti dello scorrimento
V[7.4.17]	Verifica a taglio-trazione dell'armatura dell'anima (7.4.17)
roH	Rapporto tra l'armatura orizzontale e l'area della sezione relativa di calcestruzzo
roV	Rapporto tra l'armatura verticale e l'area della sezione relativa di calcestruzzo
roN	Sforzo normale adimensionalizzato Ned/(bw fyd)

**Per la verifica a Punzonamento è presente una tabella con i simboli di seguito descritti:**

Nodo	numero del nodo
Stato	codice di verifica dell'elemento <b>ok</b> o <b>NV</b>
V. 6.47	Fattore di sicurezza per la verifica per piastre prive di armature a taglio lungo il perimetro resistente U1
V. 6.53	Fattore di sicurezza per la verifica per piastre prive di armature a taglio lungo il perimetro del pilastro U0
Beta	Fattore di incremento dovuto ai momenti flettenti
f. a fon	fattore di amplificazione per le fondazioni (solo per gusci di fondazione)
f. Uout	fattore di amplificazione dell'altezza utile per individuare il perimetro di verifica lungo il quale l'armatura a taglio non è richiesta
Aw tot	Quantitativo di armatura per la verifica di piastre munite di armatura (formula 6.52 dell'EC2)
Asw,min	Quantitativo minimo di armatura previsto dai dettagli costruttivi (formula 9.11 dell'EC2)
n. x serie	Numero di serie di armature
n.ser 0(R)	Numero di braccia delle armature in direzione 0 (o numero di braccia radiale)
n.ser 90	Numero di braccia delle armature in direzione 90 (solo se armatura cruciforme)
Rif. cmb	Riferimento combinazioni da cui si generano le verifiche più gravose

## PROGETTAZIONE DELLE FONDAZIONI

Il D.M.17/01/2018 - par: 7.2.5 prevede:

"Sia per CD"A" sia per CD"B" il dimensionamento delle strutture di fondazione e la verifica di sicurezza del complesso fondazione-terreno devono essere eseguiti assumendo come azione in fondazione, trasmessa dagli elementi soprastanti, una tra le seguenti:

- > quella derivante dall'analisi strutturale eseguita ipotizzando comportamento strutturale non dissipativo;
- > [...];
- > quella trasferita dagli elementi soprastanti nell'ipotesi di comportamento strutturale dissipativo, amplificata di un coefficiente pari a 1,30 in CD"A" e 1,10 in CD"B";

Nel contesto visualizzazione risultati e nella stampa della relazione sulle fondazioni PRO\_SAP mostra le sollecitazioni che derivano dall'analisi non incrementate sia in termini di pressioni sul terreno che in termini di sollecitazioni.

La progettazione degli elementi strutturali con proprietà fondazione è effettuata da PRO\_SAP (per travi e platee) o da PRO\_CAD Plinti (per plinti e pali di fondazione) incrementando le sollecitazioni delle combinazioni con sisma di un coefficiente pari 1.1 in CDB e 1.3 in CDA per pali, plinti, travi e platee.

Per i bicchieri dei plinti di fondazione prefabbricati l'incremento delle sollecitazioni ha un fattore pari a 1.2 in CDB e 1.35 in CDA.

N.B.: nel caso di comportamento strutturale non dissipativo la progettazione viene effettuata senza nessun incremento.

Le verifiche geotecniche vengono effettuate dal modulo geotecnico incrementando automaticamente le sollecitazioni del fattore 1.1 in CDB e 1.3 in CDA per pali, plinti, travi e platee.

N.B.: nel caso di comportamento strutturale non dissipativo le verifiche geotecniche vengono effettuate senza nessun incremento.

Macro Guscio	Spessore	Id Materiale	Id Criterio	Progettazione
	cm			
1	220.00	1	2	Singolo elemento

Nodo	Stato	x/d	V N/M	ver. rid	Af pr- Af pr+Af sec-Af sec+	N x daN/cm	N y daN/cm	N xy daN/cm	M x daN	M y daN	M xy daN
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**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	ok	0.03	0.2	2.79e-03	77.0	77.0	77.0	77.0	6.01e-02	4.2	1.1	7.762e+04-1.366e+05-1.516e+04
2	ok	0.03	0.4	4.26e-03	77.0	77.0	77.0	77.0	-5.8	7.0	0.8	1.564e+05-2.650e+05 2759.8
3	ok	0.03	0.5	2.95e-03	77.0	77.0	77.0	77.0	-7.4	10.4	1.9	1.743e+05-2.802e+05-3.490e+04
4	ok	0.03	0.3	4.29e-03	77.0	77.0	77.0	77.0	-9.7	5.6	-1.9	2.007e+05-2.213e+05-1.993e+04
5	ok	0.03	0.2	1.37e-03	77.0	77.0	77.0	77.0	-7.8	3.9	5.6	1.085e+05-9.009e+04-5.721e+04
6	ok	0.03	0.7	3.44e-03	77.0	77.0	77.0	77.0	0.4	2.3	7.0	3.191e+05 1.116e+05-2.300e+05
7	ok	0.03	0.3	2.54e-03	77.0	77.0	77.0	77.0	-2.8	6.6	2.5	1.569e+05 5.236e+04-6.065e+04
8	ok	0.03	0.4	2.42e-03	77.0	77.0	77.0	77.0	5.4	4.1	7.8	1.984e+05 1.614e+04-9.579e+04
9	ok	0.03	0.3	1.66e-03	77.0	77.0	77.0	77.0	-1.1	-3.3	5.8	1.193e+05 1.166e+05-8.885e+04
10	ok	0.03	0.7	2.97e-03	77.0	77.0	77.0	77.0	-2.0	-4.0	6.1	3.132e+05 1.693e+05-1.964e+05
11	ok	0.03	0.4	2.30e-03	77.0	77.0	77.0	77.0	2.3	0.7	4.7	1.853e+05 1.153e+05-7.085e+04
12	ok	0.03	0.5	2.35e-03	77.0	77.0	77.0	77.0	-3.9	-0.6	0.7	2.780e+05 1.199e+05-1.216e+05
13	ok	0.03	0.5	1.64e-03	77.0	82.6	77.0	82.6	9.3	-4.0	4.4	1.830e+05 2.428e+05-1.083e+05
14	ok	0.03	0.8	3.49e-03	77.0	82.6	77.0	82.6	8.8	-4.5	4.5	2.905e+05 3.659e+05-2.140e+05
15	ok	0.03	0.9	3.29e-03	77.0	82.6	77.0	82.6	10.5	-9.8	-0.2	3.933e+05 3.932e+05-2.542e+05
16	ok	0.03	0.4	4.78e-03	77.0	82.6	77.0	82.6	9.6	-6.7	-0.8	2.346e+05 2.316e+05-5.707e+04
17	ok	0.03	0.4	4.77e-03	77.0	82.6	77.0	82.6	7.1	-9.6	0.9	2.317e+05 2.345e+05-5.707e+04
18	ok	0.03	0.5	3.15e-03	77.0	82.6	77.0	82.6	3.7	-2.9	-0.1	2.142e+05 2.142e+05-1.004e+05
19	ok	0.03	0.8	3.07e-03	77.0	77.0	77.0	77.0	-4.6	6.1	-5.7	-1.383e+05-4.229e+05 2.032e+05
20	ok	0.03	0.3	1.63e-03	77.0	77.0	77.0	77.0	-3.3	8.5	-3.5	2.079e+04-1.576e+05 2.813e+04
21	ok	0.03	0.4	9.07e-04	77.0	77.0	77.0	77.0	-4.2	4.0	0.6	1.496e+05-1.852e+05 -470.4
22	ok	0.03	0.5	1.38e-03	77.0	77.0	77.0	77.0	-4.1	6.4	4.6	1.923e+05 1.079e+05-1.581e+05
23	ok	0.03	0.4	1.09e-03	77.0	77.0	77.0	77.0	-0.5	4.6	6.9	1.941e+05 5.988e+04-1.091e+05
24	ok	0.03	0.4	1.46e-03	77.0	77.0	77.0	77.0	4.6	-4.3	2.8	2.318e+05 1.933e+05-1.121e+04
25	ok	0.03	0.4	9.46e-04	77.0	82.6	77.0	82.6	7.2	-3.0	2.4	2.060e+05 1.627e+05-5.674e+04
26	ok	0.03	0.5	1.41e-03	77.0	82.6	77.0	82.6	4.3	-9.1	-4.7	2.428e+05 1.830e+05-1.083e+05
27	ok	0.03	0.8	3.70e-03	77.0	82.6	77.0	82.6	5.1	-8.8	-5.0	3.659e+05 2.904e+05-2.140e+05
28	ok	0.03	0.4	2.15e-03	77.0	77.0	77.0	77.0	-5.6	-5.2	-8.7	-5.614e+04-2.528e+05 7.991e+04
29	ok	0.03	0.3	2.14e-03	77.0	77.0	77.0	77.0	-6.7	3.8	-2.3	-1.010e+05-2.033e+05 4.359e+04
30	ok	0.03	0.5	1.39e-03	77.0	77.0	77.0	77.0	-7.2	4.8	-3.1	-1.529e+05-2.280e+05 1.364e+05
31	ok	0.03	0.5	8.65e-04	77.0	77.0	77.0	77.0	-1.4	10.2	-4.5	-1.514e+04-2.289e+05 1.394e+05
32	ok	0.03	0.4	7.18e-04	77.0	77.0	77.0	77.0	-4.0	-8.1	1.7	2.056e+05 1.327e+05-7.352e+04
33	ok	0.03	0.4	8.92e-04	77.0	77.0	77.0	77.0	2.4	-2.3	1.00e-02	1.851e+05 1.851e+05-1.022e+05
34	ok	0.03	0.4	1.40e-03	77.0	77.0	77.0	77.0	4.4	-4.6	-3.0	1.934e+05 2.317e+05-1.119e+04
35	ok	0.03	0.4	2.49e-03	77.0	77.0	77.0	77.0	-0.6	-2.2	-4.7	1.153e+05 1.852e+05-7.086e+04
36	ok	0.03	0.5	2.43e-03	77.0	77.0	77.0	77.0	0.8	4.2	-1.1	1.200e+05 2.779e+05-1.216e+05
37	ok	0.03	0.8	2.60e-03	77.0	77.0	77.0	77.0	0.7	6.1	-6.7	-1.985e+05-3.875e+05 1.785e+05
38	ok	0.03	0.4	1.54e-03	77.0	77.0	77.0	77.0	0.9	0.8	-6.4	-1.575e+05-1.513e+05 7.297e+04
39	ok	0.03	0.4	1.05e-03	77.0	77.0	77.0	77.0	-5.7	1.0	-5.5	-1.104e+05-2.314e+05 9.766e+04
40	ok	0.03	0.4	6.94e-04	77.0	77.0	77.0	77.0	6.7	3.6	-1.4	-1.830e+05-2.586e+05 5.298e+04
41	ok	0.03	0.7	8.66e-05	77.0	77.0	77.0	77.0	0.5	-0.5	1.16e-02	-3.286e+05-3.286e+05 1.481e+05
42	ok	0.03	0.4	6.92e-04	77.0	77.0	77.0	77.0	8.1	4.0	-1.7	1.328e+05 2.055e+05-7.352e+04
43	ok	0.03	0.4	1.03e-03	77.0	77.0	77.0	77.0	-4.5	0.5	-7.0	5.987e+04 1.940e+05-1.091e+05
44	ok	0.03	0.3	1.61e-03	77.0	77.0	77.0	77.0	3.5	1.2	-5.9	1.166e+05 1.192e+05-8.888e+04
45	ok	0.03	0.7	3.05e-03	77.0	77.0	77.0	77.0	4.3	1.7	-6.2	1.693e+05 3.131e+05-1.964e+05
46	ok	0.03	0.6	2.11e-03	77.0	77.0	77.0	77.0	-1.5	4.6	-2.3	-1.545e+05-3.244e+05 9.810e+04
47	ok	0.03	0.4	2.34e-03	77.0	77.0	77.0	77.0	-3.6	-1.3	-6.1	-1.467e+05-2.267e+05 5.900e+04
48	ok	0.03	0.4	1.30e-03	77.0	77.0	77.0	77.0	3.3	-3.8	-2.6	-2.325e+05-2.756e+05 -5059.5
49	ok	0.03	0.5	8.22e-04	77.0	77.0	77.0	77.0	1.4	-1.6	-3.92e-02	-2.369e+05-2.370e+05 8.941e+04
50	ok	0.03	0.4	6.63e-04	77.0	77.0	77.0	77.0	-3.6	-6.8	1.3	-2.586e+05-1.831e+05 5.298e+04
51	ok	0.03	0.5	8.53e-04	77.0	77.0	77.0	77.0	-10.2	1.4	4.4	-2.288e+05-1.524e+04 1.393e+05
52	ok	0.03	0.5	1.39e-03	77.0	77.0	77.0	77.0	-6.3	4.0	-4.7	1.079e+05 1.923e+05-1.582e+05
53	ok	0.03	0.3	2.16e-03	77.0	77.0	77.0	77.0	-6.6	2.7	-2.7	5.235e+04 1.568e+05-6.067e+04
54	ok	0.03	0.4	2.32e-03	77.0	77.0	77.0	77.0	-3.9	-5.2	-7.7	1.616e+04 1.983e+05-9.580e+04
55	ok	0.03	0.8	2.98e-03	84.5	77.0	84.5	77.0	3.8	-5.9	-5.8	-3.886e+05-3.367e+05 1.879e+05
56	ok	0.03	0.5	1.32e-03	84.5	77.0	84.5	77.0	5.0	-2.5	0.6	-1.926e+05-3.030e+05 8.788e+04
57	ok	0.03	0.4	8.27e-04	84.5	77.0	84.5	77.0	5.7	-2.5	2.0	-2.474e+05-2.047e+05 3.821e+04
58	ok	0.03	0.4	1.31e-03	77.0	77.0	77.0	77.0	3.6	-3.8	2.1	-2.756e+05-2.325e+05 -5053.0
59	ok	0.03	0.4	9.88e-04	77.0	77.0	77.0	77.0	-1.1	5.5	5.3	-2.314e+05-1.105e+05 9.765e+04
60	ok	0.03	0.5	1.29e-03	77.0	77.0	77.0	77.0	-5.0	6.9	3.1	-2.280e+05-1.529e+05 1.363e+05
61	ok	0.03	0.4	8.60e-04	77.0	77.0	77.0	77.0	-4.0	4.3	-0.7	-1.852e+05 1.495e+05 -469.6
62	ok	0.03	0.2	1.49e-03	77.0	77.0	77.0	77.0	-4.1	7.4	-5.9	-9.007e+04 1.084e+05-5.722e+04
63	ok	0.03	0.7	3.49e-03	77.0	77.0	77.0	77.0	-1.7	-1.4	-7.4	1.116e+05 3.190e+05-2.300e+05
64	ok	0.03	0.4	3.82e-03	84.5	77.0	84.5	77.0	4.1	-7.9	1.5	-2.594e+05-2.743e+05 2.540e+04
65	ok	0.03	0.9	2.64e-03	84.5	77.0	84.5	77.0	7.4	-7.5	-0.5	-4.315e+05-4.315e+05 2.321e+05
66	ok	0.03	0.5	1.51e-03	84.5	77.0	84.5	77.0	2.2	-5.9	-1.5	-3.029e+05-1.926e+05 8.788e+04
67	ok	0.03	0.4	2.03e-03	77.0	77.0	77.0	77.0	1.2	3.1	5.7	-2.267e+05-1.467e+05 5.900e+04
68	ok	0.03	0.4	1.48e-03	77.0	77.0	77.0	77.0	-0.8	-1.1	6.2	-1.513e+05-1.576e+05 7.296e+04
69	ok	0.03	0.3	2.28e-03	77.0	77.0	77.0	77.0	-3.9	6.3	2.1	-2.033e+05-1.010e+05 4.359e+04
70	ok	0.03	0.3	1.33e-03	77.0	77.0	77.0	77.0	-8.5	2.7	2.9	-1.575e+05 2.069e+04 2.811e+04
71	ok	0.03	0.5	3.11e-03	77.0	77.0	77.0	77.0	-10.9	6.2	-2.9	-2.802e+05 1.741e+05-3.492e+04
72	ok	0.03	0.3	4.62e-03	77.0	77.0	77.0	77.0	-5.5	10.1	1.8	-2.213e+05 2.006e+05-1.993e+04
73	ok	0.03	0.4	2.49e-03	84.5	77.0	84.5	77.0	1.3	-1.0	-0.5	-2.412e+05-2.412e+05 6.652e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

74	ok	0.03	0.4	3.93e-03	84.5	77.0	84.5	77.0	6.1	-4.9	-1.6-2.743e+05	-2.594e+05	2.540e+04	
75	ok	0.03	0.8	2.94e-03	84.5	77.0	84.5	77.0	4.7	-4.4	4.6-3.367e+05	-3.886e+05	1.879e+05	
76	ok	0.03	0.6	2.09e-03	77.0	77.0	77.0	77.0	-4.2	1.3	1.9-3.244e+05	-1.546e+05	9.810e+04	
77	ok	0.03	0.8	2.67e-03	77.0	77.0	77.0	77.0	-6.7	-0.8	6.3-3.875e+05	-1.986e+05	1.785e+05	
78	ok	0.03	0.4	2.14e-03	77.0	77.0	77.0	77.0	5.1	5.4	8.4-2.528e+05	-5.620e+04	7.991e+04	
79	ok	0.03	0.8	3.34e-03	77.0	77.0	77.0	77.0	-7.6	4.1	5.2-4.228e+05	-1.384e+05	2.031e+05	
80	ok	0.03	0.4	4.44e-03	77.0	77.0	77.0	77.0	-6.1	5.5	-0.5-2.649e+05	1.563e+05	2773.1	
81	ok	0.03	0.2	2.96e-03	77.0	77.0	77.0	77.0	-5.3	-1.3	-1.9-1.366e+05	7.755e+04	-1.515e+04	
82	ok	0.03	0.3	2.49e-03	77.0	77.0	77.0	77.0	-2.4	0.3	3.8-1.800e+05	-1.167e+05	5.589e+04	
83	ok	0.03	0.4	3.74e-03	77.0	77.0	77.0	77.0	-3.8	0.2	5.5-2.319e+05	-8.052e+04	9.658e+04	
84	ok	0.03	0.2	1.58e-03	77.0	77.0	77.0	77.0	-2.1	5.41e-02	2.6-1.075e+05	-8.585e+04	3.683e+04	
85	ok	0.03	0.2	1.83e-03	77.0	77.0	77.0	77.0	-4.9	2.0	3.1-1.111e+05	-4.815e+04	4.306e+04	
86	ok	0.03	0.1	1.36e-03	77.0	77.0	77.0	77.0	-1.4	0.4	1.4-5.875e+04	-6.057e+04	2.293e+04	
87	ok	0.03	0.1	1.47e-03	77.0	77.0	77.0	77.0	-2.6	1.1	0.9-6.783e+04	-2.809e+04	3.309e+04	
88	ok	0.03	7.69e-02	1.08e-03	77.0	77.0	77.0	77.0	-1.1	0.7	0.6-2.825e+04	-3.932e+04	1.443e+04	
89	ok	0.03	8.62e-02	1.16e-03	77.0	77.0	77.0	77.0	-1.6	1.2	0.2-3.856e+04	-1.459e+04	2.595e+04	
90	ok	0.03	4.46e-02	8.17e-04	77.0	77.0	77.0	77.0	-1.3	0.7	0.2-1.145e+04	-2.323e+04	9542.2	
91	ok	0.03	5.13e-02	8.72e-04	77.0	77.0	77.0	77.0	-0.7	2.6	-1.2-1.931e+04	-3347.4	1.993e+04	
92	ok	0.03	2.70e-02	9.45e-04	77.0	77.0	77.0	77.0	-1.7	6.1	-3.0	-2889.6	-1.377e+04	7042.4
93	ok	0.03	2.84e-02	7.16e-04	77.0	77.0	77.0	77.0	-1.3	1.5	5.90e-02	-8624.9	5279.5	1.493e+04
94	ok	0.03	1.33e-02	7.72e-04	77.0	77.0	77.0	77.0	-7.10e-03	0.6	0.8	-845.3	-5544.8	3741.1
95	ok	0.03	2.27e-02	7.14e-04	77.0	77.0	77.0	77.0	-0.8	1.3	0.5	-4465.7	9565.1	9677.8
96	ok	0.03	1.11e-02	6.70e-04	77.0	77.0	77.0	77.0	-0.2	0.4	-5.14e-02	-1192.7	-5673.9	-1468.7
97	ok	0.03	1.02e-02	6.58e-04	77.0	77.0	77.0	77.0	-0.2	0.4	0.3	-2139.9	5057.8	1262.6
98	ok	0.03	0.3	3.11e-03	77.0	77.0	77.0	77.0	-3.5	3.7	-1.9-1.446e+05	-5.133e+04	4.073e+04	
99	ok	0.03	0.2	2.28e-03	77.0	77.0	77.0	77.0	-3.9	3.4	-1.3-1.054e+05	7541.2	2.925e+04	
100	ok	0.03	0.1	1.51e-03	77.0	77.0	77.0	77.0	-3.0	1.5	-0.2-7.432e+04	7116.7	3.018e+04	
101	ok	0.03	9.34e-02	1.14e-03	77.0	77.0	77.0	77.0	-2.1	1.0	-0.3-5.014e+04	1.227e+04	2.630e+04	
102	ok	0.03	6.32e-02	8.71e-04	77.0	77.0	77.0	77.0	-1.5	0.7	-0.4-3.207e+04	1.638e+04	2.182e+04	
103	ok	0.03	4.13e-02	7.02e-04	77.0	77.0	77.0	77.0	-0.7	0.9	-0.1-1.997e+04	1.847e+04	1.699e+04	
104	ok	0.03	3.36e-02	7.35e-04	77.0	77.0	77.0	77.0	-0.5	0.9	-0.2-1.253e+04	1.783e+04	1.114e+04	
105	ok	0.03	9.75e-03	6.72e-04	77.0	77.0	77.0	77.0	-0.3	0.8	6.57e-02	-2243.7	4832.8	126.2
106	ok	0.03	0.2	2.62e-03	77.0	77.0	77.0	77.0	-5.9	5.3	-1.8-1.237e+05	4.015e+04	1.395e+04	
107	ok	0.03	0.2	1.94e-03	77.0	77.0	77.0	77.0	-3.1	3.9	-2.0-9.445e+04	3.732e+04	1.682e+04	
108	ok	0.03	0.1	1.40e-03	77.0	77.0	77.0	77.0	-2.7	1.5	-1.3-7.276e+04	3.496e+04	1.682e+04	
109	ok	0.03	9.04e-02	1.05e-03	77.0	77.0	77.0	77.0	-1.7	0.8	-1.2-5.505e+04	3.275e+04	1.591e+04	
110	ok	0.03	6.81e-02	7.66e-04	77.0	77.0	77.0	77.0	-0.8	-1.7	-0.3-4.084e+04	3.102e+04	1.373e+04	
111	ok	0.03	5.06e-02	7.15e-04	77.0	77.0	77.0	77.0	0.8	-0.1	-1.3-3.011e+04	2.739e+04	1.161e+04	
112	ok	0.03	3.63e-02	7.35e-04	77.0	77.0	77.0	77.0	-0.6	0.4	-0.4-2.011e+04	2.184e+04	7719.5	
113	ok	0.03	6.16e-03	7.31e-04	77.0	77.0	77.0	77.0	-8.19e-02	0.9	-0.2	-2515.6	2159.0	465.8
114	ok	0.03	0.2	2.42e-03	77.0	77.0	77.0	77.0	-4.4	2.8	-2.2-9.557e+04	6.396e+04	-5463.8	
115	ok	0.03	0.1	1.50e-03	77.0	77.0	77.0	77.0	-2.9	1.7	-2.1-7.743e+04	5.678e+04	-3068.4	
116	ok	0.03	0.1	1.20e-03	77.0	77.0	77.0	77.0	-2.1	1.1	-2.0-6.322e+04	5.034e+04	-1420.4	
117	ok	0.03	8.07e-02	9.45e-04	77.0	77.0	77.0	77.0	-1.3	0.5	-1.9-5.133e+04	4.389e+04	-330.8	
118	ok	0.03	6.44e-02	7.36e-04	77.0	77.0	77.0	77.0	-0.5	-0.6	-2.0-4.124e+04	3.768e+04	410.6	
119	ok	0.03	5.11e-02	8.38e-04	77.0	77.0	77.0	77.0	0.9	-7.3	-0.3-3.242e+04	3.267e+04	564.7	
120	ok	0.03	3.71e-02	7.21e-04	77.0	77.0	77.0	77.0	0.9	0.4	-0.3-2.372e+04	2.190e+04	972.9	
121	ok	0.03	6.31e-03	7.61e-04	77.0	77.0	77.0	77.0	0.5	0.4	-0.7	-2015.0	1959.6	413.7
122	ok	0.03	0.2	2.63e-03	77.0	77.0	77.0	77.0	-4.8	4.8	-6.7-9.265e+04	7.688e+04	-2.899e+04	
123	ok	0.03	0.1	1.97e-03	77.0	77.0	77.0	77.0	-4.5	1.1	-3.7-6.631e+04	7.208e+04	-2.521e+04	
124	ok	0.03	0.1	1.40e-03	77.0	77.0	77.0	77.0	-2.2	0.9	-2.5-5.340e+04	6.027e+04	-2.168e+04	
125	ok	0.03	8.29e-02	1.08e-03	77.0	77.0	77.0	77.0	-1.2	0.6	-2.0-4.389e+04	4.945e+04	-1.857e+04	
126	ok	0.03	6.71e-02	8.00e-04	77.0	77.0	77.0	77.0	1.3	0.3	-1.8-3.641e+04	3.982e+04	-1.516e+04	
127	ok	0.03	5.38e-02	6.81e-04	77.0	77.0	77.0	77.0	1.1	-3.5	-1.7-2.946e+04	3.207e+04	-1.224e+04	
128	ok	0.03	3.82e-02	7.41e-04	77.0	77.0	77.0	77.0	0.3	0.6	-1.3-2.035e+04	2.235e+04	-9632.5	
129	ok	0.03	6.72e-03	7.72e-04	77.0	77.0	77.0	77.0	1.0	0.7	-1.1	-1470.0	2828.2	-1160.7
130	ok	0.03	0.2	3.37e-03	77.0	77.0	77.0	77.0	1.4	-2.25e-02	-0.6-1.456e+05	7.133e+04	2.827e+04	
131	ok	0.03	0.2	2.42e-03	77.0	77.0	77.0	77.0	-6.0	-0.3	-2.6-4.023e+04	8.330e+04	-4.209e+04	
132	ok	0.03	0.1	1.58e-03	77.0	77.0	77.0	77.0	-1.6	0.2	-2.8-2.839e+04	6.331e+04	-4.048e+04	
133	ok	0.03	9.61e-02	1.20e-03	77.0	77.0	77.0	77.0	0.1	9.46e-02	-1.9-2.471e+04	4.744e+04	-3.453e+04	
134	ok	0.03	7.40e-02	8.86e-04	77.0	77.0	77.0	77.0	0.7	0.2	-1.3-2.137e+04	3.499e+04	-2.889e+04	
135	ok	0.03	5.59e-02	7.15e-04	77.0	77.0	77.0	77.0	1.2	-0.3	-1.0-1.809e+04	2.547e+04	-2.343e+04	
136	ok	0.03	3.97e-02	7.59e-04	77.0	77.0	77.0	77.0	1.7	0.2	-0.6-1.397e+04	1.719e+04	-1.714e+04	
137	ok	0.03	9.02e-03	7.49e-04	77.0	77.0	77.0	77.0	1.8	0.3	-1.1	914.3	2885.3	-2941.2
138	ok	0.03	0.4	4.06e-03	77.0	77.0	77.0	77.0	-2.3	0.7	-5.9	3.686e+04	1.869e+05	-1.180e+05
139	ok	0.03	0.2	1.96e-03	77.0	77.0	77.0	77.0	2.1	1.1	-5.3	1.714e+04	9.008e+04	-6.241e+04
140	ok	0.03	0.1	1.59e-03	77.0	77.0	77.0	77.0	-4.23e-02	-0.5	-2.9	7107.9	5.937e+04	-5.115e+04
141	ok	0.03	0.1	1.22e-03	77.0	77.0	77.0	77.0	0.2	-0.8	-1.9	3200.1	3.868e+04	-4.291e+04
142	ok	0.03	7.78e-02	8.97e-04	77.0	77.0	77.0	77.0	0.9	-2.87e-02	-1.1	-431.2	2.458e+04	-3.530e+04
143	ok	0.03	5.64e-02	7.21e-04	77.0	77.0	77.0	77.0	0.9	-4.74e-02	-0.7	-2208.9	1.505e+04	-2.828e+04
144	ok	0.03	3.93e-02	7.36e-04	77.0	77.0	77.0	77.0	1.5	0.2	-0.3	-2743.1	8918.1	-2.068e+04
145	ok	0.03	1.16e-02	6.97e-04	77.0	77.0	77.0	77.0	1.9	-1.58e-02	-0.7	4299.3	1910.3	-3675.1
146	ok	0.03	0.3	2.86e-03	77.0	77.0	77.0	77.0	3.7	-0.8	-6.4	9.939e+04	1.198e+05	-8.593e+04

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

147	ok	0.03	0.2	1.83e-03	77.0	77.0	77.0	77.0	1.9	-1.5	-4.6	5.802e+04	8.848e+04	-6.246e+04
148	ok	0.03	0.2	1.51e-03	77.0	77.0	77.0	77.0	1.4	-1.4	-3.3	4.192e+04	5.140e+04	-5.008e+04
149	ok	0.03	0.1	1.19e-03	77.0	77.0	77.0	77.0	0.9	-1.4	-1.9	3.022e+04	2.799e+04	-3.999e+04
150	ok	0.03	7.68e-02	9.03e-04	77.0	77.0	77.0	77.0	0.1	-1.3	-1.3	2.101e+04	1.298e+04	-3.179e+04
151	ok	0.03	5.52e-02	7.90e-04	77.0	77.0	77.0	77.0	-0.8	-1.8	1.2	1.393e+04	4631.7	-2.561e+04
152	ok	0.03	3.67e-02	7.49e-04	77.0	77.0	77.0	77.0	0.9	-0.3	-0.4	9608.7	367.4	-1.791e+04
153	ok	0.03	1.40e-02	7.20e-04	77.0	77.0	77.0	77.0	1.7	-0.2	-0.2	7727.5	644.8	-2898.0
154	ok	0.03	0.4	4.11e-03	77.0	77.0	77.0	77.0	4.0	-2.0	-3.3	1.353e+05	1.607e+05	-9.859e+04
155	ok	0.03	0.2	2.11e-03	77.0	77.0	77.0	77.0	2.5	-3.0	-4.0	9.336e+04	8.409e+04	-5.164e+04
156	ok	0.03	0.1	1.62e-03	77.0	77.0	77.0	77.0	2.5	-2.4	-2.5	6.775e+04	4.499e+04	-3.763e+04
157	ok	0.03	0.1	1.22e-03	77.0	77.0	77.0	77.0	2.0	-1.5	-1.3	4.876e+04	2.074e+04	-2.828e+04
158	ok	0.03	7.14e-02	8.94e-04	77.0	77.0	77.0	77.0	2.3	-0.7	-0.4	3.430e+04	5605.2	-2.135e+04
159	ok	0.03	4.93e-02	7.36e-04	77.0	77.0	77.0	77.0	1.3	-1.4	0.7	2.378e+04	-2283.9	-1.621e+04
160	ok	0.03	3.28e-02	7.74e-04	77.0	77.0	77.0	77.0	1.0	-0.6	-6.32e-02	1.656e+04	-4555.9	-1.067e+04
161	ok	0.03	1.65e-02	7.41e-04	77.0	77.0	77.0	77.0	0.7	6.03e-02	-0.2	9312.5	519.0	1608.8
162	ok	0.03	0.3	3.44e-03	77.0	77.0	77.0	77.0	10.0	-3.6	-4.1	1.583e+05	1.484e+05	-5.893e+04
163	ok	0.03	0.2	2.53e-03	77.0	77.0	77.0	77.0	6.4	-3.2	-0.5	1.107e+05	8.132e+04	-3.170e+04
164	ok	0.03	0.1	1.66e-03	77.0	77.0	77.0	77.0	2.5	-2.5	-1.3	7.682e+04	4.436e+04	-2.016e+04
165	ok	0.03	9.18e-02	1.23e-03	77.0	77.0	77.0	77.0	2.2	-1.5	-0.7	5.482e+04	2.011e+04	-1.228e+04
166	ok	0.03	6.23e-02	8.87e-04	77.0	77.0	77.0	77.0	1.9	-0.8	-0.2	3.829e+04	5157.8	-7331.2
167	ok	0.03	4.22e-02	7.39e-04	77.0	77.0	77.0	77.0	1.6	-0.4	0.2	2.635e+04	-2792.2	-4392.4
168	ok	0.03	2.84e-02	7.73e-04	77.0	77.0	77.0	77.0	1.4	0.3	0.4	1.790e+04	-4753.4	-2488.5
169	ok	0.03	1.88e-02	7.36e-04	77.0	77.0	77.0	77.0	0.7	6.93e-02	-2.63e-02	9471.7	2204.9	4155.7
170	ok	0.03	0.3	2.89e-03	77.0	77.0	77.0	77.0	4.2	-5.5	-3.2	1.758e+05	1.402e+05	-6.005e+04
171	ok	0.03	0.2	2.08e-03	77.0	77.0	77.0	77.0	6.1	-2.9	-0.8	1.041e+05	8.118e+04	-1.722e+04
172	ok	0.03	0.1	1.49e-03	77.0	77.0	77.0	77.0	2.7	-2.3	-0.5	6.961e+04	4.789e+04	-5664.6
173	ok	0.03	7.49e-02	1.12e-03	77.0	77.0	77.0	77.0	1.6	-1.7	-0.2	4.719e+04	2.610e+04	707.0
174	ok	0.03	5.13e-02	8.10e-04	77.0	77.0	77.0	77.0	0.9	-1.1	9.43e-03	3.153e+04	1.168e+04	3889.4
175	ok	0.03	3.52e-02	7.56e-04	77.0	77.0	77.0	77.0	0.5	-0.9	0.3	2.074e+04	3452.3	5003.5
176	ok	0.03	2.48e-02	7.83e-04	77.0	77.0	77.0	77.0	0.8	-0.1	-1.23e-02	1.363e+04	677.4	5146.2
177	ok	0.03	2.03e-02	7.58e-04	77.0	77.0	77.0	77.0	0.5	8.39e-02	-3.29e-02	7956.6	4949.9	5928.5
178	ok	0.03	0.2	2.58e-03	77.0	77.0	77.0	77.0	6.0	-6.4	-0.3	1.239e+05	1.134e+05	-2.421e+04
179	ok	0.03	0.1	1.62e-03	77.0	77.0	77.0	77.0	4.3	-3.3	1.52e-02	8.010e+04	7.849e+04	-8142.9
180	ok	0.03	8.32e-02	1.28e-03	77.0	77.0	77.0	77.0	2.6	-2.4	-8.86e-03	5.208e+04	5.259e+04	877.5
181	ok	0.03	6.07e-02	9.80e-04	77.0	77.0	77.0	77.0	2.0	-1.6	2.92e-02	3.305e+04	3.343e+04	5626.2
182	ok	0.03	4.35e-02	7.32e-04	77.0	77.0	77.0	77.0	1.4	-1.2	9.74e-02	1.982e+04	2.026e+04	7786.3
183	ok	0.03	3.10e-02	7.84e-04	77.0	77.0	77.0	77.0	1.1	-1.2	0.1	1.134e+04	1.200e+04	8136.3
184	ok	0.03	2.29e-02	7.76e-04	77.0	77.0	77.0	77.0	1.0	-0.2	0.4	7693.0	6846.3	7380.8
185	ok	0.03	2.05e-02	7.43e-04	77.0	77.0	77.0	77.0	0.8	0.1	0.6	8019.6	5363.0	6282.2
186	ok	0.03	0.3	2.82e-03	77.0	77.0	77.0	77.0	5.6	-3.6	2.7	1.403e+05	1.758e+05	-6.005e+04
187	ok	0.03	0.2	2.10e-03	77.0	77.0	77.0	77.0	3.3	-5.5	0.6	8.122e+04	1.041e+05	-1.722e+04
188	ok	0.03	0.1	1.47e-03	77.0	77.0	77.0	77.0	2.5	-2.2	0.6	4.792e+04	6.957e+04	-5661.5
189	ok	0.03	7.48e-02	1.09e-03	77.0	77.0	77.0	77.0	2.2	-1.3	0.6	2.612e+04	4.716e+04	709.2
190	ok	0.03	5.12e-02	7.92e-04	77.0	77.0	77.0	77.0	1.6	-0.8	0.4	1.170e+04	3.151e+04	3892.2
191	ok	0.03	3.52e-02	7.78e-04	77.0	77.0	77.0	77.0	1.0	-0.2	0.5	3450.1	2.072e+04	5002.4
192	ok	0.03	2.48e-02	8.09e-04	77.0	77.0	77.0	77.0	0.9	-0.2	0.6	697.0	1.361e+04	5150.1
193	ok	0.03	2.01e-02	7.89e-04	77.0	77.0	77.0	77.0	0.6	0.3	0.6	4948.8	7948.8	5924.7
194	ok	0.03	0.3	3.47e-03	77.0	77.0	77.0	77.0	3.9	-9.4	3.9	1.485e+05	1.583e+05	-5.892e+04
195	ok	0.03	0.2	2.50e-03	77.0	77.0	77.0	77.0	3.5	-5.7	0.3	8.136e+04	1.107e+05	-3.169e+04
196	ok	0.03	0.1	1.62e-03	77.0	77.0	77.0	77.0	2.7	-2.0	1.3	4.438e+04	7.678e+04	-2.016e+04
197	ok	0.03	9.17e-02	1.19e-03	77.0	77.0	77.0	77.0	1.7	-1.4	0.9	2.012e+04	5.478e+04	-1.228e+04
198	ok	0.03	6.22e-02	8.59e-04	77.0	77.0	77.0	77.0	1.0	-0.9	0.5	5169.4	3.825e+04	-7329.5
199	ok	0.03	4.21e-02	7.69e-04	77.0	77.0	77.0	77.0	0.1	-0.6	0.3	-2782.1	2.632e+04	-4391.9
200	ok	0.03	2.84e-02	8.02e-04	77.0	77.0	77.0	77.0	-0.2	-0.3	4.37e-03	-4746.7	1.787e+04	-2489.4
201	ok	0.03	1.85e-02	7.73e-04	77.0	77.0	77.0	77.0	0.3	0.3	0.6	2202.9	9450.6	4148.0
202	ok	0.03	0.4	4.14e-03	77.0	77.0	77.0	77.0	2.0	-3.8	3.1	1.607e+05	1.353e+05	-9.857e+04
203	ok	0.03	0.2	1.93e-03	77.0	77.0	77.0	77.0	3.2	-1.9	3.8	8.411e+04	9.333e+04	-5.164e+04
204	ok	0.03	0.1	1.55e-03	77.0	77.0	77.0	77.0	2.5	-1.8	2.4	4.501e+04	6.772e+04	-3.763e+04
205	ok	0.03	0.1	1.19e-03	77.0	77.0	77.0	77.0	1.4	-1.1	1.5	2.075e+04	4.872e+04	-2.828e+04
206	ok	0.03	7.13e-02	8.71e-04	77.0	77.0	77.0	77.0	0.9	-0.3	1.3	5610.3	3.424e+04	-2.135e+04
207	ok	0.03	4.93e-02	7.55e-04	77.0	77.0	77.0	77.0	-0.9	-1.0	1.4	-2280.0	2.374e+04	-1.622e+04
208	ok	0.03	3.28e-02	7.89e-04	77.0	77.0	77.0	77.0	0.4	0.3	0.2	-4552.6	1.651e+04	-1.067e+04
209	ok	0.03	1.62e-02	7.51e-04	77.0	77.0	77.0	77.0	0.1	0.2	0.4	519.0	9276.6	1602.5
210	ok	0.03	0.3	2.76e-03	77.0	77.0	77.0	77.0	0.5	-3.3	6.0	1.199e+05	9.935e+04	-8.594e+04
211	ok	0.03	0.2	1.81e-03	77.0	77.0	77.0	77.0	1.3	-1.4	4.4	8.849e+04	5.799e+04	-6.247e+04
212	ok	0.03	0.2	1.49e-03	77.0	77.0	77.0	77.0	1.2	-0.8	3.2	5.142e+04	4.188e+04	-5.008e+04
213	ok	0.03	0.1	1.17e-03	77.0	77.0	77.0	77.0	0.8	-0.4	2.2	2.800e+04	3.017e+04	-3.999e+04
214	ok	0.03	7.68e-02	8.89e-04	77.0	77.0	77.0	77.0	0.5	-1.1	1.3	1.299e+04	2.096e+04	-3.178e+04
215	ok	0.03	5.52e-02	8.36e-04	77.0	77.0	77.0	77.0	-0.5	-3.2	3.2	4629.4	1.391e+04	-2.562e+04
216	ok	0.03	3.66e-02	7.72e-04	77.0	77.0	77.0	77.0	0.7	4.61e-02	0.3	370.8	9558.2	-1.791e+04
217	ok	0.03	1.37e-02	7.36e-04	77.0	77.0	77.0	77.0	0.3	-0.8	8.11e-02	645.3	7683.7	-2899.2
218	ok	0.03	0.4	3.73e-03	77.0	77.0	77.0	77.0	-0.7	2.2	5.7	1.869e+05	3.682e+04	-1.180e+05
219	ok	0.03	0.2	2.06e-03	77.0	77.0	77.0	77.0	-1.4	-1.3	5.1	9.008e+04	1.708e+04	-6.241e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

220	ok	0.03	0.1	1.55e-03	77.0	77.0	77.0	77.0	-0.2	0.5	3.1	5.938e+04	7053.3-5.116e+04
221	ok	0.03	0.1	1.18e-03	77.0	77.0	77.0	77.0	-8.69e-02	0.2	2.3	3.870e+04	3150.6-4.291e+04
222	ok	0.03	7.78e-02	8.71e-04	77.0	77.0	77.0	77.0	0.2	-0.5	1.3	2.459e+04	-478.9-3.529e+04
223	ok	0.03	5.64e-02	7.67e-04	77.0	77.0	77.0	77.0	-6.55e-02	-1.1	0.6	1.506e+04	-2253.4-2.828e+04
224	ok	0.03	3.93e-02	7.83e-04	77.0	77.0	77.0	77.0	-9.98e-02	-1.0	0.1	8921.6	-2787.9-2.068e+04
225	ok	0.03	1.13e-02	7.20e-04	77.0	77.0	77.0	77.0	0.3	-0.5	0.1	1910.7	4260.7 -3669.0
226	ok	0.03	0.2	3.11e-03	77.0	77.0	77.0	77.0	-0.7	-1.5	0.2	7.131e+04	-1.457e+05 2.829e+04
227	ok	0.03	0.2	2.28e-03	77.0	77.0	77.0	77.0	-0.5	5.8	2.2	8.330e+04	-4.030e+04-4.209e+04
228	ok	0.03	0.1	1.54e-03	77.0	77.0	77.0	77.0	-0.8	1.8	2.5	6.334e+04	-2.844e+04-4.048e+04
229	ok	0.03	9.61e-02	1.17e-03	77.0	77.0	77.0	77.0	-0.6	0.5	1.7	4.746e+04	-2.474e+04-3.452e+04
230	ok	0.03	7.40e-02	8.59e-04	77.0	77.0	77.0	77.0	-0.3	-9.48e-03	1.1	3.501e+04	-2.140e+04-2.888e+04
231	ok	0.03	5.59e-02	7.54e-04	77.0	77.0	77.0	77.0	-0.7	-0.5	0.6	2.548e+04	-1.812e+04-2.343e+04
232	ok	0.03	3.97e-02	7.95e-04	77.0	77.0	77.0	77.0	-0.2	-0.8	0.3	1.720e+04	-1.400e+04-1.713e+04
233	ok	0.03	8.78e-03	7.78e-04	77.0	77.0	77.0	77.0	0.2	-0.4	0.2	2884.7	895.5 -2934.8
234	ok	0.03	0.2	2.73e-03	77.0	77.0	77.0	77.0	-5.0	4.3	5.7	7.688e+04	-9.269e+04-2.899e+04
235	ok	0.03	0.1	1.84e-03	77.0	77.0	77.0	77.0	-1.8	4.7	2.7	7.209e+04	-6.634e+04-2.521e+04
236	ok	0.03	0.1	1.35e-03	77.0	77.0	77.0	77.0	-1.6	2.3	1.8	6.030e+04	-5.342e+04-2.167e+04
237	ok	0.03	8.29e-02	1.05e-03	77.0	77.0	77.0	77.0	-1.2	1.4	1.3	4.948e+04	-4.390e+04-1.857e+04
238	ok	0.03	6.71e-02	7.73e-04	77.0	77.0	77.0	77.0	-0.9	1.4	0.5	3.984e+04	-3.642e+04-1.516e+04
239	ok	0.03	5.38e-02	7.23e-04	77.0	77.0	77.0	77.0	-4.5	1.93e-02	8.72e-03	3.209e+04	-2.946e+04-1.225e+04
240	ok	0.03	3.82e-02	7.83e-04	77.0	77.0	77.0	77.0	6.65e-02	-1.42e-02	0.2	2.237e+04	-2.035e+04 -9642.3
241	ok	0.03	6.51e-03	8.07e-04	77.0	77.0	77.0	77.0	1.58e-02	-0.7	0.6	2833.7	-1460.8 -1167.6
242	ok	0.03	0.2	2.31e-03	77.0	77.0	77.0	77.0	-3.6	4.5	1.2	6.400e+04	-9.558e+04 -5478.5
243	ok	0.03	0.1	1.46e-03	77.0	77.0	77.0	77.0	-2.6	3.1	1.0	5.681e+04	-7.741e+04 -3077.8
244	ok	0.03	1.00e-01	1.16e-03	77.0	77.0	77.0	77.0	-2.1	2.1	0.8	5.038e+04	-6.319e+04 -1427.7
245	ok	0.03	8.06e-02	9.14e-04	77.0	77.0	77.0	77.0	-1.9	1.4	0.6	4.393e+04	-5.130e+04 -340.9
246	ok	0.03	6.44e-02	7.13e-04	77.0	77.0	77.0	77.0	-2.6	1.0	0.3	3.772e+04	-4.121e+04 393.8
247	ok	0.03	5.11e-02	8.96e-04	77.0	77.0	77.0	77.0	-9.0	1.4	1.8	3.271e+04	-3.239e+04 530.5
248	ok	0.03	3.70e-02	7.80e-04	77.0	77.0	77.0	77.0	-1.0	-0.7	1.1	2.193e+04	-2.369e+04 945.8
249	ok	0.03	5.99e-03	8.01e-04	77.0	77.0	77.0	77.0	-0.9	-0.7	1.0	1983.9	-1991.7 387.7
250	ok	0.03	0.2	2.48e-03	77.0	77.0	77.0	77.0	-6.3	5.6	0.6	4.021e+04	-1.237e+05 1.393e+04
251	ok	0.03	0.2	1.86e-03	77.0	77.0	77.0	77.0	-5.0	3.0	0.7	3.737e+04	-9.442e+04 1.681e+04
252	ok	0.03	0.1	1.32e-03	77.0	77.0	77.0	77.0	-2.7	2.7	0.2	3.501e+04	-7.271e+04 1.680e+04
253	ok	0.03	9.03e-02	9.91e-04	77.0	77.0	77.0	77.0	-2.3	2.0	0.2	3.280e+04	-5.499e+04 1.589e+04
254	ok	0.03	6.80e-02	7.38e-04	77.0	77.0	77.0	77.0	-4.2	1.8	0.9	3.107e+04	-4.078e+04 1.371e+04
255	ok	0.03	5.05e-02	7.66e-04	77.0	77.0	77.0	77.0	-2.2	2.4	-0.2	2.743e+04	-3.008e+04 1.158e+04
256	ok	0.03	3.63e-02	7.92e-04	77.0	77.0	77.0	77.0	-1.3	1.61e-02	0.6	2.187e+04	-2.008e+04 7687.9
257	ok	0.03	5.96e-03	7.93e-04	77.0	77.0	77.0	77.0	-0.9	-0.2	0.4	2194.5	-2496.8 440.1
258	ok	0.03	0.3	3.03e-03	77.0	77.0	77.0	77.0	-4.8	1.7	2.2	-5.128e+04	-1.446e+05 4.072e+04
259	ok	0.03	0.2	2.19e-03	77.0	77.0	77.0	77.0	-4.8	3.4	0.3	7614.0	-1.054e+05 2.923e+04
260	ok	0.03	0.1	1.43e-03	77.0	77.0	77.0	77.0	-2.6	2.9	-0.9	7184.4	-7.427e+04 3.016e+04
261	ok	0.03	9.33e-02	1.08e-03	77.0	77.0	77.0	77.0	-2.3	2.1	-0.5	1.234e+04	-5.008e+04 2.628e+04
262	ok	0.03	6.31e-02	8.21e-04	77.0	77.0	77.0	77.0	-2.1	1.3	-0.4	1.644e+04	-3.202e+04 2.181e+04
263	ok	0.03	4.12e-02	7.49e-04	77.0	77.0	77.0	77.0	-1.4	1.1	7.96e-02	1.850e+04	-1.995e+04 1.698e+04
264	ok	0.03	3.36e-02	7.78e-04	77.0	77.0	77.0	77.0	-1.1	0.4	0.3	1.785e+04	-1.252e+04 1.112e+04
265	ok	0.03	9.54e-03	7.12e-04	77.0	77.0	77.0	77.0	-1.1	-4.79e-02	0.3	4854.5	-2234.7 114.6
266	ok	0.03	0.4	3.67e-03	77.0	77.0	77.0	77.0	-1.2	3.2	-6.0	-8.045e+04	-2.318e+05 9.659e+04
267	ok	0.03	0.2	1.67e-03	77.0	77.0	77.0	77.0	-2.3	4.5	-4.1	-4.808e+04	-1.111e+05 4.306e+04
268	ok	0.03	0.1	1.38e-03	77.0	77.0	77.0	77.0	-1.9	2.3	-2.0	-2.802e+04	-6.778e+04 3.309e+04
269	ok	0.03	8.62e-02	1.10e-03	77.0	77.0	77.0	77.0	-1.6	1.6	-1.5	-1.454e+04	-3.851e+04 2.595e+04
270	ok	0.03	5.12e-02	8.27e-04	77.0	77.0	77.0	77.0	8.70e-02	1.3	-2.0	-3308.8	-1.928e+04 1.994e+04
271	ok	0.03	2.83e-02	7.61e-04	77.0	77.0	77.0	77.0	-0.6	0.4	-0.9	5302.3	-8617.4 1.493e+04
272	ok	0.03	2.27e-02	7.62e-04	77.0	77.0	77.0	77.0	-0.6	0.2	0.2	9578.0	-4465.6 9681.4
273	ok	0.03	9.96e-03	6.94e-04	77.0	77.0	77.0	77.0	-1.4	-2.02e-02	0.1	5066.7	-2136.7 1258.0
274	ok	0.03	0.3	2.39e-03	77.0	77.0	77.0	77.0	-0.7	1.7	-4.7	-1.166e+05	-1.800e+05 5.589e+04
275	ok	0.03	0.2	1.55e-03	77.0	77.0	77.0	77.0	-0.7	1.4	-3.7	-8.580e+04	-1.074e+05 3.683e+04
276	ok	0.03	0.1	1.30e-03	77.0	77.0	77.0	77.0	-1.0	0.8	-2.7	-6.052e+04	-5.870e+04 2.293e+04
277	ok	0.03	7.69e-02	1.04e-03	77.0	77.0	77.0	77.0	-0.8	0.4	-1.9	-3.928e+04	-2.822e+04 1.444e+04
278	ok	0.03	4.46e-02	8.01e-04	77.0	77.0	77.0	77.0	-0.7	0.1	-1.9	-2.321e+04	-1.144e+04 9558.4
279	ok	0.03	2.70e-02	9.80e-04	77.0	77.0	77.0	77.0	4.7	-0.8	-4.5	-1.376e+04	-2890.6 7068.9
280	ok	0.03	1.32e-02	8.13e-04	77.0	77.0	77.0	77.0	-1.0	0.7	2.78e-02	-5524.5	-843.5 3754.0
281	ok	0.03	1.08e-02	7.01e-04	77.0	77.0	77.0	77.0	-1.6	0.1	-0.1	-5657.6	-1191.4 -1466.5
282	ok	0.03	0.4	3.36e-03	77.0	77.0	77.0	77.0	-0.6	0.3	-1.9	-1.714e+05	-1.938e+05 6.996e+04
283	ok	0.03	0.2	1.77e-03	77.0	77.0	77.0	77.0	0.9	-0.4	-3.6	-1.174e+05	-1.005e+05 1.955e+04
284	ok	0.03	0.1	1.31e-03	77.0	77.0	77.0	77.0	2.25e-02	-0.5	-2.7	-8.354e+04	-5.330e+04 3384.0
285	ok	0.03	9.43e-02	9.70e-04	77.0	77.0	77.0	77.0	-0.4	-0.4	-2.2	-5.976e+04	-2.594e+04 -3653.2
286	ok	0.03	7.18e-02	7.82e-04	77.0	77.0	77.0	77.0	-1.0	-0.3	-2.0	-4.467e+04	-1.300e+04 -6450.9
287	ok	0.03	5.70e-02	7.99e-04	77.0	77.0	77.0	77.0	-1.0	1.4	0.6	-3.447e+04	-6813.5 -7719.5
288	ok	0.03	4.47e-02	8.27e-04	77.0	77.0	77.0	77.0	-1.7	9.47e-02	-0.5	-2.664e+04	-2611.5 -7133.1
289	ok	0.03	3.99e-02	8.09e-04	77.0	77.0	77.0	77.0	-1.5	-9.27e-03	-0.4	-2.370e+04	-2351.4 -6518.7
290	ok	0.03	0.4	2.73e-03	77.0	77.0	77.0	77.0	7.4	-1.7	-4.4	-1.859e+05	-1.743e+05 2.552e+04
291	ok	0.03	0.2	2.01e-03	77.0	77.0	77.0	77.0	4.1	-0.9	-1.7	-1.296e+05	-9.564e+04 -4982.4
292	ok	0.03	0.2	1.23e-03	77.0	77.0	77.0	77.0	0.9	-1.1	-2.2	-9.292e+04	-5.487e+04-1.753e+04



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

293	ok	0.03	0.1	8.52e-04	77.0	77.0	77.0	77.0	7.65e-02	-0.8	-1.9-7.150e+04-3.351e+04-2.213e+04
294	ok	0.03	0.1	7.38e-04	77.0	77.0	77.0	77.0	-0.5	-0.8	-1.7-5.788e+04-2.223e+04-2.264e+04
295	ok	0.03	9.21e-02	7.64e-04	77.0	77.0	77.0	77.0	-1.0	-0.3	-1.1-4.716e+04-1.559e+04-2.251e+04
296	ok	0.03	8.10e-02	8.16e-04	77.0	77.0	77.0	77.0	-1.0	-0.1	-0.9-4.104e+04-1.023e+04-2.117e+04
297	ok	0.03	7.13e-02	8.97e-04	77.0	77.0	77.0	77.0	-1.3	-0.3	-0.7-3.765e+04 -7890.3-1.736e+04
298	ok	0.03	0.3	2.30e-03	77.0	77.0	77.0	77.0	2.6	-4.2	-4.0-1.981e+05-1.599e+05 2.279e+04
299	ok	0.03	0.2	1.58e-03	77.0	77.0	77.0	77.0	3.2	-1.8	-2.1-1.206e+05-9.528e+04-2.243e+04
300	ok	0.03	0.2	1.01e-03	77.0	77.0	77.0	77.0	1.3	-1.5	-1.7-8.713e+04-6.309e+04-3.287e+04
301	ok	0.03	0.1	7.20e-04	77.0	77.0	77.0	77.0	0.6	-1.2	-1.5-6.928e+04-4.561e+04-3.502e+04
302	ok	0.03	0.1	7.29e-04	77.0	77.0	77.0	77.0	0.1	-0.9	-1.2-5.744e+04-3.493e+04-3.467e+04
303	ok	0.03	0.1	7.55e-04	77.0	77.0	77.0	77.0	-0.1	0.3	-1.4-4.838e+04-2.849e+04-3.362e+04
304	ok	0.03	0.1	8.13e-04	77.0	77.0	77.0	77.0	-0.4	-0.5	-0.8-4.289e+04-2.208e+04-3.201e+04
305	ok	0.03	9.18e-02	8.99e-04	77.0	77.0	77.0	77.0	-0.7	-0.5	-0.6-3.911e+04-1.923e+04-2.785e+04
306	ok	0.03	0.2	2.02e-03	77.0	77.0	77.0	77.0	3.3	-4.0	-1.2-1.422e+05-1.315e+05-1.481e+04
307	ok	0.03	0.2	1.18e-03	77.0	77.0	77.0	77.0	1.9	-2.5	-0.9-9.370e+04-9.551e+04-3.177e+04
308	ok	0.03	0.2	8.09e-04	77.0	77.0	77.0	77.0	1.2	-1.6	-1.0-7.060e+04-7.035e+04-3.811e+04
309	ok	0.03	0.1	7.11e-04	77.0	77.0	77.0	77.0	0.7	-1.1	-1.2-5.648e+04-5.623e+04-3.912e+04
310	ok	0.03	0.1	7.27e-04	77.0	77.0	77.0	77.0	0.4	-0.6	-1.4-4.653e+04-4.693e+04-3.834e+04
311	ok	0.03	0.1	7.89e-04	77.0	77.0	77.0	77.0	2.2	-0.6	-1.6-3.966e+04-3.867e+04-3.720e+04
312	ok	0.03	0.1	7.84e-04	77.0	77.0	77.0	77.0	-2.28e-02	-0.9	-0.2-3.443e+04-3.379e+04-3.568e+04
313	ok	0.03	9.80e-02	8.31e-04	77.0	77.0	77.0	77.0	-6.82e-02	-9.96e-02	-0.1-2.989e+04-3.240e+04-3.156e+04
314	ok	0.03	0.3	2.25e-03	77.0	77.0	77.0	77.0	3.0	-2.9	2.2-3.599e+05-1.981e+05 2.279e+04
315	ok	0.03	0.2	1.62e-03	77.0	77.0	77.0	77.0	1.3	-3.8	0.1-9.529e+04-1.206e+05-2.243e+04
316	ok	0.03	0.2	1.01e-03	77.0	77.0	77.0	77.0	1.1	-1.8	-0.2-6.310e+04-8.714e+04-3.287e+04
317	ok	0.03	0.1	7.11e-04	77.0	77.0	77.0	77.0	0.6	-1.2	-0.4-4.562e+04-6.929e+04-3.503e+04
318	ok	0.03	0.1	7.19e-04	77.0	77.0	77.0	77.0	0.3	-0.9	-0.4-3.494e+04-5.745e+04-3.467e+04
319	ok	0.03	0.1	7.45e-04	77.0	77.0	77.0	77.0	1.1	-0.5	-0.9-2.850e+04-4.838e+04-3.363e+04
320	ok	0.03	0.1	8.04e-04	77.0	77.0	77.0	77.0	-0.1	-0.6	-0.3-2.209e+04-4.289e+04-3.202e+04
321	ok	0.03	9.18e-02	8.90e-04	77.0	77.0	77.0	77.0	-0.3	-0.4	-0.2-1.923e+04-3.911e+04-2.785e+04
322	ok	0.03	0.4	2.86e-03	77.0	77.0	77.0	77.0	1.0	-6.7	2.9-1.743e+05-1.860e+05 2.552e+04
323	ok	0.03	0.2	2.07e-03	77.0	77.0	77.0	77.0	0.5	-4.2	0.5-9.566e+04-1.296e+05 -4986.8
324	ok	0.03	0.2	1.25e-03	77.0	77.0	77.0	77.0	0.6	-1.7	0.6-5.488e+04-9.293e+04-1.753e+04
325	ok	0.03	0.1	8.58e-04	77.0	77.0	77.0	77.0	0.4	-1.1	0.2-3.352e+04-7.152e+04-2.214e+04
326	ok	0.03	0.1	7.20e-04	77.0	77.0	77.0	77.0	-5.71e-02	-1.0	-0.1-2.224e+04-5.790e+04-2.265e+04
327	ok	0.03	9.21e-02	7.47e-04	77.0	77.0	77.0	77.0	0.2	-0.8	-0.2-1.560e+04-4.718e+04-2.253e+04
328	ok	0.03	8.10e-02	7.95e-04	77.0	77.0	77.0	77.0	5.09e-02	-0.6	-7.18e-02-1.024e+04-4.105e+04-2.118e+04
329	ok	0.03	7.13e-02	8.78e-04	77.0	77.0	77.0	77.0	-0.2	-0.4	-0.1 -7893.1-3.767e+04-1.737e+04
330	ok	0.03	0.4	3.56e-03	77.0	77.0	77.0	77.0	-1.0	-0.5	1.6-1.938e+05-1.714e+05 6.996e+04
331	ok	0.03	0.2	1.68e-03	77.0	77.0	77.0	77.0	-0.3	-1.4	2.5-1.005e+05-1.174e+05 1.954e+04
332	ok	0.03	0.1	1.32e-03	77.0	77.0	77.0	77.0	-0.2	-0.5	1.1-5.333e+04-8.357e+04 3375.1
333	ok	0.03	9.43e-02	9.86e-04	77.0	77.0	77.0	77.0	-0.3	-0.2	0.3-2.596e+04-5.979e+04 -3667.2
334	ok	0.03	7.18e-02	7.52e-04	77.0	77.0	77.0	77.0	-0.3	-0.6	-4.25e-02-1.301e+04-4.469e+04 -6468.0
335	ok	0.03	5.70e-02	7.74e-04	77.0	77.0	77.0	77.0	1.5	-0.2	1.9 -6827.0-3.449e+04 -7735.4
336	ok	0.03	4.47e-02	7.96e-04	77.0	77.0	77.0	77.0	-0.1	-0.7	0.5 -2616.0-2.666e+04 -7148.0
337	ok	0.03	3.99e-02	7.82e-04	77.0	77.0	77.0	77.0	-0.1	8.16e-02	0.1 -2351.7-2.372e+04 -6524.8

Nodo	x/d	V N/M	ver. rid	Af pr-	Af pr+	Af sec-	Af sec+	N x	N y	N xy	M x	M y	M xy
								-10.92	-9.85	-8.73-4.315e+05-4.315e+05-2.542e+05			
	0.03	0.94	4.78e-03	84.51	82.62	84.51	82.62	10.52	10.42	8.37 3.933e+05 3.932e+05 2.321e+05			

Nodo	Stato	Max tau daN/cm2	Ver V pr	Ver V sec	Af V pr	Af V sec	V pr daN/cm	V sec daN/cm
1	ok	2.37						
2	ok	2.62						
3	ok	2.24						
4	ok	2.77						
5	ok Av	3.31	0.03	0.15	0.8	3.7	142.1	697.3
6	ok Av	4.44	0.19	0.11	4.6	2.6	875.2	498.9
7	ok	2.25						
8	ok	1.77						
9	ok	1.55						
10	ok Av	8.61	0.34	0.24	8.3	6.1	1581.9	1151.1
11	ok	1.72						
12	ok Av	5.08	0.23	0.03	5.7	0.8	1083.7	148.5
13	ok Av	3.85	0.16	0.14	4.0	3.5	763.9	657.7
14	ok Av	15.52	0.67	0.49	16.6	12.1	3140.9	2296.1
15	ok Av	17.82	0.58	0.58	14.3	14.3	2712.2	2712.0
16	ok Av	7.68	0.27	0.23	6.6	5.7	1249.4	1080.8
17	ok Av	7.68	0.23	0.27	5.7	6.6	1080.8	1249.2
18	ok Av	8.42	0.27	0.27	6.8	6.8	1280.5	1280.5
19	ok Av	7.96	0.23	0.34	5.7	8.5	1073.5	1611.8
20	ok Av	3.91	0.18	2.77e-03	4.4	6.90e-02	841.4	13.1

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

21	ok	1.46							
22	ok	1.62							
23	ok	1.79							
24	ok	1.67							
25	ok	2.48							
26	ok Av	3.85	0.14	0.16	3.5	4.0	657.6	764.0	
27	ok Av	15.52	0.49	0.67	12.1	16.6	2295.9	3140.1	
28	ok	2.74							
29	ok	2.57							
30	ok	1.54							
31	ok	2.27							
32	ok Av	3.40	0.04	0.15	1.1	3.7	203.7	703.0	
33	ok	2.18							
34	ok	1.67							
35	ok	1.72							
36	ok Av	5.08	0.03	0.23	0.8	5.7	148.5	1083.4	
37	ok Av	11.07	0.33	0.43	8.2	10.6	1549.0	2005.4	
38	ok	1.84							
39	ok	1.92							
40	ok Av	3.50	0.15	0.04	3.8	1.0	728.3	194.0	
41	ok	0.60							
42	ok Av	3.40	0.15	0.04	3.7	1.1	703.0	203.7	
43	ok	1.79							
44	ok	1.55							
45	ok Av	8.60	0.24	0.34	6.1	8.3	1150.2	1580.9	
46	ok Av	5.81	0.04	0.26	1.0	6.5	196.0	1235.3	
47	ok	1.95							
48	ok	2.07							
49	ok	2.42							
50	ok Av	3.50	0.04	0.15	1.0	3.8	193.9	728.3	
51	ok	2.27							
52	ok	1.62							
53	ok	2.25							
54	ok	1.77							
55	ok Av	17.60	0.55	0.75	13.6	18.8	2570.7	3554.2	
56	ok Av	4.22	0.14	0.19	3.5	4.6	665.7	876.0	
57	ok	2.93							
58	ok	2.07							
59	ok	1.92							
60	ok	1.54							
61	ok	1.46							
62	ok Av	3.31	0.15	0.03	3.7	0.8	697.3	142.7	
63	ok Av	4.43	0.11	0.19	2.6	4.6	497.7	873.7	
64	ok Av	8.85	0.26	0.31	6.6	7.6	1245.9	1440.4	
65	ok Av	19.78	0.64	0.64	15.9	15.9	3009.7	3009.8	
66	ok Av	4.22	0.19	0.14	4.6	3.5	875.8	665.5	
67	ok	1.94							
68	ok	1.84							
69	ok	2.57							
70	ok Av	3.91	2.78e-03	0.18	6.91e-02	4.4	13.1	841.5	
71	ok	2.25							
72	ok	2.78							
73	ok Av	9.57	0.31	0.31	7.7	7.7	1456.4	1456.5	
74	ok Av	8.85	0.31	0.26	7.6	6.6	1440.3	1246.1	
75	ok Av	17.60	0.75	0.55	18.8	13.6	3554.0	2570.9	
76	ok Av	5.81	0.26	0.04	6.5	1.0	1235.1	196.2	
77	ok Av	11.07	0.43	0.33	10.6	8.2	2005.3	1548.9	
78	ok	2.74							
79	ok Av	7.96	0.34	0.23	8.5	5.7	1611.9	1074.0	
80	ok	2.62							
81	ok	2.37							
82	ok Av	4.83	0.18	0.18	4.5	4.6	861.9	868.7	
83	ok Av	4.98	0.21	0.13	5.1	3.2	974.0	599.6	
84	ok Av	3.37	0.14	0.06	3.6	1.6	674.4	302.3	
85	ok	2.88							
86	ok	2.59							
87	ok	2.05							
88	ok	2.00							
89	ok	1.64							
90	ok	1.49							
91	ok	1.29							
92	ok	1.20							
93	ok	0.92							

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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94	ok	0.90						
95	ok	0.67						
96	ok	0.83						
97	ok	1.07						
98	ok Av	5.33	0.07	0.24	1.8	6.0	335.3	1144.9
99	ok	2.31						
100	ok	1.53						
101	ok	1.14						
102	ok	0.91						
103	ok	0.76						
104	ok	0.70						
105	ok	1.48						
106	ok	3.06						
107	ok	1.67						
108	ok	1.07						
109	ok	0.70						
110	ok	0.51						
111	ok	0.40						
112	ok	0.53						
113	ok	1.58						
114	ok	1.82						
115	ok	1.17						
116	ok	0.71						
117	ok	0.42						
118	ok	0.25						
119	ok	0.18						
120	ok	0.41						
121	ok	1.57						
122	ok	2.23						
123	ok	1.35						
124	ok	0.79						
125	ok	0.44						
126	ok	0.24						
127	ok	0.14						
128	ok	0.38						
129	ok	1.55						
130	ok Av	4.22	0.19	0.02	4.8	0.5	902.7	95.9
131	ok	1.75						
132	ok	1.05						
133	ok	0.67						
134	ok	0.43						
135	ok	0.29						
136	ok	0.42						
137	ok	1.53						
138	ok Av	3.88	0.12	0.13	3.0	3.3	576.5	621.6
139	ok	2.21						
140	ok	1.42						
141	ok	0.95						
142	ok	0.66						
143	ok	0.47						
144	ok	0.49						
145	ok	1.46						
146	ok Av	4.39	0.18	0.13	4.5	3.3	843.2	633.1
147	ok	2.67						
148	ok	1.79						
149	ok	1.25						
150	ok	0.88						
151	ok	0.60						
152	ok	0.55						
153	ok	1.34						
154	ok Av	6.89	0.11	0.30	2.7	7.4	507.0	1393.4
155	ok	3.13						
156	ok	2.11						
157	ok	1.49						
158	ok	1.06						
159	ok	0.74						
160	ok	0.58						
161	ok	1.15						
162	ok Av	4.95	0.20	0.22	5.0	5.4	955.2	1031.9
163	ok	3.19						
164	ok	2.28						
165	ok	1.63						
166	ok	1.16						

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

167	ok	0.79							
168	ok	0.58							
169	ok	0.93							
170	ok Av	5.83	0.18	0.20	4.4	4.9	840.7	929.9	
171	ok	3.18							
172	ok	2.25							
173	ok	1.64							
174	ok	1.18							
175	ok	0.80							
176	ok	0.55							
177	ok	0.68							
178	ok Av	3.89	0.13	0.13	3.3	3.3	628.7	628.7	
179	ok	2.79							
180	ok	2.06							
181	ok	1.52							
182	ok	1.09							
183	ok	0.75							
184	ok	0.50							
185	ok	0.41							
186	ok Av	5.83	0.20	0.18	4.9	4.4	930.0	840.8	
187	ok	3.18							
188	ok	2.25							
189	ok	1.64							
190	ok	1.18							
191	ok	0.80							
192	ok	0.55							
193	ok	0.68							
194	ok Av	4.95	0.22	0.20	5.4	5.0	1032.1	955.5	
195	ok	3.19							
196	ok	2.28							
197	ok	1.63							
198	ok	1.16							
199	ok	0.79							
200	ok	0.58							
201	ok	0.93							
202	ok Av	6.89	0.30	0.11	7.4	2.7	1393.8	507.2	
203	ok	3.13							
204	ok	2.11							
205	ok	1.49							
206	ok	1.06							
207	ok	0.74							
208	ok	0.57							
209	ok	1.15							
210	ok Av	4.40	0.13	0.18	3.3	4.5	633.8	843.7	
211	ok	2.68							
212	ok	1.79							
213	ok	1.25							
214	ok	0.88							
215	ok	0.60							
216	ok	0.55							
217	ok	1.34							
218	ok Av	3.89	0.13	0.12	3.3	3.0	622.6	577.4	
219	ok	2.22							
220	ok	1.42							
221	ok	0.95							
222	ok	0.66							
223	ok	0.47							
224	ok	0.49							
225	ok	1.46							
226	ok Av	4.23	0.02	0.19	0.5	4.8	94.9	904.5	
227	ok	1.75							
228	ok	1.05							
229	ok	0.67							
230	ok	0.43							
231	ok	0.29							
232	ok	0.42							
233	ok	1.53							
234	ok	2.23							
235	ok	1.34							
236	ok	0.79							
237	ok	0.44							
238	ok	0.24							
239	ok	0.14							

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

240	ok	0.38							
241	ok	1.55							
242	ok	1.82							
243	ok	1.17							
244	ok	0.71							
245	ok	0.42							
246	ok	0.25							
247	ok	0.18							
248	ok	0.41							
249	ok	1.57							
250	ok	3.06							
251	ok	1.67							
252	ok	1.07							
253	ok	0.70							
254	ok	0.51							
255	ok	0.40							
256	ok	0.53							
257	ok	1.58							
258	ok Av	5.33	0.24	0.07	6.0	1.8	1144.8	335.4	
259	ok	2.31							
260	ok	1.53							
261	ok	1.14							
262	ok	0.91							
263	ok	0.75							
264	ok	0.69							
265	ok	1.48							
266	ok Av	4.98	0.13	0.21	3.2	5.1	599.7	974.2	
267	ok	2.88							
268	ok	2.05							
269	ok	1.64							
270	ok	1.29							
271	ok	0.91							
272	ok	0.67							
273	ok	1.07							
274	ok Av	4.83	0.18	0.18	4.6	4.5	868.9	862.0	
275	ok Av	3.37	0.06	0.14	1.6	3.6	302.6	674.5	
276	ok	2.59							
277	ok	2.00							
278	ok	1.48							
279	ok	1.20							
280	ok	0.90							
281	ok	0.83							
282	ok Av	7.81	0.10	0.34	2.5	8.5	466.5	1614.2	
283	ok Av	3.83	0.03	0.17	0.8	4.3	153.4	810.8	
284	ok	2.88							
285	ok	2.06							
286	ok	1.32							
287	ok	0.91							
288	ok	0.96							
289	ok	1.25							
290	ok Av	6.19	0.26	0.25	6.4	6.2	1205.7	1175.6	
291	ok Av	4.03	0.08	0.18	1.9	4.4	354.2	841.0	
292	ok	2.76							
293	ok	1.69							
294	ok	1.00							
295	ok	0.79							
296	ok	0.79							
297	ok	1.12							
298	ok Av	6.90	0.22	0.23	5.5	5.6	1033.8	1065.7	
299	ok Av	3.77	0.10	0.16	2.6	4.0	491.9	750.1	
300	ok	2.28							
301	ok	1.29							
302	ok	0.82							
303	ok	0.64							
304	ok	0.55							
305	ok	0.74							
306	ok Av	4.60	0.16	0.16	4.0	4.0	762.7	762.8	
307	ok	3.05							
308	ok	1.76							
309	ok	1.01							
310	ok	0.72							
311	ok	0.59							
312	ok	0.38							

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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313	ok	0.32						
314	ok Av	6.90	0.23	0.22	5.6	5.5	1065.7	1033.9
315	ok Av	3.77	0.16	0.10	4.0	2.6	750.1	492.1
316	ok	2.28						
317	ok	1.29						
318	ok	0.82						
319	ok	0.64						
320	ok	0.55						
321	ok	0.74						
322	ok Av	6.19	0.25	0.26	6.2	6.4	1175.5	1205.8
323	ok Av	4.03	0.18	0.08	4.4	1.9	841.0	354.4
324	ok	2.76						
325	ok	1.69						
326	ok	1.00						
327	ok	0.79						
328	ok	0.79						
329	ok	1.12						
330	ok Av	7.81	0.34	0.10	8.5	2.5	1614.0	466.3
331	ok Av	3.83	0.17	0.03	4.3	0.8	810.7	153.2
332	ok	2.88						
333	ok	2.06						
334	ok	1.32						
335	ok	0.91						
336	ok	0.96						
337	ok	1.25						
<b>Nodo</b>		<b>Max tau</b>	<b>Ver V pr</b>	<b>Ver V sec</b>	<b>Af V pr</b>	<b>Af V sec</b>	<b>V pr</b>	<b>V sec</b>
		19.78	0.75	0.75	18.76	18.76	3553.96	3554.18



## STATI LIMITE D' ESERCIZIO

### LEGENDA TABELLA STATI LIMITE D' ESERCIZIO

In tabella vengono riportati i valori di interesse per il controllo degli stati limite d'esercizio.

In particolare vengono riportati, in relazione al tipo di elemento strutturale, i risultati relativi alle tre categorie di combinazione considerate:

- Combinazioni rare
- Combinazioni frequenti
- Combinazioni quasi permanenti.

I valori di interesse sono i seguenti:

<b>rRfck</b>	rapporto tra la massima compressione nel calcestruzzo e la tensione fck in combinazioni rare [normalizzato a 1]
<b>rRfyk</b>	rapporto tra la massima tensione nell'acciaio e la tensione fyk in combinazioni rare [normalizzato a 1]
<b>rPfck</b>	rapporto tra la massima compressione nel calcestruzzo e la tensione fck in combinazioni quasi permanenti [normalizzato a 1]
<b>wR</b>	apertura caratteristica delle fessure in combinazioni rare [mm]
<b>wF</b>	apertura caratteristica delle fessure in combinazioni frequenti [mm]
<b>wP</b>	apertura caratteristica delle fessure in combinazioni quasi permanenti [mm]
<b>dR</b>	massima deformazione in combinazioni rare
<b>dF</b>	massima deformazione in combinazioni frequenti
<b>dP</b>	massima deformazione in combinazioni quasi permanenti

Per ognuno dei nove valori soprariportati viene indicata (Rif.cmb) la combinazione in cui si è verificato.

In relazione al tipo di elemento strutturale i valori sono selezionati nel modo seguente:

pilastr	<b>rRfck</b>	<b>rRfyk</b>	<b>rPfck</b>	per sezioni significative
travi	<b>rRfck</b>	<b>rRfyk</b>	<b>rPfck</b>	per sezioni significative
	<b>wR</b>	<b>wF</b>	<b>wP</b>	per sezioni significative
	<b>dR</b>	<b>dF</b>	<b>dP</b>	massimi in campata
setti e gusci	<b>rRfck</b>	<b>rRfyk</b>	<b>rPfck</b>	massimi nei nodi dell'elemento
	<b>wR</b>	<b>wF</b>	<b>wP</b>	massimi nei nodi dell'elemento

Si precisa che i valori di massima deformazione per travi sono riferiti al piano verticale (piano locale 1-2 con momenti flettenti 3-3).

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

<b>Guscio</b>	<b>rRfck</b>	<b>rRfyk</b>	<b>rPfck</b>	<b>Rif. cmb</b>	<b>wR</b> mm	<b>wF</b> mm	<b>wP</b> mm	<b>Rif. cmb</b>
1	0.20	0.39	0.0	69,69,0	0.03	0.0	0.0	69,0,0
2	0.16	0.32	0.0	69,69,0	0.0	0.0	0.0	0,0,0
3	0.15	0.30	0.0	69,69,0	0.0	0.0	0.0	0,0,0
4	0.17	0.33	0.0	69,69,0	0.0	0.0	0.0	0,0,0
5	0.22	0.43	0.0	69,69,0	0.04	0.0	0.0	69,0,0
6	0.24	0.47	0.0	69,69,0	0.04	0.0	0.0	69,0,0
7	0.26	0.50	0.0	69,69,0	0.04	0.0	0.0	69,0,0
8	0.44	0.83	0.0	69,69,0	0.13	0.0	0.0	69,0,0
9	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
10	0.13	0.25	0.0	69,69,0	0.0	0.0	0.0	0,0,0
11	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
12	0.22	0.43	0.0	69,69,0	0.04	0.0	0.0	69,0,0
13	0.17	0.33	0.0	69,69,0	0.0	0.0	0.0	0,0,0
14	0.17	0.31	0.0	69,69,0	0.0	0.0	0.0	0,0,0
15	0.23	0.43	0.0	69,69,0	0.03	0.0	0.0	69,0,0
16	0.26	0.49	0.0	69,69,0	0.04	0.0	0.0	69,0,0
17	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
18	0.17	0.34	0.0	69,69,0	0.0	0.0	0.0	0,0,0
19	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
20	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
21	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
22	0.17	0.34	0.0	69,69,0	0.0	0.0	0.0	0,0,0
23	0.17	0.31	0.0	69,69,0	0.0	0.0	0.0	0,0,0
24	0.24	0.47	0.0	69,69,0	0.04	0.0	0.0	69,0,0
25	0.20	0.39	0.0	69,69,0	0.03	0.0	0.0	69,0,0
26	0.23	0.45	0.0	69,69,0	0.04	0.0	0.0	69,0,0
27	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
28	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
29	0.30	0.59	0.0	69,69,0	0.07	0.0	0.0	69,0,0
30	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
31	0.17	0.33	0.0	69,69,0	0.0	0.0	0.0	0,0,0
32	0.22	0.43	0.0	69,69,0	0.04	0.0	0.0	69,0,0
33	0.24	0.47	0.0	69,69,0	0.04	0.0	0.0	69,0,0
34	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
35	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
36	0.33	0.65	0.0	69,69,0	0.08	0.0	0.0	69,0,0
37	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
38	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
39	0.22	0.43	0.0	69,69,0	0.04	0.0	0.0	69,0,0
40	0.17	0.33	0.0	69,69,0	0.0	0.0	0.0	0,0,0
41	0.26	0.51	0.0	69,69,0	0.04	0.0	0.0	69,0,0
42	0.18	0.34	0.0	69,69,0	0.03	0.0	0.0	69,0,0
43	0.19	0.38	0.0	69,69,0	0.03	0.0	0.0	69,0,0
44	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
45	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
46	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
47	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
48	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
49	0.28	0.52	0.0	69,69,0	0.05	0.0	0.0	69,0,0
50	0.24	0.44	0.0	69,69,0	0.04	0.0	0.0	69,0,0
51	0.18	0.34	0.0	69,69,0	0.03	0.0	0.0	69,0,0
52	0.18	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
53	0.23	0.45	0.0	69,69,0	0.04	0.0	0.0	69,0,0
54	0.17	0.33	0.0	69,69,0	0.0	0.0	0.0	0,0,0
55	0.13	0.25	0.0	69,69,0	0.0	0.0	0.0	0,0,0
56	0.16	0.32	0.0	69,69,0	0.0	0.0	0.0	0,0,0
57	0.45	0.83	0.0	69,69,0	0.13	0.0	0.0	69,0,0
58	0.28	0.52	0.0	69,69,0	0.05	0.0	0.0	69,0,0
59	0.26	0.51	0.0	69,69,0	0.04	0.0	0.0	69,0,0
60	0.24	0.47	0.0	69,69,0	0.04	0.0	0.0	69,0,0
61	0.20	0.39	0.0	69,69,0	0.03	0.0	0.0	69,0,0
62	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
63	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
64	0.20	0.39	0.0	69,69,0	0.03	0.0	0.0	69,0,0
65	0.26	0.51	0.0	69,69,0	0.04	0.0	0.0	69,0,0
66	0.14	0.27	0.0	69,69,0	0.0	0.0	0.0	0,0,0
67	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
68	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
69	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

70	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
71	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
72	9.45e-03	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
73	0.37	0.72	0.0	69,69,0	0.10	0.0	0.0	69,0,0
74	0.13	0.25	0.0	69,69,0	0.0	0.0	0.0	0,0,0
75	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
76	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
77	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
78	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
79	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
80	0.01	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
81	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
82	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
83	0.08	0.16	0.0	69,69,0	0.0	0.0	0.0	0,0,0
84	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
85	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
86	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
87	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
88	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
89	0.12	0.24	0.0	69,69,0	0.0	0.0	0.0	0,0,0
90	0.09	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
91	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
92	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
93	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
94	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
95	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
96	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
97	0.10	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
98	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
99	0.05	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
100	0.04	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
101	0.04	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
102	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
103	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
104	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
105	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
106	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
107	0.07	0.14	0.0	69,69,0	0.0	0.0	0.0	0,0,0
108	0.05	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
109	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
110	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
111	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
112	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
113	0.32	0.64	0.0	69,69,0	0.08	0.0	0.0	69,0,0
114	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
115	0.08	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
116	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
117	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
118	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
119	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
120	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
121	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
122	0.13	0.26	0.0	69,69,0	0.0	0.0	0.0	0,0,0
123	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
124	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
125	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
126	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
127	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
128	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
129	0.31	0.62	0.0	69,69,0	0.07	0.0	0.0	69,0,0
130	0.14	0.27	0.0	69,69,0	0.0	0.0	0.0	0,0,0
131	0.09	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
132	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
133	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
134	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
135	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
136	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
137	0.28	0.53	0.0	69,69,0	0.05	0.0	0.0	69,0,0
138	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
139	0.10	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
140	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
141	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
142	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

143	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
144	0.01	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
145	0.37	0.70	0.0	69,69,0	0.10	0.0	0.0	69,0,0
146	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
147	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
148	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
149	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
150	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
151	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
152	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
153	0.20	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
154	0.12	0.24	0.0	69,69,0	0.0	0.0	0.0	0,0,0
155	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
156	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
157	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
158	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
159	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
160	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
161	0.20	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
162	0.12	0.24	0.0	69,69,0	0.0	0.0	0.0	0,0,0
163	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
164	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
165	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
166	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
167	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
168	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
169	0.37	0.70	0.0	69,69,0	0.10	0.0	0.0	69,0,0
170	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
171	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
172	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
173	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
174	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
175	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
176	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
177	0.28	0.53	0.0	69,69,0	0.05	0.0	0.0	69,0,0
178	0.14	0.27	0.0	69,69,0	0.0	0.0	0.0	0,0,0
179	0.10	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
180	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
181	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
182	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
183	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
184	0.01	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
185	0.31	0.62	0.0	69,69,0	0.07	0.0	0.0	69,0,0
186	0.14	0.27	0.0	69,69,0	0.0	0.0	0.0	0,0,0
187	0.10	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
188	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
189	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
190	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
191	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
192	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
193	0.21	0.41	0.0	69,69,0	0.03	0.0	0.0	69,0,0
194	0.13	0.26	0.0	69,69,0	0.0	0.0	0.0	0,0,0
195	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
196	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
197	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
198	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
199	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
200	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
201	0.32	0.64	0.0	69,69,0	0.08	0.0	0.0	69,0,0
202	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
203	0.08	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
204	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
205	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
206	0.03	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
207	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
208	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
209	0.14	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
210	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
211	0.07	0.14	0.0	69,69,0	0.0	0.0	0.0	0,0,0
212	0.05	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
213	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
214	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
215	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

216	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
217	0.10	0.19	0.0	69,69,0	0.0	0.0	0.0	0,0,0
218	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
219	0.05	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
220	0.04	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
221	0.04	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
222	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
223	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
224	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
225	0.12	0.25	0.0	69,69,0	0.0	0.0	0.0	0,0,0
226	0.09	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
227	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
228	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
229	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
230	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
231	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
232	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
233	0.19	0.37	0.0	69,69,0	0.03	0.0	0.0	69,0,0
234	0.11	0.22	0.0	69,69,0	0.0	0.0	0.0	0,0,0
235	0.08	0.16	0.0	69,69,0	0.0	0.0	0.0	0,0,0
236	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
237	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
238	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
239	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
240	0.02	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
241	0.37	0.72	0.0	69,69,0	0.10	0.0	0.0	69,0,0
242	0.13	0.25	0.0	69,69,0	0.0	0.0	0.0	0,0,0
243	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
244	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
245	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
246	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
247	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
248	0.01	0.03	0.0	69,69,0	0.0	0.0	0.0	0,0,0
249	0.26	0.51	0.0	69,69,0	0.04	0.0	0.0	69,0,0
250	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
251	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
252	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
253	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
254	0.02	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
255	0.01	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
256	9.50e-03	0.02	0.0	69,69,0	0.0	0.0	0.0	0,0,0
257	0.34	0.68	0.0	69,69,0	0.09	0.0	0.0	69,0,0
258	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
259	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
260	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
261	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
262	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
263	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
264	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
265	0.31	0.57	0.0	69,69,0	0.07	0.0	0.0	69,0,0
266	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
267	0.09	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
268	0.07	0.14	0.0	69,69,0	0.0	0.0	0.0	0,0,0
269	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
270	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
271	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
272	0.04	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
273	0.37	0.69	0.0	69,69,0	0.10	0.0	0.0	69,0,0
274	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
275	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
276	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
277	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
278	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
279	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
280	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
281	0.20	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
282	0.11	0.23	0.0	69,69,0	0.0	0.0	0.0	0,0,0
283	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
284	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
285	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
286	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
287	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
288	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

289	0.20	0.36	0.0	69,69,0	0.03	0.0	0.0	69,0,0
290	0.12	0.23	0.0	69,69,0	0.0	0.0	0.0	0,0,0
291	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
292	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
293	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
294	0.06	0.12	0.0	69,69,0	0.0	0.0	0.0	0,0,0
295	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
296	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
297	0.37	0.69	0.0	69,69,0	0.10	0.0	0.0	69,0,0
298	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
299	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
300	0.08	0.15	0.0	69,69,0	0.0	0.0	0.0	0,0,0
301	0.07	0.13	0.0	69,69,0	0.0	0.0	0.0	0,0,0
302	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
303	0.05	0.10	0.0	69,69,0	0.0	0.0	0.0	0,0,0
304	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
305	0.31	0.57	0.0	69,69,0	0.07	0.0	0.0	69,0,0
306	0.14	0.28	0.0	69,69,0	0.0	0.0	0.0	0,0,0
307	0.09	0.17	0.0	69,69,0	0.0	0.0	0.0	0,0,0
308	0.07	0.14	0.0	69,69,0	0.0	0.0	0.0	0,0,0
309	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
310	0.05	0.09	0.0	69,69,0	0.0	0.0	0.0	0,0,0
311	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
312	0.04	0.07	0.0	69,69,0	0.0	0.0	0.0	0,0,0
313	0.34	0.68	0.0	69,69,0	0.09	0.0	0.0	69,0,0
314	0.15	0.29	0.0	69,69,0	0.0	0.0	0.0	0,0,0
315	0.09	0.18	0.0	69,69,0	0.0	0.0	0.0	0,0,0
316	0.06	0.11	0.0	69,69,0	0.0	0.0	0.0	0,0,0
317	0.04	0.08	0.0	69,69,0	0.0	0.0	0.0	0,0,0
318	0.03	0.06	0.0	69,69,0	0.0	0.0	0.0	0,0,0
319	0.03	0.05	0.0	69,69,0	0.0	0.0	0.0	0,0,0
320	0.02	0.04	0.0	69,69,0	0.0	0.0	0.0	0,0,0
<b>Guscio</b>	<b>rRfck</b>	<b>rRfyk</b>	<b>rPFck</b>		<b>wR</b>	<b>wF</b>	<b>wP</b>	
	0.45	0.83	0.0		0.13	0.0	0.0	



## RELAZIONE GEOTECNICA E DELLE FONDAZIONI

### NORMATIVE DI RIFERIMENTO

In quanto di seguito riportato viene fatto esplicito riferimento alle seguenti Normative:

- **LEGGE n° 64 del 02/02/1974.** "Provvedimenti per le costruzioni, con particolari prescrizioni per le zone sismiche.";
- **D.M. LL.PP. del 11/03/1988.** "Norme tecniche riguardanti le indagini sui terreni e sulle rocce, la stabilità dei pendii naturali e delle scarpate, i criteri generali e le prescrizioni per la progettazione, l'esecuzione e il collaudo delle opere di sostegno delle terre e delle opere di fondazione.";
- **D.M. LL.PP. del 16/01/1996.** "Norme tecniche per le costruzioni in zone sismiche.";
- **Circolare Ministeriale LL.PP. n° 65/AA.GG. del 10/04/1997.** "Istruzioni per l'applicazione delle "Norme Tecniche per le costruzioni in zone sismiche" di cui al D.M. 16/01/1996.";
- **Eurocodice 1 - Parte 1** - "Basi di calcolo ed azioni sulle strutture - Basi di calcolo -.";
- **Eurocodice 7 - Parte 1** - "Progettazione geotecnica - Regole generali -.";
- **Eurocodice 8 - Parte 5** - "Indicazioni progettuali per la resistenza sismica delle strutture - Fondazioni, strutture di contenimento ed aspetti geotecnici -.";
- **D.M. 17/01/2018 - NUOVE NORME TECNICHE PER LE COSTRUZIONI**
- **Circolare n. 617 del 02/02/2009**

### INDAGINI IN SITO E CARATTERIZZAZIONE GEOTECNICA DEI TERRENI DI FONDAZIONE

La finalità della presente relazione è quella di definire il comportamento meccanico del volume di terreno (volume significativo) influenzato direttamente o indirettamente dalla costruzione di un manufatto e che a sua volta influenza il comportamento strutturale del manufatto stesso. Di seguito si illustrano i risultati delle indagini geologiche eseguite, nonché l'interpretazione dei risultati ottenuti. Dal quadro generale in tal modo scaturito si definiscono le caratteristiche della fondazione da adottare ed il modello da utilizzare per le elaborazioni relative alla interazione sovrastruttura-fondazione e fondazione-terreno.

Nell'area in esame sono state eseguite le seguenti indagini:

- Cinque prove penetrometriche dinamiche continue con penetrometro DPM,
- Dieci stendimenti sismici a rifrazione tipo MASW.

Le risultanze dell'indagine in sito hanno evidenziato per gli aerogeneratori oggetto della presente che il terreno di fondazione per tutta l'area in studio è caratterizzato sempre da una formazione argillosa per tutto lo spessore indagato di circa 4,7 metri, profondità oltre la quale si è avuto rifiuto delle aste alla penetrazione.

Dal punto di vista della resistenza la formazione si presenta in due spessori a resistenza crescente con la profondità (ved. la stima dei parametri geotecnici delle prova). Complessivamente si hanno valori medi di resistenza considerati fino al rifiuto alla penetrazione delle aste a circa 4.70 m di profondità.

Livello argilloso	Profondità base strato	Coeione non drenata (De Beer)	Angolo di attrito (Owasaki & Iwasaki)	Peso di volume
<b>A</b>	6,90 m	0,94 Kg/cmq	$\phi = 26,2^\circ$	$\gamma = 1.88 \text{ gr/cc}$
<b>CATEGORIA SISMICA DEI SITI</b>		c - B (G4) - B (G5)		

Di seguito si riportano alcuni cenni teorici relativi alle modalità di calcolo implementate e la descrizione della simbologia adottata nei tabulati.

### DETERMINAZIONE DELLA PORTANZA VERTICALE DI FONDAZIONI PROFONDE

Per la determinazione della portanza verticale di fondazioni profonde si fa riferimento a due contributi: la "portanza di punta" e la "portanza per attrito laterale". Queste due componenti in genere sono calcolate in maniera autonoma dato che risulta molto difficoltoso, tranne che in poche situazioni, stabilire quanta parte del carico è assorbita dall'attrito laterale e quanta dalla resistenza alla punta. Nel seguito, ai fini del calcolo della portanza verticale, si assumeranno le seguenti espressioni generali valide per il caso di palo soggetto a compressione e per il caso di palo soggetto a trazione (nel calcolo della portanza verticale è possibile tenere in conto tutti o solo uno dei contributi su definiti):

$$Q_C = \frac{Q_P}{\eta_P} + \frac{Q_L}{\eta_L} - W_{ATT.NEG.} - W_P \quad (\text{caso di palo in compressione}) \quad Q_T$$

$$= \frac{Q_L}{\eta_L} + W_P \quad (\text{caso di palo in trazione})$$

dove i simboli su riportati hanno il seguente significato:

- $Q_C$  resistenza a compressione del palo
- $Q_T$  resistenza a trazione del palo
- $Q_P$  carico limite verticale alla punta del palo
- $Q_L$  carico limite verticale lungo la superficie laterale del palo
- $W_{ATT.NEG.}$  attrito negativo agente sul palo
- $W_P$  peso totale del palo
- $\eta_{II}$  coefficiente di sicurezza per carico limite verticale alla punta del palo
- $\eta_{IA}$  coefficiente di sicurezza per carico limite verticale lungo la superficie laterale del palo

I valori del carico limite verticale alla punta del palo " $Q_P$ " e del carico limite verticale lungo la superficie laterale del palo " $Q_L$ " sono determinati con le note "formule statiche". Queste esprimono i valori di cui sopra in funzione della geometria del palo, delle caratteristiche geotecniche del terreno in cui è immerso, della modalità esecutiva e dell'interfaccia palo-terreno.

Di seguito si illustrano le metodologie con le quali saranno determinati i valori prima citati; è necessario tenere presente che tali metodi sono riferiti al calcolo del "singolo palo" e per estendere tale modalità computazione al caso di "pali in gruppo" si farà ricorso ai "coefficienti d'efficienza", in questo modo si potrà tenere in debito conto l'interferenza reciproca che i pali esercitano.

## CARICO LIMITE VERTICALE ALLA PUNTA DEL PALO

Il valore del carico limite verticale alla punta del palo, indipendentemente dal metodo utilizzato per la sua determinazione, è condizionato dalla modalità esecutiva. Esso varia notevolmente a seconda che il palo sia del tipo "infisso" o "trivellato" poiché le caratteristiche fisico-meccaniche del terreno circostante il palo variano in seguito alle operazioni d'installazione. Di conseguenza, per tenere conto della modalità esecutiva nel calcolo dei coefficienti di portanza, si propone di modificare il valore dell'angolo di resistenza a taglio secondo quanto suggerito da Kishida (1967):

$$\phi_{cor} = \frac{\phi + 40}{2} \quad (\text{per pali infissi}) \quad \phi_{cor} = \phi - 3^\circ \quad (\text{per pali trivellati})$$

Con la correzione di cui sopra si determineranno i fattori adimensionali di portanza che sono presenti nella relazione per la determinazione del carico limite verticale alla punta che assume la seguente espressione:

$$Q_P = A_P \cdot (q_P \cdot N_q^* + c \cdot N_c^*)$$

dove i simboli su riportati hanno il seguente significato:

- $A_P$  superficie portante efficace della punta del palo
- $q_P$  pressione del terreno presente alla punta del palo
- $c$  coesione del terreno alla punta del palo (nel caso di condizione non drenata  $c = c_u$ )
- $N_q^*, N_c^*$  fattori adimensionali di portanza funzione dell'angolo d'attrito interno  $\phi_{cor}$  del terreno già corretti

In letteratura esistono diverse formulazioni per il calcolo dei fattori adimensionali di portanza, di seguito si riportano quelle che sono state implementate:

### Formulazione di Meyerhof per base poggiate su terreni sciolti (1951)

- se  $\phi \neq 0$  (condizione drenata) si ha:

$$N_q = \text{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right) \cdot e^{\pi \cdot \text{tg}(\phi)} \quad N_c = (N_q - 1) \cdot \text{ctg}(\phi)$$

$$s_q = 1 + 0.1 \cdot \operatorname{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right) \quad s_c = 1 + 0.2 \cdot \operatorname{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right) \quad (\text{fattori di forma})$$

$$d_q = 1 + 0.1 \cdot \frac{L}{D} \cdot \sqrt{\operatorname{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right)} \quad d_c = 1 + 0.2 \cdot \frac{L}{D} \cdot \sqrt{\operatorname{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right)} \quad (\text{fattori d'approfondimento})$$

$$N_q^* = N_q \cdot s_q \cdot d_q \quad N_c^* = N_c \cdot s_c \cdot d_c$$

se  $\varphi = 0$  (condizione non drenata) si ha:

$$N_q = 1.00 \quad N_c = \pi + 2$$

$$s_q = 1.00 \quad s_c = 1.20 \quad (\text{fattori di forma})$$

$$d_q = 1.00 \quad d_c = 1 + 0.2 \cdot \frac{L}{D} \quad (\text{fattori d'approfondimento})$$

$$N_q^* = N_q \cdot s_q \cdot d_q \quad N_c^* = N_c \cdot s_c \cdot d_c$$

**Formulazione di Hansen per base poggiate su terreni sciolti (1970)**

se  $\varphi \neq 0$  (condizione drenata) si ha:

$$N_q = \operatorname{tg}^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right) \cdot e^{\pi \cdot \operatorname{tg}(\phi)} \quad N_c = (N_q - 1) \cdot \operatorname{ctg}(\phi)$$

$$s_q = 1 + \operatorname{tg}(\phi) \quad s_c = 1 + \frac{N_q}{N_c} \quad (\text{fattori di forma})$$

$$d_q = 1 + 2 \cdot \operatorname{tg}(\phi) \cdot (1 - \operatorname{sen}(\phi))^2 \cdot \theta \quad d_c = 1 + 0.4 \cdot \theta \quad (\text{fattori d'approfondimento})$$

dove: se  $\frac{L}{D} \leq 1 \Rightarrow \theta = \frac{L}{D}$ , se  $\frac{L}{D} > 1 \Rightarrow \theta = \operatorname{arctg} \left( \frac{L}{D} \right)$

$$N_q^* = N_q \cdot s_q \cdot d_q \quad N_c^* = N_c \cdot s_c \cdot d_c$$

se  $\varphi = 0$  (condizione non drenata) si ha:

$$N_q = 1.00 \quad N_c = \pi + 2$$

$$s_q = 1.00 \quad s_c = 1.20 \quad (\text{fattori di forma})$$

$$d_q = 1.00 \quad d_c = 1 + 0.4 \cdot \theta \quad (\text{fattori d'approfondimento})$$

$$N_q^* = N_q \cdot s_q \cdot d_q \quad N_c^* = N_c \cdot s_c \cdot d_c$$

**Formulazione di Zeevaert per base poggiate su terreni sciolti (1972)**

se  $\varphi \neq 0$  (condizione drenata) si ha:

$$N_q^* = \frac{\cos^2(\phi)}{2 \cdot \cos^2 \left( \frac{\pi}{4} + \frac{\phi}{2} \right)} \cdot e^{\left( \frac{\pi}{2} + \phi \right) \cdot \operatorname{tg}(\phi)} \quad N_c^* = (N_q - 1) \cdot \operatorname{ctg}(\phi)$$

se  $\varphi = 0$  (condizione non drenata) si ha:

$$N_q^* = 1.00 \quad N_c^* = 9.00$$

**Formulazione di Berezantzev per base poggiate su terreni sciolti (1970)**

Berezantzev fa riferimento ad una superficie di scorrimento "alla Terzaghi" che si arresta sul piano della punta del palo. Inoltre considera il cilindro di terreno coassiale al palo (avente diametro pari all'estensione in sezione della superficie di scorrimento) in parte sostenuto da tensioni tangenziali dal rimanente terreno presente lungo la superficie laterale del cilindro. Conseguentemente il valore della pressione presente alla punta del palo è inferiore alla corrispondente pressione litostatica ed è influenzata dal rapporto tra la profondità alla quale è posta la punta "L" del palo e il diametro "D" dello stesso. Quindi il valore di  $N_q^*$  è influenzato da questo effetto "Silo". I valori che l'autore propone sono:

se  $\varphi \neq 0$  (condizione drenata) si ha:

Valori di  $N_q^*$  per pali di diametro fino a 80.0 cm.

L/D	8°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	40°	42°	44°	46°	48°	50°
4	1.07	2.18	3.15	4.72	7.15	10.73	15.85	22.95	32.62	45.56	62.69	85.18	114.53	152.71	202.32	266.82	350.86	460.79	605.36
12	1.04	1.77	2.46	3.64	5.52	8.42	12.71	18.85	27.44	39.21	55.07	76.20	104.13	140.81	188.86	251.72	334.05	442.17	584.82
20	1.03	1.63	2.20	3.20	4.82	7.38	11.22	16.82	24.76	35.79	50.83	71.06	98.01	133.65	180.59	242.29	323.39	430.21	571.48
28	1.03	1.54	2.05	2.93	4.40	6.72	10.26	15.48	22.96	33.43	47.84	67.37	93.54	128.35	174.39	235.13	315.21	420.95	561.08
36	1.02	1.49	1.94	2.75	4.10	6.26	9.57	14.49	21.60	31.64	45.53	64.48	90.00	124.10	169.36	229.27	308.46	413.26	552.38
50	1.02	1.42	1.82	2.53	3.74	5.68	8.70	13.23	19.84	29.27	42.45	60.56	85.14	118.18	162.30	220.95	298.80	402.16	539.74

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

75	1.02	1.35	1.69	2.30	3.33	5.02	7.69	11.74	17.73	26.37	38.58	55.55	78.82	110.38	152.84	209.67	285.53	386.74	522.01
100	1.01	1.31	1.61	2.14	3.07	4.60	7.02	10.74	16.28	24.34	35.84	51.95	74.19	104.56	145.68	201.02	275.23	374.64	507.95
200	1.01	1.22	1.44	1.84	2.54	3.71	5.60	8.56	13.05	19.73	29.43	43.30	62.82	89.95	127.29	178.30	247.63	341.59	468.90
500	1.01	1.14	1.29	1.55	2.02	2.82	4.14	6.24	9.50	14.45	21.83	32.64	48.25	70.49	101.85	145.69	206.57	290.75	406.87

Valori di  $N_q^*$  per pali di diametro maggiore a 80.0 cm.

L/Δ	8°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°	40°	42°	44°	46°	48°	50°
4	1.16	3.09	3.95	5.04	6.44	8.22	10.50	13.41	17.12	21.87	27.92	35.65	45.53	58.14	74.24	94.80	121.05	154.57	197.38
12	1.21	3.14	3.98	5.05	6.42	8.14	10.34	13.13	16.68	21.18	26.90	34.17	43.41	55.15	70.07	89.03	113.13	143.77	182.72
20	1.26	3.18	4.01	5.06	6.39	8.06	10.18	12.85	16.23	20.49	25.88	32.69	41.29	52.16	65.89	83.26	105.21	132.97	168.06
28	1.30	3.22	4.04	5.07	6.36	7.99	10.02	12.57	15.78	19.81	24.86	31.20	39.17	49.16	61.72	77.49	97.29	122.16	153.40
36	1.35	3.27	4.07	5.08	6.34	7.91	9.86	12.30	15.33	19.12	23.84	29.72	37.04	46.17	57.55	71.72	89.38	111.36	138.75
44	1.39	3.31	4.10	5.09	6.31	7.83	9.70	12.02	14.88	18.43	22.81	28.23	34.92	43.18	53.38	65.95	81.46	100.56	124.09
52	1.44	3.35	4.14	5.10	6.29	7.75	9.54	11.74	14.44	17.74	21.79	26.75	32.80	40.19	49.21	60.18	73.54	89.76	109.43
56	1.46	3.37	4.15	5.10	6.27	7.71	9.46	11.60	14.21	17.40	21.28	26.00	31.74	38.70	47.12	57.30	69.58	84.36	102.10
60	1.49	3.39	4.17	5.11	6.26	7.67	9.38	11.46	13.99	17.06	20.77	25.26	30.68	37.20	45.03	54.42	65.62	78.96	94.77
65	1.51	3.42	4.19	5.12	6.25	7.62	9.28	11.29	13.71	16.63	20.13	24.33	29.35	35.33	42.43	50.81	60.67	72.21	85.61

$$N_c^* = (N_q - 1) \cdot \text{ctg}(\phi)$$

se  $\phi = 0$  (condizione non drenata) si ha:

$$N_q^* = 1.00 \qquad N_c^* = 9.00$$

**Formulazione di Vesic per base poggiate su terreni sciolti (1975)**

se  $\phi \neq 0$  (condizione drenata) si ha:

$$N_q^* = \frac{3}{3 - \text{sen}(\phi)} \cdot \text{tg}^2\left(\frac{\pi}{4} + \frac{\phi}{2}\right) \cdot I_{rr}^{\frac{4 + \text{sen}(\phi)}{3 \cdot (1 + \text{sen}(\phi))}} \cdot e^{\left(\frac{\pi}{2} - \phi\right) \cdot \text{tg}(\phi)}$$

$$N_c^* = (N_q - 1) \cdot \text{ctg}(\phi)$$

$$I_{rr} = \frac{I_r}{1 + \varepsilon_v \cdot I_r} \qquad \varepsilon_v = \frac{q_p \cdot \alpha}{E_t} \cdot \frac{(1 + \nu) \cdot (1 - 2 \cdot \nu)}{(1 - \nu)}$$

$$I_r = \frac{E_t}{2 \cdot (1 + \nu) \cdot (c + q_p \cdot \alpha \cdot \text{tg}(\phi))}$$

se  $\phi = 0$  (condizione non drenata) si ha:

$$N_q^* = 1.00 \qquad N_c^* = \frac{4}{3} \cdot (\log_n(I_{rr}) + 1) + \frac{\pi}{2} + 1$$

dove i simboli su riportati hanno il seguente significato:

- $E_t$  modulo elastico del terreno alla profondità della punta del palo
- $\nu$  coefficiente di Poisson del terreno alla profondità della punta del palo
- $\alpha$  coefficiente di riduzione della pressione del terreno presente alla profondità della punta del palo

Nel caso in cui si scelga di effettuare la riduzione della pressione del terreno presente alla profondità della punta del palo (cioè  $\alpha < 1$ ) il coefficiente di riduzione " $\alpha$ " assume la seguente espressione:

$$\alpha = \frac{1 + 2 \cdot K_0}{3} \qquad \text{dove: se } \phi \neq 0 \Rightarrow K_0 = 1 - \text{sen}(\phi); \qquad \text{se } \phi = 0 \Rightarrow K_0 = \frac{\nu}{1 - \nu}$$

**Formulazione di Janbu per base poggiate su terreni sciolti (1976)**

se  $\phi \neq 0$  (condizione drenata) si ha:

$$N_q^* = (\text{tg}(\phi) + \sqrt{1 + \text{tg}^2(\phi)})^2 \cdot e^{2 \cdot \vartheta \cdot \text{tg}(\phi)} \qquad N_c^* = (N_q - 1) \cdot \text{ctg}(\phi)$$

$$\vartheta = 60 + 0.45 \cdot Dr \qquad \text{dove "Dr" è la densità relativa del terreno.}$$

se  $\phi = 0$  (condizione non drenata) si ha:

$$N_q^* = 1.00 \qquad N_c^* = 5.74$$

**Formulazione di Terzaghi per base poggiate su roccia (1943)**

Per la determinazione del carico limite nel caso di presenza di ammasso roccioso bisogna valutare molto attentamente il grado di solidità della roccia stessa. Tale valutazione viene in genere eseguita stimando l'indice RQD (Rock Quality Designation) che rappresenta una misura della qualità di un ammasso roccioso. Tale indice può variare da un minimo di 0 (caso in cui la lunghezza dei pezzi di roccia estratti dal carotiere è inferiore a 100 mm) ad un massimo di 1 (caso in cui la carota risulta integra) ed è calcolato nel seguente modo:

$$RQD = \frac{\sum \text{lunghezze dei pezzi di roccia intatta} > 100\text{mm}}{\text{lunghezza del carotiere}}$$

Se il valore di RQD è molto basso la roccia è molto fratturata ed il calcolo della capacità portante dell'ammasso

roccioso va condotto alla stregua di un terreno sciolto utilizzando tutte le formulazioni sopra descritte.

$$N_q = \frac{e^{2 \cdot \left(\frac{3\pi}{4} - \frac{\phi}{2}\right) \cdot \text{tg}(\phi)}}{2 \cdot \cos^2\left(\frac{\pi}{4} + \frac{\phi}{2}\right)} \quad N_c = (N_q - 1) \cdot \text{ctg}(\phi) \quad \text{se } \phi = 0 \Rightarrow N_c = \frac{3}{2} \cdot \pi + 1$$

$$s_q = 1.00 \quad s_c = 1.30 \quad (\text{fattori di forma})$$

$$N_q^* = \text{RQD}^2 \cdot N_q \cdot s_q \quad N_c^* = \text{RQD}^2 \cdot N_c \cdot s_c$$

**Formulazione di Stagg-Zienkiewicz per base poggiate su roccia (1968)**

$$N_q = \text{tg}^6\left(\frac{90^\circ + \phi}{2}\right) \quad N_c = 5 \cdot \text{tg}^4\left(\frac{90^\circ + \phi}{2}\right)$$

$$s_q = 1.00 \quad s_c = 1.30 \quad (\text{fattori di forma})$$

$$N_q^* = \text{RQD}^2 \cdot N_q \cdot s_q \quad N_c^* = \text{RQD}^2 \cdot N_c \cdot s_c$$

### CARICO LIMITE VERTICALE LUNGO LA SUPERFICIE LATERALE DEL PALO

Il valore del carico limite verticale lungo la superficie laterale del palo è dato dall'integrale esteso a tutta la superficie laterale del palo delle tensioni tangenziali che si sviluppano all'interfaccia palo-terreno in condizioni limite:

$$Q_L = \int_{\Gamma} \tau_{\text{lim}} \cdot d\Gamma = \int_0^L (c_a + \sigma_h \cdot \text{tg}(\delta)) \cdot P_{\text{lat}} \cdot dz$$

dove i simboli sopra riportati hanno il seguente significato:

- $\chi_a$  adesione all'interfaccia terreno-palo alla generica profondità "z"
- $\sigma_h$  tensione orizzontale alla generica profondità "z"
- $\delta$  angolo di resistenza a taglio all'interfaccia terreno-palo alla generica profondità "z"
- $P_{\text{lat}}$  perimetro della sezione trasversale del palo alla generica profondità "z"
- $L$  sviluppo longitudinale del palo

Analogamente al carico limite alla punta, anche il valore del carico limite verticale lungo la superficie laterale del palo varia notevolmente a seconda che esso sia del tipo "infilato" o "trivellato" a causa del diverso comportamento del terreno circostante in palo. Conseguentemente i parametri sopra riportati possono essere correlati da leggi diverse in funzione delle modalità di esecuzione del palo. Di seguito si descrivono quelle che sono state implementate.

L'adesione " $c_a$ " è correlata alla coesione " $c$ " nel caso di condizioni drenate; oppure alla coesione non drenata " $c_u$ " nel caso di condizioni non drenate, per mezzo del coefficiente d'adesione " $\psi$ " secondo la seguente relazione:

$$c_a = c_* \cdot \psi \quad \text{dove: } c_* = c \text{ (in condizione drenata);}$$

$$c_* = c_u \text{ (in condizione non drenata).}$$

Esprimendo il valore di " $c_*$ " in N/cm<sup>2</sup>, il coefficiente d'adesione " $\psi$ " può assumere i seguenti valori:

**Caquot-Kerisel (consigliato per pali trivellati)**

$$\psi = \frac{100 + c_*^2}{100 + 7 \cdot c_*^2}$$

**Meyerhof-Murdock (consigliato per pali trivellati)**

$$\text{se } c_* \leq 5.00 \text{ N/cm}^2 \Rightarrow \psi = 1.000 - 0.100 \cdot c_*$$

$$\text{se } c_* > 5.00 \text{ N/cm}^2 \Rightarrow \psi = 0.525 - 0.005 \cdot c_*$$

**Whitaker-Cooke (consigliato per pali trivellati)**

$$\text{se } c_* \leq 2.50 \text{ N/cm}^2 \Rightarrow \psi = 0.90$$

$$\text{se } 2.50 < c_* \leq 5.00 \text{ N/cm}^2 \Rightarrow \psi = 0.80$$

$$\text{se } 5.00 < c_* \leq 7.50 \text{ N/cm}^2 \Rightarrow \psi = 0.60$$

$$\text{se } c_* > 7.50 \text{ N/cm}^2 \Rightarrow \psi = 0.40$$

**Woodward (consigliato per pali trivellati)**

se $c_* \leq 4.00 \text{ N/cm}^2$	⇒	ψ = 0.90
se $4.00 < c_* \leq 8.00 \text{ N/cm}^2$	⇒	ψ = 0.60
se $8.00 < c_* \leq 12.00 \text{ N/cm}^2$	⇒	ψ = 0.50
se $12.00 < c_* \leq 20.00 \text{ N/cm}^2$	⇒	ψ = 0.40
se $c_* > 20.00 \text{ N/cm}^2$	⇒	ψ = 0.30
<b>Viggiani e altri (consigliato per pali infissi)</b>		
se $c_* \leq 5.00 \text{ N/cm}^2$	⇒	ψ = 1.00
se $5.00 < c_* \leq 10.00 \text{ N/cm}^2$	⇒	ψ = 0.70
se $10.00 < c_* \leq 15.00 \text{ N/cm}^2$	⇒	ψ = 0.50
se $15.00 < c_* \leq 20.00 \text{ N/cm}^2$	⇒	ψ = 0.40
se $c_* > 20.00 \text{ N/cm}^2$	⇒	ψ = 0.30

Il valore della tensione orizzontale " $\sigma_h$ " è correlato al valore della pressione verticale " $\sigma_v$ " per mezzo del coefficiente di spinta orizzontale " $K_s$ " secondo la seguente relazione:

$$\sigma_h = \sigma_v \cdot K_s$$

Il valore di " $K_s$ " dipende essenzialmente dal tipo di terreno e dal suo stato d'addensamento nonché dalla tecnologia utilizzata per l'installazione.

Il programma permette di scegliere tra differenti teorie per il calcolo di  $K_s$ .

Opzione 1:

Metodo "Tomlinson (1971)"

$K_s$  può variare da un limite inferiore pari al coefficiente di spinta a riposo " $K_0$ " fino a valori prossimi al coefficiente di spinta passiva " $K_p$ "; i valori proposti sono:

pali trivellati:  $K_s = K_0 = 1 - \text{sen}(\phi)$

pali infissi:  $K_s =$  variabile da:  $K_p = 1 + \text{tg}^2(\phi)$  in sommità fino a  $K_0 = 1 - \text{sen}(\phi)$  alla punta

Opzione 2:

Metodo di "Kulhavy (1983)"

pali trivellati:  $K_s = \alpha K_0$  con  $\alpha$  variabile tra 2/3 e 1

pali infissi:  $K_s = \alpha K_0$  con  $\alpha$  variabile da 3/4, per compattazione del terreno trascurabile, fino a 2, nel caso di compattazione significativa.

Il valore dell'angolo di resistenza al taglio all'interfaccia terreno-palo " $\delta$ " è funzione della scabrezza della superficie del palo e quindi della modalità esecutiva; i valori proposti sono:

$$\delta = \text{arctg}(\text{tg}(\phi)) \quad (\text{per pali trivellati}) \quad \delta = \text{arctg}\left(\frac{3}{4} \cdot \text{tg}(\phi)\right) \quad (\text{per pali infissi})$$

## SIMBOLOGIA ADOTTATA NEI TABULATI DI CALCOLO

Per maggior chiarezza nella lettura dei tabulati di calcolo viene riportata la descrizione dei simboli principali utilizzati nella stesura degli stessi. Per comodità di lettura la legenda è suddivisa in paragrafi con la stessa modalità in cui sono stampati i tabulati di calcolo.

### **Dati geometrici degli elementi costituenti le fondazioni profonde**

- X elem.                    ascissa nel riferimento globale dell'elemento
- Y elem.                    ordinata nel riferimento globale dell'elemento
- Profon.                    profondità del piano di posa dell'elemento a partire dal piano campagna
- Base                        larghezza della sezione trasversale dell'elemento
- Lungh.                     dimensione dello sviluppo longitudinale dell'elemento
- Altez.                     altezza della sezione trasversale dell'elemento
- Rotaz.                     rotazione dell'elemento rispetto al suo baricentro



- Grup. ap. nel caso cui l'elemento faccia parte di una palificata, rappresenta il numero identificativo della stessa
- Ind. Strat. indice della stratigrafia associata all'elemento
- Tip. iniez. tipologia d'iniezione dei micropali ai fini del calcolo della portanza secondo le raccomandazioni di Bustamante e Doix (No iniez. = assenza d'iniezione, Iniez.uni. = iniezione unica, Iniez.rip. = iniezione ripetuta)
- Tip. ter. tipologia di terreno ai fini del calcolo della portanza secondo le raccomandazioni di Bustamante e Doix (Coes. = coesivo, Inc. = incoerente)
- Dia. P. diametro fusto del palo
- Lun. P. lunghezza totale del palo
- Lun. L. lunghezza tratto del palo senza contributo di terreno
- Dis. P. distanza del baricentro del palo dal bordo del plinto
- In. Px interasse principale del palo
- In. Py interasse secondario del palo
- Dia. B. diametro bulbo del palo
- Lun. B. lunghezza della sbulbatura del palo
- E.C.V. coefficiente d'efficienza per carico limite verticale del singolo palo
- E.C.C. coefficiente d'efficienza per carico critico verticale del singolo palo
- E.C.T. coefficiente d'efficienza per carico limite trasversale del singolo palo
- Svin. testa codice di svincolo alla rotazione in testa al palo (0 = non attivo, 1 = attivo)
- Vin. piede codici di vincolo rispettivamente alla rotazione orizzontale, traslazione orizzontale e traslazione verticale applicabili al piede del palo (0 = non attivo, 1 = attivo)
- Asc. X' ascissa del baricentro del singolo palo dell'elemento nel riferimento locale con origine nel baricentro del plinto
- Asc. Y' ordinata del baricentro del singolo palo dell'elemento nel riferimento locale con origine nel baricentro del plinto
- Peso spec. peso specifico del palo
- Mod. El. Pa. modulo elastico normale del palo

***Dati di carico degli elementi costituenti le fondazioni profonde***

- Cmb numero della combinazione di carico
- Tipologia tipologia della combinazione di carico
- Sismica flag per l'applicazione della riduzione sismica alle caratteristiche meccaniche del terreno di fondazione per la combinazione di carico in esame
- S. Normale sollecitazione normale agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)
- S. Tagliante X' sollecitazione tagliante lungo l'asse X' agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)
- S. Tagliante Y' sollecitazione tagliante lungo l'asse Y' agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)
- S. Flessionale X' sollecitazione flessionale lungo l'asse X' agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)
- S. Flessionale Y' sollecitazione flessionale lungo l'asse Y' agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)
- S. Torsionale sollecitazione torsionale agente alla quota del piano di fondazione dell'elemento (riferimento locale con origine nel baricentro del plinto)

***Valori di calcolo per le fondazioni profonde***

- Port. punta carico limite verticale alla punta del palo (valore su singolo palo corretto dal relativo coefficiente d'efficienza)
- Port. lat. carico limite verticale lungo la superficie laterale del fusto del palo (valore su singolo palo corretto dal relativo coefficiente d'efficienza)
- Port. bulbo carico limite verticale lungo la superficie laterale del bulbo del palo (valore su singolo palo corretto dal relativo coefficiente d'efficienza)
- C. Critico carico critico per l'instabilità del palo (valore su singolo palo corretto dal relativo coefficiente d'efficienza)
- Attr. Neg. attrito negativo agente sul palo (valore su singolo palo)

- Peso Palo            peso totale del singolo palo
- Cmb                    numero e tipologia della combinazione di carico
- S. Norm.              sollecitazione normale agente alla testa del palo in esame
- V. V. Com.            resistenza a compressione del palo in esame (corretto dal relativo coefficiente di sicurezza)
- V. V. Tra.             resistenza a trazione del palo in esame (corretto dal relativo coefficiente di sicurezza)
- Ver. Com.             rapporto tra la sollecitazione normale agente alla testa del palo e la sua resistenza a compressione (verifica positiva se il rapporto è < 1.0)
- Ver. Tra.              rapporto tra la sollecitazione normale agente alla testa del palo e la sua resistenza a trazione (verifica positiva se il rapporto è < 1.0)
- S. Tagl.                sollecitazione tagliente agente alla testa del palo
- S. Fles.                sollecitazione flessionale agente alla testa del palo
- V. V. Trs.             resistenza trasversale del palo in esame (corretto dal relativo coefficiente di sicurezza)
- Ver. Tra.             rapporto tra la sollecitazione tagliente agente alla testa del palo e la sua resistenza trasversale (verifica positiva se il rapporto è < 1.0)
- Ced. V.                cedimento verticale in corrispondenza della testa del palo
- Ced. H.                cedimento orizzontale in corrispondenza della testa del palo

## **PARAMETRI DI CALCOLO**

### **Modalità di calcolo della portanza verticale per fondazioni profonde:**

Per elementi con pali: Portanza di punta e laterale

Per elementi con micropali: Portanza di punta e laterale

### **Metodi di calcolo della portanza di punta per fondazioni profonde:**

Per terreni sciolti: Vesic

Riduzione della tensione litostatica: No

Per terreni lapidei: Terzaghi

Riduzione di Kishida per pali battuti o trivellati: Si

Metodo di calcolo del coefficiente di spinta orizzontale Ks: Tomlinson

### **Coefficienti parziali e totali di sicurezza per Tensioni Ammissibili e S.L.E. nel calcolo della portanza per fondazioni profonde:**

Coeff. di sicurezza alla punta: 2,50

Coeff. di sicurezza lungo il fusto: 2,50

Coeff. di sicurezza lungo il bulbo: 2,50

Coeff. di sicurezza per palo in trazione: 2,50

### **Combinazioni di carico:**

#### **APPROCCIO PROGETTUALE TIPO 2 - Comb. (A1+M1+R3)**

Coefficienti parziali e totali di sicurezza per S.L.U. nel calcolo della portanza per pali trivellati:

I coeff. A1 risultano combinati secondo lo schema presente nella relazione di calcolo della struttura.

- Coeff. M1 per  $\tan \phi$  (statico): 1

- Coeff. M1 per  $c'$  (statico): 1

- Coeff. M1 per  $C_u$  (statico): 1

- Coeff. M1 per  $\tan \phi$  (sismico): 1

- Coeff. M1 per  $c'$  (sismico): 1

- Coeff. M1 per  $C_u$  sismico): 1

- Coeff. R3 base: 1,35

- Coeff. R3 laterale in compressione: 1,15

- Coeff. R3 laterale in trazione: 1,25

Fattore di correlazione: 1,70

## **ARCHIVIO STRATIGRAFIE**

Indice / Descrizione: 001 / Stratigr. G9-G10

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Numero strati: 1  
Profondità falda: assente

Strato n.	Quota di riferimento	Spessore	Indice / Descrizione terreno	Attrito Neg.
1	da 0,0 a -4000,0 cm	4000,0 cm	001 / Argilla media	Assente

**ARCHIVIO TERRENI**

Indice / Descrizione terreno: **001 / Argilla media**

Comportamento del terreno: condizione non drenata

Peso Spec.	P. Spec. Sat.	Coef.non dren.	Mod.Elast.	Mod.Edom.	Dens.Rel.	Poisson	C. Ades.
daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	%	%	
1,880 E-3	2,080 E-3	0,940	150,000	150,000	60,0	0,500	0,48

**DATI GEOMETRICI DEGLI ELEMENTI COSTITUENTI LE FONDAZIONI PROFONDE**

**Elemento: 92 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.				Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.	E.C.V.	E.C.C.	E.C.T.	codice	codice
934,4	0,0	220,0	0,0	0,0	220,0	0,00	92	001				0	0; 0; 0
<b>Dia. P.</b>	<b>Lun. P.</b>	<b>Lun. L.</b>	<b>Dist.P.</b>	<b>In. Px</b>	<b>In. Py</b>	<b>Dia. B.</b>	<b>Lun. B.</b>	<b>E.C.V.</b>	<b>E.C.C.</b>	<b>E.C.T.</b>			
cm	cm	cm	cm	cm	cm	cm	cm						
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00			
<b>Palo</b>	<b>Asc. X'</b>	<b>Ord. Y'</b>											
n.	cm	cm											
1	0,0	0,0											

**Elemento: 119 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.				Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.	E.C.V.	E.C.C.	E.C.T.	codice	codice
681,8	681,8	220,0	0,0	0,0	220,0	0,00	119	001				0	0; 0; 0
<b>Dia. P.</b>	<b>Lun. P.</b>	<b>Lun. L.</b>	<b>Dist.P.</b>	<b>In. Px</b>	<b>In. Py</b>	<b>Dia. B.</b>	<b>Lun. B.</b>	<b>E.C.V.</b>	<b>E.C.C.</b>	<b>E.C.T.</b>			
cm	cm	cm	cm	cm	cm	cm	cm						
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00			
<b>Palo</b>	<b>Asc. X'</b>	<b>Ord. Y'</b>											
n.	cm	cm											
1	0,0	0,0											

**Elemento: 151 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.				Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.	E.C.V.	E.C.C.	E.C.T.	codice	codice
0,0	934,4	220,0	0,0	0,0	220,0	0,00	151	001				0	0; 0; 0
<b>Dia. P.</b>	<b>Lun. P.</b>	<b>Lun. L.</b>	<b>Dist.P.</b>	<b>In. Px</b>	<b>In. Py</b>	<b>Dia. B.</b>	<b>Lun. B.</b>	<b>E.C.V.</b>	<b>E.C.C.</b>	<b>E.C.T.</b>			
cm	cm	cm	cm	cm	cm	cm	cm						
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00			
<b>Palo</b>	<b>Asc. X'</b>	<b>Ord. Y'</b>											
n.	cm	cm											
1	0,0	0,0											

**Elemento: 183 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.				Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.	E.C.V.	E.C.C.	E.C.T.	codice	codice
-681,8	681,8	220,0	0,0	0,0	220,0	0,00	183	001				0	0; 0; 0
<b>Dia. P.</b>	<b>Lun. P.</b>	<b>Lun. L.</b>	<b>Dist.P.</b>	<b>In. Px</b>	<b>In. Py</b>	<b>Dia. B.</b>	<b>Lun. B.</b>	<b>E.C.V.</b>	<b>E.C.C.</b>	<b>E.C.T.</b>			
cm	cm	cm	cm	cm	cm	cm	cm						
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00			
<b>Palo</b>	<b>Asc. X'</b>	<b>Ord. Y'</b>											
n.	cm	cm											
1	0,0	0,0											

**Elemento: 215 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.				Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.	E.C.V.	E.C.C.	E.C.T.	codice	codice
-934,4	0,0	220,0	0,0	0,0	220,0	0,00	215	001				0	0; 0; 0
<b>Dia. P.</b>	<b>Lun. P.</b>	<b>Lun. L.</b>	<b>Dist.P.</b>	<b>In. Px</b>	<b>In. Py</b>	<b>Dia. B.</b>	<b>Lun. B.</b>	<b>E.C.V.</b>	<b>E.C.C.</b>	<b>E.C.T.</b>			
cm	cm	cm	cm	cm	cm	cm	cm						
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00			
<b>Palo</b>	<b>Asc. X'</b>	<b>Ord. Y'</b>											
n.	cm	cm											
1	0,0	0,0											

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

n. cm cm  
 1 0,0 0,0

**Elemento: 247 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.
-681,8	-681,8	220,0	0,0	0,0	220,0	0,00	247	001

Dia. P.	Lun. P.	Lun. L.	Dist.P.	In. Px	In. Py	Dia. B.	Lun. B.	E.C.V.	E.C.C.	E.C.T.	Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	cm	cm				codice	codice
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00	0	0; 0; 0

Palo	Asc. X'	Ord. Y'
n.	cm	cm
1	0,0	0,0

**Elemento: 279 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.
0,0	-934,4	220,0	0,0	0,0	220,0	0,00	279	001

Dia. P.	Lun. P.	Lun. L.	Dist.P.	In. Px	In. Py	Dia. B.	Lun. B.	E.C.V.	E.C.C.	E.C.T.	Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	cm	cm				codice	codice
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00	0	0; 0; 0

Palo	Asc. X'	Ord. Y'
n.	cm	cm
1	0,0	0,0

**Elemento: 311 - Palo singolo - Tipologia pali: trivellati**

X elem.	Y elem.	Prof.	Base	Lungh.	Altez.	Rot.	Grup.ap.	Ind.strat.
cm	cm	cm	cm	cm	cm	Gradi°	n.	n.
681,8	-681,8	220,0	0,0	0,0	220,0	0,00	311	001

Dia. P.	Lun. P.	Lun. L.	Dist.P.	In. Px	In. Py	Dia. B.	Lun. B.	E.C.V.	E.C.C.	E.C.T.	Svin.testa	Vin.piede
cm	cm	cm	cm	cm	cm	cm	cm				codice	codice
60,0	900,0	0,0	0,0	0,0	0,0	0,0	0,0	1,00	1,00	1,00	0	0; 0; 0

Palo	Asc. X'	Ord. Y'
n.	cm	cm
1	0,0	0,0

**VALORI DI CALCOLO DELLA PORTANZA PER FONDAZIONI PROFONDE**

**Elemento: 92 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$   
 Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-3028.2	-46042.8	0,066	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-3028.2	204.1	921.0	236700.0	-50980.0

**Elemento: 119 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$   
 Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-1434.1	-46042.8	0,031	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-1434.1	-176.8	731.4	187700.0	47450.0

**Elemento: 151 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$   
 Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-456.3	-46042.8	0,010	Ok



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-456.3	-348.0	188.6	47910.0	91510.0

**Elemento: 183 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$

Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-96.0	-46042.8	0,002	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-96.0	-35.1	61.8	14520.0	11130.0

**Elemento: 215 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$

Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-455.5	-46042.8	0,010	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-455.5	-176.9	380.2	95540.0	46400.0

**Elemento: 247 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$

Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-1431.5	-46042.8	0,031	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-1431.5	-735.9	203.8	50770.0	188300.0

**Elemento: 279 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$

Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-3025.9	-46042.8	0,066	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-3025.9	-933.1	-192.9	-49640.0	238300.0

**Elemento: 311 - Palo singolo**

$N_q = 1.000$ ,  $\sigma_{punta} = 2.106$ ,  $\phi = 0.0$ ,  $N_c = 9.203$ ,  $c_{punta} = 0.940$

Port. lat. = 76544.3 daN, Port. punta = 30412.2 daN, P.P.Palo = 6361.7 daN

Cmb.	Tipo	Palo	coord.X	coord.Y	N	N lim	Ver.N	Stato
n.		n.	cm	cm	daN	daN		
001	SLU STR	70	0.000	0.000	-4223.9	-46042.8	0,092	Ok

Sollecitazioni:

Cmb	Tipo	Sism.	N	Tx	Ty	Mx	My
n.			daN	daN	daN	daN cm	daN cm
001	SLU STR	No	-4223.9	-226.1	219.7	56970.0	57920.0

**VALORI DI CALCOLO DEI CEDIMENTI PER FONDAZIONI PROFONDE**

**Elemento: 92 - Palo singolo**



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-2329.4	0.007

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-2329.4	157.0	708.5	182000.0	-39210.0

**Elemento: 119 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-1103.2	0.004

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-1103.2	-136.0	562.6	144400.0	36500.0

**Elemento: 151 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-351.0	0.001

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-351.0	-267.7	145.1	36850.0	70390.0

**Elemento: 183 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-73.8	0.000

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-73.8	-27.0	47.6	11170.0	8558.3

**Elemento: 215 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-350.4	0.001

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-350.4	-136.0	292.4	73490.0	35690.0

**Elemento: 247 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-1101.1	0.003

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-1101.1	-566.1	156.8	39050.0	144900.0

**Elemento: 279 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-2327.6	0.007

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm
069	SLE rare	No	-2327.6	-717.8	-148.4	-38190.0	183300.0

**Elemento: 311 - Palo singolo**

<b>Cmb. (Tipo)</b>	<b>Palo</b>	<b>coord.X</b>	<b>coord.Y</b>	<b>N</b>	<b>Ced.Vert</b>
n.	n.	cm	cm	daN	cm
069 (SLE rare)	1	0.000	0.000	-3249.2	0.010

Sollecitazioni:

<b>Cmb</b>	<b>Tipo</b>	<b>Sism.</b>	<b>N</b>	<b>Tx</b>	<b>Ty</b>	<b>Mx</b>	<b>My</b>
n.			daN	daN	daN	daN cm	daN cm



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

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069	SLE rare	No	-3249.2	-173.9	169.0	43820.0	44550.0
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## RELAZIONE GEOTECNICA E DELLE FONDAZIONI SUPERFICIALI

### NORMATIVE DI RIFERIMENTO

In quanto di seguito riportato viene fatto esplicito riferimento alle seguenti Normative:

- **LEGGE n° 64 del 02/02/1974.** "Provvedimenti per le costruzioni, con particolari prescrizioni per le zone sismiche.";
- **D.M. LL.PP. del 11/03/1988.** "Norme tecniche riguardanti le indagini sui terreni e sulle rocce, la stabilità dei pendii naturali e delle scarpate, i criteri generali e le prescrizioni per la progettazione, l'esecuzione e il collaudo delle opere di sostegno delle terre e delle opere di fondazione.";
- **D.M. LL.PP. del 16/01/1996.** "Norme tecniche per le costruzioni in zone sismiche.";
- **Circolare Ministeriale LL.PP. n° 65/AA.GG. del 10/04/1997.** "Istruzioni per l'applicazione delle "Norme Tecniche per le costruzioni in zone sismiche" di cui al D.M. 16/01/1996.";
- **Eurocodice 1 - Parte 1** - "Basi di calcolo ed azioni sulle strutture - Basi di calcolo -.";
- **Eurocodice 7 - Parte 1** - "Progettazione geotecnica - Regole generali -.";
- **Eurocodice 8 - Parte 5** - "Indicazioni progettuali per la resistenza sismica delle strutture - Fondazioni, strutture di contenimento ed aspetti geotecnici -.";
- **D.M. 17/01/2018 - NUOVE NORME TECNICHE PER LE COSTRUZIONI**
- **Circolare n. 617 del 02/02/2008**

### INDAGINI IN SITO E CARATTERIZZAZIONE GEOTECNICA DEI TERRENI DI FONDAZIONE

La finalità della presente relazione è quella di definire il comportamento meccanico del volume di terreno (volume significativo) influenzato direttamente o indirettamente dalla costruzione di un manufatto e che a sua volta influenza il comportamento strutturale del manufatto stesso. Di seguito si illustrano i risultati delle indagini geologiche eseguite, nonché l'interpretazione dei risultati ottenuti. Dal quadro generale in tal modo scaturito si definiscono le caratteristiche della fondazione da adottare ed il modello da utilizzare per le elaborazioni relative alla interazione sovrastruttura-fondazione e fondazione-terreno.

Nell'area in esame sono state eseguite le seguenti indagini:

- Cinque prove penetrometriche dinamiche continue con penetrometro DPM,
- Dieci stendimenti sismici a rifrazione tipo MASW.

Le risultanze dell'indagine in sito hanno evidenziato per gli aerogeneratori oggetto della presente che il terreno di fondazione per tutta l'area in studio è caratterizzato sempre da una formazione argillosa per tutto lo spessore indagato di circa 4,7 metri, profondità oltre la quale si è avuto rifiuto delle aste alla penetrazione.

Dal punto di vista della resistenza la formazione si presenta in due spessori a resistenza crescente con la profondità (ved. la stima dei parametri geotecnici delle prova). Complessivamente si hanno valori medi di resistenza considerati fino al rifiuto alla penetrazione delle aste a circa 4.70 m di profondità.

Livello argilloso	Profondità base strato	Coeione non drenata (De Beer)	Angolo di attrito (Owasaki & Iwasaki)	Peso di volume
<b>A</b>	6,90 m	0,94 Kg/cmq	$\phi = 26,2^\circ$	$\gamma = 1.88$ gr/cc
<b>CATEGORIA SISMICA DEI SITI</b>		<b>c - B (G4) - B (G5)</b>		

Di seguito si riportano alcuni cenni teorici relativi alle modalità di calcolo implementate e la descrizione della simbologia adottata nei tabulati.

### CARICO LIMITE DI FONDAZIONI SUPERFICIALI SU TERRENI

Per la determinazione del carico limite del complesso terreno-fondazione (inteso come valore asintotico del diagramma carico-cedimento) si fa riferimento a due principali meccanismi di rottura: il "meccanismo generale" e quello di "punzonamento". Il primo è caratterizzato dalla formazione di una superficie di scorrimento: il terreno sottostante la fondazione rifluisce lateralmente e verso l'alto, conseguentemente il terreno circostante la fondazione è

interessato da un meccanismo di sollevamento ed emersione della superficie di scorrimento. Il secondo meccanismo è caratterizzato dall'assenza di una superficie di scorrimento ben definita: il terreno sotto la fondazione si comprime ed in corrispondenza della superficie del terreno circostante la fondazione si osserva un abbassamento generalizzato. Quest'ultimo meccanismo non consente una precisa individuazione del carico limite in quanto la curva cedimenti-carico applicato non raggiunge mai un valore asintotico ma cresce indefinitamente. Vesic ha studiato il fenomeno della rottura per punzonamento assimilando il terreno ad un mezzo elasto-plastico e la rottura per carico limite all'espansione di una cavità cilindrica. In questo caso il fenomeno risulta retto da un indice di rigidezza "I<sub>r</sub>" così definito:

$$I_r = \frac{G}{c' + \sigma' \cdot \operatorname{tg}(\varphi)}$$

Per la determinazione del modulo di rigidezza a taglio si utilizzeranno le seguenti relazioni:

$$G = \frac{E}{2 \cdot (1 + \nu)}; \quad E = E_{ed} \frac{1 - \nu - 2 \cdot \nu^2}{1 - \nu}; \quad \nu = \frac{k_0}{1 + k_0}; \quad k_0 = 1 - \operatorname{sen}(\varphi)$$

L'indice di rigidezza viene confrontato con l'indice di rigidezza critico "I<sub>r,crit</sub>":

$$I_{r,crit} = \frac{e^{\left[ \left( 3,3 - 0,45 \frac{B}{L} \right) \operatorname{ctg} \left( 45^\circ - \frac{\varphi}{2} \right) \right]}}{2}$$

La rottura per punzonamento del terreno di fondazione avviene quando l'indice di rigidezza è minore di quello critico. Tale teoria comporta l'introduzione di coefficienti correttivi all'interno della formula trinomia del carico limite detti "coefficienti di punzonamento" i quali sono funzione dell'indice di rigidezza, dell'angolo d'attrito e della geometria dell'elemento di fondazione. La loro espressione è la seguente:

- se  $I_r < I_{r,crit}$  si ha :

$$\Psi_\gamma = \Psi_q = e^{\left[ \left( 0,6 \frac{B}{L} - 4,4 \right) \operatorname{tg}(\varphi) + \frac{3,07 \cdot \operatorname{sen}(\varphi) \log_{10}(2 I_r)}{1 + \operatorname{sen}(\varphi)} \right]} \quad \text{se } \varphi = 0 \Rightarrow \Psi_\gamma = \Psi_q = 1$$

$$\Psi_c = \Psi_q - \frac{1 - \Psi_q}{N_c \cdot \operatorname{tg}(\varphi)} \quad \text{se } \varphi = 0 \Rightarrow \Psi_c = 0,32 + 0,12 \cdot \frac{B}{L} + 0,6 \cdot \log_{10}(I_r)$$

- se  $I_r > I_{r,crit}$  si ha che  $\psi_\gamma = \psi_q = \psi_c = 1$ .

Il significato dei simboli adottati nelle equazioni sopra riportate è il seguente:

- E<sub>ed</sub> modulo edometrico del terreno sottostante la fondazione
- ν coefficiente di Poisson del terreno sottostante la fondazione
- k<sub>0</sub> coefficiente di spinta a riposo del terreno sottostante la fondazione
- φ angolo d'attrito efficace del terreno sottostante il piano di posa
- c' coesione (espressa in termini di tensioni efficaci)
- σ' tensione litostatica effettiva a profondità D+B/2
- L luce delle singole travi di fondazione
- D profondità del piano di posa della fondazione a partire dal piano campagna
- B larghezza della trave di fondazione

Definito il meccanismo di rottura, il calcolo del carico limite viene eseguito modellando il terreno come un mezzo rigido perfettamente plastico con la seguente espressione:

$$q_{ult} = \gamma_1 \cdot D \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot \Psi_q + c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot \Psi_c + \gamma_2 \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot \Psi_\gamma \cdot r_\gamma$$

Il significato dei termini presenti nella relazione trinomia sopra riportata è il seguente:

- N<sub>q</sub>, N<sub>c</sub>, N<sub>γ</sub>, fattori adimensionali di portanza funzione dell'angolo d'attrito interno φ del terreno
- s<sub>q</sub>, s<sub>c</sub>, s<sub>γ</sub>, coefficienti che rappresentano il fattore di forma
- d<sub>q</sub>, d<sub>c</sub>, d<sub>γ</sub>, coefficienti che rappresentano il fattore dell'approfondimento
- i<sub>q</sub>, i<sub>c</sub>, i<sub>γ</sub>, coefficienti che rappresentano il fattore di inclinazione del carico
- γ<sub>1</sub> peso per unità di volume del terreno sovrastante il piano di posa
- γ<sub>2</sub> peso per unità di volume del terreno sottostante il piano di posa

Per fondazioni aventi larghezza modesta si dimostra che il terzo termine non aumenta indefinitamente e per valori

elevati di "B", sia secondo Vesic che secondo de Beer, il valore limite è prossimo a quello di una fondazione profonda. Bowles per fondazioni di larghezza maggiore di 2.00 metri propone il seguente fattore riduttivo:

$$r_\gamma = 1 - 0.25 \cdot \log_{10} \left( \frac{B}{2} \right) \quad \text{dove "B" va espresso in metri.}$$

Questa relazione risulta particolarmente utile per fondazioni larghe con rapporto D/B basso (platee e simili), caso nel quale il terzo termine dell'equazione trinomia è predominante.

Nel caso di carico eccentrico Meyerhof consiglia di ridurre le dimensioni della superficie di contatto ( $A_f$ ) tra fondazione e terreno (B, L) in tutte le formule del calcolo del carico limite. Tale riduzione è espressa dalle seguenti relazioni:

$$B_{rid} = B - 2 \cdot e_B \quad L_{rid} = L - 2 \cdot e_L \quad \text{dove } e_B, e_L \text{ sono le eccentricità relative alle dimensioni in esame.}$$

L'equazione trinomia del carico limite può essere risolta secondo varie formulazioni, di seguito si riportano quelle che sono state implementate:

**Formulazione di Hansen (1970)**

$$N_q = tg^2 \left( \frac{90^\circ + \varphi}{2} \right) \cdot e^{\pi \cdot tg(\varphi)} \quad N_\gamma = 1.5 \cdot (N_q - 1) \cdot tg(\varphi) \quad N_c = (N_q - 1) \cdot ctg(\varphi)$$

- se  $\varphi \neq 0$  si ha:

$$s_q = 1 + \frac{B}{L} \cdot tg(\varphi) \quad s_\gamma = 1 - 0.4 \cdot \frac{B}{L} \quad s_c = 1 + \frac{N_q \cdot B}{N_c \cdot L}$$

$$d_q = 1 + 2 \cdot tg(\varphi) \cdot (1 - \sin(\varphi))^2 \cdot \Theta \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

dove: se  $\frac{D}{B} \leq 1 \Rightarrow \Theta = \frac{D}{B}$ , se  $\frac{D}{B} > 1 \Rightarrow \Theta = \arctg\left(\frac{D}{B}\right)$

$$i_q = \left[ 1 - \frac{0.5 \cdot H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^{\alpha_1} \quad i_\gamma = \left[ 1 - \frac{0.7 \cdot H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^{\alpha_2} \quad i_c = i_q - \frac{1 - i_q}{N_q - 1}$$

- se  $\varphi = 0$  si ha:

$$s_q = 1.0 \quad s_\gamma = 1.0 \quad s_c = 1 + 0.2 \cdot \frac{B}{L}$$

$$d_q = 1.0 \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

$$i_q = 1.0 \quad i_\gamma = 1.0 \quad i_c = 0.5 \cdot \left( 1 + \sqrt{1 - \frac{H}{A_f \cdot c_a}} \right)$$

**Formulazione di Vesic (1975)**

$$N_q = tg^2 \left( \frac{90^\circ + \varphi}{2} \right) \cdot e^{\pi \cdot tg(\varphi)} \quad N_\gamma = 2 \cdot (N_q + 1) \cdot tg(\varphi) \quad N_c = (N_q - 1) \cdot ctg(\varphi)$$

- se  $\varphi \neq 0$  si ha:

$$s_q = 1 + \frac{B}{L} \cdot tg(\varphi) \quad s_\gamma = 1 - 0.4 \cdot \frac{B}{L} \quad s_c = 1 + \frac{N_q \cdot B}{N_c \cdot L}$$

$$d_q = 1 + 2 \cdot tg(\varphi) \cdot (1 - \sin(\varphi))^2 \cdot \Theta \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

dove: se  $\frac{D}{B} \leq 1 \Rightarrow \Theta = \frac{D}{B}$ , se  $\frac{D}{B} > 1 \Rightarrow \Theta = \arctg\left(\frac{D}{B}\right)$

$$i_q = \left[ 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^m \quad i_\gamma = \left[ 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^{m+1} \quad i_c = i_q - \frac{1 - i_q}{N_q - 1}$$

dove:  $m = m_B = \frac{2 + \frac{B}{L}}{1 + \frac{B}{L}}$        $m = m_L = \frac{2 + \frac{L}{B}}{1 + \frac{L}{B}}$

- se  $\varphi = 0$  si ha:

$$s_q = 1.0 \quad s_\gamma = 1.0 \quad s_c = 1 + 0.2 \cdot \frac{B}{L}$$

$$d_q = 1.0 \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

$$i_q = 1.0 \quad i_\gamma = 1.0 \quad i_c = 1 - \frac{m \cdot H}{A_f \cdot c_a \cdot N_c}$$

**Formulazione di Brinch-Hansen**

$$N_q = tg^2 \left( \frac{90^\circ + \varphi}{2} \right) \cdot e^{\pi \cdot tg(\varphi)} \quad N_\gamma = 2 \cdot (N_q + 1) \cdot tg(\varphi) \quad N_c = (N_q - 1) \cdot ctg(\varphi)$$

- se  $\varphi \neq 0$  si ha:

$$s_q = 1 + 0.1 \cdot \frac{B \cdot (1 + \text{sen}(\varphi))}{L \cdot (1 - \text{sen}(\varphi))} \quad s_\gamma = 1 + 0.1 \cdot \frac{B \cdot (1 + \text{sen}(\varphi))}{L \cdot (1 - \text{sen}(\varphi))} \quad s_c = 1 + 0.2 \cdot \frac{B \cdot (1 + \text{sen}(\varphi))}{L \cdot (1 - \text{sen}(\varphi))}$$

$$d_q = 1 + 2 \cdot tg(\varphi) \cdot (1 - \text{sen}(\varphi))^2 \cdot \Theta \quad d_\gamma = 1.0 \quad d_c = d_q - \frac{1 - d_q}{N_c \cdot tg(\varphi)}$$

dove: se  $\frac{D}{B} \leq 1 \Rightarrow \Theta = \frac{D}{B}$ , se  $\frac{D}{B} > 1 \Rightarrow \Theta = \text{arctg} \left( \frac{D}{B} \right)$

$$i_q = \left[ 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^m \quad i_\gamma = \left[ 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^{m+1} \quad i_c = i_q - \frac{1 - i_q}{N_q - 1}$$

dove:  $m = m_B = \frac{2 + \frac{B}{L}}{1 + \frac{B}{L}}$        $m = m_L = \frac{2 + \frac{L}{B}}{1 + \frac{L}{B}}$

- se  $\varphi = 0$  si ha:

$$s_q = 1.0 \quad s_\gamma = 1.0 \quad s_c = 1 + 0.2 \cdot \frac{B}{L}$$

$$d_q = 1.0 \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

$$i_q = 1.0 \quad i_\gamma = 1.0 \quad i_c = 1 - \frac{m \cdot H}{A_f \cdot c_a \cdot N_c}$$

**Formulazione Eurocodice 7**

$$N_q = tg^2 \left( \frac{90^\circ + \varphi}{2} \right) \cdot e^{\pi \cdot tg(\varphi)} \quad N_\gamma = 2 \cdot (N_q - 1) \cdot tg(\varphi) \quad N_c = (N_q - 1) \cdot ctg(\varphi)$$

- se  $\varphi \neq 0$  si ha:

$$s_q = 1 + \frac{B}{L} \cdot \text{sen}(\varphi) \quad s_\gamma = 1 - 0.3 \cdot \frac{B}{L} \quad s_c = \frac{s_q \cdot (N_q - 1)}{N_q - 1}$$

$$d_q = 1 + 2 \cdot tg(\varphi) \cdot (1 - \text{sen}(\varphi))^2 \cdot \Theta \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

dove: se  $\frac{D}{B} \leq 1 \Rightarrow \Theta = \frac{D}{B}$ , se  $\frac{D}{B} > 1 \Rightarrow \Theta = \text{arctg} \left( \frac{D}{B} \right)$

- se H è parallela al lato B si ha:

$$i_q = \left[ 1 - \frac{0.7 \cdot H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^3 \quad i_\gamma = \left[ 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \right]^3 \quad i_c = \frac{i_q \cdot N_q - 1}{N_q - 1}$$

- se H è parallela al lato L si ha:

$$i_q = 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \quad i_\gamma = 1 - \frac{H}{V + A_f \cdot c_a \cdot ctg(\varphi)} \quad i_c = \frac{i_q \cdot N_q - 1}{N_q - 1}$$

- se  $\varphi = 0$  si ha:

$$s_q = 1.0 \quad s_\gamma = 1.0 \quad s_c = 1 + 0.2 \cdot \frac{B}{L}$$

$$d_q = 1.0 \quad d_\gamma = 1.0 \quad d_c = 1 + 0.4 \cdot \Theta$$

$$i_q = 1.0 \quad i_\gamma = 1.0 \quad i_c = 0.5 \cdot \left( 1 + \sqrt{1 - \frac{H}{A_f \cdot c_a}} \right)$$

Si ricorda che per le relazioni sopra riportate nel caso in cui  $\varphi = 0 \Rightarrow N_q = 1.0, N_\gamma = 1.0$  e  $N_c = 2 + \pi$ .  
 Il significato dei termini presenti nelle relazioni su descritte è il seguente:

- $V$  componente verticale del carico agente sulla fondazione
- $H$  componente orizzontale del carico agente sulla fondazione (sia lungo  $B$  che lungo  $L$ )
- $c_a$  adesione fondazione-terreno (valore variabile tra il 60% e 100% della coesione)
- $\alpha_1, \alpha_2$  esponenti di potenza che variano tra 2 e 5

Nel caso in cui il cuneo di fondazione sia interessato da falda idrica il valore di  $\gamma_2$  nella formula trinomia assume la seguente espressione:

$$\gamma_2 = \frac{\gamma \cdot z + \gamma_{sat} \cdot (h_c - z)}{h_c} \quad h_c = \frac{B}{2} \cdot \operatorname{tg} \left( \frac{90 + \varphi}{2} \right)$$

dove i termini dell'espressione hanno il seguente significato:

- $\gamma$  peso per unità di volume del terreno sottostante il piano di posa
- $\gamma_{sat}$  peso per unità di volume saturo del terreno sottostante il piano di posa
- $z$  profondità della falda dal piano di posa
- $h_c$  altezza del cuneo di rottura della fondazione

Tutto ciò che è stato detto sopra è valido nell'ipotesi di terreno con caratteristiche geotecniche omogenee. Nella realtà i terreni costituenti il piano di posa delle fondazioni sono quasi sempre composti, o comunque riconducibili, a formazioni di terreno omogenee di spessore variabile che si sovrappongono (caso di terreni stratificati). In queste condizioni i parametri vengono determinati con la seguente procedura:

- viene determinata l'altezza del cuneo di rottura in funzione delle caratteristiche geotecniche degli strati attraversati; quindi si determina il numero degli strati interessati da esso
- in corrispondenza di ogni superficie di separazione, partendo da quella immediatamente sottostante il piano di posa della fondazione, fino a raggiungere l'altezza del cuneo di rottura, viene determinata la capacità portante di ogni singolo strato come somma di due valori: il primo dato dall'applicazione della formula trinomia alla quota  $i$ -esima dello strato; il secondo dato dalla resistenza al punzonamento del terreno sovrastante lo strato in esame
- il minimo di questi due valori sarà assunto come valore massimo della capacità portante della fondazione stratificata

Si può formulare il procedimento anche in forma analitica:

$$q'_{ult} = [q''_{ult} + q_{resT}]_{\min} = \left[ q''_{ult} + \frac{p}{A_f} (P_V \cdot K_S \cdot \operatorname{tg}(\varphi) + d \cdot c) \right]_{\min}$$

dove i termini dell'espressione hanno il seguente significato:

- $q''_{ult}$  carico limite per un'ipotetica fondazione posta alla quota dello strato interessato
- $p$  perimetro della fondazione
- $P_V$  spinta verticale del terreno dal piano di posa allo strato interessato
- $K_S$  coefficiente di spinta laterale del terreno
- $d$  distanza dal piano di posa allo strato interessato

## CARICO LIMITE DI FONDAZIONI SUPERFICIALI SU ROCCIA

Per la determinazione del carico limite nel caso di presenza di ammasso roccioso bisogna valutare molto attentamente il grado di solidità della roccia stessa. Tale valutazione viene in genere eseguita stimando l'indice  $RQD$  (Rock Quality Designation) che rappresenta una misura della qualità di un ammasso roccioso. Tale indice può variare da un minimo di 0 (caso in cui la lunghezza dei pezzi di roccia estratti dal carotiere è inferiore a 100 mm) ad un massimo di 1 (caso in cui la carota risulta integra) ed è calcolato nel seguente modo:

$$RQD = \frac{\sum \text{lunghezze dei pezzi di roccia intatta} > 100\text{mm}}{\text{lunghezza del carotiere}}$$

Se il valore di  $RQD$  è molto basso la roccia è molto fratturata ed il calcolo della capacità portante dell'ammasso



roccioso va condotto alla stregua di un terreno sciolto utilizzando tutte le formulazioni sopra descritte. Per ricavare la capacità portante di rocce non assimilabili ad ammassi di terreno sciolto sono state implementate due formulazioni: quella di Terzaghi (1943) e quella di Stagg-Zienkiewicz (1968), entrambe correlate all'indice RQD. In definitiva il valore della capacità portante sarà espresso dalla seguente relazione:

$$q'_{ult} = q''_{ult} \cdot RQD^2$$

dove i termini dell'espressione hanno il seguente significato:

- $q'_{ult}$  carico limite dell'ammasso roccioso
- $q''_{ult}$  carico limite calcolato alla Terzaghi o alla Stagg-Zienkiewicz

In questo caso l'equazione trinomia del carico limite assume la seguente forma:

$$q''_{ult} = \gamma_1 \cdot D \cdot N_q + c \cdot N_c \cdot s_c + \gamma_2 \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma$$

I termini presenti nell'equazione hanno lo stesso significato già visto in precedenza; i coefficienti di forma assumeranno i seguenti valori:

- $s_c = 1.0$  per fondazioni di tipo nastriforme                       $s_c = 1.3$  per fondazioni di tipo quadrato;
- $s_\gamma = 1.0$  per fondazioni di tipo nastriforme                       $s_\gamma = 0.8$  per fondazioni di tipo quadrato.

I fattori adimensionali di portanza a seconda della formulazione adottata saranno:

**Formulazione di Terzaghi (1943)**

$$N_q = \frac{e^{2 \left( 0.75 \cdot \pi - \frac{\varphi}{2} \right) \cdot \text{tg}(\varphi)}}{2 \cdot \cos^2 \left( \frac{90^\circ + \varphi}{2} \right)} \quad N_\gamma = \frac{\text{tg}(\varphi)}{2} \left( \frac{K_{p\gamma}}{\cos^2(\varphi)} - 1 \right) \quad N_c = (N_q - 1) \cdot \text{ctg}(\varphi)$$

se  $\varphi = 0 \Rightarrow N_c = 1.5 \cdot \pi + 1$

$\varphi$	0	5	10	15	20	25	30	35	40	45	50
$K_{p\gamma}$	10.8	12.2	14.7	18.6	25.0	35.0	52.0	82.0	141.0	298.0	800.0

**Formulazione di Stagg-Zienkiewicz (1968)**

$$N_q = \text{tg}^6 \left( \frac{90^\circ + \varphi}{2} \right) \quad N_\gamma = N_q + 1 \quad N_c = 5 \cdot \text{tg}^4 \left( \frac{90^\circ + \varphi}{2} \right)$$

**VERIFICA A ROTTURA PER SCORRIMENTO DI FONDAZIONI SUPERFICIALI**

Se il carico applicato alla base della fondazione non è normale alla stessa bisogna effettuare anche una verifica per rottura a scorrimento. Rispetto al collasso per scorrimento la resistenza offerta dal sistema fondale viene valutata come somma di due componenti: la prima derivante dall'attrito fondazione-terreno, la seconda derivante dall'adesione. In generale, oltre a queste due componenti, può essere tenuto in conto anche l'effetto della spinta passiva del terreno di ricoprimento esercita sulla fondazione fino ad un massimo del 30%. La formulazione analitica della verifica può essere esposta nel seguente modo:

$$T_{Sd} \leq T_{Rd} = N_{Sd} \cdot \text{tg}(\delta) + A_f \cdot c_a + S_p \cdot f_{Sp}$$

dove i termini dell'espressione hanno il seguente significato:

- $T_{Sd}$  componente orizzontale del carico agente sulla fondazione (sia lungo B che lungo L)
- $N_{Sd}$  componente verticale del carico agente sulla fondazione
- $c_a$  adesione fondazione-terreno (valore variabile tra il 60% e 100% della coesione)
- $\delta$  angolo d'attrito fondazione-terreno (valore variabile tra il 60% e 100% della coesione)
- $S_p$  spinta passiva del terreno di ricoprimento della fondazione
- $f_{Sp}$  percentuale di partecipazione della spinta passiva
- $A_f$  superficie di contatto del piano di posa della fondazione

La verifica deve essere effettuata sia per componenti taglianti parallele alla base della fondazione che per quelle ortogonali.

## DETERMINAZIONE DELLE TENSIONI INDOTTE NEL TERRENO

Ai fini del calcolo dei cedimenti è essenziale conoscere lo stato tensionale indotto nel terreno a varie profondità da un carico applicato in superficie. Tale determinazione viene eseguita ipotizzando che il terreno si comporti come un mezzo continuo, elastico-lineare, omogeneo e isotopo. Tale assunzione, utilizzata per la determinazione della variazione delle tensioni verticali dovuta all'applicazione di un carico in superficie, è confortata dalla letteratura (Morgenstern e Phukan) perché la non linearità del materiale poco influenza la distribuzione delle tensioni verticali. Per ottenere un profilo verticale di pressioni si possono utilizzare tre metodi di calcolo: quello di Boussinesq, quello di Westergaard oppure quello di Mindlin; tutti basati sulla teoria del continuo elastico. Il metodo di Westergaard differisce da quello di Boussinesq per la presenza del coefficiente di Poisson "ν", quindi si adatta meglio ai terreni stratificati. Il metodo di Mindlin differisce dai primi due per la possibilità di posizionare il carico all'interno del continuo elastico mentre i primi due lo pongono esclusivamente sulla frontiera quindi si presta meglio al caso di fondazioni molto profonde. Nel caso di fondazioni poste sulla frontiera del continuo elastico il metodo di Mindlin risulta equivalente a quello di Boussinesq. Le espressioni analitiche dei tre metodi di calcolo sono:

$$\text{Boussinesq} \Rightarrow \Delta\sigma_v = \frac{3 \cdot Q \cdot z^3}{2 \cdot \pi \cdot (r^2 + z^2)^{\frac{5}{2}}} \quad \text{Westergaard} \Rightarrow \Delta\sigma_v = \frac{Q}{2 \cdot \pi \cdot z^2} \cdot \frac{\sqrt{\frac{1-2 \cdot \nu}{2-2 \cdot \nu}}}{\left(\frac{1-2 \cdot \nu}{2-2 \cdot \nu} + \frac{r^2}{z^2}\right)^{\frac{3}{2}}}$$

dove i termini dell'espressioni hanno il seguente significato:

- Q carico puntiforme applicato sulla frontiera del mezzo
- r proiezione orizzontale della distanza del punto di applicazione del carico dal punto in esame
- z proiezione verticale della distanza del punto di applicazione del carico dal punto in esame

$$\text{Mindlin} \Rightarrow \Delta\sigma_v = \frac{Q}{8 \cdot \pi \cdot (1-\nu) \cdot D^2} \left( \frac{(1-2 \cdot \nu) \cdot (m-1)}{A^3} + \frac{(1-2 \cdot \nu) \cdot (m-1)}{B^3} - \frac{3 \cdot (m-1)^3}{A^5} - \frac{30 \cdot m \cdot (m+1)^3}{B^7} - \frac{3 \cdot (3-4 \cdot \nu) \cdot m \cdot (m+1)^2 - 3 \cdot (m+1) \cdot (5 \cdot m-1)}{B^5} \right)$$

$$n = \frac{r}{D}; \quad m = \frac{z}{D}; \quad A^2 = n^2 + (m-1)^2; \quad B^2 = n^2 + (m+1)^2$$

dove i termini dell'espressioni hanno il seguente significato:

- Q carico puntiforme applicato sulla frontiera o all'interno del mezzo
- D proiezione verticale della distanza del punto di applicazione del carico dalla frontiera del mezzo
- r proiezione orizzontale della distanza del punto di applicazione del carico dal punto in esame
- z proiezione verticale della distanza del punto di applicazione del carico dal punto in esame

Basandosi sulle ben note equazioni ricavate per un carico puntiforme, l'algoritmo implementato esegue un'integrazione delle equazioni di cui sopra lungo la verticale di ogni punto notevole degli elementi fondali estesa a tutte le aree di carico presenti sulla superficie del terreno; questo consente di determinare la variazione dello stato tensionale verticale "Δσ<sub>v</sub>". Bisogna sottolineare che, nel caso di pressione, "Q" va definito come "pressione netta", ossia la pressione in eccesso rispetto a quella geostatica esistente che può essere sopportata con sicurezza alla profondità "D" del piano di posa delle fondazioni. Questo perché i cedimenti sono causati solo da incrementi netti di pressione che si aggiungono all'esistente pressione geostatica.

## CALCOLO DEI CEDIMENTI DELLA FONDAZIONE

La determinazione dei cedimenti delle fondazioni assume una rilevanza notevole per il manufatto da realizzarsi, in special modo nella fase di esercizio. Nell'evolversi della fase di cedimento il terreno passa da uno stato di sforzo corrente dovuto al peso proprio ad uno nuovo dovuto all'effetto del carico addizionale applicato. Questa variazione dello stato tensionale produce una serie di movimenti di rotolamento e scorrimento relativo tra i granuli del terreno, nonché deformazioni elastiche e rotture delle particelle costituenti il mezzo localizzate in una limitata zona d'influenza a ridosso dell'area di carico. L'insieme di questi fenomeni costituisce il cedimento che nel caso in esame è verticale. Nonostante la frazione elastica sia modesta, l'esperienza ha dimostrato che ai fini del calcolo dei

cedimenti modellare il terreno come materiale pseudoelastico permette di ottenere risultati soddisfacenti. In letteratura sono descritti diversi metodi per il calcolo dei cedimenti ma si ricorda che, qualunque sia il metodo di calcolo, la determinazione del valore del cedimento deve intendersi come la miglior stima delle deformazioni subite dal terreno da attendersi all'applicazione dei carichi. Nel seguito vengono descritte le teorie implementate:

**Metodo edometrico**, che si basa sulla nota relazione:

$$w_{ed} = \sum_{i=1}^n \frac{\Delta\sigma_{v,i}}{E_{ed,i}} \cdot \Delta z_i$$

dove i termini dell'espressioni hanno il seguente significato:

- $\Delta\sigma_{v,i}$  variazione dello stato tensionale verticale alla profondità "z<sub>i</sub>" dello strato i-esimo per l'applicazione del carico
- $E_{ed,i}$  modulo edometrico del terreno relativo allo strato i-esimo
- $\Delta z_i$  spessore dello strato i-esimo

Si ricorda che questo metodo si basa sull'ipotesi edometrica quindi l'accuratezza del risultato è maggiore quando il rapporto tra lo spessore dello strato deformabile e la dimensione in pianta delle fondazioni è ridotto, tuttavia il metodo edometrico consente una buona approssimazione anche nel caso di strati deformabili di spessore notevole.

**Metodo dell'elasticità**, che si basa sulle note relazioni:

$$w_{Imp.} = \sum_{i=1}^n \frac{\Delta\sigma_{v,i}}{E_i} \cdot \Delta z_i \quad w_{Lib.} = \sum_{i=1}^n \frac{\Delta\sigma_{v,i}}{E_i} \cdot \frac{1-2 \cdot \nu^2}{1-\nu} \cdot \Delta z_i$$

dove i termini dell'espressioni hanno il seguente significato:

- $w_{Imp.}$  cedimento in condizioni di deformazione laterale impedita
- $w_{Lib.}$  cedimento in condizioni di deformazione laterale libera
- $\Delta\sigma_{v,i}$  variazione stato tensionale verticale alla profondità "z<sub>i</sub>" dello strato i-esimo per l'applicazione del carico
- $E_i$  modulo elastico del terreno relativo allo strato i-esimo
- $\Delta z_i$  spessore dello strato i-esimo

La doppia formulazione adottata consente di ottenere un intervallo di valori del cedimento elastico per la fondazione in esame (valore minimo per  $w_{Imp.}$  e valore massimo per  $w_{Lib.}$ ).

## **SIMBOLOGIA ADOTTATA NEI TABULATI DI CALCOLO**

Per maggior chiarezza nella lettura dei tabulati di calcolo viene riportata la descrizione dei simboli principali utilizzati nella stesura degli stessi. Per comodità di lettura la legenda è suddivisa in paragrafi con la stessa modalità in cui sono stampati i tabulati di calcolo.

### ***Dati geometrici degli elementi costituenti le fondazioni superficiali***

*per tipologie travi e plinti superficiali:*

- Indice Strat. indice della stratigrafia associata all'elemento
- Prof. Fon. profondità del piano di posa dell'elemento a partire dal piano campagna
- Base larghezza della sezione trasversale dell'elemento
- Altezza altezza della sezione trasversale dell'elemento
- Lung. Elem. dimensione dello sviluppo longitudinale dell'elemento
- Lung. Travata nel caso l'elemento appartenga ad un macroelemento, rappresenta la dimensione dello sviluppo longitudinale del macroelemento

*per tipologia platea:*

- Indice Strat. indice della stratigrafia associata all'elemento
- Prof. Fon. profondità del piano di posa dell'elemento dal piano campagna
- Dia. Eq. diametro del cerchio equivalente alla superficie dell'elemento
- Spessore spessore dell'elemento
- Superficie superficie dell'elemento
- Vert. Elem. Numero dei vertici che costituiscono l'elemento
- Macro nel caso l'elemento appartenga ad un macroelemento, rappresenta il numero del macroelemento

Nel caso si avesse scelto di determinare la portanza anche per gli elementi platea è presente un'ulteriore riga nella quale sono riportate le caratteristiche geometriche del plinto equivalente alla macro/platea in esame.

**Dati di carico degli elementi costituenti le fondazioni superficiali**

*per tipologie travi e plinti superficiali:*

- Cmb numero della combinazione di carico
- Tipologia tipologia della combinazione di carico
- Sismica flag per l'applicazione della riduzione sismica alle caratteristiche meccaniche del terreno di fondazione per la combinazione di carico in esame
- Ecc. B eccentricità del carico normale agente sul piano di fondazione in direzione parallela alla sezione trasversale dell'elemento
- Ecc. L eccentricità del carico normale agente sul piano di fondazione in direzione parallela allo sviluppo longitudinale dell'elemento
- S.Taglio B sforzo di taglio agente sul piano di fondazione in direzione parallela alla sezione trasversale dell'elemento
- S.Taglio L sforzo di taglio agente sul piano di fondazione in direzione parallela allo sviluppo longitudinale dell'elemento
- S.Normale carico normale agente sul piano di fondazione
- T.T.min minimo valore della distribuzione tensionale di contatto tra terreno ed elemento fondale
- T.T.max massimo valore della distribuzione tensionale di contatto tra terreno ed elemento fondale

*per tipologia platea:*

- Cmb numero della combinazione di carico
- Tipologia tipologia della combinazione di carico
- Sismica flag per l'applicazione della riduzione sismica alle caratteristiche meccaniche del terreno di fondazione per la combinazione di carico in esame
- Press. N1 tensione di contatto tra terreno e fondazione nel vertice n° 1 dell'elemento
- Press. N2 tensione di contatto tra terreno e fondazione nel vertice n° 2 dell'elemento
- Press. N3 tensione di contatto tra terreno e fondazione nel vertice n° 3 dell'elemento
- Press. N4 tensione di contatto tra terreno e fondazione nel vertice n° 4 dell'elemento
- S.Taglio X sforzo di taglio agente sul piano di fondazione in direzione parallela all'asse X del riferimento globale
- S.Taglio Y sforzo di taglio agente sul piano di fondazione in direzione parallela all'asse Y del riferimento globale

Nel caso si avesse scelto di determinare la portanza anche per gli elementi platea è presente un'ulteriore riga nella quale sono riportate le macroazioni (integrale delle azioni applicate sui singoli elementi che compongono la platea) agenti sul plinto equivalente alla macro/platea in esame.

**Valori di calcolo della portanza per fondazioni superficiali**

- Cmb numero della combinazione di carico
- Qlim capacità portante totale data dalla somma di Qlim q, Qlim g, Qlim c e di Qres P (nel caso in cui si operi alle tensioni ammissibili corrisponde alla portanza ammissibile)
- Qlim q termine relativo al sovraccarico della formula trinomia per il calcolo della capacità portante (nel caso in cui si operi alle tensioni ammissibili corrisponde alla relativa parte della portanza ammissibile)
- Qlim g termine relativo alla larghezza della base di fondazione della formula trinomia per il calcolo della capacità portante (nel caso in cui si operi alle tensioni ammissibili corrisponde alla relativa parte della portanza ammissibile)
- Qlim c termine relativo alla coesione della formula trinomia per il calcolo della capacità portante (nel caso in cui si operi alle tensioni ammissibili corrisponde alla relativa parte della portanza ammissibile)
- Qres P termine relativo alla resistenza al punzonamento del terreno sovrastante lo strato di rottura. Diverso da zero solo nel caso di terreni stratificati dove lo strato di rottura è diverso dal primo (nel caso in cui si operi alle tensioni ammissibili corrisponde alla relativa parte della portanza ammissibile)
- Qmax / Qlim rapporto tra il massimo valore della distribuzione tensionale di contatto tra terreno ed elemento fondale ed il valore della capacità portante (verifica positiva se il rapporto è < 1.0).
- TBlim valore limite della resistenza a scorrimento in direzione parallela alla sezione trasversale dell'elemento

- TB / TBlim rapporto tra lo sforzo di taglio agente ed il valore limite della resistenza a scorrimento in direzione parallela alla sezione trasversale dell'elemento (verifica positiva se il rapporto è < 1.0)
- TLLim valore limite della resistenza a scorrimento in direzione parallela allo sviluppo longitudinale dell'elemento
- TL / TLlim rapporto tra lo sforzo di taglio agente ed il valore limite della resistenza a scorrimento in direzione parallela allo sviluppo longitudinale dell'elemento (verifica positiva se il rapporto è < 1.0)
- Sgm. Lt. tensione litostatica agente alla quota del piano di posa dell'elemento fondale

Nel caso si avesse scelto di determinare la portanza anche per gli elementi platea è presente un'ulteriore riga nella quale sono riportate le verifiche di portanza del plinto equivalente alla macro/platea in esame.

#### **Valori di calcolo dei cedimenti per fondazioni superficiali**

- Cmb numero della combinazione di carico e tipologia
- Nodo vertice dell'elemento in cui viene calcolato il cedimento
- Car. Netto valore del carico netto applicato sulla superficie del terreno
- Cedimento/i valore del cedimento (nel caso di calcolo di cedimenti elastici i valori riportati sono due, il primo corrisponde al cedimento  $w_{Imp.}$ , mentre il secondo al cedimento  $w_{Lib.}$ )

#### **PARAMETRI DI CALCOLO**

##### **Metodi di calcolo della portanza per fondazioni superficiali:**

- Per terreni sciolti: Vesic
- Per terreni lapidei: Terzaghi

##### **Fattori utilizzati per il calcolo della portanza per fondazioni superficiali :**

- Riduzione dimensioni per eccentricità: si
- Fattori di forma della fondazione: si
- Fattori di profondità del piano di posa: si
- Fattori di inclinazione del carico: si
- Fattori di punzonamento (Vesic): si
- Fattore riduzione effetto piastra (Bowles): si
- Fattore di riduzione dimensione Base equivalente platea: 20,0 %
- Fattore di riduzione dimensione Lunghezza equivalente platea: 20,0 %

##### **Coefficienti parziali di sicurezza per Tensioni Ammissibili, SLE nel calcolo della portanza per fondazioni superficiali:**

- Coeff. parziale di sicurezza  $F_c$  (statico): 2,50
- Coeff. parziale di sicurezza  $F_q$  (statico): 2,50
- Coeff. parziale di sicurezza  $F_g$  (statico): 2,50
- Coeff. parziale di sicurezza  $F_c$  (sismico): 3,00
- Coeff. parziale di sicurezza  $F_q$  (sismico): 3,00
- Coeff. parziale di sicurezza  $F_g$  (sismico): 3,00

##### **Combinazioni di carico:**

##### **APPROCCIO PROGETTUALE TIPO 2 - Comb. (A1+M1+R3)**

Coefficienti parziali di sicurezza per SLU nel calcolo della portanza per fondazioni superficiali :

I coeff. A1 risultano combinati secondo lo schema presente nella relazione di calcolo della struttura.

- Coeff. M1 per  $\tan \phi$  (statico): 1
- Coeff. M1 per  $c'$  (statico): 1
- Coeff. M1 per  $C_u$  (statico): 1
- Coeff. M1 per  $\tan \phi$  (sismico): 1
- Coeff. M1 per  $c'$  (sismico): 1
- Coeff. M1 per  $C_u$  (sismico): 1
  
- Coeff. R3 capacità portante (statico e sismico): 2,30
- Coeff. R3 scorrimento (statico e sismico): 1,10

##### **Parametri per la verifica a scorrimento delle fondazioni superficiali:**

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**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

- Fattore per l'adesione (6 < Ca < 10): 8
- Fattore per attrito terreno-fondazione (5 < Delta < 10): 7
- Frazione di spinta passiva fSp: 50,00 %
- Coeff. resistenza sulle sup. laterali: 1,30

**Metodi e parametri per il calcolo dei cedimenti delle fondazioni superficiali:**

- Metodo di calcolo tensioni superficiali: Boussinesq
- Modalità d'interferenza dei bulbi tensionali: sovrapposizione dei bulbi
- Metodo di calcolo dei cedimenti del terreno: cedimenti edometrici

**ARCHIVIO STRATIGRAFIE**

Indice / Descrizione: 001 / Stratigr. G9-G10

Numero strati: 1

Profondità falda: assente

Strato n.	Quota di riferimento	Spessore	Indice / Descrizione terreno	Attrito Neg.
1	da 0,0 a -4000,0 cm	4000,0 cm	001 / Argilla media	Assente

**ARCHIVIO TERRENI**

Indice / Descrizione terreno: **001 / Argilla media**

Comportamento del terreno: condizione non drenata

Peso Spec.	P. Spec. Sat.	Coes.non dren.	Mod.Elast.	Mod.Edom.	Dens.Rel.	Poisson	C. Ades.
daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	daN/cm <sup>2</sup>	%	%	
1,880 E-3	2,080 E-3	0,940	150,000	150,000	60,0	0,500	0,48

**DATI GEOMETRICI DEGLI ELEMENTI COSTITUENTI LE FONDAZIONI SUPERFICIALI**

Elemento n.	Tipologia	Id.Strat.	Prof. Fon. cm	Dia. Eq. cm	Spessore cm	Superficie cm <sup>2</sup>	Vertici n. per elem.	Macro n.
Platea n. 1	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 2	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 3	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 4	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 5	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 6	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 7	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 8	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 9	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 10	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 11	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 12	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 13	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 14	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 15	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 16	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 17	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 18	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 19	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 20	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 21	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 22	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 23	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 24	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 25	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 26	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 27	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 28	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 29	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 30	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 31	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 32	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 33	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 34	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 35	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 36	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 37	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 38	Platea	001	220.000	81.102	220.000	5166.016	4	1



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Platea n. 39	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 40	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 41	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 42	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 43	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 44	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 45	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 46	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 47	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 48	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 49	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 50	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 51	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 52	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 53	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 54	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 55	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 56	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 57	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 58	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 59	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 60	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 61	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 62	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 63	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 64	Platea	001	220.000	81.102	220.000	5166.016	4	1
Platea n. 65	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 66	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 67	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 68	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 69	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 70	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 71	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 72	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 73	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 74	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 75	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 76	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 77	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 78	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 79	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 80	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 81	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 82	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 83	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 84	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 85	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 86	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 87	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 88	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 89	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 90	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 91	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 92	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 93	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 94	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 95	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 96	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 97	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 98	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 99	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 100	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 101	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 102	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 103	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 104	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 105	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 106	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 107	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 108	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 109	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 110	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 111	Platea	001	220.000	158.275	220.000	19675.020	4	1

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Platea n. 112	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 113	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 114	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 115	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 116	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 117	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 118	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 119	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 120	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 121	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 122	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 123	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 124	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 125	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 126	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 127	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 128	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 129	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 130	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 131	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 132	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 133	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 134	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 135	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 136	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 137	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 138	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 139	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 140	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 141	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 142	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 143	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 144	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 145	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 146	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 147	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 148	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 149	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 150	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 151	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 152	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 153	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 154	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 155	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 156	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 157	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 158	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 159	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 160	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 161	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 162	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 163	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 164	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 165	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 166	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 167	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 168	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 169	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 170	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 171	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 172	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 173	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 174	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 175	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 176	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 177	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 178	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 179	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 180	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 181	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 182	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 183	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 184	Platea	001	220.000	169.609	220.000	22593.590	4	1

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Platea n. 185	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 186	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 187	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 188	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 189	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 190	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 191	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 192	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 193	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 194	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 195	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 196	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 197	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 198	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 199	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 200	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 201	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 202	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 203	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 204	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 205	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 206	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 207	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 208	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 209	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 210	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 211	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 212	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 213	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 214	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 215	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 216	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 217	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 218	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 219	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 220	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 221	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 222	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 223	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 224	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 225	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 226	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 227	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 228	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 229	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 230	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 231	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 232	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 233	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 234	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 235	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 236	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 237	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 238	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 239	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 240	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 241	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 242	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 243	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 244	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 245	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 246	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 247	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 248	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 249	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 250	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 251	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 252	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 253	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 254	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 255	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 256	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 257	Platea	001	220.000	105.110	220.000	8677.205	4	1

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

Platea n. 258	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 259	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 260	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 261	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 262	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 263	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 264	Platea	001	220.000	171.356	220.000	23061.450	4	1
Platea n. 265	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 266	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 267	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 268	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 269	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 270	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 271	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 272	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 273	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 274	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 275	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 276	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 277	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 278	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 279	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 280	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 281	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 282	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 283	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 284	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 285	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 286	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 287	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 288	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 289	Platea	001	220.000	90.081	220.000	6373.153	4	1
Platea n. 290	Platea	001	220.000	103.349	220.000	8388.857	4	1
Platea n. 291	Platea	001	220.000	115.098	220.000	10404.560	4	1
Platea n. 292	Platea	001	220.000	125.754	220.000	12420.270	4	1
Platea n. 293	Platea	001	220.000	135.574	220.000	14435.960	4	1
Platea n. 294	Platea	001	220.000	144.731	220.000	16451.670	4	1
Platea n. 295	Platea	001	220.000	153.341	220.000	18467.380	4	1
Platea n. 296	Platea	001	220.000	161.493	220.000	20483.070	4	1
Platea n. 297	Platea	001	220.000	97.719	220.000	7499.757	4	1
Platea n. 298	Platea	001	220.000	110.148	220.000	9528.968	4	1
Platea n. 299	Platea	001	220.000	121.311	220.000	11558.180	4	1
Platea n. 300	Platea	001	220.000	131.529	220.000	13587.380	4	1
Platea n. 301	Platea	001	220.000	141.009	220.000	15616.590	4	1
Platea n. 302	Platea	001	220.000	149.891	220.000	17645.800	4	1
Platea n. 303	Platea	001	220.000	158.275	220.000	19675.020	4	1
Platea n. 304	Platea	001	220.000	166.237	220.000	21704.210	4	1
Platea n. 305	Platea	001	220.000	102.670	220.000	8278.992	4	1
Platea n. 306	Platea	001	220.000	114.651	220.000	10323.940	4	1
Platea n. 307	Platea	001	220.000	125.493	220.000	12368.880	4	1
Platea n. 308	Platea	001	220.000	135.471	220.000	14413.820	4	1
Platea n. 309	Platea	001	220.000	144.762	220.000	16458.760	4	1
Platea n. 310	Platea	001	220.000	153.492	220.000	18503.710	4	1
Platea n. 311	Platea	001	220.000	161.751	220.000	20548.660	4	1
Platea n. 312	Platea	001	220.000	169.609	220.000	22593.590	4	1
Platea n. 313	Platea	001	220.000	105.110	220.000	8677.205	4	1
Platea n. 314	Platea	001	220.000	116.895	220.000	10732.100	4	1
Platea n. 315	Platea	001	220.000	127.597	220.000	12786.990	4	1
Platea n. 316	Platea	001	220.000	137.467	220.000	14841.880	4	1
Platea n. 317	Platea	001	220.000	146.675	220.000	16896.770	4	1
Platea n. 318	Platea	001	220.000	155.338	220.000	18951.660	4	1
Platea n. 319	Platea	001	220.000	163.543	220.000	21006.550	4	1
Platea n. 320	Platea	001	220.000	171.356	220.000	23061.450	4	1

Elemento n.	Tipologia	Id.Strat.	Prof. Fon. cm	Base Eq. cm	Spessore cm	Lung. Eq. cm	Lung. Travata Eq. cm
Macro n. 1	Macro-Platea	001	220.000	1625.420	220.000	1625.420	1625.420

**VALORI DI CALCOLO DELLA PORTANZA PER FONDAZIONI SUPERFICIALI**

I coeff. A1 risultano combinati secondo lo schema presente nella relazione di calcolo della struttura. Le azioni trasmesse in fondazione, relative alle combinazioni di tipo sismico, non saranno amplificate in quanto determinate

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

ipotizzando un comportamento non dissipativo.

La verifica nei confronti dello Stato Limite di Danno viene eseguita determinando il carico limite della fondazione per le corrispondenti azioni di SLD, impiegando i coefficienti parziali gammaR di cui alla tabella 7.11.II.

N.B. La relazione è redatta in forma sintetica. Verranno riportati solo i casi maggiormente gravosi per ogni tipo di combinazione e le relative verifiche.

**Macro platea: 1**

Risultati più gravosi per cmb. di tipo **SLU STR:**

Sgm. Lt (tens. litostatica) = -0.4136 daN/cm<sup>2</sup>

Qlim = Qlim c + Qlim q + Qlim g + Qres P = 2.6530 + 0.1798 + 0.0000 + 0.0000

Qmax / Qlim = 2.5175 / 2.8328 = 0,889 Ok (Cmb. n. 001)

TB / TBlim = 6862.4 / 1518100.0 = 0,005 Ok (Cmb. n. 001)

TL / TLLim = 2721.3 / 1518100.0 = 0,002 Ok (Cmb. n. 001)

Sollecitazioni:

Cmb n.	Tipo	Sism.	Ecc. B cm	Ecc. L cm	S. Taglio B daN	S. Taglio L daN	S. Normale daN	T.T. min daN/cm <sup>2</sup>	T.T. max daN/cm <sup>2</sup>
001	SLU STR	No	245.271	-206.656	6862.4	2721.3	-3229918.0	-0.0420	-2.5175

Risultati più gravosi per cmb. di tipo **SLV A1 sism.:**

Sgm. Lt (tens. litostatica) = -0.4136 daN/cm<sup>2</sup>

Qlim = Qlim c + Qlim q + Qlim g + Qres P = 2.5267 + 0.1798 + 0.0000 + 0.0000

Qmax / Qlim = 1.9400 / 2.7066 = 0,717 Ok (Cmb. n. 007)

TB / TBlim = 174721.3 / 1381874.0 = 0,126 Ok (Cmb. n. 007)

TL / TLLim = 171525.5 / 1386555.0 = 0,124 Ok (Cmb. n. 024)

Sollecitazioni:

Cmb n.	Tipo	Sism.	Ecc. B cm	Ecc. L cm	S. Taglio B daN	S. Taglio L daN	S. Normale daN	T.T. min daN/cm <sup>2</sup>	T.T. max daN/cm <sup>2</sup>
007	SLV A1	Si	246.741	-206.963	174721.3	-33387.6	-2484547.0	-0.0302	-1.9400
024	SLV A1	Si	245.580	-205.185	40734.1	171525.5	-2484554.0	-0.0334	-1.9347

Risultati più gravosi per cmb. di tipo **SLD sism.:**

Sgm. Lt (tens. litostatica) = -0.4136 daN/cm<sup>2</sup>

Qlim = Qlim c + Qlim q + Qlim g + Qres P = 2.6078 + 0.1798 + 0.0000 + 0.0000

Qmax / Qlim = 1.9378 / 2.7876 = 0,695 Ok (Cmb. n. 039)

TB / TBlim = 67049.9 / 1383724.0 = 0,048 Ok (Cmb. n. 039)

TL / TLLim = 63860.7 / 1385431.0 = 0,046 Ok (Cmb. n. 056)

Sollecitazioni:

Cmb n.	Tipo	Sism.	Ecc. B cm	Ecc. L cm	S. Taglio B daN	S. Taglio L daN	S. Normale daN	T.T. min daN/cm <sup>2</sup>	T.T. max daN/cm <sup>2</sup>
039	SLD	Si	245.807	-206.768	67049.9	-10841.4	-2484550.0	-0.0315	-1.9378
056	SLD	Si	245.383	-206.120	18204.2	63860.7	-2484552.0	-0.0327	-1.9358

**VALORI DI CALCOLO DEI CEDIMENTI PER FONDAZIONI SUPERFICIALI**

**Elemento: Platea n. 1**

Sollecitazioni:

Cmb n.	Tipo	Sism.	Ecc. B cm	Ecc. L cm	S. Taglio B daN	S. Taglio L daN	S. Normale daN	T.T. min daN/cm <sup>2</sup>	T.T. max daN/cm <sup>2</sup>
069	SLE rare	No	245.271	-206.656	5278.8	2093.3	-2484551.0	-0.0323	-1.9365

Cedimento massimo = -3.908 cm in Cmb n. 069

Cedimento minimo = -0.112 cm in Cmb n. 069



**VERIFICHE PALI DI FONDAZIONE**

**MATERIALI**

**Acciaio: B450C**

E = 2060000 daN/cmq, Fyk = 4500 daN/cmq, fsd = 3913 daN/cmq

**Calcestruzzo pali: C25/30**

Rck = 300 daN/cmq, E = 314470 daN/cmq, fcd = 141,1 daN/cmq, fctm = 25,6 daN/cmq, fctd = 11,9 daN/cmq

**Sollecitazioni alla base del pilastro**

Cmb.	Plin.	Tipo	Vx (daN)	Vy (daN)	N (daN)	Mx (daN cm)	My (daN cm)	T (daN cm)
1	151	SLU STR.	-348,0	188,6	-456,3	47910,0	91510,0	0,0
2	151	SLU STR.	-267,7	145,1	-351,0	36850,0	70390,0	0,0
5	151	SLU A1 sism.	-467,5	69,8	-349,8	27160,0	95790,0	0,0
6	151	SLU A1 sism.	-479,8	218,4	-352,1	46240,0	97380,0	0,0
7	151	SLU A1 sism.	-55,5	71,8	-349,9	27460,0	43400,0	0,0
8	151	SLU A1 sism.	-67,8	220,4	-352,2	46540,0	44990,0	0,0
9	151	SLU A1 sism.	-467,5	69,8	-349,8	27160,0	95790,0	0,0
10	151	SLU A1 sism.	-479,8	218,4	-352,1	46240,0	97380,0	0,0
11	151	SLU A1 sism.	-55,5	71,8	-349,9	27460,0	43400,0	0,0
12	151	SLU A1 sism.	-67,8	220,4	-352,2	46540,0	44990,0	0,0
13	151	SLU A1 sism.	-467,5	69,8	-349,8	27160,0	95790,0	0,0
14	151	SLU A1 sism.	-479,8	218,4	-352,1	46240,0	97380,0	0,0
15	151	SLU A1 sism.	-55,5	71,8	-349,9	27460,0	43400,0	0,0
16	151	SLU A1 sism.	-67,8	220,4	-352,2	46540,0	44990,0	0,0
17	151	SLU A1 sism.	-467,5	69,8	-349,8	27160,0	95790,0	0,0
18	151	SLU A1 sism.	-479,8	218,4	-352,1	46240,0	97380,0	0,0
19	151	SLU A1 sism.	-55,5	71,8	-349,9	27460,0	43400,0	0,0
20	151	SLU A1 sism.	-67,8	220,4	-352,2	46540,0	44990,0	0,0
21	151	SLU A1 sism.	-308,9	-102,8	-347,1	5007,1	75600,0	0,0
22	151	SLU A1 sism.	-350,0	392,5	-354,8	68610,0	80900,0	0,0
23	151	SLU A1 sism.	-185,3	-102,3	-347,2	5096,4	59880,0	0,0
24	151	SLU A1 sism.	-226,4	393,0	-354,8	68700,0	65180,0	0,0
25	151	SLU A1 sism.	-308,9	-102,8	-347,1	5007,1	75600,0	0,0
26	151	SLU A1 sism.	-350,0	392,5	-354,8	68610,0	80900,0	0,0
27	151	SLU A1 sism.	-185,3	-102,3	-347,2	5096,4	59880,0	0,0
28	151	SLU A1 sism.	-226,4	393,0	-354,8	68700,0	65180,0	0,0
29	151	SLU A1 sism.	-308,9	-102,8	-347,1	5007,1	75600,0	0,0
30	151	SLU A1 sism.	-350,0	392,5	-354,8	68610,0	80900,0	0,0
31	151	SLU A1 sism.	-185,3	-102,3	-347,2	5096,4	59880,0	0,0
32	151	SLU A1 sism.	-226,4	393,0	-354,8	68700,0	65180,0	0,0
33	151	SLU A1 sism.	-308,9	-102,8	-347,1	5007,1	75600,0	0,0
34	151	SLU A1 sism.	-350,0	392,5	-354,8	68610,0	80900,0	0,0
35	151	SLU A1 sism.	-185,3	-102,3	-347,2	5096,4	59880,0	0,0
36	151	SLU A1 sism.	-226,4	393,0	-354,8	68700,0	65180,0	0,0
69	151	SLE Rare	-267,7	145,1	-351,0	36850,0	70390,0	0,0
1	119	SLU STR.	-176,8	731,4	-1434,1	187700,0	47450,0	0,0
2	119	SLU STR.	-136,0	562,6	-1103,2	144400,0	36500,0	0,0
5	119	SLU A1 sism.	-357,2	457,9	-1099,3	130800,0	64810,0	0,0
6	119	SLU A1 sism.	-359,7	611,3	-1101,0	150400,0	65060,0	0,0
7	119	SLU A1 sism.	87,7	514,0	-1105,3	138400,0	7933,1	0,0
8	119	SLU A1 sism.	85,2	667,4	-1107,0	158000,0	8183,3	0,0
9	119	SLU A1 sism.	-357,2	457,9	-1099,3	130800,0	64810,0	0,0
10	119	SLU A1 sism.	-359,7	611,3	-1101,0	150400,0	65060,0	0,0
11	119	SLU A1 sism.	87,7	514,0	-1105,3	138400,0	7933,1	0,0
12	119	SLU A1 sism.	85,2	667,4	-1107,0	158000,0	8183,3	0,0
13	119	SLU A1 sism.	-357,2	457,9	-1099,3	130800,0	64810,0	0,0
14	119	SLU A1 sism.	-359,7	611,3	-1101,0	150400,0	65060,0	0,0
15	119	SLU A1 sism.	87,7	514,0	-1105,3	138400,0	7933,1	0,0
16	119	SLU A1 sism.	85,2	667,4	-1107,0	158000,0	8183,3	0,0
17	119	SLU A1 sism.	-357,2	457,9	-1099,3	130800,0	64810,0	0,0
18	119	SLU A1 sism.	-359,7	611,3	-1101,0	150400,0	65060,0	0,0
19	119	SLU A1 sism.	87,7	514,0	-1105,3	138400,0	7933,1	0,0
20	119	SLU A1 sism.	85,2	667,4	-1107,0	158000,0	8183,3	0,0



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

21	119	SLU A1 sism.	-198,6	298,6	-1099,4	110600,0	44610,0	0,0
22	119	SLU A1 sism.	-206,9	809,8	-1105,2	175900,0	45450,0	0,0
23	119	SLU A1 sism.	-65,1	315,4	-1101,2	112900,0	27550,0	0,0
24	119	SLU A1 sism.	-73,4	826,7	-1106,9	178200,0	28380,0	0,0
25	119	SLU A1 sism.	-198,6	298,6	-1099,4	110600,0	44610,0	0,0
26	119	SLU A1 sism.	-206,9	809,8	-1105,2	175900,0	45450,0	0,0
27	119	SLU A1 sism.	-65,1	315,4	-1101,2	112900,0	27550,0	0,0
28	119	SLU A1 sism.	-73,4	826,7	-1106,9	178200,0	28380,0	0,0
29	119	SLU A1 sism.	-198,6	298,6	-1099,4	110600,0	44610,0	0,0
30	119	SLU A1 sism.	-206,9	809,8	-1105,2	175900,0	45450,0	0,0
31	119	SLU A1 sism.	-65,1	315,4	-1101,2	112900,0	27550,0	0,0
32	119	SLU A1 sism.	-73,4	826,7	-1106,9	178200,0	28380,0	0,0
33	119	SLU A1 sism.	-198,6	298,6	-1099,4	110600,0	44610,0	0,0
34	119	SLU A1 sism.	-206,9	809,8	-1105,2	175900,0	45450,0	0,0
35	119	SLU A1 sism.	-65,1	315,4	-1101,2	112900,0	27550,0	0,0
36	119	SLU A1 sism.	-73,4	826,7	-1106,9	178200,0	28380,0	0,0
69	119	SLE Rare	-136,0	562,6	-1103,2	144400,0	36500,0	0,0
1	183	SLU STR.	-35,1	61,8	-96,0	14520,0	11130,0	0,0
2	183	SLU STR.	-27,0	47,6	-73,8	11170,0	8558,3	0,0
5	183	SLU A1 sism.	-240,8	6,0	-75,7	5990,4	35860,0	0,0
6	183	SLU A1 sism.	-255,8	138,7	-77,2	22960,0	37840,0	0,0
7	183	SLU A1 sism.	201,7	-43,7	-70,4	-620,9	-20730,0	0,0
8	183	SLU A1 sism.	186,8	89,1	-72,0	16350,0	-18740,0	0,0
9	183	SLU A1 sism.	-240,8	6,0	-75,7	5990,4	35860,0	0,0
10	183	SLU A1 sism.	-255,8	138,7	-77,2	22960,0	37840,0	0,0
11	183	SLU A1 sism.	201,7	-43,7	-70,4	-620,9	-20730,0	0,0
12	183	SLU A1 sism.	186,8	89,1	-72,0	16350,0	-18740,0	0,0
13	183	SLU A1 sism.	-240,8	6,0	-75,7	5990,4	35860,0	0,0
14	183	SLU A1 sism.	-255,8	138,7	-77,2	22960,0	37840,0	0,0
15	183	SLU A1 sism.	201,7	-43,7	-70,4	-620,9	-20730,0	0,0
16	183	SLU A1 sism.	186,8	89,1	-72,0	16350,0	-18740,0	0,0
17	183	SLU A1 sism.	-240,8	6,0	-75,7	5990,4	35860,0	0,0
18	183	SLU A1 sism.	-255,8	138,7	-77,2	22960,0	37840,0	0,0
19	183	SLU A1 sism.	201,7	-43,7	-70,4	-620,9	-20730,0	0,0
20	183	SLU A1 sism.	186,8	89,1	-72,0	16350,0	-18740,0	0,0
21	183	SLU A1 sism.	-68,5	-166,2	-72,0	-16120,0	13730,0	0,0
22	183	SLU A1 sism.	-118,3	276,2	-77,2	40450,0	20360,0	0,0
23	183	SLU A1 sism.	64,2	-181,1	-70,4	-18110,0	-3242,6	0,0
24	183	SLU A1 sism.	14,5	261,3	-75,7	38460,0	3383,7	0,0
25	183	SLU A1 sism.	-68,5	-166,2	-72,0	-16120,0	13730,0	0,0
26	183	SLU A1 sism.	-118,3	276,2	-77,2	40450,0	20360,0	0,0
27	183	SLU A1 sism.	64,2	-181,1	-70,4	-18110,0	-3242,6	0,0
28	183	SLU A1 sism.	14,5	261,3	-75,7	38460,0	3383,7	0,0
29	183	SLU A1 sism.	-68,5	-166,2	-72,0	-16120,0	13730,0	0,0
30	183	SLU A1 sism.	-118,3	276,2	-77,2	40450,0	20360,0	0,0
31	183	SLU A1 sism.	64,2	-181,1	-70,4	-18110,0	-3242,6	0,0
32	183	SLU A1 sism.	14,5	261,3	-75,7	38460,0	3383,7	0,0
33	183	SLU A1 sism.	-68,5	-166,2	-72,0	-16120,0	13730,0	0,0
34	183	SLU A1 sism.	-118,3	276,2	-77,2	40450,0	20360,0	0,0
35	183	SLU A1 sism.	64,2	-181,1	-70,4	-18110,0	-3242,6	0,0
36	183	SLU A1 sism.	14,5	261,3	-75,7	38460,0	3383,7	0,0
69	183	SLE Rare	-27,0	47,6	-73,8	11170,0	8558,3	0,0
1	215	SLU STR.	-176,9	380,2	-455,5	95540,0	46400,0	0,0
2	215	SLU STR.	-136,0	292,4	-350,4	73490,0	35690,0	0,0
5	215	SLU A1 sism.	-384,0	251,1	-354,2	68270,0	67540,0	0,0
6	215	SLU A1 sism.	-383,4	374,7	-354,2	83980,0	67450,0	0,0
7	215	SLU A1 sism.	111,3	210,2	-346,6	63000,0	3940,9	0,0
8	215	SLU A1 sism.	111,9	333,7	-346,5	78710,0	3851,4	0,0
9	215	SLU A1 sism.	-384,0	251,1	-354,2	68270,0	67540,0	0,0
10	215	SLU A1 sism.	-383,4	374,7	-354,2	83980,0	67450,0	0,0
11	215	SLU A1 sism.	111,3	210,2	-346,6	63000,0	3940,9	0,0
12	215	SLU A1 sism.	111,9	333,7	-346,5	78710,0	3851,4	0,0
13	215	SLU A1 sism.	-384,0	251,1	-354,2	68270,0	67540,0	0,0
14	215	SLU A1 sism.	-383,4	374,7	-354,2	83980,0	67450,0	0,0
15	215	SLU A1 sism.	111,3	210,2	-346,6	63000,0	3940,9	0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

16	215	SLU A1 sism.	111,9	333,7	-346,5	78710,0	3851,4	0,0
17	215	SLU A1 sism.	-384,0	251,1	-354,2	68270,0	67540,0	0,0
18	215	SLU A1 sism.	-383,4	374,7	-354,2	83980,0	67450,0	0,0
19	215	SLU A1 sism.	111,3	210,2	-346,6	63000,0	3940,9	0,0
20	215	SLU A1 sism.	111,9	333,7	-346,5	78710,0	3851,4	0,0
21	215	SLU A1 sism.	-211,3	92,7	-351,6	48090,0	45380,0	0,0
22	215	SLU A1 sism.	-209,3	504,5	-351,5	100500,0	45080,0	0,0
23	215	SLU A1 sism.	-62,7	80,4	-349,3	46510,0	26300,0	0,0
24	215	SLU A1 sism.	-60,8	492,2	-349,2	98890,0	26010,0	0,0
25	215	SLU A1 sism.	-211,3	92,7	-351,6	48090,0	45380,0	0,0
26	215	SLU A1 sism.	-209,3	504,5	-351,5	100500,0	45080,0	0,0
27	215	SLU A1 sism.	-62,7	80,4	-349,3	46510,0	26300,0	0,0
28	215	SLU A1 sism.	-60,8	492,2	-349,2	98890,0	26010,0	0,0
29	215	SLU A1 sism.	-211,3	92,7	-351,6	48090,0	45380,0	0,0
30	215	SLU A1 sism.	-209,3	504,5	-351,5	100500,0	45080,0	0,0
31	215	SLU A1 sism.	-62,7	80,4	-349,3	46510,0	26300,0	0,0
32	215	SLU A1 sism.	-60,8	492,2	-349,2	98890,0	26010,0	0,0
33	215	SLU A1 sism.	-211,3	92,7	-351,6	48090,0	45380,0	0,0
34	215	SLU A1 sism.	-209,3	504,5	-351,5	100500,0	45080,0	0,0
35	215	SLU A1 sism.	-62,7	80,4	-349,3	46510,0	26300,0	0,0
36	215	SLU A1 sism.	-60,8	492,2	-349,2	98890,0	26010,0	0,0
69	215	SLE Rare	-136,0	292,4	-350,4	73490,0	35690,0	0,0
1	247	SLU STR.	-735,9	203,8	-1431,5	50770,0	188300,0	0,0
2	247	SLU STR.	-566,1	156,8	-1101,1	39050,0	144900,0	0,0
5	247	SLU A1 sism.	-830,0	94,1	-1104,9	30930,0	178700,0	0,0
6	247	SLU A1 sism.	-813,1	227,6	-1103,1	47990,0	176400,0	0,0
7	247	SLU A1 sism.	-319,0	86,0	-1099,2	30110,0	113300,0	0,0
8	247	SLU A1 sism.	-302,1	219,4	-1097,4	47170,0	111100,0	0,0
9	247	SLU A1 sism.	-830,0	94,1	-1104,9	30930,0	178700,0	0,0
10	247	SLU A1 sism.	-813,1	227,6	-1103,1	47990,0	176400,0	0,0
11	247	SLU A1 sism.	-319,0	86,0	-1099,2	30110,0	113300,0	0,0
12	247	SLU A1 sism.	-302,1	219,4	-1097,4	47170,0	111100,0	0,0
13	247	SLU A1 sism.	-830,0	94,1	-1104,9	30930,0	178700,0	0,0
14	247	SLU A1 sism.	-813,1	227,6	-1103,1	47990,0	176400,0	0,0
15	247	SLU A1 sism.	-319,0	86,0	-1099,2	30110,0	113300,0	0,0
16	247	SLU A1 sism.	-302,1	219,4	-1097,4	47170,0	111100,0	0,0
17	247	SLU A1 sism.	-830,0	94,1	-1104,9	30930,0	178700,0	0,0
18	247	SLU A1 sism.	-813,1	227,6	-1103,1	47990,0	176400,0	0,0
19	247	SLU A1 sism.	-319,0	86,0	-1099,2	30110,0	113300,0	0,0
20	247	SLU A1 sism.	-302,1	219,4	-1097,4	47170,0	111100,0	0,0
21	247	SLU A1 sism.	-670,8	-64,4	-1105,0	10740,0	158400,0	0,0
22	247	SLU A1 sism.	-614,6	380,4	-1099,0	67610,0	150900,0	0,0
23	247	SLU A1 sism.	-517,5	-66,9	-1103,3	10500,0	138900,0	0,0
24	247	SLU A1 sism.	-461,3	378,0	-1097,3	67360,0	131300,0	0,0
25	247	SLU A1 sism.	-670,8	-64,4	-1105,0	10740,0	158400,0	0,0
26	247	SLU A1 sism.	-614,6	380,4	-1099,0	67610,0	150900,0	0,0
27	247	SLU A1 sism.	-517,5	-66,9	-1103,3	10500,0	138900,0	0,0
28	247	SLU A1 sism.	-461,3	378,0	-1097,3	67360,0	131300,0	0,0
29	247	SLU A1 sism.	-670,8	-64,4	-1105,0	10740,0	158400,0	0,0
30	247	SLU A1 sism.	-614,6	380,4	-1099,0	67610,0	150900,0	0,0
31	247	SLU A1 sism.	-517,5	-66,9	-1103,3	10500,0	138900,0	0,0
32	247	SLU A1 sism.	-461,3	378,0	-1097,3	67360,0	131300,0	0,0
33	247	SLU A1 sism.	-670,8	-64,4	-1105,0	10740,0	158400,0	0,0
34	247	SLU A1 sism.	-614,6	380,4	-1099,0	67610,0	150900,0	0,0
35	247	SLU A1 sism.	-517,5	-66,9	-1103,3	10500,0	138900,0	0,0
36	247	SLU A1 sism.	-461,3	378,0	-1097,3	67360,0	131300,0	0,0
69	247	SLE Rare	-566,1	156,8	-1101,1	39050,0	144900,0	0,0
1	279	SLU STR.	-933,1	-192,9	-3025,9	-49640,0	238300,0	0,0
2	279	SLU STR.	-717,8	-148,4	-2327,6	-38190,0	183300,0	0,0
5	279	SLU A1 sism.	-979,0	-225,4	-2328,6	-48070,0	216500,0	0,0
6	279	SLU A1 sism.	-964,0	-75,0	-2325,5	-28770,0	214600,0	0,0
7	279	SLU A1 sism.	-471,6	-221,8	-2329,7	-47600,0	152100,0	0,0
8	279	SLU A1 sism.	-456,6	-71,4	-2326,7	-28300,0	150100,0	0,0
9	279	SLU A1 sism.	-979,0	-225,4	-2328,6	-48070,0	216500,0	0,0
10	279	SLU A1 sism.	-964,0	-75,0	-2325,5	-28770,0	214600,0	0,0

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

11	279	SLU A1 sism.	-471,6	-221,8	-2329,7	-47600,0	152100,0	0,0
12	279	SLU A1 sism.	-456,6	-71,4	-2326,7	-28300,0	150100,0	0,0
13	279	SLU A1 sism.	-979,0	-225,4	-2328,6	-48070,0	216500,0	0,0
14	279	SLU A1 sism.	-964,0	-75,0	-2325,5	-28770,0	214600,0	0,0
15	279	SLU A1 sism.	-471,6	-221,8	-2329,7	-47600,0	152100,0	0,0
16	279	SLU A1 sism.	-456,6	-71,4	-2326,7	-28300,0	150100,0	0,0
17	279	SLU A1 sism.	-979,0	-225,4	-2328,6	-48070,0	216500,0	0,0
18	279	SLU A1 sism.	-964,0	-75,0	-2325,5	-28770,0	214600,0	0,0
19	279	SLU A1 sism.	-471,6	-221,8	-2329,7	-47600,0	152100,0	0,0
20	279	SLU A1 sism.	-456,6	-71,4	-2326,7	-28300,0	150100,0	0,0
21	279	SLU A1 sism.	-818,9	-399,7	-2332,5	-70420,0	196300,0	0,0
22	279	SLU A1 sism.	-768,9	101,8	-2322,4	-6094,0	189700,0	0,0
23	279	SLU A1 sism.	-666,6	-398,6	-2332,9	-70280,0	176900,0	0,0
24	279	SLU A1 sism.	-616,7	102,9	-2322,8	-5952,7	170400,0	0,0
25	279	SLU A1 sism.	-818,9	-399,7	-2332,5	-70420,0	196300,0	0,0
26	279	SLU A1 sism.	-768,9	101,8	-2322,4	-6094,0	189700,0	0,0
27	279	SLU A1 sism.	-666,6	-398,6	-2332,9	-70280,0	176900,0	0,0
28	279	SLU A1 sism.	-616,7	102,9	-2322,8	-5952,7	170400,0	0,0
29	279	SLU A1 sism.	-818,9	-399,7	-2332,5	-70420,0	196300,0	0,0
30	279	SLU A1 sism.	-768,9	101,8	-2322,4	-6094,0	189700,0	0,0
31	279	SLU A1 sism.	-666,6	-398,6	-2332,9	-70280,0	176900,0	0,0
32	279	SLU A1 sism.	-616,7	102,9	-2322,8	-5952,7	170400,0	0,0
33	279	SLU A1 sism.	-818,9	-399,7	-2332,5	-70420,0	196300,0	0,0
34	279	SLU A1 sism.	-768,9	101,8	-2322,4	-6094,0	189700,0	0,0
35	279	SLU A1 sism.	-666,6	-398,6	-2332,9	-70280,0	176900,0	0,0
36	279	SLU A1 sism.	-616,7	102,9	-2322,8	-5952,7	170400,0	0,0
69	279	SLE Rare	-717,8	-148,4	-2327,6	-38190,0	183300,0	0,0
1	311	SLU STR.	-226,1	219,7	-4223,9	56970,0	57920,0	0,0
2	311	SLU STR.	-173,9	169,0	-3249,2	43820,0	44550,0	0,0
5	311	SLU A1 sism.	-436,7	82,7	-3245,9	32890,0	78050,0	0,0
6	311	SLU A1 sism.	-431,8	238,9	-3243,2	52810,0	77460,0	0,0
7	311	SLU A1 sism.	83,9	99,1	-3255,1	34830,0	11650,0	0,0
8	311	SLU A1 sism.	88,9	255,3	-3252,4	54760,0	11060,0	0,0
9	311	SLU A1 sism.	-436,7	82,7	-3245,9	32890,0	78050,0	0,0
10	311	SLU A1 sism.	-431,8	238,9	-3243,2	52810,0	77460,0	0,0
11	311	SLU A1 sism.	83,9	99,1	-3255,1	34830,0	11650,0	0,0
12	311	SLU A1 sism.	88,9	255,3	-3252,4	54760,0	11060,0	0,0
13	311	SLU A1 sism.	-436,7	82,7	-3245,9	32890,0	78050,0	0,0
14	311	SLU A1 sism.	-431,8	238,9	-3243,2	52810,0	77460,0	0,0
15	311	SLU A1 sism.	83,9	99,1	-3255,1	34830,0	11650,0	0,0
16	311	SLU A1 sism.	88,9	255,3	-3252,4	54760,0	11060,0	0,0
17	311	SLU A1 sism.	-436,7	82,7	-3245,9	32890,0	78050,0	0,0
18	311	SLU A1 sism.	-431,8	238,9	-3243,2	52810,0	77460,0	0,0
19	311	SLU A1 sism.	83,9	99,1	-3255,1	34830,0	11650,0	0,0
20	311	SLU A1 sism.	88,9	255,3	-3252,4	54760,0	11060,0	0,0
21	311	SLU A1 sism.	-260,3	-93,9	-3252,4	10320,0	55500,0	0,0
22	311	SLU A1 sism.	-243,7	427,0	-3243,2	76740,0	53530,0	0,0
23	311	SLU A1 sism.	-104,1	-88,9	-3255,1	10910,0	35580,0	0,0
24	311	SLU A1 sism.	-87,6	431,9	-3245,9	77330,0	33610,0	0,0
25	311	SLU A1 sism.	-260,3	-93,9	-3252,4	10320,0	55500,0	0,0
26	311	SLU A1 sism.	-243,7	427,0	-3243,2	76740,0	53530,0	0,0
27	311	SLU A1 sism.	-104,1	-88,9	-3255,1	10910,0	35580,0	0,0
28	311	SLU A1 sism.	-87,6	431,9	-3245,9	77330,0	33610,0	0,0
29	311	SLU A1 sism.	-260,3	-93,9	-3252,4	10320,0	55500,0	0,0
30	311	SLU A1 sism.	-243,7	427,0	-3243,2	76740,0	53530,0	0,0
31	311	SLU A1 sism.	-104,1	-88,9	-3255,1	10910,0	35580,0	0,0
32	311	SLU A1 sism.	-87,6	431,9	-3245,9	77330,0	33610,0	0,0
33	311	SLU A1 sism.	-260,3	-93,9	-3252,4	10320,0	55500,0	0,0
34	311	SLU A1 sism.	-243,7	427,0	-3243,2	76740,0	53530,0	0,0
35	311	SLU A1 sism.	-104,1	-88,9	-3255,1	10910,0	35580,0	0,0
36	311	SLU A1 sism.	-87,6	431,9	-3245,9	77330,0	33610,0	0,0
69	311	SLE Rare	-173,9	169,0	-3249,2	43820,0	44550,0	0,0
1	92	SLU STR.	204,1	921,0	-3028,2	236700,0	-50980,0	0,0
2	92	SLU STR.	157,0	708,5	-2329,4	182000,0	-39210,0	0,0
5	92	SLU A1 sism.	-94,2	607,5	-2324,5	169100,0	-6980,9	0,0

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

6	92	SLU A1 sism.	-93,2	759,7	-2324,1	188400,0	-7122,0	0,0
7	92	SLU A1 sism.	407,2	657,2	-2334,6	175600,0	-71310,0	0,0
8	92	SLU A1 sism.	408,3	809,5	-2334,3	195000,0	-71450,0	0,0
9	92	SLU A1 sism.	-94,2	607,5	-2324,5	169100,0	-6980,9	0,0
10	92	SLU A1 sism.	-93,2	759,7	-2324,1	188400,0	-7122,0	0,0
11	92	SLU A1 sism.	407,2	657,2	-2334,6	175600,0	-71310,0	0,0
12	92	SLU A1 sism.	408,3	809,5	-2334,3	195000,0	-71450,0	0,0
13	92	SLU A1 sism.	-94,2	607,5	-2324,5	169100,0	-6980,9	0,0
14	92	SLU A1 sism.	-93,2	759,7	-2324,1	188400,0	-7122,0	0,0
15	92	SLU A1 sism.	407,2	657,2	-2334,6	175600,0	-71310,0	0,0
16	92	SLU A1 sism.	408,3	809,5	-2334,3	195000,0	-71450,0	0,0
17	92	SLU A1 sism.	-94,2	607,5	-2324,5	169100,0	-6980,9	0,0
18	92	SLU A1 sism.	-93,2	759,7	-2324,1	188400,0	-7122,0	0,0
19	92	SLU A1 sism.	407,2	657,2	-2334,6	175600,0	-71310,0	0,0
20	92	SLU A1 sism.	408,3	809,5	-2334,3	195000,0	-71450,0	0,0
21	92	SLU A1 sism.	80,0	447,2	-2328,4	148800,0	-29330,0	0,0
22	92	SLU A1 sism.	83,6	954,8	-2327,3	213300,0	-29800,0	0,0
23	92	SLU A1 sism.	230,5	462,1	-2331,5	150800,0	-48630,0	0,0
24	92	SLU A1 sism.	234,0	969,8	-2330,3	215300,0	-49100,0	0,0
25	92	SLU A1 sism.	80,0	447,2	-2328,4	148800,0	-29330,0	0,0
26	92	SLU A1 sism.	83,6	954,8	-2327,3	213300,0	-29800,0	0,0
27	92	SLU A1 sism.	230,5	462,1	-2331,5	150800,0	-48630,0	0,0
28	92	SLU A1 sism.	234,0	969,8	-2330,3	215300,0	-49100,0	0,0
29	92	SLU A1 sism.	80,0	447,2	-2328,4	148800,0	-29330,0	0,0
30	92	SLU A1 sism.	83,6	954,8	-2327,3	213300,0	-29800,0	0,0
31	92	SLU A1 sism.	230,5	462,1	-2331,5	150800,0	-48630,0	0,0
32	92	SLU A1 sism.	234,0	969,8	-2330,3	215300,0	-49100,0	0,0
33	92	SLU A1 sism.	80,0	447,2	-2328,4	148800,0	-29330,0	0,0
34	92	SLU A1 sism.	83,6	954,8	-2327,3	213300,0	-29800,0	0,0
35	92	SLU A1 sism.	230,5	462,1	-2331,5	150800,0	-48630,0	0,0
36	92	SLU A1 sism.	234,0	969,8	-2330,3	215300,0	-49100,0	0,0
69	92	SLE Rare	157,0	708,5	-2329,4	182000,0	-39210,0	0,0

**VERIFICHE PALI**

Diametro palo = 60,0 cm  
 Armatura corrente: 10 Ø 16 = 20,1 cmq  
 Armatura aggiuntiva da quota 0 a quota -600 + 5 Ø 16  
 Armatura a taglio: spirale Ø8/13

**VERIFICHE VERIFICHE STATO LIMITE ULTIMO:**

Ver. N/M = rapporto Sd/Su con sollecitazioni ultime proporzionali  
 Ver. (25)= rapporto Nd/Nu, dove Nu viene ottenuto con riduzione del 25% di fcd  
 Ver.V = verifica a taglio, rapporto Vd/Vrd  
 (Verifica positiva per valori inferiori a 1)

**Plinto n. 151**

Cmb.	Palo	Quota (cm)	N (daN)	V (daN)	M (daN cm)	Ver. N/M	Ver.(25)	Ver.V	Stato
18	151	0,0	-352,1	527,2	107802,8	0,060	0,001	0,018	Ok
1	151	0,0	-456,3	395,8	103287,6	0,040	0,001	0,014	Ok
18	151	-30,0	-334,4	484,3	92343,5	0,051	0,001	0,017	Ok
1	151	-30,0	-433,4	389,0	91386,4	0,036	0,001	0,013	Ok
18	151	-60,0	-322,6	447,7	77816,1	0,043	0,001	0,015	Ok
1	151	-60,0	-418,1	373,4	79718,5	0,031	0,001	0,013	Ok
18	151	-90,0	-310,9	407,6	64386,5	0,036	0,001	0,014	Ok
1	151	-90,0	-402,8	351,9	68517,1	0,027	0,001	0,012	Ok
18	151	-120,0	-299,1	365,5	52161,6	0,029	0,001	0,012	Ok
1	151	-120,0	-387,6	326,1	57960,5	0,023	0,001	0,011	Ok
18	151	-150,0	-287,3	322,9	41199,2	0,023	0,001	0,011	Ok
1	151	-150,0	-372,3	297,5	48177,7	0,019	0,001	0,010	Ok
18	151	-180,0	-275,5	281,0	31514,4	0,017	0,001	0,010	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	151	-180,0	-357,1	267,3	39253,8	0,015	0,001	0,009	Ok
19	151	-210,0	-262,1	123,8	24968,3	0,014	0,001	0,004	Ok
1	151	-210,0	-341,8	236,5	31236,5	0,012	0,001	0,008	Ok
19	151	-240,0	-250,4	115,0	21272,2	0,012	0,001	0,004	Ok
1	151	-240,0	-326,6	206,1	24141,8	0,009	0,001	0,007	Ok
19	151	-270,0	-238,7	105,1	17838,7	0,010	0,001	0,004	Ok
1	151	-270,0	-311,4	176,6	17960,7	0,007	0,001	0,006	Ok
19	151	-300,0	-227,1	94,5	14701,8	0,008	0,001	0,003	Ok
1	151	-300,0	-296,1	148,7	12663,6	0,005	0,001	0,005	Ok
19	151	-330,0	-215,4	83,7	11882,0	0,007	0,001	0,003	Ok
1	151	-330,0	-280,9	122,6	8205,9	0,003	0,001	0,004	Ok
35	151	-360,0	-202,2	73,2	9472,0	0,005	0,001	0,003	Ok
1	151	-360,0	-265,7	98,6	4533,2	0,002	0,001	0,003	Ok
35	151	-390,0	-190,6	61,7	7666,7	0,004	0,000	0,002	Ok
1	151	-390,0	-250,5	76,9	1593,0	0,001	0,001	0,003	Ok
34	151	-420,0	-183,0	38,3	7371,5	0,004	0,000	0,001	Ok
1	151	-420,0	-235,3	57,6	799,4	0,000	0,001	0,002	Ok
34	151	-450,0	-171,1	23,7	8117,4	0,005	0,000	0,001	Ok
1	151	-450,0	-220,1	40,6	2487,5	0,001	0,001	0,001	Ok
34	151	-480,0	-159,3	14,7	8484,6	0,005	0,000	0,001	Ok
1	151	-480,0	-204,9	25,9	3698,9	0,001	0,001	0,001	Ok
34	151	-510,0	-147,5	14,2	8502,9	0,005	0,000	0,000	Ok
1	151	-510,0	-189,7	13,4	4472,9	0,002	0,000	0,000	Ok
34	151	-540,0	-135,7	19,0	8224,4	0,005	0,000	0,001	Ok
1	151	-540,0	-174,5	3,1	4873,2	0,002	0,000	0,000	Ok
34	151	-570,0	-123,9	24,1	7706,4	0,004	0,000	0,001	Ok
1	151	-570,0	-159,3	5,5	4962,2	0,002	0,000	0,000	Ok
34	151	-600,0	-112,1	28,0	7005,4	0,006	0,000	0,001	Ok
1	151	-600,0	-144,1	12,0	4799,3	0,003	0,000	0,000	Ok
34	151	-630,0	-100,3	30,5	6174,9	0,005	0,000	0,001	Ok
1	151	-630,0	-129,0	16,8	4440,0	0,002	0,000	0,001	Ok
18	151	-660,0	-87,8	31,2	5275,1	0,004	0,000	0,001	Ok
1	151	-660,0	-113,8	20,0	3936,1	0,002	0,000	0,001	Ok
18	151	-690,0	-76,1	31,1	4339,3	0,003	0,000	0,001	Ok
1	151	-690,0	-98,6	21,7	3336,3	0,002	0,000	0,001	Ok
18	151	-720,0	-64,4	29,7	3405,4	0,003	0,000	0,001	Ok
1	151	-720,0	-83,4	21,9	2685,8	0,001	0,000	0,001	Ok
18	151	-750,0	-52,7	27,0	2514,7	0,002	0,000	0,001	Ok
1	151	-750,0	-68,3	20,8	2027,7	0,001	0,000	0,001	Ok
18	151	-780,0	-41,0	23,0	1705,7	0,001	0,000	0,001	Ok
1	151	-780,0	-53,1	18,4	1402,4	0,001	0,000	0,001	Ok
18	151	-810,0	-29,3	17,9	1014,9	0,001	0,000	0,001	Ok
1	151	-810,0	-37,9	14,8	849,3	0,000	0,000	0,001	Ok
18	151	-840,0	-17,6	11,7	477,5	0,000	0,000	0,000	Ok
1	151	-840,0	-22,8	9,8	406,3	0,000	0,000	0,000	Ok
18	151	-870,0	-5,9	4,3	127,8	0,000	0,000	0,000	Ok
1	151	-870,0	-7,6	3,7	110,8	0,000	0,000	0,000	Ok
1	151	-900,0	-7,6	3,7	0,0	0,000	0,000	0,000	Ok

**Plinto n. 119**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
34	119	0,0	-1105,1	835,8	181722,4	0,100	0,003	0,029	Ok
1	119	0,0	-1434,1	752,5	193639,4	0,075	0,004	0,026	Ok
34	119	-30,0	-1049,6	780,1	157066,9	0,087	0,003	0,027	Ok
1	119	-30,0	-1362,0	736,4	171047,6	0,066	0,003	0,025	Ok
34	119	-60,0	-1012,6	727,9	133663,3	0,074	0,003	0,025	Ok
1	119	-60,0	-1314,0	705,4	148956,6	0,058	0,003	0,024	Ok
34	119	-90,0	-975,6	668,4	111827,2	0,062	0,002	0,023	Ok
1	119	-90,0	-1266,1	663,5	127796,1	0,050	0,003	0,023	Ok
34	119	-120,0	-938,7	604,5	91775,7	0,051	0,002	0,021	Ok
1	119	-120,0	-1218,1	613,7	107893,3	0,042	0,003	0,021	Ok
34	119	-150,0	-901,7	538,6	73641,6	0,041	0,002	0,018	Ok
1	119	-150,0	-1170,1	558,9	89483,0	0,035	0,003	0,019	Ok
34	119	-180,0	-864,8	472,7	57484,3	0,032	0,002	0,016	Ok



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	119	-180,0	-1122,2	501,3	72717,9	0,028	0,003	0,017	Ok
35	119	-210,0	-824,9	272,9	45436,3	0,025	0,002	0,009	Ok
1	119	-210,0	-1074,3	442,8	57681,2	0,022	0,003	0,015	Ok
35	119	-240,0	-788,1	245,6	37251,1	0,021	0,002	0,008	Ok
1	119	-240,0	-1026,4	385,2	44397,2	0,017	0,003	0,013	Ok
35	119	-270,0	-751,4	217,7	29884,0	0,017	0,002	0,007	Ok
1	119	-270,0	-978,6	329,5	32843,5	0,013	0,002	0,011	Ok
35	119	-300,0	-714,7	189,9	23355,7	0,013	0,002	0,006	Ok
1	119	-300,0	-930,7	276,8	22959,9	0,009	0,002	0,009	Ok
35	119	-330,0	-677,9	162,8	17662,3	0,010	0,002	0,006	Ok
1	119	-330,0	-882,9	227,7	14658,9	0,006	0,002	0,008	Ok
35	119	-360,0	-641,2	137,1	12780,7	0,007	0,002	0,005	Ok
1	119	-360,0	-835,1	182,7	7833,7	0,003	0,002	0,006	Ok
33	119	-390,0	-603,5	112,5	8716,5	0,005	0,002	0,004	Ok
1	119	-390,0	-787,3	142,0	2379,0	0,001	0,002	0,005	Ok
36	119	-420,0	-570,8	73,0	8549,6	0,005	0,001	0,002	Ok
1	119	-420,0	-739,5	105,8	1959,6	0,001	0,002	0,004	Ok
36	119	-450,0	-533,9	44,9	10517,8	0,006	0,001	0,002	Ok
1	119	-450,0	-691,7	74,0	5105,1	0,002	0,002	0,003	Ok
36	119	-480,0	-497,1	22,2	11718,7	0,006	0,001	0,001	Ok
1	119	-480,0	-644,0	46,6	7319,0	0,003	0,002	0,002	Ok
34	119	-510,0	-459,5	1,0	12253,7	0,007	0,001	0,000	Ok
1	119	-510,0	-596,2	23,3	8712,6	0,003	0,001	0,001	Ok
34	119	-540,0	-422,7	16,9	12227,2	0,007	0,001	0,001	Ok
1	119	-540,0	-548,5	4,1	9409,2	0,004	0,001	0,000	Ok
34	119	-570,0	-385,9	29,3	11719,7	0,006	0,001	0,001	Ok
1	119	-570,0	-500,8	11,7	9526,8	0,004	0,001	0,000	Ok
34	119	-600,0	-349,1	38,4	10839,7	0,009	0,001	0,001	Ok
1	119	-600,0	-453,0	23,8	9177,1	0,005	0,001	0,001	Ok
34	119	-630,0	-312,4	44,5	9686,7	0,008	0,001	0,002	Ok
1	119	-630,0	-405,3	32,6	8464,4	0,005	0,001	0,001	Ok
34	119	-660,0	-275,6	47,8	8351,6	0,007	0,001	0,002	Ok
1	119	-660,0	-357,6	38,4	7486,3	0,004	0,001	0,001	Ok
34	119	-690,0	-238,8	48,5	6917,7	0,006	0,001	0,002	Ok
1	119	-690,0	-309,9	41,4	6333,3	0,004	0,001	0,001	Ok
34	119	-720,0	-202,1	46,9	5461,7	0,004	0,001	0,002	Ok
1	119	-720,0	-262,2	41,8	5090,6	0,003	0,001	0,001	Ok
34	119	-750,0	-165,3	43,0	4054,6	0,003	0,000	0,001	Ok
1	119	-750,0	-214,6	39,6	3837,9	0,002	0,001	0,001	Ok
34	119	-780,0	-128,6	37,1	2763,2	0,002	0,000	0,001	Ok
1	119	-780,0	-166,9	34,9	2651,4	0,001	0,000	0,001	Ok
34	119	-810,0	-91,9	29,0	1651,3	0,001	0,000	0,001	Ok
1	119	-810,0	-119,2	27,9	1604,0	0,001	0,000	0,001	Ok
34	119	-840,0	-55,1	19,0	780,1	0,001	0,000	0,001	Ok
1	119	-840,0	-71,5	18,6	766,6	0,000	0,000	0,001	Ok
34	119	-870,0	-18,4	7,0	209,9	0,000	0,000	0,000	Ok
1	119	-870,0	-23,8	7,0	208,9	0,000	0,000	0,000	Ok
1	119	-900,0	-23,8	7,0	0,0	0,000	0,000	0,000	Ok

**Plinto n. 183**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
34	183	0,0	-77,2	300,5	45283,1	0,025	0,000	0,010	Ok
1	183	0,0	-96,0	71,1	18293,8	0,007	0,000	0,002	Ok
34	183	-30,0	-73,4	257,6	36702,2	0,020	0,000	0,009	Ok
1	183	-30,0	-91,2	69,4	16178,9	0,006	0,000	0,002	Ok
34	183	-60,0	-70,8	228,1	28992,5	0,016	0,000	0,008	Ok
1	183	-60,0	-87,9	66,5	14110,6	0,006	0,000	0,002	Ok
34	183	-90,0	-68,2	199,0	22171,1	0,012	0,000	0,007	Ok
1	183	-90,0	-84,7	62,5	12129,1	0,005	0,000	0,002	Ok
34	183	-120,0	-65,6	170,8	16230,6	0,009	0,000	0,006	Ok
1	183	-120,0	-81,5	57,9	10264,9	0,004	0,000	0,002	Ok
34	183	-150,0	-63,0	144,2	11148,3	0,006	0,000	0,005	Ok
1	183	-150,0	-78,3	52,7	8540,4	0,003	0,000	0,002	Ok
34	183	-180,0	-60,4	119,4	6898,1	0,004	0,000	0,004	Ok



**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	183	-180,0	-75,1	47,3	6970,2	0,003	0,000	0,002	Ok
19	183	-210,0	-52,7	40,7	5110,2	0,003	0,000	0,001	Ok
1	183	-210,0	-71,9	41,9	5562,5	0,002	0,000	0,001	Ok
19	183	-240,0	-50,4	27,9	6086,7	0,003	0,000	0,001	Ok
1	183	-240,0	-68,7	36,5	4320,6	0,002	0,000	0,001	Ok
19	183	-270,0	-48,0	17,4	6756,7	0,004	0,000	0,001	Ok
1	183	-270,0	-65,5	31,3	3243,8	0,001	0,000	0,001	Ok
19	183	-300,0	-45,7	10,0	7134,6	0,004	0,000	0,000	Ok
1	183	-300,0	-62,3	26,3	2329,2	0,001	0,000	0,001	Ok
19	183	-330,0	-43,3	7,6	7258,5	0,004	0,000	0,000	Ok
1	183	-330,0	-59,1	21,7	1574,6	0,001	0,000	0,001	Ok
19	183	-360,0	-41,0	10,2	7171,6	0,004	0,000	0,000	Ok
1	183	-360,0	-55,9	17,5	985,7	0,000	0,000	0,001	Ok
19	183	-390,0	-38,7	13,6	6916,3	0,004	0,000	0,000	Ok
1	183	-390,0	-52,7	13,7	600,2	0,000	0,000	0,000	Ok
34	183	-420,0	-39,8	4,1	6647,4	0,004	0,000	0,000	Ok
1	183	-420,0	-49,5	10,3	502,7	0,000	0,000	0,000	Ok
34	183	-450,0	-37,3	8,5	6593,7	0,004	0,000	0,000	Ok
1	183	-450,0	-46,3	7,4	617,1	0,000	0,000	0,000	Ok
34	183	-480,0	-34,7	13,1	6352,0	0,004	0,000	0,000	Ok
1	183	-480,0	-43,1	4,9	757,9	0,000	0,000	0,000	Ok
34	183	-510,0	-32,1	16,6	5964,8	0,003	0,000	0,001	Ok
1	183	-510,0	-39,9	2,9	858,4	0,000	0,000	0,000	Ok
34	183	-540,0	-29,5	19,0	5469,9	0,003	0,000	0,001	Ok
1	183	-540,0	-36,7	1,6	908,0	0,000	0,000	0,000	Ok
34	183	-570,0	-27,0	20,5	4900,9	0,003	0,000	0,001	Ok
1	183	-570,0	-33,5	1,7	910,0	0,000	0,000	0,000	Ok
34	183	-600,0	-24,4	21,1	4287,2	0,003	0,000	0,001	Ok
1	183	-600,0	-30,3	2,5	871,8	0,000	0,000	0,000	Ok
34	183	-630,0	-21,8	21,0	3654,3	0,003	0,000	0,001	Ok
1	183	-630,0	-27,1	3,2	801,5	0,000	0,000	0,000	Ok
34	183	-660,0	-19,3	20,3	3024,2	0,002	0,000	0,001	Ok
1	183	-660,0	-23,9	3,7	707,6	0,000	0,000	0,000	Ok
34	183	-690,0	-16,7	19,0	2416,3	0,002	0,000	0,001	Ok
1	183	-690,0	-20,7	3,9	597,9	0,000	0,000	0,000	Ok
34	183	-720,0	-14,1	17,2	1847,2	0,001	0,000	0,001	Ok
1	183	-720,0	-17,5	3,9	480,2	0,000	0,000	0,000	Ok
34	183	-750,0	-11,6	14,9	1331,9	0,001	0,000	0,001	Ok
1	183	-750,0	-14,4	3,7	361,9	0,000	0,000	0,000	Ok
34	183	-780,0	-9,0	12,3	883,8	0,001	0,000	0,000	Ok
1	183	-780,0	-11,2	3,3	250,0	0,000	0,000	0,000	Ok
34	183	-810,0	-6,4	9,3	515,1	0,000	0,000	0,000	Ok
1	183	-810,0	-8,0	2,6	151,2	0,000	0,000	0,000	Ok
34	183	-840,0	-3,9	5,8	237,5	0,000	0,000	0,000	Ok
1	183	-840,0	-4,8	1,8	72,3	0,000	0,000	0,000	Ok
34	183	-870,0	-1,3	2,1	62,1	0,000	0,000	0,000	Ok
1	183	-870,0	-1,6	0,7	19,7	0,000	0,000	0,000	Ok
1	183	-900,0	-1,6	0,7	0,0	0,000	0,000	0,000	Ok

**Plinto n. 215**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
34	215	0,0	-351,5	546,2	110121,5	0,061	0,001	0,019	Ok
1	215	0,0	-455,5	419,3	106210,1	0,042	0,001	0,014	Ok
34	215	-30,0	-333,8	500,0	94130,3	0,052	0,001	0,017	Ok
1	215	-30,0	-432,6	408,4	93645,6	0,037	0,001	0,014	Ok
34	215	-60,0	-322,1	461,2	79137,4	0,044	0,001	0,016	Ok
1	215	-60,0	-417,4	390,2	81395,1	0,032	0,001	0,013	Ok
34	215	-90,0	-310,3	419,0	65306,9	0,036	0,001	0,014	Ok
1	215	-90,0	-402,1	366,2	69690,0	0,027	0,001	0,013	Ok
34	215	-120,0	-298,6	375,0	52743,0	0,029	0,001	0,013	Ok
1	215	-120,0	-386,9	338,0	58705,1	0,023	0,001	0,012	Ok
34	215	-150,0	-286,8	330,7	41499,6	0,023	0,001	0,011	Ok
1	215	-150,0	-371,7	307,2	48564,9	0,019	0,001	0,010	Ok
34	215	-180,0	-275,1	287,1	31587,4	0,018	0,001	0,010	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	215	-180,0	-356,4	275,0	39348,8	0,015	0,001	0,009	Ok
35	215	-210,0	-261,6	128,1	24861,2	0,014	0,001	0,004	Ok
1	215	-210,0	-341,2	242,5	31098,6	0,012	0,001	0,008	Ok
35	215	-240,0	-250,0	118,3	21022,0	0,012	0,001	0,004	Ok
1	215	-240,0	-326,0	210,5	23824,1	0,009	0,001	0,007	Ok
35	215	-270,0	-238,3	107,4	17478,5	0,010	0,001	0,004	Ok
1	215	-270,0	-310,8	179,7	17509,9	0,007	0,001	0,006	Ok
35	215	-300,0	-226,7	96,0	14260,8	0,008	0,001	0,003	Ok
1	215	-300,0	-295,6	150,6	12120,5	0,005	0,001	0,005	Ok
19	215	-330,0	-213,3	86,5	11441,6	0,006	0,001	0,003	Ok
1	215	-330,0	-280,4	123,6	7605,9	0,003	0,001	0,004	Ok
19	215	-360,0	-201,8	73,4	9313,7	0,005	0,001	0,003	Ok
1	215	-360,0	-265,2	98,8	3908,1	0,002	0,001	0,003	Ok
19	215	-390,0	-190,2	61,4	7619,2	0,004	0,000	0,002	Ok
1	215	-390,0	-250,1	76,5	999,3	0,000	0,001	0,003	Ok
18	215	-420,0	-182,6	37,5	7410,4	0,004	0,000	0,001	Ok
1	215	-420,0	-234,9	56,7	1418,7	0,001	0,001	0,002	Ok
18	215	-450,0	-170,8	22,4	8224,6	0,005	0,000	0,001	Ok
1	215	-450,0	-219,7	39,3	3089,8	0,001	0,001	0,001	Ok
18	215	-480,0	-159,1	12,9	8626,3	0,005	0,000	0,000	Ok
1	215	-480,0	-204,5	24,3	4260,8	0,002	0,001	0,001	Ok
34	215	-510,0	-146,1	7,9	8681,1	0,005	0,000	0,000	Ok
1	215	-510,0	-189,4	11,7	4986,4	0,002	0,000	0,000	Ok
34	215	-540,0	-134,4	16,7	8453,7	0,005	0,000	0,001	Ok
1	215	-540,0	-174,2	1,6	5333,2	0,002	0,000	0,000	Ok
34	215	-570,0	-122,7	23,5	7955,1	0,004	0,000	0,001	Ok
1	215	-570,0	-159,0	7,4	5366,1	0,002	0,000	0,000	Ok
34	215	-600,0	-111,0	28,3	7251,8	0,006	0,000	0,001	Ok
1	215	-600,0	-143,9	13,9	5146,2	0,003	0,000	0,000	Ok
34	215	-630,0	-99,3	31,2	6404,1	0,005	0,000	0,001	Ok
1	215	-630,0	-128,7	18,6	4730,7	0,003	0,000	0,001	Ok
34	215	-660,0	-87,7	32,6	5467,0	0,004	0,000	0,001	Ok
1	215	-660,0	-113,6	21,7	4173,1	0,002	0,000	0,001	Ok
34	215	-690,0	-76,0	32,4	4490,1	0,004	0,000	0,001	Ok
1	215	-690,0	-98,4	23,2	3522,9	0,002	0,000	0,001	Ok
34	215	-720,0	-64,3	30,8	3519,0	0,003	0,000	0,001	Ok
1	215	-720,0	-83,3	23,3	2826,6	0,002	0,000	0,001	Ok
34	215	-750,0	-52,6	27,9	2595,4	0,002	0,000	0,001	Ok
1	215	-750,0	-68,1	22,0	2127,9	0,001	0,000	0,001	Ok
34	215	-780,0	-40,9	23,8	1758,5	0,001	0,000	0,001	Ok
1	215	-780,0	-53,0	19,4	1468,1	0,001	0,000	0,001	Ok
34	215	-810,0	-29,2	18,5	1045,3	0,001	0,000	0,001	Ok
1	215	-810,0	-37,9	15,5	887,1	0,000	0,000	0,001	Ok
34	215	-840,0	-17,5	12,0	491,3	0,000	0,000	0,000	Ok
1	215	-840,0	-22,7	10,3	423,5	0,000	0,000	0,000	Ok
34	215	-870,0	-5,8	4,4	131,4	0,000	0,000	0,000	Ok
1	215	-870,0	-7,6	3,8	115,3	0,000	0,000	0,000	Ok
1	215	-900,0	-7,6	3,8	0,0	0,000	0,000	0,000	Ok

**Plinto n. 247**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
18	247	0,0	-1103,1	844,4	182803,5	0,101	0,003	0,029	Ok
1	247	0,0	-1431,5	763,6	195054,7	0,076	0,004	0,026	Ok
18	247	-30,0	-1047,7	787,2	157907,2	0,087	0,003	0,027	Ok
1	247	-30,0	-1359,6	745,6	172148,9	0,067	0,003	0,025	Ok
18	247	-60,0	-1010,8	734,0	134291,6	0,074	0,003	0,025	Ok
1	247	-60,0	-1311,6	713,4	149781,1	0,058	0,003	0,024	Ok
18	247	-90,0	-973,8	673,6	112271,9	0,062	0,002	0,023	Ok
1	247	-90,0	-1263,7	670,3	128380,5	0,050	0,003	0,023	Ok
18	247	-120,0	-937,0	608,8	92063,9	0,051	0,002	0,021	Ok
1	247	-120,0	-1215,9	619,4	108272,6	0,042	0,003	0,021	Ok
18	247	-150,0	-900,1	542,2	73799,0	0,041	0,002	0,019	Ok
1	247	-150,0	-1168,0	563,6	89690,6	0,035	0,003	0,019	Ok
18	247	-180,0	-863,2	475,5	57534,6	0,032	0,002	0,016	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	247	-180,0	-1120,2	505,0	72784,3	0,028	0,003	0,017	Ok
19	247	-210,0	-823,4	275,2	45399,4	0,025	0,002	0,009	Ok
1	247	-210,0	-1072,4	445,8	57634,3	0,022	0,003	0,015	Ok
19	247	-240,0	-786,7	247,3	37144,6	0,021	0,002	0,008	Ok
1	247	-240,0	-1024,6	387,4	44262,0	0,017	0,003	0,013	Ok
19	247	-270,0	-750,0	218,9	29724,9	0,016	0,002	0,007	Ok
1	247	-270,0	-976,8	331,1	32642,0	0,013	0,002	0,011	Ok
19	247	-300,0	-713,3	190,6	23158,5	0,013	0,002	0,007	Ok
1	247	-300,0	-929,0	277,8	22711,2	0,009	0,002	0,009	Ok
19	247	-330,0	-676,7	163,2	17439,5	0,010	0,002	0,006	Ok
1	247	-330,0	-881,3	228,2	14379,0	0,006	0,002	0,008	Ok
20	247	-360,0	-639,0	137,2	12556,1	0,007	0,002	0,005	Ok
1	247	-360,0	-833,6	182,8	7534,9	0,003	0,002	0,006	Ok
20	247	-390,0	-602,4	112,4	8706,6	0,005	0,002	0,004	Ok
1	247	-390,0	-785,8	141,8	2064,2	0,001	0,002	0,005	Ok
17	247	-420,0	-569,8	72,6	8548,7	0,005	0,001	0,002	Ok
1	247	-420,0	-738,1	105,4	2227,0	0,001	0,002	0,004	Ok
18	247	-450,0	-532,1	42,8	10600,4	0,006	0,001	0,001	Ok
1	247	-450,0	-690,5	73,4	5377,4	0,002	0,002	0,003	Ok
18	247	-480,0	-495,3	18,6	11884,2	0,007	0,001	0,001	Ok
1	247	-480,0	-642,8	45,8	7576,8	0,003	0,002	0,002	Ok
18	247	-510,0	-458,6	1,8	12439,3	0,007	0,001	0,000	Ok
1	247	-510,0	-595,1	22,5	8950,2	0,003	0,001	0,001	Ok
18	247	-540,0	-421,9	17,6	12393,6	0,007	0,001	0,001	Ok
1	247	-540,0	-547,5	3,2	9623,1	0,004	0,001	0,000	Ok
18	247	-570,0	-385,2	30,0	11865,9	0,007	0,001	0,001	Ok
1	247	-570,0	-499,8	12,5	9715,4	0,004	0,001	0,000	Ok
18	247	-600,0	-348,5	39,1	10965,5	0,009	0,001	0,001	Ok
1	247	-600,0	-452,2	24,6	9339,6	0,005	0,001	0,001	Ok
18	247	-630,0	-311,8	45,2	9792,3	0,008	0,001	0,002	Ok
1	247	-630,0	-404,6	33,4	8601,1	0,005	0,001	0,001	Ok
18	247	-660,0	-275,1	48,4	8437,8	0,007	0,001	0,002	Ok
1	247	-660,0	-357,0	39,2	7597,9	0,004	0,001	0,001	Ok
18	247	-690,0	-238,4	49,1	6985,6	0,006	0,001	0,002	Ok
1	247	-690,0	-309,4	42,1	6421,5	0,004	0,001	0,001	Ok
18	247	-720,0	-201,7	47,4	5512,9	0,004	0,001	0,002	Ok
1	247	-720,0	-261,8	42,4	5157,2	0,003	0,001	0,001	Ok
18	247	-750,0	-165,0	43,5	4091,1	0,003	0,000	0,001	Ok
1	247	-750,0	-214,2	40,1	3885,5	0,002	0,001	0,001	Ok
18	247	-780,0	-128,4	37,4	2787,2	0,002	0,000	0,001	Ok
1	247	-780,0	-166,6	35,4	2682,6	0,001	0,000	0,001	Ok
18	247	-810,0	-91,7	29,3	1665,1	0,001	0,000	0,001	Ok
1	247	-810,0	-119,0	28,2	1622,0	0,001	0,000	0,001	Ok
18	247	-840,0	-55,0	19,2	786,4	0,001	0,000	0,001	Ok
1	247	-840,0	-71,4	18,8	774,8	0,000	0,000	0,001	Ok
18	247	-870,0	-18,3	7,0	211,5	0,000	0,000	0,000	Ok
1	247	-870,0	-23,8	7,0	211,0	0,000	0,000	0,000	Ok
1	247	-900,0	-23,8	7,0	0,0	0,000	0,000	0,000	Ok

**Plinto n. 279**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
17	279	0,0	-2328,6	1004,6	221791,6	0,121	0,006	0,034	Ok
1	279	0,0	-3025,9	952,9	243415,5	0,094	0,008	0,033	Ok
17	279	-30,0	-2211,6	941,5	192114,7	0,105	0,006	0,032	Ok
1	279	-30,0	-2873,9	930,5	214830,5	0,083	0,007	0,032	Ok
17	279	-60,0	-2133,6	880,5	163871,9	0,089	0,005	0,030	Ok
1	279	-60,0	-2772,6	890,2	186916,6	0,072	0,007	0,030	Ok
17	279	-90,0	-2055,7	810,3	137459,0	0,075	0,005	0,028	Ok
1	279	-90,0	-2671,3	836,5	160209,7	0,062	0,007	0,029	Ok
17	279	-120,0	-1977,8	734,3	113151,5	0,062	0,005	0,025	Ok
1	279	-120,0	-2570,1	773,0	135116,1	0,052	0,006	0,026	Ok
17	279	-150,0	-1900,0	655,6	91122,4	0,050	0,005	0,022	Ok
1	279	-150,0	-2469,0	703,3	111926,6	0,043	0,006	0,024	Ok
17	279	-180,0	-1822,2	576,6	71454,0	0,039	0,005	0,020	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	279	-180,0	-2367,8	630,2	90828,2	0,035	0,006	0,022	Ok
20	279	-210,0	-1743,0	356,6	56492,4	0,031	0,004	0,012	Ok
1	279	-210,0	-2266,8	556,3	71921,6	0,028	0,006	0,019	Ok
20	279	-240,0	-1665,3	318,6	45796,9	0,025	0,004	0,011	Ok
1	279	-240,0	-2165,7	483,4	55233,4	0,021	0,005	0,017	Ok
20	279	-270,0	-1587,6	280,2	36242,9	0,020	0,004	0,010	Ok
1	279	-270,0	-2064,8	413,1	40731,7	0,016	0,005	0,014	Ok
20	279	-300,0	-1510,0	242,5	27840,4	0,015	0,004	0,008	Ok
1	279	-300,0	-1963,8	346,7	28337,9	0,011	0,005	0,012	Ok
20	279	-330,0	-1432,4	206,2	20569,9	0,011	0,004	0,007	Ok
1	279	-330,0	-1862,9	284,8	17938,5	0,007	0,005	0,010	Ok
20	279	-360,0	-1354,8	172,0	14388,7	0,008	0,003	0,006	Ok
1	279	-360,0	-1762,0	228,1	9394,4	0,004	0,004	0,008	Ok
20	279	-390,0	-1277,3	140,2	9237,9	0,005	0,003	0,005	Ok
1	279	-390,0	-1661,1	177,0	2550,8	0,001	0,004	0,006	Ok
17	279	-420,0	-1200,7	91,2	9271,9	0,005	0,003	0,003	Ok
1	279	-420,0	-1560,3	131,5	2761,2	0,001	0,004	0,004	Ok
17	279	-450,0	-1123,2	56,0	12003,6	0,007	0,003	0,002	Ok
1	279	-450,0	-1459,5	91,6	6705,1	0,003	0,004	0,003	Ok
17	279	-480,0	-1045,6	26,3	13681,1	0,008	0,003	0,001	Ok
1	279	-480,0	-1358,8	57,2	9452,5	0,004	0,003	0,002	Ok
17	279	-510,0	-968,1	2,2	14467,3	0,008	0,002	0,000	Ok
1	279	-510,0	-1258,0	28,0	11167,6	0,004	0,003	0,001	Ok
17	279	-540,0	-890,6	18,2	14516,2	0,008	0,002	0,001	Ok
1	279	-540,0	-1157,3	3,9	12008,0	0,005	0,003	0,000	Ok
17	279	-570,0	-813,1	33,6	13970,7	0,008	0,002	0,001	Ok
1	279	-570,0	-1056,6	15,6	12123,5	0,005	0,003	0,001	Ok
17	279	-600,0	-735,6	45,0	12962,8	0,010	0,002	0,002	Ok
1	279	-600,0	-955,9	30,7	11654,8	0,006	0,003	0,001	Ok
17	279	-630,0	-658,1	52,7	11613,6	0,009	0,002	0,002	Ok
1	279	-630,0	-855,2	41,7	10733,3	0,006	0,002	0,001	Ok
17	279	-660,0	-580,7	56,9	10034,1	0,008	0,002	0,002	Ok
1	279	-660,0	-754,6	48,9	9481,5	0,005	0,002	0,002	Ok
17	279	-690,0	-503,2	58,1	8326,2	0,007	0,001	0,002	Ok
1	279	-690,0	-653,9	52,6	8013,4	0,004	0,002	0,002	Ok
17	279	-720,0	-425,8	56,3	6583,8	0,005	0,001	0,002	Ok
1	279	-720,0	-553,3	52,9	6435,8	0,004	0,002	0,002	Ok
17	279	-750,0	-348,4	51,8	4894,3	0,004	0,001	0,002	Ok
1	279	-750,0	-452,7	50,0	4848,8	0,003	0,001	0,002	Ok
17	279	-780,0	-270,9	44,7	3339,5	0,003	0,001	0,002	Ok
1	279	-780,0	-352,1	44,1	3347,7	0,002	0,001	0,002	Ok
17	279	-810,0	-193,5	35,1	1997,9	0,002	0,001	0,001	Ok
1	279	-810,0	-251,5	35,2	2024,2	0,001	0,001	0,001	Ok
17	279	-840,0	-116,1	23,0	944,9	0,001	0,000	0,001	Ok
1	279	-840,0	-150,9	23,5	966,9	0,001	0,000	0,001	Ok
17	279	-870,0	-38,7	8,5	254,5	0,000	0,000	0,000	Ok
1	279	-870,0	-50,3	8,8	263,3	0,000	0,000	0,000	Ok
1	279	-900,0	-50,3	8,8	0,0	0,000	0,000	0,000	Ok

**Plinto n. 311**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
18	311	0,0	-3243,2	493,5	93751,1	0,051	0,008	0,017	Ok
1	311	0,0	-4223,9	315,3	81243,6	0,031	0,011	0,011	Ok
18	311	-30,0	-3080,2	444,9	79439,6	0,043	0,008	0,015	Ok
1	311	-30,0	-4011,6	308,7	71776,6	0,027	0,010	0,011	Ok
18	311	-60,0	-2971,6	406,7	66153,2	0,036	0,007	0,014	Ok
1	311	-60,0	-3870,2	295,7	62517,1	0,024	0,010	0,010	Ok
18	311	-90,0	-2863,1	366,4	54011,9	0,029	0,007	0,013	Ok
1	311	-90,0	-3728,9	278,2	53645,6	0,021	0,009	0,010	Ok
18	311	-120,0	-2754,6	325,2	43085,1	0,023	0,007	0,011	Ok
1	311	-120,0	-3587,6	257,4	45299,6	0,017	0,009	0,009	Ok
18	311	-150,0	-2646,2	284,4	33402,6	0,018	0,007	0,010	Ok
1	311	-150,0	-3446,4	234,4	37578,1	0,014	0,009	0,008	Ok
18	311	-180,0	-2537,8	244,9	24961,7	0,014	0,006	0,008	Ok

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

1	311	-180,0	-3305,3	210,3	30545,4	0,012	0,008	0,007	Ok
19	311	-210,0	-2438,5	88,4	19563,7	0,011	0,006	0,003	Ok
1	311	-210,0	-3164,2	185,8	24236,6	0,009	0,008	0,006	Ok
35	311	-240,0	-2329,8	83,0	17181,7	0,009	0,006	0,003	Ok
1	311	-240,0	-3023,2	161,6	18662,1	0,007	0,008	0,006	Ok
35	311	-270,0	-2221,2	76,4	14949,8	0,008	0,006	0,003	Ok
1	311	-270,0	-2882,2	138,3	13812,9	0,005	0,007	0,005	Ok
35	311	-300,0	-2112,5	69,5	12887,5	0,007	0,005	0,002	Ok
1	311	-300,0	-2741,3	116,2	9663,6	0,004	0,007	0,004	Ok
35	311	-330,0	-2004,0	62,6	11009,3	0,006	0,005	0,002	Ok
1	311	-330,0	-2600,4	95,6	6177,8	0,002	0,007	0,003	Ok
35	311	-360,0	-1895,5	55,8	9322,9	0,005	0,005	0,002	Ok
1	311	-360,0	-2459,6	76,7	3310,0	0,001	0,006	0,003	Ok
33	311	-390,0	-1785,5	47,8	7830,9	0,004	0,004	0,002	Ok
1	311	-390,0	-2318,8	59,7	1011,5	0,000	0,006	0,002	Ok
17	311	-420,0	-1673,8	31,1	7621,9	0,004	0,004	0,001	Ok
1	311	-420,0	-2178,0	44,5	789,9	0,000	0,005	0,002	Ok
18	311	-450,0	-1564,3	13,8	8195,7	0,004	0,004	0,000	Ok
1	311	-450,0	-2037,3	31,1	2119,8	0,001	0,005	0,001	Ok
18	311	-480,0	-1456,3	8,8	8433,2	0,005	0,004	0,000	Ok
1	311	-480,0	-1896,7	19,6	3052,8	0,001	0,005	0,001	Ok
18	311	-510,0	-1348,3	13,6	8338,6	0,005	0,003	0,000	Ok
1	311	-510,0	-1756,1	9,8	3640,7	0,001	0,004	0,000	Ok
18	311	-540,0	-1240,4	19,7	7974,5	0,004	0,003	0,001	Ok
1	311	-540,0	-1615,5	1,8	3935,5	0,002	0,004	0,000	Ok
18	311	-570,0	-1132,4	24,5	7400,5	0,004	0,003	0,001	Ok
1	311	-570,0	-1474,9	4,8	3987,2	0,002	0,004	0,000	Ok
18	311	-600,0	-1024,5	27,9	6671,7	0,005	0,003	0,001	Ok
1	311	-600,0	-1334,3	9,9	3842,5	0,002	0,004	0,000	Ok
18	311	-630,0	-916,6	29,8	5838,3	0,005	0,003	0,001	Ok
1	311	-630,0	-1193,8	13,6	3545,2	0,002	0,003	0,000	Ok
18	311	-660,0	-808,8	30,4	4945,7	0,004	0,002	0,001	Ok
1	311	-660,0	-1053,3	16,1	3136,3	0,002	0,003	0,001	Ok
18	311	-690,0	-700,9	29,7	4035,3	0,003	0,002	0,001	Ok
1	311	-690,0	-912,8	17,3	2653,8	0,001	0,003	0,001	Ok
18	311	-720,0	-593,0	27,9	3144,3	0,002	0,002	0,001	Ok
1	311	-720,0	-772,4	17,5	2133,4	0,001	0,002	0,001	Ok
18	311	-750,0	-485,2	25,0	2307,2	0,002	0,001	0,001	Ok
1	311	-750,0	-631,9	16,6	1608,7	0,001	0,002	0,001	Ok
18	311	-780,0	-377,4	21,2	1556,1	0,001	0,001	0,001	Ok
1	311	-780,0	-491,5	14,6	1111,5	0,001	0,001	0,000	Ok
18	311	-810,0	-269,5	16,3	921,0	0,001	0,001	0,001	Ok
1	311	-810,0	-351,1	11,7	672,5	0,000	0,001	0,000	Ok
18	311	-840,0	-161,7	10,5	431,1	0,000	0,000	0,000	Ok
1	311	-840,0	-210,6	7,8	321,4	0,000	0,001	0,000	Ok
18	311	-870,0	-53,9	3,8	114,8	0,000	0,000	0,000	Ok
1	311	-870,0	-70,2	2,9	87,6	0,000	0,000	0,000	Ok
1	311	-900,0	-70,2	2,9	0,0	0,000	0,000	0,000	Ok

**Plinto n. 92**

<b>Cmb.</b>	<b>Palo</b>	<b>Quota (cm)</b>	<b>N (daN)</b>	<b>V (daN)</b>	<b>M (daN cm)</b>	<b>Ver. N/M</b>	<b>Ver.(25)</b>	<b>Ver.V</b>	<b>Stato</b>
36	92	0,0	-2330,3	997,6	220791,3	0,120	0,006	0,034	Ok
1	92	0,0	-3028,2	943,4	242081,3	0,093	0,008	0,032	Ok
36	92	-30,0	-2213,2	935,5	191315,6	0,104	0,006	0,032	Ok
1	92	-30,0	-2876,0	922,4	213767,0	0,082	0,007	0,032	Ok
36	92	-60,0	-2135,2	875,2	163252,6	0,089	0,005	0,030	Ok
1	92	-60,0	-2774,6	883,2	186094,5	0,072	0,007	0,030	Ok
36	92	-90,0	-2057,2	805,7	136998,0	0,075	0,005	0,028	Ok
1	92	-90,0	-2673,3	830,4	159599,5	0,061	0,007	0,028	Ok
36	92	-120,0	-1979,3	730,5	112827,7	0,062	0,005	0,025	Ok
1	92	-120,0	-2572,0	767,8	134689,0	0,052	0,006	0,026	Ok
36	92	-150,0	-1901,4	652,4	90915,7	0,050	0,005	0,022	Ok
1	92	-150,0	-2470,8	699,0	111655,1	0,043	0,006	0,024	Ok
36	92	-180,0	-1823,5	574,0	71345,6	0,039	0,005	0,020	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

1	92	-180,0	-2369,6	626,7	90686,6	0,035	0,006	0,021	Ok
33	92	-210,0	-1744,3	354,4	56465,5	0,031	0,004	0,012	Ok
1	92	-210,0	-2268,5	553,5	71886,2	0,028	0,006	0,019	Ok
33	92	-240,0	-1666,5	316,8	45835,1	0,025	0,004	0,011	Ok
1	92	-240,0	-2167,4	481,2	55282,7	0,021	0,005	0,016	Ok
33	92	-270,0	-1588,8	278,9	36330,6	0,020	0,004	0,010	Ok
1	92	-270,0	-2066,3	411,5	40846,6	0,016	0,005	0,014	Ok
33	92	-300,0	-1511,1	241,6	27963,8	0,015	0,004	0,008	Ok
1	92	-300,0	-1965,3	345,5	28501,5	0,011	0,005	0,012	Ok
33	92	-330,0	-1433,5	205,7	20716,8	0,011	0,004	0,007	Ok
1	92	-330,0	-1864,3	284,1	18136,5	0,007	0,005	0,010	Ok
33	92	-360,0	-1355,8	171,7	14548,3	0,008	0,003	0,006	Ok
1	92	-360,0	-1763,3	227,8	9615,4	0,004	0,004	0,008	Ok
33	92	-390,0	-1278,2	140,1	9399,6	0,005	0,003	0,005	Ok
1	92	-390,0	-1662,4	176,9	2792,6	0,001	0,004	0,006	Ok
36	92	-420,0	-1201,6	91,3	9118,1	0,005	0,003	0,003	Ok
1	92	-420,0	-1561,5	131,7	2548,4	0,001	0,004	0,004	Ok
36	92	-450,0	-1124,0	56,3	11848,0	0,007	0,003	0,002	Ok
1	92	-450,0	-1460,6	92,0	6487,6	0,003	0,004	0,003	Ok
36	92	-480,0	-1046,4	26,7	13530,5	0,007	0,003	0,001	Ok
1	92	-480,0	-1359,8	57,7	9243,8	0,004	0,003	0,002	Ok
36	92	-510,0	-968,8	3,0	14326,0	0,008	0,002	0,000	Ok
1	92	-510,0	-1258,9	28,6	10972,9	0,004	0,003	0,001	Ok
36	92	-540,0	-891,2	17,8	14386,9	0,008	0,002	0,001	Ok
1	92	-540,0	-1158,1	4,6	11830,8	0,005	0,003	0,000	Ok
36	92	-570,0	-813,7	33,1	13855,2	0,008	0,002	0,001	Ok
1	92	-570,0	-1057,4	15,0	11965,8	0,005	0,003	0,001	Ok
36	92	-600,0	-736,2	44,5	12862,1	0,010	0,002	0,002	Ok
1	92	-600,0	-956,6	30,0	11517,7	0,006	0,003	0,001	Ok
36	92	-630,0	-658,6	52,2	11528,0	0,009	0,002	0,002	Ok
1	92	-630,0	-855,9	41,0	10617,1	0,006	0,002	0,001	Ok
36	92	-660,0	-581,1	56,5	9963,6	0,008	0,002	0,002	Ok
1	92	-660,0	-755,1	48,3	9385,9	0,005	0,002	0,002	Ok
36	92	-690,0	-503,6	57,6	8270,0	0,007	0,001	0,002	Ok
1	92	-690,0	-654,4	52,0	7937,5	0,004	0,002	0,002	Ok
36	92	-720,0	-426,1	55,9	6541,0	0,005	0,001	0,002	Ok
1	92	-720,0	-553,7	52,4	6377,9	0,004	0,002	0,002	Ok
36	92	-750,0	-348,6	51,5	4863,5	0,004	0,001	0,002	Ok
1	92	-750,0	-453,0	49,6	4807,3	0,003	0,001	0,002	Ok
36	92	-780,0	-271,2	44,4	3319,2	0,003	0,001	0,002	Ok
1	92	-780,0	-352,4	43,7	3320,3	0,002	0,001	0,001	Ok
36	92	-810,0	-193,7	34,9	1986,1	0,002	0,001	0,001	Ok
1	92	-810,0	-251,7	35,0	2008,3	0,001	0,001	0,001	Ok
36	92	-840,0	-116,2	22,9	939,4	0,001	0,000	0,001	Ok
1	92	-840,0	-151,0	23,3	959,6	0,001	0,000	0,001	Ok
36	92	-870,0	-38,7	8,4	253,1	0,000	0,000	0,000	Ok
1	92	-870,0	-50,3	8,7	261,4	0,000	0,000	0,000	Ok
1	92	-900,0	-50,3	8,7	0,0	0,000	0,000	0,000	Ok

Sezioni maggiormente sollecitate:

PI.	Cmb.	Palo	Quota (cm)	N (daN)	V (daN)	M (daN cm)	Ver. N/M	Ver.(25)	Ver.V
279	17	279	0,0	-2328,6	1004,6	221791,6	0,121	0,006	0,034
311	1	311	0,0	-4223,9	315,3	81243,6	0,031	0,011	0,011

S/Su massime:

Ver. N/M = 0,121 < 1 Ok

Ver. (25) = 0,011 < 1 Ok

Ver. V = 0,034 < 1 Ok

**VERIFICHE STATO LIMITE DI ESERCIZIO:**

Combinazioni di tipo: **SLE condizioni rare.**

Tensione lim. CLS = 149,4 daN/cm<sup>2</sup>

Tensione lim. acciaio = 3600,0 daN/cm<sup>2</sup>



*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

Plinto n. 151

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cmq)	<b>Ten.SLE A</b> (daN/cmq)	<b>Stato</b>
69	151	0,0	-351,0	79452,0	-5,3	105,3	Ok
69	151	-30,0	-333,4	70297,2	-5,0	137,4	Ok
69	151	-60,0	-321,6	61321,9	-4,4	118,7	Ok
69	151	-90,0	-309,9	52705,5	-3,8	100,8	Ok
69	151	-120,0	-298,1	44585,0	-3,2	83,9	Ok
69	151	-150,0	-286,4	37059,8	-2,7	68,3	Ok
69	151	-180,0	-274,7	30195,2	-2,2	54,2	Ok
69	151	-210,0	-262,9	24028,1	-1,7	41,5	Ok
69	151	-240,0	-251,2	18570,7	-1,3	30,3	Ok
69	151	-270,0	-239,5	13815,9	-1,0	20,7	Ok
69	151	-300,0	-227,8	9741,2	-0,7	12,6	Ok
69	151	-330,0	-216,1	6312,2	-0,4	6,1	Ok
69	151	-360,0	-204,4	3487,1	-0,2	-2,9	Ok
69	151	-390,0	-192,7	1225,4	-0,1	-1,5	Ok
69	151	-420,0	-181,0	614,9	-0,1	-1,1	Ok
69	151	-450,0	-169,3	1913,5	-0,1	-1,7	Ok
69	151	-480,0	-157,6	2845,3	-0,2	-2,3	Ok
69	151	-510,0	-145,9	3440,7	-0,2	-2,8	Ok
69	151	-540,0	-134,2	3748,6	-0,3	3,4	Ok
69	151	-570,0	-122,6	3817,1	-0,3	3,9	Ok
69	151	-600,0	-110,9	3691,8	-0,3	4,0	Ok
69	151	-630,0	-99,2	3415,4	-0,3	5,0	Ok
69	151	-660,0	-87,5	3027,8	-0,2	4,4	Ok
69	151	-690,0	-75,9	2566,4	-0,2	3,7	Ok
69	151	-720,0	-64,2	2066,0	-0,2	2,8	Ok
69	151	-750,0	-52,5	1559,7	-0,1	2,0	Ok
69	151	-780,0	-40,8	1078,8	-0,1	1,2	Ok
69	151	-810,0	-29,2	653,3	0,0	-0,6	Ok
69	151	-840,0	-17,5	312,5	0,0	-0,3	Ok
69	151	-870,0	-5,8	85,2	0,0	-0,1	Ok
69	151	-900,0	-5,8	0,0	0,0	0,0	Ok

Plinto n. 119

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cmq)	<b>Ten.SLE A</b> (daN/cmq)	<b>Stato</b>
69	119	0,0	-1103,2	148953,4	-10,0	188,0	Ok
69	119	-30,0	-1047,7	131575,1	-9,4	241,5	Ok
69	119	-60,0	-1010,8	114582,0	-8,2	206,7	Ok
69	119	-90,0	-973,9	98304,7	-7,0	173,4	Ok
69	119	-120,0	-937,0	82994,8	-5,9	142,2	Ok
69	119	-150,0	-900,1	68833,1	-4,9	113,5	Ok
69	119	-180,0	-863,2	55936,9	-4,0	87,6	Ok
69	119	-210,0	-826,4	44370,2	-3,1	64,5	Ok
69	119	-240,0	-789,6	34151,7	-2,4	44,5	Ok
69	119	-270,0	-752,7	25264,2	-1,7	27,5	Ok
69	119	-300,0	-715,9	17661,5	-1,2	-14,2	Ok
69	119	-330,0	-679,2	11276,1	-0,7	-9,3	Ok
69	119	-360,0	-642,4	6025,9	-0,4	-5,8	Ok
69	119	-390,0	-605,6	1830,0	-0,3	-3,6	Ok
69	119	-420,0	-568,8	1507,4	-0,2	-3,3	Ok
69	119	-450,0	-532,1	3927,0	-0,3	-4,3	Ok
69	119	-480,0	-495,4	5630,0	-0,4	-5,0	Ok
69	119	-510,0	-458,6	6702,0	-0,4	-5,6	Ok
69	119	-540,0	-421,9	7237,8	-0,5	-5,9	Ok
69	119	-570,0	-385,2	7328,3	-0,5	-6,0	Ok
69	119	-600,0	-348,5	7059,3	-0,5	-5,7	Ok
69	119	-630,0	-311,8	6511,1	-0,5	-5,5	Ok
69	119	-660,0	-275,1	5758,7	-0,4	-4,9	Ok
69	119	-690,0	-238,4	4871,8	-0,4	-4,2	Ok
69	119	-720,0	-201,7	3915,8	-0,3	-3,3	Ok
69	119	-750,0	-165,0	2952,3	-0,2	-2,5	Ok
69	119	-780,0	-128,4	2039,6	-0,1	-1,8	Ok

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

69	119	-810,0	-91,7	1233,9	-0,1	-1,1	Ok
69	119	-840,0	-55,0	589,7	0,0	-0,6	Ok
69	119	-870,0	-18,3	160,7	0,0	-0,2	Ok
69	119	-900,0	-18,3	0,0	0,0	-0,1	Ok

Plinto n. 183

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cm <sup>2</sup> )	<b>Ten.SLE A</b> (daN/cm <sup>2</sup> )	<b>Stato</b>
69	183	0,0	-73,8	14072,2	-0,9	18,4	Ok
69	183	-30,0	-70,1	12445,3	-0,9	23,9	Ok
69	183	-60,0	-67,6	10854,3	-0,8	20,6	Ok
69	183	-90,0	-65,2	9330,0	-0,7	17,5	Ok
69	183	-120,0	-62,7	7896,1	-0,6	14,5	Ok
69	183	-150,0	-60,2	6569,6	-0,5	11,8	Ok
69	183	-180,0	-57,8	5361,7	-0,4	9,3	Ok
69	183	-210,0	-55,3	4278,8	-0,3	7,1	Ok
69	183	-240,0	-52,8	3323,5	-0,2	5,1	Ok
69	183	-270,0	-50,4	2495,2	-0,2	3,5	Ok
69	183	-300,0	-47,9	1791,7	-0,1	2,1	Ok
69	183	-330,0	-45,5	1211,2	-0,1	1,1	Ok
69	183	-360,0	-43,0	758,2	0,0	-0,6	Ok
69	183	-390,0	-40,5	461,7	0,0	-0,4	Ok
69	183	-420,0	-38,1	386,7	0,0	-0,4	Ok
69	183	-450,0	-35,6	474,7	0,0	-0,4	Ok
69	183	-480,0	-33,2	583,0	0,0	-0,5	Ok
69	183	-510,0	-30,7	660,3	0,0	-0,5	Ok
69	183	-540,0	-28,2	698,4	0,0	-0,6	Ok
69	183	-570,0	-25,8	700,0	0,0	0,6	Ok
69	183	-600,0	-23,3	670,6	0,0	0,6	Ok
69	183	-630,0	-20,9	616,6	0,0	0,8	Ok
69	183	-660,0	-18,4	544,3	0,0	0,7	Ok
69	183	-690,0	-16,0	459,9	0,0	0,6	Ok
69	183	-720,0	-13,5	369,4	0,0	0,4	Ok
69	183	-750,0	-11,0	278,4	0,0	0,3	Ok
69	183	-780,0	-8,6	192,3	0,0	-0,2	Ok
69	183	-810,0	-6,1	116,3	0,0	-0,1	Ok
69	183	-840,0	-3,7	55,6	0,0	0,0	Ok
69	183	-870,0	-1,2	15,1	0,0	0,0	Ok
69	183	-900,0	-1,2	0,0	0,0	0,0	Ok

Plinto n. 215

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cm <sup>2</sup> )	<b>Ten.SLE A</b> (daN/cm <sup>2</sup> )	<b>Stato</b>
69	215	0,0	-350,4	81700,1	-5,4	108,5	Ok
69	215	-30,0	-332,8	72035,1	-5,2	141,2	Ok
69	215	-60,0	-321,0	62611,6	-4,5	121,5	Ok
69	215	-90,0	-309,3	53607,7	-3,8	102,8	Ok
69	215	-120,0	-297,6	45157,8	-3,2	85,2	Ok
69	215	-150,0	-285,9	37357,6	-2,7	69,0	Ok
69	215	-180,0	-274,2	30268,3	-2,2	54,3	Ok
69	215	-210,0	-262,5	23922,0	-1,7	41,3	Ok
69	215	-240,0	-250,8	18326,3	-1,3	29,8	Ok
69	215	-270,0	-239,1	13469,2	-1,0	20,0	Ok
69	215	-300,0	-227,4	9323,4	-0,6	11,8	Ok
69	215	-330,0	-215,7	5850,7	-0,4	5,2	Ok
69	215	-360,0	-204,0	3006,2	-0,2	-2,5	Ok
69	215	-390,0	-192,3	768,7	-0,1	-1,2	Ok
69	215	-420,0	-180,7	1091,3	-0,1	-1,3	Ok
69	215	-450,0	-169,0	2376,7	-0,2	-2,0	Ok
69	215	-480,0	-157,3	3277,5	-0,2	-2,7	Ok
69	215	-510,0	-145,7	3835,7	-0,3	3,3	Ok
69	215	-540,0	-134,0	4102,5	-0,3	4,1	Ok
69	215	-570,0	-122,3	4127,8	-0,3	4,5	Ok
69	215	-600,0	-110,7	3958,6	-0,3	4,5	Ok
69	215	-630,0	-99,0	3639,0	-0,3	5,6	Ok

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

69	215	-660,0	-87,4	3210,1	-0,3	5,0	Ok
69	215	-690,0	-75,7	2709,9	-0,2	4,1	Ok
69	215	-720,0	-64,1	2174,3	-0,2	3,1	Ok
69	215	-750,0	-52,4	1636,8	-0,1	2,2	Ok
69	215	-780,0	-40,8	1129,3	-0,1	1,3	Ok
69	215	-810,0	-29,1	682,4	-0,1	0,6	Ok
69	215	-840,0	-17,5	325,8	0,0	-0,3	Ok
69	215	-870,0	-5,8	88,7	0,0	-0,1	Ok
69	215	-900,0	-5,8	0,0	0,0	0,0	Ok

Plinto n. 247

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cmq)	<b>Ten.SLE A</b> (daN/cmq)	<b>Stato</b>
69	247	0,0	-1101,1	150042,1	-10,0	189,6	Ok
69	247	-30,0	-1045,8	132422,2	-9,5	243,4	Ok
69	247	-60,0	-1008,9	115216,2	-8,2	208,1	Ok
69	247	-90,0	-972,1	98754,2	-7,1	174,4	Ok
69	247	-120,0	-935,3	83286,7	-5,9	142,9	Ok
69	247	-150,0	-898,5	68992,8	-4,9	113,9	Ok
69	247	-180,0	-861,7	55987,9	-4,0	87,7	Ok
69	247	-210,0	-824,9	44334,1	-3,1	64,5	Ok
69	247	-240,0	-788,1	34047,7	-2,4	44,3	Ok
69	247	-270,0	-751,4	25109,2	-1,7	27,3	Ok
69	247	-300,0	-714,6	17470,2	-1,2	-14,1	Ok
69	247	-330,0	-677,9	11060,7	-0,7	-9,1	Ok
69	247	-360,0	-641,2	5796,1	-0,4	-5,7	Ok
69	247	-390,0	-604,5	1587,8	-0,2	-3,5	Ok
69	247	-420,0	-567,8	1713,1	-0,2	-3,4	Ok
69	247	-450,0	-531,1	4136,4	-0,3	-4,4	Ok
69	247	-480,0	-494,5	5828,3	-0,4	-5,1	Ok
69	247	-510,0	-457,8	6884,8	-0,4	-5,7	Ok
69	247	-540,0	-421,1	7402,4	-0,5	-6,0	Ok
69	247	-570,0	-384,5	7473,4	-0,5	-6,1	Ok
69	247	-600,0	-347,9	7184,3	-0,5	-5,8	Ok
69	247	-630,0	-311,2	6616,2	-0,5	-5,6	Ok
69	247	-660,0	-274,6	5844,5	-0,4	-5,0	Ok
69	247	-690,0	-238,0	4939,6	-0,4	-4,2	Ok
69	247	-720,0	-201,4	3967,1	-0,3	-3,4	Ok
69	247	-750,0	-164,7	2988,8	-0,2	-2,5	Ok
69	247	-780,0	-128,1	2063,6	-0,1	-1,8	Ok
69	247	-810,0	-91,5	1247,7	-0,1	-1,1	Ok
69	247	-840,0	-54,9	596,0	0,0	-0,6	Ok
69	247	-870,0	-18,3	162,3	0,0	-0,2	Ok
69	247	-900,0	-18,3	0,0	0,0	-0,1	Ok

Plinto n. 279

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cmq)	<b>Ten.SLE A</b> (daN/cmq)	<b>Stato</b>
69	279	0,0	-2327,6	187242,7	-12,7	216,9	Ok
69	279	-30,0	-2210,7	165254,2	-11,8	270,8	Ok
69	279	-60,0	-2132,7	143782,0	-10,2	228,2	Ok
69	279	-90,0	-2054,9	123238,3	-8,7	187,6	Ok
69	279	-120,0	-1977,0	103935,5	-7,3	149,7	Ok
69	279	-150,0	-1899,2	86097,4	-6,0	115,2	Ok
69	279	-180,0	-1821,4	69867,9	-4,8	84,3	Ok
69	279	-210,0	-1743,7	55324,3	-3,8	57,5	Ok
69	279	-240,0	-1666,0	42487,2	-2,8	35,0	Ok
69	279	-270,0	-1588,3	31332,1	-2,0	-25,4	Ok
69	279	-300,0	-1510,6	21798,4	-1,4	-18,3	Ok
69	279	-330,0	-1433,0	13798,8	-1,0	-13,1	Ok
69	279	-360,0	-1355,4	7226,5	-0,7	-9,6	Ok
69	279	-390,0	-1277,8	1962,2	-0,5	-6,8	Ok
69	279	-420,0	-1200,2	2124,0	-0,5	-6,5	Ok
69	279	-450,0	-1122,7	5157,7	-0,5	-7,6	Ok
69	279	-480,0	-1045,2	7271,2	-0,6	-8,2	Ok

*Parco Eolico "Bolina" – Progetto Definitivo*  
*Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10*

69	279	-510,0	-967,7	8590,4	-0,6	-8,5	Ok
69	279	-540,0	-890,2	9236,9	-0,6	-8,5	Ok
69	279	-570,0	-812,8	9325,7	-0,6	-8,3	Ok
69	279	-600,0	-735,3	8965,2	-0,6	-7,8	Ok
69	279	-630,0	-657,9	8256,4	-0,6	-7,4	Ok
69	279	-660,0	-580,4	7293,5	-0,5	-6,5	Ok
69	279	-690,0	-503,0	6164,2	-0,4	-5,5	Ok
69	279	-720,0	-425,6	4950,6	-0,4	-4,5	Ok
69	279	-750,0	-348,2	3729,8	-0,3	-3,5	Ok
69	279	-780,0	-270,8	2575,2	-0,2	-2,5	Ok
69	279	-810,0	-193,5	1557,1	-0,1	-1,7	Ok
69	279	-840,0	-116,1	743,8	-0,1	-0,9	Ok
69	279	-870,0	-38,7	202,6	0,0	-0,3	Ok
69	279	-900,0	-38,7	0,0	0,0	-0,2	Ok

Plinto n. 311

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cm <sup>2</sup> )	<b>Ten.SLE A</b> (daN/cm <sup>2</sup> )	<b>Stato</b>
69	311	0,0	-3249,1	62495,0	-4,4	-37,4	Ok
69	311	-30,0	-3085,9	55212,8	-3,6	-45,0	Ok
69	311	-60,0	-2977,1	48090,1	-3,1	-39,6	Ok
69	311	-90,0	-2868,4	41265,8	-2,7	-34,6	Ok
69	311	-120,0	-2759,7	34845,9	-2,3	-30,1	Ok
69	311	-150,0	-2651,1	28906,3	-2,0	-26,1	Ok
69	311	-180,0	-2542,5	23496,4	-1,7	-22,8	Ok
69	311	-210,0	-2434,0	18643,5	-1,5	-20,0	Ok
69	311	-240,0	-2325,5	14355,5	-1,3	-17,4	Ok
69	311	-270,0	-2217,1	10625,3	-1,1	-15,2	Ok
69	311	-300,0	-2108,7	7433,6	-0,9	-13,2	Ok
69	311	-330,0	-2000,3	4752,1	-0,8	-11,4	Ok
69	311	-360,0	-1892,0	2546,1	-0,7	-9,9	Ok
69	311	-390,0	-1783,7	778,1	-0,6	-8,5	Ok
69	311	-420,0	-1675,4	607,6	-0,5	-8,0	Ok
69	311	-450,0	-1567,2	1630,6	-0,5	-8,0	Ok
69	311	-480,0	-1459,0	2348,3	-0,5	-7,8	Ok
69	311	-510,0	-1350,8	2800,5	-0,5	-7,5	Ok
69	311	-540,0	-1242,7	3027,3	-0,5	-7,1	Ok
69	311	-570,0	-1134,5	3067,1	-0,5	-6,6	Ok
69	311	-600,0	-1026,4	2955,8	-0,4	-6,1	Ok
69	311	-630,0	-918,3	2727,1	-0,4	-5,7	Ok
69	311	-660,0	-810,2	2412,6	-0,4	-5,0	Ok
69	311	-690,0	-702,2	2041,4	-0,3	-4,4	Ok
69	311	-720,0	-594,1	1641,1	-0,3	-3,6	Ok
69	311	-750,0	-486,1	1237,5	-0,2	-2,9	Ok
69	311	-780,0	-378,1	855,0	-0,2	-2,2	Ok
69	311	-810,0	-270,0	517,3	-0,1	-1,5	Ok
69	311	-840,0	-162,0	247,3	-0,1	-0,9	Ok
69	311	-870,0	-54,0	67,4	0,0	-0,3	Ok
69	311	-900,0	-54,0	0,0	0,0	-0,3	Ok

Plinto n. 92

<b>Cmb.</b>	<b>Palo</b>	<b>Quota</b> (cm)	<b>N</b> (daN)	<b>M</b> (daN cm)	<b>Ten.SLE C</b> (daN/cm <sup>2</sup> )	<b>Ten.SLE A</b> (daN/cm <sup>2</sup> )	<b>Stato</b>
69	92	0,0	-2329,4	186216,4	-12,6	215,4	Ok
69	92	-30,0	-2212,3	164436,1	-11,7	269,0	Ok
69	92	-60,0	-2134,3	143149,6	-10,2	226,8	Ok
69	92	-90,0	-2056,4	122768,8	-8,7	186,5	Ok
69	92	-120,0	-1978,5	103606,9	-7,3	149,0	Ok
69	92	-150,0	-1900,6	85888,5	-6,0	114,7	Ok
69	92	-180,0	-1822,8	69758,9	-4,8	84,1	Ok
69	92	-210,0	-1745,0	55297,1	-3,8	57,4	Ok
69	92	-240,0	-1667,2	42525,1	-2,8	35,0	Ok
69	92	-270,0	-1589,5	31420,4	-2,1	-25,5	Ok
69	92	-300,0	-1511,7	21924,2	-1,4	-18,3	Ok
69	92	-330,0	-1434,1	13951,1	-1,0	-13,2	Ok

**Parco Eolico "Bolina" – Progetto Definitivo**  
**Relazione di calcolo preliminare delle fondazioni degli aerogeneratori G9 e G10**

69	92	-360,0	-1356,4	7396,5	-0,7	-9,7	Ok
69	92	-390,0	-1278,8	2148,2	-0,5	-6,9	Ok
69	92	-420,0	-1201,1	1960,3	-0,4	-6,4	Ok
69	92	-450,0	-1123,5	4990,4	-0,5	-7,5	Ok
69	92	-480,0	-1046,0	7110,6	-0,6	-8,2	Ok
69	92	-510,0	-968,4	8440,7	-0,6	-8,4	Ok
69	92	-540,0	-890,9	9100,6	-0,6	-8,4	Ok
69	92	-570,0	-813,4	9204,4	-0,6	-8,2	Ok
69	92	-600,0	-735,9	8859,8	-0,6	-7,7	Ok
69	92	-630,0	-658,4	8167,0	-0,6	-7,3	Ok
69	92	-660,0	-580,9	7219,9	-0,5	-6,5	Ok
69	92	-690,0	-503,4	6105,7	-0,4	-5,5	Ok
69	92	-720,0	-425,9	4906,1	-0,4	-4,5	Ok
69	92	-750,0	-348,5	3697,9	-0,3	-3,5	Ok
69	92	-780,0	-271,0	2554,1	-0,2	-2,5	Ok
69	92	-810,0	-193,6	1544,8	-0,1	-1,7	Ok
69	92	-840,0	-116,2	738,2	-0,1	-0,9	Ok
69	92	-870,0	-38,7	201,1	0,0	-0,3	Ok
69	92	-900,0	-38,7	0,0	0,0	-0,2	Ok

Sezioni maggiormente sollecitate:

PI.	Cmb.	Palo	Quota (cm)	N (daN)	M (daN cm)	Ten.SLE C (daN/cm <sup>2</sup> )	Ten.SLE A (daN/cm <sup>2</sup> )
279	69	279	0,0	-2327,6	187242,7	-12,7	216,9

Valori massimi:

Ten.massima CLS = 12,7 daN/cm<sup>2</sup> < Ten. lim. CLS Ok  
 Ten.massima acciaio = 270,8 daN/cm<sup>2</sup> < Ten. lim. acciaio Ok