REGIONE LAZIO
COMUNE DI CISTERNA DI LATINA
PROVINCIA DI LATINA

Istanza di Valutazione di Impatto Ambientale

ai sensi degli Artt. 23, 24 e 25 del D.Lgs. 152/2006

PROGETTO DI UN IMPIANTO AGRIVOLTAICO DENOMINATO "PASCOLI VERDI",

DI POTENZA DI PICCO PARI A 60,594 MWp E POTENZA NETTA IMMESSA IN RETE PARI A 60 MW, INTEGRATO CON UN SISTEMA DI ACCUMULO DI POTENZA PARI A CIRCA 25,52 MW DA REALIZZARSI NEL COMUNE DI CISTERNA DI LATINA (LT)

Nome Elaborato

Relazione sulla producibilità di impianto

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Codice	Scala				
REL2.08	varie				
Revisione	**Data**	**Descrizione**	**Eseguito**	**Verificato**	**Approvato**
0	Aprile 2024		G. Serafinelli	A. Guida/M. Mescia	G. Tombolillo

Indice

1. Stima della producibilità dell'impianto

Si riportano di seguito gli estratti principali delle simulazioni svolte con il software specialistico PVsist per la stima della producibilità dell'impianto:

PV Array Characteristics

Array #1 - Campo FV

PV module		**Inverter**	
Manufacturer	CSI Solar Co., Ltd.	Manufacturer	SMA
Model	CS7N-695TB-AG 1500V	Model	Sunny Central 4400 UP
(Custom parameters definition)		(Original PVsyst database)	
Unit Nom. Power	695 Wp	Unit Nom. Power	4400 kVA
Number of PV modules	87024 units	Number of inverters	14 units
Nominal (STC)	60.48 MWp	Total power	61600 kVA
Modules	3108 Strings x 28 In series	Operating voltage	962-1325 V
At operating cond. (50°C)		Pnom ratio (DC:AC)	0.98
Pmpp	55.98 MWp		
U mpp	1018 V		
I mpp	54978 A		

PV Array Characteristics

Array #2 - Sottocampo #2

PV module		**Inverter**	
Manufacturer	CSI Solar Co., Ltd.	Manufacturer	SMA
Model	CS7N-695TB-AG 1500V	Model	Sunny Highpower SHP125-US-20-PEAK3
(Custom parameters definition)		(Original PVsyst database)	
Unit Nom. Power	695 Wp	Unit Nom. Power	125 kVA
Number of PV modules	162 units	Number of inverters	1 unit
Nominal (STC)	113 kWp	Total power	125 kVA
Modules	6 Strings x 27 In series	Operating voltage	684-1450 V
At operating cond. (50°C)		Pnom ratio (DC:AC)	0.90
Pmpp	104 kWp		
U mpp	982 V		
I mpp	106 A		

Total PV power		**Total inverter power**	
Nominal (STC)	60594 kWp	Total power	61725 kVA
Total	87186 modules	Number of inverters	15 units
Module area	270830 m²	Pnom ratio	0.98

Array losses

Array Soiling Losses
Loss Fraction 2.0 %

Thermal Loss factor
Module temperature according to irradiance
Uc (const) 29.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

Serie Diode Loss
Voltage drop 0.7 V
Loss Fraction 0.1 % at STC

LID - Light Induced Degradation
Loss Fraction 2.0 %

Module Quality Loss
Loss Fraction -0.4 %

Module mismatch losses
Loss Fraction 2.0 % at MPP

Strings Mismatch loss
Loss Fraction 0.1 %

IAM loss factor
Incidence effect (IAM): User defined profile

20°	40°	60°	65°	70°	75°	80°	85°	90°
1.000	1.000	1.000	0.990	0.960	0.920	0.840	0.720	0.000

Horizon definition

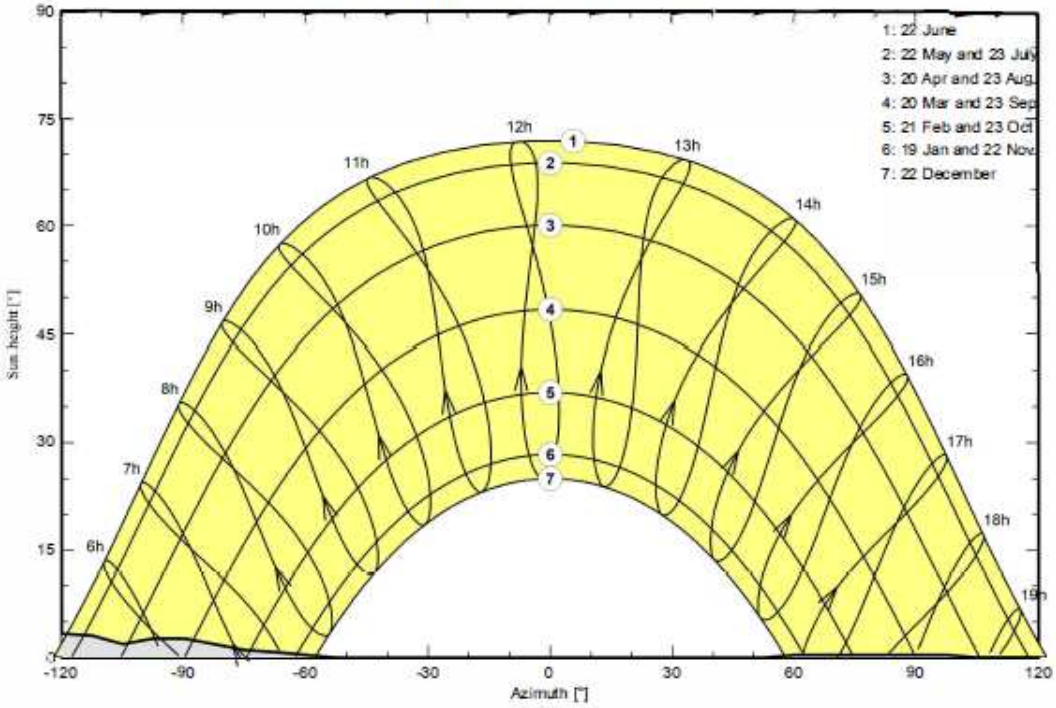
Horizon from PVGIS website API, Lat=41°33"47', Long=12°45"54', Alt=59m

Average Height	0.9 °	Albedo Factor	0.99
Diffuse Factor	1.00	Albedo Fraction	100 %

Horizon profile

Azimuth [°]	-180	-173	-165	-150	-143	-135	-128	-120	-113	-105	-98	-90	-83	-75
Height [°]	2.7	1.9	1.1	1.1	1.5	1.9	3.1	3.4	3.1	1.9	2.7	2.7	1.9	1.1
Azimuth [°]	-68	-60	-53	53	60	98	105	120	128	143	158	165	173	180
Height [°]	0.8	0.4	0.0	0.0	0.4	0.4	0.0	0.0	0.4	0.4	1.1	1.5	2.3	2.7

Sun Paths (Height / Azimuth diagram)

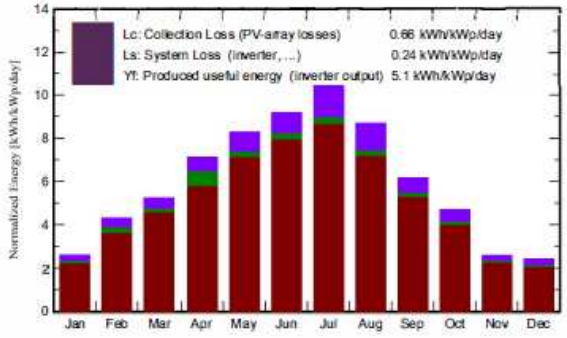


Main results

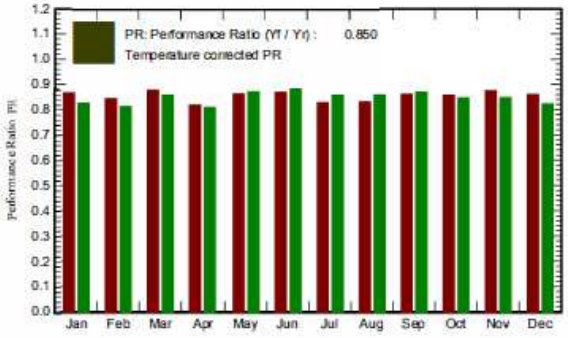
System Production

Produced Energy	112749 MWh/year	Specific production	1861 kWh/kWp/year
Apparent energy	116470 MVAh	Performance Ratio PR	85.01 %

Normalized productions (per installed kWp)



Performance Ratio PR

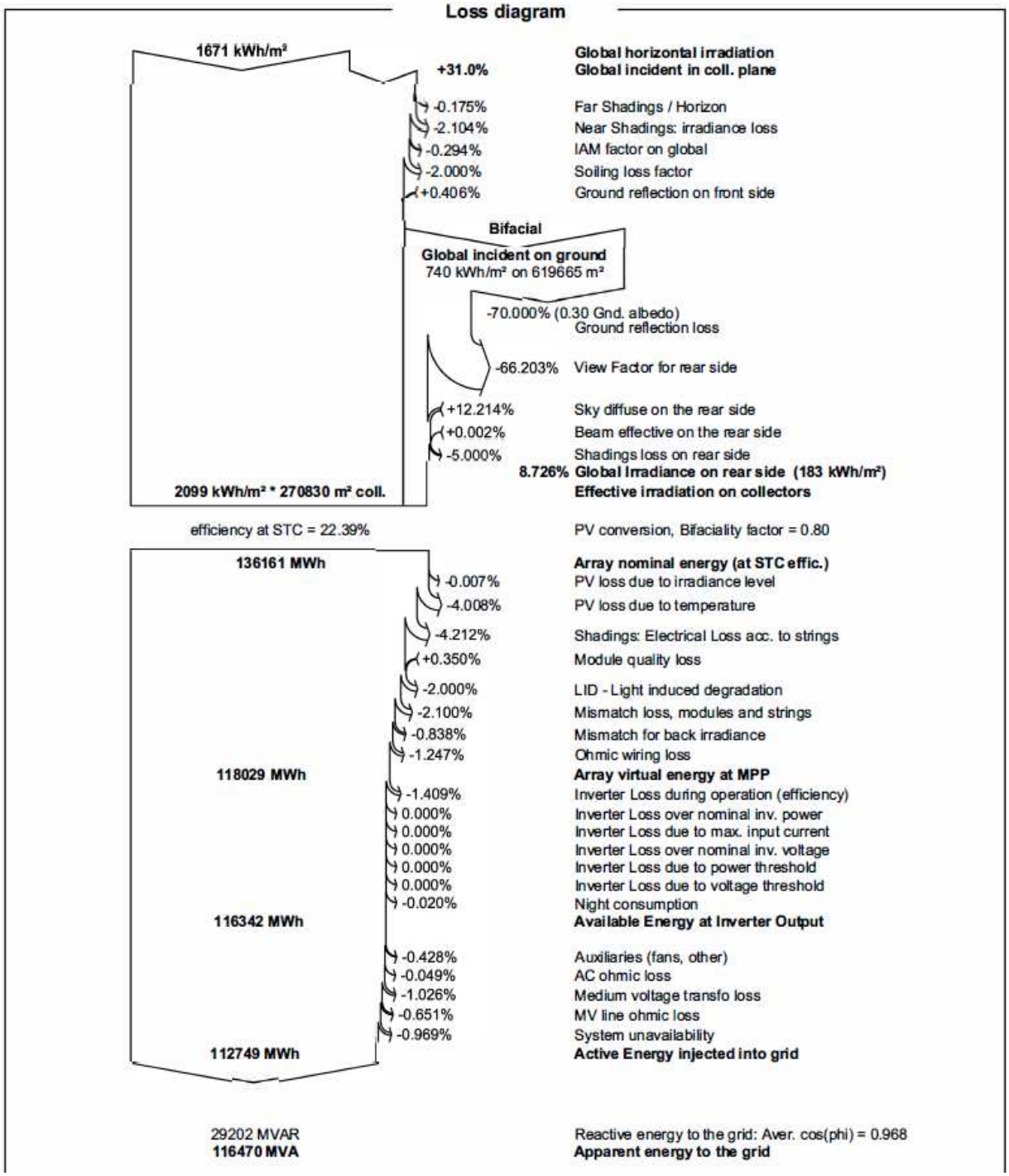


Balances and main results

	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray MWh	EArray MWh	E_Grid MWh	PR ratio	PR ratio
January	60.2	27.21	9.18	80.8	76.6	4425	4425	4244	0.867	0.867
February	88.6	32.33	8.45	120.8	115.5	6670	6670	6180	0.844	0.844
March	125.4	52.85	11.83	162.5	155.2	8965	8965	8646	0.878	0.878
April	167.1	64.57	14.11	213.6	204.7	11826	11826	10576	0.817	0.817
May	203.0	70.57	19.06	256.9	246.7	13926	13926	13438	0.863	0.863
June	214.0	70.54	21.51	275.3	264.7	15016	15016	14495	0.869	0.869
July	244.5	58.04	25.92	325.6	313.7	16906	16906	16324	0.827	0.827
August	201.4	52.84	26.64	269.1	259.1	14018	14018	13538	0.830	0.830
September	142.8	53.41	21.94	185.1	177.5	10013	10013	9668	0.862	0.862
October	107.9	41.08	17.91	145.8	139.4	7847	7847	7571	0.857	0.857
November	59.4	27.92	14.75	78.0	74.2	4316	4316	4139	0.876	0.876
December	56.6	27.05	11.11	75.4	71.3	4101	4101	3931	0.860	0.860
Year	1670.9	578.41	16.92	2188.9	2098.7	118029	118029	112749	0.850	0.850

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	EArray	Effective energy at the output of the array
T_Amb	Ambient Temperature	E_Grid	Energy injected into grid
GlobInc	Global incident in coll. plane	PR	Performance Ratio
GlobEff	Effective Global, corr. for IAM and shadings	PR	Performance Ratio



La producibilità netta dell'impianto è pari a circa **112.749.000 kWh/anno**.