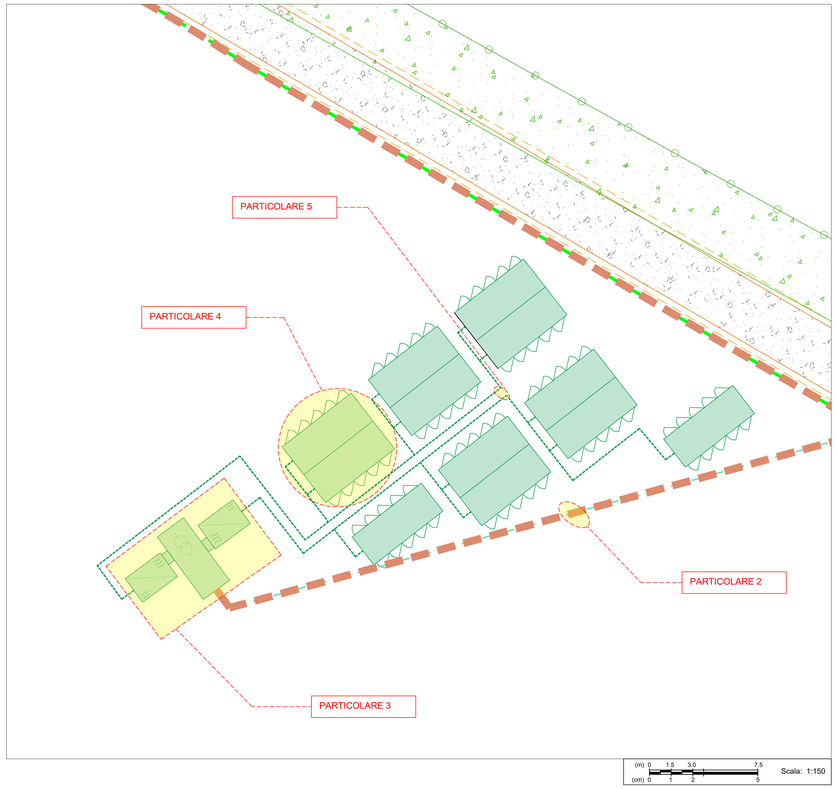
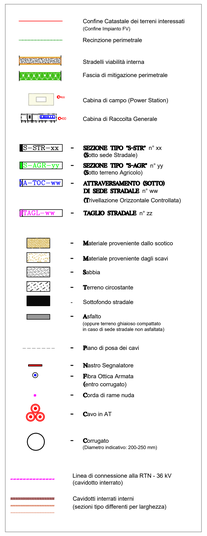
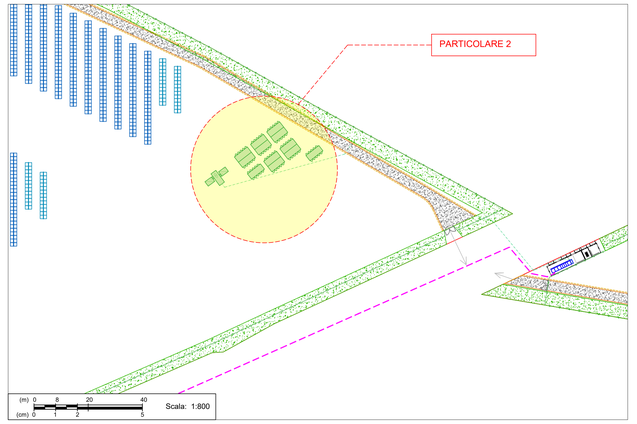
PARTICOLARE 2: DISPOSIZIONE COMPONENTI PER IMPIANTO STORAGE (BESS)



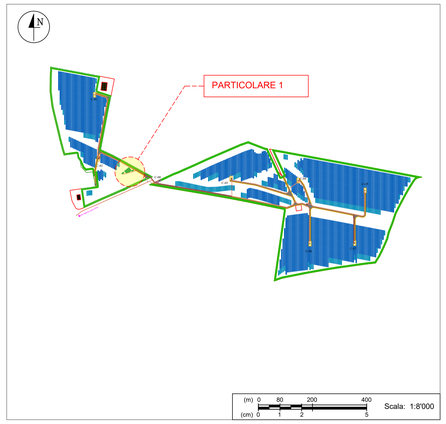
LEGENDA



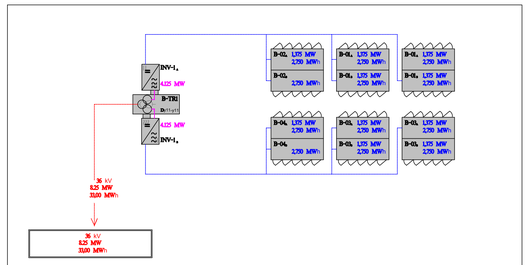
PARTICOLARE 1: AREA IMPIANTO STORAGE (BESS)



LAYOUT DELL'IMPIANTO FV



SCHEMA DI COLLEGAMENTO DEL SISTEMA DI ACCUMULO



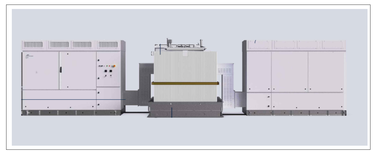
PARTICOLARE 4: CONTAINER BATTERIE

POWER ELECTRONICS — TWIN SKID COMPACT

TECHNICAL CHARACTERISTICS — **TWIN SKID COMPACT**

RATINGS	Power range @ 40 °C	3820 kVA - 8150 kVA
	Power range @ 50 °C	3550 kVA - 8150 kVA
MEDIUM VOLTAGE EQUIPMENT	MV voltage range	6.6 kV / 11 kV / 13.2 kV / 15kV / 20 kV / 22 kV / 23 kV / 25 kV / 30 kV / 33 kV / 34.5 kV
	LV voltage range	600 V /615 V /630 V / 645 V / 660 V / 690 V
	Transformer cooling	ONAN
	Transformer vector group	Dy11y11
	Transformer protection	Protection relay for pressure, temperature (two levels) and gassing. Monitoring of dielectric level decrease.
	Transformer index of protection	IP54
	Transformer bassins	IEC standard or IEC Tier-2.
	Oil retention tank	Galvanized steel, integrated with hydrocarbon filter. Optional:
	Switchgear configuration	Double feeder (2L)
	Switchgear protection	Circuit breaker (V)
	Switchgear short circuit rating [1]	16 kA 1 s
	Switchgear IAC [2]	A FL 16 kA 1 s
CONNECTIONS	LV/MV connections	Close coupled solution (play & play)
	LV protection	Motorized circuit breaker included in the inverter
	HV AC wiring	MV bridge between transformer and protection switchgear prewired
ENVIRONMENT	Ambient temperature range [3]	-10 °C...+50 °C (T > 50 °C power derating)
	Maximum altitude (above sea level) [4]	Up to 1000 m
	Relative humidity	4% to 95% non condensing
AUXILIARY SERVICES	Uselr power supply options	5 kVA / 40 kVA at 400 V (3-phase), 50 / 60 Hz (integrated in the inverter)
	User cabinet	Integrated in the inverter (by default). Optionally, LV cabinet in the skid.
	Cooling	Forced air
	HW communication	Ethernet (fiber optic or RJ45)
	UPS system [5]	1 kVA/0.9 kW (10 minutes). Optional
OTHER EQUIPMENT	Safety mechanism	Interlocking system
	Fire extinguishing system	Transformer oil tank retention accessory. Optional.
STANDARDS	Compliance	IEC 62271-2-12, IEC 62271-200, IEC 60076, IEC 61439-1

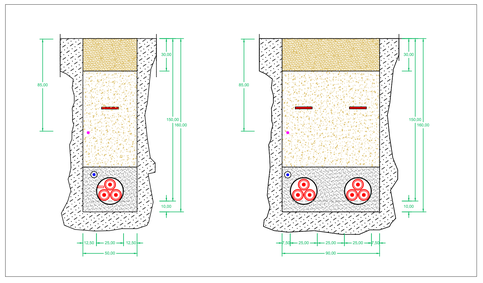
PARTICOLARE 3: GRUPPO INVERTER + TRAFO BT/AT



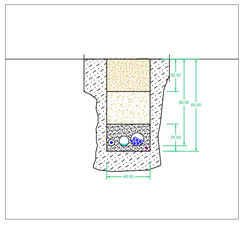
TECHNICAL CHARACTERISTICS — **FREEMAQ MULTI PCSK 690V**

REFERENCES		FRAME 2 FP2150K2	FRAME 4 FP4250K2	FP4250K4
AC	AC Output Power (kVA/kW) @40°C [6]	2195	4050	
	AC Output Power (kVA/kW) @50°C [6]	2035	4075	
	Max. AC Output Current (A) @40°C	1837	3674	
	Operating Grid Voltage (VAC)	690V ±10%		
	Operating Grid Frequency (Hz)	50/60 Hz		
	Current Harmonic Distortion (THDi)	< 3% per IEEE519		
	Power Factor (cosine phi)P	0.5 leading..0.5 lagging		
	Reactive power compensation	Four quadrant operation		
DC	DC Voltage Range	976V-1500V		
	Maximum DC voltage	1500V		
	DC Voltage Ripple	< 3%		
	Max. DC continuous current (A)	2295	4950	
	Battery Technology	All type of batteries (BMS required)		
	Number of separate DC inputs	2	2	4
EFFICIENCY & AUX. SUPPLY	Efficiency (Max) (%) (preliminary)	98.84%	98.93%	
	Eurceta (%) (preliminary)	98.45%	98.65%	
	Max. Power Consumption (kVA) (preliminary)	8	10	
CABINET	Dimensions (WxDxH) (ft)	9.8 x 6.6 x 7.2		
	Dimensions (WxDxH) (m)	3.0 x 2.0 x 2.2		
	Weight (lbs) (preliminary)	11465	12125	
	Weight (kg) (preliminary)	5200	5500	
	Type of ventilation	Forced air cooling		
ENVIROMENT	Degree of protection	NEMA 3R / IP65		
	Permissible Ambient Temperature	-35°C to +50°C, +50°C / Active Power derating (>50°C)		
	Relative Humidity	4% to 100% non condensing		
	Max. Altitude (above sea level)	2000m / >2000m power derating (Max. 4000m)		
	Noise level [7]	< 70 dBA		
CONTROL INTERFACE	Communication protocol	Modbus TCP		
	Power Plant Controller	Optional: Third party SCADA systems supported		
	Keyed ON/OFF switch	Standard		
PROTECTIONS	Ground Fault Protection	Insulation monitoring device		
	Humidity control	Active Heating		
	General AC Protection & Disconn.	Circuit Breaker		
	General DC Protection & Disconn.	DC switch [8]		
	Overvoltage Protection	AC and DC protection (type 2)		
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-16, IEC62109-1, IEC62109-2		
	Utility interconnect [9]	UL 1741 SA - Feb. 2018, IEEE 1547.1:2020		

PARTICOLARE 2: SEZIONE SCAVO AT

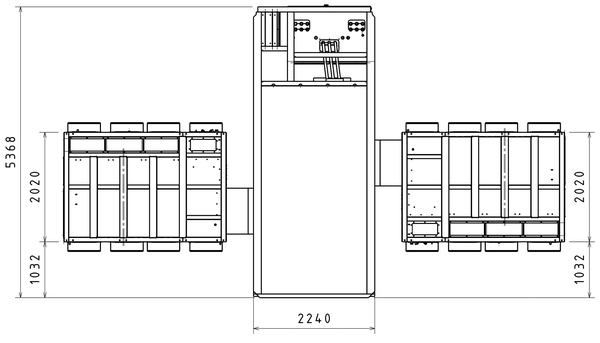


PARTICOLARE 5: SEZIONE SCAVO BT

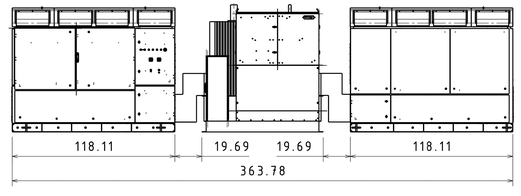


GRUPPO INVERTER + TRAFO BT/AT:

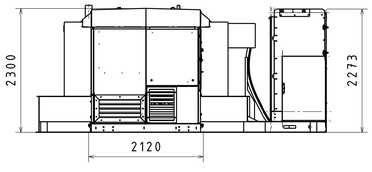
Vista dal basso



Vista frontale



Vista laterale



Firmato digitalmente da: Silvio Matta
Data: 13/06/2024 16:10:35

REGIONE AUTONOMA DELLA SARDEGNA
COMUNE DI STINTINO
Provincia di Sassari (SS)

PROGETTO DEFINITIVO PER LA REALIZZAZIONE DI UN IMPIANTO AGROVOLTAICO AVANZATO DENOMINATO STINTINO

Loc. "Pozzo San Nicola", Stintino (SS) - 07040, Sardegna, Italia

Potenza Nominale: Impianto FV 18'146,18 kWp

Committente - Sviluppo progetto FV:
ApolloSolar 3 S.r.l.
Viale della Stazione n. 7 - 39100 Bolzano (BZ)
P.IVA 03187660216, PEC: apollosolar3srl@pecimprese.it

Coordinamento Progettisti
Innova Service S.r.l.
Via Santa Margherita n. 4 - 09124 Cagliari (CA)
P.IVA 03379940921, PEC: innovaserviceca@pec.it

Coordinamento gruppo di lavoro
La SIA S.p.a.
Viale Luigi Schiavonetti n. 286 – Roma (RM)
P.IVA 08207411003, PEC: direzione.lasia@pec.it

Gruppo di lavoro - VIA (La SIA S.p.A.)
Riccardo Sacconi - Ingegnere Civile
Antonio Dedoni - Ingegnere Idraulico
Alberto Mossa - Archeologo
Simone Manconi - Geologo
Francesco Paolo Pinchera - Biologo

Progettazione Agronomica (La SIA S.p.A.)
Agr. Stefano Atzeni - Agronomo
Agr. Franco Milito - Agronomo
Agr. Rita Bosi - Agronomo

Progettazione Elettrica
Ing. Silvio Matta – Ing. Elettrico

Sacconi Riccardo 12.06.2024 17:10:38 GMT+01:00

Elaborato
DETTAGLI APPARECCHIATURE STORAGE

Codice elaborato	Scala	Formato
TAV_EL_08-STORAGE	1:8'000 1:200 varie	A0

REV.	DATA	ESEGUITO	VERIFICATO	APPROVATO
R00	Maggio 2024	Ing. Silvio Matta – Ing. Elettrico	Innova Service S.r.l.	Apollo Solar 3 S.r.l.

Note