

### 14. Electrical Specification

**Nominal output and grid conditions**  
 Nominal power ..... 6600 kW  
 Nominal voltage ..... 690 V  
 Power factor correction ..... Frequency converter control  
 Power factor range ..... 0.9 capacitive to 0.9 inductive at nominal balanced voltage

**Generator**  
 Type ..... DFIG Asynchronous  
 Maximum power ..... 6750 kW @20°C ext. ambient

**Nominal speed** ..... 1120 rpm-6p (50Hz)  
 1344 rpm-6p (60Hz)

**Generator Protection**  
 Insulation class ..... Stator H/H  
 Rotor H/H

**Winding temperatures** ..... 6 Pt 100 sensors  
 Bearing temperatures ..... 3 Pt 100  
 Slip Rings ..... 1 Pt 100  
 Grounding brush ..... On side no coupling

**Generator Cooling**  
 Cooling system ..... Air cooling  
 Internal ventilation ..... Air  
 Control parameter ..... Winding, Air, Bearings temperatures

**Frequency Converter**  
 Operation ..... 4Q B2B Partial Load  
 Switching ..... PWM  
 Switching freq., grid side ..... 2.5 kHz  
 Cooling ..... Liquid/Air

**Main Circuit Protection**  
 Short circuit protection ..... Circuit breaker  
 Surge arrester ..... varistors

**Peak Power Levels**  
 10 min average ..... Limited to nominal

**Grid Capabilities Specification**  
 Nominal grid frequency ..... 50 or 60 Hz  
 Minimum voltage ..... 85 % of nominal  
 Maximum voltage ..... 113 % of nominal  
 Minimum frequency ..... 92 % of nominal  
 Maximum frequency ..... 108 % of nominal  
 Maximum voltage imbalance (negative sequence of component voltage) ..... ≤ 5 %  
 Max short circuit level at controller's grid Terminals (690 V) ..... 82kA.

**Power Consumption from Grid (approximately)**  
 At stand-by/No yawing ..... 10 kW  
 At stand-by, yawing ..... 23 kW

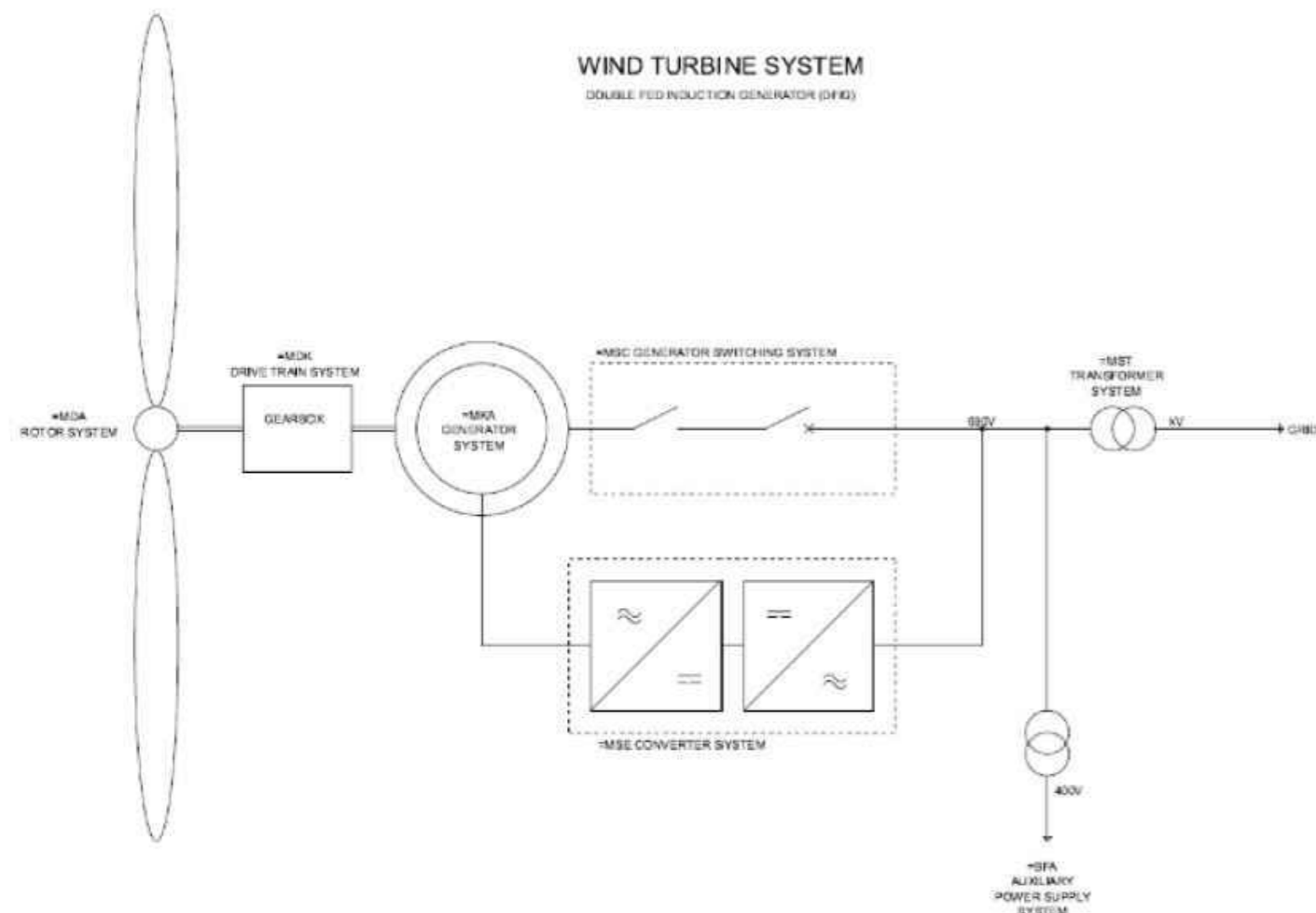
**Controller back-up**  
 UPS Controller system ..... Online UPS, Li battery  
 Back-up time ..... 1 min  
 Back-up time Scada ..... Depend on configuration

**Transformer Specification**  
 Transformer impedance requirement ..... 8.5 % - 10.5 %  
 Secondary voltage ..... 690 V  
 Vector group ..... Dyn 11 or Dyn 1 (star point earthed)

**Earthing Specification**  
 Earthing system ..... Acc. to IEC62305-3 ED 1.0:2010  
 Foundation reinforcement ..... Must be connected to earth electrodes  
 Foundation terminals ..... Acc. to SGR Standard

**HV connection** ..... HV cable shield shall be connected to earthing system

### 15. Simplified Single Line Diagram



REGIONE PUGLIA

Provincia di LECCE



**PROGETTO DEFINITIVO PER LA REALIZZAZIONE DI UN IMPIANTO EOLICO DENOMINATO "CE NARDO" COSTITUITO DA 5 AEROGENERATORI CON POTENZA COMPLESSIVA DI 33 MW E RELATIVE OPERE DI CONNESSIONE ALLA R.T.N.**

SCHEMI FUNZIONALI DEI SINGOLI AEROGENERATORI

ELABORATO

EP15

PROPONENTE:



**AEI WIND PROJECT III S.R.L.**  
 Via Vincenzo Bellini, 22  
 00198 Roma (RM)  
 pec: aeiwind-terza@legalmail.it

PROGETTISTI:



Via Caduti di Nassirya 55  
 70124 Bari (BA)  
 e-mail: atechsr@libero.it  
 pec: atechsr@legalmail.it

DIRETTORE TECNICO  
 Dott. Ing. Orazio TRICARICO  
 Ordine ingegneri di Bari n. 4985



Dott. Ing. Alessandro ANTEZZA  
 Ordine ingegneri di Bari n. 10743



CONSULENZA:

Dott.ssa Elisabetta NANNI  
 Dott. Ing. Rocco CARONE  
 Dott. Agr. For. Mario STOMACI  
 Dott. Geol. Michele VALERIO

0	DICEMBRE 2022	C.C.- V.D.P.	A.A.	O.T.	Progetto definitivo
EM./REV.	DATA	REDATTO	VERIFICATO	APPROVATO	DESCRIZIONE