

Annex F

Reference Number : _____

FORM A - ESTIMATED EQUIPMENT DATA BATTERY ENERGY STORAGE SYSTEM

A. BASIC INFORMATION

GRID USER	
1. Power Plant Name	
2. Company Name	
3. Office Address	
4. Main Contact Person	
5. Position	
6. Contact Numbers	
7. Email Address	
8. Power Plant Location	
a. Street	
b. Sitio	
c. Barangay	
d. Province	
e. Location Map	<i>Please attach a geographic map showing the coordinates of the power plant site.</i>

B. BATTERY DATA

STANDARD PLANNING DATA	VALUE
1. In-Service Date (Commissioning)	
2. Inverter Manufacturer & Model	
3. BESS Technology	
4. Total BESS Capacity	

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STANDARD PLANNING DATA	VALUE
a. Total Installed Capacity, kW (Total rating of all installed batteries)	
b. Individual Inverter maximum AC power output (kW/MW)	
c. No. of Units of Inverter	
d. Maximum input power during charging (kW/MW)	
e. Maximum output power during discharging (kW/MW)	
f. Net Energy Storage Capacity (MWh)	
6. Rated Terminal Voltage of Inverter (kV)	
7. Nominal Operating Frequency (Hz)	
8. Operating Power Factor of the Inverter	
9. Inverter Impedance	
a. Rsource	
b. Xsource	

DETAILED PLANNING DATA			
Check below the corresponding BESS model. If other models are to be used, please provide corresponding BESS Data.			
Generator	Electrical	Mechanical	Pitch
<input type="checkbox"/> PVGUI1 <input type="checkbox"/> Other Model: _____ <p>(please specify)</p>	<input type="checkbox"/> PVEU1 <input type="checkbox"/> Other Model: _____ <p>(please specify)</p>	<p>(please specify)</p>	<p>(please specify)</p>
Attach CON and ICON entries description for each of the selected models above.			

BESS TRANSFORMER DATA			
1. Substation Name		10. Status	
2. Rated Capacity		11. Model type	
3. Transformation Voltage (kV)		12. Serial Number	

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BESS TRANSFORMER DATA										
4. Vector Group				13. Rated Frequency						
5. No. of Taps				14. Power Factor						
6. % Adjust per Tap				15. Voltage Ratio						
7. % Impedance at Rated load & Voltage				16. Configuration (e.g. 3 Phase or Three Single Phase)						
8. Manufacturer				17. Temperature Rise (°C)						
9. Year of commissioning				18. Connection for each winding H,X,Y (e.g. Wye, Delta, Zigzag)						
19. Positive Sequence Impedance	(See IEEE C57.12.90 for measurement techniques)	Positive Sequence Impedance (%)	HX		HY		XY			
		R								
		X								
		Base MVA								
20. Zero Sequence Impedance (Data is required for transformers with 1 or 2 external neutrals)	H winding energized all others open	Closed Tertiary	H	X	HX	XH				
		R								
		X								
		Base MVA								
	H winding energized X winding shorted	Open Tertiary	H	X	HX	XH				
		R								
		X								
		Base MVA								
	In-Service Off-Load Tap (kV)									
	Off –Load Taps (kV)									
	On-Load Taps (kV) (Max Tap, Min Tap, Number of Steps)									
	Core and Excitation Losses (kW, kVAr)									

CHARACTERISTIC DATA	
1. Open circuit saturation curve	<i>Attach File</i>
2. Short circuit curve	<i>Attach File</i>
3. V curves	<i>Attach File</i>

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CHARACTERISTIC DATA	
4. Reactive Power Capability curve	<i>Attach File</i>
5. Ramping Capability Curve	<i>Attach File</i>
6. Short Circuit and Open Circuit Characteristic Curve	<i>Attach File</i>

PLANT FLEXIBILITY PERFORMANCE DATA (FOR EACH GENERATING PLANTS)	
a. Rate of loading following weekend shutdown (Generating Unit and Generating Plant)	
b. Rate of loading following an overnight shutdown (Generating Unit and Generating Plant)	
c. Block Load following synchronization	
d. Rate of Load Reduction from normal rated MW	
e. Regulating range	
f. Load rejection capability while still synchronized and able to supply Load.	

AUXILIARY DEMAND DATA	
a. Rated Normal unit-supplied auxiliary Load for each Generating Unit at rated MW output	
b. Each Generating Plant Auxiliary Load other than (a) above and where the station auxiliary Load is supplied from the Grid.	
Please attach the following:	
a. Physical Layout	
b. Electrical Layout	
c. Specifications	
d. Protections	

CONNECTION SCHEME
<p><i>Provide a single line diagram of the connection scheme showing the details of the main connection facilities:</i></p> <ol style="list-style-type: none"> NGCP facility where connection of power plant will be made Length of the connection line including the type of conductor and structure used MVA Rating of the transformers MVAR Rating of Shunt Capacitors or Shunt Reactors, if any

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C. SUBSTATION AND TRANSMISSION FACILITY

Line Information

Line Name	Operating Voltage Level (kV)	Length (km)	Type of conductor		Actual Rating (MVA)	R	X	B	Year of Commissioning	Age (Year)	Connected Generator /Load
			No. of Bundles	Conductor size							

Please add rows as necessary

Line Structure Information

Number	Type	Coordinates

Please add rows as necessary

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Power Circuit Breaker

Substation Name	System Voltage (kV)	Type (Live Tank or Dead Tank)	Continuous Rating (A)	Breaker Interrupting Capacity (kA)	Manufacturer	Year of Commissioning	Age (Year)

Please add rows as necessary

Reactive Compensation Equipment

Substation Name	Rated Voltage (kV)	Rated Capacity (MVar)	Manufacturer	Year of Commissioning	Age (year)	Status

Please add rows as necessary

ACCOMPLISHED BY:

SIGNATURE: _____

NAME: _____

POSITION: _____

DATE: _____

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