

TECHNICAL SPECIFICATION OF NIV BTY FOR SOLAR PANEL (DP-5)

Serial	Description of Technical Parameter	Required Specifications	To be filled up by the Manufacturer/ Principal
Part-1: General Specifications			
1.	Nomenclature	Bty for Solar Panel	
2.	Name of the Local Agent with full address, Email, Contract detail	To be mentioned	
3.	Name of Manufacturer with full address, Email, Contract detail	To be mentioned	
4.	Name of the Principal with full address, Email, Contract detail	To be mentioned	
5.	Brand and Model	To be mentioned	
6.	Country of Origin	GP A or B	
7.	Country of Manufacture	GP A or B	
8.	Country of Assembly	GP A or B	
9.	Year of Manufacture	Brand new and year of production not before the calendar year of contract	
Part-2: Technical Specifications			
10.	Energy Storage Modular /Containerized System	To be mentioned. It should be compatible with 1.2 MWP Solar Hybrid System.	
11.	Installation Type	Indoor/Outdoor	
12.	Battery Module Specifications		
	a. Cell Chemistry	Lithium Iron Phosphate (LiFePO ₄)	
	b. Cell Configuration	To be mentioned	
	c. Cycle Life	Minimum 6000 Time within 5-15 yrs	
	d. Nominal Energy	To be mentioned	
	e. Nominal Current Capacity	To be mentioned	
	f. Voltage Range	To be mentioned	
	g. Cell Max. Continuous Charge rate	Minimum 0.5 C	
	h. Cell Max. Continuous Discharge rate	Minimum 0.5 C	
	j. Static Transfer Switch	Switching time less than 10 millisecond	
	k. Weight	To be mentioned	
	l. IP Level of Battery Module	Minimum IP 55	
13.	Battery Voltage and Capacity of the system	To be mentioned for 1.2 MWP Solar System. Module or cluster wise energy allocation to be mentioned clearly	
14.	Dimension (LxWxH) in mm		
	a. Each Cell	To be mentioned (LxWxH)	
	b. Each Unit	To be mentioned (LxWxH)	
	c. Total Storage Cabinet	To be mentioned (LxWxH)	
15.	Weight		
	a. Kerb Weight	To be mentioned	
	b. Gross Weight	To be mentioned	
16.	Environment Standards		
	a. Operating Temperature	0°~ 50° C	
	b. Relative Humidity	0% to 95% (Non-Condensing)	
	c. IP Type for	IP 55	
	d. Cooling Method	Intelligent Air Cooling/Liquid Cooling	
	e. Maximum Operating Altitude	To be mentioned	
17.	Storage Energy Volume	Minimum 1.5 MWh	
18.	Usable Energy Volume	To be mentioned	
19.	Depth of Discharge (DoD)	To be mentioned	
20.	Voltage range (For solar panel battery)	To be mentioned	
21.	Energy Density	Minimum 80%	
22.	Round-Trip Efficiency	Minimum 90%	
23.	C-Rate (Rate of charge/ discharge)	Minimum 0.5 C	
24.	Current Capacity	To be mentioned	



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25.	Battery Management System (BMS)		
	a. BMS must be able to manage independent battery cluster such that due to uneven PV generation and for any failure of single battery cluster or PCS will not affect the normal operation of the overall system and balance of the current consistency	To be mentioned	
	b. Volt Management Accuracy	To be mentioned	
	c. Volt Monitoring Interval	To be mentioned	
	d. Temperature Management Accuracy	To be mentioned	
	e. Temperature Monitoring Interval	To be mentioned	
	f. Voltage Management Range	To be mentioned	
	g. Over Temperature Protection System	Automatic	
	h. Over Current Protection	To be mentioned	
	j. Short Circuit Protection	To be mentioned	
	k. Insulation Type	To be mentioned	
	l. Remote Monitoring & Alert System	To be mentioned	
	m. Energy Shutdown	Details to be available	
26.	Power Conversion System (PCS)		
	a. Type of Conversion	DC/AC and AC/DC, Smart Inverter	
	b. Operating Temperature	0 ⁰ ~ +50 ⁰ C	
	c. Cooling System	Intelligent Air-Cooling / Liquid Cooling	
	d. Dimension (LxWxH) in mm	To be mentioned	
	e. Weight	To be mentioned	
	f. Altitude	To be mentioned	
	g. Display		
	(i) Display Type	To be mentioned	
	(ii) Dimension (LxW) in mm	To be mentioned	
	(iii) Display Control System	To be mentioned	
	h. Communication Protocol (modbus)	To be mentioned	
	j. DC Input Specifications		
	(i) DC Voltage range	To be mentioned	
	(ii) Max Voltage	To be mentioned	
	(iii) Max DC Current	To be mentioned	
	k. AC Output Specifications		
	(i) Rated Output Power	To be mentioned	
	(ii) Max Output Power	To be mentioned	
	(iii) Rated Output Voltage	400-440 VAC	
	(iv) Max Voltage Range	To be mentioned	
	(v) Frequency	50 Hz	
	(vi) Output Current	To be mentioned	
	(vii) Off-grid Output Voltage	To be mentioned	
	(viii) Off-grid Overload Capacity	To be mentioned	
27.	Fire Suppression System	Compliance with International fire safety standard. Use of appropriate fire suppressor for Li induced fire.	
28.	Safety Configuration	Automatic fire extinguishing system	
29.	Necessary array connection, Junction Box, all of required attachments will be provided by the supplier to connect the PV Modules, Generators and Energy Storage Cabinet with a Composite Circuit Diagram	To be provided	
30.	Transportation: The storage cabinet with power conversion system must have provisions for transporting it by vehicle, transporter and trailer Required number of hooks to be provided in required points of the frame of storage cabinet so that it can be lifted easily. Number of hooks to be mentioned	To be mentioned	



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Other terms and conditions			
31.	If any items not specified in the specification but required for full range of operation by the store, the bidder should specify and quote such item in their offer. In case of failure to specify and quote, the bidder must provide such items free of cost if contract is awarded	To be mentioned	
32.	Offered Technical Specifications must conform to the specifications mentioned in the submitted brochure/catalogue otherwise offer will not be accepted	To be complied	
33.	Authorization Certificate to be provided by the Manufacturer in favor of Principal	Certificate to be submitted with offer	
34.	Authorization Certificate to be provided by Principal in favor of Local Agent	Certificate to be submitted with offer	
35.	List of BOQ/BOM in tabulation format	To be provided with offer	
36.	Final acceptance Certificate (FAC)	Respective contingent (user) will issue FAC after completion of installation of hardware and software (if any). If it is found fully functional and comply with the contracted technical specifications, Inspection note (I-Note) will be issued after receiving the FAC.	
Part- 3: Training Requirement			
37.	Training Requirements		
	a. User Training	To be provided (As per User/ Sponsor Directorate)	
	b. Operation, Repair and Maintenance Training	To be provided (As per requirement of EME Directorate)	
	c. Equipment Management Training	To be provided (As per requirement of Ordnance Directorate)	
Part-4: Books & Publications			
38.	a. Owner's/User Manual in English (Complete Book Type) including CD/DVD	To be provided as per requirement of EME Directorate	
	b. Updated Workshop /Repair Manual in English (Complete Book Type/ Computer generated print out)	To be provided as per requirement of EME Directorate	
	c. Spare Parts Catalogue in English (Book type)	To be provided as per requirement of EME Directorate	
	d. Spare Parts Price Catalogue in English Book type.	To be provided as per requirement of EME Directorate	
Part-5: List of Spares			
39.	Analyzer, Measuring, Testing/ Fault finding and Diagnostic set	To be mentioned (If required)	
40.	Special Service Tools (SST)	To be mentioned (if required) To be provided as per requirement of EME Directorate	
41.	Special Service Material (SSM)	To be mentioned (if required) To be provided as per requirement of EME Directorate	
42.	List of Standard Spare Parts to be submitted with offer	List to be submitted with the offer. To be supplied as per requirement of EME Directorate	
43.	Required standard Tools Kits	To be provided. List to be submitted with the offer	



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Part-6: Tools List for Different Level of Maintenance						
44.	Product warranty (minimum 02 yr) and Performance Warranty (minimum 05 yr) will be given	Certificate to be submitted with the offer				
46.	<p>a. A Warranty/ Guarantee certificate has to be provided for the equipment/ items for a trouble-free service of 2 yr. The warranty period to be counted from the date of receipt of equipment/items by the consignee after acceptance by IE&I and issuance of Inspection Note (I/Note).</p> <p>b. If any defect/ discrepancies arise during filling in the respective equipment/ Items by the respective equipment/stores within warranty/ guarantee period after receipt by consignee/ user unit, that must be repaired/ replaced (as applicable) free of cost within maximum 3 months from date of case arises.</p> <p>c. Warranty/ Guarantee certificate will be furnished for spares mentioning as "If the spares are not fitted in the respective equipment then the spares will be replaced free of cost".</p> <p>d. The firms supplying equipment/items on warranty will identify these by attaching a warranty label/disc or stenciling this by indelible (permanent) paints on the equipment/ items as shown below:</p> <table border="1" data-bbox="272 1205 673 1323"> <tr> <td>Warranty: From to</td> </tr> <tr> <td>Contract No & Date</td> </tr> <tr> <td>Supplier's Name, Address and Tel No:...</td> </tr> </table>	Warranty: From to	Contract No & Date	Supplier's Name, Address and Tel No:...	Certificate to be submitted with the offer	
Warranty: From to						
Contract No & Date						
Supplier's Name, Address and Tel No:...						
47.	A Warranty/ Guarantee certificate will be provided by the local agent in DPL-15 as above before using I-Note	To be mentioned				
48.	Model Validity certificate by OEM for Minimum 10 (Ten) years from the date of signing of contract	Certificate to be submitted with the offer				
Part-7: Terms and Conditions						
49.	After sales service should be provided by the principle and local agent as and when required for at least next 10 years (Free of charge up to warranty period and thereafter with payment). In this regards Certificates by Principal and Local agent need to be submitted with offer.	Certificate to be submitted with offer				
50.	Spares will be available for at least 15 years (Confirmation certificate to be provided by Manufacturer)	Certificate to be submitted with offer				

