

**RESTRICTED**

**REQUEST FOR PROPOSAL**  
**INVITATION OF BIDS FOR SUPPLY AND CONSTR (S&C) OF**  
**FIELD ELECTRIFICATION (SOLAR HYBRID 150 KW) FOR THE FY 2025-26**

**PART I: GENERAL INFORMATION**

1. Online Bids are invited by 62 Engineer Regiment for and on behalf of the President of India for **Supply and Construction of Field Electrification (Solar Hybrid 150 KW) (Qty-01 Nos)** for the FY 2025-26 Job No 6178/25-26 (S&C) at different locations under the AOR of HQ 3 Inf Div.

2. The address and contact numbers for seeking clarifications regarding this RFP are given below:-

- |     |  |  |
|-----|--|--|
| (a) | Bids/queries to be addressed to                | - CO, 62 Engineer Regiment                           |
| (b) | Postal address for sending requisite documents | - 62 Engineer Regiment,<br>PIN- 914062<br>c/o 56 APO |
| (c) | Name/designation of the contact personnel      | - Commanding Officer                                 |
| (d) | Telephone numbers of the contact personnel     |  |
|     | (i) Primary Contact No                         | : <b>86690 11353</b>                                 |
|     | (ii) Secondary Contact No                      | : <b>88998 40899</b>                                 |
| (e) | E-mail id of contact personnel                 | : <b>spsingh.176m@gov.in</b>                         |

3. **Placement of order.** The purchase order will be placed on successful conclusion of negotiations with L1 firm.

4. **This RFP is being issued with no financial commitment and the Buyer reserves the right to cancel/change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the RFP or Supply Order before delivery of stores, should it become necessary at any stage.**

5. FOR delivery of items will be as under:-

Ser No	Qty of Field Electrification (Solar Hybrid 150 KW)	Distance of Delivery From Leh City
(a)	01	350 KM Radius from Karu, Leh
<b>Total</b>	<b>01</b>	

6. Delivery Schedule. Stores will be delivered as per GeM instruction of placing of supply order at locations given in Para 5 above with the following stipulations.

- (a) 50% of the stores for **Field Electrification (Solar Hybrid 150 KW)** will be delivered within 45 days of issue of contract/ supply order.
- (b) Bal 50% of the stores for **Field Electrification (Solar Hybrid 150 KW)** will be delivered within 90 days of issue of contract/ supply order
- (b) Before delivery of stores testing of all major items will be carried out when the store is ready for dispatch.

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## PART-II : TECHNICAL SPECIFICATIONS

Ser No	Description of work	Auth	Drg	Brief Description of 01 x Off-Grid Hybrid Solar and Wind Power Plant of 150 KW capacity	A/U	Qty
	Provision of Off-Grid Hybrid Solar and Wind Power Plant of 150 KW capacity			<p>1. <b><u>OFF-GRID HYBRID SOLAR AND WIND POWER PLANT.</u></b></p> <p><b><u>(NOTE: PROJECT TO BE SUPPLIED AND EXECUTED AS PER LATEST MNRE GUIDELINES)</u></b></p> <p>Supply, installation, commissioning and testing of Field Electrification (Solar 123 KWp &amp; Wind 27 KW capacity) with PV panels comprising Mono crystalline half cut of minimum module efficiency of more than 20%, Low iron tempered glass, High transmission, Anti reflective coating (min 3.2 mm), in any combination, to meet 123 KW mounted on two fixed tilt angle based on maximum sunlight absorption, one for summers &amp; one for winters (varying as per site condition), Vertical Axis Wind turbines, in any combination, to meet 27 KW, Battery Energy Storage System (BESS) of Gel based VRLA batteries with temperature control and inverter.</p> <p><b><u>Note:</u></b> The layout, circuit design of complete system as per the technical specification will be vetted by IIT/ NIT. Vetted shall be submitted by L-1 vendor within 30 days of award of Supply Order.</p> <p>2. <b><u>Environmental Conditions:</u></b>            (a) Ambient temperature - (-) 40<sup>0</sup> C to (+)40<sup>0</sup>C            (b) Altitude - 4000 – 5500 Mtr            (c) Solar irradiance &amp; irradiation - As obtainable in Ladakh            (d) Wind speed ≥ 200 Km/ hrs</p> <p>3. <b><u>Solar PV Sub System.</u></b> Photovoltaic module will be as per the Approved List of Models &amp; Manufacturers (ALMM) of MNRE, monocrystalline half cut panels of 123 KW, having efficiency more than 20%. The panels will be set up in series &amp; parallel combination, based on output voltage and current. The PV subsystem to include, modules, sub – array field, electrical interconnection, foundation, mounting structure, protection devices and earthing. Each solar module shall consist of redundantly interconnected photovoltaic cell and peak power rating shall not be less than 400 W. However, higher wattage module shall be preferred.</p>	No	01
				<b>Make: - Make: - Make of PV panel will be as per the latest Approved List of Models &amp; Manufacturers (ALMM) on MNRE site. Same shall be furnished by participating bidder during document submission for verification of Accepting Officer at TEC stage. Any bidder failing to submit the same shall be disqualified during TEC.</b>		

			4.	<b><u>Following will be the parameters of the PV Modules.</u></b>				
				<b>S No</b>	<b>Item</b>	<b>Specification</b>		
				(a)	Peak power Pmax (Wp)	As per design to match the total 123 KWp		
				(b)	Cell Technology	High efficiency Monocrystalline half cut silicon cell / TOPCON		
				(c)	Glass type	High transmission, low iron tempered glass with anti-reflective, anti-soling, hydrophobic nano – coating & snow load certified with minimum 3.2mm thickness.		
				(d)	Load rating	Snow load rating $\geq 5400$ Pa & Wind load rating $\geq 2400$ Pa		
				(e)	Encapsulation	Potential Induced Degradation (PID) free Ethylene Vinyl Acetates (EVA)		
				(f)	Connector type	IP 68 rated MC4, compatible, UV & frost proof.		
				(g)	Certifications	IEC 61215, IEC 61730, IEC 62804 (PID), IEC 62716 (Ammonia), IEC 60068-2-68 (dust/ sand), IEC 61701 (Salt mist resistance), IEC 17310-1&2, IS 14286, IEC 62892 (Lead% test), IEC 61730 – 2 : 2016.		
				(h)	Dimensions of PV panels	Within 2.30 m x 1.30 m		
				(i)	No of PV panels	As per design		
				(k)	Degradation	1st year max 0.7% and Year on Year max upto 25 years module will only degrade max 20%		
				(l)	UV resistance	All material, coating & insulation must be rating for high UV exposure		
				(m)	Modules performance under low light condition should be atleast 50% of performance under normal condition.			
				(n)	Module should be tested for high altitude & extreme temperature condition.			
				(o)	<b>Module Mounting Structure</b>			
					(i) Two positions of tilt angle (winters & summers). Modules alignment and tilt angle shall be calculated to be provide the maximum annual energy output at site.			
					(ii) Specific for site.			
					(iii) Anodized Aluminum (marine grade) frame.			
					(iv) Structurally designed to withstand wind speed $\geq 200$ Km/hr and snow load $\geq 2.4$ KN/m <sup>2</sup> .			
					(v) Nord lock washer system.			
					(vi) IP 65 or above.			
					(vii) GI strip/ copper-based earthing with lightening conductors with suitable surge protection for PV arrays & power electronic.			
					(viii) Minimum ground clearance will be 500mm.			

				<p><b><u>Note:</u></b> The above parameters need to be verified in the vetting by IIT/ NIT.</p> <p>5. <b><u>Protection System.</u></b></p> <p>(a) <b><u>Lightening arrestors for Array and Wind turbine.</u></b> Conventional franklin rods with copper tube ≥ 3 m above highest solar array point covering full array area using rolling sphere method. The down conductor will be directly bonded with earth grid with saddles clamp above 1.5 m &amp; air gaps at thermal expansion joints. It will consist of same system as given below in S No 5 (b). Similarly, the lightening conductor for Wind turbine will be atleast 1.5 m above the highest point of the turbine assembly. Total quantity will be as per design vetted.</p> <p>(b) <b><u>Lightening conductor with earthing for Housing of Inverter &amp; Battery Energy Storage System:</u></b> Lightning Conductors made of copper tube 150 cm long x 25 mm dia with five copper prongs of length 15 cm each fixed to copper ball of dia 50mm and 4mm thick with securing arrangement. Bottom 40 cm portion of the copper tube will be covered with PVC insulating material to avoid direct contact between the building and the lightening conductor. GI plate of <b>90cm x 90cm x 6.5mm</b> will be provided for earthing purpose and will be buried directly in ground (earth pit not less than <b>2.75</b> metres deep below ground level) with top edge of the plate not less than <b>1.75 meters</b> below normal ground level, connected to galvanized earth lead wire 4.0mm dia <b>by means of taper pin driven into reamed hole and riveted over or a copper stud screwed into a tapped hole &amp; riveted. Joint should be protected by a heavy coat bitumen.</b> GI conductor wire will pass through PVC conduit pipe to avoid direct contact between building and GI wire. Necessary insulated MS clamps for fitting PVC conduit pipe with building will be provided. For effective earthing of the lightening, moisture near earth pit needs to be maintained. Moisture will be maintained by covering GI plate with 15cm alternative layers of 25 kg wood charcoal granules size not less than 10 mm (in HDPE bags), 25 kg edible rock salt granules (in HDPE bags) complete as per details given in the drawing attached. Two GI funnels fixed with 2 X 20mm dia GI pipe of length 3 m will be provided for passing GI conductor wire and supplying water at <b>2.75 m</b> depth. Man-hole will be covered by using PVC/CI (cast iron) cover of size 45cm x 45cm over PCC pit. Test point terminal block made of gun metal or phosphorus bronze size 75x75x25mm drilled and screwed including 3 nos 8mm dia 25mm long hex head screw for fixing GI conductor wire coming from copper tube and GI plate with suitable nuts and bolts, will be provided at plinth level to check the resistance of the earthing. Schematic layout of lightening conductors attached.</p>		
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				<p>(c)     <b><u>Surge Protection Device</u></b> Type 1 &amp; Type 2 as per IEC 61643 – II installed at:-</p> <ul style="list-style-type: none"><li>(i)     Main AC distribution board</li><li>(ii)    Invertor AC output</li><li>(iii)   Combination box DC output</li><li>(iv)    Battery DC terminal</li><li>(v)     All instrument/ data terminal</li><li>(vi)    The surge protection device nominal &amp; more discharge current along with response time &amp; protection modes will be given &amp; design be vetted by IIT/ NIT.</li></ul> <p>(d)     <b><u>Earthing</u></b></p> <ul style="list-style-type: none"><li>(i)     <b><u>Earthing for Housing of Inverter &amp; BESS.</u></b> 02 Sets of earthing of building (for distribution boxes) will be provided using 4mm dia GI earth wire connecting to main board to GI plate of <b>90cm x 90cm x 6.3mm</b> will be provided for earthing purpose and will be buried directly in ground (earth pit not less than <b>2.75</b> metres deep below ground level) with top edge of the plate not less than <b>1.75 meters</b> below normal ground level, connected to galvanized earth lead wire 4.0mm dia <b>by means of taper pin driven into reamed hole and riveted over or a copper stud screwed into a tapped hole &amp; riveted. Joint should be protected by a heavy coat bitumen.</b> GI conductor wire will pass through PVC conduit pipe to avoid direct contact between building and GI wire. Necessary insulated MS clamps for fitting PVC conduit pipe with building will be provided. For effective earthing moisture near earth pit needs to be maintained. Moisture will be maintained by covering plate with 15cm alternative layers of 25 kg wood charcoal granules size not less than 10 mm (in HDPE bags), 25 kg edible rock salt granules (in HDPE bags) complete as per details given in the drawing attached. GI funnel fixed with 2 X 20mm dia GI pipe of length 3 m will be provided for passing GI conductor wire and supplying water at <b>2.75</b> m depth. Man-hole will be covered by using PVC/CI (cast Iron) cover of size 45cm x 45cm over PCC pit. Test point terminal block made of gun metal or phosphorus bronze size 75x75x25mm drilled and screwed including 3 nos 8mm dia 25mm long hex head screw for fixing GI conductor wire coming from MCB distribution box and GI plate with suitable nuts and bolts, will be provided at plinth level to check the resistance of the earthing</li><li>(ii)    <b><u>Earthing for Array</u></b> Earthing to Solar array and Wind Structure will be provided as per IS-3043:2018. It will be similar as given at 5 (d) (i) above. Quantity will be as per design but not less than three numbers.</li></ul>		
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			<p><b><u>Battery Energy Storage System.</u></b></p> <p>(a) Battery Technology : Maintenance free Gel based VRLA</p> <p>(b) Battery bank : 800 V 1200 Ah</p> <p>(c) Battery enclosure : Double walled structure with suitable insulation for cold regions. Two heating pads of 500W each provided for each battery enclosure room. The heating pads will function through PV modules and will have auto cutoff when enclosure temperature reaches 20<sup>0</sup> C. The pads will not be placed on batteries but on a metal sheet placed on side of battery and the sheet will be in accordance with size of the battery.</p> <p>(d) Depth of discharge : 80%</p> <p>(e) Backup time : 96 KW for 8 hr @ 150 Amps</p> <p>(f) Operating temperature : -40<sup>0</sup> C to 60<sup>0</sup> C with heating pad.</p> <p>(g) Heating requirement : Active heating with auto cut off</p> <p>(h) Protection : Smart BMS with Short circuit, over voltage, over charge, under voltage, under charge, from energy due to load fault.</p> <p>(j) Minimum Cycle life : 5000 cycles with each cycle 80% DOD. Replacement of batteries will be carried out once life of battery is over till 5000 cycles are completed. Cost of the replacement will be part of project.</p> <p>(k) Warranty : 5 Years</p> <p>(l) Design catering to environmental effect &amp; Peukert's effect.</p> <p>(m) Self discharging : &lt; 3% per month.</p> <p>(n) Test report from Govt recognized testing center (i.e. NISE, CIPRI, ERTL etc) conforming testing under industry standard.</p> <p><b><u>Note:</u></b> The above parameters need to be verified in the vetting by IIT/ NIT, (Specially type of battery and output per battery) incase alternate and better battery options are available the same will be justified and approved by contract accepting officer.</p>		
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				<p>7. <b><u>Inverter Subsystem.</u></b> Inverter will convert the power available from various sources into usable AC power: -</p> <p>(a) Type - 150 KW Hybrid Inverter with Modbus communication technology to interface with battery energy storage system.</p> <p>(b) Charge Control Type - Maximum Power Point Tracking (MPPT).</p> <p>(c) Nominal Output Voltage - 230 V (+/-1%).</p> <p>(d) Nominal Frequency - 50 Hz (+/-3Hz).</p> <p>(e) Output Capacity - 150 KW.</p> <p>(f) Overload at Nominal Voltage - 110% for 5 Sec.</p> <p>(g) Charging Stage - Float, Bulk, Absorption.</p> <p>(h) Compatibility - PV array, Wind Turbine Generators, DG &amp; BESS with source sequencing logic with seamless switching to &amp; from any source (both import &amp; export).</p> <p>(j) Characteristics - (i) MPPT algorithm must support solar irradiance smoothing and power rate control to avoid sudden surges in PV output. It should prevent inverter heating or reverse power flow when DG or wind is in action.</p> <p>(ii) The inverter shall have high conversion efficiency from 25% load to the full rated load. The efficiency of the inverter shall be more than 90% at full load and more than 80% at partial load (50% - 75%). The supplier shall specify the conversion efficiency in the offer.</p>		
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				<ul style="list-style-type: none"><li>(iii) Ensure proper sharing of load &amp; prevent instability in islanded or weak grid scenarios.</li><li>(iv) Blend renewable solar, DG, Wind &amp; battery for optimization.</li><li>(v) Programmed to support real power curtailment, frequency watt &amp; voltage watt features &amp; action island detection.</li><li>(vi) Should ensure solar output reduction safety when battery is full or DG is running lightly loaded, avoiding over-charging or inverter trip</li><li>(vii) Should include or be interfaced with microgrid controller that manages synchronization with DG, wind &amp; battery system.</li><li>(viii) Prevent phase/ frequency mismatch during source switching.</li><li>(ix) Ensure storage of excess wind/ solar energy into battery and blend with DG set for optimization.</li><li>(x) Output moderation based on battery state of charge.</li><li>(xi) Avoid unnecessary charging cycles or PV clipping when battery is full &amp; load is met by other sources.</li><li>(xii) Thermal compensation for charge voltage adjusted via temperature compensation.</li><li>(xiii) Float voltage set point determined by programable voltage &amp; current thresholds.</li><li>(xvi) Absorption time base on charge current taper not fixed duration.</li><li>(xv) Cater for higher output voltage in subzero temperature and cater for inverter shutdown.</li><li>(xvi) Altitude derating curve.</li><li>(xvii) The inverter shall be designed for high altitude and extreme temperatures of the Ladakh region.</li><li>(xviii) The inverter shall have provision for input and output isolation.</li></ul>		
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				<p>(k) Inverter will be connected through DC convertor &amp; dump load for wind turbine generators and through array junction box for PV Array.</p> <p>(l) Source priority &amp; load sharing protocol - Priority logic of solar-wind-battery-DG.</p> <p>(m) Cater for jerk load, protection against fluctuation, overload short circuit, array reverse, battery reverse &amp; thermal fluctuation.</p> <p>(n) <u>Protection.</u></p> <ul style="list-style-type: none"><li>(i) PV Side - Reverse polarity, PV Power limit, Surge protection (MOV).</li><li>(ii) Battery Side - Reverse polarity, over/ under voltage, current limit.</li><li>(iii) DG Side - Over/ under frequency, surge protection (MOV).</li><li>(iv) Load Side - Overload, short circuit, surge protection (MOV).</li><li>(v) System Protection - Temperatures.</li></ul> <p>(o) <u>Display</u> - Display data as follows:-</p> <ul style="list-style-type: none"><li>(i) PV Module - Voltage, charge O/P Amps, Power, Cumulative energy (specific, monthly &amp; annual).</li><li>(ii) Battery Side - Voltage, current, battery state, string heterogeneity, battery terminal temperature.</li><li>(iii) DG Side - Phase voltage, frequency, power, power factor.</li><li>(iv) Load Side - Voltage &amp; Current, frequency, power, export KWh.</li><li>(v) System Protection - Mode of operation, action faults, status mimic.</li></ul> <p>(p) Power source sequencing &amp; integrate logic – To prevent source conflict of the following :-</p> <ul style="list-style-type: none"><li>(i) Solar PV priority use with excess after base load for charging the battery if State of charge of battery &lt;100 %.</li><li>(ii) If load more than more than solar generation, battery discharges to bridge gap.</li><li>(iii) Wind turbine adds power to supply load or charge battery. Operates in synchronized or droop controlled mode with solar.</li><li>(iv) If load not met signal to start DG set &amp; auto synchronized relay.</li></ul> <p>(q) Adequate source channel.</p> <p>(r) Additional Safety &amp; Monitoring:-</p>		
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- (i) Remote monitoring & fault logging.
- (ii) AC Fault detection.
- (iii) Manual & auto by pass.
- (iv) Insulation resistance monitoring.
- (v) Operate with only solar power even if battery connected or battery voltage is very low.

**Note:** The above parameters need to be verified in the vetting by IIT/ NIT.

8. **WIND TURBINE GENERATOR TECHNICAL DETAILS.** (Low Voltage directive 2006/95/EC(LVD) Electromagnetic Compatibility 2004/108/EC/(EMC). Functionality and safety as per IEC 60670)

S No	Item	Minimum specification required
(a)	Capacity	Vertical Axis Wind Turbine Generator to meet 9 KW capacity.
(b)	Quantity	As per design to match total 9 KW power
(c)	Starting wind speed	Not more than 1.3 m/s
(d)	Cut-in wind speed	Not more than 2.5 m/s
(e)	Rated Wind speed Rated voltage (DC)	Not less than 15 m/s and not more than 17 m/s
(f)	Cut-out wind speed	Not less than 30 m/s
(g)	Design wind speed (m/s)	Maximum wind speed $\geq 55$ m/s
(h)	Generator Control System	Three phase permanent magnet suspension motor Electromagnet
(j)	Mount Height(m)	Not less than 5m from surrounding ground level
(k)	Work environment humidity	IP 54, VAWT $\leq 90\%$ , Controller and inverter $\leq 80\%$
(l)	Overspeed protection and Overload protection	Electromagnetic brake and unloading Unit
(m)	Makes	As per MNRE specifications. Type certificate will be provided by vendor. Type testing and certification shall be carried out only by Internationally Accredited Testing and Certification body only.

**Note:** The above parameters need to be verified in the vetting by IIT/ NIT.

				<p>9. <b><u>STRUCTURE OF WIND TURBINE</u></b>. Supply, design and fabricated, self-supporting, 9 KW Vertical-axis wind turbine with adequate diameter of rotor for a residential off grid connected hybrid wind plant.</p> <p>(a) Blades made up of basalt/glass, turbulence free as per Indian Type Certification Scheme (ITCS) as per IS /IEC 61400- 22: Wind turbines – Part 22: Conformity Testing and Certification. Minimum distance of the system will be = Hub height + 0.5 rotor diameter + 5m mount.</p> <p>(b) <b><u>Foundation for Wind Turbine Generator</u></b>: Foundation for wind turbines generator should be provided by vendor as withstand the wind turbine with wind speed 200 Km/ hr and as per direction of accepting officer.</p> <p>10. <b><u>DC Rated Fuse</u></b>. DC Fuse in DC combiner box in solar PV systems. It should provide protection by tripping off when PV panel or inverter causes overload or short circuit to protect PV panels. DC fuse to also be used to protect other electrical parts in DC circuit, when overload or short circuit. DC fuse link range of 10x38mm fuse links and Base specifically designed for protecting photovoltaic strings. These fuse links to be capable of interrupting low over current associated with faulted photovoltaic string arrays (reverse current, multi-array fault). <b>IS/ IEC 60269 – 6 : 2010 (Raeff- 2024) or IS/ IEC 60947 -6-1 : 2021 or IS/ IEC 60898 – 3 : 2019.</b></p> <p>(a) <b><u>Features and benefits :</u></b></p> <ul style="list-style-type: none"><li>(i) Specifically designed to protect solar PV systems in extreme ambient temperature.</li><li>(ii) Capable of withstanding high cycling and low-level fault current conditions typical applications.</li><li>(iii) Combiner boxes</li><li>(iv) PV Wire harnesses</li></ul>		
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			<p>11. <b><u>JUNCTION BOX (AJB, ACDB, DCDB).</u></b> Array Junction Boxes (AJB) or PV combiner boxes to use IP 65 enclosures with Surge Protection Devices (SPD) and DC fuse upto 1000V DC, SPD Type II, with MC4 Connectors, earthing Gland with Terminals blocks Thermoplastic, dust, Vermin &amp; Water proof with transparent covers. AC DB will be use in input and output side of inverter to protect inverter from surge and spike in AC supply and DC DB will be use in battery side to combine output of wind turbine and to protect battery from surge and spike.</p> <p>12. ACDB should also to be consists of voltmeter, ammeter and energy meter. Junction box shall have suitable entry point fitted with cable glands of appropriate sizes for both incoming and outgoing cables. Suitable marking shall be provided on bus bar for easy identification and cable ferrules shall be fitted at the cable termination points for identification.</p> <p>The junction boxes shall have suitable arrangement for the following:-</p> <ul style="list-style-type: none"><li>(a) Combined groups of modules into independent charging sub arrays that shall be wired to the controller.</li><li>(b) Provide arrangement for connecting disconnecting for each of group.</li><li>(c) Provide a test point for each sub group for quick fault location.</li><li>(d) Provide group array isolation.</li><li>(e) The rating of junction box shall be suitable with adequate safety factor too inter connect the solar PV array.</li></ul> <table><tr><th>S NO</th><th>ITEM</th><th>MIN SPECIFICATION REQD</th></tr><tr><td>(a)</td><td>MCB type</td><td>MCB with thermal magnetic tripping unit</td></tr><tr><td>(b)</td><td>Protection</td><td>Surge protection device</td></tr><tr><td>(c)</td><td>Meter</td><td>VAF Meter</td></tr><tr><td>(d)</td><td>Indication</td><td>R-Y-B Indication lamp</td></tr><tr><td>(e)</td><td>Housing</td><td>Single front, Front accessible, fixed type, Compartment, Cable entry bottom, Hinges type door, structure.</td></tr></table>	S NO	ITEM	MIN SPECIFICATION REQD	(a)	MCB type	MCB with thermal magnetic tripping unit	(b)	Protection	Surge protection device	(c)	Meter	VAF Meter	(d)	Indication	R-Y-B Indication lamp	(e)	Housing	Single front, Front accessible, fixed type, Compartment, Cable entry bottom, Hinges type door, structure.		
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			<p>12. <b><u>Prefabricated shelter for housing of Inverter &amp; BESS.</u></b> A prefab shelter of PUF panels given below dimension will also be provided for storage of all electronic components like batteries, charge controller and inverter. Separate dunnage will be provided for keeping the batteries and suitable truss for roof to be provided for PUF panel</p>																				

				<p>roofing. Glazing will be provided all along the south facing portion of the structure to maintain the temperature inside the shelter. 1.5 mm thick UPVC frame fitted with multiwall Polycarbonate sheet 5 mm thick of 90% transparency will be fixed along the length supporting UPVC frame at suitable distances.</p> <p><u>Dimensions:</u> Length- 2.4 M, Width- 2.4 M &amp; Height- 3 M at one end and 2.4m at another end</p> <p><b>Note: Note:</b> The above dimensions may be change/ increase as per site, functional and technical requirement at discretion of contract accepting officer.</p>		
				<p>13. <b><u>Fire Extinguisher (Ground Floor &amp; Top Floor).</u></b> Fire extinguisher conforming to IS 15683-2018(R-2023) Temp range of (-) 30<sup>o</sup>C to (+) 60<sup>o</sup>C &amp; same to be clearly marked on fire extinguisher. Clear marking of BIS &amp; instruction to use to be on the body of fire extinguisher shall be installed within the insulated housing within 300 mm proximity of inverter at 600 mm above floor level of housing. Technical specifications of the extinguisher are as under:-</p> <p>(a) The Ball type extinguisher ball with following specification. Min Dimension :</p> <p style="padding-left: 40px;">Sphere, diameter 14.5CM</p> <p style="padding-left: 40px;">Gross weight : 1.30-1.50Kg</p> <p style="padding-left: 40px;">Min Chemical weight : 1.25Kg</p> <p style="padding-left: 40px;">Fire Extinguishing Agent :Non toxic mono ammonium phosphate</p> <p style="padding-left: 40px;">Fire rating : Min Class A, B, C &amp; E fire rating as per Table 3 of IS 15683 :2018(R-2023)</p> <p style="padding-left: 40px;">Function : Flame activated</p> <p style="padding-left: 40px;">Container : Outer layer of pent foam about 11mm thick shield by PVC film</p> <p style="padding-left: 40px;">Shelf life : Min 3 years</p> <p style="padding-left: 40px;">Qty of 1 Kg (ball type) : 02 Nos</p>		
				<p>14. <b><u>MAKE.</u></b> All the components viz Solar Panel and Wind turbine, Battery, Inverter shall be <b>Make in India.</b> OEM certificate as per with purchase voucher shall be produced to Consignee before payment process.</p>		
				<p>15. <b><u>Electrical cables, control wires and distribution boxes.</u></b> Electrical cables and control cables of copper conductor and MCB distribution boxes with MCB etc will be provided as per site requirement includes in the quoted rates.</p> <p><b><u>Copper Cables.</u></b> Solar cable will be multi core flexible cables IS 694, BS6500, IEC 60227 of under mentioned specifications:</p>		

				<ul style="list-style-type: none"> <li>(i) 4sqm Weather proof DC cable (SPV to inverter), (VAWT – Wind controller- battery).</li> <li>(ii) 2.5 Sq mm 3 core flexible Copper cable (Inverter – heating pad and internal lighting of housing room).</li> <li>(iii) 6 sq mm 2 core flexible copper cable as per site requirement (Inverter to user load).</li> <li>(iv) 10 sq mm single core DC cable (AJB/DCDB to inverter).</li> <li>(v) 16 sq mm single core DC cable (Battery to inverter).</li> <li>(vi) 4 Sq mm single core, copper cable (Earthing and dump load).</li> </ul> <p><b>Note:</b> Change based on vetted design to be carried out after permission of accepting officer.</p> <ul style="list-style-type: none"> <li>(f) <b><u>Properties</u></b> <ul style="list-style-type: none"> <li>(i) Used in extreme weather conditions.</li> <li>(ii) Equipped with UV Resistance.</li> <li>(iii) Halogen free low smoke emission and low toxicity during fire.</li> <li>(iv) Flame &amp; Fire retardant.</li> <li>(v) Flexibility &amp; strip ability for fast and easy installation.</li> <li>(vi) Easily Recyclable in accordance with new government norms.</li> <li>(vii) Easy installation with colour identification.</li> <li>(viii) Suitable to common connector types.</li> </ul> </li> <li>(g) <b><u>Features</u></b> <ul style="list-style-type: none"> <li>(i) Weather resistant</li> <li>(ii) Ambient Temperature: -40°C + 40°C</li> <li>(iii) Maximum Temperature at Conductor 120°C for 2000 hrs</li> <li>(iv) Short Circuit Temperature: 200°C at conductor (max 5 sec)</li> <li>(v) Rated Voltage: 0.6/1KV AC. Rated DC Voltage 1.5KV</li> <li>(vi) Maximum Permitted DC Voltage: 1.8KV Conductor /conductor, non-earthed system, circuit not under load.</li> <li>(vii) Maximum Permitted AC Voltage 0.7/1.2KV working Voltage: DC 1000V</li> <li>(viii) Insulation Resistance: 1000MW-km</li> <li>(ix) Spark Test: 6000 V AC (8400 V DC)</li> <li>(x) Voltage withstand : 6500V as per EN50395 for 5 min</li> </ul> </li> </ul>		
				16. <b><u>AMC &amp; Warranty.</u></b> Free AMC and warranty for <b>Five year</b> from date of installation, commissioning and completion of work.		
				17. <b><u>LOCATION OF INSTALLATION.</u></b> Off-Grid Hybrid Solar and Wind Power Plant shall be installed at various location as decided by appropriate authority with in the in region of Ladakh. Technical team for installation of the plant to be sent within days of intimation and cost of installation charge and boarding/lodging/transportation of technical team shall be inclusive of supplier.		

				18. The supplier should have a service centre at Leh and ensure availability of spares and technicians for repairs throughout the year. Vendor to submit escalation matrix of the firm and photographic evidence of of service centre at Leh supported by Rent Deed during TEC stage. Failure to submit the same will be render the participating vendor disqualified during TEC stage.		
				19. Any complain rectification will be addressed within 15 days of date of lodging complaint at site of installation. If the same does not rectifying within stipulated time frame accepting officer reserve the right of lifting participation of in any tender <b>upto 02 years on discretion of Accepting Officer.</b>		
				20. <b><u>Documents:</u></b> One set of installation manual/ user manual shall be supplied along with each system. The manual shall include complete system details such as array layout, schematic drawing of the system, inverter details, battery details, wind turbine generator details, working principle etc. Step by step maintenance and troubleshooting procedures shall be given in the manual as well.  21. (a) The bidder must use solar modules and other balance of system of (BoS) components that quality to the latest edition of BIS or IEC standards, relevant test reports and necessary certificates to be enclosed.  (b) The bidder must have PV modules tested at one of the IEC approved test centers. Test certificates to be enclosed.  (c) The bidder must be a total integrated system designer inclusive of solar modules, wind turbine generator, charge controllers, junction boxes and mounting structures. Necessary documentation must be enclosed.		

				<b><u>BUYER ADDED SPECIFIC TERMS AND CONDITIONS FOR THE FD ELECTRIFICATION (HYBRID)</u></b>																						
				<p>1. <b><u>Made in India</u></b> – All the components of the Fd electrification (solar plant) must be made in India. Any part found other than indigenous will be rejected.</p> <p>2. <b><u>Documents reqd-</u></b> Original Equipment Manufacturers (OEMs) certificate with guarantee for provision of spares for next 25 years. Type certification for Wind Turbine Generator &amp; ALMM OEM certificate for PV Module.</p> <p>3. <b><u>Certificate-</u></b> OEM certified by Quality council of India or any similar Org approved by Government of India. (MNRE/NABL/BIS/NIWE). For parameters which cannot be checked onsite while delivery, certification from NABL accredited lab will be provided. Beyond this, any part can be sent for testing and checking parameters to Govt/ NABL lab at the discretion of the accepting officer. Cost of the same will be borne by the supplier.</p>																						
				<p>4. <b><u>Solar Panels, -</u></b> As per ALMM of Govt of India. MNRE (For solar panel), conforming to BIS of all other and NABL certificate required for the same.</p> <p>5. <b><u>Hybrid Invertor, Wind turbine and Battery etc-</u></b> Made in India.</p> <p>6. Details missing, if any, will be assumed as per good engineering practice and will be provided by the supplier after being approved by inspection team of consignee and the rates will be inclusive of this fact. Whenever there is variation between technical specifications and drawings, technical specifications are to be followed.</p> <p>7. PBG amounting to 10% of SO amount will be deposited prior to competition to Accepting Officer. This will be released back on satisfactory completion of AMC &amp; Warranty yearly as 10% of amount post 1<sup>st</sup> &amp; 2<sup>nd</sup> year, 25% of amount in 3<sup>rd</sup> &amp; 4<sup>th</sup> year and balance amount in 5<sup>th</sup> year. Satisfactory Completion will be decided by Accepting officer and the right to hold back any part of the amount held in PBG is right of the Accepting Officer in case of delay or non-adherence of AMC/ Warranty. PBG amounting to 10% of SO amount will be deposited in five parts and shall be released in five years as % of amount per year as shown below:-</p> <table><tr><td>(i)</td><td>1<sup>st</sup> year</td><td>-</td><td>10% of BG Amount (valid upto 1<sup>st</sup> year)</td></tr><tr><td>(ii)</td><td>2<sup>nd</sup> year</td><td>-</td><td>10% of BG Amount (Valid upto 2<sup>nd</sup> year)</td></tr><tr><td>(iii)</td><td>3<sup>rd</sup> Year</td><td>-</td><td>25% of BG Amount (Valid upto 3<sup>rd</sup> year)</td></tr><tr><td>(iv)</td><td>4<sup>th</sup> Year</td><td>-</td><td>25% of BG Amount (Valid upto 4<sup>th</sup> year)</td></tr><tr><td>(v)</td><td>5<sup>th</sup> Year</td><td>-</td><td>30% of BG Amount (Valid upto 5<sup>th</sup> year)</td></tr></table>	(i)	1 <sup>st</sup> year	-	10% of BG Amount (valid upto 1 <sup>st</sup> year)	(ii)	2 <sup>nd</sup> year	-	10% of BG Amount (Valid upto 2 <sup>nd</sup> year)	(iii)	3 <sup>rd</sup> Year	-	25% of BG Amount (Valid upto 3 <sup>rd</sup> year)	(iv)	4 <sup>th</sup> Year	-	25% of BG Amount (Valid upto 4 <sup>th</sup> year)	(v)	5 <sup>th</sup> Year	-	30% of BG Amount (Valid upto 5 <sup>th</sup> year)		
(i)	1 <sup>st</sup> year	-	10% of BG Amount (valid upto 1 <sup>st</sup> year)																							
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(iv)	4 <sup>th</sup> Year	-	25% of BG Amount (Valid upto 4 <sup>th</sup> year)																							
(v)	5 <sup>th</sup> Year	-	30% of BG Amount (Valid upto 5 <sup>th</sup> year)																							
				<b><u>Training-</u></b> One-month training schedule for maint/operation for Solar –wind hybrid plant be conducted by OEM rep to user unit. Cost for the same in incl in quoted rates.																						



### **PART III - ESSENTIAL DETAILS OF ITEMS/ STORES/ SERVICE REQUIRED**

1. Tenderers shall furnish list of authorized service centers (For Commercially off the shelf items) throughout the country with complete address phone number, fax & email etc.
2. **Cover-I.** Cover-I will contain the **Technical Bids** comprising of following documents. Details of documents are as below (clear and legible documents to be submitted else bid liable to be rejected):-

Ser No	Categories	Remarks/ Appx
(a)	Bank Solvency Certificate (Solvency amount to be more than 50% of the contract value) (Bank Solvency of current financial year to be submitted)	
(b)	Cancelled Cheque (To clearly bring out the name of the firm, bank acct No, IFSC code and Bank address).	
(c)	ECS Mandate Form (To have date not more than six months prior to uploading of documents). ECS without date would be rejected.	
(d)	EMD in favour of CO 62 Engineer Regiment / Valid MSME Certificate	
(e)	PAN, GST/ Registration Nos.	
(f)	Bidder Turnover Certificate (duly vetted by CA) (CA Approved), for the period of five years) is not available for the preceding year till Jun due to non-filing of GST. <b>Provisional certificate to be provided for the same.</b>	As per Para 8(a)
(g)	Original OEM Certificates/OEM authorized certificate of their firm	
(h)	Past Performance/ Work Completion documents ( <b>Minimum Five years</b> )/ Docus as mentioned at Para 8/ Supply Orders/Work orders of last five years to <b>Northern, Eastern &amp; Central Command</b> . (All previous completed SOs of similar work and SOs currently in progress has to be submitted separately).	<b>Appendix 'E'</b>
(j)	Certificate of acceptance of terms and conditions of RFP on firm's letter head.	
(k)	Compliance of BOQ	
(l)	Confidentially Certificate	<b>Appendix 'A'</b>
(m)	Store Delivery Assurance Certificate	<b>Appendix 'B'</b>
(n)	Fall Clause Acceptance Certificate as mentioned in RFP	<b>Appendix 'C'</b>
(o)	Solvency Certificate	<b>Appendix 'D'</b>
(p)	Code of Integrity certificate	<b>Appendix 'F'</b>

3. The bid shall have the following PQC criteria based on CVC guidelines:-

(a) Average annual financial turnover during the last 5 years, ending 31<sup>st</sup> March of the previous financial year, should be at least 30% of the estimated cost. (This average annual turnover of 30% is for a work with period of completion as three years and where the period of completion is less than 3 years, the requirement of average turnover shall be proportionally increased and specified).

(b) Experience of having successfully completed similar works(**Category of assets att as Appx 'G'**) undertaken with Central/State/UT Govt Org, PSU, PMF and similar agencies during **last five years in the places under AoR of Northern, Eastern & Central Command** ending last day of month previous to the month of bid submission start date, should be either of the following:

(i) Three similar completed works costing not less than the amount equal to 40% of the estimated cost.

OR

(ii) Two similar completed works costing not less than the amount equal to 50% of the estimated cost

OR

(iii) One similar completed work costing not less than the amount equal to 80% of the estimated cost.

4. **Modification and Withdrawal of Bids.** The bidder may modify or withdraw his bid after submission provided that the written notice of modification or withdrawals received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by fax but it should be followed by ink signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified. Withdrawal of a bid during the period will result in Bidder's forfeiture of bid security. **Once Supply Order placed on L1 and the firm does not accept the Supply Order, will result in black listing the firm for period of twenty four months from tendering in Army Tenders.**
5. **Earnest Money Deposit.** Bidders are required to submit Earnest Money Deposit (EMD) that is **Rs 5,98,940 /- (Rupees Five Lakh Ninety Eight Thousand Nine Hundred Forty Only).** The EMD will be submitted in the form of an Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the public sector banks or a private sector bank authorized to conduct government business as per Form DPM-16. **EMD is to remain valid for a period of 45 days beyond the final bid validity period.** EMD of the unsuccessful bidders will be returned to the mat the earliest after expiry of the final bid validity and latest on or before the 30<sup>th</sup> day after the award of the contract. The Bid Security of the successful bidder would be returned, without any interest whatsoever, after the receipt of Performance Security from them as called for in the tender. The EMD will be forfeited if the bidder withdraws or amends impairs or derogates from the tender in any respect within the validity period of the tender. **EMD to be issued in favor of Commanding Officer, 62 Engineer Regiment, PIN-914062 c/o 56 APO payable at Karu.**
6. **If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected. If there is a discrepancy between words and figures, the amount in words will prevail for calculation of price accordingly.**
7. The Lowest Acceptable Bid will be considered further for placement of contract/Supply Order after complete clarification and price negotiations as decided by the Buyer. The Buyer will have the right to award contracts to different Bidders for being lowest in particular items in case of item rate contract. **The Buyer also reserves the right to do Apportionment of quantity, if it is convinced that lowest Bidder is not in a position to supply full quantity in stipulated time wherein the order may be placed on L<sub>2</sub>, L<sub>3</sub> at L<sub>1</sub> rates provided this is acceptable to them at the ratio of 50:30:20 or 50:50.**
8. Bidders are required to mention the rate with GST and without GST separately. The GST/without GST are not appended, the quote given will be considered as amt with GST.
9. The bidder should quote specific make, model and other relevant details of the items for which rates are quoted, irrespective of whether specifications are mentioned with the make/ model or not. **In the absence of above information, a quotation may be rejected by the quotation opening board. The bidder will quote lump sum amount for the supply and construct structural items including all accessories & item rates for electrical, sanitary, labor& construction materials as per technical specifications. The details are attached as per BOQ in bid document & rates will be quoted online by bidders in BOQ Excel Sheet only.**
10. **Confidentiality.** The Vendor will ensure confidentiality of the project and will not disclose any information, explicit or tacit, gained by them or their representative or agents, while interacting with the Officers of 62 Engineer Regiment. The authorized representative of the Vendor will sign the '**Certificate of Confidentiality**' given at **Appendix 'A'** with the Company Seal duly affixed.
11. Rate for delivery of stores and construction items will be considered for delivery as given in the FOR location at Para 5 of Part I of this RFP **with 45 days for 50% of stores and 90 days for bal store from the date of issue of Supply Order and construction activity to be progressed concurrently on supply of stores (LD will be applicable for delivery of stores if delayed as per para 55 of the RFP). Work to be completed within 180 days from the date of issue of Supply order.**
12. Specifications of TS supersedes the drg. In case of ambiguity, decision of Accepting Officer shall be final and binding.
13. **FOR of 350 Km Radius from Karu, Leh.** Stores shall be received at FOR location only.
14. The rates quoted will remain valid for six months from the date of acceptance of Supply Order by the vendor for repeat/option clause.
15. User manual to be printed and supplied in hard & soft copy along with the sample structure.

16. In case of inferior quality store or fake documents before or after placing of supply order, Accepting Officer has full right to cancel the Supply Order on quality grounds and due to breach of trust and no representation on this account will be entertained. The vendor will be black-listed from tendering in Army for twenty four months. All vendors to check the given specifications as per the TS before dispatch on account of quality and quantity as per the SO clauses. **Accepting offr will share the list of rejected items to all units in AOR of 14 Corps.**

17. Material testing certificate should be sent along with the supplied items, the material will be checked at buyer's end & the result of the test will be one of the criteria for acceptance of the product. The test can be carried out by the buyer at cost of the supplier and from the Govt approved lab/IIT/NIT as chosen by the buyer. Before dispatch of stores testing of sample items as selected by Engr Br, HQ 14 Corps/rep thereof will be undertaken. Cost of the same will be borne by the vendor.

18. Bidder's offers are liable to be rejected if he fails to upload any of the certificate/Documents as asked by the buyer.

19. **OEM Certificate**. The items costing less than six lakhs, Original Certificate to third party will be accepted. For items whose cost is more than six lakhs, only Original OEM certificate will be considered. For construction material etc test certificate should be specified and not OEM certificate. **Final decision will be based on discretion of Accepting Officer.**

20. Surprise visit to the fabrication unit/factory by any nominated member of the buyer for inspection of the factory can be organized.

21. ISO certification ISO 9001(Quality and safety), 9000 (Quality Mgt) to be submitted at the time of submission of technical bid.

## **PART IV - STANDARD CONDITIONS**

1. **Law.** The contract shall be considered and made in accordance with the laws of the Republic of India.
2. **Effective Date of the Contract.** Normally the contract shall come into effect on the date of issue of Supply Order or when some other effective date is mutually agreed to and specifically indicated/ provided in the contract. The deliveries of Store supplies and construction activities shall commence from the effective date of the contract.
3. **Arbitration.** All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to construction or performance, which cannot be settled amicably, may be resolved through arbitration at High Court, Jammu. The standard clause of arbitration is as per forms DPM – 7, DPM – 8 and DPM-9.
4. **Non-disclosure of Contract documents.** Except with the written consent of the Seller/Buyer, other party shall not disclose the contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party.
5. **Delivery Schedule.** Stores will be delivered as per GeM instruction of placing of supply Order at locations given in **Part-II of this RFP**. Please note that Contract can be cancelled unilaterally by the Buyer incase items are not received completely within the contracted delivery period. Extension of contracted delivery period will be the sole discretion of the Buyer, with or without applicability of LD clause. Date of supply will be strictly followed. Commanding Officer, 62 Engineer Regiment reserves the right not to accept supplies after the stipulated delivery period and cancel the supply order. No extension will be granted to the firm in the deadlines to supply the stores. If any delay is expected in delivery of stores, it has to be informed to the unit at least 20 days in advance. Accepting Officer i.e. CO, 62 Engineer Regiment will be sole authority in entertaining any request for extension of deadlines to supply stores. The seller will organize & arrange for unloading of stores at site either by manual or mechanical effort.
6. Bidder should quote specific make model and other relevant details of the items for which rates are quoted irrespective of whether specifications are mentioned with the make/ model or not in the absence of above information a quotation may be rejected by the quotation opening board.
7. **Specifications.** The seller guarantees to meet the specifications of the Supply Order. The Seller, in consultation with the Buyer, may carry out technical up gradation in the design, drawings and specifications due to change in manufacturing procedures, indigenization or obsolescence. This will however, not in any way adversely affect the end specifications of the equipment.
8. **Quality.** The quality of the stores delivered /work executed according to the present Supply Order shall correspond to the technical conditions and standards or Specifications enumerated as per contract/Supply Order and shall also include therein modification to the stores suggested by the Buyer. Such modifications will be mutually agreed to. The Seller shall supply changeability certificate along with similar life as the original item. **In case of inferior quality store delivered / inferior quality in execution, accepting officer has full right to cancel the Supply Order on quality ground and for due to breach of trust and no representation on this account will be entertained. All vendors to check items before dispatch on account of quality and quality as per the SO clauses. The supplier should be an OEM for fabrication or should have a OEM authorization certificate for fabrication of respective items for manufacturer itself and same to be submitted along with the Technical bid.**
9. **Quality Assurance.** After the Supply Order is finalized, the Seller would be required to provide the standard Acceptance Test Procedure (ATP), Buyer reserves the right to modify the ATP. **Seller would be required to provide all test facilities at his premises for acceptance and inspection by Buyer.** The item should be of the latest manufacture, conforming to the current production standard and having 100% defined life at the time of delivery. Material testing certificate should be sent along with the supplied items, the material will be checked at buyer's end & the result of the test will be one of the criteria for acceptance of the product. The test can be carried out by the buyer at cost of the supplier and from the Govt approved lab as chosen by the buyer.
10. **Quality Control.**
  - (a) Approval for quality is desirable and will be resorted to when & if feasible.

- (b) Acceptance officer reserves the right to get any part tested for quality if he feels so. Cost of such testing will be borne by the supplier. Buyer can send their rep for factory visit for quality check while manufacturing.
- (c) In case of inferior quality stores, accepting officer can cancel the Supply Order on quality grounds.
- (d) The supplier will be responsible for quality of items used in fabrication as given in the technical specifications.
- (e) Surprise visit to be fabrication unit/factory by any nominated member of the buyers for inspection of the factory.
- (f) **All vendor should submit their plan of procurement/execution, so that works should be completed within stipulated time.**
- (g) **Vendor solely responsible for repair/replacement during Defect Liability period**

11. **Pre-Dispatch Inspection.**

- (a) The Buyer's representatives will carry out Pre-Dispatch Inspection (PDI) of the stores/equipment in order to check their compliance with specifications in accordance with its usual standard procedures. Upon successful completion of such PDI, the Seller and Buyer will issue and sign a certificate of conformity.
- (b) The Seller shall intimate the Buyer at **least 07 days** before the scheduled date of PDI. The Buyer will send his authorized representative(s) to attend the PDI.
- (c) The Seller shall provide reasonable facilities, access and assistance to the Buyer's representative for safety and convenience in the performance of their duties.

12. Commanding Officer, 62 Engineer Regiment will be the Accepting Officer for the tender. In case of any contingency due to force majeure, the request for extension in supply period will be made minimum two weeks before delivery date. It will be purely the discretion of Commanding Officer, 62 Engineer Regiment in granting the extension.

13. **Transportation.** The store will be delivered at the consignee's end as per delivery schedule. The firm will make its own arrangement to pay all taxes including transit insurance/ octroi and other taxes as applicable, the cost thereof and will be responsible for defect free delivery of stores at destination. Labor charges for unloading the store from seller vehicles at consignee end and stocking in the stores yard of consignee will be borne by supplier. Any damages to stores during transportation from shop/factory to the site will be borne by the supplier. Any damage to the stores during transportation from seller delivery location to the site where the stores are required to be supplied will be made good/replaced by your firm **within 21 days** of the intimation from this unit.

14. **Packaging and Dispatch** : The stores are required to be packaged to withstand normal conditions of shipment and short term storage in transit and in the country of destination and the following conditions will apply:-

- (a) The Seller shall be responsible for any loss or damage or expenses incurred by the Purchase because of inappropriate packages.
- (b) Packages containing articles classified as hazardous should be packed and marked in accordance with the requirements of the appropriate regulations governing their dispatch by road or air.
- (c) The Seller shall also comply with the detailed packaging and dispatch instructions, if specified in the contract.
- (d) The responsibility of sending dispatch documents will rest with the Seller. Detailed shipping instructions issue from time to time by the Buyer will apply.
- (e) Packing Materials (PM) needed to ensure safe transportation of material from firm premises to delivery sites and to locations where it is to be constructed will be supplied and rate if any for the same will be included in quotation and no extra charges will be paid. **All material except for trusses, purlins & columns which do not get damaged during transportation to be packed with maximum weight of 100 kg per package. Accepting**

**officer is free to reject any damaged stores which will be replaced by the supplier without any cost effect.**

(f) Packing shall be marked with the following :-

- (i) Manufacturer's Name and Address.
- (ii) Consignee's Name and address.
- (iii) Nomenclature of item.
- (iv) Contract No
- (v) Year of Manufacture.
- (vi) Quantity packed.

(g) The store will be accepted only as a complete entity in composite loads and not in parts/components.

(h) The representative of the firm should be present at the **FOR location** from the time the very first consignment arrives at **FOR location** till the time Supply Order is completed for identification of parts, failing which stores will not be accepted at **FOR location**.

15. **Option Clause**. Under this clause, the Purchaser retains the right to place orders for additional quantity up to a maximum of 50% of the originally contracted quantity at the same rate and terms of the contract. Such an option is available during the original period of contract provided this clause has been incorporated in the original contract with the supplier. Option quantity during extended DP is to be limited to 50% of balance quantity after original Delivery Period. This clause may be exercised in case of procurement from single vendor/ OEM also subject to there being no downward trend in prices.

16. **Repeat Order Clause**. The contract will have a Repeat Order Clause, wherein the Buyer can order up to 50% quantity of the items under the present contract within six months from the date of supply/ successful completion of this contract, the cost terms & conditions remaining the same. The Bidder is to confirm acceptance of this clause. It will be entirely the discretion of the Buyer to place the Repeat order or not.

17. **Inspection Authority**. The store/work will be subjected to an inspection to ascertain that they confirm to the specification as laid down in the supply order. The costs incurred during inspection, if any (only for testing of material), will be borne by the Vendor / Supplier.

18. **Raw Materials**. All raw materials used should be new and as per particular specification given in Technical specifications. Test certificate for all raw materials will be submitted by the seller.

19. The items supplied will be finally accepted on the approval of the Accepting Officer, 62 Engineer Regiment or by board of officers.

20. In case of failure of supply of items by due date, the Commanding Officer reserves the right to cancel this Supply Order.

21. **Performance Bank Guarantee**. Performance Security deposit payable to the Purchaser is furnished by the Supplier in the form of a Performance Bank Guarantee (PBG) issued by a public sector bank or a private sector bank authorized to conduct government business, in the prescribed format within 30 Days from the date of contract. At present, ICICI Bank Ltd., Axis Bank Ltd. And HDFC Bank Ltd. are the three private sector banks authorized to carry out government transactions. The performance security deposit is meant to compensate the Purchaser for any loss suffered due to failure of the supplier to complete his obligations as per the contract. Preferably, performance security is payable by the supplier (As per RFP Part-II) of the contract value or as per latest Govt orders as on date of placing of SO. PBG should remain valid for a period of sixty days beyond the date of completion of contractual obligations, including warranty. The BG is returned to the supplier on successful completion of all his obligations under the contract in case the execution of the contract is delayed beyond the contracted period and the purchaser grants extension of delivery period, with or without LD, the supplier must get the BG revalidated, if not already valid. The format of the PBG is given in Form DPM – 15. Accepting officer reserves the right to cancel the supply order without notice incase PBG is not submitted within 30 Days. **A separate (Annual Maint Contract) BG at the rate of 5% will be provided prior to release of final BG on completion of work/ defect liability period for the contracts with AMC included. BG will be strictly submitted as per RFP Part-II Buyer Added Specific Terms and Conditions.**

22. **Forfeiture of Performance Bank Guarantee (PBG)/Earnest Money (EM)**. The BG/EM will be liable to be forfeited if the bidder withdraws or amends, impairs or derogates from the tender in any respect within the validity period of the quotation/Supply Order.

23. **Warranty.** The following warranty will form part of the contract placed on successful bidder :-
- (a) The Seller warrants that the work executed conform to technical specifications prescribed and shall perform according to the said technical specifications.
  - (b) The Seller **warrants for a period of 60 months/ As per RFP Part II Technical Specification** from the date of acceptance of shelter by Joint Receipt Inspection of date of installation and commissioning. Whichever is later, that the shelter constructed under the Supply Order and each component used in the manufacture thereof shall be free from all types of defects/failures.
  - (c) If within the period of warranty, the goods/defects are reported by the Buyer to have failed to perform as per the specifications, the **Seller shall either replace or rectify the same free of charge, within a maximum period of 30 days of notification of such defect** received by the Seller, provided that the goods are used and maintained by the Buyer as per instructions contained in the Operating Manual. Warranty of the equipment would be extended by such duration of downtime.
  - (d) The Seller also warrants that necessary service and repair back up during the warranty period of the equipment shall be provided by the Seller and he will ensure that the downtime is **within 30 days of notification of such defect** received by the Seller.
  - (e) Seller shall provide the details of complete defects reasons and remedial actions for defects, when such defects arise.
  - (f) If a particular equipment/goods fails frequently and /or, **the cumulative down time exceeds 25% of the warranty period, the complete equipment shall be replaced free of cost by the Seller within a stipulated period of 30 days of receipt** of the notification from the Buyer. Warranty of the replaced equipment would start from the date of acceptance after joint Receipt Inspection by the Buyer/date of installation and commissioning.
24. **Risk & Expense Clause.** Should the stores or any installment thereof not be delivered within the time specified in the Supply Order or if defective delivery is made in respect of the stores or any installment thereof, without prejudice have to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.
25. **Rejected Stores/items.** The rejected stores/items will be disposed off by the supplier at his own risk and cost at the site where these are rejected.
26. **Fall Clause.**
- (a) **The price charged for the stores supplied under the Supply Order by the Seller shall in no event exceed the lowest prices at which the Seller sells the stores or offer to sell stores of identical description to Indian Army/ Organizations** including the purchaser or any department of the Central Government as the case may be during the period till performance of all Supply Orders placed during the currency of the rate Supply Order is completed.
  - (b) If at any time, during the said period the Seller reduces the sale price, sells or offers to sell such stores to Indian Army/ Organization including the purchaser or any department of Central Govt as the case may be at a price lower than the price chargeable under the Supply Order, **the Supplier shall forthwith notify such reduction or sale or offer of sale to the Buyer and the price payable under the Supply Order for the stores of such reduction of sale or offer of the sale shall stand correspondingly reduced.**
27. **Standard Conditions of Quotation.** The Bidder is required to give confirmation of their acceptance of the Standard Conditions of the Request for Proposal mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e Seller in the Contract) as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.
28. **Liquidated damages (LD).**If the Supplier fails to complete the work within stipulated timeframe or any services thereof within the DP or at any time repudiates the contract before expiry of such period, the CFA, without prejudice to the right of the purchaser to any other remedy for breach of contract, may recover from the contractor a sum equivalent to **0.5%** of the prices of any stores which the contractor has failed to deliver within the period agreed for delivery in the contract, **for each week or part thereof** during which the delivery of such stores any be in arrears, where delivery thereof is accepted after expiry of the aforesaid period. The **total damages shall not exceed value of 10% of**

**undelivered goods.** The LD cannot exceed the amount stipulated in the contract. This payment will be made through demand draft or MRO/e-MRO in favour of **CDA, Northern Command Jammu.**

29. **Termination of Contract.** The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases:-

- (a) The delivery of the material is delayed for causes not attributable to Force Majeure for more than 45 days or after the scheduled date of delivery.
- (b) The Seller is declared bankrupt or becomes insolvent.
- (c) The delivery of material is delayed due to causes of Force Majeure by more than 90 days provided Force Majeure clause is included in contract.
- (d) The Buyer has noticed that the Seller has utilized the services of any Indian/Foreign agent in getting this contract and paid any commission to such individual/company etc.
- (e) If the Supplier, in the judgement of the Buyer , has engaged in corrupt or fraudulent practices in completion of the contract.
- (f) As per decision of the Arbitration Tribunal.
- (g) The seller fails to give the quality work during execution and following instruction given by Accepting officer time to time.
- (h) Non compliance of any part of Integrity certificate will lead to termination of SO.

30. **Payment Terms.** The payment will be made as per the following terms, on production of the requisite documents:-

S No	Stage of Work/Material Supply	%Payment	Cumulative %age payment
(a)	Supply of 50% store.	25	25
(b)	Supply of 100% store.	25	50
(c)	Installation	25	75
(d)	Testing & Commissioning	15	90
(e)	Handing over of Solar duly completed in all respect	10	100

**Note:- Payment will be done on basis of progress above slab per shelter.**

- (a) Payment shall be made after inspection and acceptance of stores/work executed has been acceptable level.
- (b) Bills will be subject to audit by associated finance.
- (c) Firms will not be issued form 'D'.
- (d) ***"PAYMENTS WILL BE MADE ONLY THROUGH ELECTRONIC FUND TRANSFER (RTGS/NEFT) OR THROUGH CHEQUE. PLEASE ENSURE BANK ACCOUNTS IN AUTHORISED BANK TO AVOID ANY INCONVENIENCE".***
- (e) **Deduction of GST.** GST will be paid by the successful vendor at the end as per Govt of India orders in vogue.

31. **Consignee Details.**

- (a) The store will be consigned to Commanding Officer, 62 Engineer Regiment, c/o 56 APO.
- (b) Store will be consigned on freight pre-paid / pay basis.
- (c) Delivery will be at shelter site in forward location as given in the FOR locations at Para 5 of Part I of this RFP.
- (d) The rate quoted is accepted for delivery of stores inside the premises of the consignee i.e. unloading at the consignee end will be arranged by the Supplier.



32. **Cancellation.** In case the work is not completed within stipulated period, or if defective Solar is made and the defective work/stores is not replaced/rectified within 30 days from the date of intimation of such defects, the supply order will be cancelled at the sole discretion of Accepting Officer ie, CO, 62 Engineer Regiment either wholly or to the extent of such defaults. If the defect exceeds Bank Guarantee amount and not rectified after one week from the date of encashment of Bank Guarantee, no stores would be accepted and Supply Order shall be cancelled.

33. No insurance charge will be paid by the department. Commanding Officer accepts no responsibility and no liability for the stores in transit or for the rejected stores lying inside consignee's premises for whatsoever reason.

34. The Commanding Officer reserves the right to inspect/testing the stores to a second Inspection by any authority nominated by him or to inspect the stores himself, and may reject them if not found conforming to the laid down specifications, within in a period of six months from the date of acceptance by the normal inspecting authority mentioned above, even if the stores have been accepted, passed and paid for. The supplier shall replace such stores with the stores of correct specifications within a period of one month on receipt of due notice in writing by the Commanding Officer at his (Supplier) cost. **Accepting offr will share the list of rejected items to all units in AOR of 14 Corps.**

35. **Documents.** The following documents shall be prepared and submitted by the supplier to the paying authority alongwith the bill of making payment :-

- (a) Ink signed copy of invoice.
- (b) Guarantee/Warranty certificate (if applicable).
- (c) Purchase Voucher of all items/ raw material purchased.
- (d) Test Certificate (if applicable).
- (e) Copy of Performance Bank Guarantee.
- (f) Prescribed pre-stamped bills in triplicate.
- (g) Docus as mentioned at Para 45 of this RFP/ Supply Orders of **last five years to 14 Corps Zone/ Northern, Eastern & Central Command.**
- (h) **Turnover Certificate.** Minimum 30% average annual turnover of the contract value for the past three years.
- (j) **Solvency Certificate.** The bidder has to produce solvency certificate along the bid. The solvency amount has to be 50% of the contract value. In case of solvency certificate for a particular amount has been given to any particular unit for a job, addl solvency from the bank will be produced by the vendor for bidding for any other job. A certificate to this effect as given in Appx 'D' will be rendered.
- (k) **Quality of materials.** Vendor should read all the makes/Specifications carefully, in case of any sub std materials of fake item is recd all the SOs in the HQ 14 Corps Zone will be cancelled and the vendor will be black listed for twenty four month. **Accepting offr will share the list of rejected items to all units in AOR of 14 Corps**

36. Bidder's offer is liable to be rejected if he fails to upload any of the certificate as asked by the buyer.

37. **Restricted area condition.** All the work need to be restricted area hence vendor has to follow all security guidelines given by user unit and accepting officer time to time work. A copy of the same will be given to vendor prior to commencement of work. All documents & sketches pertaining to work will be returned on completion of work. Only Indian Nationals shall be employed for the work. Vendor is required to obtain necessary security passes from the Army formations for labours and technicians employed for the work.

38. **Electric & Water Supply.** Vendor may take electric/ water connection from nearest available electric/ water point after due permission from concerned authorities. Electric/ water supply shall be supplied through Meter. Vendor shall make necessary arrangement for fixing of electrical/ water meter at prevailing market rates. The Electric/ water bills shall be deposited by the vendor directly to concerned authorities. The vendor may provide suitable Generator at site for progress the work.

Vendor shall make his own arrangement for water supply at work location if vendor boring done at site for water arrangements that should be property of defence after completion of work.

49. **Tools, Plants and Operators.** All tools plants and machinery is part of tender. Vendor has to submit full details of tools and plants which he intends to use in work. Modern machinery also welcome which can reduce constr activity timing.

40. **Supervision.** Contractor has to detail technical staff for supervision of work and tech staff directly report to Accepting officer with daily feedback and any hindrance if occurred at site. Tech staff will be B tech holder with 3 years' experience and one diploma holder with 3-year experience always present at site during currency of work. Documents duly attested of tech staff credentials need to submit with Bid submission.

41. **Bidder will be banned for a period of twenty four months from further participation in RFP/TE in the AoR in the case of Bidder emerging as L1 Bidder and then, withdrawing/retracting from delivery of stores and execution of the wk after placing of SO.**

42. Work being unduly delayed or not completed by vendor, the bidder will be banned from tendering in Army Contracts for the period of twenty four months/ till the completion of work, on the discretion of the accepting officer needs to be added.

43. **Unlisted Vendor.** When unlisted vendors quotes for RFP and becomes L-1, the firm will apply for temp regd with 14 Corps Engrs Branch as per Appx H1 to H4 attached with RFP.

**CONFIDENTIALITY CERTIFICATE**  
**(TO BE SUBMITTED WITH TECHNICAL BID)**

It is certified that the Company or any representative of the Company or Agents authorized by the Company will not disclose any information gained by them or their representatives or Agents, while interacting with the persons of the **62 Engineer Regiment , C/o 56 APO** or any other office of the **Headquarters 14 Corps, c/o 56 APO** or any documents prepared in connection with the project or any documents received by them, or any study carried out by them, directly or indirectly to any person or Company or Institution or Press. Any violation therein may be considered as a violation of Indian Official Secret Act 1923 and GFR Para 175 (code of Integrity).

**Appendix 'B'**

(Refer RFP Para 2 (m) of Part-III)

**STORE DELIVERY ASSURANCE CERTIFICATE**  
**(TO BE SUBMITTED WITH TECHNICAL BID)**

I hereby confirm that complete store is available for **delivery within 90 days of delivery** period at FOR loc. No extension whatsoever will be requested w.r.t the delivery period.

**FALL CLAUSE ACCEPTANCE CERTIFICATE**  
**(TO BE SUBMITTED WITH TECHNICAL BID)**

We certify that there has been no reduction in sale price of the stores of description identical to the stores supplied to the Indian Army/ Government under the contract herein and such stores have not been offered/ sold by me/ us to Indian Army/ organization including the purchaser or any department of Central Government as the case may be up to the date or bill / the date of completion of supplies against all Supply Orders placed during the currency of the Rate Contract at price lower than the price charged to Indian Army/ Government.

**SOLVENCY CERTIFICATE**  
**(TO BE SUBMITTED WITH TECHNICAL BID)**

I hereby confirm that no other solvency certificate for any amount except bank letter No\_\_\_\_\_ has been rendered to any unit/establishment in FY 2025-26.

OR

\_\_\_\_\_ Bank solvency for amount of Rs.\_\_\_\_\_ has been given in  
\_\_\_\_\_ unit/establishment on dt\_\_\_\_\_.