DEENDAYAL PORT AUTHORITY

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No. EL/AC/2892 **Date: 24/10/2025**

Expression of Interest (EOI)

Sub: Design, supply, Installation, Testing & commissioning of 20 MW ±10% Hybrid Power Plant on LSTK basis & CAMC for the period 23 Year (after completion free guarantee period of 2 years)

Sir,

Expression of Interests (EOI) is invited to carry out the work "Design, supply, Installation, Testing & commissioning of 20 MW ±10% Hybrid Power Plant on LSTK basis & CAMC for the period 23 Year (after completion free guarantee period of 2 years)" The work is to be carried out as per the scope of work and in accordance with terms & conditions stipulated below.

The Expression of Interest (EOI) along with filled Schedule-B should reach this office of undersigned on or before 15/11/2023 at 15:00 hrs, which shall be opened on the same day. The soft copy may also have accepted of this email ID, xenedpa@gmail.com.

S/d

Executive Engineer (E)

Deendayal Port Authority

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Expression of Interest (EOI)

for

Design, supply, Installation, Testing & commissioning of 20 MW ±10% Hybrid Power Plant on LSTK basis & CAMC for the period 23 Year (after completion of defect liability two year period)

(Wind + Solar mix to be decided by Developer)

1. INTRODUCTION & BACKGROUND

Deendayal Port Authority (DPA) invites Expressions of Interest (EOI) from qualified, financially robust, and technically capable renewable energy developers for the development of a ~20 MW Hybrid Power Plant (wind + solar combination, within ±10% of total capacity). The exact wind/solar capacity mix shall be decided by the developer based on site resource assessments, provided that the plant as a whole meet or exceeds the Minimum Guaranteed Generation (MGG) defined in this document.

The developer will be responsible for design, financing, construction, testing, commissioning, transfer, and 25 years of Comprehensive Annual Maintenance Contract (CAMC).

Delivery point: Energy shall be delivered to the GETCO pooling station in Gujarat. The project must be connected to the state grid network of Gujarat and comply with all GETCO/GERC/CEA regulations.

Completion period: The project shall be completed and commissioned within 18 months from the date of issue of Work Order.

2. DETAILED SCOPE OF WORK (DEVELOPER RESPONSIBILITIES)

Scope of Work

1. The selected Developer shall be responsible for complete turnkey execution of a ~20 MW Hybrid Renewable Energy Park, with the exact proportion of wind and solar to be decided by the Developer (within ±10% total capacity tolerance). The scope covers all activities from identification and procurement/lease of suitable land, site survey, design, engineering, statutory approvals, procurement, construction, installation, testing, and commissioning, up to the successful handover of the fully operational project to DPA. HPD (Hybrid Power Developer) Strictly adhere on the CERC & MNRE Guideline.
2. Regulatory compliance: Navigating the complex process of obtaining all necessary permits and approvals from local, state, and federal agencies. This ensures compliance with environmental, land use, and grid regulations

3. After handover, the same Developer shall undertake the CAMC for a period of 25 years, ensuring continuous operation and achievement of at least the minimum MGG requirement defined in this EOI, or higher if committed by the bidder.

1. Pre-Implementation Stage

a) **Land Procurement & Site Survey**

- Identification of suitable land for the hybrid park with adequate wind and solar resource potential.
- Procurement or long-term lease of land, free from encumbrances, with clear title and necessary legal approvals for renewable energy project development.
- Detailed topographical, geotechnical, and hydrological surveys.
- Wind and solar resource assessments using certified equipment and validated datasets.
- Shadow, shading, and seasonal variation analysis.
- Seismic, climatic, and site accessibility evaluation.

b) **Feasibility Study & Design Inputs**

- Energy yield estimation for hybrid configuration.
- Preliminary and final layout designs for wind turbine placement, solar array orientation, internal roads, drainage, and electrical interconnections.
- Load flow and short circuit analysis for grid integration planning.
- The major equipment's like Turbine, blades, hubs, nessel, transformers etc. shall be designed for project operational period of 25 years.

c) **Statutory Approvals & Liaisoning**

- Environmental clearance, pollution control consent, CEI approval, aviation clearance (for wind turbines if applicable).
- Grid connectivity approval from the relevant Transmission Utility/DISCOM.
- Acquisition of all land-use permissions from local authorities.

2. Detailed Engineering & Procurement

a) **Engineering Deliverables**

- Civil, structural, Mechanical and electrical designs with all necessary calculations.
- Hybrid control system architecture and SCADA design.
- Preparation of manufacturing quality plans and inspection protocols.

b) **Equipment Procurement**

- Supply of wind turbines, solar PV modules, inverters, transformers, switchgear, cables, SCADA systems, metering equipment, and weather monitoring systems.
- All equipment to meet relevant IEC/BIS certifications and warranty requirements.

3. Construction & Erection

a) **Civil Works**

- Land development, grading, and levelling.
- Foundations for wind turbines and solar module structures.
- Internal roads, drainage systems, fencing, demarcation of land and security systems.
- Control room and auxiliary buildings.

b) **Electrical Works**

- PV modules, inverters, transformers, and switchgear.
- Cable laying with proper earthing and lightning protection.
- Construction of pooling substation (if required).
- Transmission line construction up to the designated grid interconnection point.

c) **Mechanical Works**

wind turbines, including their towers, blades, and integration, Balance of system like installation of turbine, structurer stability etc

4. The PV Cell type, make of SPV Cell, make of SPV Module & make of PCU/Inverter shall be BIS approved. The contractor shall submit valid BIS Certificates for the same.
5. HPD shall provide design report of STAAD PRO for Mounting Structure of Modules for compliance of the Structural Stability which shall be duly verified by PMC of DPA.
6. HPD shall submit type test reports for PV Module, PCU/Inverter.

List of make for Solar Panel:

LONGI/TRINA/GOLDI/VIKRAM/REWNYSIS/RAYZON/WAAREE or As per MNRE approved Make list

List of make for Solar Inverter:

LUMINOUS/MICROTEK/EVVO/LENTO/DELTA/ABB/HITACHI/HUAWEI/SUNGROW or AS per MNRE approved Make list.

The Solar Inverters shall have warranty of minimum 5 Years and individual Solar Panel warranty shall be minimum 25 Years from the date of commissioning.

4. Testing & Commissioning

- Pre-commissioning checks for all electrical and mechanical systems.
- Performance verification of wind turbines and solar arrays.
- Hybrid system synchronization with grid as per SLDC/ULDC requirements.
- Joint inspection with DPA representatives and issuance of commissioning certificate from GEDA.

5. Handover to DPA

- Submission of all as-built drawings, O&M manuals, warranties, and test certificates.
- Training of DPA personnel in basic operational oversight.
- Transfer of all software licenses, SCADA access, and data ownership to DPA.
- Formal acceptance of the project by DPA upon successful commissioning.

3. OPERATION & MAINTENANCE (CAMC) – 25 YEARS

Scope: The selected Developer shall provide CAMC services for the entire ~20 MW Hybrid Renewable Energy Park for a period of 25 years from commissioning. This includes round-the-clock operation, monitoring, preventive and corrective maintenance of all project components, supply and replacement of defective/end-of-life parts, ensuring safe and reliable operation, and maintaining generation not less than the committed MGG.

- CAMC Period: Comprehensive Annual Maintenance Contract (CAMC) of 25 years in scope of the developer, out of which the first 2 years will be a free O&M period.
- Minimum Guaranteed Generation (MGG):
    - The bidder shall guarantee levelized annual generation for 25 years is not less than 50% CUF, which is equivalent to 87.6 million units (MU) per year for an installed capacity of 20 MW. A variation of ±10% in the installed capacity shall be permissible (i.e., the installed capacity may range between 18 MW and 22 MW).
    - In any particular year annual generation should not be below 30% of the plant.
    - In such cases, the minimum guaranteed generation in MU shall be calculated proportionally to the actual installed capacity as follows:
    - MGG (MU/year) = Installed Capacity (MW)×8760 hours/year × 50% CUF

    For Illustrative purpose:

    - **18 MW** installed: MGG = 78.84 MU/year
    - **20 MW** installed: MGG = 87.60 MU/year
    - **22 MW** installed: MGG = 96.36 MU/year

The proportional MGG so calculated shall be compulsory for the bidder to achieve.

  - Bidders may commit to a higher CUF/MGG based on their proposed design and technology.
  - The committed MGG offered in the bid will be binding for the entire CAMC period and will be used for evaluation and penalty calculations.

- Liquidated Damages (LD): For shortfall in annual generation below the committed MGG (except Force Majeure, documented SLDC curtailment, GETCO/DISCOM attributable outages), penalty will be 1.25 × prevailing IEX GDAM weighted average price for Gujarat delivery point. If GDAM data unavailable, a pre-agreed fixed INR/MWh will apply.
- Insurance: During the Operations & Maintenance (O&M) period, all types of insurance policies related to the project—including to equipment insurance, third-party liability insurance, workmen compensation, and any other applicable risk coverage—solely be arranged, maintained, and renewed by the Developer.
- Statutory Charges: All statutory charges, fees, levies, duties, or other government-mandated payments arising in connection with the execution, operation, and maintenance of the project (including electricity duty, inspection fees, and applicable clearances) shall initially be paid by the Developer.
- Land Lease: The Developer shall be solely responsible for arranging, leasing, and maintaining possession of the land required for the project, including any associated registration fees, lease rentals, and legal compliance. All costs, risks, and liabilities associated with securing and retaining land use rights for the entire duration of the project shall be fully borne by the Developer. Land should be free from the ROW issues.
- During the CAMC period HPD is sole responsible for necessary statuary compliance of CERC/GERC on behalf of DPA.
- All Generation & Transmission Data & other mandatory details share in Real Time mode to DPA.

4. MINIMUM GUARANTEED GENERATION (MGG):

A. Minimum Requirement

- The MGG must not be less than **50% CUF**, equivalent to **87.6 MU/year** for 20 MW capacity.
- Bidders are encouraged to offer a higher MGG, backed by site-specific wind and solar resource assessment data.
- The **offered MGG** will be binding for the 25-year CAMC period.

B. PENALTIES FOR SHORTFALL (OPERATIONAL YEARS)

- For any operational year from Year 3 onwards where Actual Generation (AG) is less than the declared MGG, the shortfall in energy (MGG – AG) in MUs will be penalized at a rate

equivalent to the 1.25 times of prevailing IEX GDAM (Green Day Ahead Market) weighted average price for Gujarat delivery point during that operational year.

- If IEX GDAM price data is not available for any period, a pre-agreed fixed INR/MWh rate (to be finalized in the RFP stage) will apply.

- No penalty for shortfall due to **Force Major**, grid outages attributable to GETCO/DISCOM, or curtailment forced by SLDC with prior written instruction.

5. EVALUATION METHODOLOGY:

 Step 1: Verify that the bidder's offered MGG ≥ 87.6 MU/year (50% CUF).

 Step 2: Levelized Cost of Generation (LCOG) will be calculated as:

$$LCOG = \frac{(\text{Total Part A} + \text{Total Part B})}{\text{Offered MGG in Mus for 25 years)}}$$

 Step 3: Bids will be ranked in ascending order of LCOG.

 The offered MGG will be locked into the contract and used for performance monitoring and penalty calculations.

6. DETAILED BOQ:

Sr. No.	Item Description	Unit	Qty	Unit Rate	Amount
1	2	3	4	5	6
Part A: Capital cost for Design, Engineering, Supply, Installation, Testing and Commissioning of 20 MW Hybrid Renewable Energy Park					
1	Design, Engineering, Supply, Installation, Testing, and Commissioning of 20 MW Hybrid Renewable Energy Park (wind + solar mix as per bidder design)	Lump sum Trunkey (LSTK)	1 Lot		
Total (Part A)				Rs._____	
Part B: CAMC cost of 20 MW Hybrid Renewable Energy Park					
1	O&M Cost (3rd to 25th Year), incl. land lease, escalation, excl. insurances/statutory charges Statutory charges)	Year	23		
Total (Part B)				Rs._____	
Total (Part-A + Part-B) amount in Figure (Rs.) (Excl.) GST_____					
Part C: Levelized Cost of Generation (LCOG)					
1	Cumulative offered Guaranteed Generation over 25 Years	KWh			
Levelized Cost of Generation (LCOG) in Rs. /kWh (Part A + Part B/ Part C): **Rs./KWH**					

7. Payment Schedule,

All payments shall be made in Indian rupees unless specifically mentioned.

(Part A)

(1) 10% payment on completion of formalities with the concern authorities (Land lease, Environmental clearance, pollution control consent, micro setting, CEI approval, aviation clearance etc.) as per latest scheme for Hybrid Solar Plant & after acceptance of the same of DPA & PMC.

(2) 40% payment (subject to deductions as per tender conditions) will be released after receipt of material at site in good condition, after obtaining insurance cover as per tender condition (If PMC appointed then after inspection & certification of the same by PMC Agency) and after inspection & acceptance of material by DPA.

(3) 30% of item rate (subject to deductions as per tender conditions) after completion of erection, installation, testing and commissioning etc. (If PMC appointed then after inspection & certification of the same by PMC Agency) and after inspection & acceptance of material by DPA.

(4) 10% on completion of evacuation system, Installation, testing and commissioning VAR drawl compensation system, Installation testing and commissioning of appropriate evacuation system for inter connection with the State grid.

(5) 10% (subject to deductions as per tender conditions) will be released after successful completion of whole work and obtaining commissioning certificate from GEDA (If PMC appointed then after inspection & certification of the same by PMC) and handing over to DPA.

(Part B) <u>Comprehensive Annual Maintenance Contract Monthly running bill account payment.</u>

Monthly payment will be released on the submission of bill in the prescribed format along with invoice and **Documents to be submitted.**

1. Consultant (Appoint by DPA) certification for the billing period.
2. Generation certificate issued by SLDC.
3. Copy of insurance policy (if).
4. Duly filled applicable maintenance schedule, Monthly reports of Generation & Transmission.
5. Penalty & shortfall calculation (if).
6. Breakdown history.

TERMS AND CONDITIONS

(1) Time Schedule: The work shall be completed within 18 Months from the date of receipt of Work Order.

(2) Payment will be made by NEFT/RTGS only after satisfactory completion of work and submission of duly signed bill as per DPA format.

(3) The bidder shall quote the price exclusive of GST. The bidder shall quote prevailing GST rate separately, which shall be reimbursed by DPA after ascertaining necessary compliance as per Goods & amp; Service Tax, 2017. All other duties, taxes, cesses applicable if any, shall be borne by the contractor.

(4) Income-Tax deductions and surcharge as applicable thereon shall be made good while making payments due to the contractor for carrying out the work and only net amount shall be paid as directed by the Central Board of Direct Taxes, Ministry of Finance, Government of India.

(5) The rates should be quoted in figures and words both. In case of difference in figure & words, the rate mentioned in words will be considered.

(6) The contractor shall affix SEAL along with SIGNATURE in the Budgetary Offer.

(7) All tools, plants, scaffolding, ladder etc. and other machinery etc. required temporary for the purpose of execution of work will have to be arranged by the contractor at his own cost and storing of such tools, plants etc. will have to be made by him.

(8) All the materials should be got approved from Engineer-in-Charge before put into use.

(9) firm if any should be signed / initialed by the contractor. White ink correction will not be allowed and lead to rejection of tender.

(10) All the rules and regulations governing DPA will be applicable.

(11) After completion of the work, the site should be neatly cleaned by the contractor.

Sd/-

Contractor Signature & seal

Executive Engineer (E)
Deendayal Port Authority