

ABRIDGED INVITATION FOR BIDS

NTPC RENEWABLE ENERGY LIMITED
(A SUBSIDIARY OF NTPC LIMITED)

CONTRACTS SERVICES

INVITATION FOR BIDS (IFB)

FOR

**EPC PACKAGE FOR DEVELOPMENT OF 100 MWH VANADIUM REDOX FLOW
BESS AT KHAVDA SOLAR PARK BY NTPC REL**

(DOMESTIC COMPETITIVE BIDDING)

IFB No.: NREL-CS-5836-004(BESS)-9

Date: 18.11.2025

NTPC RENEWABLE ENERGY LIMITED (NTPC REL) invites online bids from eligible bidders on Single Stage Two Envelope (i.e. Envelope-I: Techno-Commercial Bid and Envelope-II: Price Bid) for “**EPC PACKAGE FOR DEVELOPMENT OF 100 MWH VANADIUM REDOX FLOW BESS AT KHAVDA SOLAR PARK BY NTPC REL**”

For the detailed IFB and bidding documents please visit at <https://www.bharat-electronictender.com> or www.ntpctender.com or www.ntpc.co.in from 05.12.2025 or may contact DGM (CS) / AGM (CS), NTPC Renewable Energy Limited, 4th Floor, NETRA Building E-3, Ecotech-II, Udyog Vihar, Greater Noida, Distt. Gautam Budh Nagar, (UP), INDIA, Pin-201306 on Mob No. +91-9424140768/ Tel No. +91-120-2356601 or at e-mail: omprakash08@ntpc.co.in / abhishekkumar02@ntpc.co.in

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Corporate Identification Number (NGEL): **U40107DL2020GOI371032**,
Website: www.ntpcrel.co.in

Brief Scope of Work for EPC package for Development of 100 MWh Vanadium Redox flow BESS at Khavda Solar Park by NTPC REL

Design, Engineering, Supply, Packing and Forwarding, Transportation, Unloading, Storage, Installation and Commissioning of grid connected 16.7 MW/100 MWh of **Vanadium Redox flow-based** Battery Energy Storage System (**BESS**) on turnkey basis. Further the bidder has to obtain site-specific data from the owner in preparation for developing installation and implementation plans.

Detailed provisions in regard of scope of work and technical features/specification of equipment/ systems/ services, contained in the Bidding Document shall be final and binding

1.0 SCOPE OF WORK:

Successful Bidder shall be responsible for providing all equipment, components, and services necessary to install a fully functional BESS.

- 1.01 Design, Engineering, Supply, Packaging and Forwarding, Transportation, Unloading, Storage, Construction, Erection, Testing, Commissioning of grid connected **16.7 MW /100 MWh of Vanadium Redox flow-based** Battery Energy Storage System (**BESS**) on turnkey basis. BESS capacity to be considered is the rated AC discharge capacity at Point of injection/Metering. BESS should be integrated at 33 kV pooling substation of solar plant.
- 1.02 Details regarding guaranteed BESS annual degradation, Round Trip Efficiency (RTE), including aux consumption etc. to be maintained by bidder shall be mentioned in detailed specifications.
- 1.03 Bidder has to bid for entire project capacity.
- 1.04 Designed life of BESS system including that of battery shall be of 25 years from the date of successful completion of commissioning.
- 1.05 Comprehensive Operation and Maintenance (O&M) work of BESS system for 10 years from the date of successful commissioning shall be in scope of Bidder.
- 1.06 Grid compliance study, Reactive power compensation and power quality compliance for entire BESS system up to 400 KV grid interconnection point at NTPC REL projects switchyard shall be in scope of bidder.
- 1.07 Project shall comprises of **Vanadium Redox flow-based** Battery System including Battery Management System (BMS), Energy Management System (EMS) and SCADA, Power Conversion System (PCS), Protection system, Communication System, HT & LT System, Auxiliary power system, Monitoring & Control system, Fire Fighting, remote control and monitoring, HT Transformers, integration of BESS with existing Power evacuation and Control system of Solar plant any other associated materials and services necessary for trouble free operation and maintenance of the BESS.
- 1.08 Considering the atmospheric condition of the site, such as corrosiveness, ambient temperature etc., the system should be designed by bidder in such a way that it delivers guaranteed parameters for the entire project period.
- 1.09 BMS and EMS of the BESS should comply with the latest IS or/and IEC or/and IEEE standards.

- 1.10 BESS should be in line with latest guidelines of CEA, CERC and LDC and should be capable of carrying out the required functions as mentioned in the technical specification.
- 1.11 Minor Site-grading, clearing of vegetation, if required.
- 1.12 Providing power supply and water supply for construction purposes.
- 1.13 All associated electrical and civil works required for interfacing with grid (i.e. transformer(s), switchgear, protection system, cables, etc).
- 1.14 Metering philosophy should be as per site requirement and metering system will be in the scope of bidder.
- 1.15 Provide documentation for design and expected performance through design calculations, software, design drawings, equipment drawings, and modifications to the existing drawings.
- 1.16 Develop detailed start up and site acceptance plan.
- 1.17 Provide training for the operators, engineers, technicians and maintenance personnel.
- 1.18 Supply any special equipment and tools required for the operation and maintenance of the project.
- 1.19 Provide a warranty for the battery energy storage system (BESS) and its constituents' equipment as per technical specification.
- 1.20 All other details will be provided in the IFB.