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1. PREAMBLE

With the huge spurt in decentralized and distributed electricity generation in India, there is an immense necessity to look for cost-effective, long-life, reliable energy storage solutions which will in-turn outrace diesel based energy backup solutions.

With Govt of India coming out with ambitious plans of adding 175GW of power generation based on Renewable Energy, Energy Storage Systems are gaining importance to address intermittency issues associated with RE sources. They are also a medium for implementing Grid Stabilization, demand side management of load, time shifting of load etc. It is envisaged that there has to be storage component equivalent to 10% of the PV plant capacity.

As of now, only Li-Ion based Energy Storage systems have the long heritage and proven field record world-wide. As per the reports, Li-Ion has the largest market share of 64% of total Battery Based energy storage systems and with favorable reducing price trend, Li-Ion shall continue to be leading technology for Energy Storage Systems in the future too.

BHEL-EDN is looking for business association with reputed firms who have the capability and experience in Design, engineering, supply, installation and commissioning Li-Ion battery based energy storage systems including the power conversion system at MW level and integration of Energy Storage System with SPV plants.

In addition, interested vendors may also indicate their willingness to participate in joint bidding process together with BHEL in anticipated tenders on a case to case basis

2. QUALIFICATION CRITERIA

2.1 TECHNICAL CRITERIA

The vendor shall fulfill both 2.1.1 and 2.1.2

2.1.1


A. The vendor should be a manufacturer/supplier of Li-Ion based Energy Storage System including Li-Ion battery packs, storage containers and Battery Management System (BMS), having business association with an Energy Storage System Integrator

OR

B. The vendor should be a Energy Storage System Integrator who has designed/supplied Power Conditioning System (PCS), required hardware and software for integration into Solar PV plant, having business association with a Li-Ion based battery manufacturer/supplier

OR

C. The vendor should be an EPC(Engineering, Procurement and Construction) agency or Energy Service Company (ESCO), who have designed, supplied, installed and commissioned grid tied Li-Ion based Energy Storage System for integration into Solar PV Power plant.

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2.1.2

The vendor interested in business association with BHEL should have experience in the Energy Storage System (ESS) of minimum cumulative energy capacity of 3MWHr.

and

at least one energy storage system with minimum energy capacity of 1.5MWHr which should have been in successful operation for a period of 1 year as on the date of this EOI opening date.

Note: Vendor shall provide documentary proof for meeting the qualification criteria in the form of purchase order references / customer certificates.

2.2 FINANCIAL CRITERIA

The average annual turnover of the vendor should not be less than INR 5 Crore (Indian Rupees Five Crore Only) during the preceding three (3) completed financial years as on date of EOI publication.


3. EOI REQUIREMENTS/CONDITIONS

3.1 The energy storage system offered shall be able to address the following:


Sl No	Description	Vendors Response
1	Solar/Wind energy Time Shift	
2	Firming up/ Stabilization of Solar/Wind energy capacity /fluctuations	
3	Spinning Reserve capacity / Transmission support	
4	Power Quality	
5	Demand side management	
6	Synchronization with local grid including Diesel Generator based grid	

3.2 The vendor shall furnish following details:

Sl No	Description	Vendors Response
1	Technology employed for Energy Storage System:	

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	a) Electro-chemistry b) Details of individual Li-ion cell	
2	The Cycle and Calendar life of the Battery system including number of charge and discharge cycles at defined Depth of Discharge (DOD)	
3	Safety features incorporated at battery level, pack level and system level (include details of system overloading capacity)	
4	Robustness / Stability of the system in terms of changes in internal / external factors	
5	Foot-print	
6	Maintenance details	
7	Self-discharge of the system (on monthly or daily basis)	
8	The Auxiliary power consumption of the system (In Watts)	
9	Compliance to relevant international / national standards (details to be furnished)	
10	Seamless integration of Battery Management System with the plant level SCADA supplied by BHEL	
11	Scalability of the technology	
12	Details of the container (The container and its ventilation system shall be designed in such a way that it can withstand extreme humid and temperature conditions and also marine environment)	
13	Conformance to all relevant health, safety and environmental norms	
14	Methods / procedures / applicable statutory norms or standards for the disposal of the battery at the end of its' life cycle	
15	Guarantees and Warrantees provided	
16	Willingness to enter into an exclusive agreement with BHEL on project-to-project basis	
17	Willingness to share the liability in the form of back-up BG corresponding scope of work	

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3.3

1. The vendor must furnish details about their company particulars regarding the operation, facilities, manpower, number of projects executed since inception and other experiences with necessary credentials in support of their claim by furnishing completion certificates from the customer certifying the Scope of works and the time lines for various activities including the work order released by the customer for the systems installed.
2. Vendor shall submit audited financial statements of the preceding three years in support of the Financial QR Criteria
3. Interested parties who are manufacturers of Li-Ion batteries themselves may indicate their willingness, if any, to enter into agreement for the following:-
 - a) To supply components in Completely Knocked Down (CKD) conditions
 - b) To supply components in Semi Knocked Down (SKD) conditions
4. BHEL will be executing the projects based on customer specifications, tender terms and conditions. The same will be applicable to the vendor.
5. Vendor shall maintain the ESS throughout the warranty period and shall ensure the O&M spares are made available for the life cycle of the battery based energy storage system.
6. Vendor shall also ensure proper disposal/recycling as per the International Standards applicable at the end of life of the batteries.
7. The vendors may indicate their preparedness to participate in the tendering process thru e-procurement mode.
8. Vendor to furnish the following details.
 - a) Company profile & organizational information
 - b) Ownership information
 - c) Registration particulars
 - d) Manpower
 - e) Other particulars.
 - f) Bank details of the Company
 - g) Quality Systems
 - h) Financial Information for the previous 3 years.
 - i) Work Experience in the Energy Storage System (ESS) in last 3 years as on the date of opening of EOI.

The Vendor shall compile all details as per above requirements and send to BHEL in Hard copy mentioning EOI reference number. The response to this EOI to be addressed to Vipindas C P, Sr. Engineer, SC&PV, NEB 5th floor, BHEL-Electronics Division, Mysore Road, Bangalore-560026.

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EMAIL: vipindas@bheledn.co.in phone: 09686938636. The last date for receipt of applications in sealed cover is 30-Jan-2017, 15:30Hrs.

4. EVALUATION

1. BHEL will be evaluating the Vendor on all the parameters above and shortlist based on a ranking methodology. BHEL shall intimate the shortlisted vendors inviting them for further discussions, presentations. BHEL decision on this will be final. BHEL at their discretion shall inspect the vendor works/premises/installation sites for evaluation.
2. Further procurement and tendering process shall be as per BHEL policy and guidelines.
3. BHEL reserves the rights to disqualify a vendor at any stage in case of adverse performance report.
4. This expression of Interest is not an agreement and is not an offer or invitation to enter into an agreement of any kind with any party by BHEL.