

**CORRIGENDUM-1**

**Tender No. CDI8246P25**

This **Corrigendum No. 1 dated 28.01.2025** to **Tender No. CDI8246P25** for “*Design, Engineering, Supply, Construction, Erection, Testing & Commissioning and Comprehensive O&M of Cumulative Microgrid Solution including Ground/Roof Mounted Solar PV Power Plant at 3 nos. of separate Production Installations of Oil India Limited, under Tinsukia District, Assam.*” is issued to amend the following:

(i) Incorporation/amendment of the following Clauses in PQC/BEC-BRC & SCC of the subject tender:

<b>Sl Nos.</b>	<b>Clause Reference</b>	<b>As per NIT(Existing)</b>	<b>Amended Clause</b>
<b>1.</b>	BEC Clause No.  1.2.1	Bidder must have experience of successfully completing at least one SIMILAR work over last 07 (seven) years reckoned from the original bid closing date with PSUs / Central Government / State Government Organization / Nationalised Banks / Public Limited Company in India as under:  One similar completed work costing not less than the amount equal to Rs. 6,77,64,200.00.  OR  Two similar completed works each costing not less than the amount equal to Rs. 4,23,52,600.00.	<b>1.2.1</b> Bidder must have experience of successfully completing at least one <b>SIMILAR work</b> over last 07 (seven) years reckoned from the original bid closing date with PSUs / Central Government / State Government Organization / Nationalised Banks/Public Limited Company in India as under:  One similar completed work costing not less than the amount equal to <b>Rs. 6,77,64,200.00.</b>  <b><u>OR</u></b>  Two similar completed works each costing not less than the amount equal to <b>Rs. 4,23,52,600.00.</b>  <b><u>OR</u></b>

		<p style="text-align: center;">OR</p> <p>Three similar completed works each costing not less than the amount equal to Rs. 3,38,82,100.00.</p> <p>Bidders submitting their bid based on the experience of their Technical Collaborator/Joint Venture/Parent/ Subsidiary/Co subsidiary/Sister Subsidiary/ MOU with another party shall not be considered. Bids from 'Consortium of Companies', Joint Venture shall also not be considered.</p>	<p>Three similar completed works each costing not less than the amount equal to <b>Rs. 3,38,82,100.00</b>.</p> <p><del>Bidders submitting their bid based on the experience of their Technical Collaborator/Joint Venture/Parent/ Subsidiary/Co subsidiary/Sister Subsidiary/ MOU with another party shall not be considered. Bids from 'Consortium of Companies', Joint Venture shall also not be considered.</del></p>
2.	Notes to BEC Clause No. 1.2.1:	<p>"SIMILAR work" mentioned above means – "Experience in successfully completing supply, installation, testing and commissioning of Microgrid System comprising of Li-ion Battery based Energy Storage System (of minimum rating 500 kW-Hr) along with energy management system and Solar PV Plant of minimum rating 100kW."</p>	<p><b>A. "SIMILAR work"</b> mentioned above means – <b>Experience in successfully completing supply, installation, testing and commissioning of the following:</b></p> <p><b>(I) Microgrid System:</b> Comprising of Li-ion Battery based Energy Storage System (of minimum rating 200 kW-Hr) along with Energy Management System.</p> <p style="text-align: center;">AND</p> <p><b>(II) Solar PV Plant:</b> of minimum rating 100kW.</p> <p><b>B.</b> Bidders who have experience of (I) 'Microgrid System' but does not have experience of (II) 'Solar PV Plant' can also be considered, provided the bidder has a tie up / agreement/MoU with another firm which have the requisite experience of (II) 'Solar PV Plant'. In</p>

			<p>this regard, the bidder must furnish relevant document(s) to substantiate the same.</p> <p>Also, in such a case, the bidder on their own must meet the value of experience criteria for (I) Microgrid System as per clause 1.2.1 and must furnish documents as mentioned in Para D (under Notes to BEC Clause No. 1.2.1).</p> <p><b>C.</b> Bidder must be the Original Equipment Manufacturer (OEM) of the offered 'Microgrid System'. In this regard, the bidder must furnish relevant document(s) to substantiate the same</p> <p style="text-align: center;">OR</p> <p>If the bidder is not the Original Equipment Manufacturer (OEM) of the offered '<i>Microgrid System</i>', the bidder must submit a certificate from the OEM.</p> <p>This certificate must be addressed from the OEM to Oil India Limited and should explicitly assure the following:</p> <p>(i) OEM's commitment to provide all necessary technical, operational and maintenance support as required by OIL during the entire lifecycle of the supplied Microgrid System.</p> <p>(ii) OEM's readiness to assist in troubleshooting, spare parts supply, upgrades and any other services essential for the smooth functioning of the Microgrid System.</p>
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			<p>(iii) OEM's acknowledgment that their support will be available irrespective of the bidder's involvement during the system's lifecycle.</p> <p><b>Failure to furnish this certificate with the bid may result in disqualification of the bidder.</b></p>
3.	<p>SCC B. (11) Page 76 of 127</p>	<p>11) BESS Certifications –</p> <p>a. LFP (Cell + Module + Rack level) – IEC62619, UL1973, UL1642, UL9540A, UN 38.3, Module – UL – 1973, UL 9540A</p> <p>b. NMC (Cell + Module + Rack level) – UL 1973, IEC 62619, UN 38.3, UL 9540A</p>	<p>11) BESS Certifications –</p> <p>LFP (Cell + Module + Rack level) – IEC62619, UL1973, UL1642, UL9540A, UN 38.3, Module – UL – 1973, UL 9540A</p>
4.	<p>SCC (Table-7)</p>	<p><b>Table-7</b> Battery type: Lithium-ion Battery</p>	<p><b>Table-7</b> Battery type: Lithium-ion Battery, LFP</p>
5.	<p>SCC A. Scope of Work Page 75 of 127</p>	<p><b>Contract Duration:</b> Project duration is 06 months and 15 days from date of issue of LOA and 4 years of AMC.</p> <p>Maintenance Contract will start after a period of 3 months from the successful commissioning of the Microgrid System (Solar Plant + BESS + EMS).</p>	<p><b>Contract Duration:</b> The duration of the Contract is <b>Nine [09 (=06+03)] months and Fifteen (15) days and Four (04) years (of AMC)</b> from the date of issue of LOA.</p> <p>The detailed break-up along with the sequence of the same is as under:</p>

			<p>(i) Mobilization Period: 15 days from date of issue of LOA</p> <p>(ii) For Supply Installation and Commissioning: 06 months after completion of mobilization.</p> <p>(iii) Periodic Maintenance Contract: 04 years, to be started after a period of 3 months from the successful commissioning of the Microgrid System (Solar Plant + BESS + EMS).</p>
6.	SCC-SOQ Page 78 of 127	<p><b>Sub. Line-Item No. 50 (under item no. 10)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 5 years.</p> <p>Qty. 20 AU</p>	<p><b>Sub. Line-Item No. 50 (under item no. 10)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.</p> <p>Qty. 16 AU</p>
7.	SCC-SOQ Page 79 of 127	<p><b>Sub. Line-Item No. 50 (under item no. 20)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 5 years.</p>	<p><b>Sub. Line-Item No. 50 (under item no. 20)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.</p> <p>Qty. 16 AU</p>

		Qty. 20 AU	
8.	SCC-SOQ Page 80 of 127	<p><b>Sub. Line-Item No. 50 (under item no. 30)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 5 years.</p> <p>Qty. 20 AU</p>	<p><b>Sub. Line-Item No. 50 (under item no. 20)</b></p> <p>Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.</p> <p>Qty. 16 AU</p>

(ii) Modified BEC-BRC/PQC & revised SCC is enclosed herewith as **ENCLOSURE-I** and **ENCLOSURE-II** respectively.

(iii) Extension of bid closing & opening dates & time:

- a) Extended Bid Closing Date & Time: 11.02.2025 [1100 Hrs (IST)]
- b) Extended Bid Opening Date & Time: 11.02.2025 [1400 Hrs (IST)]

(iv) All other terms and conditions of the Bid Document remain unchanged. Details can be viewed at [www.oil-india.com](http://www.oil-india.com).

  
**SR. OFFICER - CONTRACTS (S)**

**PRE-QUALIFICATION CRITERIA (PQC)**

**BID EVALUATION CRITERIA (BEC) – BID REJECTION CRITERIA (BRC)**

**1.0 BID EVALUATION CRITERIA (BEC):**

The bid shall conform to the specifications and terms and conditions given in the Bidding Documents. Bids will be rejected in case material and services offered do not conform to the required parameters stipulated in the technical specifications. Notwithstanding the general conformity of the bid to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and will not be considered for evaluation. All the documents related to BEC shall be submitted along with the Technical Bid.

**1.1 Eligibility Criteria:**

**The bidder must be incorporated in India and must maintain more than 20% local content (LC) for the offered services to be eligible to bid against this tender.**

Regarding calculation of local content and submission of documents during bidding & execution of contracts, provision of Purchase preference policy linked with Local Content (PP-LC) notified vide Letter No. FP-20013/2/2017-FP-PNG dated 17.11.2020 by-MoPNG (including subsequent amendments thereof, if any) shall be applicable.

If such local content is not maintained during execution of contract, OIL reserves the right to invoke the Performance Securities submitted by the bidding and supporting companies, in addition to resorting to other options as may be deemed appropriate.

Whether or not the bidders want to avail PP-LC benefit against this tender, it is mandatory for them to meet the following at the bidding stage:

- (a) Without specifying the unit rates and bid amount in the technical bid, the bidder must provide the percentage (%) of local content in their bid, without which the bid shall be summarily rejected being non-compliant.
- (b) The Bidder shall submit an undertaking from the authorised signatory of bidder having the Power of Attorney alongwith the bid, specifying the LC Percentage and such undertaking shall become a part of the contract, if awarded. [Format enclosed as Proforma-XVI].
- (c) Bidder to submit a copy of their Certificate of Incorporation/registration in India.

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### **1.2 Technical Criteria:**

**1.2.1** Bidder must have experience of successfully completing at least one **SIMILAR work** over last 07 (seven) years reckoned from the original bid closing date with PSUs / Central Government / State Government Organization / Nationalised Banks/Public Limited Company in India as under:

One similar completed work costing not less than the amount equal to **Rs. 6,77,64,200.00.**

**OR**

Two similar completed works each costing not less than the amount equal to **Rs. 4,23,52,600.00.**

**OR**

Three similar completed works each costing not less than the amount equal to **Rs. 3,38,82,100.00.**

#### **Notes to BEC Clause No. 1.2.1:**

**A. "SIMILAR work"** mentioned above means – **Experience in successfully completing supply, installation, testing and commissioning of the following:**

**(I) Microgrid System:** Comprising of Li-ion Battery based Energy Storage System (of minimum rating 200 kW-Hr) along with Energy Management System.

AND

**(II) Solar PV Plant:** of minimum rating 100kW.

**B.** Bidders who have experience of (I) '*Microgrid System*' but does not have experience of (II) '*Solar PV Plant*' can also be considered, provided the bidder has a tie up / agreement/MoU with another firm which have the requisite experience of (II) '*Solar PV Plant*'. In this regard, the bidder must furnish relevant document(s) to substantiate the same.

Also, in such a case, the bidder on their own must meet the value of experience criteria for (I) Microgrid System as per clause 1.2.1 and must furnish documents as mentioned in Para D (under Notes to BEC Clause No. 1.2.1).

**C.** Bidder must be the Original Equipment Manufacturer (OEM) of the offered '*Microgrid System*'. In this regard, the bidder must furnish relevant document(s) to substantiate the same

OR

If the bidder is not the Original Equipment Manufacturer (OEM) of the offered '*Microgrid System*', the bidder must submit a certificate from the OEM.

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This certificate must be addressed from the OEM to Oil India Limited and should explicitly assure the following:

(i) OEM's commitment to provide all necessary technical, operational and maintenance support as required by OIL during the entire lifecycle of the supplied Microgrid System.

(ii) OEM's readiness to assist in troubleshooting, spare parts supply, upgrades and any other services essential for the smooth functioning of the Microgrid System.

(iii) OEM's acknowledgment that their support will be available irrespective of the bidder's involvement during the system's lifecycle.

**Failure to furnish this certificate with the bid may result in disqualification of the bidder.**

**D.** For proof of requisite Experience (refer Clause No. 1.2.1), the following documents / photocopy (self-attested / attested) must be submitted along with the bid:

(i) Contract document / LoA / WO showing details of work,

**AND**

(ii) Job Completion Certificate showing:

(i) Gross value of job done

(ii) Nature of job done and Work order no. / Contract no.

(iii) Contract period and date of completion

**OR**

SES (Service Entry Sheet) / Certificate of Payment (COP) issued by the company indicating the following:

(i) Work order no. / Contract no.

(ii) Gross value of jobs done

(iii) Period of Service

(iv) Nature of Service

**E.** Only Letter of Intent (LOI) / Letter of Award (LOA) and/ or Work Order(s), Job Completion certificate are not acceptable as evidence of experience. Successful completion of the awarded contract(s) to the extent of value/volume, as stipulated respectively under Clause 1.2 will only be treated as acceptable experience.

**F.** In case requisite experience is against **OIL's contract**, bidder shall only be required to categorically specify OIL's Contract Number and date to consider the experience.

**G.** Following work experience will also be taken into consideration:

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- (a) If the prospective bidder is executing similar work which is still running and the contract value/quantity executed prior to original bid closing date is equal to or more than the minimum prescribed value in the BEC.
- (b) In case the start date of the requisite experience is beyond the prescribed 07 (seven) years reckoned from the original bid closing date but completion is within the prescribed 07 (seven) years reckoned from the original bid closing date.
- (c) If the prospective bidder has executed a contract in which similar work is a component of the contract.
- In case the document submitted as per **Para B, (i) & (ii)** above are not sufficient to establish the value/quantity/period of the similar work against **Para E (a), (b) & (c)** above the bidder shall also have to submit the breakup of the works executed under such contract(s) clearly indicating the value / quantity / period of SIMILAR work which should be certified by the end user or a certificate issued by a practicing Chartered / Cost Accountant Firm (with Membership Number, UDIN & Firm Registration Number).
- H.** Experience of executing similar work through 'sub-contracting' shall not be considered for evaluation.
- I.** SIMILAR work executed by a bidder for its own organization / subsidiary cannot be considered as experience for the purpose of meeting BEC.

### **1.2.2 THIRD PARTY INSPECTION:**

**1.2.2.1** Oil India Limited (OIL) has engaged the following 17 (Seventeen) Independent Inspection Agencies to verify and certify various documents required against BEC/BRC of the tender:

<b>Sl. No.</b>	<b>Name of Independent Inspection Agency</b>	<b>Contact E-Mail ID</b>
1.	M/s. Dr. Amin Controllers Private Limited	<a href="mailto:rkjain@rcaindia.net">rkjain@rcaindia.net</a> ; <a href="mailto:pradeep.mathur@rcaindia.net">pradeep.mathur@rcaindia.net</a> <a href="mailto:info@rcaindia.net">info@rcaindia.net</a>
2.	M/s. TUV India Private Limited	<a href="mailto:noida@tuv-nord.com">noida@tuv-nord.com</a> ; <a href="mailto:mumbai@tuv-nord.com">mumbai@tuv-nord.com</a> <a href="mailto:salim@tuv-nord.com">salim@tuv-nord.com</a>
3.	M/s. Conformity India International Private Limited	<a href="mailto:mktg@ciindia.in">mktg@ciindia.in</a>
4.	M/s. Ravi Energie Private Limited	<a href="mailto:baroda@ravienergie.com">baroda@ravienergie.com</a> <a href="mailto:tpia@ravienergie.com">tpia@ravienergie.com</a>
5.	M/s. SGS India Private Limited	<a href="mailto:dhaval.vora@sgs.com">dhaval.vora@sgs.com</a> <a href="mailto:sgs.india@sgs.com">sgs.india@sgs.com</a>
6.	M/s. Assure Quality Management Certification Services Private Limited	<a href="mailto:aqmcs@aqmcs.com">aqmcs@aqmcs.com</a>

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7.	M/s. IRCLASS Systems and Solutions Private Limited	<a href="mailto:industrial_services@irclass.org">industrial_services@irclass.org</a> <a href="mailto:Bhavesh.satam@irclass.org">Bhavesh.satam@irclass.org</a>
8.	M/s. TUV Rheinland (India) Pvt. Ltd.	<a href="mailto:Shailesh.deotale@ind.tuv.com">Shailesh.deotale@ind.tuv.com</a> <a href="mailto:Kaushal.gohil@ind.tuv.com">Kaushal.gohil@ind.tuv.com</a> <a href="mailto:info@ind.tuv.com">info@ind.tuv.com</a> ravi.kumar@ind.tuv.com
9.	M/s. Gulf Lloyd Industrial Services(I) Pvt. Ltd.	<a href="mailto:contact@gulflloyds.com">contact@gulflloyds.com</a> inspection@gulflloyds.com
10.	M/s. Baltic Testing India Pvt Ltd.	office@balticcontrolindia.com
11.	M/s. Sanmarg Engineering Validation & Assessment Pvt. Ltd.	Amrita@sanmargeva.com
12.	M/s. Meenar Global Consultants LLP	sales@mgcllp.in
13.	M/s. Rites Limited	<a href="mailto:nrinspn@rites.com">nrinspn@rites.com</a> <a href="mailto:info@rites.com">info@rites.com</a> sbu.ninsp@rites.com
14.	M/s. Bureau Veritas (India) Private Limited	bvindia.corporate@bureauveritas.com
15.	M/s. TUV SUD South Asia Private Limited	<a href="mailto:Hemant.chavan@tuvsud.com">Hemant.chavan@tuvsud.com</a> Jayashree.rane@tuvsud.com
16.	M/s. Adornment Engineers India Private Limited	jks@adornmentengineers.com
17.	M/s. TCRC Inspections Pvt. Ltd.	<a href="mailto:admin@tcr inspections.com">admin@tcr inspections.com</a> <a href="mailto:ashismallick@tcr group.com">ashismallick@tcr group.com</a> tenders@tcr group.com

**1.2.2.2** The Bidders have to get verified and certified the various documents required against BEC/BRC of the tender by any one of the above Independent Inspection Agencies and submit the duly certified Inspection Certificate as per **Proforma XIV** (attached herewith) by the Inspection Agencies along with the Technical Bid of the Tender. All Charges of the Third-Party Independent Inspection Agencies towards verification of bidder's documents and certification thereof shall be borne by the respective bidders and payments on account of above inspection, verification and certification shall be made directly by the Bidder to the Inspection Agency(s). OIL will not be responsible for any payment dispute between Bidders and Third-Party Inspection Agencies.

**1.2.2.3** As mentioned above, Bidder(s) have to submit the verified documents along with the Technical Bids. Bid submitted with un-verified supporting documents shall not be considered. **However, in case a bidder submits its bid alongwith all relevant supporting documents as per BEC/BRC without getting all/some of**

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**them verified by the designated Independent Inspection agency, such bid can be provisionally considered provided it is accompanied by an Undertaking by the Bidder on their official letterhead to submit the duly verified copies/verification certificate within 07 (Seven) days of bid opening.** Company will neither send any reminder nor seek any clarification in this regard from such bidders, and the bid will be rejected outright if the bidder fails to submit the verified copies/verification certificate within 07 (Seven) days of bid opening at its own risk and responsibility.

**1.2.2.4** The methodology of inspection/verification of documents is broadly as under but not limited to:

(a) It is obligatory on the part of the interested Bidders, who choose to participate against the tender, to understand the tender requirements in entirety and the requisite documents sought for in support of the Bid Evaluation Criteria/Bid Rejection Criteria (BEC/BRC) mentioned in the tender in particular. The Bidder must produce all the appropriate documents before any of the OIL's empaneled third-party certifying agencies for verification/certification. Neither OIL nor the third-party certifying agency shall be held accountable in any manner regarding the choice of documents by the bidder for verification. Therefore, getting the appropriate documents inspected/verified by the agency in support of BEC/BRC clauses is the sole responsibility of the Bidder.

(b) The prospective bidder shall contact any of the empaneled inspection agencies. The agency shall go through the Tender Document, especially the requirements of BEC/BRC and list the documents to be verified. They shall depute their qualified/competent inspector to the Bidder's premises to check the original documents and certify the copies which the bidder shall submit along with their bids. OIL will reserve the right to ask the inspection agencies to verify the documents with source, if required at no extra cost to OIL. Verification of documents by OIL's empaneled third party agency shall not automatically make the bidder eligible for award of contract.

(c) Verification of documents (but not limited to) are normally categorized as under:

➤ **General Requirement (as applicable):**

- Check Bidder's PAN Card
- Check Bidder's GST Certificate
- Check ITR of company
- Check Bidder's Certificate of Incorporation – Domestic Bidder.

➤ **Additional Documents : (If applicable against the tender)**

- Joint Ventures Agreements – To cross-check with JV Partners
- Consortium Agreements – To cross-check with Consortium Partners
- Holding/Parent/Subsidiary/Sister Subsidiary/Co-Subsidiary Company – To check the Share Holding pattern.

➤ **Technical Criteria**

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- To check Experience Proof- Completion Certificates, Reference contact verification, Original Work Order/Contract Copy and any other document(s), if called for vide BEC/BRC of the Tender.
- **Financial Criteria**
- Check and verify Audited Balance Sheet/CA certificate.
- To check the Line of Credit, if incorporated in the tender.

**Note: If any documents LOI/LOA/Contracts, etc. are submitted towards BEC/BRC experience criteria issued by Oil India Limited, such documents need not be verified by TPI agency. Further TPI Verification and certification is not required for financial documents having Unique Document Identification Number (UDIN). Self-Undertaking furnished by the bidder in support of their bid may not be TPI verified.**

### **1.3 Financial Criteria:**

- (i) Annual Financial Turnover of the bidder in any of preceding 03 (three) financial / accounting years, reckoned from the original bid closing date should be at least **Rs. 4,23,52,600.00 (Rupees Four Crore Twenty-Three Lakh Fifty-Two Thousand Six Hundred)** only.
- (ii) **Net worth** of bidder must be positive for preceding financial / accounting year.

#### **Note:**

- Annual Financial Turnover of the bidder from operations shall mean: "Aggregate value of the realisation of amount made from the sale, supply or distribution of goods or on account of services rendered, or both, by the company (bidder) during a financial year" as per the Companies Act, 2013 Section 2 (91).
- Net worth shall mean: "Share capital + Reserves created out of profits and securities Premium – Aggregate value of accumulated losses (excluding revaluation reserves) – deferred expenditure – Miscellaneous Expenditure to the extent not written off and carried forward Loss - Reserves created out of write back of depreciation and amalgamation"
- The Net worth to be considered against the clause above, should be read in conjunction with the definition of Net worth as mentioned in Section 2 (57) of The Companies Act, 2013.

#### **Notes to BEC Clause No. 1.3:**

**A.** For proof of Annual Turnover & Net worth any one of the following documents must be submitted along with the bid:

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(i) A certificate\* issued by a practicing Chartered / Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in **PROFORMA-XV**.

OR

(ii) Audited Balance Sheet along with Profit & Loss account.

\*Note:

- Mention of UDIN (Unique Document Identification Number) is mandatory for all Certificates issued w.e.f. February 1, 2019 by Chartered Accountant in Practice.

- In case the bidder is a Central Govt. organization / PSU / State Govt. organization / Semi-State Govt. Organization or any other Central / State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidences for the same.

**B.** Considering the time required for preparation of Financial Statements, if the last date of preceding financial/accounting year falls within the preceding six months / within the due date for furnishing of audit report as per Section 139(1) of IT Act, 1961 (read along with latest circulars/notifications issued by CBDT from time to time) reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial/accounting year will be considered. In such cases, the Net worth of the previous financial/accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an undertaking in support of the same along with their technical bid as per **PROFORMA-X**.

**C.** In case the bidder is a Government Department, they are exempted from submission of documents mentioned under para **A.** and **B.** above.

### **2.0 COMMERCIAL EVALUATION CRITERIA**

**2.1** Bids are to be submitted under Single-Stage Two-Bid System i.e., Un-priced Techno-Commercial Bid and Price Bid in their respective fields in e-tender portal. Only the Price Bid should contain the quoted price.

**2.2** The price quoted by the successful bidder must be firm during the performance of the contract and not subject to variation on any account except as mentioned in the bid document. Any bid submitted with adjustable price quotation other than the above will be treated as non-responsive and rejected.

**Note: The breakup of the quoted/offered price i.e., the duly filled Price Bid Format SHALL NOT be uploaded with the technical bid; otherwise, the bid shall be rejected straightway.**

**2.3** Bid Security in Original shall be furnished as a part of the Technical Bid and shall reach the office of CGM- Contracts, OIL at Duliajan on or before 12.45 Hrs (IST) on the bid closing date. A scanned copy of the bid security shall however be uploaded

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in OIL's E-Procurement portal along with the Technical Bid. The amount of Bid Security shall be ₹ **19,17,500.00** Bid without proper & valid Bid Security will be rejected.

2.4 Bid Documents / User Id & Password for OIL's E-Tender portal are not transferable.

2.5 Any bid received in the form of Physical document/ Telex/ Cable/ Fax/ E-mail will not be accepted.

2.6 Bids shall be typed or written in indelible ink. The bidder or his authorized representative shall sign the bid digitally, failing which the bid will be rejected.

2.7 Bids shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by bidder, in which case such corrections shall be initiated by the persons(s) signing (digitally) the bid. However, white fluid should not be used for making corrections. Any bid not meeting this requirement shall be rejected.

2.8 Any bid containing false statement will be rejected and action will be taken by Company as per Bid Document.

2.9 Bidder must accept and comply with the following provisions as given in the Tender Document in toto, failing which offer will be rejected:

- (i) Firm price
- (ii) Bid Security
- (iii) Period of validity of Bid
- (iv) Price Schedule
- (v) Performance Bank Guarantee / Security deposit
- (vi) Delivery / Completion Schedule
- (vii) Scope of work
- (viii) Guarantee of material / work
- (ix) Liquidated Damages clause
- (x) Tax liabilities
- (xi) Arbitration / Resolution of Dispute Clause
- (xii) Force Majeure
- (xiii) Applicable Laws
- (xiv) Specifications
- (xv) Integrity Pact

2.10 There should not be any indication of price in the Un-priced Techno-Commercial Bid. A bid will be straightway rejected if this is given in the Un-priced Techno-Commercial Bid.

2.11 Bid received with validity of offer less than **One Hundred and Twenty (120) Days** from Bid Closing Date will be rejected.

2.12 The Integrity Pact is applicable against this tender. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide **PROFORMA-XIII** of the tender document. This Integrity Pact proforma has been duly signed by OIL's competent signatory. The proforma must be returned by the bidder (along with the Un-priced Techno-Commercial Bid) duly signed (digitally) by the same signatory who

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signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact have been signed by the bidder's authorized signatory who sign the Bid.

### **3.0 PRICE EVALUATION CRITERIA**

3.1 Price bid shall be opened in respect of only the techno-commercially acceptable bidders whose bids have been found to be substantially responsive. A substantially responsive bid is one that meets the terms and conditions of the Tender and/or the acceptance of which bid will not result in indeterminate liability on OIL.

3.2 Bidders are required to quote for all the items in the BOQ/Price Bid/ Financial Document. In case the bidder does not quote against any of the line items, the total bid value shall be considered as inclusive of the cost of the service/item.

3.3 It is to be clearly understood that the assumptions made in respect of the quantities for various operations are only for the purpose of evaluation of the bid and the Contractor will be paid on the basis of the actual number of days/parameters.

3.4 The bidders are advised not to offer any discount/rebate separately and to offer their prices after considering discount/rebate, if any.

3.5 Conditional and unsolicited discount will not be considered in evaluation. However, if such bidder happens to be the lowest recommended bidder, unsolicited discount without any condition will be considered for computing the contract price.

**3.6 The inter-se-ranking of the techno-commercially qualified bidders will be determined on overall lowest cost basis (L-1 offer) i.e., considering the Total quoted price inclusive of all liabilities and GST.**

3.7 Based on the evaluation of techno-commercially qualified bidders, the job will be awarded to the L-1 bidder.

3.8 In case of identical overall lowest offered rate by more than 01 (one) bidder, the selection will be made by draw of lot between the parties offering the same overall lowest price.

3.9 OIL will prefer to deal with registered bidder under GST. Therefore, bidders are requested to get themselves registered under GST, if not registered yet. However, in case any unregistered bidder is submitting their bid, their prices will be loaded with applicable GST while evaluation of bid.

3.10 When a bidder mentions taxes as extra without specifying the rates & amount, the offer will be loaded with maximum value towards taxes received against the tender for comparison purposes. If the bidder emerges as lowest bidder after such loading, in the event of order on that bidder, taxes mentioned by OIL on the Purchase Order/Contracts will be binding on the bidder.

3.11 Input Tax Credit on GST (Goods & Service Tax) for this service is NOT available to OIL & the bids will be evaluated based on total price including GST.

3.12 For evaluation purpose, quoted unit rates against each Line Item of the price bidding format shall be considered only upto 02 (two) decimal places without rounding off for evaluation.

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### **4.0 GENERAL**

4.1 In case bidder takes exception to any clause of bidding document not covered under BEC/BRC, then the Company has the discretion to load or reject the offer on account of such exception if the bidder does not withdraw/modify the deviation when/as advised by company. The loading so done by the company will be final and binding on the bidders. No deviation will however be accepted in the clauses covered under BEC/BRC.

4.2 To ascertain the substantial responsiveness of the bid the Company reserves the right to ask the bidder for clarification in respect of clauses covered under BEC/BRC also and such clarifications fulfilling the BEC/BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be evaluated based on the submission. However, mere submission of such clarification shall not make the offer responsive, unless company is satisfied with the substantial responsiveness of the offer.

4.3 If any of the clauses in the BEC/BRC contradict with other clauses of bidding document elsewhere, the clauses in the BEC/BRC shall prevail.

4.4 Bidder(s) must note that requisite information(s)/financial values etc. as required in the BEC/BRC & Tender are clearly understandable from the supporting documents submitted by the Bidder(s); otherwise, Bids shall be rejected.

4.5 OIL will not be responsible for delay, loss, or non-receipt of applications for participating in the bid sent by mail and will not entertain any correspondence in this regard.

4.6 The originals of such documents [furnished by bidder(s)] shall have to be produced by bidder(s) to OIL as and when asked for.

### **5.0 PURCHASE PREFERENCE CLAUSE: MSEs Units (manufacturers / Service Providers: **(NOT APPLICABLE FOR THIS TENDER)**)**

### **6.0 PURCHASE PREFERENCE POLICY (PPP-MII): This service is not splittable**

i) Purchase preference under Public Procurement (Preference to Make in India) Order, 2017 of Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India and as amended time to time with modifications as notified vide MoPNG Order No. FP-20013/2/2017-FP-PNG-Part (4) (E-41432) dated 26<sup>th</sup> April 2022 (including subsequent amendments thereof, if any) shall be applicable for this Tender. Bidders to check the provisions of the Notifications for their eligibility to bid and seek benefits for Purchase preference, accordingly. The minimum local content and the margin of purchase preference are as per notifications from Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India from time to time.

**8.0 COMPLIANCE OF THE COMPETITION ACT, 2002:** The bidder shall strictly comply with the provisions of the Competition Act, 2002, more particularly, Section-3 of the Act. Any violation the provisions of the Act shall attract penal action under the Act.

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**9.0 CHECKLIST FOR BEC-BRC:** Enclosed as **TECHNICAL EVALUATION SHEET (PROFORMA-XX)** and **COMMERCIAL CHECK-LIST (PROFORMA-XII)**. To be submitted along with the technical bid.

**10.0** The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. A declaration as per **Exhibit-I** in this respect to be submitted by the bidder for participation in this tender.

\*\*\*\*\***END OF PQC**\*\*\*\*\*

**ENCLOSURE-II**

**PART-III**

**SPECIAL CONDITIONS OF CONTRACT (SCC)**

**SCOPE OF WORK (SoW)**

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

**A. Scope of work:**

**Design, Engineering, Supply, Construction, Erection, Testing & Commissioning and Comprehensive O&M of Cumulative Microgrid Solution including Ground/Roof Mounted Solar PV Power Plant at 3 nos. of separate Production Installations of Oil India Limited, under Tinsukia District, Assam.**

<b>Item</b>	Microgrid Solution inclusive of ground/roof mounted Solar PV Plant, Li-Ion battery energy storage system, Energy management System, and integration with the existing captive gensets.
<b>Quantity</b>	3 nos. of different ratings
<b>Ratings</b>	To be finalised after detailed engineering
<b>Site/Installation</b>	1) Mechaki EPS (Loc TX) of Oil India Limited, (Geographical Location N-27.729424914883698, E-95.61717582462978) 2) Loc-HNE(Makum) of Oil India Limited, (Geographical Location N-27.485892887061393, E-95.42091028925985) 3) Loc-HTZ-H Well plinth (Makum) of Oil India Limited, (Geographical Location N-27.470279736653033, E-95.43675391638361)
<b>Project Objectives</b>	1) To operate the above production installations of Oil India Limited completely (24x7) on renewable/solar energy. 2) To operate all the electrical loads (motors, pumps, Air Conditioners (AC), luminaires, etc.) in the respective installation from solar power/BESS on continuous basis. 3) To stop consumption of fossil fuels for the purpose of electrical power. 4) To integrate the existing natural gas / diesel engine driven gensets into the microgrid solution, which will serve as standby energy source. During extended periods of cloudy weather or rain (say continuously 3 days or more) and when the batteries experience deep discharge, these gensets to turn ON automatically to recharge the batteries (BESS). Gensets to turn OFF once the batteries reach a sufficient charge level.

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	<p>5) Energy management within the installation/setup.</p> <p>6) Better utilisation of the existing gensets in terms of capacity/rating when operated, ultimately leading to fuel efficiency.</p>
<b>Mobilization Period</b>	15 days from date of issue of LOA
<b>Mobilization Deliverables</b>	<p>Contractor or his/her authorised representative must visit Electrical Engineering Department of Oil India Limited (OIL) and complete the following:</p> <p>(a) Hold a kick off meeting at Electrical Engineering Department, OIL, Duliajan, Assam involving the concerned OIL official(s).</p> <p>(b) Completion of necessary formalities and signing of the contract document.</p> <p>(c) Obtain Labour Clearance as required for the execution.</p> <p>(d) Obtaining Work Order from Electrical Engg. Department of OIL.</p> <p>(e) Starting of initial works such as site visit, survey of land (installation site), site data collection etc. for the purpose of engineering, design and drawing development.</p> <p>(f) Preparation of 'Mobilisation Completion Document' jointly with OIL.</p>
<b>Contract Duration</b>	<p>The duration of the Contract is <b>Nine [09 (=06+03)] months and Fifteen (15) days and Four (04) years (of AMC)</b> from the date of issue of LOA.</p> <p>The detailed break-up along with the sequence of the same is as under:</p> <p>(i) Mobilization Period: 15 days from date of issue of LOA</p> <p>(ii) For Supply Installation and Commissioning: 06 months after completion of mobilization.</p> <p>(iii) Periodic Maintenance Contract: 04 years, to be started after a period of 3 months from the successful commissioning of the Microgrid System (Solar Plant + BESS + EMS).</p>

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### **B. Special Terms and Conditions & General Technical Specifications**

- 1) All the items in this tender/contract need to be executed by a single vendor, as a LSTK contractor.
- 2) The bidder shall possess:
  - a. Valid Electrical Contractor's License issued by any State Govt. Electrical Licensing Board.
  - b. At least one electrical supervisor on contractor's roll having valid electrical supervisor's license issued by any State Govt. Electrical Licensing Board.
- 3) Copies of a valid Electrical Contractor's License and the Electrical Supervisor's Certificate of Competency for the supervising personnel must be submitted along with the bid. Both the Electrical Contractor's License and the Electrical Supervisor's Certificate of Competency must remain valid throughout the contract period. However, for the purpose of bid evaluation, the license and certificate must be valid as of the bid closing date.
- 4) Size/rating mentioned in the above SOQ are indicative and minimum size/ratings, bidder/supplier is free to choose higher rated equipment if required after detailed engineering.
- 5) All the civil works as required (matching with site requirements) for the installation/erection of solar panels at site, shall be in the contractor's scope.
- 6) Contract Duration: Total 6 Months (2 months for site survey and design finalisation and approval from Indian Institute of Technology (IIT) or equivalent institute, 2 months for materials supply, 1 months for erection, 1 month for testing and commissioning)
- 7) Performance Guarantee Test Run (PGTR): 3 Months.
- 8) Overall Warrantee of the supplied BESS and Microgrid System: 5 years, from the date of successful commissioning.
- 9) Design Life for Solar PV Plates: 25 years or higher.
- 10) Design Life for BESS & EMS: 15 years or higher.
- 11) BESS Certifications –
  - a. LFP (Cell + Module + Rack level) – IEC62619, UL1973, UL1642, UL9540A, UN 38.3, Module – UL – 1973, UL 9540A
  - b. ~~NMC (Cell + Module + Rack level) – UL 1973, IEC 62619, UN 38.3, UL 9540A~~
- 12) Battery SOH @End of 15 year > 70% @1 Cycle/Day
- 13) Battery Cycles Life > 8000 @ 25°C, 0.5C, 70% SOH
- 14) BESS shall include battery management system (BMS) with battery monitoring, battery protection & passive cell balancing.

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15) Fire Protection System – Smoke Sensors, Temperature Sensors, Combustible gas venting system & Early Thermal Runaway Detection system.

16) EMS:

- a. Calculate & monitor SOC, SOH, Battery Warrantee Tracking, remaining life prediction.
- b. Acts as a Backup to BMS for Battery Overcharging, Battery Dip Discharge, Overtemperature.
- c. Control HVAC (Thermal Management), Fire Suppression System.

17) PCS Certification - IEC 61000, IEC 62477, IEC 62116

18) Suitable derating of the BESS over complete design life shall be considered while designing microgrid system.

19) **Scope of Periodic Maintenance Service includes:**

- a. Regular cleaning of the solar plates. (at least once in every 3 month)
- b. General cleaning, necessary adjustments, condition monitoring etc. (at least once in every quarter) against BESS & EMS
- c. Supply and replacement of defective components during the currency of the contract.
- d. On call services in case of any problem, emergency, in the system.

20) Bidder may visit the site with prior intimation to the concerned engineer of Oil India Limited, before quoting.

21) The complete microgrid system / BESS system (except the solar PV panels) should be accommodated inside a suitable metallic container, including necessary colling system/AC etc. as per OEM's design.

22) Applicable Standards:

- a. UL 1741- Inverters, converters, controllers and interconnection system equipment for use with distributed energy resources.
- b. IEEE 1547- Standard for Interconnecting Distributed Resources with Electric Power Systems
- c. UL 1642- Standard of Lithium Batteries (Safety of Lithium-Ion Batteries)
- d. IEEE 2030.2.1-2019- IEEE Guide for Design, Operation, and Maintenance of Battery Energy Storage Systems
- e. IS 17387- General Safety and Performance Requirement of Battery Management System
- f. IS 17092- Electrical Energy Storage Systems: Safety Requirements

**ENCLOSURE-II****C. Schedule of Quantity (SOQ)**

<b>Contract Line-Item No.</b>	<b>Sub-Line-Item No.</b>	<b>Item</b>	<b>Qty.</b>	<b>UoM</b>
<b>10</b>	-	<b>Micro Grid Solution inclusive of 170 kWp Solar PV Plant and 528 kWh ± 5% Li-Ion battery energy storage system for Mechaki EPS (Loc TX) of Oil India Limited, (Geographical Location N-27.729424914883698, E-95.61717582462978)</b>	<b>01</b>	<b>Set</b>
	10	Site visit, Survey of land, engineering, design, drawing development for the Microgrid Solution (Solar Power Plant + Battery Storage System + Energy Management System & Integration with the existing gensets) for 24X7 operation of the installation on solar power and vetting of the design from any IIT (Indian Institute of Technology) or equivalent institute.	01	AU
	20	Supply of materials (Solar Panels, supports for erection solar panels, Li-Ion Battery based Energy Storage system including energy management system - EMS, accessories etc.) as per approved design, drawings and Bill of Materials (BOM).	01	Set
	30	Civil works as required for erection of Solar Panels and BESS as per approved design / drawings.	01	AU
	40	Installation, testing and commissioning of the complete system	01	AU
	50	Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.	16	AU
<b>20</b>	-	<b>Micro Grid Solution inclusive of 100 kWp Solar PV Plant and 336 kWh ± 5% Li-Ion battery energy storage system for Loc-HNE(Makum) of Oil India Limited, (Geographical Location N-27.485892887061393, E-95.42091028925985)</b>	<b>01</b>	<b>Set</b>
	10	Site visit, Survey of land, engineering, design, drawing development for the Microgrid Solution	01	AU

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		(Solar Power Plant + Battery Storage System + Energy Management System & Integration with the existing gensets) for 24X7 operation of the installation on solar power and vetting of the design from any IIT (Indian Institute of Technology) or equivalent institute.		
	20	Supply of materials (Solar Panels, supports for erection solar panels, Li-Ion Battery based Energy Storage system including energy management system - EMS, accessories etc.) as per approved design, drawings and Bill of Materials (BOM).	01	Set
	30	Civil works as required for erection of Solar Panels and BESS as per approved design / drawings.	01	AU
	40	Installation, testing and commissioning of the complete system	01	AU
	50	Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.	16	AU
<b>30</b>	-	<b>Micro Grid Solution inclusive of 50 kWp Solar PV Plant and 192 kWh ± 5% Li-Ion battery energy storage system for Loc-HTZ-H Well plinth (Makum) of Oil India Limited, (Geographical Location N-27.470279736653033, E-95.43675391638361)</b>	<b>01</b>	<b>Set</b>
	10	Site visit, Survey of land, engineering, design, drawing development for the Microgrid Solution (Solar Power Plant + Battery Storage System + Energy Management System & Integration with the existing gensets) for 24X7 operation of the installation on solar power and vetting of the design from any IIT (Indian Institute of Technology) or equivalent institute.	01	AU
	20	Supply of materials (Solar Panels, supports for erection solar panels, Li-Ion Battery based Energy Storage system including energy management	01	Set

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		system - EMS, accessories etc.) as per approved design, drawings and Bill of Materials (BOM).		
	30	Civil works as required for erection of Solar Panels and BESS as per approved design / drawings.	01	AU
	40	Installation, testing and commissioning of the complete system	01	AU
	50	Periodic maintenance services (quarterly) of the complete system (Solar + BESS + EMS) for a period of 4 years.	16	AU

**Table 1 : Electrical Load Profile of the installations**

<b>Installation</b>	<b>Electrical Loads</b>	<b>Avg. Running Hours in a day (24 hrs)</b>
Mechaki EPS (Loc TX)	1) Electrical Motor (Induction motor, 415V, 3 Ph) driven bowser loading pump, Rating 12 kW, two motors, one runs at a time	12 Hrs
	2) Misc. office loads (Computer, Fan, Exhaust fan, Freeze, AC, Aquaguard water purifier, Lights etc.) total 5 kW	24 Hrs
	3) Area Illumination Loads (High mast Illumination System, Flood lights etc.) Total load 10 kW	12 Hrs
	4) Water Pump/Boiler Feed Pump (Submersible Motor) rating 1 kW	24 Hrs
Loc-HNE (Makum)	1) Misc. office loads (Computer, Fan, Exhaust fan, Freeze, AC, Aquaguard water purifier, Lights etc.) total 6 kW	24 Hrs
	2) Area Illumination Loads (High mast Illumination System, Flood lights etc.) Total load 8 kW	12 Hrs
	3) Water Pump (Submersible Motor) rating 1 kW	6 Hrs
Loc-HTZ-H Well plinth (Makum)	1) Misc. office loads (Computer, Fan, Exhaust fan, Freeze, Aquaguard water purifier, Lights etc.) total 3 kW	24 Hrs

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	2) Area Illumination Loads (High mast Illumination System, Flood lights etc.) Total load 5 kW	12 Hrs
	3) Water Pump (Submersible Motor) rating 1 kW	6 Hrs

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**Table 2 : Available Land/Open Space/Roof for installation of Solar Panels**

<b>Installation</b>	<b>Maximum Available Area</b>
Mechaki EPS (Loc TX)	1500 Sq. Meter
Loc-HNE (Makum)	1000 Sq. Meter
Loc-HTZ-H Well plinth (Makum)	500 Sq. Meter

**Table-3: Technical Specification of BESS**

<b>Technical Specification of BESS</b>	<b>Requirement</b>
BESS usable Power (minimum) @ ambient temperature	To meet load requirement as mentioned in table 1
BESS usable Energy (minimum) @ ambient temperature	As per SOQ
PCS Rating in kVA (minimum)	To be decided during detailed engineering
Switching element for PCS	IGBT
PCS output voltage	415 V AC
Grid/Output Frequency	50 Hz $\pm$ 0.5%
PCS power factor	-1 to 1
PCS efficiency (minimum)	96%
Current Harmonics	IEEE 1547 Compliant, <5% TDD
Cooling for PCS	Forced air cooled
Anti-islanding protection	Yes
Mechanical isolation in PCS	Yes
Battery type	Lithium-ion Battery
Battery efficiency (minimum)	95%
Battery Life	Battery Cycles Life > 8000 @ 25°C, 0.5C, 70% SOH
Ambient temperature	10 deg. C to 48 deg. C
Relative Humidity (maximum)	95%
BESS cooling	Air conditioning system with appropriate heat dissipation mechanism
Alarm for fault	Yes

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**Table-4: Technical Specification of Battery Management System (BMS)**

<b>Technical Specification</b>	<b>Requirement</b>
Cell/module Monitoring	Each cell voltage, Module voltage, Rack Voltage, each cell, Module & Rack current, Rack Power, Cell /Module level Temperature.
Cell/module Protection	Protecting the battery from out of tolerance operating conditions such as voltage, Temperature, Current etc. and BMS must provide full cell/module protection to cover almost any eventuality. The protection shall be inbuilt to avoid thermal runaway of Battery system at any condition. Isolate battery cell, Module, Rack in case of emergency.
Charge control	BMS shall automatically control the charge and discharge of the individual cell/module along with PCS.
SOC Determination	BMS shall automatically determine the State of Charge (SOC) of the individual cell/module.
Cell Balancing	BMS shall automatically balance between cells/modules to optimize energy consumption, range and protect the battery
SOH Determination	BMS shall automatically determine the State of Health (SOH) of the individual cell/module
Historical data	BMS shall be able to store at least 30 historical faults and historical trend for all parameters for at least past 7 days
Isolating the battery in cases of emergency	Yes
HMI Display	Yes
Parameters to be displayed (minimum)	
Protections (minimum)	Over and Under Discharge Over and Under Temperature Over and Under Current Over and Under Voltage Ground Fault Internal battery Fault Battery Fuse for each cell & Module Module reverse polarity DC Contactor for each Battery Rack Failure of temperature controller

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**Table-5: Technical Specification of Power Conversion/ Conditioning System (PCS)**

<b>Technical Specification</b>	<b>Requirement</b>
Power rating (minimum)	To be decided during detailed engineering
Type	Bi-directional
Output Nominal Voltage	415VAC (+/- 10%)
Grid Frequency	50 Hz $\pm$ 0.5%
Power Factor	-1 to 1
Efficiency (minimum)	95%
Voltage Harmonics	<3%
Cooling	Forced Air Cooled
Protection (minimum)	<ol style="list-style-type: none"><li>1. Anti-islanding (as per IEC 62116)</li><li>2. Thermal Overload</li><li>3. Over Voltage: DC &amp; AC Side</li><li>4. Under Voltage: DC &amp; AC Side</li><li>5. Over Current: DC &amp; AC Side</li><li>6. Short Circuit</li><li>7. Surge Protection (Power, Control &amp; Signal Cables)</li><li>8. Earth leakage faults</li></ol>
HMI Screen	Yes

**Table-6: Technical Specification of BESS Container**

<b>Technical Specification</b>	<b>Requirement</b>
BESS container limiting dimension	To be decided during detailed engineering
Limiting weight (kg)	20000
Cooling	Air Conditioning system with appropriate heat dissipation mechanism
Lighting	All lighting shall be LED type. Lighting shall be adequate to work inside the container
Door	The container shall have at least two doors
Wall insulation	Container walls shall be insulated with suitable heat insulation.
Floor insulation	The floor shall be insulated with at least 1.1kV grade electrical insulating mat
Lifting	There shall be lifting mechanism attached to both the ends of the skid of the container for lifting and handling of the BESS unit. Care shall be taken such that the roof of the container is not damaged during lifting of the container.
Fire suspension	The container shall be fitted with appropriate standard fire suspension mechanism. Since the BESS unit shall be unmanned, the fire suspension mechanism shall act automatically and shall be controlled by the EMS/ BMS.

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**Table-7: Technical Specification of batteries**

<b>Technical Specification</b>	<b>Requirement</b>
Battery type	Lithium-ion Battery, <b>LFP</b>
Battery sub type	Secondary
Battery depth of Discharge (minimum)	80%
C rating	0.5 C or higher
Battery efficiency (minimum)	95%
Battery Life	12 Years from date of commissioning or 4500 cycles whichever is earlier
Battery Cycles per day	1 cycle per day
Temperature Control	Appropriate battery temperature control mechanism shall be installed
Terminal polarity marking	Positive and negative marked / embossed on module
Acceptable Battery Manufacturer(s)	Contemporary Amperex Technology Co., Limited. (CATL) LG Energy Solution Amaraja Batteries Limited Exide Batteries Limited Panasonic Corporation BYD Company Ltd SAMSUNG SDI CO., LTD SK innovation Kore Power LLC Tianjin Lishen Battery Joint-Stock Co., Ltd Gotion High tech Co Ltd EVE Energy Co. Ltd Narada Power Amperex Technology ltd (ATL) Dongying Cospower Technology Co., Ltd.

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