

Request for Selection (RfS) Document
for setting up of 40 MW/80MWh Standalone Battery
Energy Storage Systems in Kolkata under Tariff-
Based Competitive Bidding

RfS No. ED(PM)/2025-26/266

Dated: 30.07.2025

Issued By:

CESC Limited
CESC House, Chowringhee Square,
Kolkata-700001)

DISCLAIMER

1. The information contained in this RfS document or subsequently provided to Bidder(s), in documentary or any other form by CESC Limited (“CESC”) is provided to Bidder(s) on the terms and conditions set out in this RfS.
2. Though adequate care has been taken while preparing the RfS document, the Bidder(s) shall satisfy themselves that the document is complete in all respect. Intimation regarding any discrepancy shall be given by the prospective bidders to the office of CESC immediately. If no intimation is received from any bidder within 20 (Twenty) days from the date of issuance of RfS documents, it shall be considered that the document is complete in all respect and has been received/acknowledged by the Bidder(s).
3. This RfS document has been prepared in good faith, and on best endeavour basis. Neither CESC nor its employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this document, even if any loss or damage is caused by any act or omission on their part.
4. CESC reserves the right to modify, amend or supplement this RfS without assigning any reason and without any liability.
5. CESC reserves the right to reject any or all bids without assigning any reason and without any liability.
6. In case of any discrepancy in the documents uploaded on the websites of CESC, ISN-ETS and CPPP, the documents uploaded on the ISN-ETS website will prevail.

Place: Kolkata, West Bengal

Date: 30/07/2025

BID INFORMATION SHEET

The brief details of the RfS are as under:

(A)	NAME OF WORK/ BRIEF SCOPE OF WORK/ JOB	<p>1. Selection of Battery Energy Storage System Developer for Setting up of 80 MWh (40 MW x 2 hrs) Battery Energy Storage Systems at New Cossipore Generating Station, 28, Jheel Road, Kolkata – 700002 for “on Demand” usage under Tariff-based Competitive Bidding.</p> <p>2. The Project will be set up under Build, Own, Operate and Transfer (“BOOT”) model. The Transfer of the Project to CESC shall take place on “As Is Where Is” basis at INR 1/- on Expiry Date.</p>
(B)	RfS NO. & DATE	ED(PM)/2025-26/266 Dated 30.07.2025
(C)	TYPE OF BIDDING SYSTEM	Single Stage Two Envelope
(D)	TYPE OF RfS/ TENDER	<p>E-Tender</p> <p>Tender Search Code (TSC) for the RfS in ISN-ETS: CESC-2025-TN000001</p>
(E)	COMPLETION/ CONTRACT PERIOD	As mentioned in RfS Document
(F)	DOCUMENT FEE/ COST OF RfS DOCUMENT (NON- REFUNDABLE)	<p>Amount: INR 29,500/- (Indian Rupees Twenty-Nine Thousand Five Hundred Only) including GST to be submitted through NEFT/ RTGS transfer in the account of CESC and a copy of the receipt to be submitted along with the response to RfS</p>

(G)	DOCUMENT PROCESSING FEE	Amount: INR 5,00,000 (Indian Rupees Five Lakh) +18% GST for each project for project capacity Fees to be submitted through NEFT/RTGS transfer in the account of CESC and details of the payment to be submitted along with the response to RfS.
(H)	EARNEST MONEY DEPOSIT (EMD)	Amount: INR 6,00,00,000/- (Rs. Six Crores only) including GST to be submitted in the form of Bank Guarantee along with the response to RfS
(I)	PERFORMANCE BANK GUARANTEE	As per Clause 17 of the RfS document
(J)	DATE, TIME & VENUE OF PRE-BID MEETING	Scheduled on-line as per NIT on ISN-ETS portal
(K)	OFFLINE & ONLINE BID-SUBMISSION DEADLINE	As per NIT on ISN-ETS portal
(L)	TECHNO-COMMERCIAL BID OPENING	As per NIT on ISN-ETS portal
(M)	e-Reverse Auction (e- RA)	Will be informed to the eligible Bidders. Date and time of e-RA shall be intimated through email.
(N)	CONTACT DETAILS OF ISN-ETS PORTAL	<p>M/s Electronic Tender.com (India) Pvt. Ltd.</p> <p>Contact Person: ISN-ETS Support Team Customer Support: +91-124-4229071,4229072</p> <p>(From 10:00 Hrs. to 18:00 Hrs. on all working Days i.e., Monday to Friday except Government Holidays)</p> <p>Email: support@isn-ets.com</p>

(O)	Name, Designation, Address and other details (For Submission of Response to RfS)	Executive Director Power Marketing 1 Floor CESC House, 1 No. Chowringhee Square, Kolkata-700001		
(P)	Details of persons to be contacted in case of any assistance required	1. Name & Designation: Sh. Sayan Koley, Assistant Manager (Planning) E-mail: sayan.koley@rpsg.in Contact No.: 9831644854 2. Name & Designation: Mr. Arnab Sengupta, Deputy Manager (Power Marketing) Email: arnab.sengupta@rpsg.in Contact No.: 6291317636		
(Q)	CESC Bank Details		Bank Name	ICICI Bank Limited
			Bank Address	38 Hemanta Basu Sarani Kolkata - 700 001
			Account Type	CC
			Account Name	CESC Limited
			Account No.	000651000407
			IFSC Code	ICIC00000006

1. Bids must be submitted strictly in accordance with Section-2 and 3 of the RfS, depending upon Type of Tender as mentioned at Clause no. (D) of Bid Information Sheet.
2. Bidders are required to quote strictly as per terms and conditions of the RfS documents and not to stipulate any deviations/ exceptions.
3. Any Bidder, who meets the Qualifying Requirement and wishes to quote against this RfS, may download the complete RfS document along with its notices, amendment(s) and clarifications if any, from ISN-ETS Portal (<https://www.bharat-electronictender.com>) and CESC website (www.cesc.co.in) and submit their Bid complete in all respect as per terms & conditions of RfS Document on or before the due date of bid submission.
4. Clarification(s)/ Corrigendum(s) if any shall also be available on the above referred websites.
5. Bidders are requested to remain updated for any notices/amendments/ clarifications etc. to the RfS document through the websites <https://www.bharat-electronictender.com> and CESC website. No separate notifications will be issued for such notices/ amendments/ clarifications etc. in the print media or individually. Intimation regarding notification on the above shall be updated on CESC website and the details will be available only from <https://www.bharat-electronictender.com>.

SECTION 1. INTRODUCTION & INVITATION FOR BIDS

1 Background & Introduction

- 1.1** CESC Limited (hereinafter referred to as “CESC”) having its registered office at CESC House, Chowringhee Square, Kolkata-700001, a Company within the meaning of the Companies Act 2013 and a Distribution Licensee under Section 14 of the Electricity Act, 2003 is inviting bids for selection of the Bidder to whom the contract may be awarded for setting up of **40 MW/80 MWh** standalone Battery Energy Storage System (“BESS”) at Kolkata under Tariff-based Competitive Bidding under Build Operate, Own and Transfer (“BOOT”) model. The Transfer of the Project to CESC shall take place on “As Is Where Is” basis at INR 1/- on Expiry Date.
- 1.2** With various global developments in technology and manufacturing, Renewable Energy (RE) has become the most affordable and cheapest source for meeting the energy requirements. Initial capacities have been successfully integrated to the grids so far, but with increasing penetration of RE in the energy mix, further capacity addition is expected to face issues due to variable nature and supply-demand mismatch.
- 1.3** The above aspects rightly point out to the next course of direction of India’s energy planning methodology-integrating Energy Storage Systems (ESS) with existing and upcoming RE capacity in order to optimize generation mix while also better utilizing the transmission infrastructure in the country. With respect to increasing the storage component in the energy mix, CEA’s Report on identification of usage of storage as business case and for ancillary services, identifies Pumped Hydro Storage System (PSP) and Battery Energy Storage Systems (BESS) as the commercially deployed solutions for providing requisite storage capacity. The CEA Study has revealed that the planning model selects the battery energy storage system from the year 2027-28 onwards and a Battery Energy Storage capacity of 27,000 MW/108,000 MWh (4-hour storage) is projected to be part of the installed capacity in 2029-30. This will be in addition to 10,151 MW of Pumped Hydro Storage System envisaged to be a component of the installed capacity in 2029-30.
- 1.4** Going forward, the planning process for transition to a greener energy mix in the country would entail integrating the planned Renewable capacity into India’s energy grid while ensuring its safety and reliability. Apart from Pumped Hydro Storage Plants, BESS are envisaged to be significant element of the future grid with increased share of

renewable energy in accordance with the target of 500 GW of non-fossil-based capacity to be installed by 2030. BESS assets can provide the required flexibility in generation apart from ensuring the resource adequacy. Besides, Energy Storage Systems also have the potential to enable better utilization of the country's transmission network and reducing network infrastructure footprint.

1.5 CESC is interested to utilize energy storage systems, on a “On-Demand” basis, suited to their requirements during the peak and off-peak hours. In view of the above, CESC hereby wishes to invite proposals for setting up of grid connected Standalone Battery Energy Storage Systems (BESS), for an aggregate storage capacity of 80 MWh (40 MW x 2 hours) at the location specified in Clause 6 of this RfS. CESC shall enter into a Battery Energy Storage Purchase Agreement (BESPA) with the Successful Bidder selected based on this RfS, for providing Energy Storage facility to CESC as per the terms, conditions and provisions of the RfS and BESPA.

1.6 Battery Energy Storage System Developer (hereinafter referred to as BESSD) selected by CESC based on this RfS, shall set up the BESS on Build, Own, Operate, Transfer (BOOT) basis in accordance with the provisions of this RfS document and standard BESPA.

1.7 Guidelines for Implementation of the RfS

This RfS document has been prepared based on the Guidelines for “Procurement and Utilization of Battery Energy Storage Systems as part of Generation, Transmission and Distribution assets, along with Ancillary Services”, issued by Ministry of Power vide Gazette Notification dated 10.03.2022 and subsequent amendments and clarifications issued thereto (“Guidelines”) until the bid submission deadline for this RfS. CESC has issued this RfS as defined in the aforementioned Guidelines.

2 *Invitation for Bids*

2.1 A Single Stage, Two-Envelope competitive Bidding Procedure will be adopted and will proceed as detailed in this RfS document. The respective rights of CESC and the Bidder/BESSD (defined below) shall be governed by the RfS Documents/Agreements signed between CESC and the BESSD.

2.2 Interested Bidders have to necessarily register themselves on the portal

<https://www.bharat-electronictender.com> (“ISN-ETS portal”) through M/s Electronic Tender (India) Pvt. Limited to participate in the bidding under this invitation for bids. It shall be the sole responsibility of the interested Bidders to get themselves registered at the aforesaid portal for which they are required to contact M/s Electronic Tender (India) Pvt. Limited, New Delhi to complete the registration formalities. Contact details of ISN-ETS is mentioned on the Bid Information Sheet. All required documents and formalities for registering on ISN-ETS are mentioned in the subsequent RfS documents.

They may obtain further information regarding this RfS from the registered office of CESC at the address given on the Bid Information Sheet from 10:00 hours to 17:00 hours on all working days.

For proper uploading of the bids on the ISN-ETS portal, it shall be the sole responsibility of the Bidders to apprise themselves adequately regarding all the relevant procedures and provisions as detailed in the portal as well as by contacting M/s Electronic Tender (India) Pvt. Limited (ETI) directly, as and when required, for which contact details are also mentioned on the Bid Information Sheet. CESC in no case shall be responsible for any issues related to timely or properly uploading/ submission of the bid in accordance with the relevant provisions of the Bidding Documents.

- 2.3 Bidders should submit their bid proposal complete in all aspect on or before last date and time of Bid Submission mentioned on ISN-ETS Portal (<https://www.bharat-electronictender.com>), and as indicated in the Bid Information Sheet.
- 2.4 Bidder shall submit bid proposal along with non-refundable RfS Document Fees and Bid Processing Fees and Earnest Money Deposit (EMD) complete in all respect as per the Bid Information Sheet. Bid proposals received without the stipulated RfS Document Fees, Bid Processing Fees and EMD, will be rejected. **In the event of any date indicated being declared a holiday, the next working day shall become operative for the respective purpose mentioned herein.**
- 2.5 RfS documents which include Eligibility Criteria, Technical Specifications, various Conditions of Contract, Formats etc. can be downloaded from ISN-ETS Portal. Any amendment(s)/corrigendum(s)/clarification(s) with respect to this RfS shall be uploaded on ISN-ETS Portal. The Bidder should regularly check for any Amendment(s)/Corrigendum(s)/Clarification(s) on the above mentioned ISN-ETS Portal.

- 2.6** CESC shall conduct e-Reverse Auction (e-RA) as per provisions of RfS documents.
- 2.7** CESC reserves the right to cancel/ withdraw/ defer this invitation for bids without assigning any reason and shall bear no liability whatsoever consequent upon such a decision.
- 2.8** CESC may develop a suitable monitoring mechanism, to analyze the performance of the project and carry out random checks to verify compliance of quality standards.
- 2.9** **Interpretations**
- a. Words comprising the singular shall include the plural & vice versa.
 - b. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.
 - c. A time of day shall save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.
 - d. Different parts of this RfS are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.
 - e. The table of contents and any headings or sub headings in the contract has been inserted for case of reference only & shall not affect the interpretation of this agreement.

SECTION 2. SPECIAL CONDITIONS OF CONTRACT

3 Scope of Work

- 3.1** Under this RfS, the Battery Energy Storage System Developer (“**BESSD**”) shall be required to set up a Battery Energy Storage System (BESS), with the primary objective of making the energy storage facility available to CESC for charging/discharging of the BESS, on an “on demand” basis. Detailed scope of work for the BESSD is provided in the Annexure-A of the RfS. Detailed criteria for performance are elaborated in Clause 8 of the RfS.
- 3.2** Setting up of the BESS and interconnection of the BESS with the CESC network will be under the scope of the BESSD. This RfS is technology agnostic on the nature of battery storage system being opted by the BESSD, as long as it meets the definition of BESS under this RfS and the required performance criteria under the RfS and BESPA.
- 3.3** Physical security and safety of the site shall be under the scope of BESSD.
- 3.4** Charging and discharging of the system shall be under the scope of BESSD. Scheduling of power for such charging/discharging as well as the obligation of providing charging energy and for absorption of discharged energy shall be under the scope of the CESC.
- 3.5** The BESSD shall take separate, metered connection for the Auxiliary Power load of BESS from CESC at its own cost. Bill will be raised by CESC to the BESSD on monthly basis for payment with respect to Auxiliary Power .
- 3.6** After the expiry of the Term of the BESPA, the Project will be transferred to CESC at Re. 1 without any financial obligations to CESC in working condition with defined energy throughput at the end of the term on a “as is where is” basis, in line with the provisions of the BESPA.

4 Total capacity offered and Project sizing

- 4.1** Selection of BESS Project for a total Contracted Capacity of 40 MW/80 MWh will be carried out through e-bidding followed by e-Reverse Auction process.
- 4.2** The Bidders shall bid for the entire Contracted Capacity as per clause 4.1 above. In this context, the term “Project” used anywhere in the RfS, and BESPA , will solely mean the BESS, set up by the BESSD to make available the Contracted Capacity as agreed to in the BESPA.

- 4.3 For the aforesaid Contracted Capacity, any oversizing of the BESS over the minimum rated Energy capacities required under this RfS is left to the discretion of the BESSD. However, it is to be noted that, at the time of commissioning, rated capacity of the BESS (Power and Energy) to be installed as indicated in the BESPA, will be verified by CESC.

5 *Contracted Capacity Allocation for a Bidder*

Following conditions shall be applicable to the Bidders for submission of bids against this RfS:

- 5.1 The total capacity of 40 MW / 80 MWh shall be set up at the Project Site.
- 5.2 A Bidder, including its Parent, Affiliate or Ultimate Parent or any Group Company shall submit a single bid offering a Contracted Capacity of 40 MW/ 80 MWh in the prescribed formats.
- Note:** In case a common Company/Companies directly or indirectly hold(s) more than 10% but less than 26% shareholding in more than one Bidder participating in the RfS, each of such Bidders will be required to submit the Disclosure as per Format 7.8A. In all other cases, Format 7.8 will be applicable.
- 5.3 The evaluation of bids shall be carried out as described in Section-5 of RfS.
- 5.4 Subject to the exception as per Clause 5.2 above, multiple bids from same company including its Parent/ Ultimate Parent/Affiliates/Group Companies shall make all the bids submitted by the group invalid.

6 *Project Location*

- 6.1 The Project shall be located in land identified within the boundaries of the New Cossipore Generating Station (“NCGS”), Address - 28, Jheel Road, Kolkata – 700002. Land required for construction of BESS will be provided by CESC at the above location in as is /where is basis. Land shall be provided through Right-of-Use basis to the BESSD through suitable agreement with CESC. A site visit may be arranged at the request of prospective bidders in terms of Clause 20 of this RfS. The land along with the BESS shall be transferred completely to CESC after 12 years at Re. 1 without any financial obligations to CESC. The project land and network details/SLD are enclosed herewith at **Annexure – D**.
- 6.2 The above land area will be handed over to the BESSD from Effective Date of the BESPA after signing of Right to Use Agreement in terms of clause 20.3 of the RfS.

- 6.3** BESSD shall make necessary arrangements for approach roads, balance of plant, power/control cable trench (Cable trench route to be finalized in consultation with CESC) etc. at the site without hindering the activities of the New Cossipore Substation (“NCSS”). As BESS are prone to fire hazard, the BESSD shall provide suitable means such as fire barriers between switchyard and BESS to ensure adequate safety in terms of **Annexure-A** of this RfS.

7 *Connectivity with the CESC Network*

- 7.1** The Project should be designed for interconnection with the CESC Network at 33kV Bus at New Cossipore Substation (“NCSS”) in accordance with the prevailing WBERC Regulations, if any, in this regard. For interconnection with the CESC Network and metering, the BESSD shall abide by all rules and regulations framed under the Electricity Act, 2003 including the applicable Grid Code, Grid Connectivity Standards, Regulations on Communication System for transmission of electricity and other Regulations/Procedures (as amended from time to time) issued by WBERC and Central Electricity Authority (CEA). Minimum voltage for interconnection at the CESC Network shall be 33 kV. BESSD shall also comply with the requirements of relevant authority regarding charging and synchronization. The detailed network diagram is enclosed herewith at **Annexure – D**.
- 7.2** The maintenance of interconnection network with CESC network shall be responsibility of the BESSD, to be undertaken entirely at its cost and expense. The entire cost of network development including cost of construction of line / Cables, maintenance cost etc. and any other charges from the Project up to and including at the Interconnection Point will be borne by the BESSD.
- 7.3** Metering arrangement of the Project shall have to be adhered to in line with relevant clauses of the BESP. All relevant parameters of energy injected and drawn by the project shall be measured and continuously recorded by means of a main meter, check meter and standby meter as specified by CESC. Power Quality Meter shall also be provided as per extant regulations. The standards and the specifications of the aforesaid meters shall be as per Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 read with amendments. Note: The methodology for measurement of BESS operating and performance parameters are to be mutually agreed upon.

- 7.4 The scheduling of the power to/from the Project as per the applicable regulation shall be decided by the CESC. However, any DSM penalties due to violation of the schedule of charging or discharging of the BESS at BESS end shall be on account of the BESSD. DSM penalties, if any, shall be levied separately on the BESSD and CESC as applicable, at their respective ends for the charging and discharging activities.
- 7.5 Reactive power charges shall be on account of the power source/BESSD as applicable, at their respective ends during charging and discharging, as per WBERC Regulations.
- 7.6 The BESSD will be required to apply for connectivity at the identified substation in terms of as per applicable Regulations of WBERC, within 30 days of issuance of LoA, and shall furnish copies of the application, to CESC within 7 days of submission of such application. In case the BESSD fails to obtain connectivity at the identified substation, the same shall be immediately notified by the BESSD to CESC. All the requisite costs associated with obtaining connectivity shall be borne by the BESSD.

8 *Performance Criteria of the Project*

8.1 Project performance parameters

- a. The Contracted Capacity of the Project shall be in terms of “MW / MWh”. Contracted Capacity will be equal to 40 MW/80 MWh shall be referred at the Delivery/ Interconnection Point which is at the 33 KV bus bar end of New Cossipore Substation of CESC. The Project Capacity set up under the RfS/BESPA, shall be 100% off taken by CESC and there will be no merchant capacity.
- b. For example, for the Contracted Capacity of 40 MW/ 80 MWh, the BESPA shall entitle CESC to schedule discharge upto 80 MWh of energy at the Delivery Point from the BESS in each cycle, subject to the following:
 - i. CESC will schedule charging of the BESS with equal amount of energy plus energy expected to be lost as conversion losses (determined from the guaranteed Round-Trip Efficiency (RtE) of the system as specified in this RfS).

Illustration: For a Contracted Capacity of 40 MW/80 MWh, assuming an RtE of 90%, CESC shall supply charging power to the tune of 88.89 MWh, to expect a discharge of 80 MWh as per the desired schedule.
 - ii. Minimum energy scheduled for discharge in a given cycle during a year shall be

more than or equal to the Minimum Dispatchable Energy Capacity at the End of Year as specified in the Clause 8.1. (e) (iv).

For example, during the 3rd Year after COD, the Minimum energy scheduled during a cycle for discharge from 40 MW/80 MWh capacity shall be more than or equal to $40 \times 0.925 \times 2 = 74$ MWh.

- iii. Contract capacity shall be equal to 40 MW/ 80 MWh at Delivery Point. CESC shall provide the charging energy factoring the RtE, as specified in BESP
- c. Power rating of the project capacity of 80 MWh (40 MW x 2 hours) BESS will be 40 MW, i.e., the maximum value of the active Output and Input Power at the Delivery Point. The Energy rating of 80 MWh (40 MW x 2 hours) of the system will be the dispatchable capacity at COD of the system, as measured at the Metering Point installed at the Delivery Point. Terms and definitions of terminologies related to BESS shall be as defined in IEC 62933-2-1.
- d. The BESSD shall make the BESS available for up to two (2) operational cycles per day, i.e. up to two (2) complete charge-discharge cycles per day. It is hereby clarified that the BESS should be designed to provide a minimum of 2 Hours of discharging capacity at rated power.

Provided that, in a cycle for charging to the rated capacity at rated power, 2 hours is permitted which could be a single stretch of 2 hours or multiple stretches for achieving 100% charging of rated MWh capacity.

Similarly, for discharging, there could be a single stretch of 2 hours or multiple stretches for achieving 100% discharging of rated MWh capacity subject to condition that total scheduled discharge of energy from BESS as demanded by the CESC shall be limited to RtE % of the energy supplied by the CESC.

The charging and discharging may also be performed at below the rated power. It is hereby clarified that the BESS should be designed to provide a minimum of 2 hours of discharging capacity at rated power. However, CESC, at its sole discretion, can schedule the discharging of the BESS in multiple sessions each day, at rated power or

below the rated power.

Similarly, the charging cycle may, if required, be performed in a single session at rated power or in multiple sessions at below rated power, at sole discretion of CESC.

e. Following provisions shall be applicable on the Contracted Capacity guaranteed to be off-taken by CESC:

- i. The procurement shall be in power (MW) terms. The BESSD shall install, operate and maintain the BESS to offer facility to the CESC to charge and discharge the BESS on an “on demand” basis. The BESSD shall guarantee a **minimum system availability of 95%** on monthly basis. The BESSD shall pay the liquidated damages for any shortfall in monthly availability below 95% and shall duly pay such damages to CESC. Amount of such liquidated damages shall be twice the Capacity Charges for the capacity not made available.
- ii. Availability of the Project shall mean the ability of the BESS to execute a function i.e. charging or discharging, when called upon to do so, as per the schedule or signal provided by the CESC through automated online process, subject to the minimum system ratings specified herein.

For a given BESPA, the monthly availability guarantee shall commence from the date of commissioning of the system and shall be calculated as below:

Monthly System Availability = Average of the System availabilities of all time-blocks during the Month in which the off-taker has scheduled power for charging/discharging the BESS.

where,

System Availability in a time-block=

$$\frac{\text{Actual Injection/Drawl } MU_i(A)}{\text{Scheduled Injection/Drawl } MU_i(B)},$$

where

a) i refers to the i^{th} time-block during the Month where Scheduled Injection/Drawl $MU_i \neq 0$.

b) Actual Injection/Drawal MU_i is the Actual Energy for

Charging/Discharging in the i^{th} timeblock, in MUs

- c) Scheduled Injection/Drawal MU_i is the Energy Scheduled for Charging/Discharging in the i^{th} timeblock, in MUs
- d) A and B shall be as per the measurement at the Main ABT Meter at the Point of Interconnection.

The liquidated damages for system availability below 95% for a specific month shall be settled in the next month and if it is not able to settle in the next month, it will be carried forward for settlement in subsequent month(s).

- iii. The BESSD shall guarantee AC to AC **roundtrip efficiency (RtE) of 90%** of on monthly basis.

System Roundtrip Efficiency =

$$\frac{\text{Sum Total of Actual Drawal / Discharging } MU_j \text{ in a month (C)}}{\text{Sum Total of Actual Injection / Charging } MU_j \text{ in a month (D)}}$$

Where,

j refers to the j^{th} month in a year;

D \neq 0;

D \leq 2 x E_{bess} x [MDn-1 – ((MDn-1 – MDn) x j/12)] * Number of days in j^{th} month / RtEg;

E_{bess} refers to Energy Rating specified in Clause 8.1.b. above i.e. 80 MWh;

MDn-1 refers to minimum guaranteed dispatchable energy at the end of the previous year (as a % of Capacity at the COD specified in Clause 8.1.e.iv. below);

MDn refers to minimum guaranteed dispatchable energy at the end of the current year;

RtE refers to the guaranteed Round-Trip Efficiency under the BESPAs and is equal to 90%;

C and D shall be as per the measurement at the Main ABT Meter at the Point of Interconnection.

Note:

- The Scheduled capacity shall be subject to the System Power Rating specified in Clause 8.1.b. above.
 - The BESSD shall apply to CESC for separate, metered connection for the Auxiliary Power requirement of BESS. Accordingly, CESC will provide the supply at suitable voltage as per extant guidelines. Bill will be raised to the BESSD on monthly basis for payment.
 - The BESSD shall pay CESC for the Auxiliary Power at the connected load tariff in terms of extant WBERC Regulations.
- iv. Taking into consideration capacity degradation, the minimum dispatchable energy to be made available by the BESSD in any given year shall depend on the capacity degradation as per the table below:

Year	Minimum Dispatchable Capacity at the end of Year (as a % of Capacity at the Beginning of Life/COD)
1	97.5%
2	95.0%
3	92.5%
4	90.0%
5	87.5%
6	85.0%
7	82.5%
8	80.0%
9	77.5%
10	75.0%
11	72.5%
12	70.0%

Illustration:

Minimum dispatchable capacity during the third year as a % of Capacity at the Beginning of Life/COD) (A) = [Minimum dispatchable capacity % at the end of the second year + Minimum dispatchable capacity % at the end of third year]/2
= [95%+92.5%]/2 = 93.75%

Minimum Dispatchable energy during the year **(B)** = 80 MWh x Number of Cycles scheduled during the year*A%

- v. The nameplate ratings shall be achievable during discharge for the full range of environmental conditions at the project site when the battery is fully charged. In any case, the BESS shall be capable of being discharged at reduced power levels from that specified above. However, the energy discharged from the battery shall not require to be greater than the nameplate watt-hour rating specified herein.
- vi. CESC shall, in accordance with Applicable Laws and Regulations thereunder, issue instructions to the BESSD for dispatch of electricity to the Delivery Point during such period and in such volume as it may specify in its instructions. The BESSD shall clearly specify the maximum recovery times required to restore the BESS for functional availability between duty cycles. However, in no case, the same shall be more than 1 hour.
- vii. Operational Window: Operational Window shall mean the expected hours/duration of system (capacity) availability on each day during the term of the Contract, excluding:
- a. Maximum BESS recovery time as specified in this document
 - b. Grid Outages (duly certified to this effect by the Grid Operator)
 - c. Planned Maintenance Outage duly informed by the BESSD to the off-taker with at least one month's prior notice, subject to total number of planned outage period being not more than 34 hours in a two-month period.

For operational purposes, Operational Window may be decided as mutually agreed between the BESSD and the CESC.

BESSD will have to comply with the Charging and Discharging Schedule as intimated by CESC through automated online process.

- viii. In addition to above, the BESSD shall also submit Available energy Test Report as per IEC 62933-2-1 on Annual basis. The assessment of BESS on annual basis shall be carried out by personnel trained for inspection as per ISO/IEC 17020.

- ix. It shall be the responsibility of the BESSD to make periodic replacements/replenishments of system capacities (to ensure annual guaranteed system ratings), if and when required, up to the Term of the Contract. Outage time as a result of replacement will also be counted as an “Accountable BESS Outage” for the purpose of computing BESS Availability.
- f. Pursuant to the provisions above, the BESSD shall plan the dispatch of electricity and convey its availability based on the schedule furnished by CESC. The BESSD shall adhere to all the technical requirements as brought out in **Annexure-A** of the RfS. The BESS shall conform to all the applicable CEA and CERC Standards for connectivity, metering, communication with the grid operators, etc. It is clarified that subject to the provisions of para 8.1.e (vi) above, CESC shall schedule charging and discharging activities with at least 30 minutes of advance notice to BESSD.

8.2 Shortfall in meeting Performance Criteria

Following provisions shall be applicable on the Contracted Capacity guaranteed to be off-taken by CESC:

- a. **Shortfall in demonstrating minimum Monthly Availability**: Subsequent to COD of full Project Capacity, in case the monthly Availability demonstrated by the BESSD is less than the minimum as specified above, such shortfall in performance shall make the BESSD liable to pay the liquidated damages provided in the BESPA to CESC.

Liquidated damages on account of shortfall in meeting the minimum Availability criteria as per Clause 8.1.e.i., will be computed as follows:

$$\text{Liquidated damages} = (A - B) \times C \times D \times 2$$

where,

A is Guaranteed Monthly Availability as per Clause 8.1.e.i. above;

B is Actual Monthly System Availability, as calculated as per Clause 8.1.e.ii. above;

C is BESS Power Capacity in MW;

D is Capacity Charges/MW/month as discovered through bidding process;

In case the BESSD fails to meet the monthly RtE demonstration as per Clause 8.1.e (iii) above, additional Liquidated Damages for the unavailability of the required minimum RtE shall be applicable for the entire month in terms of para 8.2.c below.

However, this damage shall not be applicable in events of Force Majeure identified under the BESPAs with CESC, affecting the availability of the system.

- b. **Shortfall in meeting minimum dispatchable Energy requirement:** The BESSD is required to meet the annual energy commitment subject to Clause 8.1.e (iv) above. The BESSD shall be liable for Liquidated Damages to the CESC, if any, on account of short fall in supply of committed energy on annual basis at the Average Market Clearing Price (MCP) in peak hour (21:00 Hours-24:00 Hours) in Day Ahead Market (DAM) of Power Exchange for corresponding year.

Illustration:

- a) Minimum dispatchable capacity during the third year as a % of Capacity at the Beginning of Life/COD) **(A)** = $[\text{Minimum dispatchable capacity \% at the end of the second year} + \text{Minimum dispatchable capacity \% at the end of third year}]/2 = [95\% + 92.5\%]/2 = 93.75\%$
 - b) Minimum Dispatchable energy during the year **(B)** = 80 MWh x Number of Cycles scheduled during the year * A%
 - c) Actual energy dispatched during the year = **C** MWh
 - d) Shortfall during the year **(D)** = $[B - C]$ MWh
 - e) Average MCP in peak hour (21:00 Hours-24:00 Hours) in Day Ahead Market (DAM) for the year = Rs. E/MWh
 - f) Liquidated Damage **(F)** = Rs. D x E
- c. **Shortfall in meeting Monthly RtE:** The BESSD shall be liable for Liquidated Damages to the off-taker, if any, on account of excess conversion losses, based on the following conditions:
- (a) For RtE < 70%, there shall be a liquidated damage at the Average Market Clearing Price (MCP) in peak hour (21:00 Hours-24:00 Hours) in Day Ahead Market (DAM) of Power Exchange for corresponding month for excess conversion losses considering system RtE = 90% and tariff payment for the corresponding month shall not be made to the BESSD;

- (b) For $70\% \leq \text{RtE} < 90\%$, there shall be a liquidated damage levied at the Average Market Clearing Price (MCP) in peak hour (21:00 Hours-24:00 Hours) in Day Ahead Market (DAM) of Power Exchange per unit of excess conversion losses considering system $\text{RtE} = 90\%$.

9 *Commissioning of Project*

- 9.1** The Commissioning of the Project shall be carried out by the BESSD in line with the procedure as per the RfS/BESPA. CESC may authorize any individual or committee or organization to witness and validate the commissioning procedure on site. Commissioning certificates shall be issued by CESC after successful commissioning. The BESSD shall obtain necessary safety clearances from the Central Electricity Authority/CEIG and any other agency, if applicable, prior to commissioning of the Project.

9.2 Part Commissioning

Part commissioning of the Project, without prejudice to the imposition of liquidated damages in terms of the BESPA, on part which is not commissioned, shall be accepted by CESC subject to the condition that minimum part commissioning capacity for the first part will be 50% of the project capacity. The total number of instalments in which a Project can be commissioned will not be more than 2, i.e., first initial instalment of 40 MWh and one subsequent instalment.

However, the Scheduled Commissioning Date (“SCD”) will not get altered due to part commissioning. Irrespective of dates of part commissioning or full commissioning, the BESPA will remain in force for a period as per Clause 18.2 of the RfS.

In case of part-commissioning, payments as per the BESPA shall be made on pro-rata basis, proportionate to the capacity commissioned. The procurement of part commissioned capacity will be based on the sole discretion of CESC. In case CESC is not interested to consider procurement of the part capacity till commissioning, the BESSD shall be allowed to sell part commissioned capacity in the open market till SCD.

9.3 Commissioning Schedule and Liquidated Damages Not Amounting to Penalty for Delay in Commissioning

- a. The Scheduled Commissioning Date (SCD) for commissioning of the full capacity of the Project shall be the date as on 18 months from the Effective Date of BESPA

(for e.g. if Effective Date of the BESPA is 05.07.2025, then SCD shall be 05.01.2027).

- b. The maximum time period allowed for commissioning of the full Project Capacity with applicable liquidated damages, shall be limited to the date as on 6 months from the SCD or the extended SCD (if applicable).
- c. In case of delay in commissioning of the Project beyond the SCD until the date as per Clause 9.3.b. above, as part of the liquidated damages, the total PBG/POI amount for the Project shall be encashed on per-day-basis and proportionate to the balance capacity not commissioned. For example, in case of a Project Capacity of 40 MW capacity, if commissioning of 20 MW capacity is delayed by 18 days beyond the SCD, then the liquidated damages shall be: $\text{PBG amount} \times (20/40) \times (18/180)$. For the purpose of calculations of the liquidated damages, 'month' shall be considered consisting of 30 days.
- d. As an alternative to the above encashment of PBG/POI, the BESSD may choose to make a payment of the amount corresponding to the liquidated damages, directly to CESC. The BESSD shall intimate to CESC, its chosen alternative out of the two options, within 3 business days of intimation of the liquidated damages to the Developer, as calculated by CESC. In case no response is received from the BESSD until the lapse of the above deadline, CESC shall encash the PBG/POI for the amount as per the liquidated damages. In case the Developer chooses to make necessary payments in lieu of the liquidated damages, the said payment shall be credited to CESC's account through NEFT payment, no later than 5 business days from the above intimation by the BESSD. In case of non- payment by the developer within the above deadline, the PBG will be encashed by CESC on the next business day.
- e. In case Commissioning of the Project is delayed beyond the date as per Clause 9.3.b above, the BESPA capacity shall stand reduced/amended to the Project Capacity commissioned and the BESPA for the balance capacity will stand terminated and shall be reduced from the selected Project Capacity.
- f. It is clarified that for the purpose of commissioning, the Project Capacity shall refer to the rated capacity of the Energy Storage System as declared by the BESSD in the BESPA. Any reduction in the Project Capacity on account of Clause 9.3.e. above, will have no bearing on the obligation of the BESSD to provide the Contracted Capacity as per the BESPA.

- g. In case of delay in commissioning of Project due to reasons beyond the reasonable control of the BESSD, CESC may extend the SCD after examining the issue on a case- to-case basis.

10 *Early Commissioning*

The BESSD shall be permitted for full commissioning as well as part-commissioning of the Project even prior to the SCD subject to availability of transmission connectivity and/or open access, if applicable. In cases of early/part commissioning, till SCD, the BESSD will be free to sell the electricity generated / battery capacity, to any entity other than CESC, provided that the first right of refusal will be vested with CESC. CESC shall provide refusal within 15 (fifteen) days from the receipt of the request, beyond which it would be considered as deemed refusal. In cases of early commissioning of full Project capacity prior to SCD, in case the CESC agrees to purchase such early commissioned power, the same shall be purchased at BESPAT tariff.

SECTION 3. STANDARD CONDITIONS OF CONTRACT

11 Obtaining RfS Documents

Interested Bidders shall have to download the official copy of RfS & other documents after login into the ISN-ETS portal by using the Login ID and Password provided by ISN- ETS during registration (**Refer Annexure - C**). The Bidder shall be eligible to submit/ upload the bid documents only after logging into the ISN-ETS portal and downloading the official copy of RfS.

12 Cost of Documents and Bid Processing Fees

Prospective Bidders interested to participate in the bidding process are required to submit their Project proposals in response to this RfS document along with a non-refundable processing fee as mentioned in the Bid Information Sheet. A Bidder will be eligible to participate in the bidding process only on submission of entire financial amounts as per the Bid Information Sheet. Payments against Cost of RfS document and Bid Processing Fee shall be done only through NEFT/RTGS (electronic transfer), and the Bidder shall submit the transaction receipt, as part of the online bid submission.

The bank details of CESC are available in the Bid Information Sheet. Upon making the necessary payments, the prospective Bidders shall immediately write to CESC (mailing to ranajit.bhattacharya@rpsg.in; soumya.sarkar@rpsg.in), providing the payment details along with name and registered address of the Bidder (with GSTIN of the paying entity), to enable seamless issuance of payment invoices for taxation purpose. CESC will not be liable for any delay in issuing necessary invoices in this regard

Bids submitted without cost of the RfS document and/or Bid Processing Fee and/or Bank Guarantee/Payment on Order Instrument against Earnest Money Deposit (EMD) (including partial submission of any one of the respective amounts), may be liable for rejection by CESC

13 Project Scope & Technology Selection

Under this RfS, the BESSD shall set up the Project including the dedicated transmission network up to the Interconnection/Delivery Point, at its own cost and in accordance to the provisions of this RfS document. All approvals, permits and clearances required for setting up of the Project and/or dedicated transmission network upto the Delivery Point (along with connectivity), including those required from State Government and local

bodies, shall be in the scope of the BESSD. The Project to be selected under this scheme provide for deployment of Battery Energy Storage Technology. However, the selection of Project would be technology agnostic within the above segment.

14 *Connectivity with the Grid*

Please refer Clause 7 of the RfS.

15 *Clearances Required from the Central/State Government and Other Local Bodies*

The BESSD are required to obtain all necessary clearances and permits as required for setting up the Project including but not limited to the following:

- a) No Objection (NOC)/Environmental clearance (if applicable) for the Project
- b) Approval for water from the concerned authority required for the Project
- c) Necessary approval(s) of CEIG/SEIG
- d) Any other clearances as may be legally required, in order to establish and operate the Project

The above clearances, as applicable for the Project, will be required to be submitted to CESC prior to commissioning of the Project. In case of any of the clearances not applicable for the said Project, the BESSD shall submit an undertaking in this regard, and it shall be deemed that the BESSD has obtain all the necessary clearances for establishing and operating the Project. Any consequences contrary to the above shall be the responsibility of the BESSD. The BESSD shall also comply with all the laws, regulations, orders and procedures issued by the appropriate authority, applicable for setting up and implementing the Project.

The BESSD shall be required to follow the applicable rules regarding project registration with the relevant authorities in line with the provisions of the applicable policies/regulations of the state of West Bengal. It shall be the responsibility of the BESSD to remain updated about the applicable charges payable to the such authority under the respective State Policy.

Note: The BESSD should apply for all the necessary approvals, permits and clearances not more than 90 days from the Effective Date of the BESPA, which shall be complete in all respects, incorporating the clarifications/changes as required by the concerned

authorities. The above timeline shall be adhered to, in order to examine cases where the BESSD faces delay in grant of the necessary approvals and permits, for a period substantially greater than the standard period of grant of approval by the respective organizations.

16 Bank Guarantee/ Payment on Order Instrument (POI) against Earnest Money Deposit (EMD)

- 16.1** Earnest Money Deposit (EMD) of **INR 6,00,00,000** (Rupees Six Crores Only) in the form of Bank Guarantee according to Format 7.3A and valid for 12 months from the last date of bid submission, shall be submitted by the Bidder along with their bid, failing which the bid shall be summarily rejected. The Bank Guarantees towards EMD have to be issued in the name of the Bidding Company/ Lead Member of Bidding Consortium. In the event of encashment of EMD, the encashed amount shall include all applicable taxes. Electronic Bank Guarantee (e-BG) is also acceptable against EMD under this RfS.
- 16.2** The Bidder shall furnish the Bank Guarantees towards EMD from any of the Scheduled Commercial Banks as listed on the website of Reserve Bank of India (RBI) and amended as on the date of issuance of bank guarantee. Bank Guarantee issued by foreign branch of a Scheduled Commercial Bank is to be endorsed by the Indian branch of the same bank or State Bank of India (SBI).

The EMD shall be valid as per the timelines stipulated above. However, shortfall in the EMD validity, if any, up to a period of seven (7) days shall be acceptable. Further, an additional shortfall only in the following cases shall be acceptable:

If the bidder has submitted the EMD with validity as per original bid submission date or as per any revised submission date, and if the deadline for submission of bids has been extended further, the Bid Guarantee shall be acceptable provided, the EMD is valid for more than two months from the actual date of bid submission and the Bidder submits the EMD extension for the requisite period within seven days from the date of actual bid submission, if required.

- 16.3** CESC has agreed to accept the EMD in the form of an unconditional and irrevocable Bank Guarantee instead of the cash deposit with the clear position intimated to the bidder that the EMD Bank Guarantee shall be encashable for being appropriated by CESC in terms of the guarantee as in the case of appropriation of the cash deposit lying

with CESC.

16.4 For unsuccessful Bidder(s), CESC shall release the EMD within 45 (forty-five) days of the date of issue of LoA to Selected Bidder. The Bank Guarantees towards EMD of the Successful Bidder shall be released subsequent to submission of PBG by them to CESC as per Clause 18 the RfS.

16.5 The Bank Guarantees have to be executed on non-judicial stamp paper. All expenditure towards execution of Bank Guarantees such as stamp duty etc. shall be borne by the Bidder

16.6 Forfeiture of EMD:

The BG towards EMD shall be encashed by CESC in following cases:

- a. If the bidder withdraws or varies the bid after due date and time of bid submission and during the validity of bid;
- b. In case, CESC offers to execute the BESPA with the Selected Bidder and if the Selected Bidder does not submit the requisite documents as per Clause 23 of the RfS or does not execute the BESPA within the stipulated time period;
- c. If after issuance of LoA, it is found that the documents furnished by the bidders as part of response to RfS are misleading or misrepresented in any way;
- d. If the bidder fails to furnish required PBG/POI in accordance with Clause 17 of the RfS

16.7 Payment on Order Instrument (POI): As an alternative to submission of EMD as above, the Bidder also has an option to submit a letter of undertaking issued by either of the following three organizations, viz. (i) Indian Renewable Development agency Limited (IREDA) or (ii) Power Finance Corporation Limited or (iii) REC Limited. This Letter of Undertaking shall be issued as “Payment on Order Instrument” (POI), wherein the POI issuing organization undertakes to pay in all scenarios under which the EMD would be liable to be encashed by CESC within the provisions of RfS/BESPA. This instrument would have to be furnished as per Format 7.3B of the RfS, within the timelines as per Clause 16.1 above, for the amount and validity period as per those Clause 16.1 above.

The term “Bank Guarantee (BG) towards/ against EMD” occurring in the RfS shall be

read as “Bank Guarantee (BG)/ Payment on Order Instrument (POI) towards/ against EMD”.

17 Performance Bank Guarantee (PBG)/ Payment on Order Instrument (POI)

- 17.1** Bidders selected by CESC based on this RfS shall submit Performance Bank Guarantee (PBG) for a value @ **INR 15,00,00,000** (Rupees Fifteen Crores Only), at least seven (7) working days prior to signing of BESPA. It may be noted that successful Bidder shall submit the PBG according to the Format 7.3C with a validity period upto (& including) the date as on 15 months after the COD of the Project. Upon receipt and after successful verification of the total PBG in the acceptable format, the BG submitted towards EMD shall be returned by CESC to the successful Bidder. It may be noted that BESPA will be signed only upon successful verification of the PBG submitted by the Successful Bidder. Electronic Bank Guarantee (e-BG) is also acceptable against PBG under this RfS. Prior to signing of BESPA, in case of any shortfall in validity of the PBG, the same will be acceptable, subject to the condition that the PBG validity is enhanced by the Successful Bidder prior to expiry of validity of the PBG.
- 17.2** The PBG is required to be submitted in the name of the entity signing the BESPA. In case of BESPA being eventually signed with the SPV incorporated/utilized by the successful bidder, the PBG may be submitted in the name of the successful bidder within the above prescribed deadline, if the bidder chooses to do so, and the same shall be replaced by the PBG issued in the name of the SPV, prior to signing of BESPA.
- 17.3** The BESSD shall furnish the PBG from any of the Scheduled Commercial Banks as listed on the website of Reserve Bank of India (RBI) and amended as on the date of issuance of bank guarantee. Bank Guarantee issued by foreign branch of a Scheduled Commercial Bank is to be endorsed by the Indian branch of the same bank or State Bank of India (SBI). In case of the Project being implemented through an SPV incorporated by the successful bidder, the PBG shall be furnished in the name of the SPV, except for the case as indicated in Clause 34.3 of the RfS.
- 17.4** The format of the Bank Guarantees prescribed in the Format 7.3 A (EMD) and 7.3 C (PBG) shall be strictly adhered to and any deviation from the above Formats shall result in rejection of the EMD/ PBG and consequently, the bid. In case of deviations in the formats of the Bank Guarantees, the corresponding BESPA shall not be signed.
- 17.5** CESC has agreed to accept the PBG in the form of an unconditional and irrevocable

Bank Guarantee instead of the cash deposit with the clear position intimated to the bidder that the PBG shall be encashable for being appropriated by CESC in terms of the guarantee as in the case of appropriation of the cash deposit lying with CESC.

- 17.6** The selected Bidder for the Project selected based on this RfS is required to sign BESPA with CESC within the timeline as stipulated in Clause 18 of the RfS. In case, CESC offers to execute the BESPA with the Selected Bidder and if the Selected Bidder does not submit the requisite documents as per Clause 18 of the RfS, or does not execute the BESPA within the stipulated time period, then the Bank Guarantee equivalent to the amount of the EMD shall be encashed by CESC from the Bank Guarantee available with CESC (i.e. EMD or PBG) as penalty, the selected Project shall stand cancelled and the selected Bidder expressly waives off its rights and objections, if any, in that respect. It is further clarified that the penalties are genuine pre-estimate and Bidder/BESSD agrees that in case of invocation of BG, CESC is under no obligation to produce any estimate of loss in this regard.
- 17.7** The Bank Guarantees have to be executed on non-judicial stamp paper of appropriate value as per Stamp Act relevant to the place of execution.
- 17.8** All expenditure towards execution of Bank Guarantees such as stamp duty etc. shall be borne by the Bidders. Any Bank Guarantee or amendment to be submitted as part of the bidding process / contract execution, shall be effective only when the BG issuance message is transmitted by the issuing bank through SFMS to “ICICI Bank Limited IFSC: ICIC0000006, Client Name: CESC Limited” and a confirmation in this regard is received by CESC.
- 17.9** In case of Bank Guarantees issued by foreign branch of a Scheduled Commercial Bank, the same is to be endorsed by the Indian branch of the same bank or SBI, and the endorsing bank would be required to provide the SFMS confirmation.
- 17.10** The PBG shall be returned to the BESSD within 45 days from the COD of the Project, after taking into account any liquidated damages due to delays in commissioning as per Clause 9 of the RfS.
- 17.11 Payment on Order Instrument (POI):** As an alternative to submission of PBG as above, the BESSD also has an option to submit a letter of undertaking issued by either of the following three organizations, viz. (i) Indian Renewable Development agency Limited (IREDA) or (ii) Power Finance Corporation Limited or (iii) REC Limited. This

Letter of Undertaking shall be issued as “Payment on Order Instrument” (POI), wherein the POI issuing organization undertakes to pay in all scenarios under which the PBG would be liable to be encashed by CESC within the provisions of RfS/BESPA. This instrument would have to be furnished as per Format 7.3 D of the RfS, within the timelines as per Clause 17.1 above, for the amount and validity period as per those Clause 17.1 above. In case the BESSD chooses to submit POI, delay in submission of the POI beyond the timeline stipulated at Clause 17.1 above, will be applicable in this case too.

The term “Performance Bank Guarantee (PBG)” occurring in the RfS shall be read as “Performance Bank Guarantee” (PBG)/Payment on Order Instrument (POI)”.

18 Battery Energy Storage Purchase Agreement (BESPA)

- 18.1** CESC shall enter into Battery Energy Storage Purchase Agreement (BESPA) with Bidders selected based on this RfS. A copy of standard BESPA to be executed between CESC and the BESSD will be made available on ISN-ETS Portal and also on CESC website. The BESPA shall be signed within 30 days of issuance of LoAs, if not extended by CESC. Subsequent extension in this timeline shall be finalized as mutually agreed by CESC and the BESSD.
- 18.2** The BESPA shall be valid from the Effective Date to a period of 12 years from the SCD of the Project or the date of full commissioning of the Project, whichever is later. Any extension of the BESPA period beyond the term of the BESPA shall be through mutual agreement between the BESSD and CESC.
- 18.3** The Performance Bank Guarantee as per Clause 17 above shall be submitted by the BESSD, at least seven (7) working days prior to signing of BESPA. Before signing of BESPA between CESC and the BESSD, CESC will verify the shareholding of the Project Company along with a copy of complete documentary evidence. If at this stage it is found that the documents furnished by the BESSD are false / misleading or misrepresented in any way, then the provisions contained in this RfS will be applicable.
- 18.4** Successful bidder will have to submit the required documents to CESC for verification within 15 days from the issue of LoA. In case of delay in submission of documents beyond the threshold day as mentioned above, CESC shall not be liable for delay in verification of documents and subsequent delay in signing of BESPA. Effective Date of the BESPA shall be the date as on 30 days from the date of issue of LoA or the date of

signing of BESPA, whichever is earlier. Subsequent to expiry of the 30 -day period after the issuance of LoA, in case CESC intimates to the Successful Bidder, a particular date as the date for signing of BESPA, the specified date shall become the Effective Date of the BESPA, irrespective of the date of signing of BESPA.

18.5 The BESSD will be free to replenish the battery capacity from time to time during the Term of the BESPA at its cost and expense to meet the performance criteria. However, CESC will be obligated to off-take capacity only within the performance range as specified in the BESPA and at the charges applicable as per the existing agreements. For the avoidance of doubt, CESC shall not be responsible for, nor bear any financial obligation in respect of, any additional capacity installed by BESSD to meet its performance criteria under the BESPA that may result in excess supply beyond Contracted Capacity.

18.6 In addition to the above, subsequent to signing of BESPA, the BESSD shall be required to submit the monthly Project status on 5th day of every calendar month as per the format as provided subsequent to signing of BESPA.

19 Financial Closure or Project Financing Arrangements

19.1 The Project shall achieve Financial Closure within the date as on 9 months after the Effective Date of the BESPA (e.g. if Effective Date is 05.08.2025, the above deadline will be 05.05.2026).

19.2 At the stage of financial closure, the BESSD shall report 100% tie-up of Financing Arrangements for the Project. In this regard, the BESSD shall submit a certificate/necessary document from all financing agencies regarding the tie-up of 100% of the funds indicated for the Project, including arrangements of funds in the form of Equity.

19.3 Checklist of documents to be submitted at this stage is provided at **Annexure-B** of the RfS.

19.4 In case of default in achieving above condition as may be applicable within the stipulated time, CESC shall be entitled to encash PBG/POI, unless the delay is on account of factors not owing to any action or inaction on the part of the BESSD, or caused due to a Force Majeure as per BESPA. An extension can however be considered, on the sole request of BESSD, on advance payment of extension charges of INR 1,000/-

per day per MW. This extension will not have an impact on the obligation of BESSD to achieve commissioning by the SCD of the Project. Subsequent to the completion of deadline for achieving financial closure, CESC shall issue notices to the BESSD if they are not meeting the requirements of Financial Closure as per the RfS deadlines. The notice shall provide a period of 7 business days to the BESSD to either furnish the necessary documents or make the above mentioned payment of Rs. 1,000/MW/day. In case of non-submission of either-the requisite documents or the necessary amount upon expiry of the above mentioned notice period of 7 days, CESC shall encash the PBG/POI of the BESSD and terminate the BESPA. The amount of Rs. 1,000/MW/day shall be paid by the BESSD in advance prior to the commencement of the said delay period and shall be calculated based on the period of delay as estimated by the BESSD. In case of the BESSD meeting the requirements of Financial Closure before the last date of such proposed delay period, the remaining amount deposited by the BESSD shall be returned by CESC. Interest on account of delay in deposition of the above mentioned charges or on any subsequent extension sought, shall be levied @ one year SBI MCLR rate /annum on pro-rata basis. Any extension charges paid so, shall be returned to the BESSD without any interest on achievement of successful commissioning within the SCD, on pro-rata basis, based on the project capacity commissioned as on SCD.

- 19.5** The BESSD will have to submit the required documents to CESC at least 14 days prior to the scheduled Financial Closure date. In case of delay in submission of documents mentioned above, CESC shall not be liable for delay in verification of documents and subsequent delay in Financial Closure.

20 *Land Arrangements for the Project*

- 20.1** Land identification and possession shall be in line with Clause 6 of the RfS, and CESC shall facilitate usage of land to the BESSD. The tentative site plan is provided in **Annexure-D** of the RfS.
- 20.2** The bidders are advised to visit the proposed project site (at their own expense), prior to the submission of the bid, and make surveys and assessments as deemed necessary for proposal submission. Interested bidder shall intimate CESC at least two days in advance in case they wish to visit the site location. Such site visit shall be arranged up to 7 days prior to the date of pre-bid meeting as specified in this RfS.
- 20.3** CESC shall grant to BESSD a non-exclusive right-to-use over the designated land, to

be formalized through a comprehensive agreement to be signed along with the BESPA. This right-to-use is strictly limited to the duration of twelve (12) years. Upon the expiration of this twelve-year term, full and unencumbered ownership of both the land and the Battery Energy Storage System (BESS) shall automatically revert to CESC at Re. 1.

- 20.4** CESC shall make the land available to BESSD with preliminary demarcation, upon signing of Right to Use Agreement as per clause 20.3 above on as is/where is basis. The entire scope of Land development, including construction of boundary wall, approach road (capable of handling the load of the requisite fire tender and all other equipment) up to the main entrance of the project site, and power/control cable trenches (Cable trench route to be finalized in consultation with CESC) as required for successful erection and commissioning of BESS at project site shall be in the scope of BESSD. Tree and bush cutting as per relevant law, clearing and grubbing, along with demolition of any obstructions or facilities, land filling, removal of scrap materials, structures, waste and debris, as applicable and all other necessary civil works required to facilitate the commencement of construction activities at the project site shall be in BESSD's scope.

21 *Commercial Operation Date (COD)*

- 21.1** In case of part commissioning, Commercial Operation Date (COD) will be declared only for that part of Project Capacity. COD shall be the next day after the date of commissioning of the Project, as indicated on the Commissioning Certificate issued by CESC / Competent Authority, upon successful commissioning of the full capacity of the Project or the last part capacity of the Project as the case may be, as declared in line with the commissioning procedure as provided in the RfS/BESPA. Similarly, for each part commissioning, COD will be the next day after actual date of commissioning of the respective part capacity.
- 21.2** The BESSD shall obtain necessary charging and safety clearances from the SEIG/CEIG/CEA prior to commissioning of the Project. The 12-year tenure of BESPA shall be as per the provisions of BESPA. Any capacity being offered to the grid before COD shall be off-taken by CESC under this scheme. Declaration of COD will be governed by applicable Grid Code provisions, and in case of discrepancy between the procedure given in the RfS and that stipulated in the Grid Code, the provisions of Grid

Code will prevail. SLDC & STU permission, if required, is to be obtained for charging for testing and for declaring COD.

22 *Modifications in Controlling Shareholding*

22.1 The Bidder shall provide complete information in its Bid in reference to this RfS about its Promoters and upon issuance of LoA, the BESSD shall provide information about its Promoter(s) and their shareholding in the company before signing of BESPA with CESC.

22.2 No change in controlling shareholding of the Bidding Company or Bidding Consortium shall be permitted from the date of submission of response to RfS till the execution of the BESPA. However, in case the Project is being set up by a listed Company, this condition will not be applicable.

Following shall not be considered as change in Controlling shareholding as mentioned above:

- a. Infusion of fresh equity capital amongst the existing shareholders/promoters at the time of Bid Submission to meet equity requirements.
- b. Conversion of CCDs, CCPs etc. already issued to existing shareholders.
- c. Death, marriage, Divorce, minor attaining major (any legal heir who was minor at the time of signing of BESPA), insolvent, insane of existing shareholders.
- d. Transfer or infusion of Equity by Affiliate in the Bidding Company.
- e. Transfer of shares to IEPF.
- f. Issue of Bonus Shares.

22.3 The Successful Bidder executing the Project, if being a single company, shall ensure that its shareholding in the SPV/ Project Company executing the BESPA, shall not fall below 51% at any time prior to COD of the Project. In the event the successful Bidder is a consortium, then the combined shareholding of the consortium members in the SPV/ Project Company executing the BESPA, shall not fall below 51% at any time prior to COD. However, in case the Project is being set up by a listed Company, this condition will not be applicable.

22.4 In case of the Successful Bidder itself executing the BESPA, it shall ensure that Controlling Shareholding of the bidding company remains unchanged until the COD.

However, in case the Project is being set up by a listed Company, this condition will not be applicable.

- 22.5** In case of companies having multiple promoters (but none of the shareholders having more than 50% of voting rights and paid up share capital), it shall be considered as a company under joint control. In such cases, the shareholding pattern in the company as submitted at the time of bidding, shall be maintained upto the COD.
- 22.6** Any change in the shareholding after COD can be undertaken after intimation to CESC.
- 22.7** In the event of Change in Shareholding/ Substitution of Promoters triggered by the Financial Institutions leading to signing of fresh BESPA with a new entity, an amount of INR 10 Lakh +applicable taxes per Transaction as Facilitation Fee (non- refundable) shall be deposited by the BESSD to CESC.

23 Instructions to Bidders for Structuring of Bid Proposals in Response to RfS

- 23.1** The Bidders shall submit bid for the entire Contracted Capacity. Bids submitted for capacity less than the Contracted Capacity shall be rejected.
- 23.2** The bidder including its Parent, Affiliate or Ultimate Parent or any Group Company shall submit single response to RfS. Detailed Instructions to be followed by the bidders for online submission of response to RfS are stated at **Annexure – C** of this RfS. Submission of bid proposals by Bidders in response to RfS shall be in the manner described below:
- a. Covering Letter as per **Format 7.1.**
 - b. In case of a Bidding Consortium, a Power of Attorney in favour of the Lead Member issued by the other Members of the Consortium shall be provided in original as per format attached hereto as **Format 7.2.**

In the event any Member of the Bidding Consortium (other than Lead Member) is a foreign entity, it may submit Board Resolutions in place of Power of Attorney for the purpose of fulfilling the requirements under this clause. Provided that such Board Resolutions shall be supported by an unqualified opinion issued by the legal counsel of such foreign entity stating that the Board Resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing Company and the authorizations granted therein are true and valid.

- c. Bank Guarantee/ Payment on Order Instrument (POI) against Earnest Money Deposit (EMD) as per **Format 7.3 A/7.3 B.**

- d. Board Resolutions, as per prescribed formats enclosed as per **Format 7.4** duly certified by the Company Secretary or the Director of the relevant Bidder, as applicable to the Bidder and mentioned hereunder:
- i. Board Resolution from the Bidding Company or the Lead Member of the Consortium, as the case may be, in favour of the person signing the response to RfS and in the event of selection of the Project and to sign the BESPA with CESC. Board Resolution from each of the Consortium Members in favour of the person signing Consortium Agreement.
 - ii. Board Resolution from the Bidding Company committing 100% (One Hundred Percent) of the equity requirement for the Project/ Board Resolutions from each of the Consortium Members together in aggregate committing to 100% (One Hundred Percent) of equity requirement for the Project (in case of Bidding Consortium); and
 - iii. Board Resolutions from each of the Consortium Members and Lead member contributing such additional amount over and above the percentage limit (specified for the Lead Member and other member in the Consortium Agreement) to the extent becoming necessary towards the total equity share in the Project Company, obligatory on the part of the Consortium pursuant to the terms and conditions in the Consortium Agreement.
- e. In case of a Consortium, the Consortium Agreement between the Members in the Consortium as per **Format 7.5** along with Board resolution from each Member of the Consortium for participating in Consortium.
- f. Format for Financial Requirements as per **Format 7.6** along with the certificate from practicing Chartered Accountant/ Statutory Auditors showing details of computation of the financial credentials of the Bidder.
- g. Undertaking regarding no willful default and no major litigation pending as per **Format 7.7**.
- h. A disclosure statement as per **Format 7.8/7.8A** regarding participation of any related companies in the bidding process.
- i. Format for Technical Criteria as per **Format 7.9** (to be filled out separately for each Project).
- j. Declaration by the Bidding Company / Lead Member of Bidding Consortium for the Proposed Technology Tie Up as per **Format 7.10**.
- k. Attachments
- i. Memorandum of Association, Article of Association needs to be attached along with

the bid. The bidder should also highlight the relevant provision which highlights the objects relating to Power/ Energy/ Renewable Energy/ Standalone Battery Energy Storage System development.

- In case, there is no mention of the above provisions in the MoA/ AoA of the bidding company, the same has to be amended and submitted prior to signing of BESPA, if the bidder is selected as Successful bidder.
 - If the selected bidder wishes to execute the project through a Special Purpose Vehicle (SPV), the MoA/ AoA of the SPV highlighting the relevant provision which highlights the objects relating to Power/ Energy/ Renewable Energy/ Solar Power plant development has to be submitted prior to signing of BESPA.
- ii. Certificate of Incorporation of Bidding Company/ all member companies of Bidding Consortium. In case of AIF, registration certificate issued by SEBI would be required.
 - iii. A certificate of shareholding of the bidding company, its Parent and Ultimate Parent (if any) duly certified by a practicing Chartered Accountant/ Company Secretary as on a date within 30 days prior to the last date of bid submission. CESC reserves the right to seek additional information relating to shareholding in promoter companies, their parents/ ultimate parents and other group companies to satisfy themselves that RfS conditions have been complied with and the bidder will ensure submission of the same within the required time lines.
 - iv. Certified copies of annual audited accounts for the last two financial years, i.e. FY 2024-25 and FY 2023-24, and provisional audited accounts, along with certified copies of Balance Sheet, Profit & Loss Account, Schedules and Cash Flow Statement supported with bank statements as on the date at least 7 days prior to the due date of bid submission (if applicable), shall be required to be submitted.
 - v. Details of all types of securities/instruments which are pending conversion into equity whether optionally or mandatorily.
- l. Covering letter of the Financial bid as per **Format - 7.11**.
 - m. Break-up of the Preliminary Estimate of Cost of Project as per **Format 7.12**
 - n. Format for Technical Undertaking – compliance with technical & regulatory requirements as per **Format 7.13**

24 *Important Notes and Instructions to Bidders*

- 24.1** Wherever information has been sought in specified formats, the Bidders shall fill in the details as per the prescribed formats and shall refrain from any deviations and referring to any other document for providing any information required in the prescribed format.
- 24.2** The Bidders shall be shortlisted based on the declarations made by them in relevant schedules of RfS. The documents submitted online will be verified before signing of BESPA in terms of Clause 18 of the RfS.
- 24.3** If the Bidder/Member in a Bidding Consortium conceals any material information or makes a wrong statement or misrepresents facts or makes a misleading statement in its response to RfS, in any manner whatsoever, CESC reserves the right to reject such response to RfS and/or cancel the Letter of Award, if issued, and the Bank Guarantee/POI provided up to that stage shall be encashed. Bidder shall be solely responsible for disqualification based on their declaration in the submission of response to RfS.
- 24.4** If the event specified at Clause 24.3 is discovered after the Effective Date of BESPA, consequences specified in BESPA shall apply.
- 24.5** Response submitted by the Bidder shall become the property of the CESC and CESC shall have no obligation to return the same to the Bidder. However, the EMDs submitted by unsuccessful Bidders shall be returned as specified in Clause 18 of the RfS.
- 24.6** All documents of the response to RfS (including RfS and subsequent Amendments/ Clarifications/ Addenda, BESPA and BESSA) submitted online must be digitally signed by the person authorized by the Board as per Format 7.4.
- 24.7** The response to RfS shall be submitted as mentioned in Clause 23 of the RfS. No change or supplemental information to a response to RfS will be accepted after the scheduled date and time of submission of response to RfS. However, CESC reserves the right to seek additional information from the Bidders, if found necessary, during the course of evaluation of the response to RfS.
- 24.8** The Bidder shall make sure that the correct, valid and operative Pass-Phrase to decrypt the relevant Bid-part is submitted into the ‘Time Locked Electronic Key Box (EKB)’ after the deadline of Bid submission, and before the commencement of the Online Tender Opening Event (TOE) of Technical bid.

- 24.9** All the information should be submitted in English language only. In case of foreign bidders having documents in other than English language, then the documents shall be translated in English language by certified translator and submitted.
- 24.10** Bidders shall mention the name of the contact person and complete address and contact details of the Bidder in the covering letter.
- 24.11** Response to RfS that are incomplete, which do not substantially meet the requirements prescribed in this RfS, will be liable for rejection by CESC.
- 24.12** Response to RfS not submitted in the specified formats will be liable for rejection by CESC.
- 24.13** Bidders delaying in submission of additional information or clarifications sought will be liable for rejection.
- 24.14** Non-submission and/ or submission of incomplete data/ information required under the provisions of RfS shall not be construed as waiver on the part of CESC of the obligation of the Bidder to furnish the said data/ information unless the waiver is in writing.
- 24.15** The West Bengal Electricity Regulatory Commission shall be the appropriate commission to exercise the regulatory and adjudicatory jurisdiction in regard to matters between BESSD and CESC. Subject to the above, only courts at Kolkata shall have exclusive jurisdiction in all matters pertaining to this RfS.
- 24.16** All the financial transactions to be made with CESC including delay charges (except Payment Security Deposit and charges for delay in Financial Closure), and any additional charges (if required), shall attract applicable taxes on each transaction, irrespective of the same being mentioned in the RfS/BESPA.

25 *Non-Responsive Bid*

The electronic response to RfS submitted by the bidder along with the documents submitted **online** to CESC shall be scrutinized to establish “Responsiveness of the bid”. Each bidder’s response to RfS shall be checked for compliance with the submission requirements set forth in this RfS.

Any of the following conditions shall cause the Bid to be “Non-responsive”:

- (a) Non-submission of the requisite Cost of RfS and/ or Processing Fee as mentioned in the Bid Information Sheet.

- (b) Response to RfS not received by the due date and time of bid submission.
- (c) Non-submission of correct, valid and operative Pass-Phrases for both Technical and Financial Bid (Price Bid) Parts after the deadline of Bid Submission, and before the commencement of the Online Tender Opening Event (TOE) of Technical Bid.
- (d) Any indication of tariff in any part of response to the RfS, other than in the financial bid.
- (e) Non-submission of payment details against Cost of RfS and/or Bid Processing Fee
- (f) Data filled in the Electronic Form of Financial Bid (Second Envelope), not in line with the instructions mentioned in the same electronic form.
- (g) Except for the scenario as per Clause 5.1 above, in case it is found that the Bidding Company including Ultimate Parent Company/ Parent Company/ Affiliate/ Group Companies have submitted more than one response to this RfS, then all these bids submitted shall be treated as non-responsive and rejected.
- (h) Non-submission or partial submission of EMD in acceptable form along with response to RfS
- (i) Response to RfS (offline as well as online) not received by the due date and time of Bid submission.
- (j) Non-submission of the original documents by due date and time of Bid submission.
- (k) Conditional bids shall be summarily rejected.

In any of the above cases, the bid shall not be considered for bid opening and evaluation process.

26 Method of Submission of Response to RfS by the Bidder

26.1 The Bidder has to submit original of following documents **offline:**

- a. Bank Guarantee/ Payment on Order Instrument towards EMD as mentioned in the Bid Information Sheet (as per Format 7.3A/ 7.3B). One EMD may be submitted for the cumulative capacity quoted by the bidder, or individual EMDs may be submitted for each Project.
- b. Pass-phrases for Techno-commercial and Financial bids submitted on the ETS portal.

No documents will be accepted in person, on or before the date of bid submission.

Bank Guarantee/POI against EMD needs to be submitted in both online and offline modes. The bidders will be required to submit the bank guarantee, either in person or through post, at the office of CESC until the date as on 2 working days after the closing date of bid submission. The 2-day duration will be counted from the date of bid submission.

For e.g., if the bid submission deadline is 18:00 hrs on 22.05.2025, the above deadline will expire at 18:00 hrs on 24.05.2025. In case of the above deadline being a holiday, the next working day in CESC will be the deadline for submission of Bank Guarantees.

Note: In all cases, the Bank Guarantee/POI against EMD (if applicable), shall be issued on or before the bid submission deadline. These instruments issued after the expiry of the deadline will be summarily rejected.

The bidding envelope shall contain the following sticker:

RfS for Procurement of 40 MW/80 MWh Battery Energy Storage Systems in Kolkata under Tariff-based Competitive Bidding	
<i>Capacity of the Project applied for</i>	<i>40 MW/ 80MWh</i>
<i>RfS Reference No.</i>	
<i>Submitted by</i>	<i>(Enter Full name and address of the Bidder)</i>
<i>Organization ID (OID) on ETS portal</i>	<i>(Enter the OID through which the Bid has been submitted online on ETS portal)</i>
<i>Authorized Signatory</i>	<i>(Signature of the Authorized Signatory) (Name of the Authorized Signatory) (Stamp of the Bidder)</i>
<i>Bid Submitted to</i>	

26.2 Documents to be Submitted Online

Detailed instructions to be followed by the Bidders for online submission of response to RfS have been stated in **Annexure-C** of this RfS. The bidders shall strictly follow the instructions mentioned in the electronic form in respective technical bid and financial bid while filling the form.

If the Bidder has submitted bid online and fails to submit the Bank Guarantee for requisite amount offline by the last date of bid submission, then the same shall be treated as incomplete bid and Cost of RfS, Processing fee submitted at this stage will be

encashed, the EMD(s) shall be returned and the submitted bid will stand cancelled.

All documents of the response to RfS submitted online must be digitally signed and uploaded on the website, <https://www.bharatelectronicstender.com>. Response to RfS shall contain the following:

I. Technical Bid (First Envelope)

The Bidder shall upload single technical bid containing **scanned copies** of the following documents duly signed and stamped on each page by the authorized signatory as mentioned below.

- (a) Formats - 7.1, 7.2 (if applicable), 7.3 A, 7.3 B (if applicable) 7.4, 7.5 (if applicable), 7.6, 7.7, 7.8/7.8A, 7.9, 7.10, 7.11 and 7.13 as elaborated in Clause 23 of the RfS.
- (b) All attachments elaborated in Clause 23 of the RfS, under the sub-clause k: Attachments, with proper file names.
- (c) All supporting documents regarding meeting the eligibility criteria.
- (d) Scanned Copies of NEFT/RTGS details towards Cost of RfS Document and Bid Processing Fee as mentioned in Bid Information Sheet.
- (e) Scanned Copies of requisite amount of Bank Guarantee/Payment on Order Instrument towards EMD as mentioned in the Bid Information Sheet.

The Bidder will have to fill the Electronic Form provided at CESC website as part of Technical Bid.

Submission of Pass-phrases: In line with Clause 24.8, and **Annexure-C** of the RfS, the Bidder shall be required to submit the Pass-Phrase to decrypt the relevant Bid-part is submitted into the 'Time Locked Electronic Key Box (EKB)' after the deadline of Bid submission, and before the commencement of the Online Tender Opening Event (TOE) of Technical bid.

II. Financial Bid (Second Envelope)

Bidders shall submit the single Financial Bid containing the scanned copy of following document(s):

- (a) Covering letter as per Format - 7.11 of the RfS
- (b) Preliminary Estimate of Cost of the Project as per Format 7.12 of the RfS

Only a single capacity charge (INR/MW/Month) for the Project, shall have to be

filled online in the Electronic Form provided at the ISN-ETS portal. The instructions mentioned in the Financial Bid Electronic Form have to be strictly followed without any deviation, else the bid shall be considered as non-responsive.

Important Note:

- (a) The Bidders shall not deviate from the naming and the numbering formats of envelopes mentioned above, in any manner.
- (b) In each of the envelopes (as part of online bid submission), all the documents enclosed shall be indexed and flagged appropriately, with the index list indicating the name of the document against each flag.
- (c) All the envelopes shall be properly sealed with the signature of the Authorized Signatory running across the sealing of the envelopes.

In case the Bidder submits the online documents on ISN-ETS within the bid submission deadlines and fails to submit the offline documents in the office of CESC within the bid submission deadlines, the online bid of the Bidder shall not be opened and shall be 'archived' on the ISN-ETS portal. Similarly, bids submitted offline but without any online submission on ISN-ETS portal shall not be opened and the EMD shall be returned to the respective bidder. In such cases, Bid Processing fee and cost of RfS document, if paid by the Bidder, will not be refunded to the Bidder.

- (d) In case of submission of Bank Guarantee against EMD online on or before the bid submission deadline, and non-submission of the hard copy of the Bank Guarantee to CESC within the date as on 2 working days subsequent to bid submission deadline, the respective bidder will be debarred from participating in any of the tenders issued by CESC, for a period of 6 (six) months, starting from the last date of bid submission of this RfS.
- (e) Tariff to be quoted in the Financial Bid shall be inclusive of GST.

27 Notice Board for Display

The BESSD will have to put a notice board (at least 180 cm x 120 cm) at its project site main entrance prominently displaying the following message before declaration of COD.

40 MW / 80 MWh ISTS-Connected Battery Energy Storage System Pilot

Project Owned and operated by

----- (insert name of the BESSD)

**[Under RfS for Procurement of 40MW/80 MWh Battery Energy Storage
Systems under Tariff-based Competitive Bidding in Kolkata by
CESC]**

New Cossipore Generating Station

28, Jheel Road, Kolkata – 700002, West Bengal

28 Validity of the Response to RfS

The Bidder shall submit the response to RfS which shall remain valid up to 180 (One Hundred Eighty) days from the last date of submission of response to RfS (“Bid Validity”). CESC reserves the right to reject any response to RfS which does not meet the aforementioned validity requirement. It is clarified that subsequent to issuance of LoAs, the discovered tariffs shall be deemed to be valid until the signing of BESPA, pursuant to Clause 40.5.3 of the RfS.

29 Bid Preparation Cost

The Bidder shall be responsible for all the costs associated with the preparation of the response to RfS and participation in discussions and attending pre-bid meeting(s) etc. CESC shall not be responsible in any way for such costs, regardless of the conduct or outcome of the bid process.

30 Technical Clarifications/ Pre-Bid Meeting/ Enquiries/ Amendments

30.1 Clarifications/ Doubts, if any, on RfS document may be emailed and/ or through ISN-ETS portal. The format for submission of clarifications is available on the portal.

30.2 CESC will make effort to respond to the same in the Pre-Bid Meeting to be held as mentioned in the Bid Information Sheet. A compiled list of such questionnaire and

CESC's response will be uploaded in the ISN-ETS portal <https://www.bharat-electronictender.com>. If necessary, amendments, clarifications, elaborations shall be issued by CESC which will be notified on CESC/ ISN-ETS web site. No separate reply/intimation will be given for the above, elsewhere. In the event of the issuance of any revision or amendment of the RfS documents, the Bidders shall be provided a period of at least 7 (seven) days therefrom, for submission of Bids.

30.3 A Pre-Bid Meeting shall be held on-line as mentioned in the Bid Information Sheet.

30.4 Enquiries/ Clarifications may be sought by the Bidder by contacting CESC's officials as per the details contained in the Bid Information Sheet.

30.5 A site visit to the proposed project location may be arranged at the request of the Bidders. Interested bidders may give a week notice so that such visit can be arranged.

31 *Right of CESC to Reject a Bid*

CESC reserves the right to reject any or all of the responses to RfS or cancel the RfS or annul the bidding process for any project at any stage without assigning any reasons whatsoever and without thereby any liability. In the event of the tender being cancelled at any stage, subsequent to bid submission and prior to issuance of LoA, the processing fee (excluding GST, if amount credited to CESC's account), without any interests, and EMD submitted by the Bidders shall be returned to the respective Bidders.

Note: In the event of cancellation of LoA prior to signing of BESPA, Bid Processing Fee will not be refunded.

32 *Post Award Compliances*

Timely completion of all the milestones i.e. signing of BESPA, meeting Financial Closure Requirements/Conditions Subsequent (BESPA), Commissioning etc. will be the sole responsibility of BESSD. CESC shall not be liable for issuing any intimations/reminders to BESSD for timely completion of milestones and/ or submission of compliance documents.

Any checklist shared with BESSD by CESC for compliance of above mentioned milestones to be considered for the purpose of facilitation only. Any additional documents required as per the conditions of Guidelines, RfS and BESPA must be timely

submitted by the BESSD.

Tax implications, if any, on procurement of capacity under this RfS, will be borne by the BESSD.

Tentative timelines of various activities to be carried out under this RfS are summarized as follows:

Activity	Timeline
Date of issuance of RfS	30.07.2025
Site Visit	from 02.08.2025 to 17.08.2025
Date of pre-bid meeting/technical clarifications	25.08.2025
Bid submission deadline	18.09.2025
Issuance of Letter of Award (LoA)	On or before 28.10.2025
Submission of documents for verification in terms of clause 18.3 of RfS	Within 15 days from award of LoA
Signing of the BESPA and Right to Use Agreement with respect to Project land	Within 30 days from award of LoA
Financial Closure	Within 270 days from signing of BESPA
Schedule Commissioning Date	Within 540 days from signing of BESPA

33 Point of Contact in CESC

Following officers/departments are to be contacted by the Bidders based on the stage of bidding and project implementation under this RfS:

- (i) Bid submission upto issuance of LoA:-
 - (a) Details as per Bid Information Sheet
- (ii) Subsequent to issuance of LoA upto commencement of power supply: -
 - (a) Power Marketing Department

Sayan Koley, Assistant Manager	9831644854 Email: sayan.koley@rpsg.in
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Mr Arnab Sengupta, Deputy Manager	6291317636 Email: arnab.sengupta@rpsg.in
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SECTION 4. QUALIFICATION REQUIREMENTS FOR BIDDERS

Short listing of Bidders will be based on the following Criteria:

34 *General Eligibility Criteria*

Bidders participating in the RfS will be required to meet the following eligibility criteria (as applicable).

34.1 The Bidder must fall under either of the following categories:

- i. A Company under the Companies Act, 2013.
- ii. A Foreign Company under the respective nation's laws.
- iii. Alternative Investment Funds (AIF) as registered under SEBI. "AIF" shall be as defined by SEBI.
- iv. A Consortium comprising the above entities.

The above would be subject to the relevant Acts, Rules, Guidelines, Orders and Policy documents of the Government of India as amended from time to time.

34.2 A Consortium shall participate with one of the consortium partners as the Lead Member. Consortium shortlisted and selected based on this RfS has to necessarily form a Project Company and get it registered under the Companies Act, 2013 prior to signing of BESPA, keeping the original shareholding of the Bidding Consortium unchanged. For the avoidance of doubt, it is hereby clarified that the shareholding pattern of the Project Company shall be the identical to the shareholding pattern of the Consortium as indicated in the Consortium Agreement (Format 7.5).

34.3 In case of foreign company participating on standalone basis and its selection as successful Bidder, it has to form a "Special Purpose Vehicle" (SPV), i.e. an Indian Company registered under the Companies Act, 2013 as its subsidiary Company, with at least 51% shareholding in the SPV, before signing of BESPA. In case a Foreign Company is selected as the successful Bidder, it shall comply with all the laws and provisions related to Foreign Direct Investment in India.

In case the foreign company participating as a member of consortium, Clause 34.7 of the RfS shall be applicable.

34.4 In line with the O.M. issued by the Department of Expenditure, Ministry of Finance, vide No. 7/10/2021-PPD Dated 23.02.2023 and subsequent amendments and

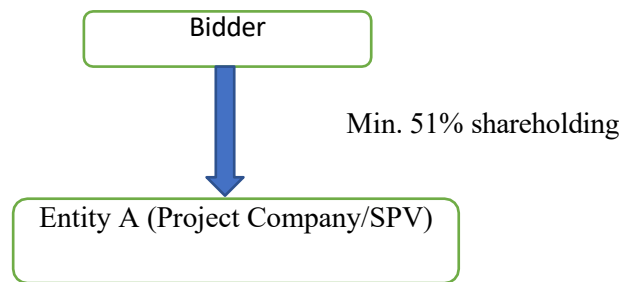
clarifications thereto, the Bidder shall meet the following criteria for its bid to be considered for evaluation under the RfS:

- a. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority (as defined in the OM as referred above).
- b. Any Bidder (including an Indian Bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be eligible to participate in this RfS only if the Bidder is registered with the Competent Authority under the referred OM.
- c. “Bidder” in this reference, means any person or firm or company, including any member of a consortium, every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in this tender.
- d. “Bidder from a country which shares a land border with India” for the purpose of this clause, means:
 - i. An entity incorporated, established or registered in such a country; or
 - ii. A subsidiary of an entity incorporated, established or registered in such a country; or
 - iii. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - iv. An entity whose beneficial owner is situated in such a country; or
 - v. An Indian (or other) agent of such an entity; or
 - vi. A natural person who is a citizen of such a country; or
 - vii. A consortium where any member of the consortium falls under any of the above.
- e. “Beneficial owner” for the purposes of Clause 34.4.d.iv. above will be as defined in the referred OM, including subsequent amendments and clarifications thereto.
- f. In support of the above, the Bidder shall be required to submit necessary Undertaking, as per Format 7.8/7.8A of the RfS.
- g. Other provisions of the referred OM dated 23.02.2023, except Sl. 11 of the OM, will also be applicable for this tender. Any interpretation of the above clauses will be made in line with the referred OM, including subsequent amendments and

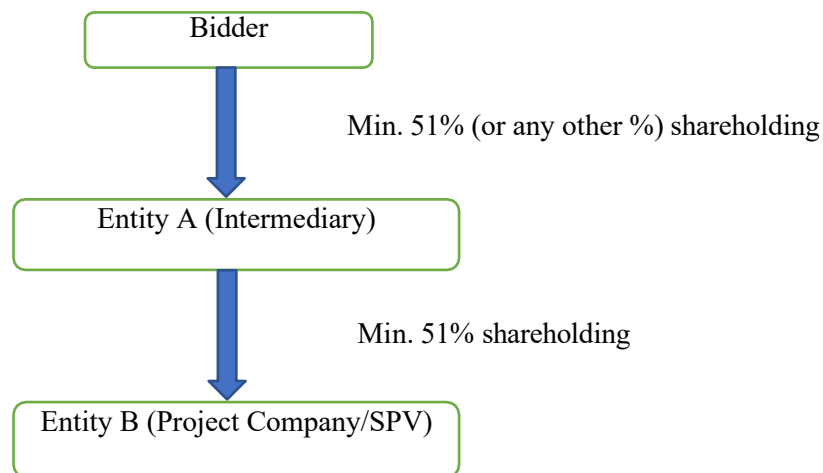
clarifications thereto.

- 34.5** Limited Liability Partnership (LLPs) are not eligible for participation.
- 34.6** A Bidder which has been selected as Successful Bidder based on this RfS can also execute the Project through a Special Purpose Vehicle (SPV) i.e. a Project Company especially incorporated/acquired as a subsidiary Company of the successful bidder for setting up of the Project, with at least 51% shareholding in the SPV which has to be registered under the Indian Companies Act, 2013, before signing of BESPA.
- 34.7** Any consortium, if selected as Successful Bidder, shall incorporate a Project company with equity participation by the Members in line with consortium agreement (to be submitted along with the response to RfS) before signing of BESPA with CESC, i.e. the Project Company incorporated shall have the same shareholding pattern as that indicated in the Consortium Agreement given at the time of submission of response to RfS. This shall not change till the signing of BESPA and the Controlling Shareholding (held by the Lead Member holding not less than 51% of the voting rights and paid up share capital) shall not change from submission deadline of response to RfS up to COD of the Project. Transfer of controlling shareholding within the same group of companies will however be allowed prior to COD with the permission of CESC, subject to the condition that, the management control remains within the same group of companies.
- 34.8** The Bidder or any of its Affiliates should not be a wilful defaulter to any lender. Further, the Bidder & any of its Affiliate including any Consortium Member & any of its Affiliate, their directors should not have been barred or included in the blacklist by any government agency or authority in India, the government of the jurisdiction of the Bidder or Members where they are incorporated or the jurisdiction of their principal place of business, any international financial institution such as the World Bank Group, Asian Development Bank, African Development Bank, Inter-American Development Bank, Asian Infrastructure Investment Bank etc or the United Nations or any of its agencies. The Bidder shall submit an undertaking to this effect.
- 34.9** For avoidance of doubt, it is clarified that the fully owned subsidiary Company as mentioned in Clauses 34.3 and 34.6 above may or may not be an immediate subsidiary of the bidder. The following illustrations are provided to clarify the same:

Scenario 1:



Scenario 2:



As per provisions of the RfS, both scenarios will be permissible under this RfS.

35 Technical Eligibility Criteria

- 35.1** Under this RfS, it is proposed to promote only commercially established and operational technologies to minimize the technology risk and to achieve timely commissioning of the Project. The Bidder may indicate regarding the selection of technology and its details at the time of submission of bids in the prescribed Format 7.10 of the RfS. The technology proposed at the time of submission of response to RfS can be changed at the time of Financial Closure.
- 35.2** Not used.
- 35.3** The Bidder is required to undertake to furnish evidence of meeting the above criteria in line with provisions of Clause 19 of the RfS. The undertaking shall be submitted as per enclosed Format 7.9 of the RfS.

35.4 The Project shall also comply with the performance criteria as detailed in Clause 8 of the RfS.

36 *Financial Eligibility Criteria*

36.1 Net-Worth/ Asset Under Management (AUM) or Investible Funds

- a. The Net Worth of the Bidder should be equal to or greater than **Rs. 60 Cr (Rupees Sixty Crore)** as on the last date of previous Financial Year, i.e. FY 2024-25 or as on the day at least 7 days prior to the bid submission deadline. In case of the Bidder being a SEBI registered AIF, the cumulative value of Assets Under Management (AUM) with minimum requirement as decided by the Procurer/Intermediary Procurer shall be demonstrated. In this context, AUM shall mean the amount as certified by the Statutory Auditor of the AIF.
- b. The net-worth/value of AUM to be considered for the above purpose will be the cumulative net-worth of the Bidder/AIF or consortium members. Except in the case of AIFs, the Bidder may seek qualification on the basis of financial capability of its Affiliate(s) for the purpose of meeting the Net Worth criteria as per the RfS. In case of the Bidder being a Bidding Consortium, any Member may meet the above criteria on the basis of financial capability of its Affiliate(s). In both cases, such Affiliates shall undertake to contribute the required equity funding and performance bank guarantees in case the bidder(s) fail to do so in accordance with the RfS.
- c. Net Worth to be considered for this clause shall be the total Net Worth as calculated in accordance with the Companies Act, 2013 and AUM or investible funds to be considered under this clause will be calculated in accordance with applicable SEBI (AIF) Regulations.

36.2 Liquidity

In order to ascertain that the Bidder has sufficient means to manage the fund requirements for the Project, the Bidder shall be required to demonstrate the following parameters:

- a. A minimum annual turnover of **Rs. 200 Crore (Rupees Two Hundred Crore)** during the previous financial year, 2024-25 or as on the day at least 7 days prior to the bid submission deadline. It is hereby clarified that “Other Income” as indicated in the annual accounts of the Bidder shall not be considered for arriving at the annual turnover.
- b. Internal resource generation capability, in the form of Profit After Tax plus Depreciation for a minimum amount of **Rs. 10 Crore (Rupees Ten Crore)** , as on the last date of previous financial year, 2024-25, or as on the day at least 7 days prior to the bid submission deadline.

36.3 Except for AIFs, the Bidder may seek qualification on the basis of financial capability of its Affiliate(s) for the purpose of meeting the qualification requirements as per Clauses 36.1 and 36.2 above. In case of the Bidder being a Bidding Consortium, any Member (except an AIF) may seek qualification on the basis of financial capability of its Affiliate(s). In such cases, the Bidder shall be required to submit Board Resolutions from the respective Affiliate(s), undertaking to contribute the required equity funding and Performance Bank Guarantees/POI in case the Bidder(s) fail to do so in accordance with the RfS. In case of non-availability of the Board Resolution as required above, a letter from the CEO/ Managing Director of the respective Affiliate(s), undertaking the above, shall be required to be submitted and the requisite Board Resolution from the Affiliate(s) shall be required to be submitted prior to signing of BESPA.

36.4 For the purposes of meeting financial requirements, only latest unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the Bidder may be used for the purpose of financial requirements provided the Bidder has at least twenty six percent (26%) equity in each Company whose accounts are merged in the audited consolidated account.

36.5 A Company/Consortium would be required to submit annual audited accounts for the last financial year, 2024-25, or as on the day at least 7 days prior to the bid submission deadline, along with net worth, annual turnover and PBDIT certificate (as applicable) from a practicing Chartered Accountant/ Statutory Auditor to demonstrate fulfillment of the criteria. In case of foreign companies, the Bidders shall be required to submit the annual audited accounts for the last respective financial year as per the general norm in the country where the Bidder or its Affiliate(s) is/ are located, or provisional accounts as on the day at least 7 days prior to the bid submission deadline.

Note: In case of foreign Bidders, in the event the Bidder is unable to furnish the audited

annual accounts for the previous financial year as per the prevalent norm in the respective country, the Bidder shall submit the annual audited accounts of the last financial year for which the audited accounts are available. This, however, would be acceptable, subject to the condition that the last date of response to this RfS falls on or within the deadline for completion of audit of annual accounts of companies, as stipulated by the laws/rules of the respective country, and the Bidder shall submit the corresponding documentary evidence against the same. In case the annual accounts or provisional accounts as on the day at least 7 days prior to the bid submission deadline, are submitted in a language other than English, a certified English translation from an approved translator shall be required to be submitted by the Bidder.

36.6 For meeting the above financial eligibility criteria, if the data is provided by the Bidder in a foreign currency, equivalent Indian Rupees of Net Worth and other financial parameters will be calculated by the Bidder using Reserve Bank of India's reference rates prevailing on the date of closing of the accounts for the respective financial year.

36.7 In case of any currency for which RBI reference rate is not available, Bidders shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion. After such conversion, Bidder shall follow the procedure/ submit document as elaborated in Clause 36.6 above.

36.8 In case the response to RfS is submitted by a Consortium, then the financial requirement (both the Net-Worth and Liquidity requirements) to be met by each Member of the Consortium shall be computed in proportion to the equity commitment made by each of them in the Project Company.

For example, if two companies A and B form a Consortium with equity participation in 70:30 ratio and submit their bid. Minimum requirement of Net-Worth to be met by Lead Member A would be minimum Rs. 42 Crores and to be met by Consortium Member B would be Rs. 18 Crores. Similar methodology shall be followed for computation of liquidity requirement.

36.9 For the limited purpose of meeting the technical and financial eligibility criteria, in addition to using credentials of the Affiliates having more than 50% shareholding in the Bidding Company, the Bidder may use credentials of those Affiliates who do not control more than 50% of the bidding company, subject to the following:

- a. The qualification criteria parameters will be met proportionately to the equity contribution of the entity whose credentials are being used to meet the requirement.

For example, in case of Net Worth requirement being Rs 100 Crore and the strength of an Affiliate is used which owns 30% of the total shareholding in the bidder, the said Affiliate should be able to meet upto Rs 30 Crore of the Net Worth.

- b. In case the strength of an Affiliate is being used for meeting the eligibility criteria, shareholding pattern of the respective Affiliate will be locked-in upto COD of the Project.

SECTION 5. BID EVALUATION AND SELECTION OF PROJECT

37 *Bid Evaluation*

Bid evaluation will be carried out considering the information furnished by Bidders as per provisions of this RfS. The detailed evaluation procedure and selection of bidders are described in subsequent clauses in this Section.

38 *Techno-Commercial Evaluation of Bidders (Step 1)*

38.1 The first envelope (Technical Bid submitted online) of only those bidders will be opened by CESC whose required documents as mentioned at Clause 29 of the RfS are received by CESC. Bid opening (online) will be done only after the deadline for submission of Bank Guarantee (if applicable) and/or DDs/Pay order against Cost of RfS document and Bid Processing Fee.

For e.g., if the bid submission deadline is 18:00 hrs on 31.05.2025, the online bid opening will be conducted on 02.06.2025. In case of the above deadline being a holiday, the bids will be opened on the next working day.

38.2 Subject to Clause 24 of the RfS, CESC will examine all the documents submitted by the Bidders and ascertain meeting of eligibility conditions prescribed in the RfS. During the examination of the bids, CESC may seek clarifications/additional documents to the documents submitted etc. from the Bidders if required to satisfy themselves for meeting the eligibility conditions by the Bidders. Bidders shall be required to respond to any clarifications/additional documents sought by CESC within 07 (seven) days from the date of such intimation from CESC. All correspondence in this regard shall be made through email/ISN-ETS portal only. It shall be the responsibility of the Bidder to ensure that the email id of the authorized signatory of the Bidder is functional. The Bidder may provide an additional email id of the authorized signatory in the covering letter. No reminders in this case shall be sent. It shall be the sole responsibility of the Bidders to remove all the discrepancies and furnish additional documents as requested. CESC shall not be responsible for rejection of any bid on account of the above.

38.3 The response to RfS submitted by the Bidder shall be scrutinized to establish Techno-Commercial eligibility as per the RfS.

39 Financial Bid Evaluation (Step 2)

- 39.1** In this step evaluations of Techno-Commercially Qualified Bids shall be done based on the capacity charges, or the “First Round Tariff”, quoted by the Bidder in the Electronic Form of Financial Bid. After this step, the shortlisted bidders shall be invited for the Reverse Auction. **The “tariff” in this section, will refer to the capacity charges quoted by the bidders inclusive of applicable taxes and duties including GST.**
- 39.2** Second Envelope (containing First Round Tariff) of only those bidders shall be opened whose technical bids are found to be qualified as per the RfS.
- 39.3** The Bidder including its Parent, Affiliate or Ultimate Parent or any Group Company will have to submit a single bid (single application) quoting a single tariff (capacity charges) in Indian Rupee per MW for the Project. **The tariff has to be quoted in Indian Rupee per MW per Month in whole numbers only (no decimal places allowed).** If it is quoted with any decimal places, the digits in the decimal places shall be ignored. (For e.g. if the quoted tariff is INR 450.34/MW/Month, then it shall be considered as INR 450/MW/Month).
- 39.4** In this step, evaluation will be carried out based on tariff quoted by the Bidders.
- 39.5** On completion of Techno-Commercial bid evaluation, if it is found that only one or two Bidder(s) is/are eligible for the next stage, opening of the financial bid of the Bidder(s) will be at the discretion of CESC. Thereafter, CESC will take appropriate action as deemed fit.
- 39.6** If the first-round tariff quoted is same for two or more Bidders, then all the Bidders with same tariff shall be considered of equal rank/ standing in the order.
- 39.7** All Bidders with same tariff shall be eligible for reverse auction round subject to provisions of Clause 40.2 of the RfS.
- 39.8** Ranking of bidders after Financial Bid Evaluation: Following illustrates an example of ranking of bidders after financial bid opening and evaluation

Bidder	Submitted Financial Bid	Ranking
B1	₹ 210 (Tariff in ₹/ MW/Month)	L1
B2	₹ 220 (Tariff in ₹/ MW/Month)	L2
B3	₹ 230 (Tariff in ₹/ MW/Month)	L3

B4	₹ 230 (Tariff in ₹/ MW/Month)	<i>L3</i>
B5	₹ 243 (Tariff in ₹/ MW/Month)	<i>L4</i>
B6	₹ 260 (Tariff in ₹/ MW/Month)	<i>L5</i>
B7	₹ 365 (Tariff in ₹/ MW/Month)	<i>L6</i>
B8	₹ 469 (Tariff in ₹/ MW/Month)	<i>L7</i>
B9	₹ 570 (Tariff in ₹/ MW/Month)	<i>L8</i>

40 Reverse Auction (Step 3)

- 40.1** The reverse auction for the total tendered capacity shall be conducted on the portal <https://www.bharat-electronictender.com>, on the day as intimated by CESC to the eligible Bidders. Rules of the auction process are brought out below and are also contained in **Annexure-C** of the RfS. As part of submission of their response to RfS, the Bidders shall submit the scanned copy of **Annexure-C** of the RfS duly signed and stamped by the Authorized Signatory, as an acceptance of the provisions contained therein.
- 40.2** After the opening of Initial Price Offer (IPO(s)) or first round tariff, the system will rank the Bidders according to their Price Bids. The Bidder with the highest price bid in the IPO stage shall be called the H1 Bidder. The system will then analyse the number of bidders after techno-commercial evaluation. If the number of bidders after techno-commercial evaluation is more than three, the H1 Bidder will be eliminated. It is clarified that the elimination of H1 Bidder will take place only if after such elimination, number of eligible bidders for reverse auction is more than or equal to 3 (three).
- 40.3** Advance intimation regarding the date and time of the reverse auction will be sent by e-mail to all the bidders whose technical bids have been opened and are found to be qualified. However, from this advance intimation it shall not be construed by the bidders that they have been shortlisted for Reverse Auction. Further, at least two hours before the scheduled start time of Reverse Auction, a system generated email for invitation for Reverse Auction will be sent to all those bidders only who have been shortlisted based on the criteria mentioned at Clause 40.2 above.
- 40.4** Shortlisted bidders for Reverse Auction will be able to login into the ISN-ETS portal of reverse auction 15 minutes before the start time of reverse auction.
- a. During the 15 minutes prior to start of reverse auction process, the respective tariff

- of the bidder shall be displayed on its window.
- b. The minimum decrement value for tariff shall be INR 1000 per MW per Month. The Bidder can mention its revised discounted tariff which has to be at least Rs. 1000/MW/Month less than its current tariff.
 - c. Bidders can only quote any value lower than their previous quoted tariff taking into consideration the minimum decrement value mentioned in the previous clause. However, at any stage, increase in tariff will not be permissible. Bidders can improve their ranking by quoting the tariff lower than their last quoted tariff.
 - d. During reverse auction, the Bidder shall not have the option of changing the total project capacity while quoting tariff during reverse auction.
 - e. In the bidder's bidding window, the following information can be viewed by the bidder:
 - i. Its tariff as the initial start price and there after last quoted tariff along with the project capacity for which the Bidder is qualified.
 - ii. The list of all the Bidders with their following details: Pseudo Identity, last quoted tariff and project capacity
 - f. The initial auction period will be of 30 (thirty) minutes with a provision of auto extension by 8 (eight) minutes from the scheduled/ extended closing time. Such auto extension shall be effected if by way of reduction in tariff, a Bidder causes a change in its zonal placement at that instant. The 'zones' are as defined below:
 - i. Green Zone: This zone consists of the Bidders who may be allocated their full quoted Project capacity if the auction is closed at that instant.
 - ii. Yellow Zone: This zone consists of the Bidders who may be allocated a part of their full quoted Project capacity if the auction is closed at that instant.
 - iii. Red Zone: This zone consists of the Bidders who will not be awarded their quoted Project capacity if the auction is closed at that instant.

If no such change as described above is effected during the last 8 minutes of auction period or extended auction period, then the reverse auction process will automatically get closed.

41 Selection of Successful Bidder

Subsequent to conclusion of the e-RA process, the L1 bidder discovered in the e-RA, shall be declared as Successful Bidder.

42 *Issuance of LoAs*

- a) At the end of the selection process, a Letter of Award (LoA) will be issued to the successful Bidders for each Project. In case of a Consortium being selected as the successful Bidder, the LoA shall be issued to the Lead Member of the Consortium.
- b) In all cases, CESC's decision regarding selection of Bidder through Reverse Auction or other- wise based on tariff or annulment of tender process shall be final and binding on all participating bidders.
- c) In case of delay in signing of BESPA beyond 12 months from the date of issuance of LoAs, or any other extended date as mutually agreed between CESC and the Successful Bidder, the awarded capacity shall stand cancelled and the EMD submitted by such Bidder shall be returned by CESC. In case of extension of the above BESPA signing date by mutual agreement, the minimum extension in the signing date shall be 3 months subsequent to the above deadline.

SECTION 6. DEFINITIONS OF TERMS

43 Following terms used in the documents will carry the meaning and interpretations as described below:

43.1 "ACT" or "ELECTRICITY ACT, 2003" shall mean the Electricity Act, 2003 and include any modifications, amendments and substitution from time to time.

43.2 "AFFILIATE" in relation to a company shall mean a company that, directly or indirectly,

i. controls, or

ii. is controlled by, or

iii. is under common control with, such company, its parent or ultimate parent company or a Member in a Consortium.

“**Control**” means ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such company or right to appoint majority Directors.

43.3 "APPROPRIATE COMMISSION" shall mean as defined in the BESP.A.

43.4 "AVAILABILITY" shall mean as defined in Clause 8 of the RfS.

43.5 "BATTERY ENERGY STORAGE SYSTEM" or "BESS" shall mean the system/project utilizing methods and technologies such as electrochemical batteries (Lead Acid, Li-ion, solid state batteries, flow batteries, etc.), providing a facility that can store chemical energy and deliver the stored energy in the form of electricity, including ancillary facilities (grid support, for example). Such systems may be co-located with RE Generating Stations, or may be operated on stand-alone basis.

43.6 "BATTERY ENERGY STORAGE SYSTEM DEVELOPER" or "BESSD" or "DEVELOPER" or "PROJECT DEVELOPER" shall mean the entity owning/operating the BESS facility for supply of power under the BESP.A, and shall refer to the Bidding Company or a Bidding Consortium participating in the bid and having been selected and allocated a Project capacity by CESC (through a competitive bidding process), including the SPV formed by the selected bidder/ consortium for the purpose of setting up of the Project and signing of BESP.A with CESC.

43.7 "BATTERY ENERGY STORAGE PURCHASE AGREEMENT" or "BESP.A" shall mean the agreement signed between the Selected Bidder/BESSD and CESC according for procurement of capacity from the BESS, as per the terms and conditions

of the standard BESPA enclosed with this RfS.

- 43.8 “BID” or “PROPOSAL”** shall mean the documents submitted by the Bidder towards meeting the techno-commercial and financial qualifying requirements, along with the price bid submitted by the Bidder as part of its response to the RfS issued by CESC.
- 43.9 “BIDDER”** shall mean Bidding Company (including a foreign company) or a Bidding Consortium submitting the Bid. Any reference to the Bidder includes Bidding Company/ Bidding Consortium, Member of a Bidding Consortium including its successors, executors and permitted assigns and Lead Member of the Bidding Consortium jointly and severally, as the context may require; foreign companies participating in the bidding process shall be registered as companies as per the rules of their country of origin.
- 43.10 “BIDDING CONSORTIUM” or “CONSORTIUM”** shall refer to a group of Companies that collectively submit the response in accordance with the provisions of this RfS under a Consortium Agreement.
- 43.11 “BID CAPACITY”** shall mean aggregate project capacity of the Battery Energy Storage System(s) as proposed by the Bidder.
- 43.12 “CHARTERED ACCOUNTANT”** shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949.
- For bidders incorporated in countries other than India, “Chartered Accountant” shall mean a person or a firm practicing in the respective country and designated/ registered under the corresponding Statutes/ laws of the respective country.
- 43.13 “COMPANY”** shall mean a body corporate incorporated in India under the Companies Act, 2013 or any law in India prior thereto relating to Companies, as applicable.
- 43.14 “COMMERCIAL OPERATION DATE (COD)”** shall mean the date as defined in Clause 21 of the RfS.
- 43.15 “CONTRACTED CAPACITY”** shall mean the capacity in MW/MWh (“X” MW x 2hrs) contracted with CESC for providing Energy storage facility to the Procurer for charging and discharging the system on “on-demand” basis, based on which the BESPA is executed with CESC.
- 43.16 “CONTRACT YEAR”** shall mean the period beginning from the Effective Date of

the BESPA and ending on the immediately succeeding 31st March and thereafter each period of 12 months beginning on 1st April and ending on 31st March provided that:

- a. in the financial year in which the Scheduled Commissioning Date would occur, the Contract Year shall end on the date immediately before the Scheduled Commissioning Date and a new Contract Year shall commence once again from the Scheduled Commissioning Date and end on the immediately succeeding 31st March, and thereafter each period of 12 (Twelve) Months commencing on 1st April and ending on 31st March, and
- b. provided further that the last Contract Year of this Agreement shall end on the last day of the Term of this Agreement.

43.17 “CONTROL” shall mean the ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such Company or right to appoint majority Directors.

43.18 “CONTROLLING SHAREHOLDING” shall mean more than 50% of the voting rights and paid up share capital in the Company/ Consortium.

43.19 “CENTRAL TRANSMISSION UTILITY (CTU)” shall mean the Central Transmission Utility as defined in sub-section (10) of section 2 of the Electricity Act 2003.

43.20 “DAY” shall mean calendar day.

43.21 “EFFECTIVE DATE” shall mean the date as on 30th day from the date of issuance of Letter of Award (LoA) or in case of delay in signing of BESPA attributable to CESC, the actual date of signing of BESPA, whichever is later, which shall be indicated in the BESPA executed by both the parties.

43.22 “EQUITY” shall mean Net Worth as defined in Companies Act, 2013.

43.23 “FINANCIAL CLOSURE” or “PROJECT FINANCING ARRANGEMENTS” means arrangement of necessary funds by the BESSD towards 100% Project Cost either by way of commitment of funds by the Company from its internal resources and/or tie up of funds through a bank/ financial institution by way of sanction of a loan or letter agreeing to finance;

43.24 “GUIDELINES” shall mean “Guidelines for Procurement and Utilization of Battery

Energy Storage Systems as part of Generation, Transmission and Distribution assets, along with Ancillary Services” issued by Ministry of Power vide Gazette Resolution dated 10.03.2022, including subsequent amendments and clarification thereof, if any, issued until the last date of bid submission of this RfS.

43.25 “GROUP COMPANY” of a Company means:

- a. a Company which, directly or indirectly, holds 10% (Ten Percent) or more of the share capital of the Company or;
- b. a Company in which the Company, directly or indirectly, holds 10% (Ten Percent) or more of the share capital of such Company or;
- c. a Company in which the Company, directly or indirectly, has the power to direct or cause to be directed the management and policies of such Company whether through the ownership of securities or agreement or any other arrangement or otherwise or;
- d. a Company which, directly or indirectly, has the power to direct or cause to be directed the management and policies of the Company whether through the ownership of securities or agreement or any other arrangement or otherwise or;
- e. a Company which is under common control with the Company, and control means ownership by one Company of at least 10% (Ten Percent) of the share capital of the other Company or power to direct or cause to be directed the management and policies of such Company whether through the ownership of securities or agreement or any other arrangement or otherwise;

Provided that entities which have Government shareholding, financial institution, scheduled bank, foreign institutional investor, Non-Banking Financial Company, and any mutual fund, pension funds and sovereign funds shall not be deemed to be Group Company, and its shareholding and the power to direct or cause to be directed the management and policies of a Company shall not be considered for the purposes of this definition unless it is the Project Company or a Member of the Consortium developing the Project.

43.26 “INTER-CONNECTION POINT/ DELIVERY/ METERING POINT/POINT OF COMMON COUPLING (PCC)” shall mean 33 kV switchboard of CESC’s New Cossipore Substaion, where the power to/from the Project is injected/delivered from/into the CESC network (including the dedicated line(s) connecting the Project with the substation system) as specified in the RfS. A Single Line Diagram showing

interconnection point is enclosed as Annexure-D of this RfS. Metering shall be done at this interconnection point where the power is injected into. For interconnection with grid and metering, the BESSD shall abide by the relevant WBERC Regulations, Grid Code and Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 as amended and revised from time to time.

43.27 “JOINT CONTROL” shall mean a situation where a company has multiple promoters (but none of the shareholders has more than 50% of voting rights and paid up share capital).

43.28 “LEAD MEMBER OF THE BIDDING CONSORTIUM” or “LEAD MEMBER”:
There shall be only one Lead Member, having the shareholding of not less 51% in the Bidding Consortium.

Note: The shareholding of the Lead member in the Project Company (Special Purpose Vehicle) cannot be changed till 01 (one) year after the Commercial Operation Date (COD) of the Project.

43.29 “LETTER OF AWARD” or “LoA” shall mean the letter issued by CESC to the selected Bidder for award of the Project.

43.30 “LIMITED LIABILITY PARTNERSHIP” or “LLP” shall mean a Company governed by Limited Liability Partnership Act 2008 or as amended.

43.31 “LLC” shall mean Limited Liability Company.

43.32 “MEMBER IN A BIDDING CONSORTIUM” or “MEMBER” shall mean each Company in a Bidding Consortium. In case of a Technology Partner being a member in the Consortium, it has to be a Company.

43.33 “MONTH” shall mean calendar month.

43.34 “NET-WORTH” shall mean the Net-Worth as defined section 2 of the Companies Act, 2013.

43.35 “PAID-UP SHARE CAPITAL” shall mean the paid-up share capital as defined in Section 2 of the Companies Act, 2013.

43.36 “PARENT” shall mean a Company, which holds more than 50% voting rights and paid up share capital, either directly or indirectly in the Project Company or a Member in a Consortium developing the Project.

- 43.37 “PROJECT”** shall mean the Battery Energy Storage System set up by the BESSD for supply of Power on an “on Demand” basis, having single point of injection at Interconnection/ Delivery/ Metering Point. The Project shall also comprise auxiliaries and associated facilities, bay(s) for transmission system in the switchyard, dedicated line(s) up to the injection point and all the other assets, buildings/structures, equipment, plant and machinery (pertaining to the BESS), facilities and related assets required for the efficient and economic operation of the power supply facility, whether completed or at any stage of development and construction or intended to be developed and constructed for the purpose of supply of power to CESC.
- 43.38 “PROJECT CAPACITY”** shall mean the maximum AC capacity at the delivery point that can be scheduled from the Project and shall be equal to capacity in terms of clause 4 of this RfS.
- 43.39 “PROJECT COMMISSIONING”:** The Project will be considered as commissioned in line with the Commissioning procedure defined in the RfS/BESPA.
- 43.40 “PROJECT LOCATION”** shall mean the identified area by CESC at its New Cossipore Generating Station details of which are enclosed as **Annexure-D** of this RfS.
- 43.41 “POWER ON DEMAND”** shall mean the requirement of the CESC to charge and discharge the BESS based on its requirements during the time of day, subject to provisions of the RfS and BESPA.
- 43.42 “RENEWABLE ENERGY (RE) POWER”** shall mean power from a RE Power generation facility.
- 43.43 “RfS” or “RfS DOCUMENT” or “BIDDING DOCUMENT(S)” or “TENDER DOOCUMENTS”** shall mean the “Request for Selection” document issued by CESC including standard Battery Energy Storage Purchase Agreement and Battery Energy Storage Sale Agreement, along with subsequent clarifications and amendments thereof, vide RfS No.ED(PM)/2025-26/266
- 43.44 “SCHEDULED COMMISSIONING DATE” or “SCD”** shall be the date as indicated in Clause 9 of the RfS.
- 43.45 “SELECTED BIDDER” or “SUCCESSFUL BIDDER”** shall mean the Bidder selected pursuant to this RfS to set up the Project and supply electrical output as per the terms of BESPA.

- 43.46 “STATE TRANSMISSION UTILITY” or “STU”** shall mean the Board or the Government Company notified by the respective State Government under Sub-Section I of Section 39 of the Electricity Act, 2003.
- 43.47 “TOE”** shall mean Tender Opening Event.
- 43.48 “ULTIMATE PARENT”** shall mean a Company, which owns more than 50% (Fifty Percent) voting rights and paid up share capital, either directly or indirectly in the Parent and Affiliates;
- 43.49 “WBERC”** shall mean West Bengal Electricity Regulatory Commission
- 43.50 “WEEK”** shall mean calendar week;

SECTION 7. SAMPLE FORMS & FORMATS FOR BID
SUBMISSION

The following formats are required to be submitted as part of the RfS. These formats are designed to demonstrate the Bidder's compliance with the Qualification Requirements set forth in Section 4 and other submission requirements specified in the RfS.

Format 7.1

COVERING LETTER

**(The Covering Letter should be submitted on the Letter Head of the Bidding Company/
Lead Member of Consortium)**

Ref. No. ____

Date: _____

From: *(Insert name and address of Bidding Company/ Lead Member of Consortium)*

Tel.#: Fax#:

E-mail address#

To,

Executive Director – Power Marketing

CESC Limited

1st Floor, CESC House,

Chowringhee Square, Kolkata-700001

Sub: Response to RfS No. dated for(Insert title of the RfS)

Dear Sir/ Madam,

We, the undersigned *[insert name of the 'Bidder']* having read, examined and understood in detail the RfS including Qualification Requirements in particular, terms and conditions of the standard BESPA for supply of power for the Term of the BESPA to CESC, hereby submit our response to RfS.

We confirm that in response to the aforesaid RfS, neither we nor any of our Ultimate Parent Company/ Parent Company/ Affiliate/ Group Company has submitted response to RfS other than this response to RfS, directly or indirectly, in response to the aforesaid RfS (as mentioned in Format 7.8 under Disclosure).

OR

We confirm that in the response to the aforesaid RfS, we have a Group Company who owns more than 10% but less than 26% in the bidding company as well as other companies who may participate in this RfS, and accordingly, we have submitted requisite undertaking as per Format 7.8A in this regard

[strike out whichever not applicable].

We are submitting response to RfS for the development of following Project

Project No.	Capacity (MW/MWh)	Location of Project (Village, Tehsil, Dist., State)	Interconnection Point Details
1	40 MW/ 80 MWh	As per Annexure - D	CESC New Cossipore Substation

1. We give our unconditional acceptance to the RfS, dated *[Insert date in dd/mm/yyyy]*, standard BESPA documents attached thereto, issued by CESC. In token of our acceptance to the RfS, and BESPA documents along with the amendments and clarifications issued by CESC, the same have been digitally signed by us and enclosed with the response to RfS. We shall ensure that the BESPA is executed as per

the provisions of the RfS and provisions of BESPA and shall be binding on us. Further, we confirm that we will commence power supply from the full Project capacity within the deadline as per Clause 9 of the RfS.

2. Earnest Money Deposit (EMD):- *(Please read Clause 16 carefully before filling)*

We have enclosed EMD of INR *(Insert Amount)*, in the form of Bank Guarantee/Payment on Order Instrument no..... *[Insert bank guarantee/POI number]* dated *[Insert date of bank guarantee/POI]* as per Format 7.3A/7.3B from *[Insert name of bank providing bank guarantee/POI issuing agency]* and valid up to.....in terms of Clause No. 16 of this RfS. The total capacity of the BESS project offered by us is MW/ MWh *[Insert cumulative capacity proposed]*. *(Strike off whichever is not applicable)*

3. We hereby declare that in the event our Project gets selected and we are not able to submit Bank Guarantee/POI of the requisite value(s) towards PBG, within due time as mentioned in Clause No. 17 of this RfS on issue of LoA by CESC for the selected Project and/ or we are not able to sign BESPA with CESC within the timeline as stipulated in the RfS for the selected Project, CESC shall have the right to encash the EMD submitted by us.

4. We have submitted our response to RfS strictly as per Section 7 (Sample Forms and Formats for Bid Submission) of this RfS, without any deviations, conditions and without mentioning any assumptions or notes in the said Formats.

5. Acceptance:-

We hereby unconditionally and irrevocably agree and accept that the decision made by CESC in respect of any matter regarding or arising out of the RfS shall be binding on us. We hereby expressly waive and withdraw any deviations from the provisions of the RfS and all claims in respect of this process.

6. Familiarity with Relevant Indian Laws and Regulations:-

We confirm that we have studied the provisions of the relevant Indian Laws and Regulations as required to enable us to submit this response to RfS and execute the BESPA, in the event of our selection as Successful Bidder.

7. In case of our selection as the Successful Bidder and the project being executed by a Special Purpose Vehicle (SPV) incorporated by us, we shall ensure that our shareholding in the SPV / project company executing the BESPA shall not fall below 51% (fifty-one per cent) at any time prior to the COD.
8. In case of our selection as the Successful bidder under the scheme and the project being executed by a Special Purpose Vehicle (SPV) incorporated by us which shall be our subsidiary, we shall infuse necessary equity to the requirements of RfS. Further, we will submit a Board Resolution prior to signing of BESPA with CESC , committing total equity infusion in the SPV as per the provisions of RfS.
9. We are submitting our response to the RfS with formats duly signed as desired by you in the RfS online for your consideration.
10. It is confirmed that our response to the RfS is consistent with all the requirements of submission as stated in the RfS, including all clarifications and amendments and subsequent communications from CESC .
11. The information submitted in our response to the RfS is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our response to the RfS.
12. We confirm that all the terms and conditions of our Bid are valid up to __ (*Insert date in dd/mm/yyyy*) for acceptance [i.e. a period up to the date as on 12 (twelve) months from the last date of submission of response to RfS].

13. Contact Person

Details of the representative to be contacted by CESC are furnished as under:

Name :

Designation:

Company:

Address :.....

Phone Nos.

Mobile Nos:

E-mail address:.....

14. We have neither made any statement nor provided any information in this Bid, which to the best of our knowledge is materially inaccurate or misleading. Further, all the confirmations, declarations and representations made in our Bid are true and accurate. In case this is found to be incorrect after our selection as Successful Bidder, we agree that the same would be treated as a seller's event of default under BESPA and consequent provisions of BESPA shall apply.

Dated _____ day of _____, 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

Project Capacity:____MW

Project Location: ____

Format 7.2

FORMAT FOR POWER OF ATTORNEY

(Applicable Only in case of Consortium)

(To be provided by each of the other members of the Consortium in favor of the Lead Member)

*(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of
Appropriate Value)*

KNOW ALL MEN BY THESE PRESENTS THAT M/s..... having its registered office at,, and M/s having its registered office at, (Insert names and registered offices of all Members of the Consortium) the Members of Consortium have formed a Bidding Consortium named (insert name of the Consortium if finalized) (hereinafter called the ‘Consortium’) vide Consortium Agreement dated..... and having agreed to appoint M/s..... as the Lead Member of the said Consortium do hereby constitute, nominate and appoint M/s..... a company incorporated under the laws of and having its Registered/ Head Office at as our duly constituted lawful Attorney (hereinafter called as Lead Member) to exercise all or any of the powers for and on behalf of the Consortium in regard to submission of the response to RfS No.....

We also authorize the said Lead Member to undertake the following acts:

- i) To submit on behalf of Consortium Members, response to RfS.
- ii) To do any other act or submit any information and document related to the above response to RfS Bid.

It is expressly understood that in the event of the Consortium being selected as Successful Bidder, this Power of Attorney shall remain valid, binding and irrevocable until the Bidding Consortium achieves execution of BESPA.

We as the Member of the Consortium agree and undertake to ratify and confirm all whatsoever the said Attorney/ Lead Member has done on behalf of the Consortium Members pursuant to this Power of Attorney and the same shall bind us and deemed to have been done by us.

IN WITNESS WHEREOF M/s, as the Member of the Consortium have executed these presents on this..... day ofunder the Common Seal of our company.

For and on behalf of Consortium Member

M/s.....

(Signature of person authorized by the board)

Name:

Designation:

Place:

Date:

Accepted

(Signature, Name, Designation and Address of the person authorized by the board of the Lead Member)

Attested

(Signature of the executant)

(Signature & stamp of Notary of the place of execution)

Place: -----

Date: -----

Format 7.3A

FORMAT FOR BANK GUARANTEE TOWARDS EARNEST MONEY DEPOSIT
(EMD)

*(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of
Appropriate Value)*

Reference:

..... Bank

Guarantee No.:

Date:

In consideration of the _____[*Insert name of the Bidder*] (hereinafter referred to as 'Bidder') submitting the response to RfS inter alia for Selection of Battery Energy Storage System Developer for Setting up of a Battery Energy Storage System under Tariff-based Competitive Bidding of the capacity of 40 MW / 80 MWh for offering Battery Energy Storage System on long term basis, in response to the RfS No.[•] dated [•] and addendums thereto issued by CESC Limited (hereinafter referred to as CESC) and CESC considering such response to the RfS of[*Insert the name of the Bidder*] as per the terms of the RfS, the [Insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to CESC at [*Insert Name of the Place from the address of CESC*] forthwith without demur on demand in writing from CESC or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees____[Insert amount not less than that derived in line with Clause 16 of the RfS], only, on behalf of M/s.[*Insert name of the Bidder*].

This guarantee shall be valid and binding on this Bank up to and including____[*insert date of validity in accordance with Clause No. 16 of this RfS*] and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to INR_(Indian Rupees_____ only). Our

Guarantee shall remain in force until ____[insert date of validity in accordance with Clause No. 16 of this RfS]. CESC shall be entitled to invoke this Guarantee till __[insert date of validity in accordance with Clause No. 16 of this RfS].

The Guarantor Bank hereby agrees and acknowledges that the CESC shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by CESC, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to CESC.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by __[Insert name of the Bidder] and/ or any other person. The Guarantor Bank shall not require CESC to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against CESC in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Kolkata shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly CESC shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to enforce any security held by CESC or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to CESC and may be assigned under intimation to us, in whole or in part, (whether absolutely or by way of security) by CESC to any entity to whom CESC is entitled to assign its rights and

obligations under the BESPA.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to INR____(Indian Rupees_____Only) and it shall remain in force until_____
_____[*Date to be inserted on the basis of Clause No. 16 of this RfS*].

We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if CESC serves upon us a written claim or demand.

Signature:

Name:

Power of Attorney No:_____

For

[*Insert Name and Address of the Bank*]

Contact Details of the Bank:

E-mail ID of the Bank:

Banker's Stamp and Full
Address. Dated this__day of
_____, 20____

Format 7.3 B

FORMAT OF PAYMENT ON ORDER INSTRUMENT TO BE ISSUED
BY IREDA/REC/PFC (IN LIEU OF BG TOWARDS EMD)

No.

Date

To,

CESC,

CESC House,

Chowringhee Square,

Kolkata-700001

Reg: M/s (insert name of the Bidder) – Issuance of Payment on Order
Instrument for an amount of Rs.

Dear Sir,

1. It is to be noted that M/s.____(*insert name of the POI issuing Agency*) (**‘IREDA/REC/PFC’**) has sanctioned a non-fund based limit loan of Rs. ____ (Rupees____only) to M/s_____under the Loan Agreement executed on_____ to execute Battery Energy Storage System Project.
2. At the request of M/s ____, on behalf of____(*insert name of the Bidder*), this Payment on Order Instrument (POI) for an amount of Rs.____(Rupees____(in words)). This Payment on Order Instrument comes into force immediately.
3. In consideration of the[*Insert name of the Bidder*] (hereinafter referred to as 'Bidder') submitting the response to RfS inter alia for setting up of Battery Energy Storage System Project of the capacity of 40 MW / 80 MWh for supply of power on long term basis, in response to the RfS No._dated__issued by CESC Ltd (hereinafter referred to as “CESC”) and CESC considering such response to the RfS of[*Insert the name of the Bidder*] as per the terms of the RfS, the _[*Insert name & address of IREDA/PFC/REC*] hereby agrees unequivocally, irrevocably and unconditionally to pay

to CESC at *[Insert Name of the Place from the address of CESC]* forthwith without demur on demand in writing from CESC or any Officer authorized by it in this behalf, any amount up to and not exceeding Rupees_____ *[Insert amount not less than that derived in line with Clause 16 of the RfS]*, only, on behalf of M/s _____*[Insert name of the Bidder]*.

4. In consideration of the above facts, IREDA/REC/PFC, having its registered office at _____, agrees to make payment for the sum of Rs. _____ lakhs (in words.....) to CESC on the following conditions:-

- (a) IREDA/REC/PFC agrees to make payment of the said amount unconditionally, without demur and without protest upon receipt of request from CESC within the validity period of this letter as specified herein;
- (b) The commitment of IREDA/REC/PFC, under this Payment of Order Instrument will have the same effect as that of the commitment under the Bank Guarantee issued by any Public Sector Bank and shall be enforceable in the same manner as in the case of a Bank Guarantee issued by a Bank and the same shall be irrevocable and shall be honored irrespective of any agreement or its breach between IREDA/REC/PFC or its constituents notwithstanding any dispute that may be raised by the against CESC;
- (c) The liability of IREDA/REC/PFC continues to be valid and binding on IREDA/REC/PFC and shall not be terminated, impaired and discharged, by virtue of change in its constitution and specific liability under letter of undertaking shall be binding on its successors or assignors;
- (d) The liability of IREDA/REC/PFC shall continue to be valid and binding on IREDA/REC/PFC and shall not be terminated/ impaired/ discharged by any extension of time or variation and alternation made given or agreed with or without knowledge or consent of the parties (CESC and Bidding Party), subject to the however to the maximum extent of amount stated herein and IREDA/REC/PFC is not liable to any interest or costs etc.;
- (e) This Payment of Order Instrument can be invoked either partially or fully, till the date of validity;

- (f) IREDA/REC/PFC agrees that it shall not require any proof in addition to the written demand by CESC made in any format within the validity period. IREDA/REC/PFC shall not require CESC to justify the invocation of the POI against the SPV/BESSD, to make any claim against or any demand against the SPV/BESSD or to give any notice to the SPV/BESSD;
 - (g) The POI shall be the primary obligation of IREDA/REC/PFC and CESC shall not be obliged before enforcing the POI to take any action in any court or arbitral proceedings against the SPV/BESSD;
 - (h) Neither CESC is required to justify the invocation of this POI nor shall IREDA/REC/PFC have any recourse against CESC in respect of the payment made under letter of undertaking;
5. Notwithstanding anything contrary contained anywhere in this POI or in any other documents, this POI is and shall remain valid up to and IREDA/REC/PFC shall make payment thereunder only if a written demand or request is raised within the said date and to the maximum extent of Rs. and IREDA/REC/PFC shall in no case, be liable for any interest, costs, charges and expenses and IREDA's/REC's/PFC's liability in no case will exceed more than the above amount stipulated.

Thanking you,

Yours faithfully

For and on behalf of M/s. _____

(Name of the POI issuing agency).

()

[Designation]

Format 7.3 C

FORMAT FOR PERFORMANCE BANK GUARANTEE (PBG)

(To be submitted separately for each Project)

*(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of
Appropriate Value)*

Reference:

Bank Guarantee No.:

Date:

In consideration of the _____[*Insert name of the Bidder*] (hereinafter referred to as 'selected Battery Energy Storage System Developer') submitting the response to RfS inter alia for..... [*Insert title of the RfS*] of the capacity of 40 MW / 80 MWh, at.....[*Insert name of the place*], for supply of power there from on long term basis, in response to the RfS dated..... and addendums thereto issued by CESC Limited (hereinafter referred to as CESC) and CESC considering such response to the RfS of[*Insert name of the Bidder*] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Project of the Battery Energy Storage System Developer and issuing Letter of Award No. _ to ____(*Insert Name of selected Battery Energy Storage System Developer*) as per terms of RfS and the same having been accepted by the selected BESSD resulting in a Battery Energy Storage Purchase Agreement (BESPA) to be entered into, for purchase of Power [from selected Battery Energy Storage System Developer or a Project Company, M/s _____{a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable].

As per the terms of the RfS, the _____[*Insert name & address of Bank*] hereby agrees unequivocally, irrevocably and unconditionally to pay to CESC at [*Insert Name of the Place from the address of the CESC*] forthwith on demand in writing from CESC or any Officer authorised by it in this behalf, any amount up to and not exceeding Indian Rupees [TotalValue] only, on behalf of M/s _____[*Insert name of*

the selected Battery Energy Storage System Developer/ Project Company].

This guarantee shall be valid and binding on this Bank up to and including and shall not be terminable by notice or any change in the constitution of the Bank or the term of contract or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective agreement.

Our liability under this Guarantee is restricted to INR.(Indian Rupees_____only).

Our Guarantee shall remain in force until..... CESC shall be entitled to invoke this Guarantee till

The Guarantor Bank hereby agrees and acknowledges that CESC shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by CESC, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to CESC.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by___[*Insert name of the selected Battery Energy Storage System Developer/ Project Company as applicable*] and/ or any other person. The Guarantor Bank shall not require CESC to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against CESC in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at Kolkata shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and

accordingly CESC shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the selected Battery Energy Storage System Developer/ Project Company, to make any claim against or any demand on the selected Battery Energy Storage System Developer/ Project Company or to give any notice to the selected Battery Energy Storage System Developer/ Project Company or to enforce any security held by CESC or to exercise, levy or enforce any distress, diligence or other process against the selected Battery Energy Storage System Developer/ Project Company.

The Guarantor Bank acknowledges that this BANK GUARANTEE is not personal to CESC and may be assigned, in whole or in part, (whether absolutely or by way of security) by CESC to any entity to whom CESC is entitled to assign its rights and obligations under the BESPA.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to INR____(Indian Rupees____only) and it shall remain in force until We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if CESC serves upon us a written claim or demand.

Signature: _____

Name:

Power of Attorney No.: _____

For____

[Insert Name and Address of the Bank]

Contact Details of the Bank:

E-mail ID of the Bank:

Banker's Stamp and Full Address.

Dated this____day of_, 20____

Witness:

1.

Signature

Name and Address

2.

Signature

Name and Address

Notes:

1. The Stamp Paper should be in the name of the Executing Bank and of appropriate value.
2. The Performance Bank Guarantee shall be executed by any of the Scheduled Commercial Banks as listed on the website of Reserve Bank of India (RBI) and amended as on the date of issuance of Bank Guarantee.

Format 7.3 D

FORMAT OF PAYMENT ON ORDER INSTRUMENT TO BE ISSUED
BY IREDA/REC/PFC (IN LIEU OF PBG)

No.

Date

CESC Limited,

CESC House,

Chowringhee Square,

Kolkata-700001

Reg: M/s _____ (insert name of the BESPAs signing entity) (Project No. _____
(insert project ID issued by CESC) – Issuance of Payment on Order Instrument
for an amount of Rs. _____

Dear Sir,

1. It is to be noted that M/s. _____ (insert name of the POI issuing Agency) (**‘IREDA/REC/PFC’**) has sanctioned a non-fund based limit loan of Rs. _____ (Rupees _____ only) to M/s _____ under the Loan Agreement executed on _____ to execute Battery Energy Storage System Project.
2. At the request of M/s _____, on behalf of _____ (insert name of the SPV), this Payment on Order Instrument (POI) for an amount of Rs. _____ (Rupees _____ (in words)). This Payment on Order Instrument comes into force immediately.
3. In consideration of the ----- [Insert name of the Bidder] (hereinafter referred to as selected Battery Energy Storage System Developer’) submitting the response to RfS inter alia for selection of Contracted Capacity of 40 MW/80 MWh, at [Insert name of the place] under RfS for _____ (insert name of the RfS), for supply of power there from on long term basis, in response to the RfS dated issued by CESC (hereinafter referred to as CESC) and CESC considering such response to the RfS of [insert the name of the selected Battery Energy Storage System Developer] (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Battery Energy

Storage System Project of the Battery Energy Storage System Developer (BESSD) and issuing Letter of Award No ----- to (Insert Name of selected Battery Energy Storage System Developer) as per terms of RfS and the same having been accepted by the selected BESSD resulting in a Battery Energy Storage Purchase Agreement (BESPA) to be entered into, for purchase of Power [from selected Battery Energy Storage System Developer or a Project Company, M/s ----- {a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable]. As per the terms of the RfS, the [insert name & address of IREDA/PFC/REC] hereby agrees unequivocally, irrevocably and unconditionally to pay to CESC at [Insert Name of the Place from the address of the CESC] forthwith on demand in writing from CESC or any Officer authorized by it in this behalf, any amount up to and not exceeding Rupees----- [Total Value] only, on behalf of M/s__[Insert name of the selected Battery Energy Storage System Developer / Project Company].

4. In consideration of the above facts, IREDA/REC/PFC, having its registered office at _____, agrees to make payment for the sum of Rs. _____ Lakhs (in words.....) to CESC on the following conditions:-
 - (i) IREDA/REC/PFC agrees to make payment of the said amount unconditionally, without demur and without protest upon receipt of request from CESC within the validity period of this letter as specified herein;
 - (j) The commitment of IREDA/REC/PFC, under this Payment of Order Instrument will have the same effect as that of the commitment under the Bank Guarantee issued by any Public Sector Bank and shall be enforceable in the same manner as in the case of a Bank Guarantee issued by a Bank and the same shall be irrevocable and shall be honored irrespective of any agreement or its breach between IREDA/REC/PFC or its constituents notwithstanding any dispute that may be raised by the against CESC;
 - (k) The liability of IREDA/REC/PFC continues to be valid and binding on IREDA/REC/PFC and shall not be terminated, impaired and discharged, by virtue of change in its constitution and specific liability under letter of undertaking shall be binding on its successors or assignors;
 - (l) The liability of IREDA/REC/PFC shall continue to be valid and binding on

IREDA/REC/PFC and shall not be terminated/ impaired/ discharged by any extension of time or variation and alternation made given or agreed with or without knowledge or consent of the parties (CESC and Bidding Party), subject to the however to the maximum extent of amount stated herein and IREDA/REC/PFC is not liable to any interest or costs etc;

- (m) This Payment of Order Instrument can be invoked either partially or fully, till the date of validity;
 - (n) IREDA/REC/PFC agrees that it shall not require any proof in addition to the written demand by CESC made in any format within the validity period. IREDA/REC/PFC shall not require CESC to justify the invocation of the POI against the SPV/BESSD, to make any claim against or any demand against the SPV/BESSD or to give any notice to the SPV/BESSD;
 - (o) The POI shall be the primary obligation of IREDA/REC/PFC and CESC shall not be obliged before enforcing the POI to take any action in any court or arbitral proceedings against the SPV/BESSD;
 - (p) Neither CESC is required to justify the invocation of this POI nor shall IREDA/REC/PFC have any recourse against CESC in respect of the payment made under letter of undertaking;
5. Notwithstanding anything contrary contained anywhere in this POI or in any other documents, this POI is and shall remain valid upto___and IREDA/REC/PFC shall make payment thereunder only if a written demand or request is raised within the said date and to the maximum extent of Rs.....and IREDA/REC/PFC shall in no case, be liable for any interest, costs, charges and expenses and IREDA's/REC's/PFC's liability in no case will exceed more than the above amount stipulated.

Thanking you,

Yours faithfully For and on behalf of

M/s. —

(Name of the POI issuing agency).

()

[Designation]

FORMAT FOR BOARD RESOLUTIONS

The Board, after discussion, at the duly convened Meeting on [*Insert date*], with the consent of all the Directors present and in compliance of the provisions of the Companies Act, 1956 or Companies Act 2013, as applicable, passed the following Resolution:

1. **RESOLVED THAT** Mr/ Ms....., be and is hereby authorized to do on our behalf, all such acts, deeds and things necessary in connection with or incidental to our response to RfS vide RfS No. for ____ (insert title of the RfS), including signing and submission of all documents and providing information/ response to RfS to CESC Limited (CESC), representing us in all matters before CESC, and generally dealing with CESC in all matters in connection with our bid for the said Project. (*To be provided by the Bidding Company or the Lead Member of the Consortium*)
2. **FURTHER RESOLVED THAT** pursuant to the provisions of the Companies Act, 1956 or Companies Act, 2013, as applicable and compliance thereof and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to invest total equity in the Project. (*To be provided by the Bidding Company*)

[Note: In the event the Bidder is a Bidding Consortium, in place of the above resolution at Sl. No. 2, the following resolutions are to be provided]

FURTHER RESOLVED THAT pursuant to the provisions of the Companies Act, 1956 or Companies Act, 2013, as applicable and compliance thereof and as permitted under the Memorandum and Articles of Association of the Company, approval of the Board be and is hereby accorded to invest (----%) equity [*Insert the % equity commitment as specified in Consortium Agreement*] in the Project. (**To be provided by each Member of the Bidding Consortium including Lead Member such that total equity is 100%**)

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to participate in consortium with M/s ----- [*Insert the name of other Members in the Consortium*] and Mr/ Ms....., be and is hereby authorized to execute the Consortium Agreement. (*To be provided by each Member of the Bidding Consortium*)

including Lead Member)

And

FURTHER RESOLVED THAT approval of the Board be and is hereby accorded to contribute such additional amount over and above the percentage limit (specified for the Lead Member in the Consortium Agreement) to the extent becoming necessary towards the total equity share in the Project Company, obligatory on the part of the Consortium pursuant to the terms and conditions contained in the Consortium Agreement dated executed by the Consortium as per the provisions of the RfS. [*To be passed by the Lead Member of the Bidding Consortium*]

Certified True Copy

(Signature, Name and Stamp of Company Secretary)

Notes:

- 1) This certified true copy should be submitted on the letterhead of the Company, signed by the Company Secretary/ Director.
- 2) The contents of the format may be suitably re-worded indicating the identity of the entity passing the resolution.
- 3) This format may be modified only to the limited extent required to comply with the local regulations and laws applicable to a foreign entity submitting this resolution. For example, reference to Companies Act, 1956 or Companies Act, 2013 as applicable may be suitably modified to refer to the law applicable to the entity submitting the resolution. However, in such case, the foreign entity shall submit an unqualified opinion issued by the legal counsel of such foreign entity, stating that the Board resolutions are in compliance with the applicable laws of the respective jurisdictions of the issuing Company and the authorizations granted therein are true and valid.

FORMAT FOR CONSORTIUM AGREEMENT

(To be stamped in accordance with Stamp Act, the Non-Judicial Stamp Paper of Appropriate Value)

THIS Consortium Agreement (“Agreement”) executed on this Day of____ between M/s_____[Insert name of Lead Member] a Company incorporated under the laws of _____and having its Registered Office at _____(hereinafter called the “**Member-1**”, Which expression shall include its successors, executors and permitted assigns) and M/s ___, a Company incorporated under the laws of _____and having its Registered Office at _____(hereinafter called the “**Member-2**”, which expression shall include its successors, executors and permitted assigns), M/s _____a Company incorporated under the laws of____and having its Registered Office at _____(hereinafter called the “**Member-n**”, which expression shall include its successors, executors and permitted assigns), [The Bidding Consortium should list the details of all the Consortium Members] for the purpose of submitting response to RfS and execution of Battery Energy Storage Purchase Agreement (in case of award), against RfS No.____dated_____issued by CESC Limited (CESC) a Company incorporated under the Companies Act, 2013, and having its Registered Office at CESC House, Chowringhee Square, Kolkata-700001

WHEREAS, each Member individually shall be referred to as the “Member” and all of the Members shall be collectively referred to as the “Members” in this Agreement.

WHEREAS CESC desires to purchase Power under RfS for_____(insert title of the RfS);

WHEREAS, CESC had invited response to RfS vide its Request for Selection (RfS) dated__

WHEREAS the RfS stipulates that in case response to RfS is being submitted by a Bidding Consortium, the Members of the Consortium will have to submit a legally enforceable Consortium Agreement in a format specified by CESC wherein the Consortium Members have to commit equity investment of a specific percentage for the Project.

NOW THEREFORE, THIS AGREEMENT WITNESSTH AS UNDER:

In consideration of the above premises and agreements all the Members in this Bidding

Consortium do hereby mutually agree as follows:

1. We, the Members of the Consortium and Members to the Agreement do hereby unequivocally agree that Member-1 (M/s___), shall act as the Lead Member as defined in the RfS for self and agent for and on behalf of Member-2, , Member-n and to submit the response to the RfS.
2. The Lead Member is hereby authorized by the Members of the Consortium and Members to the Agreement to bind the Consortium and receive instructions for and on their behalf.
3. Notwithstanding anything contrary contained in this Agreement, the Lead Member shall always be liable for the equity investment obligations of all the Consortium Members i.e. for both its own liability as well as the liability of other Members.
4. The Lead Member shall be liable and responsible for ensuring the individual and collective commitment of each of the Members of the Consortium in discharging all of their respective equity obligations. Each Member further undertakes to be individually liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.
5. Subject to the terms of this Agreement, the share of each Member of the Consortium in the issued equity share capital of the Project Company is/shall be in the following proportion:

Name	Percentage
Member 1	---
Member 2	---
Member n	---
Total	100%

We acknowledge that after the execution of BESPA, the controlling shareholding (having not less than 51% of the voting rights and paid up share capital) in the Project Company developing the Project shall be maintained upto COD of the Project.

6. The Lead Member, on behalf of the Consortium, shall inter alia undertake full

responsibility for liaising with Lenders or through internal accruals and mobilizing debt resources for the Project, and ensuring that the Seller achieves Financial Closure and commencement of power supply in terms of the BESPA.

7. In case of any breach of any equity investment commitment by any of the Consortium Members, the Lead Member shall be liable for the consequences thereof.
8. Except as specified in the Agreement, it is agreed that sharing of responsibilities as aforesaid and equity investment obligations thereto shall not in any way be a limitation of responsibility of the Lead Member under these presents.
9. It is further specifically agreed that the financial liability for equity contribution of the Lead Member shall not be limited in any way so as to restrict or limit its liabilities. The Lead Member shall be liable irrespective of its scope of work or financial commitments.
10. This Agreement shall be construed and interpreted in accordance with the Laws of India and courts at Kolkata alone shall have the exclusive jurisdiction in all matters relating thereto and arising thereunder.
11. It is hereby further agreed that in case of being selected as the Successful Bidder, the Members do hereby agree that they shall furnish the Performance Guarantee in favour of CESC in terms of the RfS.
12. It is further expressly agreed that the Agreement shall be irrevocable and shall form an integral part of the Battery Energy Storage Purchase Agreement (BESPA) and shall remain valid until the expiration or early termination of the BESPA in terms thereof, unless expressly agreed to the contrary by CESC.
13. The Lead Member is authorized and shall be fully responsible for the accuracy and veracity of the representations and information submitted by the Members respectively from time to time in the response to RfS.
14. It is hereby expressly understood between the Members that no Member at any given point of time, may assign or delegate its rights, duties or obligations under the BESPA except with prior written consent of CESC.

15. This Agreement

- a) has been duly executed and delivered on behalf of each Member hereto and constitutes the legal, valid, binding and enforceable obligation of each such Member;
- b) sets forth the entire understanding of the Members hereto with respect to the subject matter hereof; and
- c) may not be amended or modified except in writing signed by each of the Members and with prior written consent of CESC .

16. All the terms used in capitals in this Agreement but not defined herein shall have the meaning as per the RfS and BESPA.

IN WITNESS WHEREOF, the Members have, through their authorized representatives, executed these present on the Day, Month and Year first mentioned above.

For M/s----- [Member 1]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated)

Witnesses:

1) Signature-----

Name: Address:

2) Signature -----

Name: Address:

For M/s----- [Member 2]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated)

Witnesses:

1) Signature -----

Name: Address:

2) Signature -----

Name: Address:

For M/s----- [Member n]

(Signature, Name & Designation of the person authorized vide Board Resolution Dated

_____))

Witnesses:

1) Signature -----

Name: Address:

(2) Signature -----

Name: Address:

Signature and stamp of Notary of the place of execution

FORMAT FOR FINANCIAL REQUIREMENT

(This should be submitted on the Letter Head of the Bidding Company/ Lead Member of Consortium)

Ref. No. _____

Date: _____

From: *(Insert name and address of Bidding Company/ Lead Member of Consortium)*

Tel. #:

Fax #:

E-mail address#

To

CESC Limited

Power Marketing Dept.

1st Floor, CESC House,

Chowringhee Square, Kolkata-700001

Sub: Response to RfS No. _dated_ for ____.

Dear Sir/ Madam,

We certify that the Bidding Company/Member in a Bidding Consortium is meeting the financial eligibility requirements as per the provisions of the RfS. Accordingly, the Bidder, with the support of its Affiliates, (strike out if not applicable) is fulfilling the minimum Net Worth criteria,

by demonstrating a Net Worth of Rs..... Cr. (..... in words) as on the last date of Financial Year 2024-25 or as on the date at least 7 (seven) days prior to the bid submission deadline (*Strike out wherever not applicable*).

This Net Worth has been calculated in accordance with instructions provided in Clause 36.1 of the RfS.

Exhibit (i): Applicable in case of Bidding Company

For the above calculations, we have considered the Net Worth by Bidding Company and/ or its Affiliate(s) as per following details:

Name of Bidding Company	Name of Affiliate(s) whose net worth is to be considered	Relationship with Bidding Company*	Net Worth (in Rs. Crore)
Company 1			
Total			

**The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/ chartered accountant is required to be attached with the format.*

Exhibit (ii): Applicable in case of Bidding Consortium

(To be filled by each Member in a Bidding Consortium separately) Name of Member:

[Insert name of the Member]

Net Worth Requirement to be met by Member in Proportion to the Equity Commitment: INR

----- Crore (Equity Commitment (%) * Rs. [] Crore)

For the above calculations, we have considered Net Worth by Member in Bidding Consortium and/ or its Affiliate(s) per following details:

Name of Consortium Member Company	Name of Affiliate(s) whose net worth is to be considered	Relationship with Bidding Company* (If any)	Net Worth (in Rs. Crore)	Equity Commitment (in %age) in Bidding Consortium	Committed Net Worth (in Rs.Crore)
Company 1					

Total					

** The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/chartered accountant is required to be attached with the format*

Further, we certify that the Bidding Company/ Member in the Bidding Consortium, with the support of its Affiliates, (strike out if not applicable) is fulfilling the minimum Annual Turnover Criteria, by demonstrating an Annual Turnover of INR____(____in words) as on the end of Financial Year 2024-25 or as on the day at least 7 (seven) days prior to the bid submission

deadline (choose one). (Strike out if not applicable)

Exhibit (i): Applicable in case of Bidding Company

For the above calculations, we have considered the Annual Turnover by Bidding Company and/or its Affiliate(s) as per following details:

Name of Bidding Company	Name of Affiliate(s) whose Annual Turnover is to be considered	Relationship with Bidding Company*	Annual Turnover (In Rs. Crore)
Company 1			
Total			

**The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/chartered accountant is required to be attached with the format.*

Exhibit (ii): Applicable in case of Bidding Consortium

(To be filled by each Member in a Bidding Consortium separately) Name of Member:

[Insert name of the Member]

Annual Turnover Requirement to be met by Member in Proportion to the Equity Commitment:
INR -----Crore (Equity Commitment (%) * Rs. [] Crore)

For the above calculations, we have considered Annual Turnover by Member in Bidding Consortium and/ or its Affiliate(s) as per following details:

Name of Consortium Member Company	Name of Affiliate(s) whose Annual Turnover is to be considered	Relationship with Bidding Company* (If Any)	Annual Turnover (in Rs. Crore)	Equity Commitment (in %age) in Bidding Consortium	Proportionate Annual Turnover (in Rs. Crore)
Company 1					

Total					

** The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/chartered accountant is required to be attached with the format*

Further, we certify that the Bidding Company/ Member in the Bidding Consortium, with the support of its Affiliates, (strike out if not applicable) is fulfilling the minimum Profit After Tax plus Depreciation criteria as mentioned in the RfS, by demonstrating a Profit After Tax plus Depreciation of INR__ (in words) as on the end of Financial Year 2024-25 or as on the day at least 7 (seven) days prior to the bid submission deadline. (Strike out if not applicable)

Exhibit (i): Applicable in case of Bidding Company

For the above calculations, we have considered the Profit After Tax plus Depreciation by Bidding Company and/ or its Affiliate(s) as per following details:

Name of Bidding Company	Name of Affiliate(s) whose Profit After Tax plus Depreciation is to be	Relationship with Bidding Company*	Profit After Tax plus Depreciation (in

Company 1			
Total			

**The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/chartered accountant is required to be attached with the format.*

Exhibit (ii): Applicable in case of Bidding Consortium

(To be filled by each Member in a Bidding Consortium separately) Name of Member:
[Insert name of the Member]

Profit After Tax plus Depreciation Requirement to be met by Member in Proportion to the Equity Commitment: INR -----Crore (Equity Commitment (%) * Rs. [] Crore)

For the above calculations, we have considered Profit After Tax plus Depreciation by Member in Bidding Consortium and/ or its Affiliate(s) as per following details:

Name of Consortium Member Company	Name of Affiliate(s) whose Profit After Tax plus Depreciation is to be considered	Relationship with Bidding Company* (If Any)	Profit After Tax plus Depreciation (in Rs. Crore)	Equity Commitment (in %age) in Bidding Consortium	Proportionate Profit After Tax plus Depreciation (in Rs. Crore)
Company 1					

Total					

** The column for “Relationship with Bidding Company” is to be filled only in case the financial capability of Affiliate has been used for meeting Qualification Requirements. Further, documentary evidence to establish the relationship, duly certified by a practicing company secretary/chartered accountant is required to be attached with the format*

(Signature & Name of the Authorized Signatory)

(Signature and Stamp of CA)

Firm:

Date:

Membership No.

Regn. No. of the CA's

- Note: (i) Along with the above format, in a separate sheet on the letterhead of the Chartered Accountant's Firm, provide details of computation of Net Worth and Annual Turnover/ Profit After Tax plus Depreciation (as applicable) duly certified by the Chartered Accountant.
- (ii) Certified copies of Balance sheet, Profit & Loss Account, Schedules and Cash Flow Statements are to be enclosed in complete form along with all the Notes to Accounts.

Format 7.7

UNDERTAKING

(To be submitted on the letterhead of the Bidder)

We, hereby provide this undertaking to CESC Limited, in respect to our response to RfS vide RfS No._____dated__, that as on __ (Insert bid submission deadline), M/s (insert name of the Bidder), or any of its Affiliates is not a willful defaulter to any lender. We further undertake that as on____ (insert bid submission deadline), M/s _____ (insert name of the Bidder) & any of its Affiliate including any Consortium Member & any of its Affiliate, their directors have not been barred or included in the blacklist by any government agency or authority in India, the government of the jurisdiction of the Bidder or Members where they are incorporated or the jurisdiction of their principal place of business, any international financial institution such as the World Bank Group, Asian Development Bank, African Development Bank, Inter-American Development Bank, Asian Infrastructure Investment Bank etc., or the United Nations or any of its agencies.

(Name and Signature of the Authorized
Signatory)

Format 7.8

FORMAT FOR DISCLOSURE

(To be submitted on the Letter Head of the Bidding Company/ Each Member of Consortium)

DISCLOSURE

Ref.No. ____

Date: ____

From: *(Insert name and address of Bidding Company/ Lead Member of Consortium)*

Tel. #:

Fax#:

E-mail address#

To

CESC Limited

Power Marketing Dept.

**1st Floor, CESC House, Chowringhee Square,
Kolkata-700001**

Sub: Response to RfS No. _dated_ for ____.

Dear Sir/ Madam,

We hereby declare and confirm that we are participating in the RfS Selection process for the RfS No.____.and that our Parent, Affiliate or Ultimate Parent or any Group Company with which we have direct or indirect relationship are not separately participating in this selection process.

We further declare and confirm that in terms of the definitions of the RfS, M/s ____ (enter name of the Promoter/Promoters) is/are our Promoter(s) and has/have a

direct/indirect Control in the bidding company as per the Companies Act 2013. No other entity has a direct/indirect control in the bidding company except the entity(ies) mentioned above.

We further declare that the above statement is true and correct. We are aware that if at any stage it is found to be incorrect, our response to RfS will be rejected and if LOA has been issued or BESPA has been signed, the same will be cancelled and the Bank Guarantees will be encashed and recoveries will be effected for the payments done.

We also understand that the above is in addition to the penal consequences that may follow from the relevant laws for the time being in force.

We further declare that we have read the provisions of Clause 34.4 of the RfS, and are complying with the requirements as per the referred OM dated 23.02.2023 except Sl. 17 of the OM, including subsequent amendments and clarifications thereto. Accordingly, we are also enclosing necessary certificates (Annexure to this format) in support of the above compliance under the RfS. We understand that in case of us being selected under this RfS, any of the above certificates is found false, CESC shall take appropriate action as deemed necessary.

Dated the ____ day of __, 20____. Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

Format 7.8A

FORMAT FOR DISCLOSURE

(To be submitted on the Letter Head of the Bidding Company/ Each Member of Consortium)

(To be submitted by all such bidders in which a common Company/companies directly/indirectly own(s) more than 10% but less than 26% shareholding)

DISCLOSURE

Ref.No. _____

Date: _____

From: *(Insert name and address of Bidding Company/ Lead Member of Consortium)* Tel.
#:

Fax#:

E-mail address#

To

CESC Limited

Power Marketing Dept.

**1st Floor, CESC House, Chowringhee Square,
Kolkata-700001**

Sub: Response to RfS No. _dated_ for ____.

Dear Sir/ Madam,

We hereby declare and confirm that in terms of the definitions of the RfS, M/s _____ (enter name of the common shareholder) is our Group Company, and has a direct/indirect shareholding of less than 26% in the bidding company. M/s _____

(enter name of the common shareholder) also holds directly/indirectly less than 26% shareholding in other Companies which may participate in this RfS, i.e. RfS No. _____.

We undertake that M/s _____ (enter name of the above common shareholder) is not a party to the decision-making process for submission of response to this RfS by M/s _____ (enter name of the bidding company/member in the consortium). We further undertake that while undertaking any action as part of our response to RfS, we are not complicit with other such bidders participating in this RfS, in which M/s _____ (enter name of the common shareholder) has less than 26% direct/indirect shareholding, if any.

We further declare that the above statement is true and correct. We are aware that if at any stage it is found to be incorrect, our response to RfS will be rejected and if LOA has been issued or BESPA has been signed, the same will be cancelled and the Bank Guarantees will be encashed and recoveries will be effected for the payments done.

We also understand that the above is in addition to the penal consequences that may follow from the relevant laws for the time being in force.

We further declare that we have read the provisions of Clause 34.4 of the RfS, and are complying with the requirements as per the referred OM dated 23.02.2023 except Sl. 17 of the OM, including subsequent amendments and clarifications thereto. Accordingly, we are also enclosing necessary certificates (Annexure to this format) in support of the above compliance under the RfS. We understand that in case of us being selected under this RfS, any of the above certificates is found false, CESC shall take appropriate action as deemed necessary.

Dated the ____ day of __, 20____. Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

DECLARATION

**RESTRICTION ON PROCUREMENT FROM CERTAIN
COUNTRIES: MoF OM F.7/10/2021-PPD (1) dated 23.02.2023**

*(To be submitted on the Letter Head of the Bidding Company/ Each Member of
Consortium)*

Ref. No. ____

Date: _____

From: _____ *(Insert name and address of Bidding Company/Member of Consortium)*

Tel

#:

Fax

#:

E-mail address#

To

CESC Limited

Power Marketing Dept.

1st Floor, CESC House, Chowringhee Square,

Kolkata-700001

Sub: Response to RfS No datedfor the

tender

for

Dear Sir/ Madam,

This is with reference to attached order vide OM No. F.7/10/2021-PPD(1) dated 23.02.2023 including subsequent amendments and clarifications thereto issued by Department of Expenditure, Ministry of Finance, Govt of India.

We are hereby submitting the following declaration in this regard:

"I/We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached]."

We further declare that the above statement is true & correct. We are aware that if at any stage it is found to be incorrect, our response to the tender will be rejected.

Dated the _____ day of _____, 20....

Thanking you,

We remain,

Yours faithfully,

Encl: OM dated 23.02.2023, as referred above

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

Format 7.9

FORMAT FOR TECHNICAL CRITERIA

*(This should be submitted on the Letter Head of the Bidding Company/ Lead Member
of Consortium)*

Ref. No. ____

Date: _____

From: _____ *(Insert name and address of Bidding Company/Member of Consortium)*

Tel

#: _____

Fax

#: _____

E-mail address# _____

To

CESC Limited

Power Marketing Dept.

1st Floor, CESC House, Chowringhee Square,

Kolkata-700001

Sub: Response to RfS No datedfor the tender

Dear Sir/ Madam,

We hereby undertake to certify in line with **Clause 19** under the title “Financial Closure” that the following details shall be furnished within **9(nine) months** from Effective Date of the BESPA.

1. Evidence of achieving complete-tie-up of the Project Cost through internal accruals or through a Financing Agency.
2. DPR of the Project, detailing out project configuration and proposed commissioning schedule of the Project.

Failure or delay on our part in achieving the above conditions shall constitute sufficient grounds for actions as per the provisions of the RfS.

Dated the day of , 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

DECLARATION BY THE BIDDER FOR THE PROPOSED
TECHNOLOGY TIE-UP

1	Name of Bidding Company/ Lead Member of Bidding Consortium	
2	Location of BESS Project	New Cossipore Generating Station
3	Contracted Capacity proposed	40 MW/ 80 MWh
4	Technology Proposed to be adopted for the Project	

Dated the _____ day of _____, 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

FORMAT FOR SUBMISSION OF FINANCIAL BID

*(The Covering Letter should be submitted on the Letter Head of the Bidding
Company/ Lead Member of Consortium)*

Ref. No. ____

Date: _

From: *_(Insert name and address of Bidding Company/ Lead Member of Consortium)*

Tel.#: Fax#:

Email address:

To

CESC Limited

Executive Director – Power Marketing

Power Marketing Dept.

1st Floor, CESC House, Chowringhee Square

Kolkata-70001

Sub: Response to RfS No.____dated__for_____.

Dear Sir/ Madam,

I/We, *_(Insert Name of the Bidder)* enclose herewith the Financial Proposal for selection of my/ our firm for setting up a Battery Energy Storage System Project for a capacity of 40 MW/80 MWh at New Cossipore Substation of CESC as Bidder.

I/We agree that this offer shall remain valid for a period up to the date as on 12 months from the due date of submission of the response to RfS and such further period as may be mutually agreed upon.

Dated the____day of_, 20 .

Thanking
you,

We remain,
Yours
faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

Notes:

1. *If the Bidder submits the financial bid in the Electronic Form at ETS portal not in line with the instructions mentioned therein, then the bid shall be considered as non-responsive.*
2. *Tariff requirement shall be quoted as a fixed amount in Indian Rupees only. Conditional proposal shall be summarily rejected.*
3. *In the event of any discrepancy between the values entered in figures and in words, the values entered in words shall be considered.*
4. *Tariff should be in Indian Rupee in whole numbers only (no decimal places allowed).*

Format 7.12

**PRELIMINARY ESTIMATE OF COST OF BATTERY ENERGY STORAGE
SYSTEM PROJECT**

(Disclaimer: It is clarified that the data submitted as part of this Format is for CESC's records only, and will have no bearing on the BESSD's claims against Change in Law or any other provisions of the BESPA. Please refer to Annexure-A of this RfS for detailed project requirement.)

Project Capacity: 40 MW / 80 MWh

Location: New Cossipore Generating Station, Address - 28, Jheel Road, Kolkata – 700002

S. No.	Equipment	Estimated Rate (in Lakh INR) (in figures)	Estimated Applicable Taxes (in %)	Estimated Total Cost (in Lakh INR) (in figures)
1	33 kV HT Switchgear Panel (Standalone Breaker)			
2	Battery Energy Storage Container			
3	Bidirectional Power Conversion System			
4	Evacuation Cost up to Delivery Point (Cables and Inverter Duty Transformer)			
5	Communicable meters (DC energy meter, AC Energy meter, AUX meter)	-	-	
6	Battery racks/module	-	-	

7	BMS	-	-	
8	HVAC (cooling system)	-		
9	Fire Protection System	-	-	
10	Energy Management System			
11	Human Machine Interface	-	-	
12	Civil and General Works			
13	Preliminary and Pre-Operative Expenses including IDC and Contingency			
14	Any other (Please specify)			
15	Total Project Cost			

Dated the _____ day of _____, 20....

Thanking you,

We remain,

Yours faithfully,

Name, Designation, Seal and Signature of Authorized Person in whose name Power of Attorney/ Board Resolution/ Declaration.

**FORMAT FOR TECHNICAL UNDERTAKING – COMPLIANCE WITH
TECHNICAL & REGULATORY REQUIREMENTS**

(To be submitted on the Letterhead of the Bidding Company / Lead Member of Consortium)

Ref. No.: _____

Date: _____

From:

(Insert name and address of Bidding Company/Member of Consortium)

Tel#: _____

Fax#: _____

E-mail Address#: _____

To

CESC Limited

Power Marketing Dept.

1st Floor, CESC House

Chowringhee Square, Kolkata – 700001

Sub: Response to RfS No. _____ dated _____ for the tender

Dear Sir/Madam,

We hereby undertake and confirm that we have thoroughly read, understood, and accepted all clauses mentioned in **Annexure-A: “Technical and Regulatory Requirements to be followed for Battery Energy Storage Systems (BESS)”** issued as part of the above-referred RfS document.

We acknowledge that the technical, safety and regulatory provisions mentioned in the said Annexure-A shall be fully adhered to, and no deviation shall be sought or assumed during or after the bidding process.

We understand that any failure or delay on our part in fulfilling the conditions in Annexure-A shall constitute sufficient grounds for action as per the provisions of the RfS.

Dated this ____ day of _____, 20.

Thanking you,

We remain,

Yours faithfully,

[Signature]

Name: _____

Designation: _____

Seal: _____

(Authorized Signatory as per Power of Attorney / Board Resolution /**Declaration**)

Annexure - A

TECHNICAL AND REGULATORY REQUIREMENTS TO BE FOLLOWED FOR
BATTERY ENERGY STORAGE SYSTEMS

1. Site Conditions

The key site conditions where the BESS is to be installed are described below:

S.No	Particulars	Details
1	Location	New Cossipore Generating Station (“NCGS”) (Lat. 22.625, Long. 88.367) Address - 28, Jheel Road, Kolkata – 700002
2	Maximum ambient air temp	50°C
3	Minimum ambient air temp	5°C
4	Max. Relative Humidity	100%
5	Min. Relative Humidity	10%
6	Max. Altitude above M.S. L	300 meters
7	Average annual rainfall	1750 – 2250 mm
8	Rainy Months	June - October
9	Max. wind pressure	2600 kg/Sq. m
10	Average No. of thunderstorms	30 days/year

11	Avg. no. of rainy days	120 days/year
12	Pollution	Highly polluted (Class III)
13	Seismic level	Zone- III, as per IS-1893, 2002
14	Site location (indoor / outdoor)	Outdoor

2. Scope of Work & Battery Limit

2.1 Under this RFS, the BESSD shall be required to set up, operate, and maintain a Battery Energy Storage System (BESS), with the primary objective of making the energy storage facility available to CESC for charging/ discharging of the BESS, on an “on demand” basis.

2.2 BESS shall primarily support load management requirement of CESC. The Successful Bidder is expected to operate the BESS in a manner that meets the requirements of CESC.

2.3 Setting up of the BESS, interconnection of the BESS with the distribution grid at the Project Location, and operations and maintenance of the BESS will be under the scope of the BESSD. For the capacity under contract, charging and discharging of the system will be carried out by the Developer as per requirements of CESC. After the expiry of the term of the BESPA, the Project will be transferred to CESC at Re. 1 without any financial obligations to CESC in working condition with defined energy through put at the end of the term on a “as is where is” basis, in line with the provisions of the BESPA.

2.4 Starting from the designing of BESS up to connectivity of 33 kV feeders to CESC’s 33 kV Switchboard at New Cossipore Substation (NCSS) is the battery limit for the bidders. A sample SLD of BESS system is given in **Annexure-D** for bidder’s reference. The SLD is tentative/indicative and the Bidder needs to prepare the final SLD/design after carrying out detailed engineering before technical bid submission. The connectivity shall be done considering the following points, which may be modified as per site requirements.

- 2.4.1** 33 kV switchboards need to be installed in a **Switch-cum-Control Room / Control Centre** to be constructed within the BESS area. These will function as intermediate buses, enabling connectivity between the BESS system and CESC's network. The number of panels will be finalized during detailed engineering by the developer based on site-specific requirements. This switchboard will serve as the central node for pooling power before its evacuation to CESC's grid. The Control Room shall also have a suitable conference cum Office area with all amenities as required by CESC. The Conference Room should also have a clear view of the project area. The general layout, architectural/structural design. of Switch-cum-Control Room shall be vetted by CESC.
- 2.4.2** The switchboard shall be equipped with all necessary protection and control features, including protective relays, metering units, circuit breakers, and control interfaces. The configuration and layout shall comply with CESC's design guidelines and applicable utility standards.
- 2.4.3** If Bay Control and Protection Unit (BCPU) panels are not considered, a separate Relay, Control, Indication, and Protection (RCIP) panel may be installed, as required.
- 2.4.4** The BESSD shall arrange the necessary auxiliary and backup power supply at the Switch-cum-Control Room / Control Centre through appropriately sized station battery and charger system at appropriate voltage level, as well as UPS (Uninterruptible Power Supply), to ensure uninterrupted operation of metering, protection, control, and communication systems.
- 2.4.5** Suitable optical fibre cable based communication system compatible with CESC's communication system (MPLS-TP /CISCO network) shall be provided by the BESSD. All materials/services required for successful connectivity shall be borne by BESSD. Necessary optical fibre cable required for metering/protection/data transfer/security systems etc. should be provided by BESSD along with hardware, software, devices etc. **The optical fibre cable shall be provided as per specification given in Annexure-H.**
- 2.4.6** For final grid integration, two runs (2R) of 1C x 400 sq. mm, 33 kV XLPE AL cables or higher (each rated for minimum ~25 MVA, total 50 MVA (minimum) for

two circuits) will be laid from the feeder of the intermediate 33 kV switchboard to the 33 kV Double Busbar (DBB) Siemens Gas Insulated Switchgear (GIS) (inner cone type) at CESC's New Cossipore Substation (NCSS). Please refer to the tentative SLD for connectivity. The specifications of the cable shall be vetted by CESC before submission of technical bid.

- 2.4.7** Suitable metering arrangement needs to be implemented to monitor the power flow in terms of applicable CEA Metering Regulations. One CT/PT cubicle shall be installed at the CESC end, as shown in the attached SLD, to facilitate ABT (Availability Based Tariff) metering – Main/Check. Additionally, ABT metering – Standby metering arrangement should be made available at 33kV intermediate bus end. Supply, design, system compatibility checking & commissioning shall be entirely in the BESSD's scope. The ABT metering shall be provided as per the specification given in **Annexure-G**.
- 2.4.8** From a protection perspective, dedicated current transformers (CTs) shall be installed at 33 kV Intermediate bus. The CT specifications must comply with CESC's requirements to enable Line Differential Protection (87L) for the 33kV feeder(s) between the 33 kV intermediate bus at BESS end and NCSS end. The Line Differential Protection (87L) should be provided through Optical Fibre Cable (OFC) as per CESC's specifications. The Numerical relay for Line Differential Protection (87L) shall be provided as per the specification given in **Annexure-E**. The final specifications shall be vetted by CESC during detailed engineering. The optical fibre cable shall be provided as per specification given in **Annexure-H**.
- 2.4.9** A monitoring terminal of EMS of BESS will be placed at Switch-cum-Control Room remotely (through cloud) for remote monitoring & controlling from the control centre.
- 2.4.10** EMS of BESS will not be connected to CESC's SCADA system. The raw signals (Analog & digital) of BESS will be integrated with CESC's SCADA System through Automation Unit (AU).

It is anticipated that the Successful Bidder shall perform the following tasks as part of the Scope of Work, in relation to installation of BESS but not limited to.

2.5 Supply, Erection and Commissioning

2.5.1 Site survey, planning, design, engineering, transportation to site, insurance, supply at site, unloading, handling, storage, required site area grading, construction and civil work, installation, integration, testing, commissioning & demonstration for acceptance of all equipment/ materials and miscellaneous item required to complete the BESS installation, which includes, but is not limited to the following:

- i. Battery packs, Power Conversion /conditioning system (PCS), Air conditioning (AC) system, UPS, system hardware, measurement & control device, and other associated items necessary for trouble free operation and maintenance of whole system.
- ii. The remote monitoring terminal of Energy Management System including internet connectivity up to the remote monitoring terminal will be placed in CESC Ltd.'s Control room/ building. The control/ monitoring system shall be cyber security compliant. The Successful Bidder should integrate the local 33 kV CB status indication along with protection signals over IEC61850 or hardwired and Analog Signals through MFM with the Automation Unit (AU) installed at NCSS with the CESC's SCADA system meeting the cyber security norms. The ABT meters installed for monitoring the system should have a RS-485 port to integrate with the AU at NCSS for real time monitoring. Data exchange between AU and Central CESC's SCADA will be on IEC 104 and the AU should be capable of handling field Signals through IEC 61850 or Hardwire signals (DI, DO, AI). MFM & ABT Meter data to be considered over RS-485. The communication link should be independent and isolated from the Cloud interface to ensure Cyber-Security in Operational Technology (OT) domain and may require Next Gen Firewall based on the placement of devices. Auxiliary supply with backup for powering up the devices shall be considered. Additionally, Optical fibre cable, with termination arrangement and L2 Managed switch with optical SFP is required for connectivity between NCSS & BESS end. In case OF (optical fibre) line differential protection is required (as per schematic) the same OF cable may serve the purpose.

Sizing of AU & requirement of Firewall will be finalized during pre-bid clarifications. AU, Firewall & L2 Managed switch specification shall be vetted and approved by CESC.

- iii. Containers, structures, earthing design, and battery modules inter-connection
- iv. Complete logistic management from factory to site including way leave, permits and any commercial involvement etc.
- v. Power Conversion/Conditioning System (PCS) with monitoring & control related equipment such as actuators, sensors, transducers etc.
- vi. Appropriate protection and safety features as applicable.
- vii. Mandatory spares, maintenance tools and tackles
- viii. Interconnection with the grid. 33 KV Cable laying from BESS to CESC's 33 KV Switch. and termination of cable at 33 KV switch. of CESC is BESSD 's responsibility.
- ix. Project Management including adherence to all requisite safety practices.
- x. Automated Fire and Smoke detection and Fire suppression system for all deliverables under the scope of work including but not limited to Battery container, PCS, and Transformers
- xi. Factory acceptance test (FAT) and site acceptance test (SAT). FAT and SAT shall be conducted in the presence of representatives of CESC.
- xii. CCTV video surveillance with 360-degree night vision with live feed output on mobile app and EMS screen and archival in DVR including any other required hardware, software, and internet connectivity. Data retention period shall be 90 days.
- xiii. Transit Insurance, Storage Insurance, Post Commissioning Insurance to be covered by the Successful Bidder.

An analysis of the functional and performance requirements of this specification and / or site surveys, design and engineering may lead the bidders to conclude that additional items are required that are not specifically mentioned in this specification. The bid/ proposal should include all equipment, services and associated costs required to ultimately commission a viable and fully functional BESS that meets or exceeds the capacity and performance requirements specified. Such materials shall be considered to be within the scope of the contract.

The offered items shall be designed to operate as per the site conditions. Adequate measures meeting the relevant standards shall be taken to provide protection against contaminants, pollutants, water & moisture, lightning & short circuit, vibration & electro-magnetic interference, etc.

The bidders are advised to visit proposed project site (at their own expense), prior to the submission of the bid, and make surveys and assessments as deemed necessary for proposal submission.

2.6 Installation and Commissioning of BESS that includes

- 2.6.1** Special care to be taken while designing the system to cater to heavy rainfall, strong winds, temperature variations, and earthquakes that may be prevalent in the area.
- 2.6.2** The Successful Bidder shall provide all related drawings, documents, and reports to relevant IS/ IEC/UL/IEEE/NFPA standards.
- 2.6.3** Documentation and Training to CESC's officials.
- 2.6.4** Undertake Pre-commissioning and Commissioning tests of all supplied equipment
 - a) Test running of the grid-connected BESS facility including battery operation trials at Site, prior to handover.
 - b) Installation of appropriate measurement and control devices at required location, with submission of drawings - approved prior to commencement of work on Site.

- c) Commissioning certificate from relevant authorities for the facility

2.7 General Instructions

- 2.7.1** Security and safety of all materials at sites shall be the responsibility of the Successful Bidder.
- 2.7.2** Expenses for any other works, supply of material, and providing services including re-testing of any equipment/component during FAT required for the successful commissioning and operation of the plant, but not specifically mentioned in this document shall be borne by Successful Bidder
- 2.7.3** Safety has to be strictly complied with by the Successful Bidder throughout implementation activity. Applicable Codes / Standards as specified in Clause 5 of this Annexure must be complied with.
- 2.7.4** All local labour, employment, and other issues shall be handled independently by the Successful Bidder.
- 2.7.5** The entire responsibility and risk related towards the manpower working at the site, and compliance of different statutory regulations (like Workman Compensation Act, Employees State Insurance Corporation (ESIC), Factory Act. 1948, Contract Labour Regulation, and Abolition Act 1970, Shop and Establishment Act. 1948, West Bengal Fire Service Dept. guidelines and other Statutory regulatory bodies, etc.) shall solely lie with the Successful Bidder. The Successful Bidder shall also be solely responsible for payment of wages, provident fund, bonus, retrenchment compensation leaves, etc. applicable as per various statutory regulations to their entire workforce and keep CESC indemnified in this regard against any claim.

2.8 Delivery, installation, and Commercial Operation Date (COD)

Delivery of materials, installation, testing, and commissioning of the project should be completed within 18 months from the Effective Date of BESPA. This shall be the Scheduled Commissioning Date (SCD). Transit insurance and storage insurance till the handing over of all materials will be within the scope of work of Successful Bidder. COD shall be the next day after the date of commissioning of the Project, as indicated on the Commissioning Certificate, upon successful commissioning of the full capacity of the

Project or the last part capacity of the Project as the case may be, as declared in line with the commissioning procedure as provided in the BESPA

3. Operation and Maintenance

- 3.1** The operation & maintenance of the BESS would include operating the BESS as per control logic mentioned by CESC and separate module needs to be integrated with EMS for optimal dispatch, wear& tear, overhauling, insurance, and replacement of defective cells, invertors, PCSs, spares, consumables & other parts for a services period of twelve years.
- 3.2** BESS shall primarily support load management requirement of CESC. The Successful Bidder is expected to operate the BESS in a manner that meets the requirements of CESC.
- 3.3** The BESS system shall include energy management system (EMS), battery management system (BMS) and dashboard to display key operational parameters such as voltage, current, battery SoC, frequency etc. Final list of parameters will be decided during detailed engineering in consultation with CESC, post issuance of the LoA to the Successful Bidder.
- 3.4** Monitoring of BESS performance as per IEC 62933-3 and parameters decided during detailed engineering and supply of all technical, production/operation data and information and making it available as and when required would be the responsibility of the BESSD.
- 3.5** The BESSD shall be responsible to carry out routine and preventive maintenance and replacement of each and every component / equipment of the BESS in case of any failure and BESSD shall provide all labour, material, consumables etc. for routine and preventive maintenance at their own cost. BESSD shall be responsible to keep consumables and spares at their own store.
- 3.6** The BESSD shall carry out preventive maintenance of each and every component of the BESS and shall provide the required manpower, materials, consumables, components, or equipment etc. at regular intervals as per the discretion of CESC.
- 3.7** The BESSD shall carry out maintenance activities as a result of sudden failure/breakdown of any particular component or equipment. Bidder / BESSD shall be responsible to carry out breakdown maintenance of each and every component of the BESS and shall provide the required manpower, materials, consumables, components,

or equipment etc. for breakdown maintenance at its own cost irrespective of the reasons of the breakdown/failure.

- 3.8** The BESSD shall make itself available to undertake a visit to the site on call basis to provide maintenance services within 12 hours of lodging of complaint by the CESC through Telephone/ E-mail or, any form of written communication. The BESSD shall provide dedicated trained contact/ personnel for troubleshooting and complaint lodging.
- 3.9** An Operation, Instruction and Maintenance Manual in English language as per the requirement should be issued enclosing the following aspects:

3.9.1 Basic principles of BESS operation.

3.9.2 A small site-specific write-up (with a block diagram) on the BESS – its components, battery packs, inverter, junction boxes and expected performance shall be provided.

3.9.3 Type of battery technology finalized, Make & Model number, Voltage & capacity of inverter and cells, used in the BESS.

3.9.4 Technical characteristics of the entire component.

3.9.5 Clear instructions on regular maintenance and trouble shooting.

3.9.6 Contact details of relevant official of the Successful Bidder / BESSD

- 3.10** Bidder shall maintain stock of mandatory spares required for warranty and AMC period for any emergency troubleshooting. In any case system should be in running condition within 12 hours of break-down.

- 3.11** Sub-Contracting: No sub-contracting of work in full or in part is allowed unless approved by the CESC in writing.

An analysis of the functional and performance requirements of this specification and / or site surveys, design and engineering may lead the bidders to conclude that additional items are required that are not specifically mentioned in this specification. The bid/ proposal should include all costs required to ultimately commission a viable and fully functional BESS that meets or exceeds the capacity and performance requirements specified. Such materials shall be considered to be within the scope of the contract. To the extent possible, the bidders shall identify and include all such items in their proposal.

4. Technical Parameters of BESS, BESS Characterization and Performance

Parameters

An analysis of the functional and performance requirements of this specification and / or site surveys, design and engineering may lead the bidders to conclude that additional items are required that are not specifically mentioned in this specification. The bid/ proposal should include all costs required to ultimately commission a viable and fully functional BESS that meets or exceeds the capacity and performance requirements specified. Such materials shall be considered to be within the scope of the contract. To the extent possible, the bidders shall identify and include all such items in their proposal.

4.1 Technical Parameters of BESS

4.1.1 Battery Sub System

Lithium-ion battery cells shall be preferred in the energy storage system. However, alternative chemistries may also be considered, provided they meet the following technical specifications and comply with the applicable extant/current or upcoming safety regulations for the rated useful capacity of the BESS, as detailed in the table below:

S. No.	Parameters	Unit	Details
1	Useful Capacity output at Delivery Point	MWh	80
2	Peak Power Output at delivery point	MW	40
3	Life Cycles	Nos	Up to 2 cycles daily for at least 12 years from the date of commissioning
4	Round trip efficiency (RTE) (AC t o AC)	%	90
5	Service Life	Years	at least 12 years from the date of commissioning
6	System availability	%	>95

Taking into consideration capacity degradation, the minimum dispatchable energy to

be made available by the BESS developer at the end of a given year shall be in terms of clause 8.1.e (iv) of this RfS.

The cells shall be supplied as group of cells combined into modules and inter-connection of cells, and the modules should be designed properly to prevent the damage during transportation. The cells & modules should be able to absorb the anticipated vibration/shock associated with the transportation and shall resist deterioration due to vibrations. External connections to the cells, including inter-cells or inter-module connections shall also be designed to prevent failure during transportation. Protective covers / insulation shall be provided at battery terminals to prevent accidental contact with live electrical connections

4.1.2 Energy Management System (EMS)

The BESS will be primarily designed for energy time shift and provision of ancillary services. In this application, BESS shall draw power from CESC Ltd.'s distribution grid and discharge as informed by CESC through an automated online scheduling mechanism developed by BESSD. The mechanism shall be vetted by CESC.

S.No.	Details	Particulars
1	Application (main)	Energy time-shift, Peak load management, Deviation Settlement Mechanism, Reactive Power Support, frequency support, Voltage control etc.
2	No of cycles per day	Up to 2 cycles
3	Charging/ Discharging condition	Informed by CESC as per operating protocol

S.No.	Details	Particulars
4	Response time	Less than 1 second

The Energy Management System (EMS) architecture shall comply with following requirements. However, an analysis of the functional and performance requirements of this specification and / or site surveys, design and engineering may lead the bidders to conclude that additional items are required that are not specifically mentioned in this specification. The bid/ proposal should include all costs required to ultimately commission a viable and fully functional BESS that meets or exceeds the capacity and performance requirements specified:

- i. Energy management system shall comprise of hardware and software including internet connectivity for managing the power/ energy flow through BESS for specific application.
- ii. Energy Management System proposed should have experience in working with Distribution connected Energy Storage systems along with integration with Distribution SCADAs for remote optimization and control
- iii. EMS shall have the capability to tune BESS for energy time-shift, peak load management, Deviation Settlement Mechanism (DSM) and reactive power management as and when necessary.
- iv. System should have capability to take and accept analog / digital data from other BESS of similar / different size and with different technology. The EMS may also be a cloud-based service, on the cloud approved by Ministry of Electronics and Information Technology (MEITY), Government of India.
- v. BESS should have the capability to monitor and control the operational parameters (Grid V & I, P, Q, f, battery V & I, SoC, relay/actuator command etc.) remotely in SCADA system. In-addition, BESS operation shall be controlled either through EMS frontend or utility's SCADA screen.

- vi. The EMS shall include monitoring, data acquisition and control system to provide continuous visualization or display of key operational parameters, as well as permanent archival of all measured parameters at the CESC's SCADA control centre (suitably informed during detailed engineering). The archived data shall be readily made available at any point throughout the term of the BESPA as per the CESC's requirement. For monitoring & control, sensors, transducers, wiring, signal isolation, conditioning circuitry and data acquisition and analysis hardware and software shall be installed. The system shall record values of all operational parameters Including, but not limited to, cell level voltages, string / rack level currents and soc, cell / module level temperatures, AC side current, voltage, frequency, power and energy parameters, auxiliary power data, HVAC, fire activation and suppression of all components, CCTV live feed parameters. It shall be capable of making all monitored data and events available and shall allow the display of current values and recent historical trend (such as past 24 hours).
- vii. The sampling time for measurement/monitoring of key electrical parameters shall be adjustable up to 1 second. The real time analogue data such as grid voltage and current, battery voltage and current, SoC, frequency etc. at 10 second intervals and digital data such as alarm, events will be stored for 30 days.
- viii. Human machine interface (HMI) shall display the single line diagram of whole system with colour display and alarms & events shall be displayed in the form of list. The operation of HMI should be user friendly.
- ix. It should have feature to control the BESS operation both in automatic and manual mode (set/reference point can also be defined manually as well).
- x. Cell-level, Module-level, Rack level and Block level battery management system shall be provided to take care of battery module's, racks and block parameters (voltage, SoC and temperature) within specified range as per the applicable technical and industry standards of battery technology.
- xi. The control features in Energy Management System (EMS) shall be customizable and shall have feature to update the algorithm and control philosophies from time to time till tenure of BESPA. The updates should be

over the air (OTA) and without system downtime

- xii. The field status of key operational parameters must be communicated to CESC's SCADA system through IEC61850 or Hardwired and Modbus communication for analog parameters, and it shall have feature to control the system from SCADA centre. In addition, the BESSD shall also create local control station to monitor & control the system locally from an industrial computer/ PC as well as through a smart phone application based on android or IOS independent of CESC SCADA system.
- xiii. EMS shall be extendable in case additional battery storage systems get installed in future at other locations or existing battery energy storage system gets replaced with a newer technology and/or of different size. EMS shall be interoperable and scalable with any other EMS or Distributed Energy Resources Management System (DERMS). The EMS so supplied should be supporting open protocols capable of integrating multiple battery energy storage systems at different locations in future as well. The communication between the EMS (which is to be located at the CESC's Central Control Centre, both Main Control Centre and Backup Control Centre) and the location of BESS needs to be established by the bidder through suitable communication channels covering hardware, software and including internet connection.
- xiv. BESS operation should be controlled by one operator at a time, positioned either locally at site or remotely at Control centre and thus it must have suitable interlock features. However, BESSD's operator shall be available at Control centre for operation of BESS for 24x7 hours till tenure of BESPA. Monitoring & control system shall be accessible through web-based interface for remote monitoring. Utility should be able to set threshold values for changing operating conditions. Required infrastructure for operator like computer system, desktop PC should be made available
- xv. BESSD shall provide a module as part of EMS for uploading the schedule by CESC, basis which charging and discharging of BESS shall be carried by BESSD. In addition, a forecasting module of day-ahead and real-time market prices shall be developed and shall be integrated in EMS for optimal charging

and discharging for the purpose of envisaged application of Energy time-shift, peak load management etc. and/or participation in Ancillary market, with an over-riding facility to the operator after due approval from CESC.

- xvi. Software interlocking should be provided to ensure that inadvertent incorrect operation of switchgear causing damage and accidents in case of false operation do not take place.
- xvii. A restricted access to monitor the operating parameters through web/ online portal as well as mobile app shall be provided to the CESC.
- xviii. Change management to be approved by CESC.
- xix. Secure integration (as per ISO:27001-2022) to be deployed such as SSL VPN Secure ports.
- xx. Deployment architecture for Network connectivity shall be submitted to CESC for its approval. BESSD to provide list of Inventory as part of documentation and update from time to time and provide to CESC.
- xxi. BESSD shall not procure any components/connected devices OR involve any consultant from countries sharing boundaries with India viz (Pakistan, China, etc.) as per the MoP/CEA Guidelines.
- xxii. BESSD shall be solely responsible for patch management of IT & OT devices. Security testing must be conducted by certified CESC's empanelled vendor .
- xxiii. The EMS system shall be time synchronised with GPS.

4.1.3 Monitoring

Following parameters are to be displayed at the control centre:

- i. Operating Mode:
 - a. Grid connected/ Standalone mode

- b. Automatic/ Manual mode
 - c. Charge/discharge
- ii. Application mode (as described above for different category) /as per CESC's requirement)
- iii. Measurements (V, I, P, Q, SoC, charge/discharge rate freq., energy export/import)
- iv. Events and alarms
- v. Breaker position/operation
- vi. Status: Health of each battery, Air-conditioning system, Fire protection system
- vii. Charge / Discharge: No of cycles, State of charge, estimated time for charging, estimated discharge time at ongoing discharge, etc.
- viii. Any other parameter as mutually agreed during detailed engineering

4.1.4 Control

- i. Operation: Open / close breakers, change of operating modes, change control logic for applications, charging control, change of local / remote control
- ii. Protection: Protection relay parameter setting, battery over / under voltage alarm / tripping, battery over current alarm / tripping, temperature rise alarm / tripping, Temperature delta / voltage delta alarms. Rate of change of temperature alarm

4.1.5 System Hardware Requirements

- i. Monitoring & control centre shall include workstation, keyboard, mouse, LAN cable and all associated items. Local LCD display shall be provided to monitor various functions and parameters locally viz. Charge, discharge, current, voltage, power, alarms etc.
- ii. The system shall preferably be based on computer technology with a commensurate operating system, compatible with CESC's operating system

without compromising cyber security. Other system architectures are acceptable, but regardless of system architecture, the system shall, at a minimum, provide remote data inquiry from personal computer-based platform and data file export capabilities in ASCII format or, independent media (such as universal serial bus drive) that are readable on personal computer-based systems.

- iii. The system shall comply with all relevant cyber security regulations and guidelines issued by relevant authorities like CEA (Central Electricity Authority), or CERT-In (Indian Computer Emergency Response Team) or any other as applicable , from time to time.
- iv. The system shall provide unsolicited message capability for reporting critical alarms and indication locally and remotely to EMS remote terminal system.
- v. Processor, RAM, and storage should be selected in such a way that it should not use more than 50% of the disk space.
- vi. There should be CCTV surveillances for installations at each site with real-time recordings.

4.1.6 Battery Management System (BMS) & Power Conversion System (PCS)

Power Conversion system (PCS) shall supply rated power to the grid / battery for rated duration without violating the temperature rise limits. PCS shall consist of solid-state devices compatible to specified battery technology and shall be equipped with Isolation Transformer (Isolation transformer can be provided separately). PCS shall have at AC and DC side CB control and SPD (Type 1+2). Modular type PCS will be an added advantage. PCS shall have control of active and reactive power separately and should be able to provide power in all quadrants. It should have operational capability for both standalone and grid-connected mode. It should have capability to provide black- start support. It shall contain adequate inbuilt filter bank, harmonic filters, etc. for its operation without deteriorating the quality of power in terms of power factor, harmonics, transients, flicker, etc. Power quality parameters of PCS shall comply with relevant IEC/IEEE standards. It shall have following additional features:

S.No	Feature	Details
1	Monitoring	BMS and EMS shall monitor utility side parameters such as voltage, charge/discharge current, power quality parameters, protection system readings / status or any other parameter essential for monitoring health of battery. It shall also monitor parameters like charging / discharging current, power quality parameters, voltage, and protection system, etc. on the utility side of PCS.
2	Charge Control	<p>BMS shall monitor voltage, temperature and charging status of each cell of BESS. It shall be able to control charging of cells based upon these information and power / energy requirements. It should charge the module in CCCV mode as per requirement of battery sub-system design. PCS shall regulate the float / boost voltage in case of prescribed temperature rise of battery as per manufacturer's recommendation to avoid thermal runaway.</p> <p>The minimum C-rate for charging C/2 and discharging C/2</p>
3	Active / Reactive power control	<p>PCS shall have the capability to provide active / reactive power as per the requirement limited to rated/contracted capacity of the system. PCS shall have 4- quadrant operation and complied to IEEE 1547 and IEEE 519. Change in delivery of active / reactive towards load side should be smooth over the range of 0 - 100%.</p> <p>Similarly, change in charging current of batteries shall also be smoothly controllable. PCS shall be able to provide 0.8 lead to 0.8 lag reactive power</p>

		support without curtailing the active power. PCS output voltage shall remain within 1% of the set value, for AC input voltage variation of 10%, frequency variation of 5%, a combined voltage and frequency variation of 10%.
4	Operation Mode	PCS shall be connected with the distribution grid and operate in grid connected mode. The grid connected mode shall be the default mode and shall be capable for standalone mode as well. Beyond the voltage limits, PCS shall disconnect itself from grid automatically. After normalization of voltage condition, it shall be able to restart / reconnect automatically.
5	Auxiliary power supply	Auxiliary loads of BESS shall be supplied power through a separate connection with metering. BESSD shall apply for auxiliary supply. Accordingly, CESC will provide the supply at suitable voltage as per extant guidelines/regulations subject to requisite payment by BESSD for service charges & security deposit (SD). Necessary switch room/meter room (5m x 5m) for auxiliary supply of shall be constructed, as per CESC's specifications, by BESSD at project site to provide the supply. The specification of the switch-room for auxiliary supply will be provided during application process. The necessary statutory clearances as per extant regulations shall be arranged by the BESSD. Bill will be raised to the BESSD on monthly basis for payment.
6	Enclosure	PCS should be placed in waterproof and dustproof enclosure rated to minimum IP-54 protection with provision to prevent moisture condensation, airborne dust, rodents etc., and compliant to IEC-

		60529 and NFPA 855. It shall be kept indoor floor-mounted, self-supporting sheet metal enclosed cubicle type. The BESSD shall provide all associated items such as base frames, removable gland plates, copper lugs anchor bolts and hardware. Cubicle door should be earthed properly.
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4.1.7 Design and Construction Requirements

Following are the design and constructional requirements which are expected by the CESC. An analysis of the requirements of this specification and / or site surveys, design and engineering may lead the bidders to conclude that additional design and construction items are required that are not specifically mentioned in this specification. The bid/ proposal should include all costs required to ultimately commission a viable and fully functional BESS that meets or exceeds the capacity and performance requirements specified:

4.1.7.1 Battery container / cabinet: The whole system (battery, cooling system, ventilation system, auxiliary source, BMS, firefighting system etc.), shall be enclosed in a container or cabinet with IP-54 class of protection or as per national/ international standards (IEC-60529) and NFPA 855. The system must be placed in a container, and it should have feature for heat load management. The system's container shall meet all standard safety requirements. The battery container shall be explosion-proof, with a forced ventilation system and automated louvers for safe release of the flammable gas and maintain internal pressure within safe limits. Further, the battery container material should have electro-chemical compatibility and resistant to acid & alkaline material. The container should be insulated, fire retardant, and it shall be able to withstand the tensile stress due to internal pressure of the cells or electrolyte in the worst operating condition. Cell / battery shall not show any deformity or bulge under all working conditions. Each Battery container should have early detection of thermal runaway system to protect the system against fire due to thermal runaway. Hydrogen, CO, Co2 sensors to be

provided in the container.

- All Battery containers shall be positioned so as to ensure a distance of 7.5 meters from the nearest exterior wall or roof overhang. Provided that where prescribed distance cannot be maintained, Large Scale Fire Testing (LSFT) shall be conducted as per relevant standard to validate the safety of the installation. Large Scale Fire Testing (LSFT) shall be in Bidder's scope. Provided further that adequate measure shall be taken for noise reduction in the area where BESS is installed within densely populated urban area or critical building.
- A distance of 3 meters shall be maintained between two Battery containers. Provided that where prescribed distance cannot be maintained, LSFT shall be conducted as per relevant standard to validate the safety of the installation. Provided further that the external wall of container shall have a minimum fire resistance rating of 2 hours.
- Adequate ventilation and cooling systems for BESS container shall be installed to prevent overheating.
- A suitable mechanism shall be provided to limit the concentration of flammable materials inside the enclosure of BESS, in compliance to relevant Indian Standard. Provided that in the event of the mechanical ventilation system failure, the system shall initiate a shut down to maintain the concentration of flammable materials in the battery container within safe limits.
- In case of batteries having acidic/basic aqueous electrolytes in liquid form, the electrolyte spills shall be contained as per relevant standards.

4.1.7.2 Energy Density (MWh/container) per container is to be displayed on the container. During designing, the bidder should consider maximum energy density container for optimization of space.

- 4.1.7.3 Cell covers: The cell covers should be permanently fixed with the battery container and shall be capable to withstand internal pressure without bulging / cracking. It shall also be fire retardant. Fixing of pressure regulation valve (if provided) & terminal posts in the cover shall be such that seepage of electrolyte, gas escape, and entry of electrostatic spark are prevented
- 4.1.7.4 Separator: The separators used in manufacturing of battery cells, shall be of suitable material with large porosity, low acid / alkaline solubility and good insulating properties depending on the type of technology used for battery. The design of separators shall ensure that there is no misalignment during normal operation and handling.
- 4.1.7.5 Pressure Regulation valve: Each cell should be provided with pressure regulated valve (if required as per battery technology). The valve should be self-re-sealable and fire resistant. The valve unit shall be such that it cannot be opened without a proper tool. The valve shall be capable to withstand the internal cell pressure specified by the manufacturer.
- 4.1.7.6 Terminals: Both the positive and negative terminals of the cells shall be capable of proper termination and shall ensure its consistency with the life of the battery. The surface of the terminal post extending above the cell cover including bolt hole shall be coated with an acid / alkaline resistant and corrosion retarding material. Terminal posts or any other metal part which is in contact with the electrolyte shall be made of the same alloy as that of the plates or of a proven material that does not have any harmful effect on cell performance. Both positive and negative posts shall be clearly and unambiguously identifiable. Terminal post seals shall not transmit stresses between the cover or container and posts.
- 4.1.7.7 Connectors, Nuts and bolts, Heat Shrinkable sleeves: Where it is not possible to bolt the cell terminals directly to assemble a battery, separate non-corroding lead or copper connectors of suitable size shall be provided to enable connection of the cells. Copper connections shall be suitably coated to withstand corrosion due to acid / base at a very high rate of charge or discharge. Nuts and bolts for connecting the cells shall be made of copper, brass, or

stainless steel, which shall be effectively coated to prevent corrosion. All inter cell connectors shall be protected with heat shrinkable silicon sleeves for reducing the environmental impact including a corrosive environment.

- 4.1.7.8 Mounting: All the batteries shall be mounted in a metallic stand/frame. The suitable isolation should be provided between base of frame and ground to avoid the grounding of frame
- 4.1.7.9 Battery Bank stand: All batteries shall be mounted in a suitable metallic stand / frame. The frame shall be properly painted with the acid / base resistant paint. The battery stands shall be designed to withstand the wind speed and seismic design considerations.
- 4.1.7.10 All sensors, transducers, circuit boards, and test points in the System shall be easily and safely accessible for calibration and maintenance.
- 4.1.7.11 The additional items such as enclosures, junction boxes, grounding, instrumentation, wiring etc. required for fully functional system as per specification shall be provided / installed by BESSD.
- 4.1.7.12 External connection to the cells, including inter-cells or inter-module connections (such as cables/ straps etc.) shall also be designed to prevent failure during transportation.
- 4.1.7.13 BESS shall be provided with air conditioning system to manage the heat load of the system and rating of AC should be defined accordingly. It should be rugged, reliable and maintenance free and designed for long life time. It shall be designed for continuous operation. The system should be equipped with changeover feature to keep system healthy. Appropriate redundancy should also be provided such that operation is unaffected.
- 4.1.7.14 ABT (Availability Based Tariff) based energy meter of 0.2s class (as per IS-14697) accuracy shall be provided for recording export/import energy from/to BESS. CTs and PTs used in the energy meter will be under scope of BESSD. The standards and the specifications of the aforesaid meters shall be as per Central Electricity Authority (Installation and Operation of Meters)

Regulations, 2006 read with amendments. **The ABT metering shall be provided as per the specification given in Annexure-G .**

4.1.7.15 Ingress Protection shall be provided as per the relevant standards. Walk-in System, including Entrances & Exit, of BESS shall be as per the relevant standard

5. Codes and Standards

5.1 Safety of Battery cell shall be ensured by BESSD as per IEC-62281 and UL 1642 or UL 1973, Appendix E (cell) or IEC 62619 (cell) + IEC 63056 (cell), UL 9540 and UL 9540A or any extant/upcoming safety regulations as applicable. The container should have IP-54 class of protection.

5.2 The safety for whole BESS system shall also be ensured by BESSD as per UL-9540 or IEC/TS 62933-5-1 + IEC/TS 62933-5-2).

5.3 Suitable earthing system should be designed and provided for BESS by the BESSD.

5.4 BESSD shall ensure that the PCS shall have adequate safety features for complete isolation from grid in case of any malfunctioning (Separate isolation transformer may be connected between grid and BESS, if required). In addition, there should be a provision for manual as well as automatic disconnection of BESS from distribution system.

5.5 Provision should be provided for AC/DC protection (over/under voltage, over/under current, earth fault protection, over/under frequency for AC, transient/surge protection, breaker failure protection etc.) by BESSD.

5.6 Emergency alarm system should be provided by BESSD for any malfunctioning of BESS operation.

5.7 The BESSD shall comply with the following Codes and Standards or equivalent Indian Standards, as applicable for the Project.

Standard/ Code (or equivalent Indian Standards)	Description	Certification Requirements
IEC 62485-2	Safety requirements for secondary batteries and battery installations - to meet requirements on safety aspects associated with the erection, use, inspection, maintenance and disposal: Applicable for Lead Acid and NiCd / NiMH batteries	Applicable only for Lead Acid and NiCd/NiMH batteries
UL 1642 or UL 1973, Appendix E (cell) or IEC 62619 (cell) + IEC 63056 (cell)	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications	Required for Cell
UL 1973 (battery) or (IEC 62619 (battery) + IEC 63056 (battery))	Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications / Secondary cells and batteries containing	Either UL 1642 or UL1973 or (IEC 62619 + IEC 63056) for the Battery level

	alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications	
IEC 62281 / UN38.3	Safety of primary and secondary lithium cells and batteries during transport: Applicable for storage systems using Lithium Ion chemistries	Required for both Battery and Cell.
IEC 61850/ DNP3	Communications networks and management systems. (BESS control system communication)	
UL 9540 or (IEC TS 62933-5-1 + IEC 62933-5-2)	Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems – General specification / Standard for Energy Storage Systems and Equipment	Either UL9540 or (IEC 62933-5-1 + IEC 62933-5-2) is required for BESS system level
IEC 62933-2-1	Electrical energy storage (EES) systems - Part 2-1: Unit	Tests for Class B applications:

	Parameters and testing methods - General Specification	1. Duty Cycle Round Trip Efficiency Test 2. Equipment and Basic Function Test 3. Available energy Test 4. Insulation test
Power Conditioning Unit Standards for BESS		
IEC 62477-1	Safety requirements for power electronic converter systems and equipment - Part 1: General	
IEC 62477-2	Safety requirements for power electronic converter systems and equipment - Part 2: Power electronic converters from 1 000 V AC or 1 500 V DC up to 36 kV AC or 54 kV DC	
IEC 61000-6-2 Ed. 2	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments	
IEC 61000-6-4 Ed. 2.1	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments	
IEC 62116 Ed. 2	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures	
IEC 60068-2-1:2007	Environmental testing - Part 2-1: Tests - Test A: Cold	
IEC 60068-2-2:2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	

IEC 60068-2-14:2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
IEC 60068-2-30:2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)

The Battery Energy Storage System:

- a) shall follow the relevant CEA/CEIG Standards and CERC/WBERC Regulations
- b) shall be responsible for complying with the “First Time Energization” procedure available at Grid India website as per the IEGC Regulations 2023 (If applicable).
- c) Comply with the grid-interfacing requirements as mentioned in following standards:
 - i. IEEE Std. 2800 -2022: IEEE Standard for Interconnection and Interoperability of Inverter -Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems
 - ii. IEC TS 62786-1: Distributed energy resources connection with the grid – Part 1: General requirements
 - iii. IEC TS 62786-3: Distributed energy Resources connection with the grid: Part 3, Additional requirements for stationary battery energy storage systems

Further, CEA Technical Standards for Connectivity to the Grid, Regulations 2007, Part-1 (General), Standards and Codes for Practice, mentions the following:

“

(2) The equipment including overhead lines and cables shall comply with the relevant Indian Standards, British Standard (BS), or International Electrotechnical Commission (IEC) Standard, or American National Standards Institute (ANSI) or any other equivalent International Standard:

Provided that whenever an International Standard or International Electro technical

Commission Standard is followed, necessary corrections or modifications shall be made for nominal system frequency, nominal system voltage, ambient temperature, humidity and other conditions prevailing in India before actual adoption of the said Standard.

*(3) The effects of wind, storms, floods, lightening, elevation, **temperature extremes**, icing, contamination, pollution and earthquakes must be considered in the design and operation of the connected facilities.”*

The BESS, therefore, shall be designed keeping in view the ambient temperature and weather conditions prevailing at site i.e. the BESS shall be able to deliver rated performance at the extreme temperature and weather conditions (as specified in para 1 of this Annexure-A) at site where it is deployed.

In this regard, the procedure notified by CEA on 8th April 2024 for assessment of the “*Design Temperature for RE Plants in compliance to CEA (Technical Standards for Connectivity to the Grid) Regulations*” shall be followed. Same is available at: <https://cea.nic.in/whats-new/?lang=en>

6. Protection System

Protection system must be capable of monitoring all the operating parameters and sensing all abnormal conditions to isolate the faulty circuit or component without damaging other parts of the system. Adequate indications/ alarms should also be provided locally as well as at remote control system for identification of faults and taking preventive / corrective actions.

The protection system shall work on following principles:

6.1 The protection of BESS system shall be designed such that CESC’s system does not trip due to any operation of BESS protection. This should also ensure maximum availability of BESS. Earthing of BESS System shall be chosen accordingly. However, the integrated protection system of BESS and its settings shall be vetted by CESC before installation.

6.2 The battery system shall be designed with two-fault tolerance to prevent catastrophic failures under all conditions, including but not limited to overcharge, over-discharge, short circuit, and operation outside specified temperature limits.

6.3 The CT & PT specifications for protection purpose must comply with CESC's requirements as per Annexure-E of this RfS.

6.4 The CT & PT specifications for ABT metering purpose must comply with CESC's requirements as per Annexure-F of this RfS.

6.5 Suitable optical fibre based Line Differential Protection (87L) shall be provided. The Numerical relay for Line Differential Protection (87L) shall be provided as per the specification given in Annexure-E of this RfS.

6.6 The fault should be identified as internal / external fault. The internal fault is associated with battery system whereas external fault is for distribution system. In the external fault, the system shall recover automatically from fault condition when healthy condition detected.

6.7 The protective device closest to fault location shall clear the fault without damaging other part of the system.

6.8 Lightning arrestor shall be installed to protect the whole system from damaging effect of lightning.

6.9 Adequate fire protection system should be provided for whole system (cells, modules, PCS etc.).

6.10 Temperature rise protection system should be provided for battery and PCS.

6.11 Emergency shutdown: Provision shall be given for automatic as well as manual disconnection of the BESS from distribution system if:

6.11.1 Protection system fail is detected during self-diagnostic, control healthy check

6.11.2 Breaker trip coil or interruptive device fails

6.11.3 DC supply is lost

Protection system supplied by BESSD shall include **all the required components such as relay, contactor, and switches, for operation of BESS, which may not be specified in**

this tender specification. The requirements of AC/DC protection system are listed in table below:

AC Protection	DC Protection
AC Under/Over Voltage	DC Under/Over Voltage
Over/Under Current Protection	DC Over Current Relay
Earth Fault Protection	Ground Fault Protection
Breaker Failure Protection	Breaker Failure Protection
Transient/Surge Protection	Transient/Surge Protection
Synchronization Check for Relay	Synchronization Check for Relay (if any)
Loss in Phase Difference	-

6.12 Protection for PCS

6.12.1 The PCS shall be protected against thermal overload, over-current and over-voltage. Insulating monitoring ground fault detection shall be provided. The following protective functions shall be provided:

- i. DC over-voltage
- ii. DC under-voltage
- iii. DC over-current
- iv. AC over-voltage
- v. AC under-voltage
- vi. AC over-current
- vii. Anti-Islanding
- viii. Battery protection
- ix. Internal fault (over temperature, logic failure, etc.)
- x. The electrical shield cable shall be adopted for the signal and control cable. The surge absorber shall be connected on both sides.
- xi. EMC requirement shall meet IEC 61000 or equivalent standard.
- xii. Neutral point high resistor grounding type (DC side) for ground fault alarm shall be provided

6.13 Protection for Battery

6.13.1 The following protections shall be provided:

- i. Over/Under-charge protection
- ii. Over-discharge protection
- iii. Over/Under-temperature protection
- iv. Over/Under-current protection
- v. Over/Under Voltage protection
- vi. Ground-fault detection
- vii. Internal battery fault detection
- viii. Cell balancing
- ix. Protective devices should include for DC-side protection:
 - x. Battery fuse for each battery cell and module (preferred)
 - xi. DC contactor for each battery rack
 - xii. Grounding over current

6.14 Protection for Temperature Rise

The BESSD shall design a protection system for temperature rise in the battery modules/cells, PCS, or any other component of the BESS, due to short circuit in any part of the system, failure in temperature controller or sensors or any other internal/external fault.

6.15 Emergency Stop

A manual disconnection of the BESS is to be provided. The system should also automatically disconnect the BESS from distribution system if and not limited to following conditions:

- i. Protection system failure is detected
- ii. Breaker trip coils or interrupting device fails
- iii. DC supply is lost
- iv. In case a safety issue or battery anomaly is detected, the affected section of BESS shall shut down within pre-set period.

- v. Manual emergency stop buttons or switches or mechanisms shall be placed at easily accessible and visible locations.

7. Metering

7.1 For installation of ABT Meters, Meter testing, Meter calibration and Meter reading and all matters incidental thereto, the BESSD shall follow and be bound by the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, the Grid Code, as amended and revised from time to time.

7.2 The BESSD shall bear all costs pertaining to installation, testing, calibration, maintenance, renewal, and repair of meters at up to Delivery Point (Point of Common Coupling as specified in para 2.4 of Annexure-A) for injection and drawal of power from the Grid during discharging and charging of BESS.

7.3 In addition to ensuring compliance of the applicable codes, the BESSD shall install Main & Check meters at the Delivery Point for both Charging and Discharging, along with Stand-by meter(s) as per the applicable Central/State regulations. **The ABT metering shall be provided as per the specification given in Annexure-G of this RfS.**

7.4 Online arrangement would have to be made by the BESSD for real time monitoring and submission of metering data regularly for the entire period of BESPA to the CESC as per applicable regulations / directions.

7.5 Reports on metering parameters on monthly basis, and/or as required by regulation / Guidelines, shall be submitted by the BESSD to CESC for entire Term of the BESPA.

8. General specifications

8.1 System Testing, Commissioning, and Operations

All testing including but not limited to Type Tests, Factory Acceptance Test (FAT) and Site Acceptance Test (SAT) must be conducted as per the specifications and the BESS Safety Standards listed above and approved by the CESC. The BESSD shall submit final formats to be approved by CESC. The BESS shall be commissioned as per commissioning criteria and procedures specified by the CEA.

8.1.1 Factory Acceptance Test

BESSD shall submit a comprehensive plan for factory acceptance test (FAT) to CESC for approvals. and shall carry out FAT at sub system and module level as per the FAT plan approved by CESC. it shall include for all components to the extent possible. The BESSD shall carry out FAT in presence of CESC representatives.

It shall include, as a minimum, the following tests:

- Visual Inspection of equipment including dimension and overall design
- Verification of sensors, metering, and alarms
- Verification of all control function including remote control, monitoring and communication interface
- Verification of system performance at full/ partial Energy/ Power ratings
- Verification of maintenance and replacement features for unit batteries and other components

During the FAT, system shall be operated as specified and designed in all the operating states, use cases and duty cycles. It shall meet power / energy requirements and shall be demonstrated to meet the safety requirements.

Operation of all control, protective relaying and instrumentation circuits shall be demonstrated by direct tests, if feasible, or by simulating operating states for all parameters that cannot be directly tested. Automatic, local, and remote operation of the controls shall be demonstrated.

BESS shall be verified for operation at temperature extremes defined in specification. For this, if it is not possible for the full system, then independent laboratory certification of operation of critical components and subsystems shall be submitted at the time of FAT.

During FAT, if there is some malfunction, then FAT shall be suspended and resumed after rectification of the problem. The system shall not be accepted for shipment until all FATs have been successfully completed

8.1.2 Site Acceptance Test

BESSD shall submit a comprehensive plan for site acceptance test to CESC for approval. SAT plan shall include procedures to test correct system responses to system disturbances and operating scenarios described in the specification.

The test shall include, as a minimum, the following procedures:

- Verification of sensors, metering, and alarms
- Verification of all control functions including automatic, local, and remote control
- Verification of the performance criteria
- Demonstration of all the intended applications
- Demonstration of grid interface protection & control system
- Verification of power quality parameters

8.1.3 Training

BESSD shall provide training in India to manpower identified by the CESC. Training shall cover all aspects of BESS needed for proper operation & maintenance of the system. The BESSD shall be responsible for determination of content & duration of training sessions

8.1.4 Documentation

To ensure that the proposed system conforms to the specific provisions and general intent of the specification, the BESSD shall submit a comprehensive list of the documents applicable for the offered system to the CESC for review and approval before the commissioning of the project. The flow of documents for approval from CESC shall strictly meet the time schedule and project schedule shared by BESSD. Further, the BESSD shall also submit the drawings / documents for all the hardware & software required for site installation, testing and commissioning and thereafter the operation of the system.

The BESSD shall submit three hard copies and one soft copy with each submission. The documentation shall be in English. Review and acceptance of the documents does not encumber the utility with responsibility for the adequacy and safety of the BESSD's design.

At a minimum, the documentation shall cover but not limited to:

- System description document (overview)
- Functional description document
- System configuration document
- Construction and installation drawings including civil layout, electrical layout, communication architecture, EMS hardware configuration (PLC layout)
- Equipment drawings and specifications
- Equipment drawings and specifications
- Wiring diagrams including electrical and communication

- Conduit diagrams
- Bill of material
- Assembly drawing
- O&M manual
- Maintenance schedule
- Project implementation schedule
- Master test plan & procedures
- Quality Assurance manual
- Software documentation
- Test reports
- FAT reports
- SAT procedure/ document
- Relay & control settings
- Progress reports
- Training manuals
- As-built drawings
- List of connected devices – EMS and entire system
- Troubleshooting manual
- Asset Register covering Make, Model No., Description, Country of Origin and Type of Device (Passive or Active)

8.2 Identification and Traceability

Cells/Racks/Packs Assembly shall meet seismic requirement for the plant location of the BESS. Labelling of cells/batteries shall include manufacturer's name, cell type, name-plate rating, date of manufacture and date of expiry of parts and labour warranty **Other Sub-systems/Components**

8.3 Other subsystems/components

Other subsystems/components used in the BESS must also conform to the relevant international/national Standards for Electrical Safety besides that for Quality required for ensuring Expected Service Life and Weather Resistance.

8.4 Fire Protection

Adequate fire protection should be provided to tackle any fire incident likely to arise in battery energy storage system as per the international standard IEC 62897 (for Li-ion) or NFPA 72.A or NFPA 855 or as per relevant standards, as applicable. The BESSD shall design and install a fire protection system that conforms to national and local codes, as applicable. The fire protection system design and associated alarms shall take into account that the BESS will be unattended at most times. For high energy density technologies, the BESSD shall also obtain thermal runaway characterization of the battery storage systems.

BESS shall have hazard detection systems for smoke, gas, heat and flame as per relevant standard and the same shall be monitored.

Every battery container shall be provided with water /aerosol based automatic fire suppression system as per relevant standard. The BESSD shall provide a fire water tank of at least 5 KL/MWh capacity within the project boundary. The arrangement for filling, maintaining, and replenishing this tank including necessary water sourcing infrastructure shall be entirely in the scope of the BESSD. The BESSD shall obtain necessary permissions, approvals, and connections from the concerned local authorities or service providers, at its own cost and risk. The water tank and related infrastructure shall be developed and maintained in accordance with applicable fire safety norms, standards, and guidelines issued by relevant statutory authorities. CESC shall not be held liable for any delay or non-compliance arising out of failure to obtain such water connectivity

The components of the installed fire suppression system shall be protected from ambient weather conditions and unauthorized access while ensuring ease of accessibility for inspection and maintenance.

An independent third party fire safety audit of the BESS shall be conducted by BESSD, as per relevant standard. BESS owner shall submit the above fire safety audit report to the Electrical Inspector & CESC at the time of inspection.

8.5 Transportation and Storage at site

The BESSD shall be responsible to survey, select and verify the route, mode of transportation and make all necessary arrangements with the appropriate authorities for the

transportation of the equipment. It shall be the responsibility of the BESSD to coordinate the arrangement for transportation of the BESS for all the stages from the manufacturer's work to the site and ensure transit insurance and storage insurance for materials within the scope of work.

The BESSD shall dispatch the battery system in a way so as to avoid any accident either due to road conditions, environmental conditions and any other conditions which may arise due to transportation.

BESSD shall follow all the rules, regulations, and standards applicable for transport of batteries in India.

8.6 Civil and Structural Works

All civil works shall be carried out as per design / drawing / specifications as approved by the CESC. The civil work includes levelling, area grading, site clearing (Tree and stump removal as per applicable law, clearing and grubbing, along with demolition of any obstructions or facilities), soil investigation and design as per site conditions. All materials used for construction should be of superior quality confirming to relevant Standards and Codes. The BESSD shall make necessary provisions for construction of foundation, cable trenches, excavation, etc. All materials including cement, reinforcement steel and structural steel, etc. shall be arranged by the BESSD and will be in the scope of BESSD.

The BESSD shall fully apprise themselves of the prevailing conditions at the proposed sites. Climatic conditions including monsoon patterns, local conditions and site-specific parameters, soil parameters, availability of construction material, etc. shall be taken care of by BESSD which may not have been explicitly mentioned in the RfS.

8.7 Authorized Test Centres

BESS Unit deployed in the Project site must have valid test certificates for their qualification as per above specified IEC/ BIS Standards by one of the ILAC member signatory accredited laboratories. In case of module types/ BESS/equipment for which such Test facilities may not exist in India at present, test certificates from reputed ILAC Member body accredited Labs abroad will be acceptable.

8.8 Warranty

BESSD shall procure performance guarantees to ensure minimum performance levels as per the terms of the RFS for 12 years from the Commercial Operation Date (COD). The Warranty shall clearly indicate life expectancy given discharge profiles provided for the application.

9. Performance Monitoring

As part of the performance monitoring, the following shall be carried out:

The BESSD must install necessary equipment to continuously measure BESS operating parameters (including but not limited to voltage, current, ambient conditions etc.) as well as energy input into and energy output from the BESS along with Metering arrangement in accordance with extant regulations. They will be required to submit this data to CESC on line and/or through a report on regular basis every month for the entire duration of contract.

Note: The methodology for measurement of BESS operating and performance parameters are to be mutually agreed upon post issuance of the LoA to the Successful Bidder.

9.1 The BESSD shall provide access to the CESC or their authorized representatives for installing any additional monitoring equipment to facilitate on-line transfer of data.

9.2 All data shall be made available as mentioned above for the entire duration of the Contract.

9.3 BESSD to provide a replica of its digital interface to CESC, along with the option to download data (like P,Q,I etc.) for analysis.

9.4 Web-based monitoring should be made available to CESC, which should not be machine dependent. The web-based monitoring should provide the same screens as available in the plant. Also, it should be possible to download reports from a remote web-client in PDF or Excel format.

9.5 BESSD shall provide weekly, fortnightly, monthly, and annual reports as per the requirements on the performance parameters as per IEC 62933-3 and parameters approved by CESC. BESSD shall submit monitoring report to CESC briefly assessing the overall performance of the BESS and its associated components along-side the

technical performance of battery cells/modules promised at the time of bidding for the term of the agreement. For example, throughput consumed & throughput remaining, C-rate assessment (maximum, minimum and average), degradation curve, down-time assessment, depth of discharge assessment (maximum, minimum and average), auxiliary consumption assessment, round-trip efficiency, PCS efficiency, battery module-wise health parameters, etc.

10. General Safety Considerations

- 10.1** The chargers used for charging the battery energy storage systems shall be designed for the chemistry of the battery to be charged.
- 10.2** Testing of BESS shall be carried out as per relevant standard.
- 10.3** Necessary safety audit shall be carried out as per relevant standard and CESC's requirement.
- 10.4** Fire and explosion protection at Cell level, Module level, container level and site specific installation level shall be as per the relevant standard.
- 10.5** BMS shall monitor and record voltage, temperature, current, and thermal runaway at cell level and module level. Provided that audio visual alarms shall be activated in case the monitored parameter exceeds the operating range as specified per OEM. Provided further that BMS shall automatically stop charging and discharging of the battery when the temperature readings exceeds manufacturer's recommended values.
- 10.6** PCS shall be capable of fully automatic and unattended operation, including synchronizing with the grid or electric power system, seamless paralleling and disconnecting from the grid or electric power system. It shall include self-protective and diagnostic features to protect itself from damage in the event of component failure and abnormal operating parameters.
- 10.7** Coolant lines shall be routed and secured to mitigate leakage on live electrical parts. A failure of the dielectric fluid cooling system, including any fault in the cooling lines shall not result in a leakage that can cause short circuiting of the cells inside the battery pack or lead to a hazardous condition.

- 10.8** A separate emergency source of lighting with automatic initiation shall be provided in enclosed working spaces as per relevant standard.
- 10.9** Location and specification of lighting and signage shall support safe access and navigation to the site.
- 10.10** BESS installations shall be protected by fencing not less than 1.8 m in height so as to prevent unauthorized entry.

11. Other necessary criteria

- 11.1** Central Electricity Authority, Technical Standards for Connectivity to the Grid, (Amendment) Regulations, 2013 and 2019 mention connectivity standards applicable to the wind generating stations, generating stations using inverters, wind - solar photo voltaic hybrid systems and energy storage systems. BESS, being an inverter based power system element, shall also comply to the requirements specified for other generating stations using inverters.
- 11.2** Some of the requirements are indicated below and following shall be added separately in the “Technical and Regulatory Requirements to be followed by Battery Energy Storage System”:
- 11.3** BESS shall be capable of operating in the frequency range 47.5 to 52 Hz and be able to deliver rated output both in charging and discharging mode in the frequency range of 49.5 Hz to 50.5 Hz.
- 11.4** Low/High Voltage Ride Through (LVRT/HVRT) - BESS shall be capable of operating when voltage at the interconnection point on any or all phases dips/rises to the high or low levels. The levels applicable for wind/solar generation sources (inverter-based) may be referred as available in CEA (Technical Standards for Connectivity to the Grid) Regulations shall be applicable to BESS.
- 11.5** Dynamic Reactive Power Support / Voltage Control - BESS shall have the feature to detect and regulate the voltage of interconnection point as per the specified capability i.e. The BESS shall be capable of supplying dynamically varying reactive power support at least up to the limits specified for wind/solar generation sources (inverter-based) in the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations. The response time of the BESS shall not exceed the value specified in relevant standards or grid codes.

- 11.6** Primary Frequency Control – The BESS shall have provisions for Primary Frequency Control with a droop which can be set as per system requirement between the range specified for wind/solar generation sources (inverter-based) in the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations.
- 11.7** BESS shall be capable to receive active power/reactive power set point from CESC.
- 11.8** The BESS shall have the black start and intentional island control capability to extend start-up of a blackout system or to operate independently after formation of an island.
- 11.9** BESS is required to have the following basic functions:
- 11.9.1** Monitoring: Monitor operational parameters, equipment status and communication status, alarm and faults of main equipment and BESS system, etc.
 - 11.9.2** Information exchange: Receive and process information with CESC including operation parameters, switching information, various alarms and alerts, protective action signals, control information, etc.
 - 11.9.3** Control: Including control mode and parameter setting sharing with CESC
- 11.10** The static information like detailed write-up on present operation methodology of BESS, forbidden zones, number of cycle limits, Auxiliary consumption details, capability curve, simulation models (RMS/PSCAD) along with description or any specific information about BESS shall also be furnished as and when required by CESC.
- 11.11** BESSD will ensure the compliance of requirements mentioned in procedure of First Time Charging (FTC) as applicable for other power system elements. The consolidated FTC procedure including the requirements for BESS is available in public domain at https://posoco.in/wpcontent/uploads/2021/04/Procedure_for_Integration_of_Power_System_Elements.pdf

12. Safe Disposal of unit Batteries from the BESS

The Developer will comply with the requirements under Hazardous & other Waste (Management and Trans boundary Movement) Rules, 2016, as amended from time to time, as applicable. The BESSD shall ensure that all Unit Battery modules from the plant after their ‘end of life’ (when they become defective/ non-operational/ non-

repairable) are disposed in accordance with the “e-waste (Management and Handling) Rules, 2016” notified by the Government and as revised and amended from time to time and Battery Waste Management Rules, as and when notified by the Government of India.

Annexure – B

CHECK LIST FOR FINANCIAL CLOSURE

(To be signed by the Authorized signatory of the BESSD)

(RfS No. _____ dated _____)

Last Date for submission of documents related to Financial Closure – _____

(9 months from Effective Date of BESPA)

Project Company Name _____

Project ID:- _____

LOA No. - _____ . Dtd. - _____

Effective Date of BESPA - _____

Scheduled Commissioning Date: - _____

1. Financial Closure -(Clause 19 of the RfS, including subsequent amendments & clarifications)

Details	Presently given in BESPA
Location	

Technology	
Project Cost	Certificate to show the cost of the project and its break-up in debt and equity (to be enclosed as Annexure-I)
Certificate from all financial institutions	<p>In case of tie up through Bank / Financial Institutions: -</p> <p>(a) Document from Bank / Financial Institutions certifying arrangement of necessary funds by way of sanction of Loan.</p> <p>(b) Facility Agreement with lenders/financiers to provide the required debt as mentioned above (to be enclosed as Annexure-II).</p> <p>In case of Internal Resources: -</p> <p>Copy of Board Resolution, Audited/Certified Balance sheet, Profit & Loss Account Statement, Bank Statement and Cash Flow Statement in support of availability of Internal resources of the Project Company and of the Company other than Project Company (in case the required funding will be raised from Company other than Project Company) (to be enclosed as Annexure-II).</p>

Note:-

- (i) Copy of Final Detailed Project Report (DPR) is to be enclosed as Annexure – III A.
 - (ii) Undertaking by the Project Company that all Consents, clearances and permits required for implementing the Project as per the terms of BESP A have been obtained is to be enclosed as Annexure – III B
2. Copy of Agreement/ MOU entered into / Purchase Order with acceptance, for the supply of Plants and Equipment (to be enclosed as Annexure-IV)

3. Technical Parameters of the Project (Clause 36 of the RfS)
 - Certificate from Project Company that Technical specifications and directives given in Annexure-A of the RfS will be adhered to (to be enclosed as Annexure-V A)
 - Proposed Project configuration as part of DPR of the Project (to be enclosed as Annexure-V B)
4. Ownership of the BESSD: Latest Shareholding Pattern of the Project Company (including Compulsorily Convertible Debentures (CCDs), Compulsorily Convertible Preferential Shares (CCPS) of the Project Company certified by Chartered Accountant (to be enclosed as Annexure VI A)

Shareholding pattern is not required to be submitted by a Listed Company.

Note: Shareholding pattern is to be submitted by the Project Company, as and when requisitioned for by CESC.

5. The above checklist is to facilitate financial closure of project. For any interpretation the respective provision of RfS / BESPA shall prevail.

Annexure - C

SPECIAL INSTRUCTIONS TO BIDDERS FOR e-TENDERING AND REVERSE AUCTION

For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the ETS.

GENERAL

The Special Instructions (for e-Tendering) supplement 'Instructions to Bidders', as given in these RfS Documents. Submission of Online Bids is mandatory for this RfS.

e-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Now, the Government of India has made e-Tendering mandatory. Suppliers/Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, *CESC Limited (CESC)* has adopted a secured and user friendly e-tender system enabling bidders to Search, View, Download tender document(s) directly from the e-tendering portal of M/s Electronic Tender.com (India) Pvt. Limited <https://www.bharat-electronictender.com> through ISN-ETS. This portal is based on the world's most 'secure' and 'user friendly' software from Electronic Tender®. A portal built using Electronic Tender's software is also referred to as Electronic Tender System® (ETS).

Benefits to Suppliers are outlined on the Home-page of the portal.

INSTRUCTIONS

Tender Bidding Methodology:

Sealed Bid System

Single Stage Two Envelope

Auction

The sealed bid system would be followed by an 'e-Reverse Auction'

Broad Outline of Activities from Bidder's Perspective:

1. Procure a Class III Digital Signing Certificate (DSC).
2. Register on Electronic Tender System® (ETS)
3. Create Marketing Authorities (MAs), Users and assign roles on ETS. It is mandatory to create at least one MA
4. View Notice Inviting Tender (NIT) on ETS
5. For this tender -- Assign Tender Search Code (TSC) to a MA
6. Download Official Copy of Tender Documents from ETS. Note: Official copy of Tender Documents is distinct from downloading 'Free Copy of Tender Documents'. To participate in a tender, it is mandatory to procure official copy of Tender Documents for that tender.
7. Clarification to Tender Documents on ETS
 - a) Query to CESC (Optional)
 - b) View response to queries posted by CESC
8. Bid-Submission on ETS
9. Post-TOE clarification on ETS (optional)
10. Respond to CESC Post-TOE queries
11. Participate in e-Reverse Auction if invited

For participating in this tender online, the following instructions are to be read carefully.

These instructions are supplemented with more detailed guidelines on the relevant screens of the ETS.

Digital Certificates

For integrity of data and authenticity/ non-repudiation of electronic records, and to be compliant with IT Act 2000, it is necessary for each user to have a Digital Certificate (DC),

also referred to as Digital Signature Certificate (DSC), of Class III, issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer <http://www.cca.gov.in>].

Registration

To use the Electronic Tender® portal <https://www.bharat-electronictender.com>, vendors need to register on the portal. Registration of each organization is to be done by one of its senior persons who will be the main person coordinating for the e-tendering activities. In ETS terminology, this person will be referred to as the Super User (SU) of that organization. For further details, please visit the website/ portal, and click on the ‘Supplier Organization’ link under ‘Registration’ (on the Home Page), and follow further instructions as given on the site. Pay Annual Registration Fee as applicable.

After successful submission of Registration details and payment of Annual Registration Fee, please contact ISN-ETS Helpdesk (as given below), to get your registration accepted/ activated.

Important Note:

1. Interested bidders have to download official copy of the RfS & other documents after login into the e-tendering Portal of ISN-ETS <https://www.bharat-electronictender.com>. If the official copy of the documents is not downloaded from e-tendering Portal of ISN-ETS within the specified period of downloading of RfS and other documents, bidder will not be able to participate in the tender.
2. To minimize teething problems during the use of ETS (including the Registration process), it is recommended that the user should peruse the instructions given under ‘ETS User-Guidance Centre’ located on ETS Home Page, including instructions for timely registration on ETS. The instructions relating to ‘Essential Computer Security Settings for Use of ETS’ and ‘Important Functionality Checks’ should be especially taken into cognizance.

Please note that even after acceptance of your registration by the Service Provider, to respond to a tender you will also require time to complete activities related to your organization, such as creation of users, assigning roles to them, etc.

ISN-ETS/ Helpdesk	
Telephone/ Mobile	<i>Customer Support: +91-124-4229071, 4229072</i> <i>(From 1000 HRS to 1800 HRS on all Working Days i.e. Monday to Friday except Government Holidays)</i>
Email-ID	support@isn-ets.com [Please mark CC: support@electrontender.com]

Some Bidding Related Information for this Tender (Sealed Bid)

The entire bid-submission would be online on ETS (unless specified for Offline Submissions).
Broad outline of submissions are as follows:

- Submission of Bid-Parts
 - Envelope I (Techno-commercial Bid)
 - Envelope II (Financial Bid)
- *Submission of digitally signed copy of Tender Documents/ Addendum*

In addition to the above, the bidders are required to submit certain documents physically offline also as per Clause 26 of the RfS, failing which the technical bids will not be opened.

Note: The Bidder should also upload the scanned copies of all the above mentioned original documents as Bid-Annexures during Online Bid-Submission.

Internet Connectivity

If bidders are unable to access ISN-ETS's e-tender portal or Bid Documents, the bidders may please check whether they are using proxy to connect to internet or their PC is behind any firewall and may contact their system administrator to enable connectivity. Please note that Port SSL/ 443 should be enabled on proxy/firewall for HTTPS connectivity. Dial-up/ Broad and internet connectivity without Proxy settings is another option.

SPECIAL NOTE ON SECURITY AND TRANSPARENCY OF BIDS

Security related functionality has been rigorously implemented in ETS in a multidimensional manner. Starting with 'Acceptance of Registration by the Service Provider', provision for security has been made at various stages in Electronic Tender's software. Specifically, for Bid Submission, some security related aspects are outlined below:

As part of the Electronic Encrypted® functionality, the contents of both the 'Electronic Forms®' and the 'Main-Bid' are securely encrypted using a Pass-Phrase created by the Bidder himself. Unlike a 'password', a Pass-Phrase can be a multi-word sentence with spaces between words (e.g. I love this World). A Pass-Phrase is easier to remember, and more difficult to break. It is mandatory that a separate Pass-Phrase be created for each Bid-Part. This method of bid-encryption does not have the security and data-integrity related vulnerabilities which are inherent in e-tendering systems which use Public-Key of the specified officer of a Buyer organization for bid-encryption. Bid-encryption in ETS is such that the Bids cannot be decrypted before the Public Online Tender Opening Event (TOE), even if there is connivance between the concerned tender-opening officers of the Buyer organization and the personnel of e-tendering service provider.

CAUTION: All bidders must fill Electronic Forms® for each bid-part sincerely and carefully, and avoid any discrepancy between information given in the Electronic Forms® and the corresponding Main-Bid. For transparency, the information submitted by a bidder in the Electronic Forms® is made available to other bidders during the Online Public TOE. If it is found during the Online Public TOE that a bidder has not filled in the complete information in the Electronic Forms®, the TOE officer may make available for downloading the corresponding Main-Bid of that bidder at the risk of the bidder. **If variation is noted between the information contained in the Electronic Forms® and the 'Main-Bid', the contents of the Electronic Forms® shall prevail.**

In case of any discrepancy between the values mentioned in figures and in words, the value mentioned in words will prevail.

The bidder shall make sure that the Pass-Phrase to decrypt the relevant Bid-Part is submitted into the 'Time Locked Electronic Key Box (EKB)' after the deadline of Bid Submission, and before the commencement of the Online TOE of Technical Bid. The process of submission of this Pass-Phrase in the 'Time Locked Electronic Key Box' is done in

a secure manner by first encrypting this Pass-Phrase with the designated keys provided by CESC.

Additionally, the bidder shall make sure that the Pass-Phrase to decrypt the relevant Bid-Part is submitted to CESC in a sealed envelope before the start date and time of the Tender Opening Event (TOE).

There is an additional protection with SSL Encryption during transit from the client-end computer of a Supplier organization to the e-Tendering Server/ Portal.

OTHER INSTRUCTIONS

For further instructions, the vendor should visit the home-page of the portal

<https://www.bharat-electronictender.com>, and go to the **User-Guidance Center**

The help information provided through 'ETS User-Guidance Center' is available in three categories – Users intending to Register/ First-Time Users, Logged-in users of Buyer organizations, and Logged-in users of Supplier organizations. Various links (including links for User Manuals) are provided under each of the three categories.

Important Note: It is strongly recommended that all authorized users of Supplier organizations should thoroughly peruse the information provided under the relevant links, and take appropriate action. This will prevent hiccups, and minimize teething problems during the use of ETS.

SEVEN CRITICAL DO'S AND DON'TS FOR BIDDERS

Specifically, for Supplier organizations, the following '**SEVEN KEY INSTRUCTIONS for BIDDERS**' must be assiduously adhered to:

1. Obtain individual Digital Signing Certificate (DSC or DC) of Class III well in advance of your tender submission deadline on ETS.
2. Register your organization on ETS well in advance of the important deadlines for your first tender on ETS viz 'Date and Time of Closure of Procurement of Tender Documents' and 'Last Date and Time of Receipt of Bids'. Please note that even after acceptance of your registration by the Service Provider, to respond to a tender you will

also require time to complete activities related to your organization, such as creation of -- Marketing Authority (MA) [i.e. a department within the Supplier/ Bidder Organization responsible for responding to tenders], users for one or more such MAs, assigning roles to them, etc. It is mandatory to create at least one MA. This unique feature of creating an MA enhances security and accountability within the Supplier/ Bidder Organization

3. Get your organization's concerned executives trained on ETS well in advance of your first tender submission deadline on ETS.
4. For responding to any particular tender, the tender (i.e. its Tender Search Code or TSC) has to be assigned to an MA. Further, an 'Official Copy of Tender Documents' should be procured/ downloaded before the expiry of Date and Time of Closure of Procurement of Tender Documents. Note: Official copy of Tender Documents is distinct from downloading 'Free Copy of Tender Documents'. Official copy of Tender Documents is the equivalent of procuring physical copy of Tender Documents with official receipt in the paper-based manual tendering system.
5. Submit your bids well in advance of tender submission deadline on ETS (There could be last minute problems due to internet timeout, breakdown, etc.)

Note: Bid-submission in ETS can consist of submission of multiple bid-components, which vary depending upon the situation and requirements of the Buyer. Successful receipt of a bid in an e-tendering scenario takes place if all the required bid-components are successfully 'received and validated' in the system (ETS) within the scheduled date and time of closure of bidding. ETS/ Service Provider is not responsible for what happens at an end-user's end, or while a submission made by an end-user is in transit, until the submission is successfully 'received and validated' in ETS.

6. It is the responsibility of each bidder to remember and securely store the Pass-Phrase for each Bid-Part submitted by that bidder. The bidders are required to submit correct, valid and operative Pass-Phrase to decrypt either Technical Bid Part or Financial Bid Part in a separate sealed envelope before due date and time of submission of bid. In the event, the bids are not opened with the pass-phrase submitted by bidder, CESC may ask for re- submission/ clarification for correct pass-phrase. In the event of a bidder forgetting the Pass-Phrase before the expiry of deadline for Bid-Submission, facility is

provided to the bidder to 'Annul Previous Submission' from the Bid-Submission Overview page and start afresh with new Pass-Phrase(s). If bidder fails to submit correct pass-phrase immediately as requested by CESC, the Bid Processing Fee and Cost of RfS Document, if applicable, shall be forfeited and bid shall not be opened, and EMD shall be refunded. No request on this account shall be entertained by CESC.

7. ETS will make your bid available for opening during the Online Public Tender Opening Event (TOE) 'ONLY IF' the status pertaining Overall Bid-Submission is 'COMPLETE'. For the purpose of record, the bidder can generate and save a copy of 'Final Submission Receipt'. This receipt can be generated from 'Bid-Submission Overview Page' only if the status pertaining overall Bid-Submission' is 'COMPLETE'

NOTE:

While the first three instructions mentioned above are especially relevant to first-time users of ETS, the fourth, fifth, sixth and seventh instructions are relevant at all times.

ADDITIONAL DOs AND DON'Ts FOR BIDDERS PARTICIPATING IN e-REVERSE AUCTION

1. Get your organization's concerned executives trained for e-Reverse Auction related processes on ETS well in advance of the start of e-Reverse Auction.
2. For responding to any particular e-Reverse Auction, the e-Reverse Auction (i.e. its Reverse Auction Search Code or RASC) has to be assigned to an MA.
3. It is important for each bidder to thoroughly read the 'rules and related criterion' for the e-Reverse Auction as defined by the Buyer organization.
4. It is important to digitally-sign your 'Final bid' after the end of e-Reverse Auction bidding event.
5. During an e-auction, it is recommended that a bidder submits a bid well before the scheduled time of 'Date and Time of Closure of Reverse-Auction'. Submission of a bid near the closing time of an auction may result in failure due to any of the various factors at that instant, such as – slow internet speed at the bidder's end, slow running of computer at bidder's end, nervousness of the bidder in the last few seconds, etc. This

could lead to delay in submission of data from the bidder's computer to the server. Even if the delay is of a fraction of second after the scheduled closing time, it will result in failure of bid submission. Further, please note that a bid can be submitted even if the bidding-page has not been refreshed manually, or otherwise depending on the conditions of the e-auction.

Note: Successful receipt of Bid in an e-auction scenario takes place if the bid is successfully 'received and validated' in the system (ETS) within the scheduled date and time of closure of bidding. ETS/ Service Provider is not responsible for what happens at an end-user's end, or while a submission made by an end-user is in transit, until the submission is successfully 'received and validated' in ETS.

Pre-requisite for participation in bidding process

- Bidder must possess a PC/ Laptop with Windows 7 professional operating system and Internet Explorer 8 or 9 for hassle free bidding. Bidder is essentially required to effect the security settings as defined in the portal.
- The Bidder must have a high-speed internet connectivity (preferably Broadband) with internet explorer to access ISN-ETS's e-Tender Portal for downloading the Tender document and uploading/ submitting the Bids.
- A valid e-mail ID of the Organization/ Firm Vendors Training Program

Vendors Training Program

- One day online training (10:00 to 17:00) is provided by ISN-ETS. Training is optional. In case, any bidder is interested, he may send a request to support@isn-ets.com. Vendors are requested to arrange their own Laptop, Digital Certificate and Wireless Connectivity to the Internet.

TERMS & CONDITIONS OF REVERSE AUCTION

After opening of Financial bids and short-listing of bidders based on the tariff and total capacity of project of qualified Project(s), CESC shall resort to "REVERSE AUCTION PROCEDURE". Reverse Auction shall be conducted as per methodology specified in Section-

5 and other provisions of Reverse Auction in RfS Documents and their subsequent Addenda/ Amendments/ Clarifications. Bidders in their own interest, are advised to go through the documents in entirety. The Terms & Conditions and Business Rules mentioned hereunder are in brief and may not give complete explanations. Further these are supplementary in nature.

1. Bidders shall ensure online submission of their 'Bid Price' within the auction period.
2. Bidders shall ensure to take all necessary training and assistance before commencement of reverse auction to the interested bidders on chargeable basis to be paid directly to ISN-ETS.
3. Business rules for Reverse Auction like event date, time, bid decrement, extension etc. shall be as per the business rules, enumerated in the RfS document or intimated later on, for compliance.
4. Reverse auction will be conducted on scheduled date & time, as mentioned in the RfS document.
5. Bidders should acquaint themselves of the 'Business Rules of Reverse Auction', which is enclosed separately in the RfS document.
6. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant guidelines, shall be initiated by CESC .
7. The Bidder shall not divulge either his Bids or any other exclusive details of CESC to any other party.
8. Period of validity of Prices received through Reverse Auction shall be same as that of the period of validity of bids offered.
9. Bidders should also note that:
 - a) Although extension time is '10' minutes, there is a time lag between the actual placing the bid on the local computer of the bidder and the refreshing of the data on to the server for the visibility to the Owner. Considering the processing time for data exchange and the possible network congestion, bidders must avoid the last minute hosting of the Financial Bid during reverse auction.

- b) Participating bidder will agree to non-disclosure of trade information regarding the purchase, identity of CESC , bid process, bid technology, bid documentation and bid details.
- c) It is brought to the attention of the bidders that the bid event will lead to the final price of bidders only.
- d) Technical and other non-commercial queries (not impacting price) can only be routed to the CESC contact personnel indicated in the RfS document.
- e) Order finalization and post order activities such issue of LOA, signing of BESPA etc. would be transacted directly between Successful Bidder and CESC.
- f) LOA shall be placed outside the ETS e-portal & further processing of the LOA shall also be outside the system.
- g) In case of any problem faced by the bidder during Reverse Auction and for all Bidding process related queries, bidders are advised to contact the persons indicated in –Bid Information Sheet of the RfS document.
- h) Bidders are advised to visit the auction page and login into the system well in advance to identify/ rectify the problems to avoid last minute hitches.
- i) CESC will not be responsible for any PC configuration/ Java related issues, software/ hardware related issues, telephone line glitches and breakdown/ slow speed in internet connection of PC at Bidder's end.
- j) Bidders may note that it may not be possible to extend any help, during Reverse Auction, over phone or in person in relation to rectification of PC/ Internet/ Java related issues and Bidder may lose the chance of participation in the auction.

10. For access to the Reverse Auction site, the following URL is to be used:
<https://www.bharat-electronictender.com>.
11. No queries shall be entertained while Reverse Auction is in progress.

BUSINESS RULES OF REVERSE AUCTION

Reverse Auction shall be conducted as per methodology specified in Section - 5 and other provisions of Reverse Auction in RfS documents and their subsequent Amendments/ Clarifications/ Addenda. Bidders, in their own interest, are advised to go through the documents in entirety.

The following would be parameters for e-Reverse Auction:

Sl. No.	Parameter	Value
1.	Date and Time of Reverse-Auction Bidding Event	To be intimated Later to Eligible Bidders
2.	Duration of Reverse-Auction Bidding Event	1 hour
3.	Automatic extension of the 'Reverse-Auction closing Time', if last bid received is within a 'Predefined Time-Duration' before the 'Reverse-Auction Closing Time'	Yes
3.1	Pre-defined Time-Duration	10 Minutes
3.2	Automatic extension Time-Duration	10 Minutes
3.3	Maximum number of Auto-Extension	Unlimited Extension
4.	Entity-Start-Price	Tariff quoted by the bidders in Financial Bid (Second Envelope)

Online Reverse Auction shall be conducted by CESC on pre-specified date and time, while

the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the Reverse Auction, any requests for extension of time will not be considered by CESC. Bidders are therefore requested to make all the necessary arrangements/ alternatives whatever required so that they are able to participate in the Reverse Auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse Auction cannot be the cause for not participating in the Reverse Auction. CESC shall not be responsible for such eventualities.

Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, capacity/ no. of projects being auctioned, auction rules etc.

CESC reserves the right to cancel/ reschedule/ extend the Reverse Auction process/ tender at any time, before ordering, without assigning any reason.

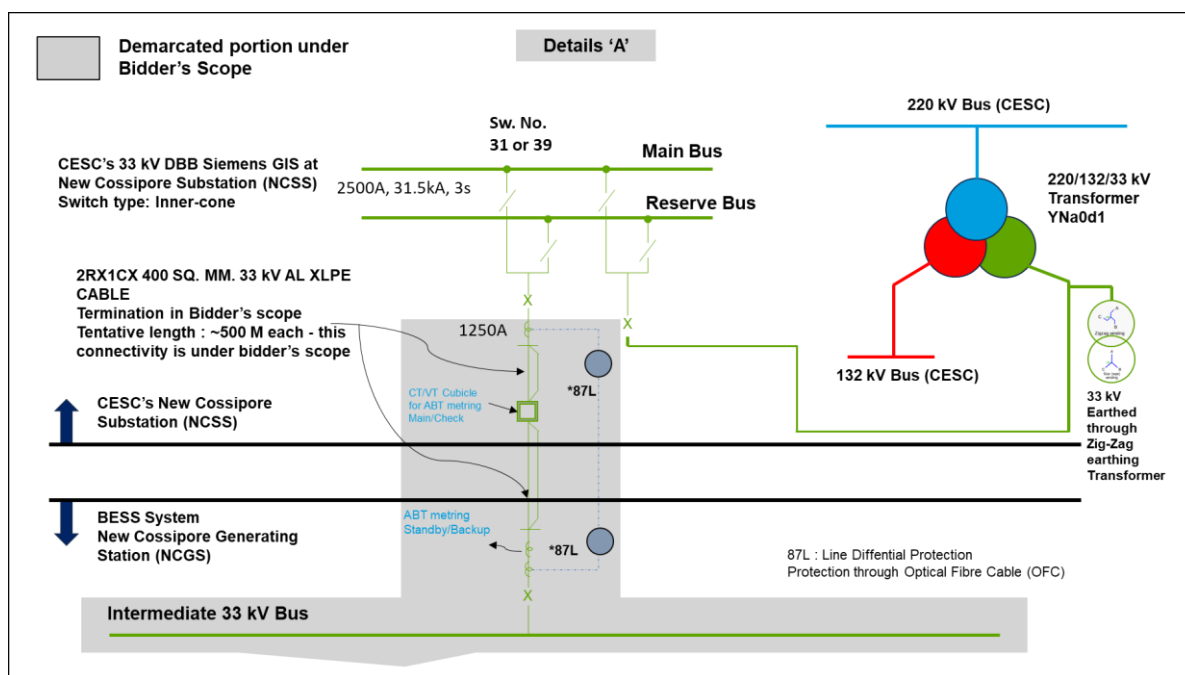
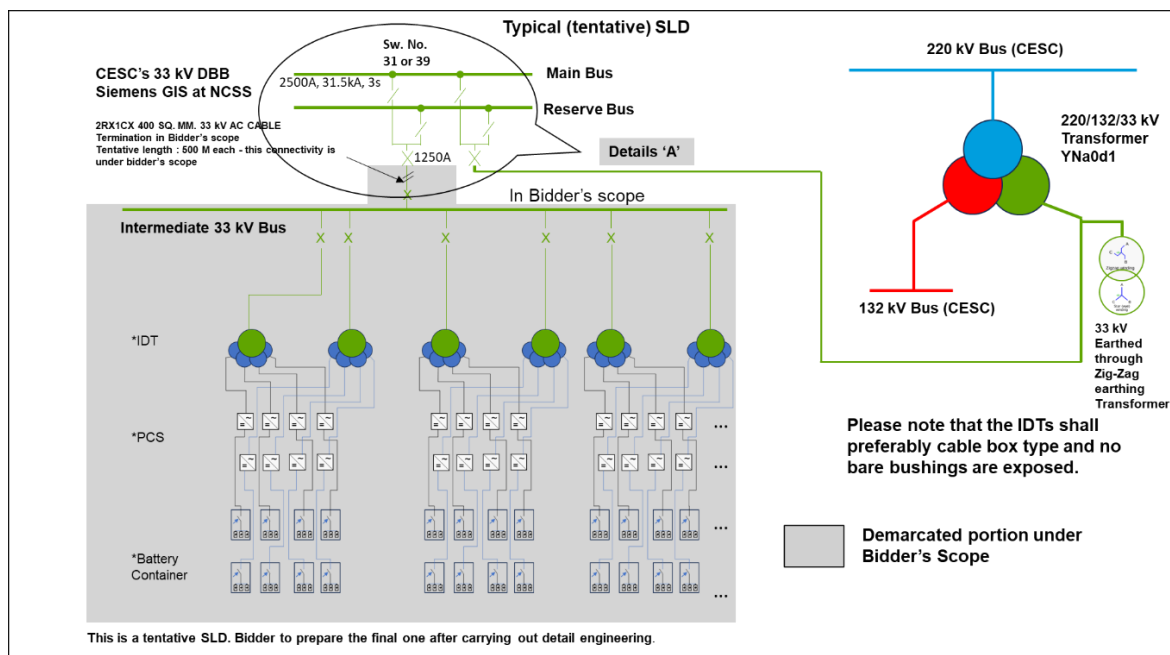
CESC shall not have any liability to bidders for any interruption or delay in access to the auction website irrespective of the cause. In such cases, the decision of CESC shall be binding on the bidders.

Other terms and conditions shall be as per bidder's techno-commercial offers and as per the RfS document and other correspondences, if any, till date.

Network Details/ Single Line Diagram (SLD) and Site Plan

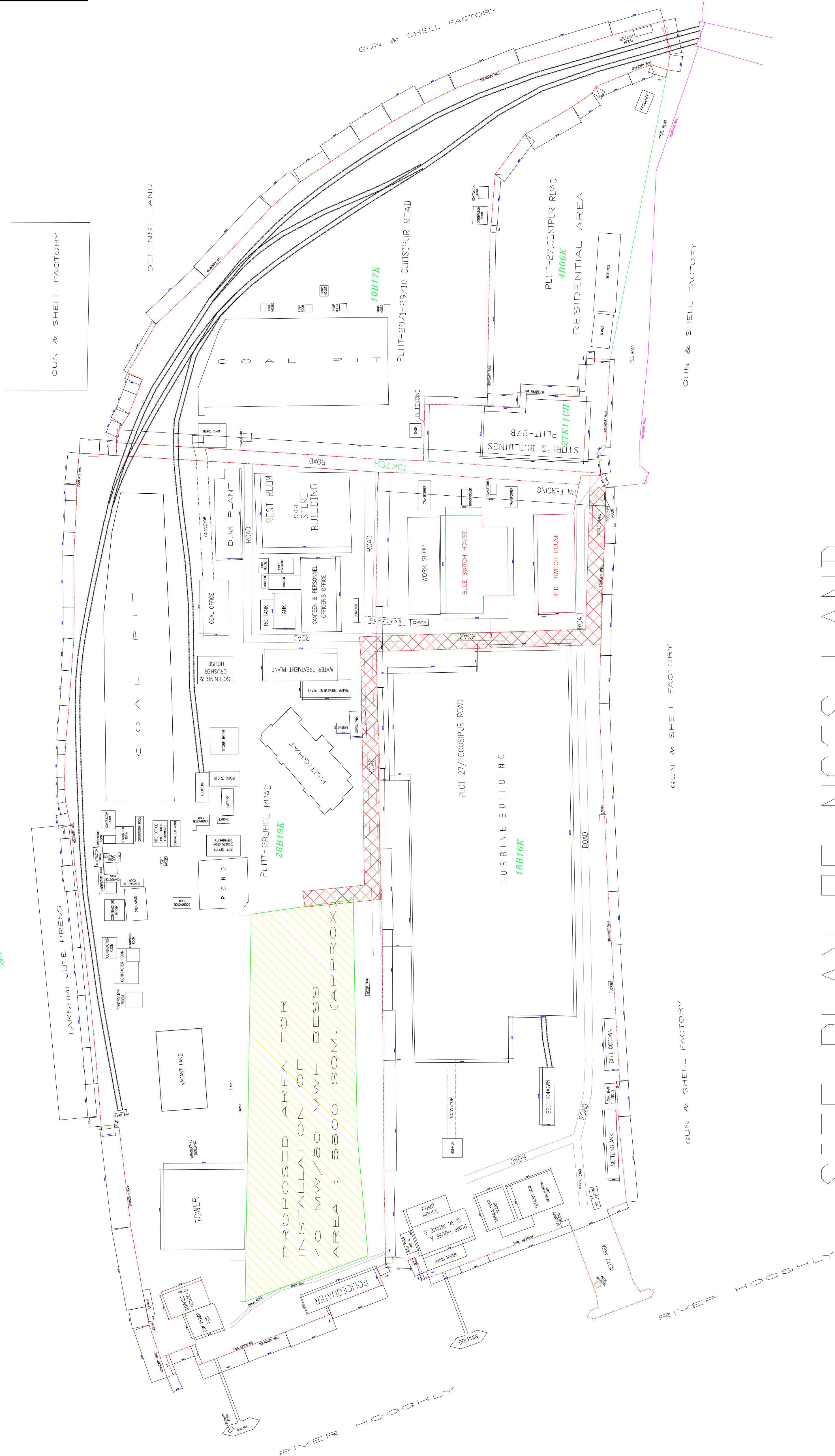
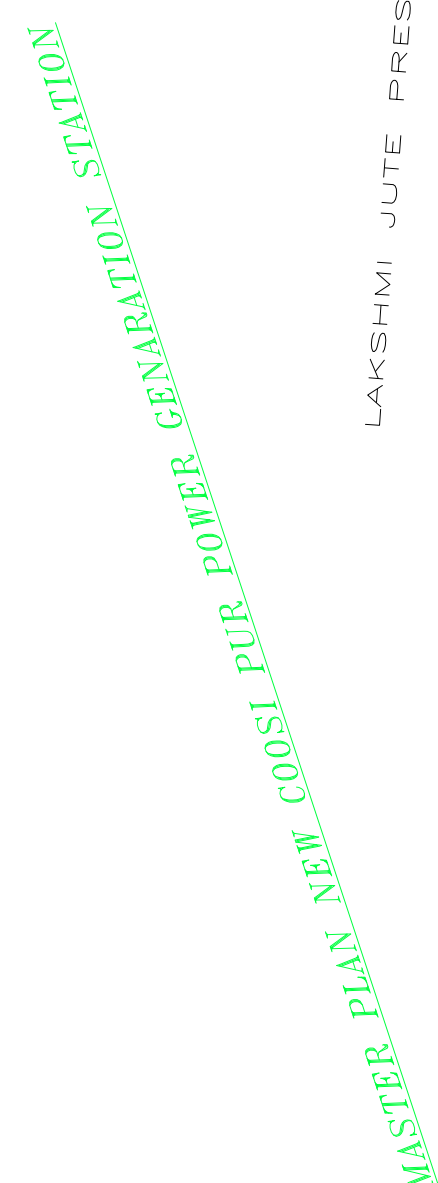
Note: The SLD provided is purely indicative. The bidder shall prepare the final versions after carrying out detailed engineering before technical bid submission

1. Proposed SLD for BESS


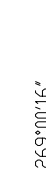
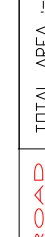




2. Site Plan



SITE PLAN OF NGS LAND

	<p>LEGEND</p>		<p>6 M Y W I D E M E T A L R O A D</p>	<p>FREE HOLD AREA</p>
	<p>NOTES:</p> <ol style="list-style-type: none"> 1. ALL DIMENSIONS ARE IN METRES, EXCEPT IF STATED OTHERWISE. 2. STATION POINT ON ASSUMED CO-ORDINATE E=10000.00, N=50000.000 OF SURVEY POINT T1 3. MAGNETIC W.T. IS ASSUMED AT STATION POINT T1. 4. SURVEY WAS BEEN ORIENTED TO MAGNETIC NORTH (PRESERVED) AT STATION T1. 5. MAGNETIC BEARING FROM T1 TO T2 = 89°50'16" 6. CONTOUR INTERVAL 0.250 M 	<p>TOTAL AREA :- =8449.886 sq metre =20.37 acre</p>		<p>DRG. NO. PLG. A1-2388</p>

SCALES - 1:000 ISOS AOSHEET

Specification of Numerical relay for Unit protection

The Unit protection for the cables /Line should be optical fiber based line differential protection

Features with Optical Fibre based Line Differential Protection:

- | | |
|-------------------------------|--|
| ❑ Line Length | Upto 8 Kms. |
| ❑ Communication link | Over Mono-mode optical fibers suitable for 1300 nm Optical wavelength. |
| ❑ Over-current Check : | The relays should have an over-current check feature for phase & earth current with differential protection. |
| ❑ Emergency over-current | Emergency Over-current & Earth Fault protection to be provided, which can be set to automatically switch to service in case of communication link failure. |
| ❑ Direct inter-trip function | If relay at one end trips, it should send internally generated intertrip signal for inter-tripping the remote end relay also. |
| ❑ Transfer trip function | Tripping of the remote ends by an external device via binary inputs. |
| ❑ Transmission of Information | Transmission of 8 (at least) fast commands or binary input signals to the remote end relay for operating 8 different status outputs. (Excluding transfer trip/inter-trip function). |
| ❑ Disturbance Recording | Analog representation of Voltages, Line, Bias and Differential currents and status of Digital Inputs and outputs for at least 8 events with date and time stamp triggered either on pickup of protection functions or externally through binary inputs. Fault recording and data transfer for pre- |

	fault and post-fault recording for a maximum time length of 15 secs.
□ Measurement & display	<p>All line currents in local and remote ends;</p> <p>All voltages in local end;</p> <p>Phase wise differential and bias currents at local end.</p> <p>Computed active & reactive power, power factor.</p>
□ Patch Cord	The relays should be provided with 60m long Mono-mode Optical Fibre patch cords suitable for 1300nm Optical wavelength with suitable connector at relay end & FC connector at FOJB end.
□ Type of Protection	Phase segregated two-ended Line differential protection.
□ Measuring Transformer	Current and Voltage
□ CT Ratio :- 1000/ 1A	
□ PT Secondary	33kV/ 1.732/ 110 V/1.732 AC (phase to Phase); 63.5 V AC (phase to neutral).
□ Auxiliary Voltage	80 -250V DC
□ Method of tripping	3-pole without auto-reclose for U/G Cable feeder.
□ Mounting	Flush with screwed terminals for all connections.
□ Self- supervision	In-built for VT and CT circuits along with internal hardware and software. In the event of any abnormality, the relay should energise a user configurable output for generating external alarms & block protection function.
□ Communication Protocol communication	The relay should conform to IEC 61850
□ Binary Output	Provision of minimum 8 nos. binary Output.
□ Binary Input	Provision of minimum 15 nos. binary input.
□ LED Indication	16 nos. programmable LED for various function.

Relay Model: Make-**SIEMENS**, Type- **SIPROTEC 7SD5**; Rating-CT input: 1A/5A, 50Hz, Aux. volt- 80-250V DC; minimum 8 BI + 15 BO; Case-Flush mounting, 61850 compatible, MLFB No.: **7SD5221-5AB99-4FM0 L0R M2H**.

Specification of CT & PT

CT & PT specification for Unit protection and ABT compliant Standby metering at Intermediate Station (BESS end)

Core 1: (Unit protection)

RATIO: 1000/1 A

CLASS: PS

$V_k \geq 600V$

$I_m \leq 30mA$ at $V_k/2$

$R_{CT} \leq 5 \text{ ohm}$ at $75^\circ C$

Core: 2 (Standby Metering)

RATIO: 1000/1

Class: 0.2s

ISF ≤ 5

Burden 5 VA

Standard: IS 16227 (Part I & II)

PT SPECIFICATION

Ratio: $33000/\sqrt{3}/110 \text{ V}/\sqrt{3}$

Class: 0.2

Burden: 25 VA

Standard: IS 16227 (Part I & III)

CT & PT spec for ABT metering at CT-PT metering Cubicle (NCSS end)

CT SPECIFICATION

RATIO: 1000/1

Class: 0.2s

ISF ≤ 5

Burden 5 VA

Standard: IS 16227 (Part I & II)

PT SPECIFICATION

Ratio: 33000 V/ $\sqrt{3}$ /110 V/ $\sqrt{3}$

Class: 0.2

Burden: 25 VA

Standard: IS 16227 (Part I & III)

Specification of ABT metering

ABT Meter Specification

- **Make:** SECURE
- **Model:** APEX 100 (ABT compliant meter)
- **Meter CT Ratio:** 1000/1 A
- **Meter PT Ratio:** 33000V/ $\sqrt{3}$ /110 V/ $\sqrt{3}$
- **Aux. supply:** 110 V DC
- **Quantity:** 2 nos. for Main and Check Metering at NCSS end and 1 no. for Standby Metering at BESS end

Note: Metering Panel at either ends to be procured for housing main/ check and Standby Meters.

Specification of U/G Optical Fibre cable (OFC)

1. **SCOPE :-** This specification covers the requirements of

(i) Optical and mechanical characteristics

(ii) Provision of test and inspection

for Monomode Armoured Underground Optical Fibre cable.

2.0 GENERAL REQUIREMENTS:-

2.1 The monomode cable required by CESC Limited, should consist of 48 monomode fibres.

2.2 The armoured monomode cable should be suitable for direct underground burial with or without enclosing in the duct.

3.0 TERMINOLOGY:-

All terminologies used in this specification are as per International Electro technical vocabulary on optical communication.

4.0 TEMPERATURE AND ENVIRONMENT

(i) Ambient Temperature over which specifications are guaranteed -5⁰ C to 60⁰ C

(ii) Storage Temperature -20⁰ C to 65⁰ C

5.0 REQUIREMENTS OF O.F. CABLE:-

5.1 Characteristics of fibre:

5.1.1 Monomode fibre shall be as per CCITT Rec. G. 652 (Revised text according to study group XV Report 13 of March 86 unless otherwise specified)

5.1.2 Cut Off Wave Length: 1120 to 1280 nm for matched clad and less than 1350 nm for depressed clad. The above optical wavelength is w.r.t. 2 metres sample length of fibre.

5.1.3 Attenuation:- 0.4 dB/Km. in 1280 to 1330 nm. band and 0.25 dB/Km at 1550 nm band.

5.1.4 Core (Mode field): 9 micrometer for depressed clad and nominal diameter 10 micrometer for matched clad fibre. Concentricity error : 1.0 micrometer

or less.

- 5.1.5 Primary Coating : Material – UV curable acrylate.

Diameter – 250 micron + 15 micron

- 5.1.6 Secondary Coating: Material – Nylon/ Polybutyl terephthalate

Diameter – 1.8 + 0.2 mm

- 5.1.7 Chromatic Dispersion: Max 3.5 ps/nm km. for 1285 to 1330 nm

Max. 20.0 ps/nm km for 1550 nm

- 5.1.8 Summary of Fibre Geometry

Nominal Mode Field Diameter $9.5 \pm 10\%$

Nominal Cladding Diameter 125 ± 3

micrometer Cladding Non-Circularity

less than

2%

Mode field Concentricity error 1.0

micrometer Cutoff Wavelength 1120 to

1310 nm.

Attenuation 0.40 dB/Km at 1310 nm

0.25 dB/Km at 1550 nm

Dispersion 3.5 ps/nm.Km (1285 –

1330 nm) Diameter over primary coating $250 \pm$

15 micrometer.

5.2 **Cable Construction :**

5.2.1 General Requirement:-

Primary coated fibres, not exceeding eight, shall be covered by a secondary coated loose tube and the in between space shall be filled with a suitable water blocking jelly compound.

- 5.2.2 The cable core shall be wrapped with suitable material which does not adhere to the secondary fibre coating. The cable core shall not have any metallic component and shall have splice free optical fibre.

5.2.3 Cable Strength member:-

A solid non metallic member (preferably of FRP) in the centre core of the cable for strength and flexibility shall be used.

5.2.4 Cable Core covering - moisture barrier

The cable core shall be covered with a continuous layer of a non hygroscopic dielectric material applied longitudinally or helically with an overlap. The cable core shall be filled with suitable water blocking jelly compound.

5.2.5 Inner PE Sheath

Over the core covering, a PE sheath free from pinholes, joints, mended places or other defects and made of tough weather resistant and high molecular weight polyethylene compound shall be provided. Its thickness shall be 1.5 mm minimum.

A sheathing of Nylon – 12 shall be applied over the inner P.E. sheath for protection against termite. The thickness of the Nylon-12 tube should be \geq 0.5 mm.

5.2.6 Armouring of Cable

Over the Nylon - 12 sheath, armouring shall be provided to make the cable rodent and termite proof.

5.2.6.1 Stainless steel armouring, corrugated transversely for lateral strength and bending flexibility to be applied longitudinally with an overlap of minimum 10% over the inner PE sheath.

5.2.6.2 The armouring shall be coated with an adhesive system of polymer so as to bond the armouring to the outer jacket and make a unitary construction.

The armouring shall offer excellent corrosive resistance and shall be of AISI Alloy 304. The chemical composition and mechanical property of steel shall be as per ASTM:A 167- 82 for type 304.

5.2.6.3 Thickness of stainless steel alloy 0.15 mm.

5.2.6.4 Over corrugated steel armouring , an outer jacket of HDPE of a minimum thickness of 1.8 mm shall be provided.

5.2.6.5 The outer jacket shall be of such a composition or be doped with suitable

termite repellent so as to preserve the sheath from attack by termites.

5.2.6.6 The overall outer jacket shall withstand 10KV AC RMS Spark test at the time of extrusion.

5.2.7 Marking on Cable

On the outer jacket there shall be identifiable a) length marking b) manufacturers identity mark c) CESC limited marking d) cable drum code at an interval of 1 metre.

5.2.8 Overall diameter

Overall diameter : Preferably 20 mm.(Armoured UG OF Cable)

5.2.9 Fibre Identification

The fibre shall be distinctly colour coded and order of coloured fibre shall be RED, YELLOW, CYAN, SLATE, VIOLET, PINK, BROWN and BLACK in each tube.

The colour of 6 no. loose tubes shall be BLUE, BROWN, GREEN, ORANGE, SLATE, NATURAL.

5.2.10 Figure Sheets

The cross-sectional view of Underground optical fibre cable is enclosed herewith.

5.3 **Mechanical Performance of Cable :**

5.3.1 Tensile strength

The cable shall have sufficient strength to withstand a load of value $9.8 \times W \times 2.0$ Newton for 10 minute where W is the weight of 1 Km. of cable in Kg. This load shall not produce elongation of cable fibre exceeding 0.25% and shall not cause permanent damage to constituent parts of the cable and the change in attenuation shall not be more than 0.05 dB per Km.

5.3.2 Compressive strength

The fibre and component parts of the cable shall not suffer permanent damage and change in attenuation shall not be more than 0.05 dB/ Km. when

subjected to a compressive load of 1600N applied between two plates of dimensions 50mm x 50mm. The load shall be applied for 60 seconds.

5.3.3 Flexibility

The fibre and the component parts of the cable shall not suffer permanent damage when the cable is repeatedly wrapped and unwrapped four complete turn for the complete cycle around a mandrel of $12 \times D$ mm. in diameter where D is the overall diameter of the cable in mm. and change in attenuation shall not be more than 0.05 dB/Km.

5.3.4 General

The UG OF cable shall be immunized to corrosive element found naturally in the ground.

5.3.5 Bending Radius

Minimum bending radius will be $20 \times D$ mm. where D is the diameter of the cable in mm.

5.3.6 Impact

Method : IEC 794 – 1 – E4

The fibre and the component parts of the cable shall not show any cracks or break and change in attenuation shall not be more than 0.05 dB/Km. when the cable is exposed to 3 impacts each of having an energy of 50 Newton metre with impacting radius of 300 mm.

5.3.7 Torsion

Method : IEC 794 – 1 – E7

Number of rotations : $20 (\pm 180$ with the speed of not less than 30 per minute.) Distance between fixed and rotating clamp : 250 mm.

Axial Load : 20 Newton

Requirements : No breakage in fibre and its constituent parts.

5.4 Life of Cable :

The minimum expected life of the cable shall not be less than 25 years.

5.5 **Cable Ends :**

Running end shall be provided with a pulling eye and the other end shall be sealed with Thermal shrink cap.

5.5.1 **Length of Cable Drum**

Standard Factory Length = 2 Km \pm 10%

However, for specific application, CESC Limited may specify different drum length of the cable other than the standard length mentioned above.

6.0 **PACKING**

6.1 The cable shall be wound on strong wooden drums of suitable size which have been treated properly. Nails, if used, are to be effectively clinched. The drums shall be fitted with spindle steel plates to 75 mm round steel spindle.

6.2 Before despatch, all drums shall be tagged with closely fitted battens and every batten shall be secured enough to prevent the batten from getting displaced or damaged during transit or storage. The tagging shall further be strengthened by steel straps bound circumferentially over the drum.

6.3 The battens on the drum which should be removed to obtain access to the outer ends of the cables must be indicated clearly by painting them red. The battens on the drum which should be removed to obtain access to the outer ends of the cables must be indicated clearly by painting them red.

6.4 The cable ends shall be firmly fastened and secured to the drum so that during transit, transshipment and rolling, neither the cable end sealing gets damaged nor does the cable get loosened or displaced.

6.5 Each drum shall be stenciled in good oil paint giving the following particulars :

- a) Drum Number
- b) Name of manufacturer
- c) Address of the consignee

- d) Type, size, length & description of cable
- e) Year of manufacture
- f) Net gross weight
- g) Arrow to indicate the direction in which the drum can be safely rolled.
- h) Not to be slung except by bar through centre.

7.0 TESTS

7.1 Various test procedures are enumerated in Appendix (A)

7.2 Type Test

7.2.1 Test for Optic Fibre

- a) Diameter of primary coating
- b) Cut off wavelength
- c) Core(Mode field)
- d) Attenuation
- e) Chromatic dispersion

7.2.2 Test for secondary coating(for loose tube construction only)

- a) Outer diameter
- b) Melting point of nylon powder
- c) Tensile properties of Polybutylene compound

7.2.3 Tests for inner PE sheath

- a) Thickness
- b) Tensile strength and elongation at break
- c) Brittle temp. of PE
- d) Dissipation factor and dielectric constant

7.2.4 Tests for stainless steel armouring:

- a) Tensile strength
- b) Elongation Test
- c) Thickness of armouring
- d) Extent of overlapping of the armouring

7.2.5 Test for HDPE outer jacket

Items of test are same as inner PE sheath (Item 8.2.3)

7.2.6 Test for Nylon-12 tube

- a) Thickness measurement

7.2.7 Test on completed cable

- a) Cut off Wavelength
- b) Attenuation
- c) Chromatic dispersion
- d) Tensile strength
- e) Compressive strength
- f) Flexibility
- g) Impact
- h) Torsion
- i) Environmental Tests
- j) Water Penetration Tests
- k) Drip point test for jelly
- l) Overall diameter
- m) Length of cable drum

7.2.8 Visual Inspection

- a) Cable lay up and fibre identification (by colour coding)
- b) Identification marking on outer jacket.

7.2.9 Termite Test for Outdoor Cable

This test is required to be carried out by CAZARI, Jodhpur or Forest Research Institute, Dehra Dun.

For this, 10 Nos. sample will be tested and after the test, in no sample the termite should penetrate the armour and in not more than one sample the outer HDPE jacket is to be damaged.

7.3 **Acceptance Test :**

7.3.1 Optic fibre – Diameter of primary coating with travelling microscope.

7.3.2 Secondary Coating (loose tube) - diameter

7.3.3 Inner PE sheath - Thickness

7.3.4 Corrugated stainless steel armouring - Thickness and extent of overlapping

7.3.5 Outer HDPE jacket - Thickness

7.3.6 Overall diameter of the cable

7.3.7 **Optical Test on**

cable :-

- a) Cut off wave length
- b) Attenuation
- c) Chromatic dispersion

7.3.8 **Mechanical Test on Cable**

- a) Tensile strength
- b) Compressive stress
- c) Flexibility
- d) Water penetration Test
- e) Drip point test for jelly

7.3.9 **Visual Inspection**

- a) Cable lay up and colour code
- b) Identification marking
- c) Outer appearance, packing, stencilling etc. of the drum.
- d) Pulling eye and thermoshrink cap at the ends.
- e) Length of cable drum by length marking.

8.0 Routine Test

All the tests mentioned in 7.3 except the tests mentioned in 7.3.8 and 7.3.9 shall constitute the routine test which shall be carried out by the manufacturer on individual cable drum length, in addition to any other tests which have to be carried out to ensure that the cable is manufactured as per purchaser's specifications.

9.0 INSPECTION

9.1 General

9.1.1 Inspection and Testing shall be carried out by the authorised representatives of CESC Ltd. to ensure that all the requirements of this specification were complied with for acceptance of the materials.

9.1.2 The authorised representative of CESC Limited shall

- a) have free access to the works of the manufacturer.
- b) Be allowed to inspect the manufacture of the cable at any stage of manufacturing process.

The inspection authority shall have the right to reject in whole or part of any work or material that may not conform to the specification of this cable and order the same to be removed / replaced or altered at the expense of the manufacturer. The manufacturer shall provide all facilities considered necessary for the inspection authorities.

9.1.3 The manufacturer shall supply the cable sample, sample of raw material and prepare test pieces at his own cost as required by the inspecting authority. If the manufacturer cannot provide all facilities at his own premises to carry out the prescribed tests, he shall bear the costs of type tests at any approved laboratory or test home.

9.2 Test by Manufacturer and Test Certificate

9.2.1 Before inspection, the manufacturer shall have carried out on each individual

cable drum routine tests as specified in clause 8.4 in addition to any other tests as deemed necessary by the manufacturer.

9.2.2 Prior to inspection of each lot the manufacturer shall produce the test certificate incorporating the results of all routine tests. In case the inspecting authority observes that the results obtained by him during tests at manufacturer works do not corroborate with results appended in the test certificate with reasonable accuracy, he may reject the complete lot at his discretion and call upon the manufacturer to have the cables type tested before any further supplies are inspected or accepted.

9.2.3 Sampling :

In order to carry out the type test, the manufacturer shall submit to the inspecting authority sufficient number of cable drum lengths to enable him to select at least two drum lengths to achieve the desired accuracy for the test measurements detailed in the specification. Other necessary test pieces of the cable or its constituent material shall also be drawn as samples out of these selected drums.

9.2.4 For acceptance tests the samples will be taken from the drums at random as per mutually agreed upon sampling plan.

10.0 REJECTION

10.1 Should the cables tested and inspected in accordance with the specification fail to pass the test or comply with requirements of this specification, the tests shall be repeated on a further representative set of cable pieces and if it again fails, the whole consignment shall be rejected subject to the discretion of the purchaser or his nominee.

11.0 INFORMATION TO BE FURNISHED BY THE TENDERER WITH THE OFFER

11.1 Dimensional drawing of cross-section of various types of cables offered indicating constituents of the cable and their dimension.

- 11.2 Type of Fibre i, e. matched clad or depressed clad.
- 11.3 Fibre identification Scheme.
- 11.4 Complete Test Results
- 11.5 Copies of manufacturers 'specification for the items' of raw materials used.

APPENDIX - A

A.1 TEST OF OPTIC FIBRE CABLE

A.1.1 Cut-off Wavelength :

The measurement shall be carried out on a 2 m fibre section using the reference test / alternate test method as described in CCITT Rec.G.652 (Revised Text according to study group XV report of March 86).

A.1.2 Attenuation :

The attenuation of fibre shall be measured using Reference test method or alternate test method as described in IEC 793-1 (1987) or CCITT Rec.G.652

A.1.3 Core Concentricity Error :

This shall be measured in accordance with method as described in IEC 793-1 (1987) or CCITT Rec.G 652

A.1.4 Chromatic Dispersion :

This shall be measured in accordance with the reference test / alternate test method for dispersion measurement as described in CCITT Rec.G.652 (Revised text according to study group XV report 13 of March 86).

A.2 MECHANICAL TESTS OF CABLE

A.2.1 Tensile Strength :

For measurement of change in attenuation with the tensile strength, the

procedure Given in para 10 of IEC 794-1 (1987) may be followed.

A.2.2 Compressive stress :

This test shall be carried out in accordance with method IEC 794-1 (1987)

A.2.3 Flexibility :

This test shall be carried out in accordance with para 20 (procedure 1) of IEC 794-1 (1987).

A.2.4 Impact :

This test shall be carried out in accordance with method IEC 794-1-E4-Impact as described in IEC publication 794-1(1987).

A.2.5 Torsion :

This test shall be carried out in accordance with method IEC 794-1-E7-Torsion as described in IEC publication 794-1(1987)

A.3 **ENVIRONMENT TEST**

A.3.1 The test shall be carried out in accordance with the test method specified in para 25 of IEC publication 794-1. The length of test sample shall be minimum 1 Km. The cable shall be exposed to minimum two temperature cycles.

A.3.2 At minimum and maximum temperature operation the additional attenuation must not exceed 0.05 dB / Km. After the temperature has been raised from lower minimum / maximum temperature for storage, the additional attenuation must not exceed 0.05dB/Km.

A.4 **WATER PENETRATION TEST**

This shall be tested in accordance with method IEC 794-1-F5-Water Penetration as described in para 29 of IEC – 794 –1 (1987).

A.5 **DRIP POINT TEST FOR JELLY**

The test specimen of 30 cms in length shall be cut from a completed cable.

One end of the cable shall be stripped off approximately 5 cms and the fibre with jelly shall be flared out at 45 degree angle. The sample shall then be suspended in an air oven with a glass disc placed directly below the flared end of the cable. The oven temperature shall be set at 65 ± 1 degree centigrade for a period of 24 hours. At the end of the test the glass shall be examined for the presence of filling compound which might have dripped. There shall be no dripping of jelly compound.

CROSS SECTION OF UNDERGROUND OPTICAL FIBRE CABLE

