

MINISTRY OF POWER**RESOLUTION**

New Delhi, the 6th February, 2025

TARIFF BASED COMPETITIVE BIDDING GUIDELINES FOR PROCUREMENT OF STORAGE CAPACITY/ STORED ENERGY FROM PUMPED STORAGE PLANTS

No. 42-26/1/2022-RCM-Part (3).—

PART A: SCOPE**1. Background**

- 1.1. The National Framework for Promotion of Energy Storage Systems (ESS) 2023 aims at facilitating India's Energy Transition and to enhance the energy security as the country shifts from fossil to non-fossil fuel sources, driven primarily by Renewable Energy (RE). As part of its action plan to combat Climate Change, India plans to have 500 GW of non-fossil fuel-based electricity installed capacity by 2030, so that the non-fossil and cleaner fuel-based sources comprise 50% of the installed capacity mix by 2030. However, the variability of RE—caused by factors such as Time of day, Weather conditions, Seasonal changes, and Geographic location—poses challenges to these goals. Renewable sources such as solar, wind, and run-of-the-river Hydro are not available on 24x7 basis. Energy Storage Systems (ESS) address this by storing excess energy and supplying it when needed, Improving Grid Stability, Enabling Peak Shifting, and Enhancing Renewable Energy integration.
- 1.2. The National Electricity Plan 2023 foresees a need of approximately 74 GW/411 GWh of ESS by 2031-32, including 27 GW/175 GWh from Pumped Storage Plants (PSP) and 47 GW/236 GWh from Battery Energy Storage Systems (BESS).
- 1.3. Usage of ESS provides benefits like reduced peak deficits, lower peak tariffs, carbon emissions reduction, and deferred capital expenditure on transmission and distribution. ESS also enables energy arbitrage, providing advantages for both the grid and consumers.
- 1.4. The Guidelines for the procurement and utilization of Battery Energy Storage Systems (BESS) are already in place, but there are no separate guidelines for Pumped Storage Plants (PSP). Considering the distinct requirements of PSP in aspects such as land acquisition, permits and clearances, project timelines and performance parameters, separate guidelines for PSPs here-in are being formulated to address the specific nuances of PSP technologies.

2. Objectives

The following are the objectives of these Guidelines.

- 2.1. To promote the development of Pumped Storage Plants (PSPs).
- 2.2. To provide a transparent, fair, standardized procurement framework based on open competitive bidding with appropriate risk-sharing between various stakeholders.

3. Applicability

- 3.1. These Guidelines are issued under Section 63 of the Electricity Act, 2003, for procurement of storage capacity/ stored energy from Pumped Storage Plants (PSPs) through competitive bidding.
- 3.2. The provisions of these Guidelines shall be applicable on the following entities:
 - a. Developers,
 - b. Procurers (End Procurers or Intermediary Procurers)
- 3.3. These Guidelines are applicable for the procurement of storage capacity or stored energy by the Procurers from existing, under-construction or new PSP projects.

4. Definitions

The terms used in these Guidelines will have the following meanings:

- a. “Act” shall mean the Electricity Act, 2003, including subsequent amendments and clarifications issued thereof.

- b. **“Actual Commencement of Supply Date (ACSD)”** in relation to the contracted storage capacity shall mean the date corresponding to the actual date of commencement of storage capacity for pumping or generation of energy.
- c. **“Affiliate”** in relation to a Company shall mean an entity that controls, is controlled by, or is under the common control with, such Company. The expression ‘control’ shall mean the ownership, directly or indirectly, of more than 50% of the voting shares of such Company or right to appoint majority Directors.
- d. **“Annual Availability”** shall be as defined in the RfS.
- e. **“Appropriate Commission”** shall have the same meaning as defined in the Act.
- f. **“Appropriate Government”** shall have the same meaning as defined in the Act.
- g. **“Bidding Agency”** shall refer to the organization issuing the tender documents and carrying out the evaluation and selection process under these Guidelines.
- h. **“Bid Documents”** shall consist of RfS Document, PSPA and PSSA to be prepared by the Bidding Agency in line with these Guidelines.
- i. **“Composite Tariff Model”** shall mean a model in which the Procurer contracts for power or energy from storage-based system for a specified time. In either of these contracts, the energy for storage including losses in conversion is arranged by the Developer.
- j. **“Delivery Point”** shall mean any point as specified in the RfS Document where the PSP is delivering power.
- k. **“Effective Date of PPA”** shall mean the date of signing of PPA.
- l. **“End Procurer”** shall mean the final purchaser of storage capacity or stored energy from the Intermediary Procurer or the Pumped Storage Plant Developer, as the case may be, and shall include the distribution licensees.
- m. **“Financial Closure”** or **“Project Financing arrangements”** shall mean arrangement of necessary funds by the Developer towards 100% project cost either by way of commitment of funds by the Company from its internal resources (through a resolution passed by the Board of Directors) and/or tie up of funds through a bank/financial institution by way of sanction of a loan or firm commitment letter agreeing to finance.
- n. **“Infrastructure Sector”** means sectors notified by the Department of Economic Affairs in its Gazette Notification no. 13/1/2017-INF dated 14th November, 2017, and as amended from time to time.
- o. **“Intermediary Procurer”** shall mean an agency, including a trading licensee that acts as an intermediary between the End Procurer(s) and the Developer(s). This agency shall be responsible for aggregating storage capacity or stored energy purchased from different Developers, and subsequently selling it to the End Procurer(s). In cases where the trading licensee purchases storage capacity or stored energy from the Developer(s) and sells it to one or more distribution licensees, the trading licensee shall be deemed to be the Intermediary Procurer, and the distribution licensees shall be deemed to be the End Procurer(s) for the purpose of these Guidelines. So long as the Intermediary Procurer follows these Guidelines, the End Procurer(s) shall be deemed to have followed these Guidelines.
- p. **“Payment on Order Instrument”** shall mean a Letter of Undertaking (LOU) issued by an agency authorized by the Government of India or a State Government. This LOU shall guarantee to pay the Procurer (beneficiary) a specified amount in case of failure of the Developer to meet the obligations under the tender documents or contract. The LOU shall be issued on terms and conditions similar to that of a Bank Guarantee provided by any public sector bank.
- q. **“Procurer”** shall mean the End Procurer or an Intermediary Procurer, as the context may require.
- r. **“Pumped Storage Plants (PSPs)”** or **“Projects”** shall mean a hydro power plant, either on-stream or off-stream, that stores energy by pumping water from a lower stream/ reservoir to a upper reservoir and generates electricity by releasing it back through a turbine-generator.
- s. **“Pumped Storage Plant Developer (PSPD)”** or **“Developer”** shall mean an entity that owns or operates a PSP. The PSP can provide storage capacity or stored energy from various sources, under these guidelines.
- t. **“Pumped Storage Purchase Agreement”** or **“PSPA”** or **“Power Purchase Agreement”** or **“PPA”** shall mean an agreement between either the Intermediary Procurer or the End Procurer and the Developer outlining the terms for purchasing storage capacity or stored energy from the Pumped Storage Plant (PSP). The agreement can be based on a Tolling Tariff, Composite Tariff, or any other applicable model.
- u. **“Pumped Storage Sale Agreement”** or **“PSSA”** or **“Power Sale Agreement”** or **“PSA”** shall mean an agreement between the Intermediary Procurer and the End Procurer to facilitate the purchase of storage

capacity or stored energy under the Tolling Tariff or Composite Tariff or any other model. The PSA (or PSSA) contain the relevant terms from the corresponding Pumped Storage Purchase Agreement (PSPA) or Power Purchase Agreement (PPA) to enable a "back-to-back" contracting between the Developer and the End Procurer.

- v. **“Request for Selection”** or **“RfS”** or **“Tender”** or **“Bid Document”** shall mean the tender documents issued by the Bidding Agency, including Pumped Storage Purchase Agreement (PSPA) and Pumped Storage Sale Agreement (PSSA) as applicable, for procurement of storage capacity or stored energy through a competitive bidding process under these Guidelines.
- w. **“Scheduled Commencement of Supply Date (SCSD)”** in relation to the contracted storage capacity shall mean the date corresponding to the scheduled date of commencement of storage capacity for pumping or generation of energy as indicated in the RfS.
- x. **“Tolling Tariff Model”** shall mean a model in which the Procurer contracts the storage capacity. The energy for storage is provided by the Procurer and the same is off taken by the Procurer at a different time after accounting for losses.
- y. The term **“Contract”** in these Guidelines shall mean Pumped Storage Purchase Agreement or Power Purchase Agreement or Pumped Storage Sale Agreement or Power Sale Agreement.
- z. The term **“Supply”** in these Guidelines shall mean supply of stored energy or contracted PSP capacity.

5. Clarification and Modification to Guidelines

- 5.1. The Procurer shall seek prior approval of the Appropriate Commission for deviations from the process defined in the Guidelines before the initiation of the bidding process itself. However, for the purpose of clarity, if the Procurer while preparing the Bid Documents and other Project Agreements, provides detailed provisions that are consistent with these Guidelines, such detailing shall not be considered as deviations from these Guidelines.
- 5.2. In the event of any ambiguity, difficulty, or need for modification in interpreting or implementing these Guidelines, the Ministry of Power shall have the authority to provide clarification.

6. Applicable Laws and Regulations

- 6.1. All activities/ procurement being undertaken under these Guidelines will be subject to applicable laws, rules, orders, guidelines and regulations issued by the Appropriate Government and Regulatory Commissions.

PART B: BID

A. GENERAL CONDITIONS OF BID

1. BID/RFS Documentation

- 1.1. The Procurer shall prepare the bid documents in accordance with set Guidelines. The principles outlined in these Guidelines shall suitably be detailed in the Standard Bid Documents.
- 1.2. The Procurer shall invite the bidders to participate in the RfS prepared in accordance with these Guidelines. In case of bids initiated or already in progress before the notification of these Guidelines, the provisions outlined in the relevant tender or bid documents shall prevail.
- 1.3. The Bidding Agency will specify suitable technical and financial eligibility criteria for the bidders, in the tender documents.
- 1.4. The procurer may specify in the bid documents if the Project should be established at a site designated by the Procurer or at a site chosen by the Developer. If the Procurer does not specify the Project site in the bid documents, the Developer has liberty to choose its own site. Where the location/ site/ land is specified by the Procurer, the details thereof shall be indicated clearly in the bid documents.
- 1.5. The RfS shall outline the responsibilities of each party regarding the acquisition of necessary clearances, permits, licenses, land arrangements, etc, including the milestones related to land acquisition, connectivity, and other project requirements. The RfS shall specify the penalties for non-compliance with such milestones/requirements and the regular reporting requirements by the Developer.

2. Bid Process

- 2.1. The procurer shall call for the bids adopting a single stage, two part (Separate Technical Bid & Financial Bid), bidding process to be conducted preferably through electronic mode (e-bidding).

- 2.2. The technical bid shall be opened first and the financial bids of only those bidders who qualified in the technical bid evaluation stage, shall be opened. The Procurer may choose to conduct an e-reverse auction (e-RA) for selection of bidders, which shall be specifically mentioned in the notice inviting bids and the bid document. E-procurement platforms with a successful track record, adequate safety, security and confidentiality shall be used.
- 2.3. The Procurer shall publish the RfS notice in at least two national newspapers and/or its own website and/or the Central/State Public Procurement Portal to accord wide publicity.
- 2.4. The Procurer shall provide opportunity for pre-bid conference to the prospective bidders and shall provide written interpretation of the tender documents to any bidder which shall also be made available to all other bidders. All the concerned parties shall rely solely on the written communication. Any clarification or revision of the bidding documents shall be uploaded on the website of the Procurer for information. In the event of the issuance of any revision or amendment of the bidding documents, the bidders shall be granted with a period of at least 7 days there from, for submission of bids.

3. Mode of Procurement

The mode of procurement shall be as specified in the **Special Conditions of Bid**.

4. Indicative Timelines for Bid Process

- 4.1. The indicative timelines for different activities of bid process shall be as specified in the **Special Conditions of Bid**.
- 4.2. The Procurer may specify different timelines as per the specific requirements in the RfS document. If the Procurer gives extended time for any of the events in the bidding process, on account of delay in achieving the activities required to be completed before that event, or any other reason, such extension of time shall not in any way be construed as deviation from these Guidelines.

5. Bid Structure

- 5.1. **Bidding Parameter:** Allotment of contract shall be based on a Tariff Based Competitive Bidding process. The Bidding Agency may specify in the RfS, any of the bidding parameters specified in the **Special Conditions of Bid**, depending on the project specifics outlined in the RfS.
- 5.2. The Tariff shall be quoted at the **delivery point** to be specified in the RfS. In case of Composite Tariff Model, all the charges and losses till the Delivery Point shall be borne by the Developer, unless otherwise specified in the RfS. For the Tolling Tariff Model, the responsibility for the charges and losses till the Delivery Point shall be as specified in the RfS.
- 5.3. The minimum bid capacity of projects shall be as specified in the **Special Conditions of Bid**.
- 5.4. The Procurer may also define the maximum capacity to be allotted to a single bidder, considering factors like economies of scale, land availability, competition, and market development. The Procurer may allow the Developer to set up a higher capacity in projects developed in Mode-1 and in such case the Procurer shall have the first right of refusal to contract the additional capacity/energy.

5.5. Bid Responsiveness

The bid shall be evaluated only if it is responsive and satisfies conditions, inter-alia:

- a. Bidder or any of its Affiliate should not be a wilful defaulter to any lender;
- b. The Bidder and any of its Affiliate including any Consortium Member and any of its Affiliate, their directors should not have been barred by any government agency or an authority in India, or by the government of the jurisdiction of the Bidder or Members where they are incorporated or the jurisdiction of their principal place of business, or by 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 by the United Nations or by any of its agencies as on the date of bid submission.

5.6. Eligibility and Qualification Criteria

- a. Formation of consortium by the bidders shall be permitted, in the case of, the consortium shall identify a lead member which shall be the contact point for all correspondences during the bid process. The Procurer may specify technical and financial criteria, and lock in requirements for the lead member of the consortium.
- b. **General Eligibility Criteria:** Bidders participating in the tenders issued under these Guidelines should 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 of above entities.

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

c. Technical Eligibility Criteria: To encourage competition by way of increased participation and to ensure proper implementation of the Projects, the Procurer may specify additional Technical Eligibility Criteria as specified in the **Special Conditions of Bid**. Such criteria should be set after an assessment of the number of project developers - that are expected to meet the criteria - so that an adequate level of competition is achieved. The cut-off date for meeting the Technical Eligibility Criteria should generally be kept as the last date of bid submission.

d. Financial Eligibility Criteria:

i. Net-worth/Assets under Management (AUM) or Investible Funds:

- a. The Procurer shall specify that a Bidder must meet the net-worth requirement as specified in the **Special Conditions of Bid**.
- b. A Bidder who is a SEBI registered Alternative Investment Funds (AIF) must demonstrate a cumulative value of Assets under Management (AUM), as specified in the RfS. The net-worth of an AIF will be calculated as per the Companies Act, 2013 and the value of AUM will be calculated in accordance with the applicable SEBI (AIF) Regulations and certified by the AIF's Statutory Auditor.
- c. The net-worth of a Consortium Bidder shall be calculated as the combined net-worth of the Consortium members, along with the net-worth of Affiliates that undertake to contribute equity funding and provide Performance Guarantee (PG) if any of the Consortium member fails to meet the obligations as per the RfS.
- d. A Bidder (excluding AIF) can qualify based on the financial capability of their Affiliates. Further, in case of a Bidder who is part of a Bidding Consortium, any member can fulfil the criteria based on its Affiliate's financial capability. However, in both these cases, the Affiliates must commit to provide the required equity funding and Performance Guarantee (PG) if the Bidder fails to do so in accordance with the RfS document. Further, the affiliate(s) shall maintain their status of Affiliate (as per the definition mentioned in these Guidelines) informed in the bid, until the Actual Commencement of Supply Date (ACSD) of the project.

ii. Liquidity: It is necessary that the Bidder has sufficient cash flow/internal accruals to manage the fund requirements for the Project. The Procurer may stipulate suitable parameters such as annual turnover, Profit Before Depreciation, Interest and Tax (PBDIT), internal resource generation, bidding capacity etc.

5.7. The quoted tariff shall be exclusive of GST. The developer will be obligated to undertake measures to reduce GST incidence by availing Input Tax Credit (ITC) or any other tax refund, exemption, or benefit under applicable tax laws. The final impact of GST shall be reimbursed by the Procurer on production of supporting documents adjusting for the benefits.

6. Technical Requirements

- 6.1.** The Procurer shall specify the Technical Requirements in the Bid Documents as per the **Special Conditions of Bid**.
- 6.2.** The Procurer will encourage the use of proven and operational technologies to reduce technology risks and ensure timely project commissioning. The specific technical standards applicable to the types of energy storage projects covered by these Guidelines will be outlined in the bidding documents. These standards will be regularly updated to align with the latest guidelines, notifications, and industry standards.
- 6.3.** The technical Parameters of PSP, PSP Characterization and Performance Parameters are mentioned in **Appendix-I**.

7. Contractual Guarantees

- 7.1.** The Developer shall provide the following instruments to the Procurer in terms of the RfS and the Contract.

7.2. Earnest Money Deposit (EMD)

- a. Procurer shall specify the quantum of the Earnest Money Deposit (EMD) as per the **Special Conditions of Bid**.
- b. The EMD for all the successful bidders shall be valid at least up to the Effective Date of PPA. Thereafter, EMD will be released and replaced by the Performance Guarantee (PG) in case of successful bidders. For the remaining bidders, the EMD shall be released after issuance of Letter of Award within the number of days specified in the **Special Conditions of Bid**.
- c. Forfeiture of EMD or debarring etc., as defined in these Guidelines, shall be undertaken in the event of failure of the successful bidder to execute the PPA within the stipulated time period.
- d. EMD shall be submitted in the form of
 - i. **Bank Guarantee**
OR
 - ii. **Payment on Order instrument/Letter of Undertaking**
OR
 - iii. **Insurance Surety Bonds** which would be paid unconditionally similar to a Bank Guarantee
OR
 - iv. Any other approved instrument approved by Ministry of Finance, Government of India.

7.3. Performance Guarantee (PG)

- a. A Procurer will fix the Performance Guarantee (PG) as per the **Special Conditions of Bid**.
- b. A PG shall be submitted at the time of signing of the PPA in the form of:
 - i. **Bank Guarantee**
OR
 - ii. **Payment on Order instrument / Letter of Undertaking** to be furnished by the bidders to be used to pay in case a Developer defaults in terms of PPA
OR
 - iii. **Insurance Surety Bonds** which would be paid unconditionally similar to a Bank Guarantee
OR
 - iv. Any other approved instrument approved by Ministry of Finance, Government of India.
- c. In addition to other remedies, this PG can be encashed to recover any damages/dues of the Developer in terms of the PPA. The damages/dues recovered by the Intermediary Procurer by encashing the PG, upon the default of the Developer under the PPA, shall be credited to the Procurer.
- d. The PG will be returned, after deducting any liquidated damages, to the Developer within '**D**' days of the Actual Commencement of Supply Date (ACSD) of the full contracted capacity or the last part of contracted capacity accepted by the Procurer. However, the Procurer/Intermediary Procurer may extend this period up to a maximum of '**M**' months from the ACSD, which will be clearly specified in the Bidding Documents. '**D**' and '**M**' are specified in the **Special Conditions of Bid**. In the case of partial commissioning of the contracted capacity, the PG corresponding to the part commissioned contracted capacity shall be released after deducting any liquidated damages, within the time specified in the Bidding Documents.
- e. As an alternative to encashing the PG, the Procurer/Intermediary Procurer may allow the Developer to furnish the requisite amount through Demand Draft/electronic payment against the release of the relevant PG without any encashment.
- f. A Procurer may release the Bank Guarantee submitted by the Developer if the Developer is able to replace the same with an alternative PG as per these Guidelines, issued by any agency notified by the Government of India or State Government, to pay in case a Developer defaults in terms of PPA.
- g. **Compliance of FDI Laws by foreign bidders:** 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.

8. Submission and Evaluation of Bids

- 8.1.** The bidders may be required to submit non-refundable processing fee and/or success fee, as specified in the RfS.
- 8.2.** The bidders shall be required to submit separate technical and price bids. The bidders shall also be required to furnish necessary bid-guarantee in the form of an EMD along with the bids.
- 8.3.** The Procurer shall constitute a committee for evaluation of the bids called Evaluation Committee, with at least three members, including at least one member with expertise in financial matters/ bid evaluation. The evaluation committee should satisfy itself that the price of the selected offer is reasonable and consistent with the requirement. The evaluation committee shall have the right to reject all price bids if the rates quoted are not aligned with the prevailing market prices.
- 8.4.** The technical bids shall be evaluated to ensure that the bids submitted meet the eligibility criteria set out in the RfS document on all evaluation parameters. Only the bids that meet the evaluation criteria set out in the RfS shall be considered for further evaluation on the price bids.
- 8.5.** To ensure competitiveness, the minimum number of qualified Bidders should be two. If the number of qualified bidders is less than two, even after three attempts of bidding, and the Procurer still wants to continue with the bidding process, the same may be done with the consent of the Appropriate Commission.
- 8.6.** The price bid shall be rejected, if it contains any deviation from the bid conditions. No clarifications shall normally be requested from bidders at this stage.
- 8.7.** Bid Evaluation shall be carried out in terms of parameters as mentioned in the RfS through ranking of Bids in ascending order of the Bidding Parameter. The Bidding Agency may carry out electronic reverse auction for award of Projects.
- 8.8.** The detailed procedure for evaluation of the bid and selection of the successful bidder(s) shall be provided in the RfS.
- 8.9.** After the conclusion of bidding process, the Evaluation Committee constituted for evaluation of bids shall critically evaluate the bids and certify as appropriate that the bidding process and the evaluation has been conducted in conformity with the provisions of these Guidelines.

B. SPECIAL CONDITIONS OF BID

The clauses in the Special Conditions correspond to and must be read in conjunction with the clauses in the General Conditions within the respective part of the document.

3. Mode of Procurement

The mode of procurement may be either of the following:

- a. Mode 1 - Procurement from a PSP developed on a site identified by the Procurer:** The Procurer may choose to locate the Project at a site pre-specified and identified in the bidding documents. Where the site belongs to the Government or a Government entity, to ensure inter-generational equity in the utilisation of such site, the development shall be on “Build Own Operate Transfer (BOOT)” basis for a period of 25 to 40 years, which shall be specified in the RfS. In BOOT mode of implementation, the project will be transferred after the end of term of the agreement to an entity identified by the State Government at a pre specified amount to be specified in the RfS.

The Procurer shall issue a Detailed Project Report (DPR) made in accordance with the provisions of the relevant Guidelines along with the bid.

Further, to de-risk the project, the procurer shall form a Special Vehicle (SPV) which shall undertake all pre-feasibility activities. These activities include applying for and initiating the process of securing all clearances including environmental clearance, forest clearance, land procurement, and other statutory clearances as may be applicable. The SPV shall be incorporated as a wholly owned subsidiary of the procurer entity with a minimum shareholding of Rs. 1 lakh under the Companies Act. The SPV incorporated by the procurer would be transferred to the successful bidder at a cost equivalent to the sum total of the par value of shareholding in the company and the expenditure incurred by the procurer in operation of SPV, which shall be pre-specified in the RfS.

- b. Mode 2 - Procurement from a PSP developed on a site identified by the Bidder or an already commissioned PSP or under development PSP:** In this case Supply will be from a PSP developed on a site identified by the bidder or from an already commissioned or under development PSP. In this case the development may be on “Build-Own-Operate (BOO)” basis for a period of 15 to 40 years, which shall be specified in the RfS. PSP Developers may self-identify potential sites where a PSP can be constructed or offer storage from already commissioned or under development projects. The PSP Developer shall obtain the statutory clearances including concurrence under Section 8 of the Electricity Act, environmental clearance, forest clearance, land procurement etc. before the commencement of construction of the project. The Procurer shall not be responsible in case of delay in obtaining any required clearances. The selected bidder (s) may be required to submit the approved DPR before signing the PPA.

4.1. Indicative Timelines

- a. The indicative timeline for different activities under the **Mode 1 and Mode 2** shall be as under:

Sl. No	Event	Time from Zero date (for Mode 1 of procurement)	Time from Zero date (for Mode 2 of procurement)
1	Date of issue of Bid Documents	Zero date	Zero date
2	Pre-bid conference, Bid Clarifications, opening of online Data Room to share project specific details including site, if specified by the Procurer etc., and revision of RfS document	**	**
3	Bid submission	90 days	60 days
4	Evaluation of Technical bids	120 days	90 days
5	Evaluation of Financial bids and conduct of e-RA	150 days	120 days
6	Issuance of Letter of Award	195 days	165 days
7	Date of filing of petition for adoption of tariff by SERC/CERC [#]	225 days	195 days
8	a. Signing of Share purchase agreement of SPV (Mode-1) (if applicable) and/or b. Signing of PPA and PSA (if applicable)	285 days	255 days

****** In case of any change in RfS document, the Procurer shall provide the bidders with additional time.

Commission shall adopt tariff within 60 days of filing the petition.

5.1 Bidding Parameters:

- Storage charge (Rs/{MW/kW}/{year/month})
- Storage charge (Rs/{MW/kW}/{year/month}) with a pre-specified VGF/ Annuity support
- Composite Tariff (Rs/kWh basis) for electricity including the cost of input power and storage. In this case input power is arranged by the Developer (“Composite Tariff Model”)

Note:

- In case the procurement is based on storage charge i.e., “**Tolling Tariff Model**”, the input power shall be arranged by the Procurer of the storage capacity.
- The Procurer may specify an escalating tariff structure for the Bid Parameters specified in 5.1(a), (b) and (c) in the Bid document.

- 5.3 Minimum Bid Capacity:** For ISTS connected projects, the minimum bid capacity that can be offered by the bidder should be 50 MW. For InSTS connected projects, i.e., when the Procurer and the identified PSP are within the same State, the minimum bid capacity may be at least 10 MW. For projects in North-Eastern States, Special Category States, and other InSTS-connected projects, based on the availability of land and transmission facilities, a smaller minimum capacity may be allowed but this should be clearly specified beforehand in the RfS. However, the Procurer may specify a project size different from the limits specified hereunder in the RfS document.

5.6 Qualification requirements to be met by the bidders

- a. Technical Eligibility Criteria: Applicants must demonstrate experience in developing infrastructure sector projects within the past five (5) years. Specific details will be outlined in the Request for Proposal (RfS), including:
 - Minimum Aggregate Capital Expenditure: The total capital expenditure for all qualifying infrastructure projects undertaken in the last five (5) years must meet a threshold specified in the RfS.
 - Minimum Capital Expenditure per Project: Each qualifying infrastructure project must have a minimum capital expenditure as defined in the RfS.
- b. Financial Eligibility Criteria:
 - ii. *Net-worth/Assets under Management (AUM) or Investible Funds: Net-worth equivalent of at least 20% of the estimated capital cost of the contracted capacity of the PSP for the financial year in which bids are issued. The estimated capital cost will be determined by the Bidding Agency.*

6.1 Technical Requirements in Bid Documents

- a. The procurer shall specify the following while defining the technical requirements for PSP:
 - i. Power capacity in MW
 - ii. Energy capacity in MWh
 - iii. Pumping/ Generation duration in hours per day (Maximum number of Continuous and Non-Continuous hours in a day)
 - iv. Usage in cycles per day/month/quarter/year/entire contract period as applicable.
- b. The Procurer may choose to specify additional performance parameters also for bid evaluation as per its requirement:
 - i. Availability (%)
 - ii. Switchover time between generation and pumping mode and vice versa.
 - iii. Cycle Losses, if applicable
 - iv. Other performance parameters

The performance parameters will be evaluated based on operational data, considering either the entire project or the contracted capacity, as applicable.

7.2 Earnest Money Deposit (EMD)

- a EMD shall not be less than **2% (two percent)** of the estimated capital cost of the contracted capacity in MW for the new PSP for the year in which bids are invited or as per the upper limit stipulated by Ministry of Finance from time to time, whichever is lower.
- b EMD shall be released within 15 days of issue of LOA for other than selected bidder.

7.3 Performance Guarantee (PG)

- a PG shall not be less than **5% (five percent)** of the estimated capital cost of the contracted capacity in MW for the new PSP for the year in which bids are invited, or as per the upper limit stipulated by Ministry of Finance from time to time, whichever is lower.
- d **Timeline** 'D' = Sixty (60) days, 'M' = Six (6) months

PART C: CONTRACT

A. GENERAL CONDITIONS OF CONTRACT

1. Contract Award and Conclusion

- 1.1. The PPA shall be signed by the Procurer with the successful Bidder/ Project Company or the SPV as the case may be.

- 1.2. In case of involvement of an Intermediary Procurer, the Intermediary Procurer shall enter into a PPA with the Developer(s) and a PSA with the End Procurer (s). The PSA shall contain the relevant provisions of the PPA to enable back-to-back contracting of stored energy/storage capacity between the Developer and the Procurer. The PPA(s) should preferably be signed immediately after signing of the PSA(s). The Intermediary Procurer shall be entitled to charge a trading margin at 7 paise per unit of discharged energy or as specified by the Appropriate Commission, for composite tariff model and 1% of the capacity charges in (Rs/MW/month) or as specified by the Appropriate Commission, for Tolling tariff model, from the Procurer for purchase and sale of storage capacity or stored energy.
- 1.3. The power procurement for Distribution licensees in some States is centralized through a holding company or a government agency. Such companies/ agencies will be considered as Procurer and not as Intermediary Procurer for the purposes of these Guidelines.
- 1.4. In case of delay in signing of PPA beyond a period of six (6) months from the date of issuance of LoAs, or any other extended date as mutually agreed between the Bidding Agency and the successful bidders not exceeding 12 months, the awarded capacity shall stand cancelled. In certain cases, after the above deadline, if the cumulative capacity eligible for signing of PPAs is lower than the cumulative capacity awarded under the tender, further course of action to be decided by the Bidding Agency will be clearly specified in the Bid document.
- 1.5. To ensure transparency, the Procurer shall, after the execution of the PPA, publicly disclose the name(s) of the successful bidder(s) and the tariff/ charges quoted by them together with breakup into components, if any. The public disclosure shall be made by posting the requisite details on the website of the Procurer for at least thirty (30) days.
- 1.6. The Procurer or the Intermediary Procurer shall approach the Appropriate Commission for adoption of tariff under section 63 of the Act within thirty (30) days of issue of LoA.
- 1.7. The tariff shall be adopted by the Appropriate Commission within sixty (60) days of the application date. If the Appropriate Commission fails to decide within sixty (60) days of the application date, the Procurer(s) shall grant an extension of time in Scheduled Commencement of Supply Date (SCSD) and Financial Closure (FC) Date to the Developer. This extension should correspond to the time taken by the Appropriate Commission in adoption of tariff beyond sixty (60) days of application date.
- 1.8. The PPA shall include standard provisions, including but not limited to the following, which, unless otherwise specified, will be mirrored in the PSA.

2. Term

The term of the PPA will be determined by the Procurer based on the intended use of the plant, and this will be explicitly specified in the RfS document. Following the expiry of the PPA period, the Developer will be free to continue operating the Project. It is important to note that when the Project site is designated by the Procurer, the Procurer's responsibility for land arrangements shall be limited to the PPA period.

3. Performance Parameters

Performance parameters and other conditions shall be as specified in the **Special Conditions of Contract**

4. Liquidated Damages

- 4.1. The Liquidated Damages on account of shortfall in meeting performance criteria, specified in the Bidding Documents, PPA, or PSA, should be genuine and a reasonable estimate of potential damages for the Procurer/ Intermediary Procurer(s).
- 4.2. Any shortfall in availability of capacity below the committed capacity shall incur charges on a pro-rata basis at the capacity rate or at a predetermined number specified in the RfS.
- 4.3. Predefined Liquidated Damages for deviations related to ancillary services parameters, as specified in the RfS, will be imposed.
- 4.4. Any other Liquidated Damages specified in the **Special Conditions of Contract** and RfS Document.

5. Terms of procurement

- 5.1. The penalty for non-performance shall be as specified in the RfS. The scheduling and its punching thereof at different Regional Load Despatch Centres (RLDCs) / State Load Despatch Centres (SLDCs) (including the injecting, intervening and buyer SLDCs / RLDCs) shall be the responsibility of Developer.
- 5.2. Additional terms will be as specified in the **Special Conditions of Contract**

6. Deviation Settlement Mechanism (DSM)

For deviations from schedule, the DSM (Deviation Settlement Mechanism) shall be applicable as per the prevailing regulations. The DSM charges at the Project end shall be settled by the Developer.

7. Financial Closure (FC)

The following provisions shall be applicable only in case of new Projects to be commissioned by the Developers.

- a. The Developer must achieve Financial Closure (FC) within the period specified in the **Special Conditions of Contract** from the Effective Date of PPA. However, if there is a need to modify this period for any reason, the Procurer has the authority to do so.
- b. In case of a delay in achieving Financial Closure, the Procurer/ Intermediary Procurer will encash the PG, unless the delay is due to allotment of land by the Government, delay caused by Government (not attributed to the Developer), or due to Force Majeure. The Procurer may consider an extension for Financial Closure upon the Developer's request, subject to payment of extension charges specified in the **Special Conditions of Contract**. This extension will not affect the SCSD. Any extension charges paid will be refunded without interest upon successful commissioning within the SCSD. Any non-refunded penalties or extension charges shall go to the Procurer.

8. Transmission Connectivity

- 8.1. The responsibility of obtaining Transmission Connectivity to ISTS network under GNA regulation or to the InSTS network will lie with the Developer and shall be at the cost of Developer.
- 8.2. The Developer within '**D**' days of issuance of the LoA shall apply for Connectivity/GNA/Open Access to the CTU/STU Grid (as required) for technical feasibility of Connectivity/Open Access of the plant to InSTS/ISTS substation. The value of '**D**' is specified in the **Special Conditions of Contract**.
- 8.3. The End Procurer shall be liable for Inter-state/ Intra-State transmission charges and losses beyond the Delivery Point under the Applicable Laws. Inter-State/ Intra-State Transmission Charges and losses up to the Delivery Point shall be borne by the Developer.
- 8.4. The energy supplied to the Procurer shall be measured at the Metering Point or any additional point(s) as specified in the Bidding Document. The Metering Point shall be the low voltage bus bar of the InSTS/ ISTS substation at which power is injected in the transmission system of STU/CTU.
- 8.5. Unless otherwise provided, the transmission of power up to the point of interconnection where metering is done for energy accounting shall be the responsibility of Developer and at its own cost. Additional conditions shall be as specified in the **Special Conditions of Contract**.

9. Commencement of Supply

- 9.1. The PPA between the Developer and Procurer/Intermediary procurer shall clearly indicate the SCSD and quantum of capacity.
- 9.2. The projects shall generally commence services, within a period specified in the **Special Conditions of Contract**. However, if for some reason, the SCSD period needs to be kept longer/ shorter than that provided in these Guidelines, the Procurer can do the same.
- 9.3. **Early Commencement.** The Developer shall be permitted commencement of Supply corresponding to full as well as part contracted capacity, even prior to the SCSD. The Developer shall give at least '**D**' days (as specified in the **Special Conditions of Contract**) advance notice to both the End Procurer(s) and Intermediary Procurer regarding the advance commissioning of full or part contracted capacity. The End Procurer(s) and Intermediary Procurer shall give acceptance for availing such storage capacity or stored energy within '**D**' days from the date of service of notice. In case both the End Procurer(s) and Intermediary Procurer do not give their acceptance within the stipulated period, the developer can sell the stored energy/storage capacity to the extent not accepted by the End Procurer(s) and Intermediary Procurer in the power exchanges or through bilateral arrangements. In case both the End Procurer(s) and Intermediary Procurer give their acceptance, the End Procurer(s) will be accorded priority in availing the Supply.
- 9.4. **Part Commencement of Supply.** In case of part commencement of the contracted capacity, the minimum capacity for the acceptance shall be as specified in **Special Conditions of Contract**. However, penalties, as per the PPA, may apply to the non-commissioned part. Despite part or full commencement dates, the SCSD remains unchanged. The PPA remains in force for the entire term, starting from the SCSD.

9.5. Early and Part Commencement of Supply. In case of early and part commencement, the tariff payable by the End Procurer(s) and Intermediary Procurer shall be equal to the PPA tariff. Other conditions for early and part commencement shall be as specified in **Special Conditions of Contract**.

9.6. Delay in Commencement of Supply beyond the SCSD shall involve penalties on the Developer, as detailed below:

- a. For Delay in Commencement of Supply up to 6 (six) months from SCSD, encashment of Performance Guarantee (PG), on per day basis and proportionate to the contracted capacity that has not commenced Supply.
- b. For Delay in Commencement of Supply beyond six months from SCSD, the contracted storage capacity shall stand reduced to the project capacity that has commenced Supply within the period of SCSD plus 6 (six) months. The PPA for the balance contracted capacity that has not commenced Supply shall stand terminated.

9.7. Delay in Commencement of Supply on account of delay in Connectivity/Grid Access Operationalisation

Delays in granting or operationalizing Grid Access by CTU/STU, or in the readiness of the ISTS/InSTS substation at the Delivery Point/Injection Point, including the power evacuation and transmission infrastructure of the ISTS/InSTS network until the SCSD, are considered as delays beyond the Developer's control, if the following conditions are met:

- a. The Developer has completed all application formalities as per the Connectivity Procedure.
- b. The Developer has adhered to the relevant procedure notified by the Appropriate Commission/CTU/STU.
- c. The delay is caused by STU/CTU/transmission licensee and is beyond the Developer's control.

The SCSD for such projects will be adjusted to a date thirty (30) days after the readiness of the Delivery Point and power evacuation infrastructure and/or the operationalization of the Grid Access. The decision regarding the necessary extension due to the above-mentioned factors will be made by the Procurer/Intermediary Procurer.

10. Compensation for Offtake Constraints

Compensation for Offtake Constraints due to transmission unavailability and grid security shall be as specified in the **Special Conditions of Contract**.

11. Payment Security Mechanism

11.1. In case the End Procurers are Distribution Licensees where the tariff is determined or adopted by the Appropriate Commission, adequate payment security shall be provided as per Electricity (Late Payment Surcharge and Related Matters) Rules, 2022 including amendments and clarifications issued from time to time.

11.2. If the Supply is meant for sale through power markets, the shortfall/surplus in revenue shall be treated as per the relevant Guidelines/orders issued by the Central Government and regulated by the Central Commission.

12. Force Majeure

12.1. The PPA shall contain provisions with regard to force majeure definitions, exclusions, applicability, and available relief on account of force majeure, as per the industry standards.

12.2. The Developer shall intimate the Procurer about the occurrence of force majeure within 15 (fifteen) days of the start of the force majeure and the Procurer shall respond on his claim within 15 days of the receipt of the intimation.

13. Event of Default and Consequences Thereof

While detailed provisions with regard to the event of default of the concerned parties and its resulting consequences shall be given in the PPA/PSA, the broad principles of contractually dealing with the default of the Developer and the Procurers (excluding the Intermediary Procurer) shall be as follows.

- a. For delay in commencement of Supply beyond SCSD, the Developer event of default shall have been construed to have occurred and consequences shall be in accordance with these Guidelines.

- b. In the event the Developer fails to maintain the minimum performance requirement continuously for a period specified in the RfS, the Developer shall be in default and the PPA shall be liable to be terminated. Further, the Developer shall be liable to pay to the Procurer, damages, equivalent to '**M' months** (as specified in **Special Conditions of Contract**), or balance PPA period whichever is less, of tariff for its contracted capacity.
- c. In the event the Developer assigns or novates any of its rights or obligations contrary to the terms of the PPA, or repudiates the PPA, or commits any other acts or omissions as laid down in the PPA and is also unable to cure any of the aforesaid within the cure period, as may be provided in the PPA, the Developer shall pay to the Procurer, damages, equivalent to '**M' months** (as specified in **Special Conditions of Contract**), or balance PPA period whichever is less, of tariff for its contracted capacity. The Procurer shall have the right to recover the said damages by way of forfeiture of Performance Guarantee, if any, without prejudice to resorting to any other legal course or remedy.
- d. In addition to the levy of damages as aforesaid, in the event of a default by the Developer, the lenders shall be entitled to exercise their rights of substitution, in accordance with the substitution provisions provided in the PPA and in concurrence with the Procurers. However, in the event the lenders are unable to substitute the defaulting Developer within the stipulated period, the Procurer may terminate the PPA.
- e. If the Procurer/Intermediary procurer is in default on account of reasons including inter alia failure in timely payment of the dues, in accordance with the RfS or repudiation of the PPA, the Developer may terminate the PPA at its discretion. The defaulting Procurer shall pay to the Developer, damages, equivalent to '**M' months** (as specified in the **Special Conditions of Contract**), or balance PPA period whichever is less, of charges for its contracted capacity.
- f. If the Developer agrees to Supply all or part of the Contracted Capacity of the Procurer from an alternate source during the period between the SCSD and ACSD, and on the terms specified in the PPA, the Damages payable under this Clause will be proportionally reduced based on the extent of such Supply vis-à-vis the Contracted Capacity. If the Project is not completed and the ACSD does not occur within 180 days from the SCSD, and unless the delay is on account of Force Majeure or attributable to the Procurer, the Procurer may terminate the PPA at its discretion.

14. Change in Law

The provisions for Change in law shall be specified in the RfS and PPA, in accordance with the Electricity (Timely Recovery of Costs due to Change in Law) Rules, 2021. Further, the term Change in Law ("CIL") shall refer to the occurrence of any event related to the project from seven (7) days prior to the last date of Bid Submission.

15. Minimum Paid-up Share Capital/ Shareholding to be held by the Promoter

- 15.1. The successful bidder, if being a single company, shall ensure that its shareholding in the SPV/ project company executing the PPA shall not fall below 51% (fifty-one percent) at any time prior to the ACSD. In the event the successful bidder is a consortium, then the combined shareholding of the consortium members in the SPV/ project company executing the PPA, shall not fall below 51% at any time prior to the ACSD. Further, in case the Project is executed by the successful bidder itself, it shall ensure that the controlling shareholding of the bidding company/consortium remains unchanged until the ACSD. The successful bidder shall provide the information about its shareholding to the Procurer before signing of the PPA with Procurer.
- 15.2. Any change in the shareholding after the ACSD can be undertaken under intimation to the Procurer.
- 15.3. In the event, the Developer is in default to the lender(s), the lenders shall be entitled to undertake "Substitution of Promoter" in consultation with the Procurers.

16. Construction and Performance Monitoring

- 16.1. All grid-connected projects, covered under these Guidelines, must install necessary equipment to continuously record the Project's performance. The Developer shall be required to submit this data to Authorities/Agencies as specified in the RfS Document in online/electronic mode for the entire duration of PPA. In this regard, they shall also mandatorily grant access to the Procurer and Ministry of Power/ Central Electricity Authority or any other agency designated by Appropriate Government, to the remote monitoring portal of the power plants on a 24×7 basis. Geo-tagging of the Projects shall be mandatory.
- 16.2. When a Project Site is identified by the Developer then the Developer shall be responsible for obtaining all the clearances and the Procurer shall not be responsible for delay in obtaining such clearances. The Developer should ensure that various preparatory and implementation activities are completed as per the timelines stipulated in the RfS to ensure timely commencement of Supply.

17. Role of State Nodal Agencies and Other Facilitators

The State Nodal Agencies appointed by respective State Governments will provide necessary support to facilitate the required approvals and sanctions in a time bound manner to achieve commissioning of the Projects within the scheduled timeline. This may include facilitation in the following areas:

- a. Co-ordination among various State and Central agencies for speedy implementation of Projects.
- b. Support during commissioning of Projects.

18. Dispute Resolution Mechanism

- 18.1. Any dispute related to tariff or the matters dealt under provisions of Section 79 and Section 86 of the Electricity Act, 2003 shall be adjudicated by the Appropriate Commission. All other disputes shall be resolved by the Dispute Resolution Committee set up by the Appropriate Government and if the Committee fails to resolve the dispute, it shall be resolved through arbitration under the Indian Arbitration and Conciliation Act, 1996.
- 18.2. The Dispute Resolution Committee will be an additional forum beyond the provisions of the law and can be used by the relevant parties at their option.

B. SPECIAL CONDITIONS OF CONTRACT

The clauses in the Special Conditions correspond to and must be read in conjunction with the clauses in the General Conditions within the respective part of the document.

3. Performance Parameters

- a. The performance parameters of the Project specified in the bidding documents, which may include availability, charging/discharging rate, efficiency, ramp rate, cycling losses, capacity degradation, and daily/monthly cycles, shall be clearly articulated in the PPA. Where availability is a performance criterion, the PPA should specify the minimum level at which the Developer must maintain the PSP Capacity. Depending on the PSP's intended usage, the Developer may need to meet monthly and/or annual availability requirements or declare availability on a day-ahead basis. The Procurer may specify specific hours and performance parameters, restricting the minimum availability criteria to specified hours or peak hours, with any shortfalls calculated accordingly.
- b. When the contract is for storage, the energy shall be procured independently by the End Procurer and stored in the provided capacity. The Developer will return the stored energy, accounting for predetermined conversion losses. The End Procurer is obligated to pay the storage charge for the provided capacity, whether or not the capacity is fully utilized.

4.4. Additional Liquidated damages for performance shortfalls

The Developer shall bear the cost of energy loss exceeding the guaranteed parameter (specified in the RfS Document) at the tariff of input energy provided by the procurer or any number specified in the RfS.

5.2 Additional Terms of Procurement

- a. For any deficiency in available capacity/energy, the PPA shall have appropriate provisions for liquidated damages. The amount of such penalty will be equal to one and a half times of the PPA tariff for the shortfall in storage capacity/ energy, in accordance with the terms of the PPA.
- b. In case, the availability of energy is more than the maximum specified annual contracted stored energy, the Developer will be free to sell it to any other entity without providing the first right of refusal to the Procurer(s).
- c. The Developer may also sell un-requisitioned capacity/energy to any third party or power exchange without requiring NOC from the Procurer(s).

7. Financial Closure

- a. Financial Closure period will be within **12 months**.

- b.** Extension charges will be **Rs. 1,000 per MW** of contracted capacity per day of delay in SCSD.

8. Transmission Connectivity

- 8.2** Connectivity/GNA/Open Access to the CTU/STU Grid to be applied with 'D' = Sixty (60) days of issue of LoA.

8.5. Transmission Connectivity additional conditions

In case of procurement of storage capacity, the responsibility of supplying charging energy to the contracted PSP capacity at the Metering Point as well as transmission of discharged energy from contracted PSP capacity beyond the Metering Point shall be that of the End Procurer.

9. Commencement of Supply

9.2 Commencement of Storage Schedule

- (i) Projects shall generally commence within a period of:

Sl. No.	Procurement Mode Type	Type of PSP	SCSD (Months) after Effective Date of PPA
1.	Mode 1	Off-river	48 months
		On-river	66 months
2.	Mode 2	-	As per the requirement of procurer

9.3 Early Commencement

Notice period will be at least 'D' = Fifteen (15) days

9.4 Minimum part capacity for commissioning

The minimum capacity of first part for part commissioning shall be 50% of Project Capacity or 50 MW, whichever is lower.

9.5. Early and Part Commissioning

In capacity procurement contracts, if the project is partially commissioned, payments according to the PPA may be made on pro-rata basis, proportionate to the commissioned capacity. The decision to procure the part-commissioned capacity lies solely with the Procurer/Intermediary Procurer. If they choose not to consider procurement until full commissioning, the part-commissioned capacity can be sold in the open market until the SCSD.

10. Compensation for off-take constraints

The Procurer may be constrained to off-take the energy storage capacity offered/ power scheduled by the Developer on account of transmission constraints and grid security and in such case, the applicable Compensation for reduced off-take shall be as under:

- a. In case of procurement being on Tolling Tariff Model:** Period of reduced off-take to be considered as deemed available for payment to Developer if the annual availability is less than normative annual availability specified in RfS. The total availability after such adjustment shall not be higher than normative availability.
- b. In case of procurement being on Composite Tariff Model:** If the annual energy supplied falls below the contracted amount specified in the Request for Selection (RfS), the following provision shall apply:
- (i). **Payment Adjustment:** - The Procurer for the reduced energy will pay at a rate stipulated in the RfS but not exceeding 60% of the composite tariff in the Power Purchase Agreement (PPA).

13. Event of Default and Consequences Thereof

- b** Damages equivalent to 'M' = 24 (Twenty-Four) months
- c** Damages equivalent to 'M' = 24 (Twenty-Four) months
- e** Damages equivalent to 'M' = 24 (Twenty-Four) months

Appendix-I

Technical Parameters of PSP, PSP Characterization and Performance Parameters

- I.** For **Mode 1 Procurement**, the Procurer shall submit the Pre-Feasibility Report (PFR) and Detailed Project Report (DPR) of the project along with the RfS, which shall also specify the status of requisite clearances and approvals, including those already obtained or applied for by the Procurer. However, for **Mode 2 Procurement**, relevant information may be specified in the tender.
- II.** A tentative format for the PFR is provided below. The table below is not exhaustive, and the Procurer may add additional information as needed.
- III.** General Technical particulars for PSP shall be as under (applicable for Mode-I only):

S. No.	Parameter	Unit
1	Type of Power plant (Underground/Surface)	
2	Type of PSP	
3	Capacity of the plant	MW
4	Duration of storage	Hours
5	Number of Generation Cycles (per Day)	
6	Number of Pumping Cycles (per Day)	
7	Number of units	
8	Unit Capacity (Turbine/Pump)	MW
9	Maximum Head (Turbine)	Meter
10	Rated Head (Turbine)	Meter
11	Minimum Head (Turbine)	Meter
12	Maximum Head (Pump)	Meter
13	Rated Head (Pump)	Meter
14	Minimum Head (Pump)	Meter
15	Elevation & dimensions of upper dam	Meter
16	Elevation & dimensions of lower dam	Meter
17	Maximum head(upper/lower)	Meter
18	Minimum head (upper/lower)	Meter
19	Suction Head	Meter
20	Proposed Speed	RPM
21	Upper reservoir capacity	MCM
22	Lower reservoir capacity	MCM
23	Live storage capacity (Upper/Lower Reservoir)	MCM
24	Unit Discharge	Cubic Meter/ Second
25	Length of water conductor system	Meter
26	Centre line of unit	Meter
27	Planned Unit spacing	Meter
28	Planned Elevation of machine floor	Meter
29	Generator barrel diameter	Meter
30	Planned Size of powerhouse (L X W X H)	MxMxM
31	Planned Size of Transformer Cavern/Hall (L X W X H)	MxMxM
32	Planned Switchyard Type (AIS/GIS)	
33	Planned Maximum possible transportation dimensions of any E&M equipment	MxMxM
34	Planned Max possible weight of any E&M equipment	Kg
35	Planned Size of Switchyard (L X W)	MxM
36	Transmission Voltage	kV
37	Proposed Nearest Pooling Station	
38	Proposed Location/Locations of Pumping Energy Source	

IV. Technical features and performance of PSP Machine

Features	Requirements
Efficiency	Pump Turbine eff. >90.5% Motor Generator eff. >98%
Cycle efficiency*	>75%

Fast transition between operating modes	~7 - 15 min
Power factor	
Controllable reactive power	Yes
Grid oscillation damping (PSS)	Yes
Inertia	Yes
Fast transition in turbine power (min.-Full load) / (Full – min. load)	<60s. Limited by hydraulic transient.
Synchronous Condenser Mode	Yes

**Procurer may specify any higher efficiency not exceeding 80%.*

V. Codes & Standards

1. Material and equipment pertaining to construction and machine shall conform to relevant IS codes and international codes.
2. Field and laboratory testing, and procedures for material shall conform to relevant IS codes and international codes.

VI. Design & Safety

1. These projects shall have simpler design with minimum requirement of River Diversion works, Desilting & Silt Flushing arrangements, Surge Chambers and very small water conductor systems.
2. Location of project shall have minimal environmental issues such as, Fisheries, Environmental Flows and CAT Plans including R&R.

Note: *Bidding Agency may modify these specifications based on specific requirements considering applicable Guidelines, Standards, etc. issued by CEA or any other Govt. Agency.*

HEMANT KUMAR PANDEY, Chief Engineer