

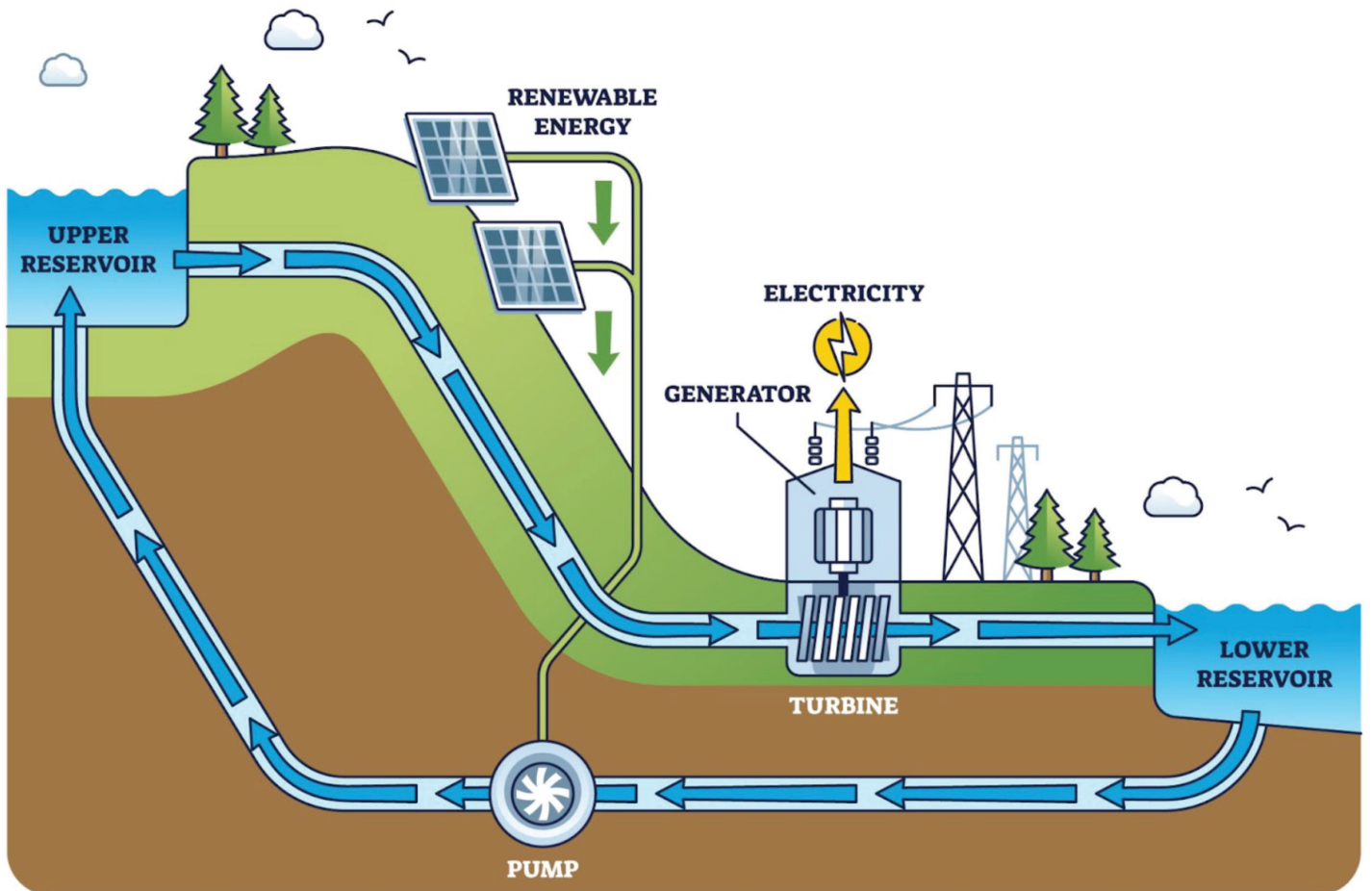


Scheme for Implementation of

Pumped Hydro Storage (PHS)

Project in Madhya Pradesh

February 2025





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1. Preamble

- 1.1. Solar and Wind power potential in India is 748.98 GW and 695.50 GW (at 120 hub height) respectively. Due to technological advancement, Solar and Wind power have achieved grid price parity, and it is expected that solar and wind power technologies would play a significant role in achieving sustainable economic growth while addressing the concern around climate change and global warming.
- 1.2. Resource Adequacy Plan for the State of Madhya Pradesh (2024-25 to 2034-35) published by Central Electricity Authority (CEA), estimates that, other than conventional sources of energy, Madhya Pradesh would require 29,956 MW Solar and 5,293 MW of Wind by 2034-35 to cater state energy demand, projected to increase with a CAGR of 5.36 % from 2024-25 to 2034-35.
- 1.3. Considering the associated issues of variability and intermittency of renewable energy, energy storage systems will play an important role in addressing variations in RE generation. To facilitate smooth and efficient integration of renewable energy into the grid, energy storage capacity would be required at a larger scale. Pumped hydro storage, being one of the most matured technologies among presently available energy storage technologies, is poised to play a crucial role in the future.
- 1.4. Recognizing the need of the hour, Ministry of Power (MoP) has taken several measures to promote development of energy storage (including pump storage):
 - 1.4.1. vide order F.No.09/13/2021-RCM dated 22nd July 2022, target has been prescribed for Energy Storage Obligation (ESO) as 4% of total energy consumed through energy storage sources by FY 2029-30.
 - 1.4.2. Vide order no. 23/12/2016/-R&R dated 23rd November 2021 and order no. 12/07/2023-RCM dated 29th May 2023, waiver of Inter-State Transmission Charges has been provided on transmission of the electricity generated from Hydro PSP project where construction work is awarded prior to 30.06.2025.



- 1.4.3. notified Guidelines to promote development of PSPs vide Notification No. F. No. 15-14/9/2022-H-II(Part) dated 10.04.2023 stipulating, inter alia, the modalities for allotment of project sites by State Governments with an objective to provide enabling policy framework for development of Hydro Pumped Storage projects and to ensure RE capacity addition targets for the benefits of consumers.
- 1.4.4. Issued draft TBCB guidelines for procurement of storage capacity/stored energy from Pumped Storage Plants vide No. 42-26/1/2022-RCM-Part(3) dated 22nd August 2024.
- 1.5. Reassessment of On-River Pumped storage Hydroelectric Potential in India carried out by CEA in June 2023, reveals that total 61 sites in India have 59,036 MW of on-river PSP potential. Out of these, only 8 projects are operational (4,745.60 MW), 3 projects are under construction (1,580 MW) and 2 projects have been concurred by CEA/State Govt. (2,350 MW). Thus, out of total on-river potential, only around 14.7% has been utilized till date. This clearly indicates that state governments need to take a proactive role to overcome the myriad issues, such as timely allocation of sites, uplifting the requirement to pay any cess, obligation from providing free power, procedural clarity on provisions related to Right of First Refusal (ROFR), etc. Such forward-looking policy measures would help in prudently utilizing the PSP potential of the country.
- 1.6. Resource Adequacy Plan for the State of Madhya Pradesh of CEA provides for the necessity of adding around 12,000 MW of 4 hours energy storage capacity in the state. Madhya Pradesh Power Management Company Limited (MPPMCL) is entrusted with the responsibility of procuring power on behalf of all the DISCOMs of the state, and would need to procure storage capacity, apart from other sources of power. The Government of Madhya Pradesh (GoMP), through this Scheme, is planning to develop a holistic ecosystem to promote development of Pump Storage Projects in Madhya Pradesh.



2. Definitions

- 2.1. *Affiliate*** shall mean, in relation to a Developer, a person who controls, is controlled by, or is under the common control of such Developer.
- 2.2. *Composite Tariff Model*** shall mean a model in which the Procurer contracts for power or energy from storage-based system for a specified time. The energy for storage, including losses, in conversion is arranged by the Developer. The price shall be in Rs./kWh.
- 2.3. *Control*** shall mean the ownership, directly or indirectly, of more than 50% (fifty percent) of the voting shares of such company.
- 2.4. *Government Authority*** shall mean an Authority set up by an Act of Parliament or a State Legislature.
- 2.5. *Nodal Agency*** shall mean Office of Commissioner, New and Renewable Energy.
- 2.6. *State Project Development Authority (SPDA)*** shall mean Rewa Ultra Mega Solar Limited (RUMSL).
- 2.7. *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. The price shall be in Rs./{MW/KW}/{year/month}.

3. Title, Validity and Applicability of the Scheme

- 3.1. As per the power conferred to the Office of Commissioner, New and Renewable Energy under Clause 1.2.6 read along with Clause 1.1.1 of "Guidelines for implementation of Madhya Pradesh Renewable Energy Policy – 2022", the following Scheme is hereby formulated for implementation and development of Pumped Hydro Storage Projects in Madhya Pradesh.

- 3.2. This Scheme shall be known as "Scheme for implementation of Pumped Hydro Storage (PHS) project in Madhya Pradesh". It shall be read along with the Madhya Pradesh Renewable Energy Policy – 2022 and associated Guidelines, as amended from time to time.
- 3.3. The Scheme shall be co-terminus with the Madhya Pradesh Renewable Energy Policy – 2022 and associated Guidelines, as modified from time to time. Otherwise, it shall remain in operation for a period of ten (10) years from the date of notification in the Madhya Pradesh State Gazette or until a new Scheme is notified by GoMP, whichever is earlier.
- 3.4. The Scheme shall be applicable for all PHS Projects at any stage of project development, viz., under construction, under identification, under Survey and Investigation, under CEA or MoEF concurrence, etc.
- 3.5. Office of Commissioner, New and Renewable Energy may amend/modify/review this Scheme, appropriately, as and when required.

4. MP State Potential

- 4.1. As per CEA's report on reassessment of On-River Pumped storage Hydroelectric Potential in India, published on June 2023, Madhya Pradesh is estimated to have a total on-river PHS potential of around 7 GW. However, the actual potential could be higher as the CEA assessment does not include off-river Pumped Storage Hydro projects and potential of retrofitting existing hydro projects to develop Pump Storage Hydro Projects.
- 4.2. A new category of PHS project, called off-river PHS project (which being located away from the river course do not involve any longitudinal connectivity issues or E-flows requirements or consumptive use of water) is gaining attention. Off-river PHS Projects in many cases would require only one time filling of water into the reservoir, except for refilling on account of evaporation, and this would be on a non-consumptive basis and the restore supply of water for its consumption shall be minimal. These sites will be located away from the reservoir and shall use water on a non-consumptive basis. Hence, it is felt necessary to promote development of PSHs, including off-river pumped storage projects, in the State.



5. Pumped Hydro Storage Site/ Resource Allocation

- 5.1. Pumped Hydro Storage site may be allotted by the Nodal Agency, i.e., Office of Commissioner, either to
 - 5.1.1. CPSUs, State PSUs and Authority set up by GoI or GoMP.
 - 5.1.2. State Project Development Authority, or
 - 5.1.3. PHS Project Developer on the basis of self-identification.
- 5.2. PSPs are defined as under:
 - 5.2.1. On-stream PSP - Both reservoirs are located on any river or perennial stream or perennial nallah.
 - 5.2.2. Semi-off-stream PSP - One reservoir is located on river or perennial stream or perennial nallah, while the other reservoir (off-stream reservoir) is not located on any river or perennial stream or perennial nallah.
 - 5.2.3. Off-stream PSP - None of the reservoirs is located on any river or perennial stream or perennial nallah. However, one of the two reservoirs can be in an existing reservoir or the backwater of an existing reservoir. Water for one-time fill and to meet the evaporation and recirculation losses shall be provided from an existing reservoir or river or stream or nallah or any other water body during the first and successive monsoon seasons whenever there is surplus flow of water/ flooding, or through natural rainfall.

If any reservoir is located on a non-perennial stream or nallah, then:

- i. Suitable provision shall be made for diversion of non-perennial stream/nallah to its downstream and/ or release of water of the non-perennial stream/ nallah to its downstream through body of dam/ barrage/ embankment etc.

- ii. The water of rainfall yield of self-catchment of the reservoir shall be released downstream through body of dam/ barrage/ embankment etc.
- iii. The water for filling of reservoir/ recoupment of evaporation and recirculation losses shall be met from a source other than the rainfall yield of catchment of non-perennial stream/ nallah, unless the said water is allotted by Water Resource Department (WRD).

6. Modes of Project Development

- 6.1. Pumped hydro storage project may be developed under the following modes:
 - 6.1.1. Mode – I: Allotment of PHS site on nomination basis to CPSUs, State PSUs and Authority set up by GoI or GoMP
 - 6.1.2. Mode – II: Project developed for meeting requirement of third parties or power exchange or captive consumption;
 - 6.1.3. Mode – III: Project developed for meeting requirement of MPPMCL and other public organisations within and outside the state, wherein the project developer is chosen through a Tariff Based competitive bid; and
 - 6.1.4. Mode – IV: Allotment of self-Identified off-stream Pumped Hydro Storage Projects.

7. Mode – I: Allotment of PHS site on nomination basis to CPSUs, State PSUs and Government Authority

- 7.1. Nodal Agency may allot an on-stream or off-stream PHS site, as defined in Para5.2, directly to CPSUs or GoMPPSUs or Government Authority of GoI or GoMP, like Ken-Betwa Link Project Authority (KBLPA) and Narmada Valley Development Authority (NVDA) respectively, on nomination basis. Due consideration shall be given to the experience and financial strength of the CPSUs/State PSUs/ Government Authority by the Nodal Agency before allotment of site



on nomination basis.

7.2. Initial Project Registration Under Mode - I: PHS site will be provisionally allotted by Office of Commissioner to CPSUs or State PSUs or Government Authority on a nomination basis with site exclusivity right, if it fulfills the following conditions:

7.2.1. submission of Project Pre-feasibility Report (PFR) of the identified site along with Preliminary details as per Annexure - I;

7.2.2. submission of application to relevant authorities for allotment of land; and

7.2.3. submission of application to relevant authorities for allotment of water.

7.3. Progress of the Project would be reviewed on an annual basis by the Nodal Agency and can be cancelled if expected progress is not achieved by the Project Developer.

7.4. MPPMCL will have the Right of First Refusal of up to 100% of capacity of the projects developed under this Mode. Procedure for exercising of Right of First Refusal by MPPMCL shall be as provided in Para 12 read with Para13.

8. Mode – II: Project developed for meeting requirement of third parties or power exchange or captive consumption

8.1. An off-stream PHS site, as defined in Para5.2.3, shall be identified by State Project Development Authority. The PHS project developer would be chosen through transparent competitive bidding route for the purpose of Captive Consumption, or for sale of power to third parties or Open Access consumers, or for sale in Exchange.

8.2. Initial Project Registration Under Mode - II: PHS site will be provisionally allotted by Office of Commissioner to State Project Development Authority with site exclusivity right, if it fulfills following conditions:

- 8.2.1. submission of Project Pre-feasibility Report (PFR) of the identified site along with Preliminary details as per Annexure- I;
 - 8.2.2. submission of application to relevant authorities for allotment of land; and
 - 8.2.3. submission of application to relevant authorities for allotment of water.
- 8.3. PHS site would be allotted through a competitive bidding process. State Project Development Authority may use an appropriate Bid Parameter to serve as the basis of competitive bidding process for the allotment of the PHS site.
- 8.4. MPPMCL will have no Right of First Refusal on the capacity of the project developed under this Mode.

9. Mode – III: Project developed for power procurement by MPPMCL and other public organizations through storage, wherein the project developer is chosen through a competitive bid

- 9.1. Mode-III project would be developed on an on-stream or off-stream PHS site, as defined in Para 5.2. Mode-III project shall be identified by State Project Development Authority. The PHS project developer would be chosen through a transparent competitive bidding route by the State Project Development Authority to meet the energy storage requirement of MPPMCL and other public organizations. The bidding could be both for a PHS site under the Tolling Tariff Model or for the PHS site together with a solar project in a solar park developed by the SPDA under the Composite Tariff Model.

- 9.2. Initial Project Registration Under Mode - III:** PHS site will be provisionally allotted by Office of Commissioner to State Project Development Authority with site exclusivity right, if it fulfills the following conditions:

- 9.2.1. submission of Project Pre-feasibility Report (PFR) of the identified site along with Preliminary details as per Annexure - I;



- 9.2.2. submission of application to relevant authorities for allotment of land; and
- 9.2.3. submission of application to relevant authorities for allotment of water.
- 9.3. SPDA may be guided by the following process for conducting site specific bidding:
 - 9.3.1. In case the site belongs to the Government or a Government entity, to ensure inter-generational equity in the utilization of such site, the development may be on Build Own Operate Transfer (BOOT) basis for a period of 25 to 40 years, which shall be specified in the RfS.
 - 9.3.2. In BOOT mode of implementation, the project will be transferred after the end of term of the agreement to the entity identified by the State government at a pre-specified amount to be provided in the RfS.
 - 9.3.3. SPDA shall issue a Detailed Project Report (DPR) made in accordance with the provisions of the relevant Guidelines along with the bid.
 - 9.3.4. Further, to de-risk the project, SPDA may form a Special Purpose 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.
 - 9.3.5. The SPV shall be incorporated as a wholly owned subsidiary of the SPDA with a minimum shareholding of Rs. 1 lakh under the Companies Act.
 - 9.3.6. The SPV would be transferred to the successful bidder at a cost equivalent to sum total of the par value of shareholding in the company and the expenditure incurred by SPDA in operation of SPV, which shall be specified in the RfS.

10. Mode – IV: Allotment of Self-Identified off-stream Pumped Storage Project

- 10.1. Developers may self-identify potential off-stream sites, as defined in Para 5.2.3, where PHS project can be constructed. The site should not be identified for development of a Mode I or Mode II or Mode III PSP. PHS Project Developer shall have to obtain all statutory clearances from State and Central agencies before starting construction.
- 10.2. **Initial Project Allotment under Mode - IV:** A Self-Identified PHS project will be provisionally allotted by Office of Commissioner to PHS Project Developer if it fulfills the following conditions:
 - 10.2.1. submission of Project Pre-feasibility Report (PFR) of the identified site along with Preliminary details as per Annexure - I;
 - 10.2.2. submission of application to relevant authorities for allotment of land;
 - 10.2.3. submission of application to relevant authorities for allotment of water on non-consumptive basis, i.e., only for one-time usage and subsequently only for recouping on evaporation loss; and
- 10.3. Nodal Agency shall open an online window for receiving applications for allotment of PHS site under this Mode. The Nodal Agency shall select the application received the earliest for each site and thereon shall:
 - 10.3.1. publish a notification at its official website and in at least one national and one local newspaper, calling for information from other PHS developers, including those that have submitted their application in the online window, who have undertaken project development activities for the same site.
 - 10.3.2. period of 60 days shall be provided from the date of publication of notification in newspaper/website for any PHS developer to apply for such notified PHS site, in case PHS developer has already undertaken project development activities for the same site.



- 10.4. On scrutiny of applications received, if it is found that any other developer (challenger) is ahead compared to the developer whose application had been submitted earlier (applicant) in the online window with respect to the benchmarks listed below in the mentioned priority, then the former developer (challenger) shall be allotted the site:

Priority 1:

Submission of Scoping Clearance Application Form-1, along with justification note, Pre-Feasibility Report (PFR) and other related documents, to MOEF&CC under Clause 7 (i) II of EIA Notification, 2006

Priority 2:

Submission of Project Pre-feasibility Report (PFR) of the identified site along with Preliminary details as per Annexure - I

Further, in case of tie among the developers with respect to the Priorities mentioned above, then Initial Project Allotment shall be granted to the developer who, directly or along with affiliate(s), is ahead in the following tie-breakers in the following order:

- (a) Highest operating PHS capacity in MW; or
- (b) Highest operating power generating assets in MW; or
- (c) Highest Net worth.

Otherwise, the applicant developer whose application had been submitted earlier in the online window (applicant) shall be granted the Initial Project Allotment.

PHS developer that has submitted request for allotment of any PHS site to New and Renewable Energy Department or Department of Industrial Policy & Promotion, prior to notification of this new Scheme, shall also be required to submit their revised application as per the provisions of this new Scheme to Nodal Agency. The date

of the said earlier request would be considered as their date of application in the online window, if the said earlier request contained Prefeasibility Report of the identified site along with Preliminary Report as provided in Annexure – I of the repealed Scheme. The process of publication of notification, seeking information and decision, as laid out for fresh applications, shall also be followed for revised applications.

Provided, Nodal Agency shall not issue Initial Allotment Letter for such identified PHS site, which have been earlier allotted or provisionally allotted to any other PHS Project Developer or SPDA or CPSUs/SPSUs/ Government Authority.

10.5. The Initial Allotment Letter shall be issued to the eligible Developer, as may be determined as per Para 10.3.2 above, upon submission of Bank Guarantee at rate of Rs 1 Lakh/MW in favour of Nodal Agency, valid for period of one and a half years with claim period of 6 (six) months. The Initial Allotment Letter mentioned will provide exclusivity right on PHS site to PHS Project Developer for one and a half years, within which PHS Project Developer has to fulfill the following conditions within one and a half years from date of issuance of Initial Allotment letter:

10.5.1. Submission of Scoping Clearance Application Form-1, along with justification note, Pre-Feasibility Report (PFR) and other related documents, to MOEF&CC under Clause 7 (i) II of EIA Notification, 2006; and

10.5.2. grant of Standard Terms of Reference (TOR) by MOEF&CC under Clause 7 (i) II (ii) of the EIA Notification, 2006

If any of the above condition is not fulfilled within one and a half years, the Initial Allotment Letter and the associated exclusivity right on PHS site shall be deemed to be cancelled, along with forfeiture of Bank Guarantee.

10.6. Intermediate Project Registration: Nodal Agency shall give Intermediate allotment of PHS site to PHS Project Developer upon fulfillment of conditions specified in Para 10.5.1 and 10.5.2. The



Bank Guarantee at rate of Rs 1 Lakh/MW, mentioned in Para10.5, in favour of Nodal Agency would be reduced to Rs 50,000 (Fifty thousand) per MW upon issuance of Intermediate allotment.

10.7. Intermediate allotment of PHS site shall provide exclusivity right to the PHS Project Developer, till such site is permanently allotted to them upon fulfillment of conditions specified at Para 10.8 below, within one and a half years from date of issuance of Intermediate allotment or three years from the date of the Initial Allotment Letter, whichever is later. Intermediate Registration letter and associated exclusivity right on PHS site shall be deemed to be cancelled upon expiry of one and a half years from date of its issuance or three years from the date of the Initial Allotment Letter, whichever is later, in case PHS Project Developer fails to fulfill the condition specified at Para 10.8. In that situation, Bank Guarantee as mentioned in Para 10.6 shall be forfeited. Any relaxation in the time period mentioned herein would be granted by a committee chaired by NRE Minister.

10.8. Permanent Project Registration: PHS Project Developer will become eligible for seeking Permanent Registration of the Project upon fulfillment of conditions as mentioned below, within one and a half years from issuance of Intermediate Project Registration letter or three years from the date of the Initial Allotment Letter, whichever is later:

10.8.1. grant of Environment Clearance by MOEF&CC under Clause 8 of EIA Notification, 2006 issued under Environment (Protection) Act, 1986;

10.8.2. grant of approval of DPR from Central Electricity Authority as per applicable "Guidelines for Formulation of Detailed Project Reports for Pumped Storage Schemes";

10.8.3. submission of Construction Bank Guarantee at the rate of Rs. 25,000 (Twenty-five thousand) per MW in favour of Nodal Agency, valid for period of 4 (Four) years with claim period of 6 (six) months; and

- 10.8.4. deposit of applicable Registration-cum-Facilitation Fees prescribed in Madhya Pradesh Renewable Energy Policy – 2022 for energy storage projects, along with requisite application form as specified at Guidelines for Implementation of Madhya Pradesh Renewable Energy Policy – 2022.
- 10.9.** The Bank Guarantee at rate of Rs 50,000 (Fifty thousand) per MW, mentioned in Para 10.6, in favour of Nodal Agency would be suitably adjusted upon issuance of Permanent Project Registration in view of Para 10.8.4 above.
- 10.10.** Notwithstanding anything contained herein, Project Registration may be cancelled by the Office of Commissioner, NRE in case PHS Project Developer has failed to achieve the Project Commissioning Timelines as specified in Para 20.
- 10.11.** If a developer is directly eligible for Intermediate Project Registration or Permanent Project Registration, then they can straightaway register for the appropriate stage. In this situation, no applications shall be considered for the earlier stages.
- 10.12.** An annual Bank Guarantee extended to the prescribed period can also be submitted in place of a Bank Guarantee of more than one year.
- 10.13.** MPPMCL will have the Right of First Refusal of up to 50% of capacity of the projects developed under this Mode. Procedure for exercising of Right of First Refusal by MPPMCL shall be as provided in Para 12 read with Para 13.
- 10.14.** PHS project being developed under Mode – IV will be obliged to participate in competitive bidding carried by State Project Development Authority, as provided in Para 13.
- 10.15.** Notwithstanding anything stated hereinabove, if the PHS Developer does not seek the allotment of government land, the following provisions shall apply:



- 10.15.1. The PHS Developer shall not be required to undergo the process of Initial Registration and Intermediate Registration;
- 10.15.2. The PHS Developer may apply for Permanent Project Registration by depositing the applicable Registration-cum-Facilitation Fees as prescribed under the Madhya Pradesh Renewable Energy Policy, 2022, for energy storage projects, along with the requisite application form specified in the Guidelines for Implementation of the Madhya Pradesh Renewable Energy Policy, 2022.
- 10.15.3. Water for one-time filling and subsequent annual replenishment to compensate for evaporation losses shall be allotted at the applicable industrial water rates.

11. Other Conditions:

- 11.1. The Developers shall obtain all statutory clearances that are required from Government of India and Government of Madhya Pradesh. The Nodal Agency and the SPDA will extend necessary support to get the clearances on best endeavor basis.
- 11.2. The Developer, through Nodal Agency or State Project Development Authority, shall take the approval of the DPR from the concerned agency owning the reservoir or operating any hydel power project.
- 11.3. Developer shall be responsible for allotment of water to be used in PHS project from Water Resource Department (WRD)/Narmada Valley Development Authority (NVDA). Developer shall pay the water use charges as per the applicable rate, as modified from time to time, as may be levied by Government of Madhya Pradesh.
- 11.4. The Developer shall bear the entire cost of the project from investigation to commissioning and subsequent operation and maintenance.

- 11.5. Nodal Agency or SPDA shall not bear liability of any kind on part of Developer.
- 11.6. Project spanning multiple states could also be allotted under this Scheme, if any of the reservoir (lower or upper) is required to be developed within Madhya Pradesh. However, principles of allocation shall be applicable in accordance with Scheme. Further, the ROFR for applicable Mode(s) would reduce to half of its stated value mentioned in this Scheme.

12. Procedure for exercising of Right of First Refusal by MPPMCL under Mode – I and Mode - IV

- 12.1. The Right of First Refusal would be available to MPPMCL for projects under Mode I and Mode IV to the extent of 100% and 50% respectively of their capacity.
- 12.2. Within fifteen days of the letter of approval of DPR and obtaining of Environmental clearances/approvals (Milestone M2 as defined in Para 19.1 and M3 under Para 20.1), PHS developer shall inform both MPPMCL and SPDA. It would also inform whether they wish to provide power in Tolling Tariff Model or Composite Tariff Model.
- 12.3. So as to facilitate a decision of Right of First Refusal by MPPMCL, SPDA within 21 days from receipt of information from PHS Developer as per Para 12.2 above, would issue a bid for Pumped Hydro Storage, as provided in Para 13 below. The purpose of the bidding process shall be to ascertain whether alternative proposals, from within or outside the state at lower rates are available to meet MPPMCL's requirement at that time, subject to requirement as assessed in Resource Adequacy. The bid could be of capacity equal to or less than or more than the capacity of the PHS Project Developer, in accordance with the assessment of Resource Adequacy by Central Electricity Authority. The bid would be in Tolling Tariff Model or Composite Tariff Model, as conveyed by the PHS developer under Para 12.2 above.
- 12.4. The PHS Developer would be obligated to participate in the bid. Participation of the PHS Project Developer in the bid would be



considered fulfillment of its obligation to supply power to MPPMCL under ROFR.

- 12.5. Within three months of receipt of information under Para 12.2, MPPMCL would have the right to convey its willingness to procure the entire power provided in Para 12.1 above or part of it. Subsequently, MPPMCL shall sign a PPA with the PHS developer.

Provided further, if MPPMCL fails to convey its willingness within the said threemonths period, an additional period of one month may be granted, provided that the SPDA has initiated the bidding process as outlined in Para 12.3 for the procurement of storage power.

- 12.6. In case MPPMCL does not decide to procure the entire power mentioned in Para 12.1 above, then PHS Project Developer will be free to bid or sign PPA for the balance project capacity with any other entity. In case MPPMCL does not convey its willingness to procure power within stipulated time as mentioned in Para 12.5 above, then it will be considered as deemed No-Objection of MPPMCL and PHS Project Developer will be free to bid or sign PPA for entire project capacity with any other entity.
- 12.7. However, if PHS Developer, at a later stage, wishes to offer power to anyone through long-term or medium-term PPA at a tariff lower than the lowest tariff bid by the PHS developer under para 12.4 above and any subsequent bid(s), if any, conducted by SPDA, then PHS Developer would have to firstly offer the power to MPPMCL, up to the maximum limit of ROFR allowed under the applicable Mode. In case the tariff bid under SPDA's earlier bid(s) and that in the proposed long-term or medium-term PPA are under different models, viz., Tolling Tariff Model and Composite Tariff Model, then the lowest tariff discovered in the last bid conducted by SPDA for vanilla solar would be considered to determine the equivalence. In case the PHS Developer does offer power to anyone through long-term or medium-term PPA at a tariff lower than the lowest tariff bid under para 12.4 above and any subsequent bid(s), if any, conducted by SPDA, NRED, GoMP would take action against such PHS Developer, including penalty amounting to difference between the

tariff bid under SPDA's earlier bid(s) and that in the proposed long-term or medium-term PPA for the duration of the contractor cancellation of allotment of the project site or blacklisting of such a firm.

13. Conducting of bid for procurement of power from storage facility by state

13.1. SPDA would conduct a bid process for procurement of storage power, wherein projects from all over the country can participate, in the following two situations:

13.1.1. when the state is need of Storage based power as determined by Central Electricity Authority in its report,

13.1.2. whenever MPPMCL is required to take decision regarding exercising its Right of First Refusal, as provided in Para 12.3 above.

In the latter case, the bid would be conducted to facilitate a decision of ROFR by MPPMCL, within the time period provided in Para 12.5 above.

13.2. SPDA shall be eligible to take Bid Process Management Fees at the rate of Rs. 1 Lakhs/MW from the successful bidder, upon conclusion of the bid.

13.3. Bid issuing agency would approach MPERC for tariff adoption under Section 63 of the Electricity Act, 2003.

13.4. PHS developers from within or outside the state would be eligible to participate in the bid. Other PHS developer(s), who have been allotted PSP Site under Mode – I or Mode – II or Mode – IV, would also be eligible to participate in the bid process, in case PHS Developer(s) fulfills all the following listed conditions:

13.4.1. PHS Developer has already achieved the stages mentioned in Para 12.2; and



13.4.2. PHS Developer has untied project capacity available at the allotted PSP site.

13.5. Key principles of bidding shall be as per follows:

13.5.1. The Bid Capacity (in MW) shall be less than or equal to or more than the project capacity for which competitive tariff is to be determined, in case the bidding is under condition Para 13.1.2

13.5.2. The bid should either be on Tolling Tariff Model or Composite Tariff Model.

13.5.3. Tariff for the projects connected at CTU, both within and outside the state, shall be evaluated at STU level, considering all applicable ISTS charges and losses. Suitable formula shall be provided in the bidding document for normalization of the tariff.

13.5.4. Technical and Financial Criteria shall not be kept in a manner that may disqualify the PHS Developer to participate in the bid process, which is mandated to participate as per Para 12.4 above.

14. Principles of bid

14.1. SPDA shall conduct a bid for storage based power in the following situations:

(a) for the selection of PHS Project Developer for a given site under Mode III, as provided in Para 6

(b) when the state is in need of Storage based power as provided in Para 13, and

(c) whenever MPPMCL is required to take decision regarding exercising its Right of First Refusal under Mode – I and Mode – IV as provided in Para 13.

14.2. The following bid parameters can be specified by the SPDA in the bidding document for

14.2.1. Storage charge (Rs/{MW/kW}/{year/month}) under Tolling Tariff Model

14.2.2. Storage charge (Rs/{MW/kW}/{year/month}) with a pre-specified VGF/ Annuity support under Tolling Tariff Model

14.2.3. 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")

However, SPDA in consultation with MPPMCL and/or other public organizations may use any other bidding parameter.

14.3. Technical requirements in bidding documents

14.3.1. The procurer shall specify the following while defining the technical requirements for PSP:

(i) Power capacity in MW

(ii) Energy capacity in MWh

(iii) Charge/ Discharge duration in hours (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.

14.3.2. 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) 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.

- 14.4. To ensure energy security for the state and to ensure availability of charging power for the PHS project, SPDA would endeavor to set up a solar project under a Solar Park sanctioned by Ministry of New and Renewable Energy, Government of India. In case the bid is being conducted on Composite Tariff model, the park would be offered to the bidders. In case the bid is being conducted on Tolling Tariff Model, the vanilla solar project would be separately developed by the SPDA, on the basis of requirement communicated by MPPMCL, to synchronize with the development of the PHS project.
- 14.5. State Project Development Authority would be entitled to recover the cost of identification of PHS site, cost of development of PFR and fees or charges paid in seeking permission for allotment of land or water from the successful bidder. These details have to be specified in the RFP at the time of bidding.

15. Dovetailing Government of India Policies and Schemes

- 15.1. Whenever scheme for Viability Gap Funding (VGF) and/or Financial Assistance (FA) for Pump Storage Hydro Projects is formulated, the projects shall be eligible for VGF/FA from the Central Government and/or State Government, as per the Policy decisions of the Government.
- 15.2. No VGF from State Government shall be made available to projects set up under Mode – I, Mode – II and Mode - IV. VGF can be available under Mode III if the entire power is to be supplied to MPPMCL.
- 15.3. VGF from State Government, if any, may be available and consequently VGF based bids can be conducted only when the power from the PHS is to be procured by MPPMCL under Mode - III. Allocation of VGF will be in proportion to the power being purchased by MPPMCL.

- 15.4. Nodal Agency and State Project Development Authority will support and facilitate the project for obtaining grant of special category project under Central Government Schemes, if any.
- 15.5. Nodal Agency will facilitate the project for availing benefit provided as per National Energy Storage Policy without any financial commitment from Government of Madhya Pradesh.
- 15.6. Storage is an intermediary system where energy is stored and released later. In line with the principles of double taxation avoidance, Electricity Duty (ED) shall not be applicable on pumping power for charging of PSPs as PSPs are merely facilitating conversion of energy. ED may only be levied on the final consumption of electricity, i.e., quantum of energy consumed by PHS plant due to turbine inefficiency in pumping and discharging mode of its operation.

16. Incentive to PHS projects under the scheme:

- 16.1. Following incentives/benefits could be availed by PHS project Developer as prescribed under Madhya Pradesh Renewable Energy Policy, 2022. However, for allotment of Revenue Land, provision specified in Para 17 of this Scheme shall remain applicable.
- 16.2. Incentives/benefits are applicable for only those Projects which are registered under applicable provisions of under Madhya Pradesh Renewable Energy Policy, 2022.

16.3. Exemption in Electricity Duty and Energy Development Cess:

- 16.3.1. As per the provisions of Madhya Pradesh Vidyut Shulk Adhiniyam, 2012, PHS projects shall be exempted from payment of Electricity Duty, as specified at Para 15.6 above, for ten (10) years from date of COD, towards storage of electrical energy in any form; and towards supply of electrical energy to Distribution Licensee/ Third party / Captive purpose;
- 16.3.2. No energy development cess shall be payable on the power supplied by PHS projects for a period of ten (10) years from the date of COD.



16.4. Reimbursement of Stamp Duty:

16.4.1. Stamp duty shall be reimbursed to the developer at the rate of 65% (50% + 15% additional for energy storage projects) on purchase of private land for the project.

16.5. Waiver of wheeling charges:

16.5.1. Facility of wheeling will be available to all PHS projects through MPPTCL/ MP Discoms, as case may be, as per wheeling charges specified by MPERC. 50% waiver on wheeling charges shall be applicable or as may be approved by Madhya Pradesh Electricity regulatory Commission from time to time. This waiver shall be applicable for 5 years from COD.

16.5.2. For PHS projects supplying power to MPPMCL, there would be no wheeling charge for charging power within the state for the quantum of power supplied to MPPMCL.

16.6. Exemption in registration cum facilitation fees:

16.6.1. PHS project shall be exempted from payment of 20% of registration cum facilitation fees, as is levied to RE projects.

16.7. Carbon credits or any other similar incentives, which are available for such projects, can be availed by Developers, as per the guidelines issued by the concerned authorities from time to time or as per the provisions of arrangement between Developers and procurer/ user.

17. Land facilitation to the developer

17.1. Government Land:

17.1.1. Necessary Government land required for project can be allocated to project being developed by Developer under Mode – I, Mode – II and Mode – IV at 100% Guideline rate with right to use permission.

17.1.2. Government land required for development of the project development under Mode – III shall be allotted to the Developer at the discounted rate of 35% of Guideline rate (i.e., concession of 65%) as per RE Policy – 2022.

17.1.3. Government land shall be allotted for the project purpose only in accordance with Clause 43 (2) or Clause 45 of Chapter – 3, Part (F) of the Madhya Pradesh Nazul Land Release Instructions, 2020.

17.2. Forest Land:

17.2.1. The developer shall apply for diversion of the forest land as per procedures and guidelines laid by the respective department and by paying applicable charges in full, if any.

17.3. Private land:

17.3.1. The responsibility of acquisition of private land shall lie with the Developer.

17.3.2. In case of acquisition of private land, mutually negotiated terms and conditions between the private landowner and the Developer shall prevail.

18. Charges to be paid by the Developer

18.1. Project registration-cum-facilitation charges: It shall be paid as per applicable provisions of the Madhya Pradesh Renewable Energy Policy – 2022.

18.2. Rehabilitation and Resettlement: Developer shall mandatorily follow the provisions of Rehabilitation and Resettlement Policy of the Government of India and Government of Madhya Pradesh at their own cost.



19. Timeline for completion of project under Mode I, II and III

19.1. The various Milestones (M) of the project shall be completed as per the following timelines:

19.1.1. Registration of the Project (M1):

- i. Within 3 months from date of selection of PSP developer under Mode – II and Mode – III.
- ii. Within 3 months from date of provisional allotment of the project site to CPSU/SPSU/Government Authority under Mode - I.

19.1.2. **Preparation of DPR and obtaining of Environmental clearances/approvals (M2):** Three (3) years from the date of Project Registration.

19.1.3. **Land acquisition (M3):** 100% within Four (4) years from the date Project Registration.

19.1.4. **Financial closure (M4):** Within Four (4) years from the date Project Registration.

19.1.5. **50% of Civil E&M and H&M works (M5):** Within Five and half (5.5) years from the date Project Registration.

19.1.6. **100% of work and commissioning of the project (M6):** Within Seven (7) years from the date of Project Registration.

19.2. Intermediate milestones could be achieved during the project tenure.

19.2.1. Relaxation of 1 year may be granted to those projects where delay in start of construction is attributable to pending Environment Clearance (EC) and Forest Clearance (FC), provided that the applications are submitted to concerned authorities within timelines agreed at the time of award of the project.

- 19.3. In case of valid reason for delay, upto the satisfaction of Nodal Agency, timeline for completion of any of the milestone may be extended.

20. Timeline for completion of project under Mode – IV

- 20.1. The various Milestones (M) of the project shall be completed as per the following timelines:

20.1.1. **Initial Project Allotment (M1):** Upon self-identification of PHS Site. PSP developer shall pay 25% of the Project registration-cum-facilitation fees at this stage.

20.1.2. **Intermediate Project Registration (M2):** One and a half years from date of issuance of Initial Allotment Letter

20.1.3. **Approval of DPR by CEA and obtaining of Environmental clearances (M3):** One and a half years from the date of Intermediate Project Registration or three years from the date of the Initial Allotment Letter, whichever is later.

20.1.4. **Application for Project Registration of the Project (M4):** Within 4 years from the date of Intermediate Project Registration or three years from the date of the Initial Allotment Letter, whichever is later. PSP developer shall pay balance 75% of the Project registration-cum-facilitation fees at this stage.

20.1.5. **Land acquisition (M5):** 100% within one (1) year from the date of Project Registration

20.1.6. **Financial closure (M6):** Within one (1) year from the date of Project Registration

20.1.7. **50% of Civil E&M and H&M works (M7):** Within Two and Half (2.5) years from the date of Project Registration



20.1.8. **100% of work and commissioning of the project (M8):** Within Four (4) years from the date of Project Registration

20.2. Relaxation of one year may be granted to those projects where delay in start of construction is attributable to pending Environment Clearance (EC) and Forest Clearance (FC), provided that the applications are submitted to concerned authorities within timelines agreed at the time of award of the project.

20.3. In case of valid reason for delay, upto the satisfaction of Nodal Agency, timeline for completion of any of the milestone may be extended.

21. Input power to PHS project

21.1. The PHS developer has the option of developing a joint project consisting of the Pumped Hydro Storage Project and the project for supplying input energy to the Pumped Hydro Storage project. However, in that case, the facilities offered under this scheme would not be applicable to the generation component of the project and would be limited to the storage component. As regards the generation component, RE Policy 2022 would apply if the generation source is renewable.

21.2. In case a composite project within the state is supplying power to MPPMCL, no wheeling charges would be applicable for supply of input power to the PSP project.

22. Periodic review of the project

22.1. Nodal agency or any other institutions nominated by the Nodal Agency for such purpose, in an endeavor to complete the project within six (6) years shall undertake periodic reviews and shall obtain project progress report from the Developer.

22.2. Nodal agency or any other institutions nominated by the Nodal Agency, may engage Project Management Consultant for man-

aging various aspects of PHS, including development planning strategy and implementation for timely completion of the project.

- 22.3. In case of undue delay in development of the project, the Nodal Agency reserves the right to cancel the registration of the project. PHS site in such case shall again be available for allotment as per Para 5 and 6 of this Scheme.
- 22.4. Nodal Agency shall be competent authority to provide extension in the project timelines as may be provided under Para 19.3 and 20.3 of this Scheme.

23. Operationalization of Pump Hydro Storage Scheme

- 23.1. New and Renewable Energy Department (NRED) shall have Administrative Powers to frame operational guidelines for implementation of Pump Hydro Storage Scheme.
- 23.2. NRED shall have Administrative Powers to issue orders/ clarifications/ amendments etc to remove any difficulty in implementation of Pump Hydro Storage Scheme either on its own motion or based on representation from stakeholders.
- 23.3. The progress of PHS projects will be regularly monitored by the Nodal Agency or any other institutions nominated by the Nodal Agency for such purpose. The additional time frame for activities related to project development may be defined at the time of project registration by the Nodal Agency.
- 23.4. Comprehensive list of Pumped Hydro Storage site allocated to Project Development Authority and PHS Developer under self-identified shall be made available at the official website of the New and Renewable Energy Department.



24. Repeal and Savings

- 24.1. Save as otherwise provided in this Scheme, all provisions pertaining to development of PSP Projects in Madhya Pradesh under previous Scheme of PSP development issued on Gazette of Madhya Pradesh vide no. 140 dated 28th April 2023 and all amendments thereunder (if any) are hereby repealed.
- 24.2. Notwithstanding such repeal, anything done, or any action taken or purported to have been done or taken under the Scheme provisions repealed above shall, in so far as it is not inconsistent with the provisions of this Scheme, be deemed to have been done or taken under the relevant/ corresponding provisions of this Scheme to facilitate smooth and justifiable transition.

Annexure – I: Preliminary Details

Sl.	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 Switch yard Type (AIS/GIS)	
33.	Planned Maximum possible transportation dimensions of an equipment	MxMxM
34.	Planned Max possible weight of any E&M equipment	Kg
35.	Planned Size of Switchyard (L X W)	MxMxM
36.	Transmission Voltage	kV
37.	Proposed Nearest Pooling Station	
38.	Proposed Location/Locations of Pumping Energy sources	

