



# Uttarakhand Pumped Storage Project Policy



# CONTENTS



1	Background and Context	5
2	Definitions	7
3	Objectives	8
4	Policy Validity and Applicability	9
5	Implementation Agency	10
6	Project Allocation	11
7	Support and incentives for PSP development in the State	15
8	Terms and Conditions of Allotment	17





# 01

## Background and Context

The National Electricity Plan (NEP) for the period of 2022-32, released by the Central Electricity Authority (CEA), highlights the increasing requirement for pumped storage in India's electricity generation. According to the NEP, the projected total installed capacity for the year 2026-27 is estimated to be ~610 GW, including ~7.5 GW of pumped storage capacity. By the year 2031-32, the estimated total installed capacity is expected to be ~900 GW, with pumped storage capacity increasing to ~27 GW.

The NEP's focus on pumped storage reflects the need for large-scale energy storage solutions to support India's renewable energy targets and address the challenges associated with variable renewable generation. By incorporating pumped storage into the overall generation plan, the NEP aims to enhance grid flexibility, optimize resource utilization, and support the integration of renewable energy sources into the electricity system.

This indicates a growing recognition of the importance of pumped storage in managing the intermittency of renewable energy sources and maintaining grid stability.



Recognizing the growing need for Pumped Storage Projects (PSP) as an enabler for energy transition by integrating wind and solar energy, the Ministry of Power, GoI has released guidelines on Pumped Storage Projects. The guidelines offer methodologies for promotion of PSPs including allotment, market reforms and a host of support and viability alternatives.

The Central Electricity Authority (CEA) has identified ~10 GW of pumped storage potential in the state of Uttarakhand of which Tehri St-I (4×250 MW) is under final stages of construction and Jaspalgarh (1,935 MW) has been indicted to THDCIL for development. The assessed potential is mainly on-stream or with existing storages. There could be large potential located off-stream which is yet to be identified and tapped for development.

This policy aims to set forth key objectives and mechanisms for development of Pumped Storage Projects in Uttarakhand.



# 02

## Definitions

- **CoD:** Date of commercial operation of the project i.e., the stage when project construction ends, and commercial operations start
- **Developer:** A person or an entity who develops land and other common infrastructure for the installation of Pumped Storage Projects.
- **On-Stream PSPs:** Pumped Storage Projects where at least one of the storage bodies are located on the river.
- **Off-Stream PSPs:** Pumped Storage Projects where none of the storage bodies are located on the river.
- **State:** State of Uttarakhand
- **State Govt:** Government of Uttarakhand
- **Players:** Central or State Public Sector Undertakings (PSUs) and private entities willing to develop Pumped Storage Projects in the State.
- **State DISCOM:** State owned electricity distribution licensee as per Section 14 of the Electricity Act, 2003.
- **Letter of Offer:** The letter offering the specified share of project capacity to State Government under right of first refusal.
- **Right of First Refusal:** Contractual right that gives the State Govt. the option to accept or refuse the share of project capacity offered by the Developer of the Pumped Storage Project, according to specified terms, before the Developer is entitled to enter transactions with a third party.

# 03

## Objectives

- Facilitate development of Pumped Storage Projects in the State and support State's growing energy demand in a sustainable manner.
- Harness the PSP potential in the State and encourage development of self-identified off-stream sites
- Leverage PSPs to generate public and private investment
- Encourage integration of renewable energy sources into the grid by promoting PSPs
- Leverage PSP storage to fulfil the drinking and irrigation needs of the regions wherever required and feasible



# 04

## Policy Validity and Applicability

This policy shall come into effect from the date of issue and shall remain in force till such time that a new policy is issued.

This policy shall be applicable for all Pumped Storage Projects of capacity greater than 25 MW including projects currently identified by the State Govt. / CEA and projects under S&I stage in the state of Uttarakhand. The policy shall not be applicable for projects which have commenced operation / under construction / MoU signed with State Govt. as on date of publication of the policy.



# 05

## Implementation Agency

The State Govt. shall be responsible for implementation of this policy and will be assisted by the Urja Cell. This will include:

- Allocation of projects to CPSUs, State PSUs or private Developers as per allocation methodologies detailed in this policy
- Inviting proposals from Players from time to time for self-identified sites
- Defining evaluation criteria and terms and conditions for allocating self-identified projects by Players
- Facilitating Players in obtaining all statutory clearances / approvals required for implementation of projects
- Amending this policy as required in future for improvements



# 06


## Project Allocation

Pumped Storage Projects will be categorized in two main categories and the allocation methodologies for each category are detailed below:

### **On-stream Projects – at least one storage located on river stream**

The State Govt. designated agency will identify on-stream projects from time to time. The projects may be allocated to CPSUs or State PSUs on nomination basis and to private Developers through competitive bidding. The period of allocation and terms and conditions shall be as defined under this policy. The State Govt. shall have the right of first refusal of up to 80% of the project capacity for all on-stream projects.

- **Nomination of CPSUs or State PSUs:** The State Govt. may allot projects on nomination basis to CPSUs indicated by Ministry of Power, GoI from time to time or State PSUs. The State Govt. may invite preliminary proposals from Players detailing the execution timelines and methodology. Due consideration will be given to the timeline for execution, track record of projects execution in the past, financial strength of the entity, and current pipeline of projects with the entity. The projects may also be allotted to Joint Ventures (JVs) between CPSUs and / or State PSUs for development of such PSPs. Further the CPSU / State PSU shall ensure that award of contracts for the supply of equipment and construction of the project, either through a turnkey or through well-defined packages, is done based on competitive



bidding. The Uttarakhand Electricity Regulatory Commission (UERC) shall fix the tariff for capacity developed through this mode under section 62 of Electricity Act, 2003.

- **Competitive bidding:** The State Govt. may conduct a competitive bidding for identified on-stream sites for allocating the projects to private Developers. The CPSUs and State PSUs can also participate in the bidding. All the activities of carrying out S&I shall be undertaken by the successful bidder post bidding process and issue of Letter of Intent (LoI) to successful bidder. The State Govt. may adopt one of the below methodologies of bidding:
  - **Two stage competitive bidding:** The first stage shall be for pre-qualification based on criteria of financial strength, experience of developing infrastructure projects of similar size, past track record of developing projects, turnover etc. In the second stage, bids are to be called based on quantifiable parameters such as concession period of the project or any other parameter as specified in the Request for Proposal (RFP). The Developer shall submit the Letter of Offer for at least 80% of the project capacity to the State Govt. after receiving the Detailed Project Report (DPR) approval and before the project CoD. The Developer would be free to sell the balance project capacity or entire capacity under short / medium / long term PPA, or in power markets or through bilateral contracts, if State Govt. does not provide acceptance on full or part of offered capacity within 8 weeks of Letter of Offer from the Developer.
  - **Tariff based competitive bidding:** This method may be adopted by the State Govt. when the power is to be used by the State / State DISCOM. The State DISCOM shall identify long term energy demand and requirement of energy storage. The bids may be invited based on:
    - » Composite tariff (including the cost of input power) in case input power is arranged by the Developer
    - OR
    - » Tariff for storage on a per Megawatt Hour basis if the input power is to be arranged by the State DISCOM

The Uttarakhand Electricity Regulatory Commission (UERC) shall adopt the tariffs for capacity developed through competitive bidding under section 63 of Electricity Act, 2003.



## Off-stream sites – no storage located on river stream

The State Govt. shall promote identification and development of off-stream PSPs by encouraging Players to self-identify sites. The State Govt. shall invite Expressions of Interest (EoIs) from Players for self-identified sites from time-to-time. The State Govt. shall notify the criteria for evaluation of the proposals and the terms and conditions of the allocation. The Players shall submit the complete details of the identified site, storage potential and techno-commercial viability along with pre-feasibility report for the State Govt.'s evaluation. The State Govt., after due evaluation of the proposal, and taking into account all other projects located or expected in the vicinity shall allot or refuse the same and an MoU / agreement shall be signed with the Developer.

The State Govt. shall have the right of first refusal of up to 50% of the project capacity and tariff for such capacity shall be fixed by the Uttarakhand Electricity Regulatory Commission (UERC) under section 62 of Electricity Act, 2003. The Developer shall submit the Letter of Offer for at least 50% of the project capacity to the State Govt. after receiving the Detailed Project Report (DPR) approval and before the project CoD. The Developer would be free to sell the balance project capacity or entire capacity under short / medium / long term PPA, or in power markets or through bilateral contracts, if State Govt. does not provide acceptance on full or part of offered capacity within 8 weeks of Letter of Offer from the Developer.



PSP Developers are encouraged to take up projects with dual benefits of Pumped Storage and drinking water and / or irrigation support in the region. The State Govt. may prepare a list of regions (e.g., cities or districts) having need for drinking water and / or irrigation storage. The Developer can also independently liaise with relevant State Departments to identify such needs and appropriately incorporate in the project proposal. The incremental cost towards building additional storage for drinking water and / or irrigation, if any, shall be borne by the State Govt. and any additional support as required may be offered on a case-to-case basis.

In cases where:

- Any State or Central PSU identifies the same site as a private developer, then preference would be given to the State or Central PSU
- Two private Developers identify the same site, the preference shall be given to the Developer proposing higher capacity (energy terms) in MWh
- Two private Developers identify the same site with same capacity (energy terms), the preference shall be given to the Developer with higher instantaneous capacity in MW
- Two private Developers identify the same site with same capacity (energy terms) and same instantaneous capacity, the preference shall be given to the Developer proposing additional support for fulfilling drinking water and / or irrigation needs in the region



# 07

## Support and incentives for PSP development in the State

To encourage PSP development in state, the following support and incentives shall be offered:

- **Exemption of Intra-State Transmission Charges:** PSP Developers shall be billed not more than 50% of intra-state transmission charges for a period of five (5) years from the project CoD, provided that project CoD is before end of FY2033-34.
- **Exemption of Local Area Development Fund:** Local Area Development Fund shall not be applicable to off-stream PSPs for the projects where power is purchased by State Govt.
- **Exemption of Free Royalty Power to the State Govt.:** The State Govt. shall not collect any free royalty power from Pumped Storage Projects.



- **Land:** For all categories of projects, permission for transfer / clearance on private land shall be offered within 8 weeks of application to facilitate fast track development.
- **Water Tax / Charges:** For PSP projects, water tax will be applicable only on the net entry of water into the storage sites and not for recycling of water between the storage sites for electricity generation
- **Preference to Developers with existing projects:** The Developers with existing operational / under construction hydro projects in the State shall be given preference over other bidders while allocating pumped storage project when the proposed PSP is connected to existing storage. However, the PSP capacity shall be over and above the allocated Hydro capacity. No increase in upfront premium would be applicable for this additional PSP capacity. The allocation period for such projects shall be capped to a maximum of the Hydro project concession time.
- **Single Window Clearance:** Single Window Clearance shall be made available for PSP Developers for obtaining time bound statutory clearances and handholding support may be provided as deemed necessary.





# 08

## Terms and Conditions of Allotment

### Bank Guarantee

The Developer shall provide bank guarantee equivalent to electricity duty and transmission charges for 3 years, estimated basis the capacity allocated. The bank guarantee shall be provided within 1 month from the date of allocation and be valid till the date of actual commissioning of the project.

### Land Use Rights

The Government land (if applicable) shall be allocated for the PSP project at an annual lease rate linked to the circle rate for a period of 45 years such that the circle rate value of the land is recovered during the allocation period. Any Government land so allocated shall be used for developing allocated pumped storage project only.



## Time Limit for Executing Project

The Developer shall commit and adhere to project execution timelines as specified in the bid / allotment conditions.

Indicative timelines for project development are specified below:

- Preparation of Detailed Project Report (DPR) and all statutory clearances and approvals of the State and Central Governments and the Regulator (as applicable): 2.5 years from allotment date (also applicable for Developers developing PSP capacity on existing Hydro sites)
- Land acquisition, financial closure and securing funding: Within 2.5 years of allotment date
- Completion of construction: Within 3 years post receipt of statutory clearances and approvals of the State and Central Governments and the Regulator (as applicable)

Further, the State Govt. shall stipulate for each project, as part of the bid / allotment conditions, a maximum number of years for completion of the project implementation. The project shall be made operational within this time-frame.

The failure to reach any of the execution milestones mentioned in bid / allotment conditions before start of the project construction except due to uncontrollable factors such as force majeure, local or public agitation, delay in statutory approvals and clearances, change in law etc., subject to the satisfaction of State Govt., will result in automatic cancellation of the allotment of the site, and forfeiture of any up-front amounts paid. No compensation would be payable to the Developers in such an instance.

Failure to reach the milestones mentioned in bid / allotment conditions, after project has commenced construction except due to uncontrollable



factors such as force majeure, local or public agitation, delay in statutory approvals and clearances, change in law etc., subject to the satisfaction of State Govt., would result in a reduction in the concession period for Intra-State Transmission Charges to the Developer by the number of years of delay.

If the project has failed to start within 3 years from the committed project CoD in bid / allotment conditions except due to uncontrollable factors such as force majeure, local or public agitation, delay in statutory approvals and clearances, change in law etc., subject to the satisfaction of State Govt., it would result in automatic cancellation of the allotment of the site, and encashment of the bank guarantee offered to State Govt. No compensation would be payable to the Developer in such an instance.

The Developer may surrender the allotment back to State Govt. if on completion of the Detailed Project Report (DPR), within the stipulated time-frame, it has grounds to establish that the project is not techno-commercially viable. On such surrender, 10% of the bank guarantee provided by the Developer shall be forfeited.

## Period of Allocation

The Pumped Storage Projects shall be offered for a maximum period of forty-five (45) years from the date of allotment at the end of which they shall revert to the State Govt. or be extended further on mutually agreed terms, as per the decision of the State Govt.

The project assets would be maintained by the successful Developer in a condition that would ensure a residual life of the project at the rated capacity for at least 30 years at any point of time. During the 10th, 20th, 30th and 40th years of operation, as well as during the last year of concession, the State Govt. or one of its appointed agencies would carry out a mandatory inspection of the project site to ensure that the project assets are maintained to the required standards to ensure the specified generation capability and residual life of the plant. If such inspections find that the plant capacity and / or life are being undermined by inadequate maintenance,



the State Govt. would be entitled to seek remedial measures from the Developer. If the Developer fails to comply with the requirements, the State Govt. would have the right to terminate the allotment by payment of compensation to be computed as follows: The termination compensation value would be based on estimated net cash flows to the State Govt. for the next ten years or residual period of concession, whichever is lesser, discounted at a suitable rate. Both, the estimate of cash flows as well as the discount rate would be approved by the Uttarakhand Electricity Regulatory Commission (UERC) which will also factor the costs of refurbishment, renovation, repairs, etc. required to bring the project assets to the standards specified.

## Power Evacuation

Where the Developer wishes to connect to the state transmission network, Power Transmission Corporation of Uttarakhand Ltd. (PTCUL) shall extend the connectivity to its intra-state transmission system as per the prevailing procedures and UERC regulations. The Developer shall lay the network infrastructure from the PSP site to the grid connectivity point identified by PTCUL at his own cost and after review and approval from PTCUL. If any new EHV substations and transmission lines or strengthening of existing transmission system is required by PTCUL for evacuation of power from the PSP site, then the same shall be carried out at the cost of the Developer.

## Banking

Banking of power is not applicable for Pumped Storage Projects.



## Transfer of Allotment

Free transfer of project will be permitted post project CoD. The Developer may transfer projects prior to project CoD subject to following requirements:

- The Developer justifies its inability to execute & complete the project reasonably
- Transfer of the project to the transferee Developer happens at the same terms and conditions including the project CoD as approved during the allocation of the project or any reasonable modifications approved by the State Govt.

## Dispute Resolution

In the event of a dispute, the interpretation of these guidelines made by the State Govt. shall be final. In all such matters, to the extent practicable, an opportunity shall be given to affected stakeholders to be heard before the State Govt. takes any decision.

## Ambiguity Resolution

Any ambiguity in terms used herein above shall take meaning as prescribed in Central or State Govt. Acts / Policies / Regulations etc.





