Greenko AP01 IREP Private Limited
CIN: U40200AP2020PTC122145

To,
The Secretary
Central Electricity Regulatory Commission (CERC)
6th, 7th & 8th Floors, Tower B, World Trade Centre,
Nauroji Nagar,
New Delhi- 110029

11.11.2026

Greenko/Commercial/AP01/Hon'ble CERC/2026-27/

Subject: Submission of comments on the proposal to include Pumped Storage Plants (PSPs) in the eligibility list for participation in the High Price Day Ahead Market (HP-DAM) – Hon'ble CERC Suo-Motu Order No. 13/SM/2026 dated 28.10.2026 – Reg.

Ref: Hon'ble CERC Suo-Motu Order No. 13/SM/2026 dated 28.10.2026.

Respected Sir/Madam,

1. Introduction

1.1 We thank the Hon'ble Commission for the opportunity to submit our comments on the proposal, set out in the above-referred Order, to include Pumped Storage Plants (PSPs) as an eligible category of generating stations in the existing HP-DAM segment of the Power Exchanges.

1.2 At the outset, we welcome and fully support the proposal. It is consistent with the Ministry of Power's (MoP) policy of promoting pumped storage, and it recognises the role PSPs play in providing long-duration energy storage, peak power support and grid flexibility at a time of rapidly increasing renewable energy penetration.

2. Grounds in support of the proposal

2.1 Consistent with the MoP policy framework

Clause 3.4(iii) of the Guidelines for Promotion of Development of Pump Storage Projects, 2023 notified by Ministry of Power (MoP PSP Guidelines, 2023) on 10.04.2023 provides that PSPs and other storage projects shall be allowed to participate in all market segments of the Power Exchanges, including the HP-DAM, so that they can take the suitable advantage of the price differential between peak and off peak tariffs. The MoP, vide its letter dated 30.07.2026, has reiterated that PSPs be considered for HP-DAM. Further, NLDC, vide its letters dated 02.07.2026 and 24.07.2026, has recommended the inclusion of PSPs in the HP-DAM eligibility list. The proposal therefore gives effect to an established policy direction and the recommendation of the system operator.

2.2 Parity with Battery Energy Storage Systems (BESS)

The Hon'ble Commission, vide its Orders dated 16.02.2023 (Petition No. 359/MP/2022), 11.04.2023 (Petition No. 14/MP/2023) and 24.07.2023 (Petition No. 122/MP/2023), has already permitted the Power Exchanges to operate HP-DAM with BESS as an eligible entity.

Pumped Storage Plants discharge the same essential function as Battery Energy Storage Systems, namely the inter-temporal shifting of energy from off-peak, low-demand periods to peak, high-demand periods. They do so, however, at a substantially larger scale and over considerably longer durations. In particular, PSPs can supply firm, dispatchable capacity at gigawatt scale for sustained periods. This makes them exceptionally well placed to meet crunch-period demand, especially during the evening and night-time peak when solar generation is unavailable and the system faces acute supply constraints. Since both technologies are energy storage resources serving an identical purpose, there is no technical, economic or regulatory justification for differential treatment of PSPs vis-à-vis BESS with respect to eligibility for participation in the HP-DAM.

2.3 Price Discovery for Peaking Power

PSPs are fundamentally a **peaking asset**. It charges (pumps) during off-peak hours when prices are low and discharges (generates) during peak hours when demand and prices are high. The HP-DAM is specifically designed to discover prices during high-demand periods (e.g., evening peaks). Excluding PSPs from this segment means the market misses the most natural supplier of peak power, leading to artificial price spikes and inefficient price signals.

2.4 Recovery of High Variable Costs (The "HP" Rationale)

The primary rationale for creating a separate High Price DAM segment (which allows prices up to ₹20/unit vs. the standard ₹10 cap) is to allow generators with **high variable costs** (such as imported coal or gas plants) to recover their costs without clearing the entire market at elevated prices. PSPs have a unique cost structure: it incurs the cost of pumping (energy + losses) plus O&M. By participating in the HP-DAM, PSP can bid its true opportunity cost during peak hours. If forced into the standard DAM with a lower price cap, PSP would be unable to recover its pumping costs, making the asset financially unviable.

2.5 System Flexibility and Grid Stability

HP-DAM is typically cleared for delivery during the evening peak (e.g., 6 PM–10 PM). PSP is the most efficient grid-scale technology for **ramping** and **frequency regulation**. Including PSP in the HP-DAM ensures that the exchange can clear sufficient fast-ramping capacity to meet the steep evening demand curve, reducing the reliance on inefficient OCGT peakers and enhancing grid stability.

2.6 Optimal Utilization of Transmission Corridors

PSP projects are often located at strategic grid nodes. By participating in the HP-DAM, PHS can provide **congestion relief** by injecting power exactly when transmission corridors are stressed (peak hours). This maximizes the utilization of existing transmission infrastructure without needing new investments.

2.7 Price Arbitrage and Market Efficiency

A well-functioning spot market requires **arbitrageurs** to smooth out price volatility. PSP is the ultimate arbitrageur: it buys low (pumping in the DAM/GDAM) and sells high (generating in the HP-DAM). Excluding PSP from HP-DAM creates a market inefficiency where peak prices are artificially inflated due to lack of supply, and off-peak prices are depressed due to lack of demand. Including PSP in both segments creates a natural price floor and ceiling, improving overall market efficiency.

2.8 Alignment with Renewable Energy Integration

With the rapid addition of solar power, the grid faces the "duck curve" problem—low prices and surplus power during the day, and steep ramps in the evening. PSP is the primary solution to this. The HP-DAM is the exact market segment where this stored solar energy (pumped during the day) can be sold at a premium in the evening. Excluding PSP from HP-DAM undermines the business case for integrating renewables with storage.

2.9 Regulatory and Market Design Precedent

In mature markets (e.g., PJM, CAISO, Nord Pool), storage assets are fully integrated into all spot market segments, including scarcity/peaking markets. Hon'ble CERC recognizing that **storage must be treated as a market participant**, not a passive grid asset. Including PSP in HP-DAM aligns the exchange design with global best practices and the legal definition of "electricity storage" as a generation asset.

2.10 The DAM alone does not adequately remunerate PSPs

NLDC's analysis (Table 2 of the Order) shows that the effective landed cost of PSP generation, including the cost of pumping energy, is up to ₹8.92 per unit. During April 2025 to July 2026, the average DAM evening-peak price was about ₹6.57 per unit, against about ₹2.20 per unit during solar hours, i.e. an arbitrage spread of about ₹4.37 per unit.

The landed cost of PSP generation is therefore well above both the average DAM peak price and the available arbitrage spread. We concur with the Commission's prima facie view in paragraph 6 of the Order that the opportunity available in the DAM alone may not be sufficient for PSPs. Access to HP-DAM will allow PSPs to participate in the high-demand periods where their value to the grid is greatest.

2.11 No adverse impact; improved liquidity and price discovery

As noted by NLDC, HP-DAM is presently a thin segment, with market clearing on only 47 days (9.65% of the period) and in 965 time-blocks (2.06%). Since eligibility is permissive and participation is voluntary, the inclusion of PSPs cannot adversely affect existing participants. On the contrary, additional supply-side participation is the most direct way to address the low-liquidity concern identified in the Order. Additional supply during scarcity periods will also help meeting crunch period demand, to the benefit of buyers and the grid as a whole.

In short, **PSP must be included in the HP-DAM because it is the most economically efficient and technically capable provider of peak power and flexibility.** Excluding it would:

- Distort price discovery.
- Prevent PSP from recovering its pumping costs.
- Force the grid to rely on more expensive and dirtier peaking plants.
- Undermine the financial viability of energy storage, which is critical for the energy transition.

3. Suggestions for effective implementation and recommendations

To ensure that eligibility translates into actual participation, we respectfully suggest that the Hon'ble Commission may:

(a) Direct NLDC and the Power Exchanges to notify the necessary procedures within a fixed timeline from the date of the final Order;

(b) Clarify that the eligibility extends to all PSPs, including PSPs forming part of Integrated Renewable Energy Projects; and

(c) Provide that participation of PSPs in HP-DAM is subject to the same terms and conditions as are applicable to BESS, so as to maintain parity between storage technologies.

Considering the above, we respectfully pray that the Hon'ble Commission may be pleased to:

(i) Approve the inclusion of PSPs as an eligible category of generating stations for participation in the existing HP-DAM segment on the Power Exchanges;

(ii) Direct NLDC and the Power Exchanges to issue the necessary procedures within a fixed timeline, as suggested in paragraph 3 above;

It is further requested that the above submissions be duly considered before finalising the proposal and that we may be granted an opportunity to present the case before this Hon'ble Commission

Thanking you,

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Manager (Regulatory)
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