Ref. No: JGEPL/CERC/DSM/BD/2025-26/003 Date: 17.10.2025

To

The Secretary

Central Electricity Regulatory Commission

6th, 7th & 8th Floors, Tower B, World Trade Centre,

Nauroji Nagar, New Delhi- 110029.

Subject: Comments on determination of value of "X" for computation of the deviation (in %) for Wind and Solar (WS) Sellers from 01.04.2026 onwards under the provisions of the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024.

Dear Sir,

We, Juniper Green Energy Pvt Ltd (Renewable Energy platform of AT Capital Group), take this opportunity to introduce ourselves as renewable energy producers and operator for solar and wind projects with significant experience in conceptualizing, building, and developing Renewable Energy assets. The Group in the past built Orange Renewable, a 1GW renewable platform in India.

Juniper Green Energy, based out of Delhi NCR, commenced operations in October 2018. The business has experienced rapid growth, and it presently has an operational portfolio of about 1.5 GW with an under-construction capacity of about 4.8 GW and a development pipeline of more than 4.5 GW of solar, wind and hybrid project.

We refer to the draft Suo-Motu issued by the Central Electricity Regulatory Commission (CERC) inviting stakeholder comments on the proposed determination of value of "X" for computation of the deviation (in %) for Wind and Solar (WS) Sellers

While we appreciate and fully support the Hon'ble Commission's intent to frame regulations that strengthen the grid and facilitate large-scale integration of renewable power, we are concerned that the proposed value of "X," if implemented in its current form, appears overly stringent. This may **adversely impact on the commercial viability of several operational projects as well as projects that have already been bid out under prevailing conditions.**

We therefore humbly request the Hon'ble Commission to kindly re-examine the draft provisions and consider our attached submissions in Annexure-1 for a more balanced approach.

Thanking you,

Yours faithfully,

For M/s Juniper Green Energy Limited

Authorized Signatory

Annexure-1

With reference to the said draft, we submit the following comments and suggestions to Hon'ble CERC.

A. Comments:

1. Inherent Intermittency and Forecasting Limitations

- RE generation, particularly from wind and solar sources, depends on natural resources that vary continuously and are difficult to predict at every instant. Consequently, such generation is inherently intermittent. Accurate forecasting remains a significant challenge — not only in India but also globally — **as current tools and models cannot predict renewable generation with complete precision**.
- The accuracy of generation forecasts is highly dependent on the accuracy of weather forecasts, which require specialized skillsets and large-scale infrastructure. RE generators rely on national and international forecasting agencies such as IMD and NCMRWF.
  Presently, IMD provides forecasts at a coarse spatial resolution with only two or four revisions per day, while international agencies use grid sizes of 20×20 km or larger. Such forecasts are insufficient for even current and proposed DSM compliance, which demands plant-level forecasts at 15-minute intervals. **Increasing penalties on RE developers for forecast deviations therefore penalizes them for factors beyond their control.**
- Since the introduction of DSM regulations, the tightening of DSM bands on multiple occasions has not led to any significant improvement in the volume or pattern of deviations by RE generators. This suggests that **stricter penalties alone have not been effective in achieving the intended objective of enhancing forecasting accuracy.**

2. Financial hardship

- DSM regulations introduced in 2018 already imposed financial burdens on renewable generators. At the bidding stage, developers assumed DSM-related impacts below 1% of revenue. Under the proposed amendments, these could rise to over 10% for solar and up to 20% for wind projects, **threatening financial viability, potential loan defaults and investment uncertainty in the renewable sector.**

3. Regulatory Impacts

- The proposed amendment is introducing changes to the deviation formula (denominator "X factor"), which was never contemplated at the time of bidding for existing and commissioned projects. This may qualify as a **Change-in-Law** event. We request the Hon'ble Commission to formally acknowledge this and **devise a formula for calculating compensation under Change-in-Law for already bid and operational projects.**

4. **Expected response**

- Decades of empirical evidence — from OECD studies to top-tier economics journals — show that while *moderate and well-structured* regulation can encourage innovation,

purely punitive penalty regimes tend to crowd out R&D. In capital-intensive sectors like renewable energy, higher risk and compliance costs reduce rather than enhance investment in better forecasting systems.

- With the proposed increase in penalties to unsustainable levels, RE generators would start cutting down on discretionary and patient capital expenditures like R&D, Algorithms, data acquisition and instead direct resources towards legal fees, higher interest costs etc.

B. Suggestions

1. Learnings from Global Practices

a) International regulators and grid operators have successfully introduced innovative mechanisms to maintain grid stability with high renewable penetration. India should evaluate these practices and adapt them to local grid conditions rather than relying solely on a penalty-based framework.

2. Aggregation of RE generation

a) European markets have introduced the concept of **Balancing Responsible Parties (BRPs)** — entities that aggregate renewable generation across large geographic areas or balancing circles, assume imbalance risk, and manage deviations on an aggregated basis. Aggregation across a wider area statistically reduces deviations and improves balancing efficiency.
In contrast, in India, DSM charges are localized to the Point of Connection (PoC), leading to higher localized penalties and preventing the benefit of geographic averaging even within a balancing circle.

b) **The Indian Grid Code already permits aggregation of renewable generation, but implementation procedures are pending**. Enabling **aggregation at the regional or balancing circle level**, through authorized aggregators or QCAs, will reduce DSM exposure and improve overall system efficiency.

c) With India moving towards a "**One Nation, One Grid**" framework, variability and intermittency can be managed far more effectively across larger geographies rather than at the plant level, where opportunities for forecasting accuracy and innovation are limited.

3. Market and Operational Reforms

a) **Participation in Real-Time Market (RTM)**
The Real-Time Market was introduced to manage the infirm nature of renewable generation. However, RE generators are currently excluded from RTM participation for balancing deviations. Allowing RE generators to buy back power in RTM to correct imbalances will make DSM compliance more practical and equitable.

b) **Gate Closure Timelines**
Currently, the gate closure for exchange trades in India is **5–6-time blocks** and for scheduling **7–8-time blocks** ahead of delivery. Such early closure limits the use of updated forecasts and increases DSM liability.
In most European countries, gate closure occurs **30 minutes before delivery**, allowing generators to use the latest weather and plant data. India should bring suitable amendments in Grid Code and Power Market Regulations to reduce gate closure to

not more than 3-time blocks ahead of delivery, aligning with international best practices.

c) **Strengthening REMCs**
Renewable Energy Management Centres (REMCs) should be empowered and resourced to enhance forecasting models, coordinate with RLDCs and RE generators, and publish regional-level forecast performance metrics. This will strengthen system-level forecasting and provide data-driven insights for future regulatory refinements.

d) **Investments in strengthening forecasting infrastructure**
Part of the funds being collected in Deviation and **Ancillary Service** Pool **Account** should be deployed in providing infrastructure to the RE players to enable better forecasting like R&D grants, local weather stations, better weather models from IMD, central datasets, public APIs, hyperlocal weather data platform etc. This way, we would be addressing the root cause of the issue to enable RE players to improve forecasting.

4. Implementation Pathway and Transition

a) **Defer "X Factor" Implementation**
Implementation of the proposed "X factor" should be deferred until **2030**, maintaining the deviation band at the same level for WS seller. During this interim period, pilot projects involving nodal agencies, RE developers, REMC and QCAs can be undertaken to test forecasting improvements and benchmark performance against countries that have successfully integrated high RE shares. After, these studies, the "X" factor can be implemented in stages with adequate transition time.

i. **Enable Large-Scale Aggregation**
Aggregation of renewable generation should be operationalized at least at the **regional** level, and ideally at the **national** level. With full grid unification under "One Nation, One Grid," geographical diversity will help smooth generation variability and reduce DSM exposure.

ii. **Encourage BESS Integration**
With the rapid decline in **Battery Energy Storage System (BESS)** costs, system operators should deploy storage solutions at the balancing circle or regional level to manage variability. Linking part of DSM savings or incentives to projects using BESS can accelerate this transition.

The proposed DSM framework (9/SM/2025), in its current stringent form, may jeopardize the viability of renewable projects and deter future investment in the sector. A balanced and forward-looking approach is needed — one that recognizes the inherent forecasting limitations of renewable energy, encourages aggregation and market-based balancing mechanisms, and aligns operational reforms with international best practices.

We respectfully request the Hon'ble Commission to revisit the draft DSM framework and incorporate the above recommendations to ensure fair, practical, and growth-oriented regulations that support India's clean energy transition.