Ref: GRIMPL/CERC/2025/01 **Date:** 15.10.2025

To,
The Secretary
Central Electricity Regulatory Commission
6th, 7th & 8th Floor, Tower B, World Trade Centre,
Nauroji Nagar, New Delhi – 1100029

Subject: Submission of Comments on Draft Proposal dated 10th September 2025 in Petition No. 9/SM/2025 (Suo-Motu)

Ref: Public Notices dated 10.09.2025 and 01.10.2025 inviting suggestions/ objections/ comments from stakeholders

Respected Sir,

This is in reference to the Public Notices dated 10.09.2025 & 01.10.2025 issued by the Hon'ble Commission, inviting stakeholder comments on the draft order in Petition No. 9/SM/2025 (Suo-Motu). The draft pertains to the determination of the value of "X" for calculating deviation (in %) for Wind and Solar (WS) Sellers effective from 01.04.2026 and other proposals as per the provisions of the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2024.

Gentari is a clean energy solutions company committed to accelerating the transition to a sustainable future. Our core focus areas Renewable Energy, Green Hydrogen, and Green Mobility form a comprehensive portfolio designed to support customers in their decarbonisation journey. Our mission is to be the leading developer of Commercial & Industrial (C&I) and utility-scale renewable energy projects, a scalable hydrogen producer and trusted industry partner, and the foremost provider of green mobility solutions in the Asia Pacific region. In the long term, Gentari aspires to be the most valued clean energy solutions partner, driving meaningful impact and enabling the journey to a net-zero future.

In line with the above, we are pleased to submit our comments for the kind consideration of the Hon'ble Commission. These are enclosed as **Annexure – I**.

Thanking You,

For Gentari Renewables India Management Private Limited

Amit Kumar Chachan

AGM-Regulatory & Policy Advocacy

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Annexure-I

Subject: Comments on CERC Draft Order in Petition No. 9/SM/2025 – Determination of "X" for Deviation Computation for Wind and Solar Sellers

Gentari India's Submission: We thank the Hon'ble Commission for inviting stakeholder comments on the Draft Order in Petition No. 9/SM/2025 regarding the determination of the value of "X" for computing deviation for Wind and Solar (WS) Sellers under the DSM Regulations, 2024.

It is submitted that we absolutely concur with the Hon'ble Commission that Grid security is the cornerstone of a reliable and resilient power system. Grid security is the responsibility and collective obligation of all stakeholders involved. However, after going through the draft order, it appears that RE Generators are being singled out here and proposed changes are very harsh. India has made tremendous progress in the last decade in building a robust RE sector. These proposed changes, if implemented without adequate safeguards, risk undermining the very progress we have made. After a detailed review of the proposal and associated simulation study, our comments for considerations of Hon'ble Commission are as below;

A. Tightening of band and introduction of 'X' factor

While the intent behind the proposed tightening of deviation limits is understandable, the current form of the proposal risks penalizing RE generators for factors far beyond their control. Compared to other stakeholders like Conventional Generators or drawl entities, forecasting and scheduling for RE developers are mostly dependent upon exterior factors resulting in errors, despite their best efforts. The reduction of the revenue-neutral tolerance band from ±10% to ±5% for solar and hybrid projects, and from ±15% to ±10% for wind projects, coupled with a shift in the deviation formula through phased introduction of 'X' factor, significantly increases the financial burden on RE developers. This is particularly unfair for RE developers as they lack control over weather variability, unlike conventional generators and scheduling deviations are majorly due to forecasting inaccuracies caused by climate variability.

Simulation studies conducted by Grid India show that under the proposed framework, wind generators could face revenue **losses of up to 48.2%,** while solar and hybrid projects could see losses ranging from **3.5% to 11.8%.** These figures are alarming and could severely impact the viability of RE projects, especially smaller developers who lack the resources to absorb such losses. In line with above, following is our issue wise comments for the proposal:

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1. **No Significant Improvement in Forecasting Accuracy**

The Commission's justification for transitioning to a tighter band and schedule-based deviation formula hinges on the assumption of improved forecasting. However, as acknowledged in the SOR to DSM Regulations as well as accepted across stakeholders, forecasting remains inherently complex for RE generators. Renewable energy generation especially from solar and wind sources is inherently variable and highly dependent on local weather conditions. Since the notification of DSM Regulations in 2024, no substantial improvement has occurred in weather forecasting accuracy, which remains the primary data source. There are several limitations in its current forecasting system which affects RE scheduling:

- **Low Spatial Resolution**: IMD's forecasts currently operate at a **12 km × 12 km resolution**, which is not granular enough for site-specific RE forecasting. The power grid operates in **15-minute intervals**, but IMD updates forecasts only **twice a day**.
- **Infrequent Updates**: The lack of real-time or high-frequency updates makes it difficult for RE generators to revise schedules dynamically.
- **Forecasting Errors**: IMD forecasts often fail to capture **localized cloud movements, wind speed fluctuations**, or **unexpected rainfall**, leading to **forecasting errors** that directly translate into **scheduling deviations**.

Forecasting accuracy is still limited due to unreliable weather data and lack of localized forecasting models. The Central Electricity Authority (CEA) have also acknowledged these challenges and are taking or working on initiatives like:

- CEA has mandated the installation of Automatic Weather Stations (AWS) at RE plants ≥50 MW to improve local data collection.
- There are discussions to upgrade IMD's resolution to 4 km × 4 km and increase update frequency to better support RE scheduling.

Tightening DSM bands without addressing these limitations is punitive. **Until forecasting infrastructure is robust and reliable, penalties for RE generators should be relaxed and if required, may be linked to forecast accuracy benchmarks.**

Further, Climate change is increasingly disrupting traditional weather patterns, making it significantly harder for forecasting models especially those relying on historical data to accurately predict solar irradiance, wind speed, and cloud cover. This has led to notable instability in solar energy generation, with data from various states indicating continuously shifting solar radiation patterns, resulting in greater unpredictability in solar output and complicating scheduling for RE developers.

Wind energy has also been severely impacted. In 2020 alone, wind power generation dropped by **24%** during the monsoon season, and the past five years have seen a **12.5%** decline in annual output at key sites. These figures highlight the extent of climate-induced variability that RE generators face factors well beyond their control and a major contributor to forecasting challenges.

Further, recent climate research underscores a rapid warming trend in the **Western Indian Ocean (WIO)**, where sea surface temperatures have risen by **1.2°C** between 1901 and 2012 faster than any other tropical ocean region. This warming has disrupted monsoon systems, directly affecting wind energy generation across India.

Climate-induced variability manifests in several ways:

- Sudden and unpredictable surges or drops in generation.
- Persistent forecasting errors, even with advanced models, due to the non-linear and chaotic nature of climate-influenced weather systems.

Without foundational improvements in weather data infrastructure and forecasting models, expecting accurate scheduling from RE generators remains premature and unrealistic.

2. **Retrospective Application raises Regulatory Certainty Concerns**

The proposed changes will apply to projects that have already been commissioned or bid out under the prevailing regulatory framework. This retrospective application undermines the principle of **regulatory certainty and consistency**, which is critical for investor confidence and long-term planning in the RE sector. **Such changes should not apply to existing projects, and the proposed changes overlook the financial and contractual implications for developers. Further, in case it is implemented, this should be declared as Change in Law and the revenue loss should be pass through as change in tariff.**

3. **Role of QCA and the Need for Institutional Oversight**

The concept of Qualified Coordinating Agencies (QCAs) is a welcome step. Many developers, including Gentari, are already engaging with QCAs to improve forecasting and scheduling. However, a formal institutional framework is urgently needed. Grid India or another central body should be designated to oversee QCA performance, define roles and responsibilities, and ensure accountability.

There is a need to institutionalize QCA such that forecasting at Substation or even at Cluster level is done through QCA. Once it is done then only after at least 4-5 years of operational experience, based on its experience and data, harsh DSM penalties which are being proposed should be implemented.

4. **Immature Market for RE Operations and Scheduling**

Most RE projects have been commissioned only in the recent past. The sector is still evolving in terms of operational maturity and scheduling discipline. Decisions of this magnitude should be based on **4-5 years of operational data over a bigger set of plants**, not on limited simulations as being proposed in the instant draft order. As requested above a longer period data post QCA implementation over majority of Substation/Cluster should only be considered.

5. **Issues with Simulation Study given in draft Order**

Source	Deviation Band Compliance under current tolerance bands	Deviation Band Compliance under proposed tighter bands
Solar	74%–84%	45%–58%
Wind	73%–93%	32%–73%
Hybrid	72%–87%	38%–47%

The result shows a significant drop in compliance under tighter bands. From a statistical standpoint, this suggests that the proposed changes would result in more than 40% of time blocks being penalized, which is not a reasonable threshold for a sector still developing forecasting capabilities.

- **Sample Size and Diversity**

The study includes **only 16 RE plants**, which is a **small and potentially non-representative sample** of the national RE fleet. The simulation study conducted by Grid-India covers only 9 months of data, excluding the monsoon period, which is known for its forecasting challenges. Further, this data does not include most important state of Rajasthan for the subject matter. This exclusion raises serious concerns about the robustness and representativeness of the study used to justify such critical decisions. A statistically valid study should include a **larger, more geographically diverse sample** to account for regional weather patterns and operational practices.

Thus, based on above, from a statistical perspective, the simulation study:

- Is too short and excludes critical seasonal data
- Shows low compliance under proposed norms
- Lacks robust statistical metrics
- Uses a limited sample size

Therefore, the proposed changes especially the tightening of tolerance bands and introduction of the "X" factor are not statistically justified based on the current study. A more comprehensive, multi-year, and statistically rigorous analysis is needed before implementing such impactful changes.

6. Dual Burden on Developers

The simultaneous implementation of:

- Tightening of the revenue-neutral tolerance band, and
- Introduction of the "X" factor-based deviation formula

constitutes a double burden on RE developers. The sector is not prepared for even one of these changes, let alone both together. The report itself mentions that the solar plants experienced revenue loss, varying from around 3.5% to 11.1%. Hybrid plants loss range from 2.4% to 11.8%. and wind power plants loss is from 2.8% to 48.2%. These are very high numbers considering that the Per unit power costs have been very competitive for RE developers, and they are already working on a very tight margins with no further scope of loss.

7. Utilizing DSM Funds for Sectoral Improvement

Additionally, we wish to request that the DSM charges collected should be reinvested into improving forecasting infrastructure, data analytics, and capacity building. This would create a virtuous cycle where penalties also contribute to systemic improvements. A portion of DSM penalties must be allocated to fund forecasting R&D, Automatic Weather Stations (AWS) deployment, and data integration platforms.

B. All new Wind and Solar (WS) projects, with tendering or bid submission dates on or after 01.04.2026, shall be treated at par with General Sellers:

The proposal to treat all new Wind and Solar (WS) projects **with tendering or bid submission dates on or after 01.04.2026** at par with General Sellers introduces a **dual regulatory regime** for the same technology. This raises several concerns:

- **Regulatory Inconsistency**: Currently, DSM charges for General Sellers (conventional generators) are linked to both **scheduled generation and system frequency**, whereas WS Sellers follow a different methodology. Applying the General Seller framework to only new WS projects creates a **disjointed regulatory landscape**, where two projects using identical technology are governed by **two fundamentally different DSM philosophies.**

- **Investor Uncertainty**: Such a distinction is arbitrary and undermines **regulatory certainty**, a key pillar for long-term investment decisions in the RE sector.
- **Stricter norms without adequate support**: The proposed change would subject new WS projects to:
    - A **scheduled generation-based deviation formula** (with the "X" factor),
    - **Tighter tolerance bands**, and
    - **linkage to frequency**, like conventional generators.

  This results in **harsher penalties** for RE developers, despite their **limited control over generation variability** due to weather dependence. The lack of parity in operational control between RE and conventional generators makes this shift inequitable.

We respectfully submit that **any change in DSM treatment should be technology-based** and should be implemented **only after sufficient operational experience and forecasting infrastructure improvements** are in place.

C. No payment for over-injection during high-frequency periods (≥ 50.05 Hz) for existing WS sellers:

The proposal to deny payment for over-injection during high-frequency periods (≥ 50.05 Hz) for existing WS Sellers further exacerbates the financial strain.

- **Contradiction to Must-Run Status**: Solar and wind projects are designated as **"must-run"** under national policy. Denying payment for over-injection contradicts this principle.
- **Loss of Legitimate Revenue**: Over-injection is often not a result of indiscipline but a consequence of **forecasting limitations** and **real-time weather variability**. Denying compensation leads to **unjustified revenue loss**, especially for projects operating on thin margins.

We recommend that the Commission **reconsider this provision** and explore alternatives of **Partial compensation** for over-injection during high-frequency periods.

D. Our Submissions:

In light of the above, we respectfully submit the following requests:

1. **No Retrospective Application**: The proposed DSM changes should not apply to projects with COD or bid submission dates prior to the notification of the final order. Retrospective application undermines regulatory certainty and investor confidence.

2. **Defer Implementation**: The proposed changes should be deferred by at least 5 years to allow:
    - Strengthening of forecasting infrastructure and institutional oversight of QCAs.
    - Accumulation of operational data across diverse RE technologies and geographies.
    - Maturity in market operations and scheduling discipline.
    - Integration of Energy Storage Systems (ESS) to mitigate variability.
3. **Re-evaluate Simulation Basis**: The simulation study used to justify the proposed changes should be revisited. A statistically robust, multi-year analysis covering all seasons and a larger, more representative sample of RE plants (including key states like Rajasthan) is essential.
4. **Avoid Simultaneous Implementation**: The tightening of tolerance bands and introduction of the "X" factor should be phased in gradually. Simultaneous implementation imposes a dual burden on RE developers and risks destabilizing the sector.
5. **Uniform DSM Framework for Similar Technologies**: DSM treatment should be technology-based, not timeline-based. All Wind and Solar (WS) projects irrespective of bid submission date should be governed by a consistent DSM philosophy to avoid regulatory fragmentation and ensure fairness.
6. **Reinstate Compensation for Over-Injection During High-Frequency Periods**: Denying payment for over-injection contradicts the must-run status of RE projects and results in unjustified revenue loss. Compensation should be reinstated or rationalized to reflect grid support contributions.
7. **Utilize DSM Funds for Sectoral Improvement**: DSM charges collected should be reinvested into:
    - Enhancing forecasting tools and data analytics.
    - Deploying Automatic Weather Stations (AWS).
    - Supporting QCA development and oversight.

We hope the Hon'ble Commission will consider these submissions in the interest of maintaining regulatory stability, ensuring equitable treatment of RE developers, and supporting the sustainable growth of India's renewable energy sector.

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