17th October 2025

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

Subject: *Comments on the determination of the value of "X" by CERC via Petition No. 9/SM/2025 (Suo-Motu)*.

Dear Sir,

Hon'ble Commission via petition No. 9/SM/2025 (Suo-Motu) Dated 10th September 2025, invited comments from stakeholders on the determination of the value of "X" for computation of the deviation (in %) for Wind and Solar (WS) Sellers applicable from 01.04.2026 onwards.

ReNew Private. Ltd. Hereby submits comments on the same in **Annexure** for perusal of the Hon'ble Commission.

Yours sincerely,

(Purnendu Chaubey)

Senior Vice President
Strategic Business Development and Policy Affairs

ReNew Private Limited
Corporate Office: ReNew.Hub, Commercial Block-1, Zone 6, Golf Course Road, DLF City Phase-V, Gurugram – 122009
Registered Office: 138, Ansal Chambers- II, Bhikaji Cama Place, New Delhi -110066
CIN: U40300DL2011PTC291527

W www.renew.com T +91 124 489 6670 F +91 124 489 6699

Annexure

Submissions on the proposed determination of value of 'X' and DSM framework for Wind and Solar Sellers

Against the backdrop of the proposed changes under the CERC Draft Order dated 10.09.2025, the following submissions are made. These comments are based on a detailed review of the draft order, supported by empirical data on generation behavior and supplemented by policy recommendations for a more balanced and market-driven approach to grid stability.

The proposed trajectory for the reduction of the 'X' factor—from 100% in 2026 to 0% by 2031 and reduction in tolerance band (Solar/Hybrid: from ±10% to ±5%, and Wind: from ±15% to ±10%) —raises serious concerns. The underlying assumption that forecasting accuracy has significantly improved is not supported by ground realities. The proposal also fails to account for the economic impact on existing renewable energy projects, particularly wind power, which is inherently variable and difficult to forecast.

The DSM formula itself has been legally challenged, and the Delhi High Court has granted interim protection to affected stakeholders. Proceeding with the proposed framework while the matter is sub-judice undermines the judicial process and creates regulatory uncertainty.
Further, the methodology used to determine the values of 'X' has not been explained. The absence of a transparent and data-backed rationale makes the proposed values appear arbitrary and pre-judged, rather than the outcome of a consultative and evidence-based process.
The financial implications of the proposed changes are severe. CERC's own study indicates that wind projects could suffer revenue losses of up to 48.2%. Such losses are not sustainable and could render many projects financially unviable, especially those commissioned under earlier regulatory frameworks.

Forecasting remains a major challenge. Agencies such as IMD, CEA, and MNRE have acknowledged that forecasting for wind generation is still inaccurate and subject to significant limitations. Even the IMD's Vision-2047 report highlights the need for significant improvements in forecasting infrastructure. Expecting wind generators to match the forecasting precision of conventional generators is unrealistic and unfair, given the inherent variability of wind resources.

Aggregation, while conceptually useful, does not offer a complete solution. Combining multiple projects has shown only marginal improvements in deviation percentages. In cases where projects are located in the same geographical area, forecast errors tend to be correlated, thereby limiting the effectiveness of aggregation. The Grid India study relied upon by the Commission analyzed only **16 projects**—a sample size too small to represent the national RE landscape, which exceeds **175 GW.**

The proposal also fails to recognize the fundamental differences between renewable and conventional generators. Wind and solar generation are weather-dependent and non-dispatchable, whereas conventional generators can regulate their output. Treating both categories under the same DSM framework violates the principle of fairness and equality under Article 14 of the Constitution.

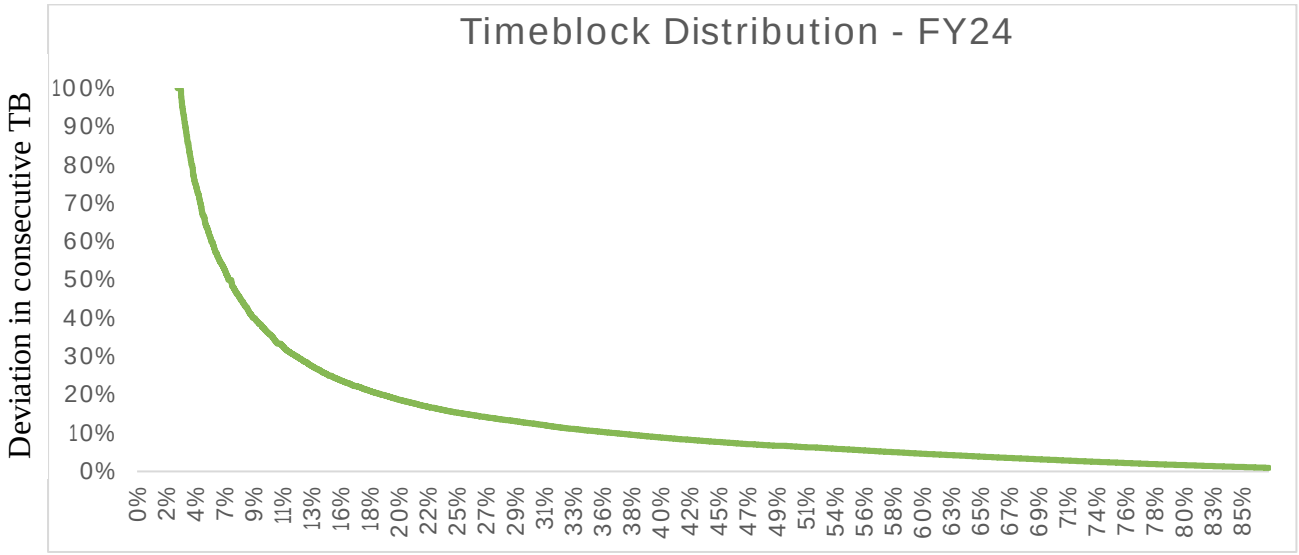
Existing projects, which were conceptualized and bid under different regulatory assumptions, are particularly vulnerable. Applying new DSM rules retroactively to these projects breaks the principle of regulatory certainty and undermines investor confidence. These projects cannot absorb the financial shock of such drastic changes, especially when tariffs are locked in for 25 years.

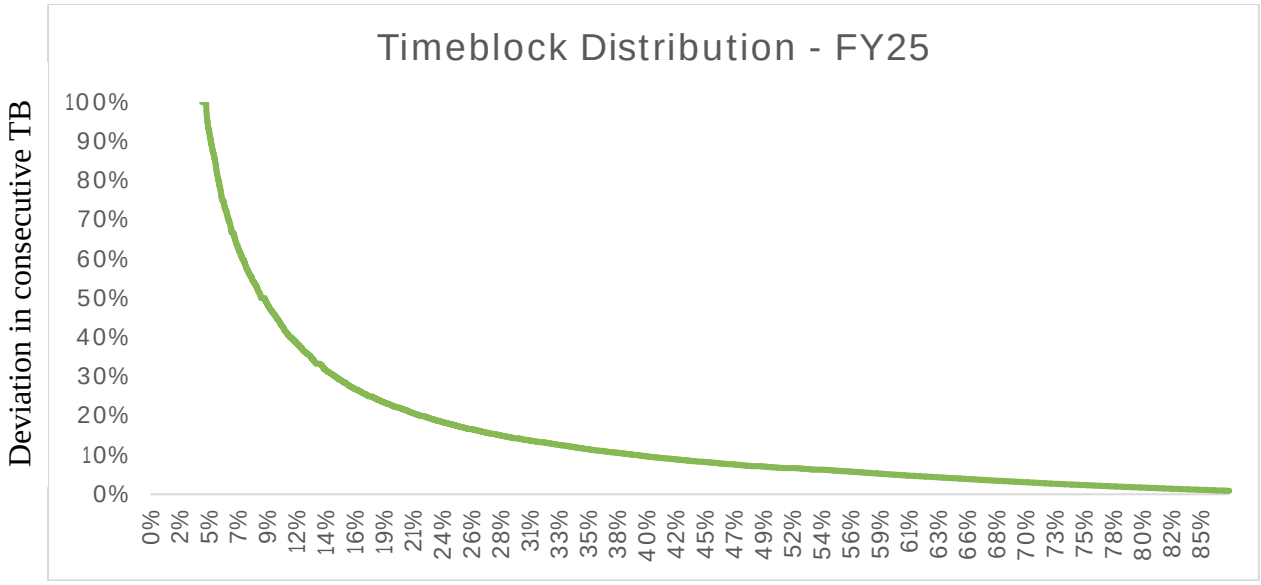
Lastly, the proposed framework contradicts the broader goals of the Electricity Act, which promotes the generation of electricity from renewable sources. By imposing disproportionate penalties and rigid compliance expectations, the draft order risks discouraging investment and slowing the growth of the wind energy sector.

Erratic Generation Behavior:

The assumption that forecasting improvements will mitigate deviation risks is contradicted by actual generation data. Analysis of time-block-wise deviations shows **high volatility and erratic behavior,** especially in wind generation. These deviations are not due to poor forecasting practices but are a direct consequence of the **inherent intermittency** of renewable sources.

Yearly Deviation: -





FY24	
Deviation in consecutive time blocks	**% Occurrence**
0-10%	65%
10%-20%	17%
>20%	18%

FY25	
Deviation in consecutive time blocks	**% Occurrence**
0-10%	53%
10%-20%	19%
>20%	28%

The analysis presents a **time block-wise frequency distribution** of the **percentage change in actual power generation** for a sample wind power plant, comparing data from **FY24** and **FY25.** The percentage change is calculated between two consecutive time blocks to capture the **short-term variability** in generation.

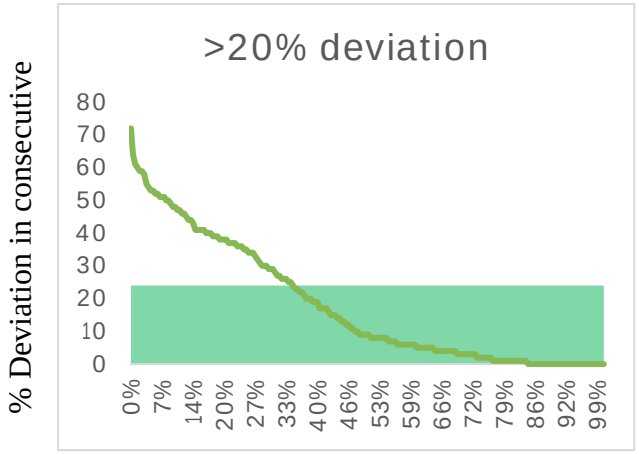
The data reveals a **notable increase in the number of instances** where the generation output changes by **more than 20% between two consecutive time blocks** in FY25 compared to FY24. This means that the wind plant's output is fluctuating more frequently and more sharply in FY25.

This trend is significant because it indicates that the **generation profile has become more volatile** in FY25. In other words, the wind plant is experiencing **larger and more frequent swings in output** over short periods.

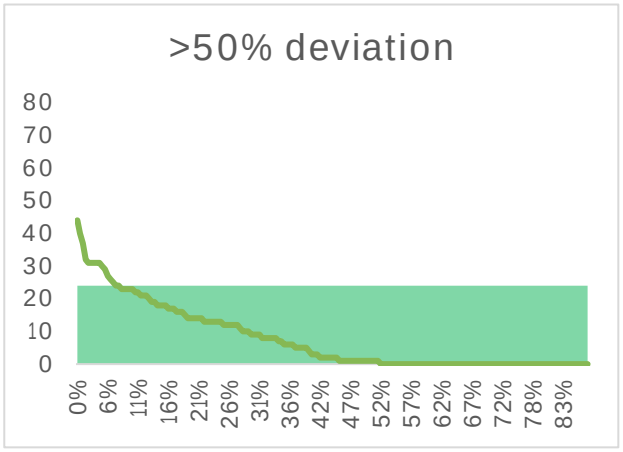
The **persistence of this trend**—as suggested by the data—implies that this increased volatility is **not a temporary anomaly** but rather a **systemic shift** in the generation pattern. This could be due to a variety of factors such as changing wind patterns.

Time-block Deviation:-

FY-24

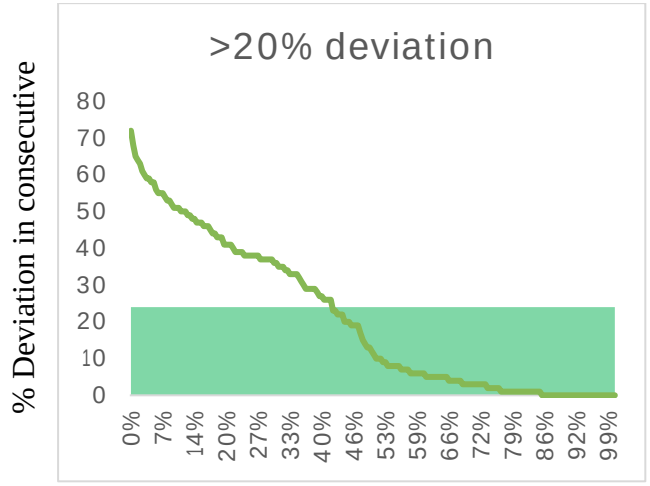


34% of the days in this period are having time block deviation of >20% for over quarter of a day, i.e., 24 time blocks/day

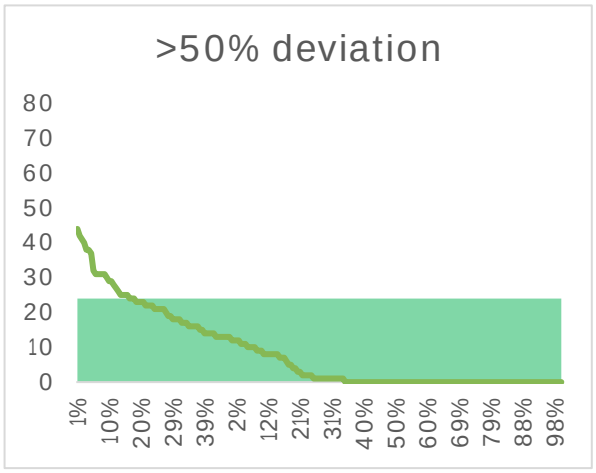


7% of the days in this period are having time block deviation of >50% for over quarter of a day, i.e., 24 time blocks/day

FY-25



42% of the days in this period are having time block deviation of >20% for over quarter of a day, i.e., 24 time blocks/day



16% of the days in this period are having TB deviation of >50% for over quarter of a day, i.e., 24 time blocks/day

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W www.renew.com T +91 124 489 6670 F +91 124 489 6699

The analysis of time block wise generation data reveals not only an increase in overall year-on-year variability but also a **marked rise in time-of-day volatility**. This means that the fluctuations in generation are not just more frequent on an annual average basis, but they are also becoming more pronounced at specific times of the day.

In **FY-24**, it was observed that on **34% of the days**, there were **at least 24 time blocks**—equivalent to **6 hours**—during which the deviation in actual generation from expected values exceeded **20%**. This already indicates a significant level of intra-day variability. However, in **FY-25**, this figure increased to **42% of the days**, showing a clear escalation in the **frequency and persistence of high-deviation periods.**

This shift suggests that the system is experiencing **more frequent and sustained episodes of significant deviation** from expected generation patterns. Such deviations are not isolated or random but appear to follow a **recurring daily pattern**, particularly during certain times of the day. This pattern of volatility has critical implications for **system reliability and operational predictability.**

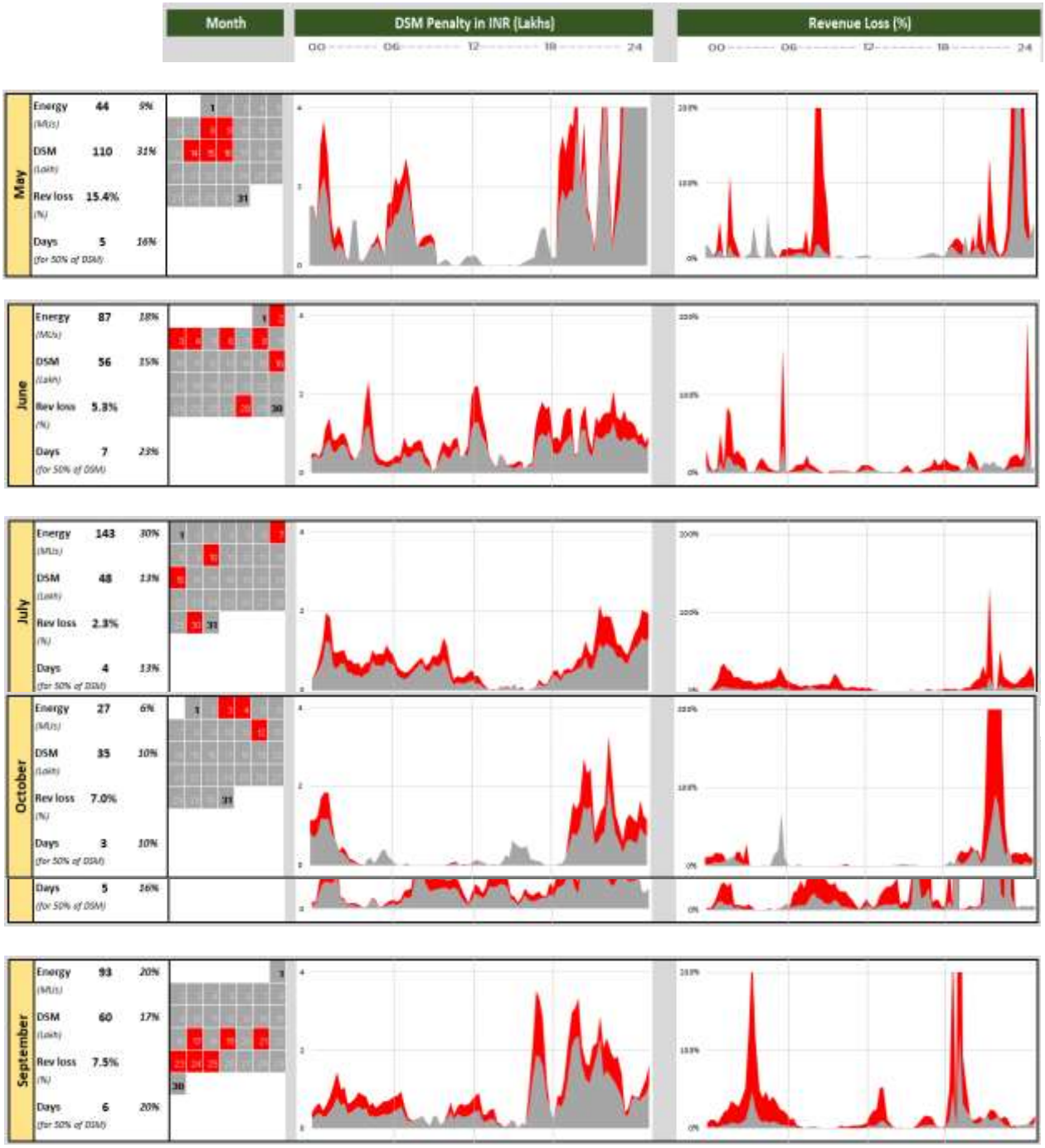
The increase in both the **magnitude and frequency** of these deviations implies that the power system is becoming more sensitive to short-term fluctuations, likely driven by the growing share of variable renewable energy sources like wind and solar. These sources are inherently weather-dependent and can exhibit sharp changes in output due to meteorological conditions.

DSM Penalty-Day wise Distribution: -

An in-depth review of monthly DSM (Deviation Settlement Mechanism) penalty data reveals a striking pattern: more than 50% of the total monthly penalty is consistently concentrated in just 4 to 5 days each month. This means that while the remaining 25 to 26 days of the month contribute relatively little to the overall penalty, a small number of days are responsible for a disproportionately large share of the financial burden.

What makes this insight particularly important is that these high-penalty days are not predictable. They do not follow any discernible pattern based on historical trends, seasonal behavior, or known operational parameters such as weather forecasts, maintenance schedules, or load patterns. This unpredictability suggests that the penalties are not the result of ongoing systemic inefficiencies or persistent operational flaws. Instead, they are likely caused by isolated, high-impact events—such as sudden weather changes, equipment failures, or unforeseen grid conditions—that lead to sharp deviations from scheduled generation.

This finding has significant implications for how DSM penalties are assessed and managed. The current approach, which may treat all deviations uniformly across the month, does not account for the concentrated and erratic nature of these penalty spikes. As a result, operators may be penalized heavily for a few outlier days, even if their overall monthly performance is relatively stable and compliant.



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Overall, these findings – yearly devitaion, time block wise deviation and day wise distribution- highlight the need for a more nuanced approach to DSM penalty assessment, one that accounts for unpredictability and concentrates corrective focus on high-impact days rather than penalizing broader operational patterns.

Such an approach would not only be fairer but also more effective in driving meaningful improvements in grid reliability and operational discipline.

Need for Market based Mechanism to Support Grid Stability:

While the proposed DSM tightening and reduction of "X" are opposed due to their disproportionate impact, there is a clear need to enhance grid stability through **market-based mechanisms** that empower renewable generators rather than penalize them.

The following reforms are recommended:

- **Right to Buy in Real-Time Market (RTM)**: RE generators should be allowed to purchase power from RTM to manage deviations. This is standard practice in European markets and helps balance portfolios in real time.
- **Reduction in RTM Gate Closure Timelines**: India's current gate closure of 4 time blocks (delivery in the 6th) is too rigid. A phased reduction to 2 blocks or less would improve responsiveness and deviation management.
- **Restoration of Schedule Revision Flexibility**: The revision window should be restored to the 4th time block, especially given the tightening of tolerance bands and increase in penalties.
- **Enhanced Aggregation Mechanisms**: Aggregation should be allowed at the portfolio or regional level, not just at polling stations. This would better utilize geographic diversity and reduce net deviations.
- **Grandfathering for Existing Projects**: The proposed changes should not be made applicable to projects commissioned prior to their effective date. Retroactive application violates regulatory certainty and investor trust.
- **Post-Delivery Settlement Mechanism**: Deviations should be allowed to be settled through market mechanisms after delivery, as practiced in Germany and other European markets.

Conclusion:

The proposed DSM framework and reduction of the "X" factor are based on flawed assumptions and risk undermining the viability of renewable energy projects. The erratic nature of wind generation, coupled with forecasting limitations, makes it impractical to impose tighter deviation bands and penalties.

Instead, a **market-driven, flexible, and equitable DSM framework** should be adopted—one that supports grid stability without compromising the growth and sustainability of India's renewable energy sector.