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Ref. No. MSEDCL/CERC/DSM/Comments/33636 Date: 15.10.2025

To,
The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chandralok Building,
36, Janpath, New Delhi- 110 001

Sub: Inviting Suggestion/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 Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2024

Ref.: L.No. L-1/260/2021/CERC dtd 10.09.2025

Respected Sir/Madam,

This is in reference to the public notice issued by Hon'ble CERC, inviting comments / suggestions / objections from the stakeholders 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 Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2024.

In this regard, the comments of MSEDCL on the same are submitted herewith for the consideration of the Hon' Commission.

Regards,

Yours Faithfully,

Chief Engineer (Power Purchase)
MSEDCL

Copy s.w.r.to,
1. The Director (Commercial), MSEDCL
2. The Executive Director (Commercial), MSEDCL

MSEDCL's Comments/Suggestions on determination of value of "X" for computation of the deviation (in %) for Wind and Solar (WS) Sellers from 01.04.2026 onwards under CERC DSM Regulation 2024:

Background:

As per Clause (4) of Regulation 8 of the CERC DSM Regulations, 2024, the revenue-neutral tolerance band for Solar/ Wind-Solar Hybrid Generating Stations will reduce from +/- 10% to +/- 5% and for Wind Generating Stations it will reduce from +/- 15% to +/- 10% from 01.04.2026 onwards.

Further, Clause (2)(a) of Regulation 6 of the CERC DSM Regulations, 2024, stipulates that the deviation in a time block for WS-Sellers (Dws) (in %) shall be computed for the period from the date of commencement of these regulations to 31.03.2026, as per the following formula

Dws% *= 100 x [(Actual injection in MWh) – (Scheduled generation in MWh)] / [(Available Capacity)]*

While Clause (2)(b) of Regulation 6 stipulates that the deviation in a time block for WS Sellers (Dws) (in %) shall be computed for the period from 01.04.2026 onwards, as per the following formula:

Dws% = 100 x [(Actual Injection in MWh) – (Scheduled generation in MWh)] / [(X% of Available Capacity) + (100-X) % of Scheduled Generation)

Presently Hon'ble Commission has considered value of "X" as 100 from FY2026-27 which means that Commission is extending the benefit of existing formula which considered deviation only with respect to Available capacity and value of "X" will increase in step of 20 each year and formula for computation of deviation will align with Formula of general seller only from 01.04.2031.

A. Grid Management and Forecasting Concerns

MNRE has decided of achieving India's target of 500 GW non-fossil fuel capacity by 2030, ensuring energy independence by 2047 and fulfilling the net-zero commitment by 2070. Present installed capacity for Solar is 116. GW and for Wind is 52.68 GW and total RE capacity is 234GW Further RPO target of 43.3% has been set.to comply by 2030. This means that RE Capacity will be more than double of its existing by 2030.

With existing RE capacity addition , there are already Grid management issues faced by Grid India and to address these issues, Grid India has already filed Petition No 713/MP/2025 wherein some amendment have been proposed. This proposed amendment mainly focusses on change in commercial settlement i.e. minimum offtake from Thermal, Fix charges to Thermal station for RSD, High DSM charges at High frequency, Default compensation for TRAS-E, Linking of Compensation charges under TRAS-E to reference rate etc. This amendment do not focus on main root cause i.e. increase in RE penetration; particularly Solar generation during day time. Hence Hon'ble Commission needs to be

focus on main root cause and accordingly considering increase in share of Solar & Wind in RE portfolio in future, it is suggested to improve Forecasting of Solar & Wind Generation and promotion of its integration technologies i.e. Battery storage, PSP, Green Hydro etc.

As far as forecasting is concern, we would like highlight here that Discom Demand which is highly depend on Weather Parameters is expected to forecasted with high Accuracy level of less than 1%. For Maharashtra, Peak demand is about 30GW whereas Deviation volume limit is fix at 250MW (0.83%). With increasing Distributed connected RE generation from Solar by virtue of KUSUM-A & KUSUMC and Roof Top under PM-Surya Ghar, Discom needs to take into account generation from these solar while forecasting its Demand at T<>D Points. If drawee entities are expected to achieve demand forecasting accurately then WS sellers also need to achieve such high level forecasting accuracy.

B. **Analysis of Forecasting Error of WS seller :**

As per simulation study conducted by Grid-India covering 16 renewable energy (RE) regional generating plants, including solar, wind, and hybrid projects, across the Northern, Western, and Southern regions during the period from 16.09.2024 to 29.06.2025 with the revenue neutral tolerance band for Wind of +/- 15% and that for Solar of +/- 10%, the percentage of time the deviation remained within the respective bands was in the range of 74% to 84% for Solar Generating Stations, 73% to 93% for Wind Generating Stations, and 72% to 87% for Hybrid projects.

Similarly MSEDCL has done analysis in respect of solar forecast accuracy vis-a-vis the % tolerance band of +/- 10%, for solar and it is observed that over a period, Accuracy level has increase.

Month	Below 2%	Below 4%	Below 6%	Below 8%	Below 10%	Above 10%
Apr-23	27%	44%	56%	64%	70%	30%
May-23	31%	51%	63%	70%	75%	25%
Jun-23	25%	42%	55%	65%	72%	28%
Jul-23	18%	32%	42%	51%	59%	41%
Aug-23	19%	33%	43%	51%	58%	42%
Sep-23	19%	32%	42%	51%	58%	42%
Oct-23	31%	50%	63%	71%	77%	23%
Nov-23	31%	51%	64%	72%	77%	23%
Dec-23	32%	50%	62%	70%	76%	24%
Jan-24	36%	55%	69%	78%	84%	16%
Feb-24	35%	56%	71%	81%	88%	12%
Mar-24	36%	58%	73%	82%	88%	12%

MSEDCL has also done analysis in respect of wind forecast accuracy vis-a-vis the % tolerance band of +/- 15%, and it is observed that over a period, Accuracy level has increased.

Month	Below 2%	Below 4%	Below 6%	Below 8%	Below 10%	Above 10%
Apr-23	11%	25%	42%	56%	67%	33%
May-23	11%	24%	39%	52%	63%	37%
Jun-23	12%	24%	35%	46%	56%	44%
Jul-23	12%	24%	35%	45%	54%	46%
Aug-23	13%	25%	37%	48%	58%	42%
Sep-23	12%	24%	38%	50%	61%	39%
Oct-23	13%	31%	51%	68%	79%	21%
Nov-23	13%	28%	45%	62%	75%	25%
Dec-23	14%	30%	50%	68%	80%	20%
Jan-24	12%	27%	45%	62%	75%	25%
Feb-24	11%	24%	41%	59%	73%	27%
Mar-24	12%	24%	39%	56%	69%	31%

From above, it may be seen that forecast accuracy of both Solar & Wind has been improved over a time. The WS seller forecast accuracy may further been improved by using the more advance technology and /or use of AI based tool.

Therefore, the trajectory for reduction of "X" in case of solar deviation computation during the period of five years, starting from April 2026 to March 2031, as proposed may be reduced to three years i.e. upto March 2029 as follows:

Table 2:

With Effect From (w.e.f.)	Value of "X"
01.04.2026 tov31.03.2027	80 %
01.04.2027 tov31.03.2028	40 %
01.04.2028 to 31.03.2029	30%
01.04.2029 onwards	0%

C. Treatment of WS Sellers at Par with General Sellers

CERC's Draft Order (Para 25) proposes that

- **Existing WS Sellers** → to be treated at par with general sellers from **01.04.2031**.
- **New WS Sellers (post 01.04.2026 bids)** → treated at par with general sellers from COD.

In this regards, it is requested to clarify whether deviation Wind and Solar generators shall be computed as per deviation of general sellers or their deviations shall be linked

with frequency rates rather than linked with their contract rates as envisaged in CERC DSM Regulation 2024?

It is suggested that deviation of all Wind and Solar (WS) shall be linked with frequency rates and computed as applicable to general sellers from 01.04.2029. Further, it is also suggested that deviation of all existing Wind and Solar (WS) Projects shall be linked with frequency rates computed as applicable to general sellers for the period 01.04.2029 onwards.

Hon'ble Commission expects all new WS project to have higher accuracy, however for any AI/ML based software tool, historical behaviour is more important rather than age of Project. Forecasting accuracy is a function of data quality, AI/ML tools, and aggregation techniques and not the commissioning date of the project. Hence if any new project can achieve higher accuracy immediately after its COD, then it is very easy for all existing WS seller to achieve higher Forecasting accuracy. Hence it is suggested that different timelines for existing and new WS projects are unjustified. A uniform framework will ensure equitable treatment and better grid discipline.

D. Protocol for RE Curtailment :

Presently Wind & Solar generation curtailment is done as a last resort by RLDC and that too considering High frequency at Grid level. However, at individual state level, control area deviations also need to be taken into account; particularly in states with significant RE capacity like Maharashtra. Presently, Maharashtra SLDC, is reluctant to curtail RE, treating it as an "Must Run" resource, even when under-drawal at the State periphery exceeds state-specific Deviation volume limits citing Grid Frequency not exceeding 50.05Hz. Under a scenario where the forecasted demand and supply availability lead to significant surplus during the solar period even after backing down all Inter-State Generating Stations (ISGS) and Intra-State Generating Stations (InSGS) to their Technical Minimum (TM), DISCOM is compelled to Backdown ISGS station below TM for some time block

Recently Ld. CERC in Petition 9/SM has directed that "*ISGS station getting schedule less than 50% of MCR for some or all time block (s) of 'D' day on 'D-1' day (after sale of un-requisitioned surplus in day ahead market under Regulation 49(1)(l) of the Grid Code), and which is not committed under SCUC (list declared at 1500 hrs of 'D-1' day), shall be eligible to take its generating station or unit thereof under Unit Shutdown (USD), with off-bar DC. Now under such scenario*",

Hence, in real time operation, such uncontrollable under underdrawal by Discom, If the SLDC does not act to manage this situation by curtailing RE, the consequences are twofold:

1. **Threat to Grid Security:** Uncontrolled, large-scale under-injection poses a serious **threat to grid stability** and frequency management.

2. **Financial Loss to DISCOM:** The DISCOM incurs significant penalties, including additional DSM charges for under-drawal exceeding the volume limits, and the obligation to make Energy payments to the RE generator despite the injection causing grid stress.

Given the necessity of balancing grid security, operational flexibility, and financial prudence for the Distribution Licensee, it is strongly submitted that the Hon'ble Commission should:

1. **Issue a clear Protocol for Intra-State RE Curtailment:** The CERC shall issue a directives to Forum of Regulator for preparing detailed protocol empowering the SLDC to direct RE curtailment within the state control area **before** the state's total deviation volume exceeds the applicable DSM limits, and when necessary to manage technical minimum constraints of thermal generators during periods of surplus.
2. **Integrate State Deviation:** This protocol must explicitly link the need for RE curtailment to State Periphery under-drawal/over-injection volumes, and not solely to the all-India grid frequency.
3. **Define Priority:** Provide guidance on the priority of control actions (e.g., curtailment of ISGS/InSGS below TM vs. RE curtailment) in scenarios where full RE is technically infeasible for maintaining grid security and financial compliance.

MSEDCL's Suggestions:

In light of the above, **MSEDCL respectfully submits** the following:

1. The trajectory for reduction of "X" should be shortened to three years (2026–2029), instead of five years (2026–2031) as follows:

With Effect From (w.e.f.)	Value of "X"
01.04.2026 tov31.03.2027	80 %
01.04.2027 tov31.03.2028	40 %
01.04.2028 to 31.03.2029	30%
01.04.2029 onwards	0%

2. From 01.04.2029 onwards, deviation of WS Sellers should be linked to frequency-based DSM rates, as applicable to general sellers.
3. Forecasting accuracy standards should be uniformly applicable to both existing and new WS projects, irrespective of commissioning date.
4. CERC may consider directing greater focus on forecasting improvement measures, aggregation mechanisms, and storage solutions, which address the root cause of grid imbalances.

5. Protocol for RE curtailment needs to be framed to avoid Grid Management issues as well as financial implication on Discom due to uncontrollable under drawal resulted on account of constraint in reducing Thermal Generation below Technical minimum.