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Ref: AEPL/Draft-Regulations-CERC/01

Date:07.10.2025

To,
The Chairperson,
Central Electricity Regulatory Commission (CERC),
Tower-B,6,7,8 Floor, World Trade Centre,
Naurojni Nagar Market, Block G, Nauroji Nagar,
Safdarjung Enclave, New Delhi,
Delhi 110029

Subject: [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 and Comments/Suggestions thereof.]

Ref. [Petition No. 9/SM/2025(Suo-Motu), 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- Regarding]

Respected Sir,

With reference to the Petition No. 9/SM/2025 (Suo-Motu), In the matter of: 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, dated: 10th September 2025, Hon'ble CERC invited comments/suggestions from the stakeholders on the proposed trajectory for reduction of "X" as outlined in para 22 of the above mentioned order on or before 17.10.2025.

In line with the above, please find the comments/suggestions by M/s Avaada Energy Pvt Ltd attached with this letter.

Submitted for information and needful please.

Thanks & Regards

Rajesh Bihari Dwivedi

(Head, O&M)
(Avaada Group)

Avaada Energy Private Limited

AVAADA

Suggestions on the Draft proposal of CERC on inclusion of X-factor in Deviation formula for RE plants

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation

S No.	Proposed provisions in the matter of determination of value of "X" for computation of the deviation(%age) for WS seller from 01.04.26 onwards	Avaada' s Suggestions
1.	**Clause 4** While Clause(2)(b) of Regulation 6 of the DSM Regulation,2024 stipulates that the deviation in a time block for WS-seller (Dws) (in %age) 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).** Provided "X" shall be stipulated by the Commission through separate order(s) after public consultation.	With respect to mentioned draft proposals, we want to bring under kind notice of the Hon'ble commission, that **as per order having order no. W.P.(C) 14783/2024 & CM APPL. 62099/2024 of High Court of Delhi, at New Delhi dated: 20.11.2024, clause 5, it was directed by Hon'ble Court to Hon'ble Commission that no coercive steps, pursuant to the impugned regulation, shall be taken against the petioner till the next date of hearing, and the date has been extended to 9th December 2025.So, as the matter related to CERC DSM regulations 2024 is subjudice before the Hon'ble High Court of Delhi, So, we request the Hon'ble commission to reconsider before making amendment to the current regulation.** Further, we request Hon'ble commission to eliminate the X-factor completely in the deviation (%age) formula, and consider only the Available Capacity (AvC) in the denominator for RE plants. For increasing accuracy of forecasting, we as an IPP have engaged with multiple reputed forecasting agencies including IIT Bombay, BITS Pilani, but till date no agencies including the reputed government organization cannot predict the weather forecast with such higher precision. Also, as the RE plants are terrain and climate dependent so shifting the denominator from Available Capacity(AvC) to Scheduled Generation, will make the industry unviable as the %age revenue loss will rise enormously from 3.5% to about 61.51%. It has been analyzed on the past data that as the WS seller are facing adverse impacts due to change in deviation formula along with reduction in the deviation band (for Solar: 10% to 5%) and (for Wind: 15% to 10%), and the Intraday implementation from 7th and 8th time block further worsen the situation thereby increasing the revenue loss to IPPs. We request hon'ble commission to exempt the existing plants from the formula having X-factor and consider the old deviation formula having Available capacity(AvC) in denominator for the existing plants. (Elaborated in **Fig A, shown in Slide 5**)
2.	**Clause 5** The Commission in the draft DSM Regulation,2024 had received several comments from the stakeholders to reconsider the available capacity in the denominator for computation of deviation for the WS sellers. Some stakeholders had suggested using "Scheduled Generation" in the denominator for calculating the deviation %age for the WS seller. In contrast some had suggested using both "Available Capacity" and "Schedule Generation" in the denominator, with a specific weight assigned to each. The commission considered the suggestions of the stakeholders regarding the DSM regulations, 2024 and decided that the existing deviation formula, using the "Available Capacity" in the denominator, will remain in force until 31.03.2026. After this date, a phased transition to use "Scheduled Generation" in the formula will be initiated through separate order(s), following consultation with the stake holders.	
3.	**Clause 22** Therefore, it is proposed that for the existing projects (WS Sellers), the trajectory for reduction of "X" shall be as follows:	

S No.	With Effect From (w.e.f)	Value of "X"
1	01.04.2026 to 31.03.2027	100%
2	01.04.2027 to 31.03.2028	80%
3	01.04.2028 to 31.03.2029	60%
4	01.04.2029 to 31.03.2030	40%
5	01.04.2030 to 31.03.2031	20%
6	01.04.2031 onwards	0%

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation formula for RE plants.

S No.	Proposed provisions in the matter of determination of value of "X" for computation of the deviation(%age) for WS seller from 01.04.26 onwards	Avaada' s Suggestions
1.	**Clause 12** Further to calculate the value of "X", a study was carried out by applying different values of "X" to each 15-minute time block for the selected RE generating stations for the total 41-week period, along with the proposed volume limits applicable from 01.04.2026 for WS Sellers, as per clause 4 of regulation 8 of the DSM Regulations, 2024.	We as a RE developer, have also conducted study on the guidelines laid by Hon'ble Commission, on data of our various plants located in different regions of India. For analysis, we have considered our solar plants which are not in aggregation from three regions viz Northern (Rajasthan), Central (Madhya Pradesh) and Southern (Karnataka).
2.	**Clause 13** The objective of the study was to assess the revenue impact on the RE projects by analyzing the financial implications in terms of percentage gain or loss w.r.t the PPA rate for each RE plant under various X%.	The analysis have shown that %age revenue loss has increased on consistent basis from X=100 to X=10 while at X=0, the %age revenue loss has increased upto 61.51%, when RE plants are operated without going in aggregation.
3.	**Clause 14** A total of 16 regional renewable energy (RE) stations were considered for the study, out of which six were solar power projects (three from the Western Region and three from the Southern Region). Similarly, six wind power projects were included, three from the Southern region and three from the Western Region. Additionally, four hybrid power projects were selected from the northern region. A total of 41 weeks of time-block-wise data for selected renewable generating stations were analyzed for the study to account for seasonal variations. **Clause 15** The study assessed the impact of DSM on the revenue of RE plants under different values of X, ranging from X=100% to X=0%. The findings indicates that solar plant experienced a moderate range of revenue loss, varying from 3.5% to 11.1%. Hybrid plants showed a slightly wider loss range from 2.4% to 11.8%. However, the highest impact was seen in wind plants, where the percentage loss is from 2.8% to 48.2%.	We request Hon'ble commission to incorporate provision for installation of BESS compulsorily with every RE plant having around 30%-40% of the total installed or contracted capacity, prior making any amendment to the current regulation. Further we want to bring under your kind concern that, Prior to IEGC 2023, the Intraday revision was being implemented in 4th time block, but due to increase in volume of energy from RE plants, the IEGC 2023 compelled grid controllers for Intraday implementation from 7th and 8th Time block depending weather the revision is made in odd time block or even time block. But No mitigation was done to provide any relaxation to the RE developers. We request Hon'ble commission to either mitigate for the Intraday implementation from 7th or 8th time block or introduce the provision for Intraday implementation from 3rd and 4th time block, which will be additional beneficial for grid stability.
4.	**Clause 18** A study for a 250 MW Wind power plant was also conducted by an RE developer, which suggested that aggregating multiple RE plants reduces the revenue impact due to DSM charges. The analysis, demonstrates that when the schedules and actual injections of multiple plants are combined, the overall deviation is reduced, leading to a lower revenue impact. This highlights that one effective strategy to manage the DSM for WS sellers is the implementation of aggregation at the pooling station level through a QCA. By combining the schedules and actual injections of multiple RE generators, aggregation helps offset individual generation fluctuations and reduces overall deviations.	In addition to above, The aggregation might lower the revenue loss under current regulation by 25%, but when Schedule generation is in denominator of deviation formula then this revenue loss will still be on higher side enormously approx. around 40.92% which is still on very high side as compared to the revenue loss in the previous repealed regulations. (**Shown in Fig B, slide 6**)

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation formula for RE plants.

S No.	Proposed provisions in the matter of determination of value of "X" for computation of the deviation(%age) for WS seller from 01.04.26 onwards	Avaada' s Suggestions
1.	**Clause 8** Grid India undertook a study covering 16 renewable energy (RE) regional generating plants, including solar, wind, and hybrid projects, across the Northern, Western and Southern region and with forecasting accuracy ranging from poor to best. The Study period spanned from 16.09.2024 to 29.06.2025, covering a total of 41 weeks to account for seasonal variations.	We as a RE developer, have also conducted study on the guidelines laid by Hon'ble Commission, on data of our various plants located in different regions of India. For analysis, we have considered our solar plants which are not in aggregation from three regions viz Northern (Rajasthan), Central (Madhya Pradesh) and Southern (Karnataka). The dataset considered is from period 01.04.2024 to 31.08.2025.
2.	**Clause 9** It was also observed that during the period from 16.09.2024 to 29.04.2025 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.	
3.	**Clause 10** It was also noted that on tightening of the DSM tolerance band for Wind from +/-15% to +/-10% and that for Solar from +/-10% to +/-5%, the percentage of time the deviation remaining within the respective bands during the same period of 16.09.2024 to 29.06.2025 reportedly shrank to the range of 45% to 58% for Solar Generating station, 32% to 73% for Wind Generating Stations, and 38% to 47% for Hybrid projects. These results, however, were based on simulations carried out on the existing data without factoring in the likely change in behavior and improvement in forecasting consequent on a change in the rules of the game.	The analysis, shows that range of forecasting accuracy when tolerance band is +/-10% ranges from 73.33% to 83.55 %, for solar plants while when tolerance band reduces to +/-5%, then the forecasting accuracy reduces to range 40.92% to 60.69%, which lead to more commercial loss to the developer Also, the analysis shows that the %age of Under-injection(UI) and Over-injection(OI) scenarios increases, which leads to grid instability. So, we request Hon'ble Commission to exempt the existing WS plants from the new regulation and provide stipulated time so, that the developers could work on incorporating of alternatives like: BESS in the system, so that revenue loss can be minimized along with maintaining of grid stability. Further analysis is shown in **Figure C(i) and C(ii), slide-7.**
4.	**Clause 11** The Table below represents a comparison of the percentage of time the RE generating stations remained within the revenue-neutral deviation tolerance band (Volume Limit-1) under both the existing and the new DSM tolerance band proposed from 01.04.2026 onwards	

RE Generating Stations	Tolerance Band	%age Time Within Band	Tolerance Band	%age Time Within Band
Solar	+/-10%	74% - 84%	+/-5%	45% - 58%
Wind	+/-15%	73% - 93%	+/-10%	32% - 73%
Hybrid	+/-10%	72%-87%	+/-5%	38% - 47%

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation formula for RE plants.

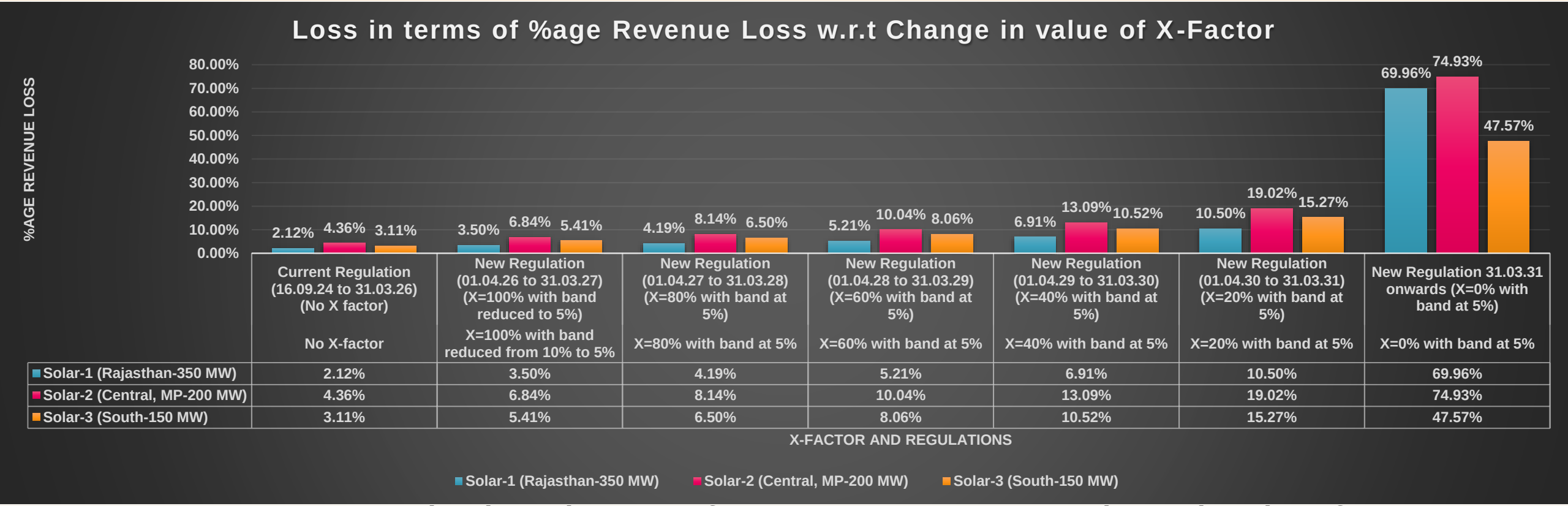
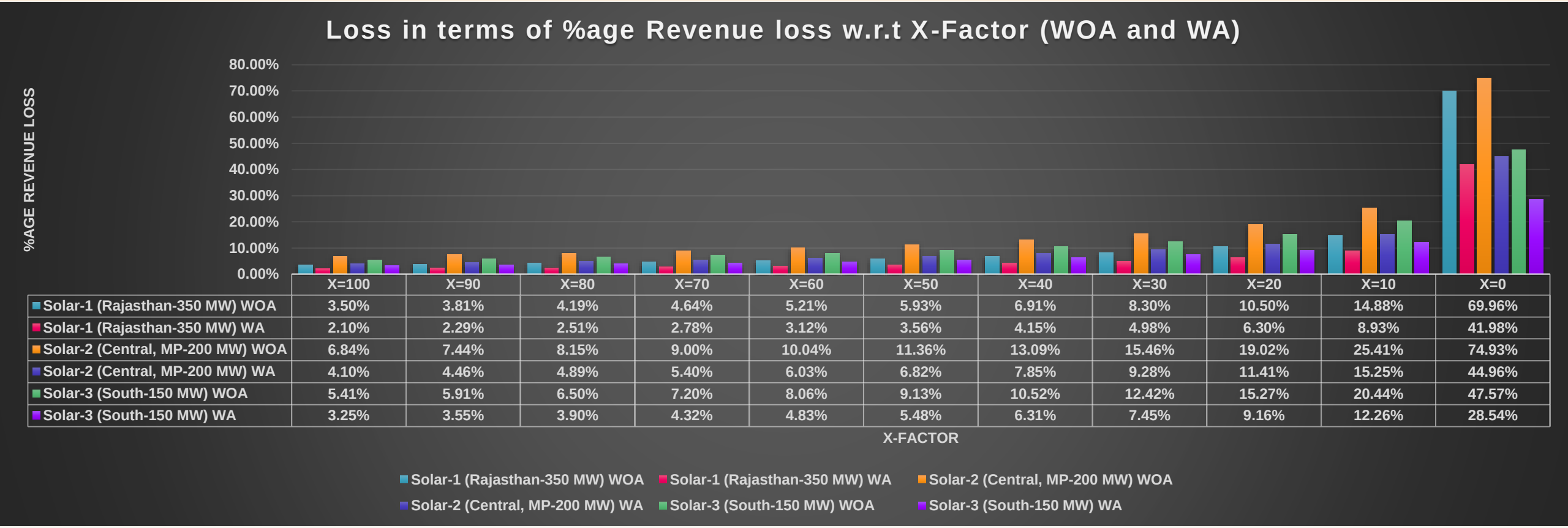


FIGURE A : Loss to developer in terms of %age Revenue Loss w.r.t Change in value of X-Factor

In above **Figure A,** the dataset considered is from time period 01.04.2024 to 31.08.25. It can be observed from above, that as the value of X-Factor decreases, along with narrowing of deviation band from 10% to 5%, in case of solar plants then the %age revenue loss also increases, and when the deviation formula is totally dependent on the Schedule Generation(kWH) instead of Available Capacity(AvC), then the average %age revenue is around 64.15%, which is too high for the developers. We request the Hon'ble Commission to exempt the existing plants from new formula and deviation bands to be implemented from 01.04.26 onwards, having X-factor and consider the old deviation formula having Available capacity(AvC) in denominator for the existing plants.

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation formula for RE plants.

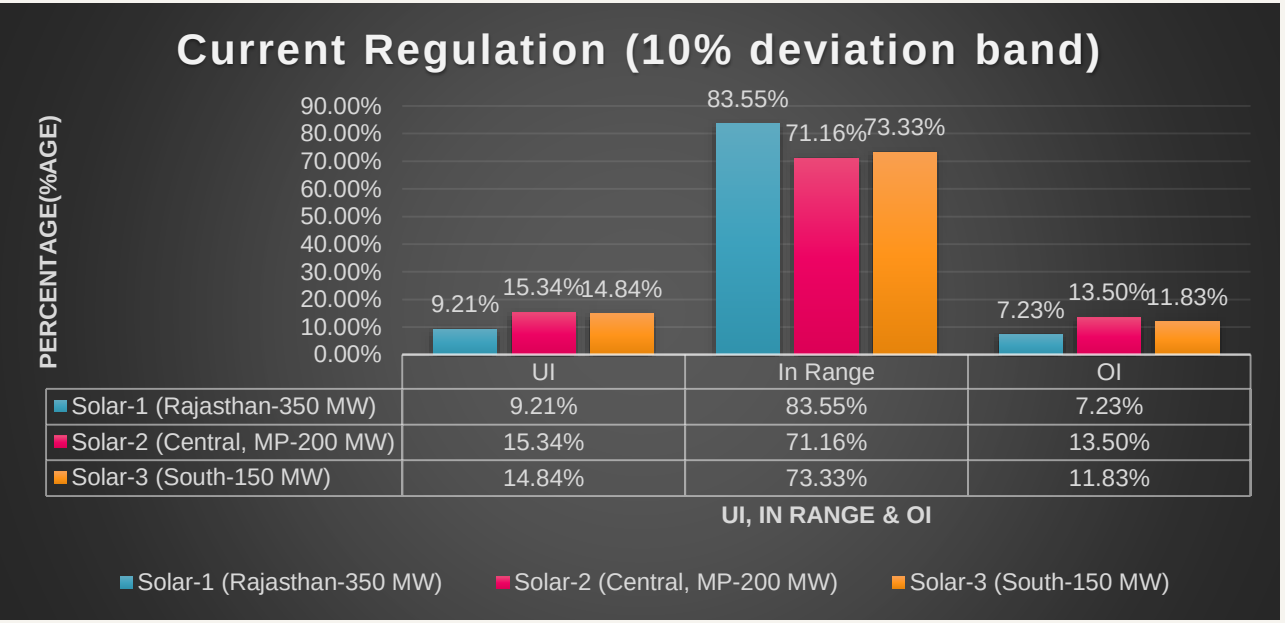


	X=100	X=90	X=80	X=70	X=60	X=50	X=40	X=30	X=20	X=10	X=0
Solar-1 (Rajasthan-350 MW) WOA	3.50%	3.81%	4.19%	4.64%	5.21%	5.93%	6.91%	8.30%	10.50%	14.88%	69.96%
Solar-1 (Rajasthan-350 MW) WA	2.10%	2.29%	2.51%	2.78%	3.12%	3.56%	4.15%	4.98%	6.30%	8.93%	41.98%
Solar-2 (Central, MP-200 MW) WOA	6.84%	7.44%	8.15%	9.00%	10.04%	11.36%	13.09%	15.46%	19.02%	25.41%	74.93%
Solar-2 (Central, MP-200 MW) WA	4.10%	4.46%	4.89%	5.40%	6.03%	6.82%	7.85%	9.28%	11.41%	15.25%	44.96%
Solar-3 (South-150 MW) WOA	5.41%	5.91%	6.50%	7.20%	8.06%	9.13%	10.52%	12.42%	15.27%	20.44%	47.57%
Solar-3 (South-150 MW) WA	3.25%	3.55%	3.90%	4.32%	4.83%	5.48%	6.31%	7.45%	9.16%	12.26%	28.54%

Figure B: Loss to developer in terms of %age Revenue Loss w.r.t X-factor, With Aggregation(WA) and Without Aggregation(WOA)

On the same dataset considered for Fig A, we have done analysis for solar plants in different regions **With Aggregation (WA)** and same plant if it is **Without Aggregation (WOA)**, it can be observed from above **Fig B**, that at X-Factor=0, if the plant underwent aggregation then also the %age revenue loss is so high that after reduction around 25%, w.r.t Without aggregation, the %age revenue loss for developers still stand around 38.50%, which is enormously high for the developers. That's why we are requesting again to Hon'ble Commission for exempting the existing plant from the change in regulation to be implemented from 01.04.26 onwards and consider the old regulation with 10% band for them.

AVAADA'S Comments/Suggestions to Draft proposal of CERC on inclusion of X-factor in deviation formula for RE plants.



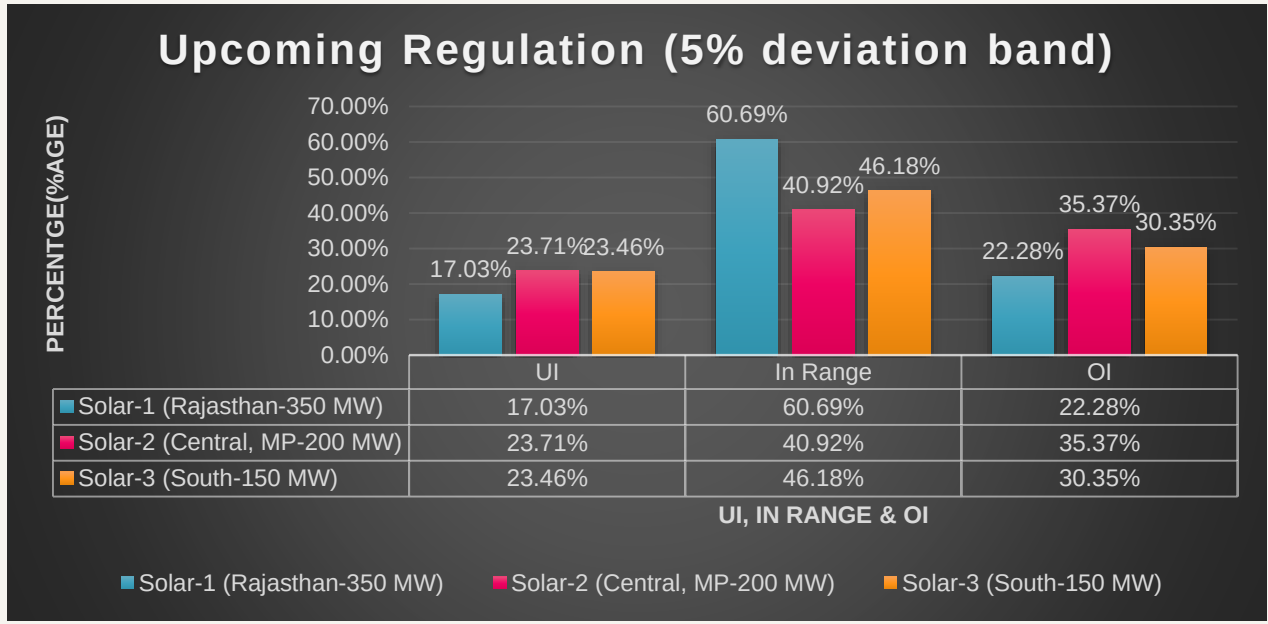


Figure C(i): %age time block deviation within and outside of tolerance band (%age block) under current regulation band

Figure C(ii): %age time block deviation within and outside of tolerance band (%age block) in upcoming new deviation band

On the dataset considered for three solar plants from three different regions of India, the period of dataset is from 01.04.2024 to 31.08.2025, it can be observed from above **Fig C(i) and C(ii)**, that when the tolerance band is +/-10% then the %age time block which falls under the deviation band ranges from 71.16% to 83.55%, while the UI(Under-injection) band and OI(Over-injection) band also falls on lower side, UI ranging from 9.21% to 15.34% and OI ranging from 7.23% to 13.50%. Similarly, when the tolerance band is reduced from +/-10% to +/-5% for solar power plants, then the %age time block which falls under the deviation band ranges from 40.92% to 60.69%, while the UI(Under-injection) band and OI(Over-injection) band also increases to higher side, UI ranging from 17.03% to 23.71% and OI ranging from 22.28% to 35.37%. This shows that the lowering of deviation band for existing Re plant is not only impacting developer commercially but also impacting grid stability adversely.



THANK YOU