Comments and Recommendations: "Determination of value of "X"

(CERC Petition No. 9/SM/2025 (Suo-Motu)



Views on CERC Draft DSM Framework

The proposed DSM changes - X factor reduction and tighter tolerance bands - pose significant risks to renewable energy projects, based on high expectations of forecasting improvements and severe financial implications

Forecasting Expectations	Source of RE generation by nature are variable, intermittent & to a large extent unpredictable, making perfect forecasting **impractical**
Ecosystem Readiness	The proposed trajectory should align with current realities/ bottlenecks, considering that the enabling ecosystem for weather data, energy markets & others are still very **far from maturity**
Financial and Investment Risks	Projected revenue losses (11%- 48%, CERC's own study) **threatens** existing project viability, **discouraging** future investment and derail renewable integration goals
Judicial Review	The DSM framework is sub-judice in Hon'ble High Court in Delhi

Forecasting Limitations

Despite technological progress, forecasting accuracy for wind and solar remains constrained by inherent variability and erratic generation patterns make precise forecasting impractical

Infrastructure Gaps	Current weather forecasting infrastructure is not at par with the expectations from the industry. As per "IMD Vision-2047", by 2047, it will be at 95% accuracy…. Link
Aggregation not as effective as perceived	Current PSS level aggregation is not even sufficient to compensate or recover additional loss incurred due to change in the DSM penalty as per DSM Regulations 2024 Further reducing the "X" to "0" will worsen the situation. Solar/Wind* **"X" factor impact : +100% / +300% I Aggregation benefit: - -30% / -50%**
Erratic Generation Behaviour	Typically wind project on majority of the days (30%-40% Time) observe over 10% deviation in generation between 2 consecutive time blocks making forecasting really tough. Solar also witnesses similar magnitude of erraticness in around 4-5 months
Penalty Concentration	Typically 50% of the total penalty are observed in just 6-7 days in a month, with no YoY, MoM trend Data

India Meteorological Department
Ministry of Earth Sciences
Government of India
VISION-2047

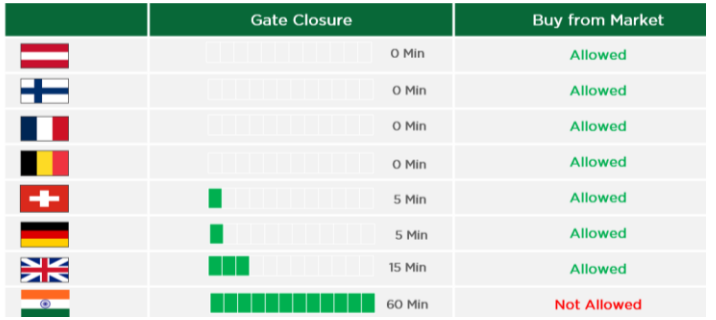
** For ReNew's portfolio under Aggregation*

Enablers (Operational)

Forecasting alone cannot minimize deviations, Critical enablers, innovative market mechanisms, must precede DSM tightening.

Reduced Gate Closure

Reduce RTM gate closure from current 60 min. to 30 min. to start with, and reduce further to reflect and cater to dynamic demand and renewable heavy supply.



	Gate Closure	Buy from Market
	0 Min	Allowed
	0 Min	Allowed
	0 Min	Allowed
	0 Min	Allowed
	5 Min	Allowed
	5 Min	Allowed
	15 Min	Allowed
	60 Min	Not Allowed

Dynamic Deviation Management

Allow generators to buy power from the Market, to manage deviations dynamically and maintain grid stability - a standard practice in European Market

Schedule Revision Flexibility

Restore schedule revision closer to real-time (from 4th time block), to allow generators to manage intermittency more efficiently.

Enablers (Policy)

Adopt a balanced policy approach, by safeguarding existing projects and strengthening system operator roles, to ensure balance and regulatory certainty

Protect Existing Investment	Introduce grandfathering provisions to safeguard investments made under previous regulations, ensuring investor confidence.
Centralized Forecasting	National/Regional agency with better control & data visibility can provide more efficient forecast and effective deviation management. *Successful precedence: SCED, Ancillary, REC, NOAR, etc. run by system operator*
Enhanced Aggregation	With "One Nation - One Grid", it will be apt to increase the balancing area to utilize geographic diversity & scale, which will result in reduced deviations at pool level. *Currently allowed at PSS, should be extended to regional/national level.*
Different treatment for Wind, solar & hybrid	The DSM data in the draft order clearly indicate that wind projects face much steeper revenue losses. Therefore, it is requested to allow: • Differentiated trajectories for solar, wind, and hybrid projects, reflecting their distinct operational and forecasting challenges

ReNew 15

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Imbalance/Deviations Management

European markets allows generators to correct the position (Buy + Sell) closer to delivery (almost real time) . India currently offers only sell option that too with a longer gate closure..

	Gate Closure	Buy from Market
	0 Min	Allowed
	0 Min	Allowed
	0 Min	Allowed
	0 Min	Allowed
	5 Min	Allowed
	5 Min	Allowed
	15 Min	Allowed
	60 Min	Not Allowed

Source

Accuracy target as per IMD's Vision 2047 Report released in 2025

4.6.6 Monitoring & Forecasting Targets with their possible applications

Prediction horizon	Time ahead	Accuracy target (2035)	Accuracy target (2047)	Applications
Now	0 to 5 min	95%	98%	Managing ramp rates and smart grids, ensuring grid stability
Very short	5 to 30 min	95%	97%	Electricity pricing, control strategies
Short	30 min to 6 h	92%	95%	Economic load dispatching, power scheduling
Medium	6 h to 1 day	90%	92%	Unit commitment, energy storage

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Source

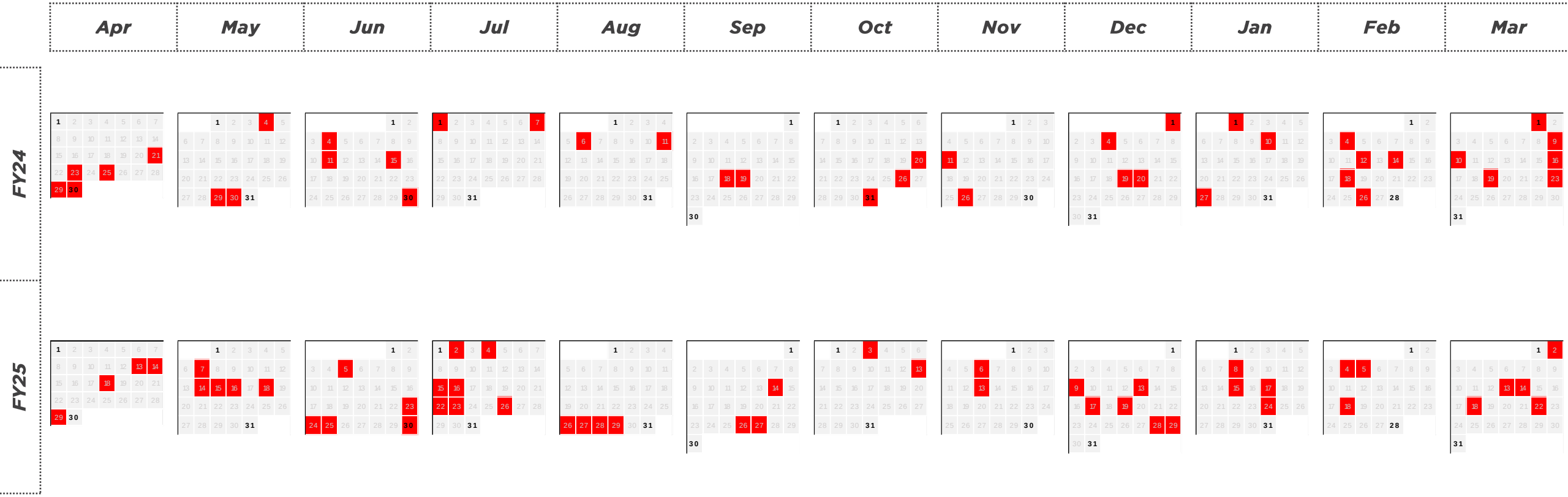
Annexures

Penalty Concentration

A small number of days are responsible for a disproportionately large share of the financial burden…

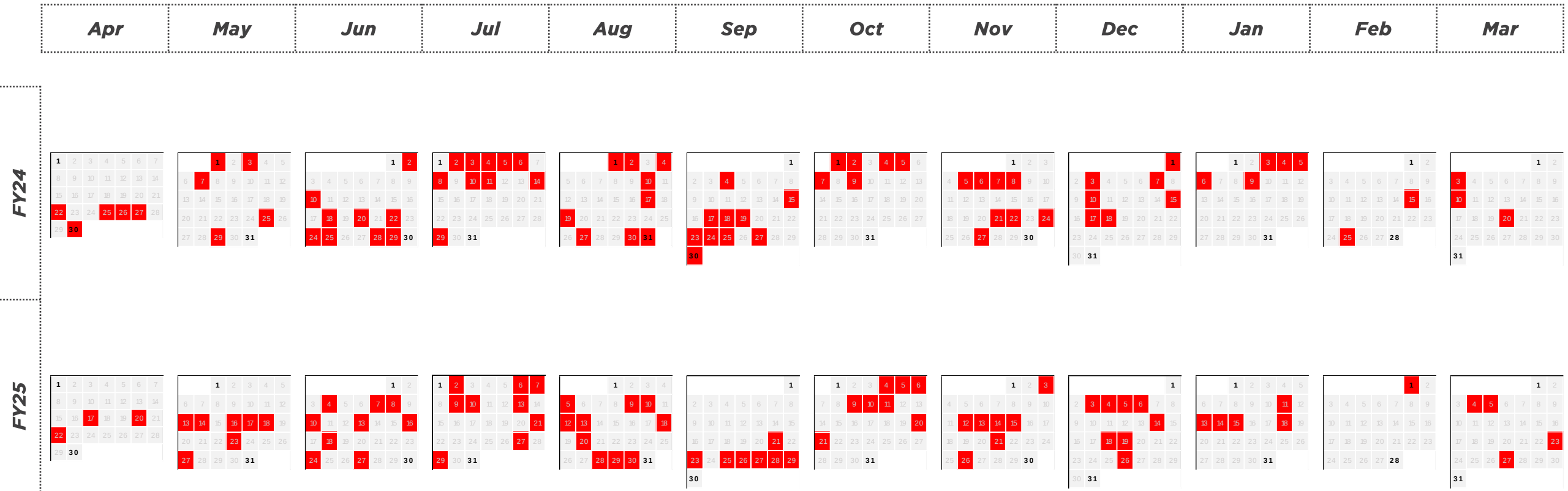
Typically for a renewable project, around 50% of the total penalty is concentrated in just 5 to 6 days each month which are scattered without any YoY or MoM trend…

Wind - 1 (WR)



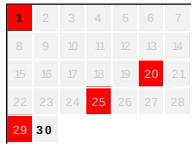
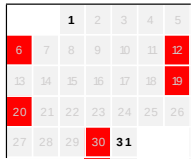
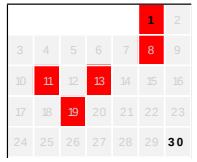
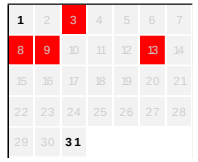
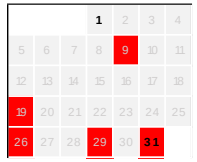
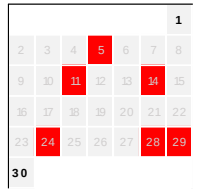
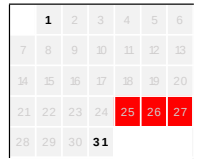
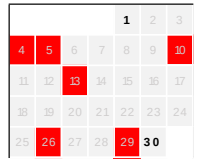
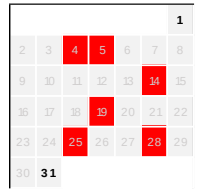
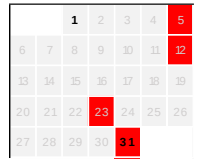
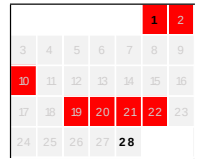
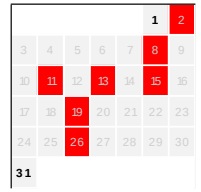
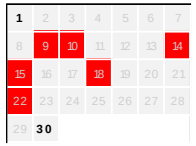
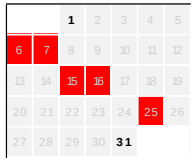
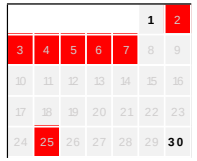
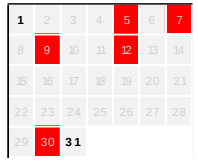
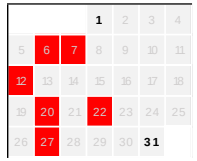
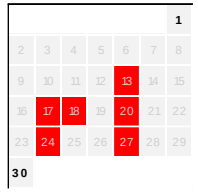
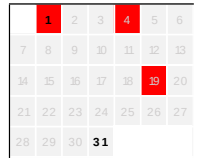
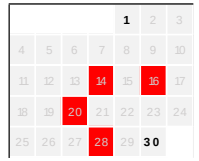
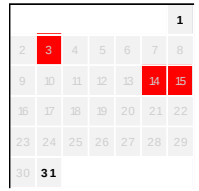
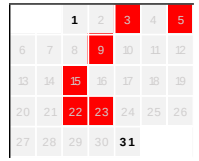
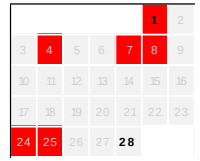
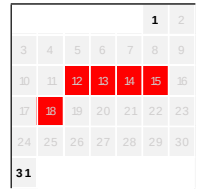
Days in a month where 50 % of total monthly penalty is concentrated.

Solar - 1 (SR)



Days in a month where 50 % of total monthly penalty is concentrated.

Wind - 2 (SR)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
FY24												
FY25												

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Days in a month where 50 % of total monthly penalty is concentrated.