Value of ‘X’ for Deviation Computation of WS Sellers as per CERC DSM Regulations, 2024

effective: 01st April 2026

Submissions for Public Hearing dated 03-Dec-2025

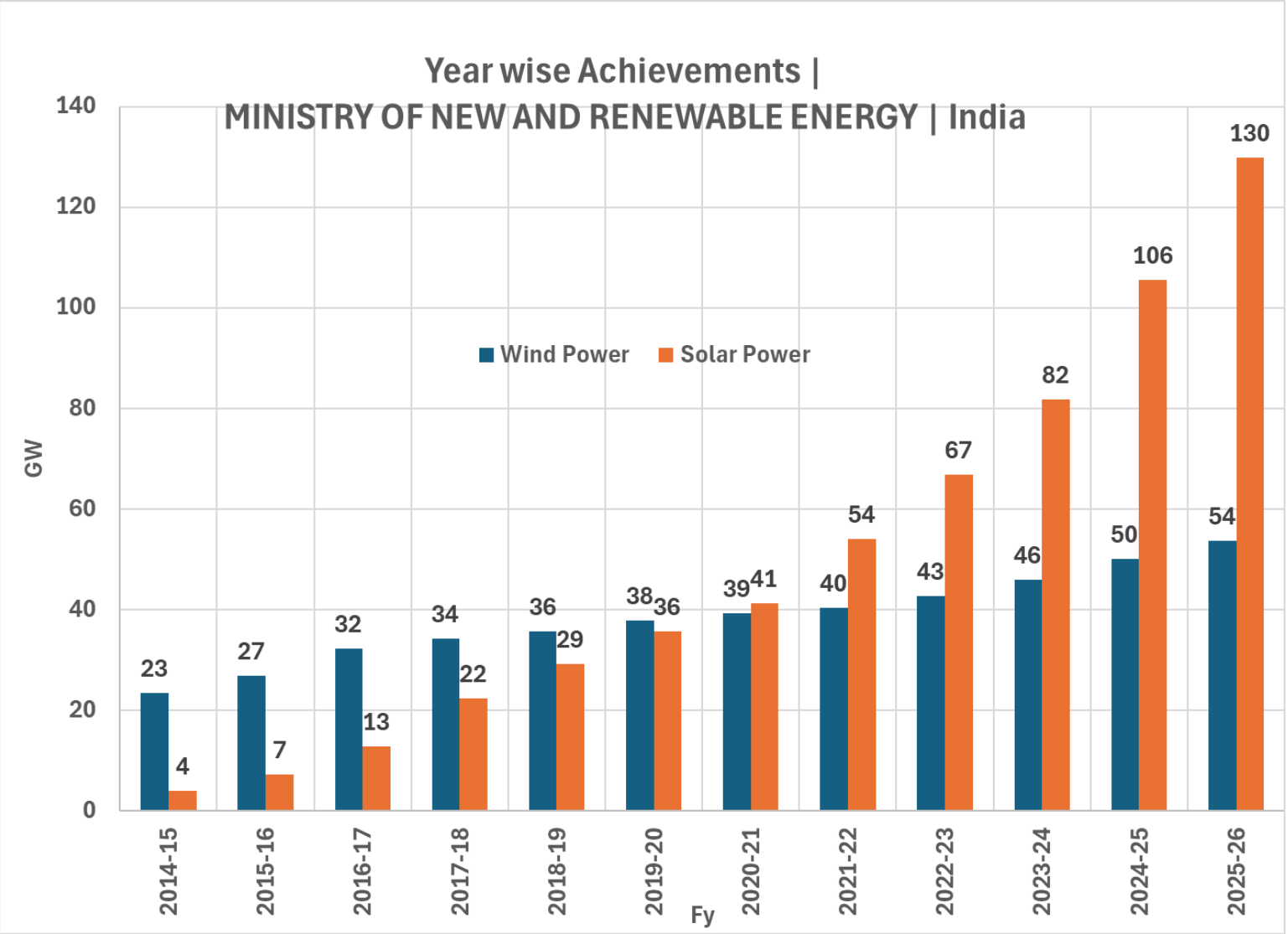
Introduction - Evolution of DSM for ISTS RE…(1)

- **1st Nov, 2015** - Deviation Settlement Mechanism for RE introduced through 2nd Amendment of 2014 DSM regulations
- **Absolute Error, AvC** - introduced as metrics for RE deviation
  - Error (%) = 100 * [Actual Generation – Scheduled Generation] / (AvC)
- RE Deviation delinked from frequency,
- **Concurrent Grid Code Amendment** mandating RE forecasting and scheduling (16 Revisions per day)
- Gradual tightening of deviation band - to bring RE closer to mainstream

	Regional Entity Wind/Solar (DSM 2014 -2nd Amendment from 1-Nov 2015)	
	over injection	under injection
	< = 15%	< = 15%
	>15% but <= 25%	>15% but <= 25%
	>25% but <=35%	>25% but <=35%
	> 35%	> 35%

DSM 2022 onwards till March 2026			
WS (Solar/Hybrid)		Wind	
over injection	under injection	over injection	under injection
10%	10%	15%	15%
10-15%	10-15%	15-20%	15-20%
>15%	>15%	>20%	>20%

Introduction…(2)

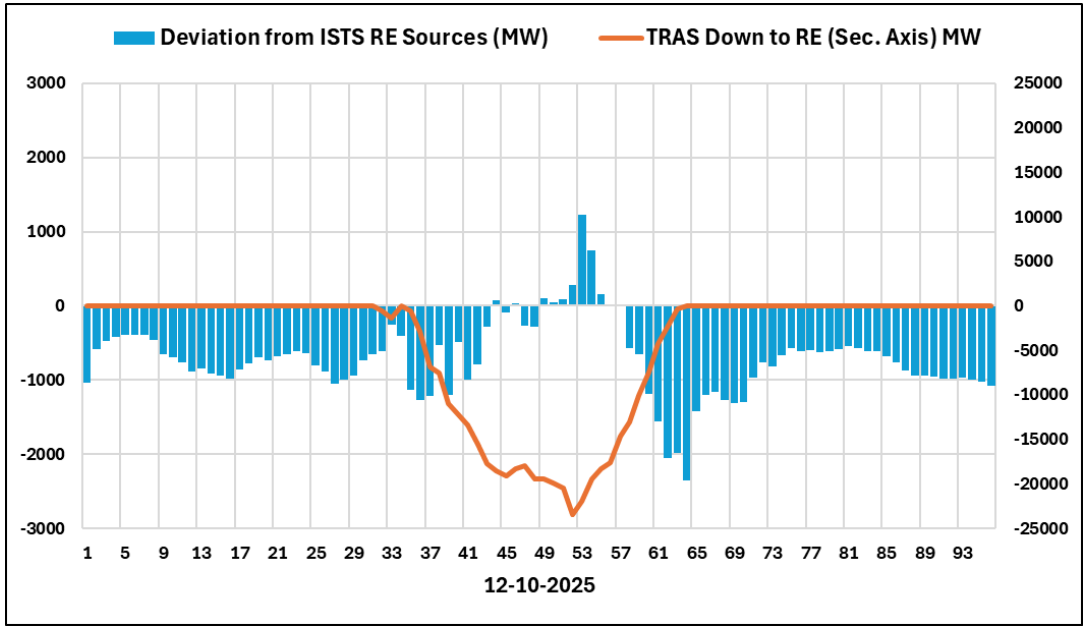


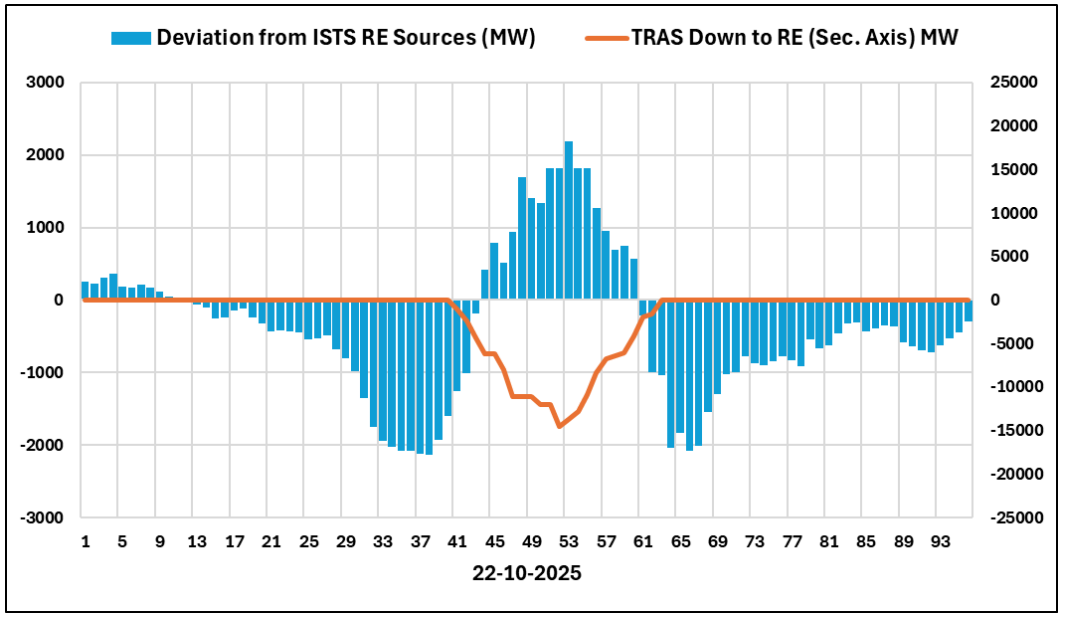
FY	Daily Max Energy Penetration	Daily Avg Penetration (Energy)
2021-22	18%	9%
2022-23	20%	11%
2023-24	19%	11%
2024-25	19%	12%
2025-26 Nov'25	22%	15%

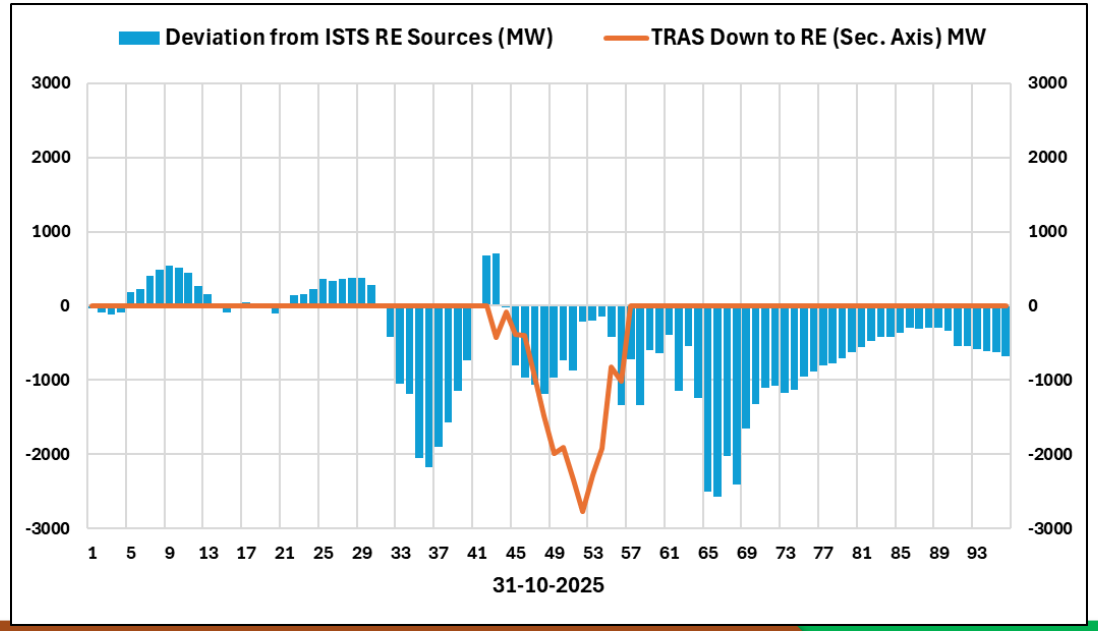
On 29 July 2025, India reached the highest-ever renewable energy share in electricity generation mix:
(Solar, Wind, Hydro) = **51.5 %**
Solar+Wind =**36.6%**

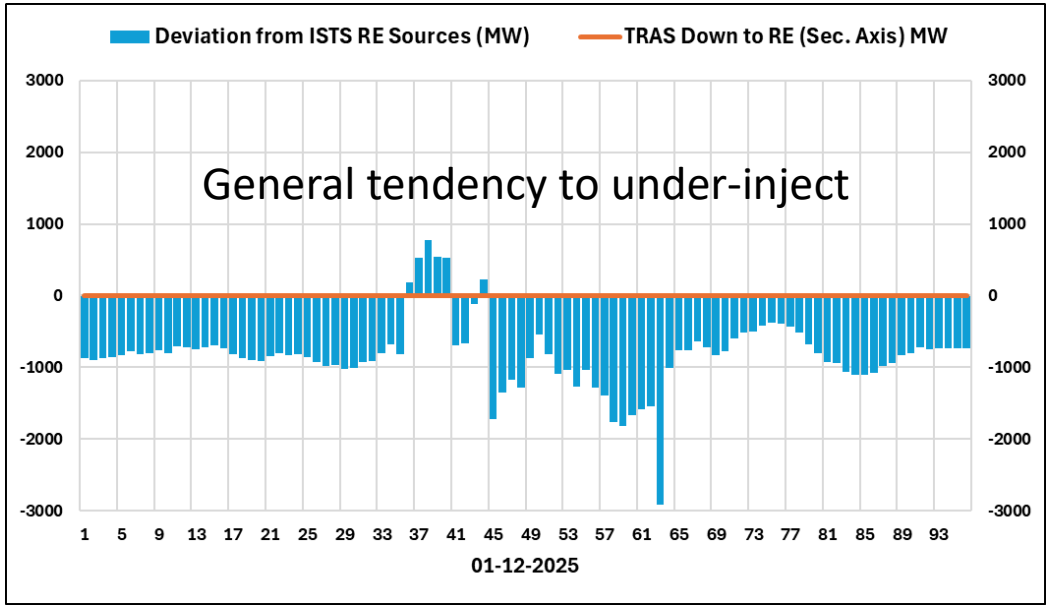
Moving fast towards 500 GW target by 2030 - Need for aligning RE scheduling and imbalance handling for Grid Stability

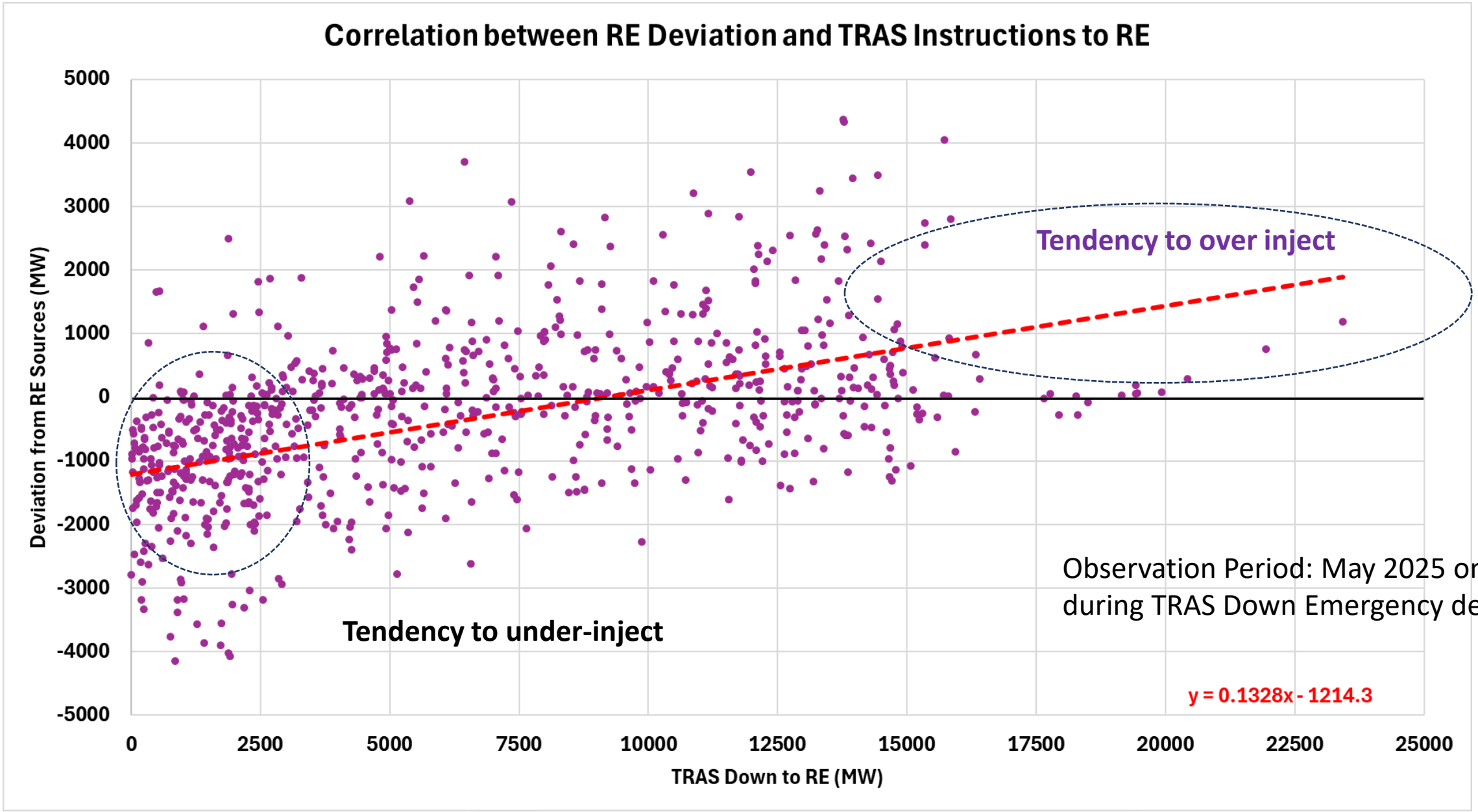
Deviation by ISTS RE on sample days







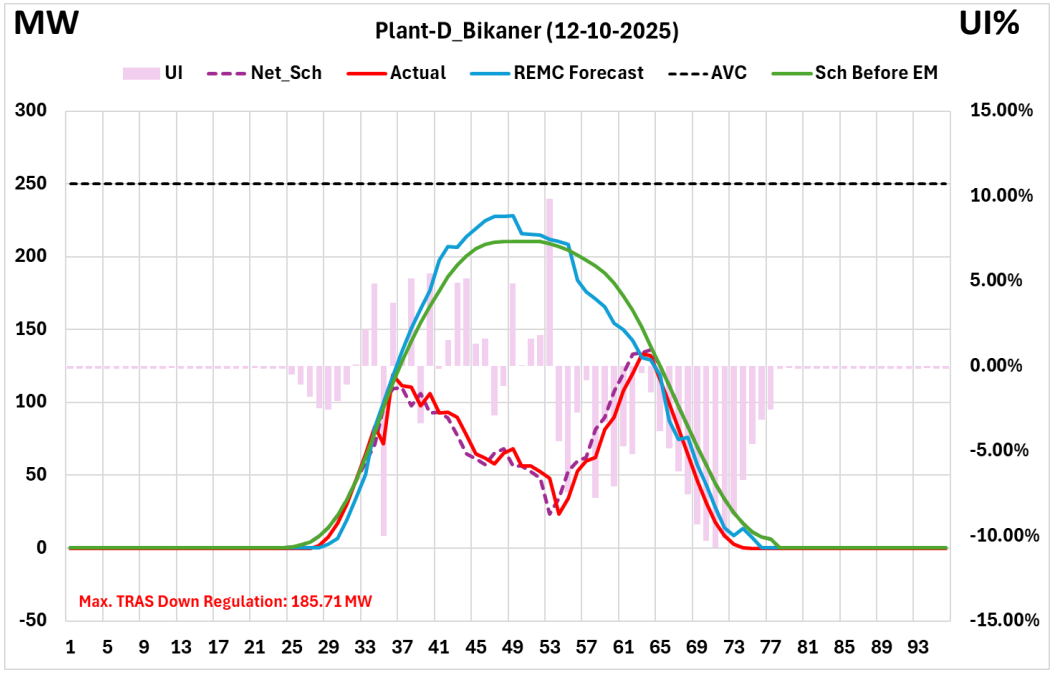




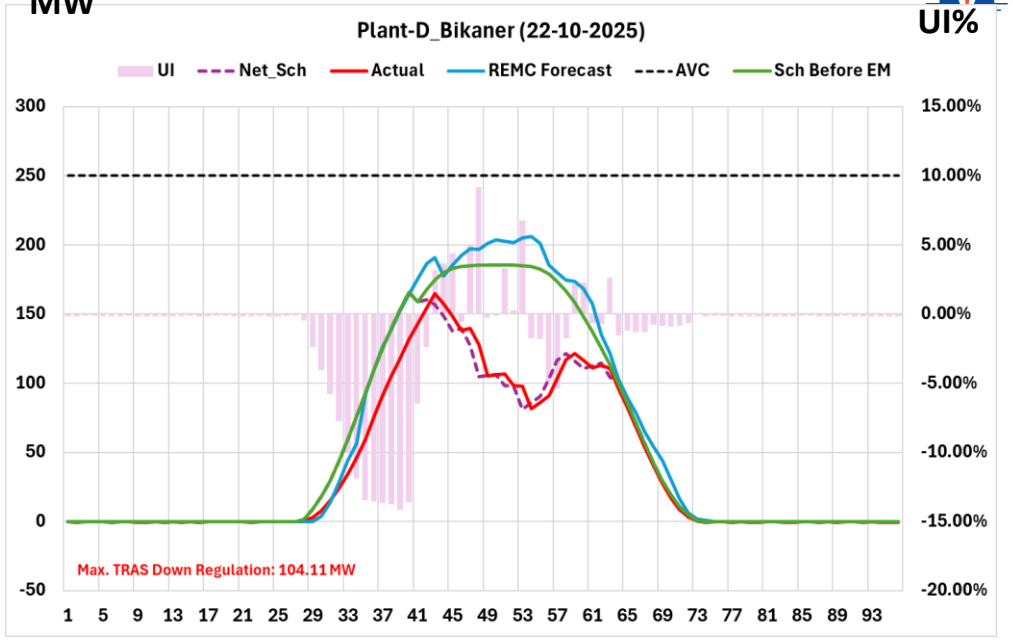
Observation Period: May 2025 onwards during TRAS Down Emergency despatch

RE Plants closely following schedules after TRAS Emergency despatch

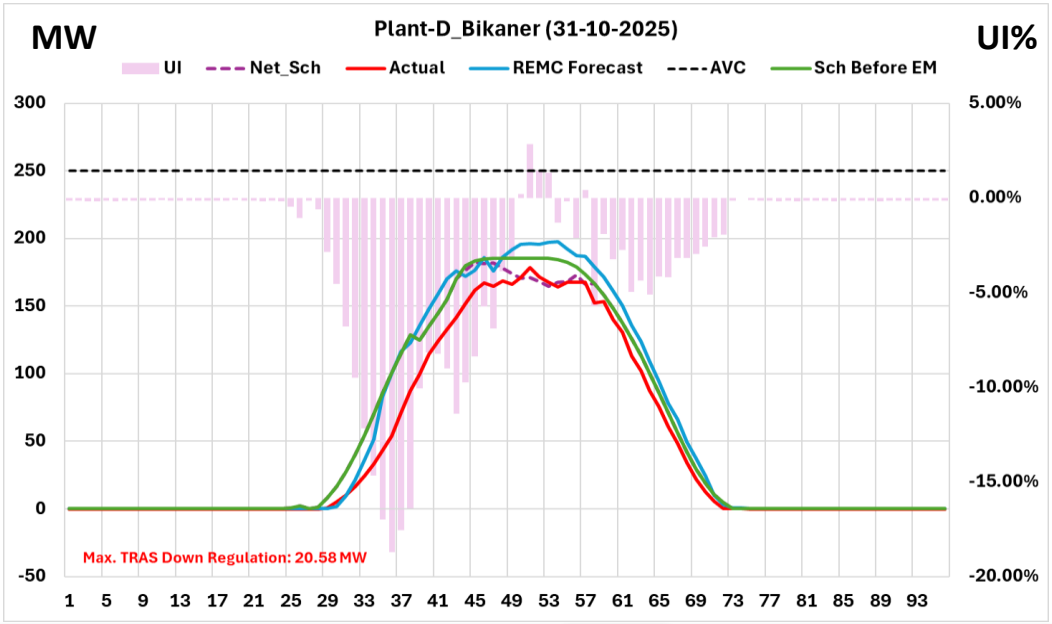
High TRAS down quantum



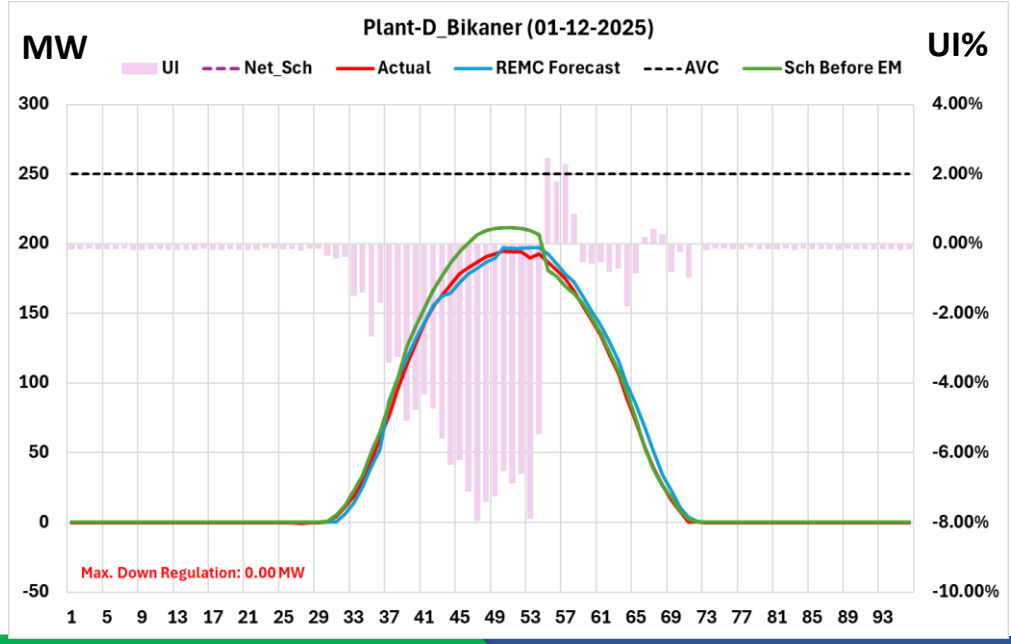
Moderate TRAS down quantum



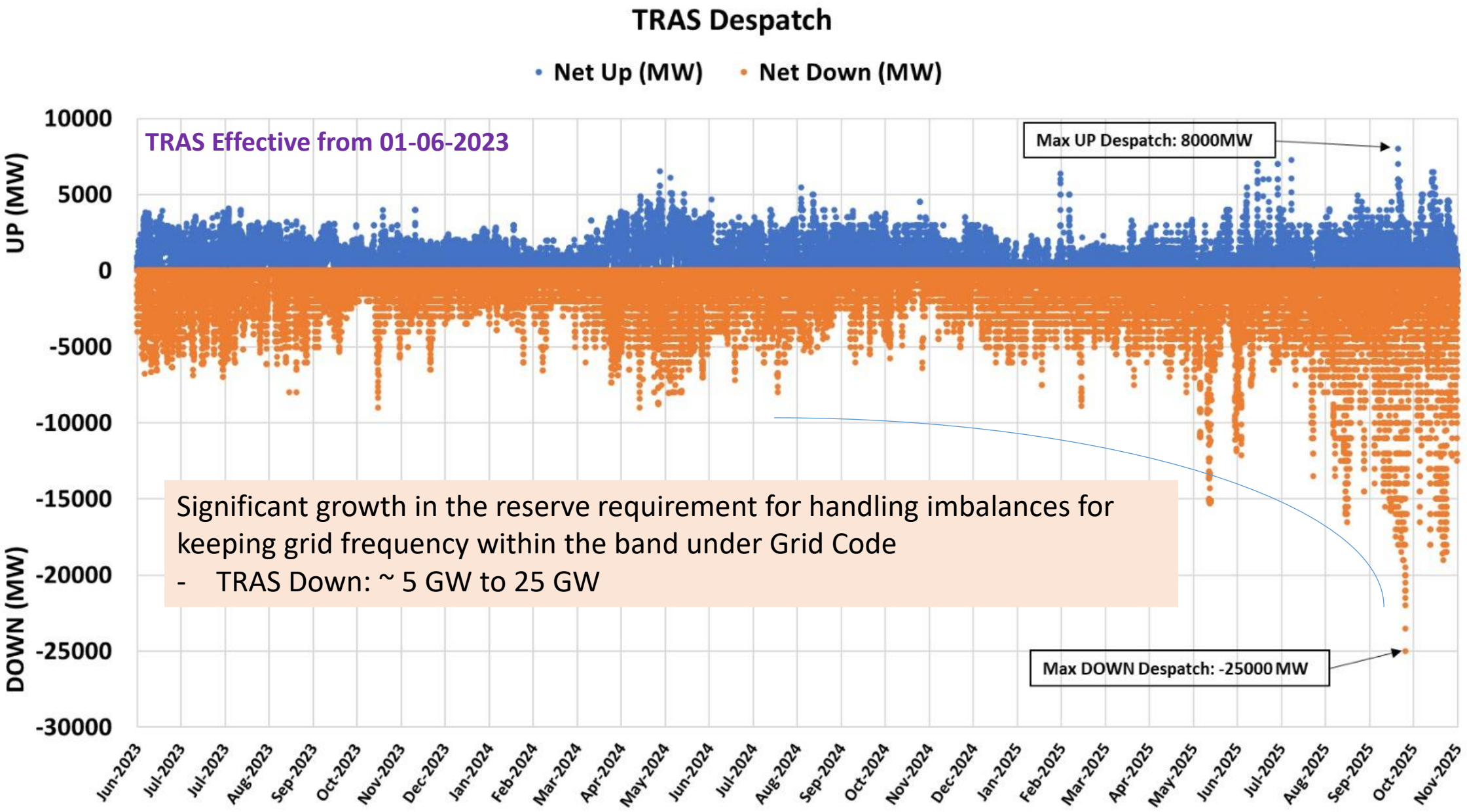
Low TRAS down quantum



No TRAS down



Growing need for Tertiary Reserves



Significant growth in the reserve requirement for handling imbalances for keeping grid frequency within the band under Grid Code

- TRAS Down: ~ 5 GW to 25 GW

Summary

- Suitable design of “Imbalance (DSM) Price” is critical for ensuring grid discipline.
- RE Deviation delinked from frequency, deviation computation is w.r.t. AvC (not schedule). Actual deviation would be higher compared to measured deviation for WS leading to:
  - Over scheduling and under injection in general
  - higher reserve requirement for grid balancing (2341 MUs of TRAS Down Emergency to RE since May 2025)
- IEGC 2023: RE generator no restriction in number of schedule revisions (unlike coal, hydro)
- Improvement in weather forecast services from IMD / NCMRWF – over the years (more granular grid side and temporal resolution weather data)
- With growing RE penetration - there is need to bring the RE plants to mainstream to cater to the grid balancing needs for reliable grid operation.
- **Proposal for gradual reduction in ‘X’ in the DSM formula - a welcome step**
  - This would give signal for passive balancing from the REGS for reliable grid operation.
  - **This would bring discipline and reduce balancing reserves requirement**.

ग्रिड-इंडिया
GRID-INDIA

Thank you