

**Presentation To Honorable CERC
(5th draft Amendment of the DSM regulations)
on
22.5.2019**

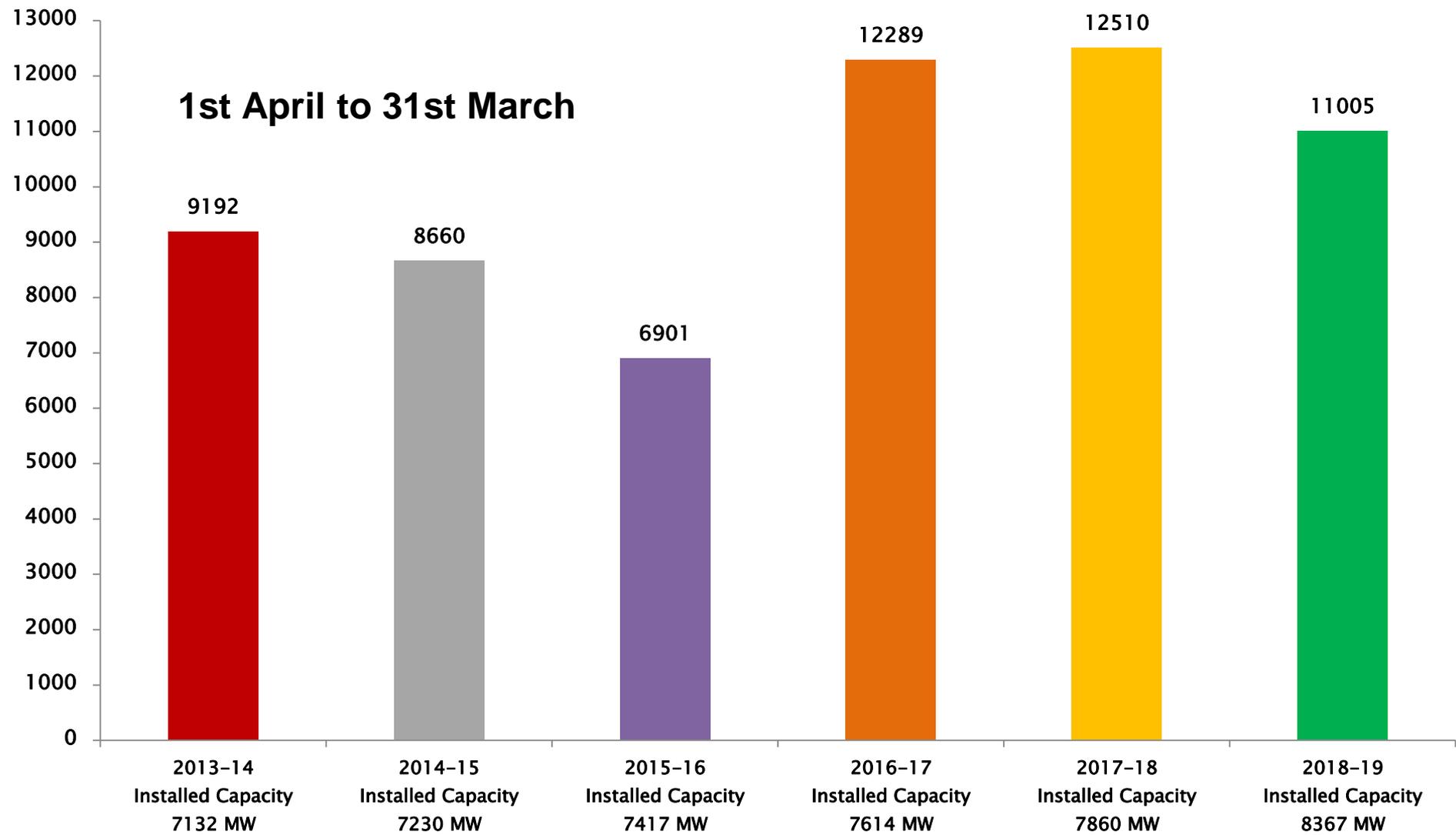
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- **IWPA – An Association with largest membership of Wind Energy generators in the country with more than 1500 members having installation of 14 GW and 5000 MW in Tamil Nadu alone**
- **Wind generation is intermittent and variable and has now become reasonably predictable due to good quality forecasting.**
- **F & S Regulations provide for a deviation from schedule ranging between 10 & 15% without penalty considering its intermittency and variability.**
- **Tamilnadu a Super Rich RE State which has over 10,000 MW of installed capacity (both wind and solar) could have a deviation of more than 1000 MW from schedule , assuming a 10% deviation.**

Proactive Steps Initiated by CERC for better absorption of RE Power

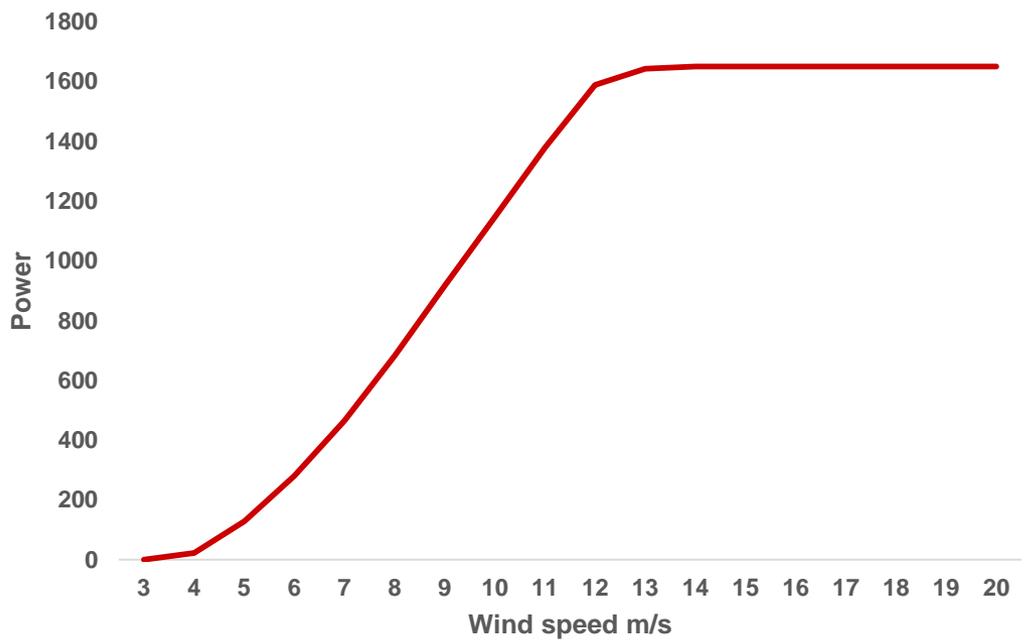
- ▶ Increasing the deviation limits for RE rich states to 250 MW
- ▶ Reducing the technical minimum of thermal generators to 55%
- ▶ Forecasting and scheduling regulations
- ▶ Implementation of AGC
- ▶ **After the implementation of above measures, evacuation of RE power improved by helping grid operators plan in advance in balancing the integration of growing renewable power and secure management of grid**

▪Using the Centralized State Wide Forecasting TN is managing the grid in safe and secure manner without any grid stability issues, integrating the renewables to a greater extent for the past three years.



- Forecasting is done based on the prediction of wind speed whereas the schedule is given for power output.
- The variation in wind speed and power output is not linear. A 11% variation in wind speed can result in 25% variation in power output. Deviation depends on the impact of variation in wind speed on the power generation. Deviation cannot be controlled or restricted.

Power Curve NM82



Wind speed (M/s)	Power (KW)	% of Increase in WIND	% of Increase in Generation
5	129	25%	486%
6	280	20%	117%
7	465	17%	66%
8	683	14%	47%
9	916	13%	34%
10	1147	11%	25%
11	1379	10%	20%
12	1588	9%	15%
13	1643	8%	3%

Implementation of Fourth Amendment

- **Fourth Amendment implemented on 1.1.2019 requiring sign change has already started reducing the evacuation of RE power.**
- **Since its implementation, frequency and duration of grid back down has increased in 2019.**
- **If RE is not exempted from sign change requirement, the purpose of the amendments specifically brought earlier by the Honble CERC for integrating large scale renewable may not be fully served – increase in the deviation limit from 150 MW to 250 MW, reducing the technical minimum of thermal plants to 55%, introduction of DSM and F and S regulation for RE power and mandatory installation of AGC**

Impact on RE Power

- **Deviation limit of 250 MW is effectively not available for RE power for all the time blocks as sign change requirement supersedes and nullifies the deviation limit.**
- **For the sake of achieving the sign change RE power has been curtailed as RE power cannot be regulated. Other wise load has to be backed down which is counter productive**
- **Frequent back down and stoppages of WEGs will lead to more failures of components entailing additional maintenance costs.**

- Given below is a summary of grid back down details for the period from 1.1.2019 till 15.5.2019 in one substation in Tamilnadu with comparison of the earlier corresponding period which is a lean wind period

Frequency of Load shed

Month/Year	2018	2019
Jan	7	40
Feb	4	35
Mar	3	13
Apr	3	10
May (till 15th)	2	17
Total	19	115

- In Para No 2.13 of the explanatory Memorandum to the draft 5th Amendment it is mentioned as follows:-

“ The Commission has also considered to clearly provide exemption from the sign change requirement for the generation from RE sources.”

From the above proposal of CERC it is clear that the Honorable Commission has recognized that sign change cannot be enforced to RE power and proposed to exempt Regional RE entities from the sign change requirement.

- However in the draft amendment the exemption is restricted only to RE sources that are regional entities.
- The exemption granted to RE should be made applicable for all RE generators including the intra state entities. If RE cannot comply with sign change, RE rich states also cannot comply the sign change

Our submission

Exempt the deviation in RE power including the intra state RE entities from the purview of sign change by exempting the RE rich states from the applicability of sign change before the wind season starts. Otherwise precious green power will be lost increasing the carbon emissions which is bad for the HUMANITY.

Typical Example

	schedule	Actual	Deviation	freq
				49.92
7:15:00	1638.543	1620.667	17.876	
7:30:00	1751.678	1660.44	91.238	49.94
7:45:00	1694.18	1661.998	32.182	49.9
8:00:00	1623.368	1593.697	29.671	49.88
8:15:00	1599.85	1543.084	56.766	49.78
8:30:00	1593.725	1512.265	81.46	49.8
8:45:00	1615.965	1533.458	82.507	49.86
9:00:00	1587.618	1503.38	84.238	49.81
9:15:00	1511.7	1502.61	9.09	49.9
9:30:00	1448.243	1451.76	-3.517	49.78

THANK YOU