

Date: 04.03.2020

To,

Hon' Secretary
Andhra Pradesh Electricity Regulatory Commission
11-4-660, 4th Floor, Singareni Bhavan, Red Hills Road,
Khairatabad, Hyderabad, Telangana 500004

Subject: Suggestions / Comments on Draft Amendments proposed by APTRANSCO, towards the Regulation 4 of APERC Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation Regulation, 2017

Dear Sir,

We wish to introduce ourselves as Tadas Wind Energy Private Limited (TWEPL) which owns and operates 256 MW of wind power projects in the country and is a wholly owned subsidiary of ORIX Corporation, Japan with Wind Portfolio of 859 MW across the country. In Andhra Pradesh, TWEPL owns and operates a 50.4 MW wind farm project at District Ananthapur which is connected to the 220/33 kV Shahpuram Windworld substation.

At the outset we thank the Hon' APERC for giving us an opportunity to offer our views and suggestions on the proposed amendment by APTRANSCO, as referred above. Further with reference to the above subject, we would like to bring to your kind attention that several wind and solar companies across the country have challenged the legal and constitutional validity of Forecasting, Scheduling and DSM Mechanism Regulations passed by respective State Electricity Regulatory Commissions in various High Courts and interim orders have also been passed to the effect that no coercive actions be taken against the renewable energy generating companies. Similarly, aggrieved by the APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation) Regulation, 2017 i.e. Regulation No. 4 of 2017, some wind and solar companies have filed certain Writ Petitions before the Hon'ble High Court of Andhra Pradesh.

Forecasting & scheduling activity has started in AP since July 2018, the Honourable APERC should also assess the existing practice and accuracy of demand forecasting by DISCOMS and APTRANSCO. Only a full analysis of the accuracy of demand and supply forecasting will enable making an informed decision regarding the cost of deviation from VRE, and changes if any that needs to be made in the regulation. The larger impact of changes proposed by APTRANSCO will only be to make the projects unviable. All the changes proposed like change in the error calculation formula, reducing the permitted deviation to 5%, disallowing any intra-day revisions, and charging Rs 2/ unit of deviation will result in a significant cost increase, potentially making the projects unviable. The Honourable APERC should assess the cost impact of such changes on a per unit basis, and assess viability of RE projects before making any changes.

Our Comments/Suggestions in Respect of the Proposed Amendment of Regulation 4 of 2017 is detailed below:

Amendment 1:

Substitute the term 'absolute error' with 'forecast error'.

Substitute the term 'Available Capacity' with 'Scheduled Generation' for calculating Forecast error as per following formula.

$$\text{Forecast Error (\%)} = 100 \times (\text{Scheduled Generation} - \text{actual Injection}) / \text{Scheduled Generation}$$



Our Comments:

Change in formula for error would be against the interest of justice and would create serious prejudice against VRE as Renewable energy is predictable to some extent however, its forecasting and scheduling accuracies cannot be treated at par with conventional energy generators. For instance in case of a wind generating plant an error of 0.5 meter per second in wind speed may result in 15% variation in terms of power generated and 0.5 meter per second is the minimum error achieved worldwide and average error for wind plant is of around 0.7 meter per second. For another instance, in case of Solar plant an error of 50 watt per meter square as GHI results an error of 10% variation in terms of power and average error for solar sites is of 100 watt per meter square as GHI. Further, for day ahead basis the average error is increased to more than 0.9 meter per second for wind plant which ultimately results an absolute error near to 25% and for solar plant 100 watt per meter second is an average error on day ahead basis which ultimately leads to an absolute error of 20%.

As per CERC DSM Regulation 2014, the Commission has used Available Capacity (AvC) as the denominator for calculating Absolute Error.

Therefore considering the present change in formula and other proposed amendment, avoiding penalties for VRE Generator would become inevitable without any fault or role by VRE Generator and entire purpose of the RE Regulation would be defeated.

Amendment 2:

The definition of phrase 'Allowable forecast error' in percentage should be considered for inclusion.

'Allowable forecast error' = $100 \times (\text{diversity factor } 0.7 \text{ in control area in the beginning of financial year}) \times (\text{quantum of deviation limit permitted under CERC's DSM Regulation amended from time to time}) / (\text{quantum of VRE Installed capacity}) \pm 5\%$.

Our Comments:

1. Assumption taken into consideration by APTRANSCO may not be correct in every case. In case two VRE Generators deviate in opposite direction, in that case both the VRE Generator end up paying deviation charges despite impact upon state owing to deviation on the part of both the generators is zero.

2. Treating VRE Generator at par with conventional energy generator was never the intent of Forum of Regulator and the same is evident through methodology adopted by them in the Model Re Forecasting and Scheduling Regulation for State by Forum of Regulator, 2015.

3. If taken into consideration proposed definition of allowed error and calculation thereto, it would be inevident for VRE Generator to avoid penalties and would be seriously discouraged to operate generating plant owing to such onerous negative revenue impact because of such penalties.

4. If renewable energy generators are treated at par with conventional energy generators that would seriously defeat the very target of Government of India to meet its renewable energy target since VRE Generator has a very narrow scope for mismatch with respect to their revenue requirement. VRE Generators are firmly dependent upon weather conditions for their plant operation and generation and accurate projection of their electricity generation and revenue cannot be ascertained and in such a scenario reducing permissible band for deviation would totally take away the commercial viability of VRE Generators. In this context, it is proposed to not to make amendment to the definition of Absolute Error and its calculations.

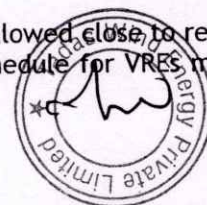
Amendment 3:

It is proposed to remove the option of rescheduling of forecast on one and half hourly basis during the day of operation and strictly adhere to ahead basis

Our Comments:

The suggestion for removal of one and half hourly revision on the basis that the DISCOMS have to plan on a day ahead basis is not in the right spirit due the following reasons:

Variability of generation from VREs, can only be bridged if revisions are allowed close to real time, so that the variations can be kept at a lower level. Allowing only Day Ahead schedule for VREs may significantly



escalate the deficit/surplus scenario for the DISCOMs, due to much higher variations in the Day Ahead forecast, and this has been discussed and documented in several meetings of SLDC with the stakeholders involved.

The same has also been recognized by forecasting agencies worldwide, and also quoted in the SoR by CERC: *"The Commission recognizes that accuracy of forecasting improves as one gets closer to time of dispatch. This is borne out by plenty of research that is available on how forecasting accuracy improves as more updates are done aligned with shorter scheduling intervals."*

State Electricity Commissions while formulating Renewable Energy forecasting and scheduling regulations needs to be guided by Forum Of Regulators framework. The proposed amendment would be in direct conflict with the framework proposed by FOR's model regulation. Removing provisions for revision in schedule and reducing the accuracy band to 5%, would entirely make projects unviable for developers to operate.

Amendment 4:

Sr.No	Forecast Error in the 15 min. time block	Deviation charges payable to State Pool Account
1.	<Allowable Forecast Error	None
2.	Allowable Forecast Error	At Rs.2.00 per unit for the shortfall or excess injection

Our Comments:

It is submitted that in the event of actual wind and solar generation are mostly dependent on climatic conditions and geographical conditions. The power from the renewable energies is not firm and are not predictable. It is further submitted that even the dedicated government departments using best of the forecasting technologies cannot accurately predict the phenomenon of the nature. Thus, it would be completely unfair to penalize wind/solar generator for any inaccurate forecasting that too at lowest tolerance band of +/- 5% and at Rs. 2.0/kWh.

According to CERC DSM Regulations, 2014, the penalty is based on percentage of fixed rate with each error band and not an absolute penalty value as proposed by AP Transco. The proposed absolute penalty of Rs.2 /kWh is extremely harsh and unviable.

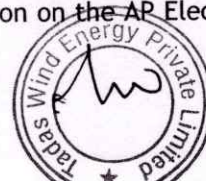
Also, as per Forum Of Regulators, 2015, the Central Commission, while proposing the DSM amendments for solar & wind regional entities had considered simulations and analytical inputs from agencies engaged in wind forecasting. The Central Commission, in view of simulation studies as well as international research reports on observed mean absolute error (MAE), had put forth the framework for computing deviation charges based on error, with a tolerance band of 15% with no deviation charge. Penalty will be levied beyond 15% deviation and will be different for different deviation bracket. Also, the penalty should not be in absolute value and should be in percentage of tariff in line with the CERC framework.

Amendment 5:

The definition phrase of virtual pooling may be considered to be deleted from definition 2.1 (aa) and also be deleted at clause 6.9 of Regulation 4 of 2017.

Having all the RE generators connected to Virtual Pool is advantageous in many fronts. It reduces the number of QCAS sending their schedule to SLDC thus removing multiple data analysis/entries. Further, aggregation of schedule and actual generation on the State level and/or with respect to each distribution licensee would ensure that the deviation from the schedule in generation of renewable power is averaged out. This will enable the SLDC to plan their day ahead schedule more accurately, thus enhancing grid stability and security through more accurate management while parallelly helping RE generators minimize their penalties. Moreover Hon'ble Commission followed the FOR Model Regulations and Karnataka ERC has also allowed such aggregation.

While thanking you for the opportunity for giving us the platform to address our concerns, we would also like to refer that the it is significant to state the Hon'ble Supreme Court in the matter CA No.4404 of 2019, has by its order dated April 26, 2019, remanded the issue of adjudication on the AP Electricity Regulatory



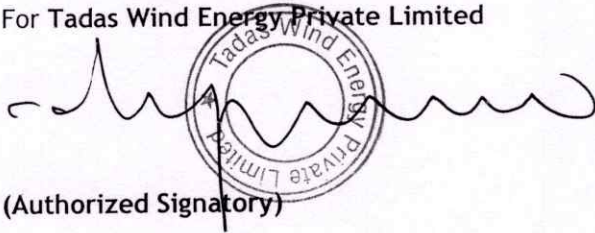
Commission (Forecasting, Scheduling and Deviation Settlement Mechanism for Wind and Solar Generation Sources), Regulations, 2017 to the Hon'ble AP High Court, for disposal on merits and the same is sub-judice before the Hon'ble AP High Court.

Therefore, in view of the above, we humbly request that the public notice issued by Hon'ble APERC for holding a public hearing on March 10, 2020, with regard to amendment of the said Regulation No. 4 of 2017, be kept in abeyance until the matter on the constitutional validity of the Regulations is finally decided by the Hon'ble High Court at Andhra Pradesh.

We look forward your continuing co-operation in the said matter.

Thanking you,

For Tadas Wind Energy Private Limited

A handwritten signature in black ink is written over a circular stamp. The stamp contains the text "Tadas Wind Energy Private Limited" around its perimeter. Below the signature, the text "(Authorized Signatory)" is printed.

(Authorized Signatory)