



From: Sprng Energy Private Limited
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Date: 9th March, 2020

To,
Hon'ble Secretary,
Andhra Pradesh Electricity Regulatory Commission
11-4-660, 4th Floor, Singareni Bhavan, Red Hills,
Hyderabad- 500 004

Subject : Public notice dated 13.02.2020 regarding public hearing to be held on 10.03.2020 in respect of proposed amendment of Regulation 4 of 2017 i.e., APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation) Regulations, 2017

Ref'nce : Chief General Manager/HRD & Planning APTRANSCO letter no. CGM/HRD&Plg/SE/Plg/EE/RAC&Reforms /APERC/D.No.121/2019 Dated 10.12.2019 issued to Secretary, APERC.

Respected Sir,

At the onset, we would like to introduce ourselves. Sprng Energy Private Limited (SEPL) is a renewable energy platform set up in India by Actis - a private equity fund manager that invests exclusively in the world's growth markets, with a total commitment of US\$500mn of equity from Actis Energy Fund 4 to set up c.2.5GW (1.1% of 175 GW of target set up by Ministry of New and Renewable Energy, Government of India) of renewable energy capacity (solar and wind) by 2020. Till date, we have 500 MW (AC) solar projects and 600 MW of wind power projects under execution & 444 MW (AC) solar projects and 197.5MW wind project under operation cumulating to a total of 1741.5 MW projects in the country.

We would like to bring it to the notice of Hon'ble APERC that M/s. Axis wind Farms and Others have filed Writ Petition bearing number 13860 of 2019 before AP High Court in respect of the APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation) Regulation, 2017" i.e. Regulation No. 4 of 2017 (herein after referred to as 'Regulations'). In addition, some solar companies have filed Writ Petitions before the Hon'ble High court of Andhra Pradesh challenging the



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(Formerly known as "Arinsun Energy Pvt.Ltd")

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legal and constitutional validity of Regulation No. 4 of 2017. Hon'ble Supreme Court in an order passed on 26.04.2019 in Civil Appeal No. 4404 of 2019 has directed Hon'ble AP High Court to adjudicate on the constitutional validity of the Regulations, emphasizing that it shall not be left to the jurisdiction of Hon'ble Regulatory Commission and must be reviewed by the Hon'ble High Court. During the process, Hon'ble High Court has passed interim orders in these writ petitions directing the Discoms not to take any coercive action pending the disposal of the writ petitions. Therefore, we would like the Hon'ble APERC to please note that the validity of the Regulations itself is under judicial review by the Hon'ble High Court in WP 5706 of 2019 and WP 13860 of 2019.

Without pre-judice to the aforesaid matters before Hon'ble AP High Court, with reference to the public notice issued by Hon'ble APERC (under subject matter), we would like to submit some facts before Hon'ble APERC.

1. CERC, in its effort to provide a framework for effective large-scale integration of variable RE sources, in August 2015, notified the Framework on Forecasting, Scheduling and Imbalance Handling for Wind and Solar Generators connected to ISTS. IEGC and DSM Regulations were suitably amended to incorporate this framework. Subsequently, the FOR Secretariat prepared Model Regulations on "Forecasting, Scheduling and Deviation Settlement of Wind and Solar Generators at the State level" which were endorsed during the 50th meeting of Forum of Regulators (dated 29th Sept – 1st Oct. 2015).
2. For interstate transactions coming under CERC Deviation Settlement Mechanism Regulations for Renewables within tolerance band (+/- 15%), receipt from/payment to pool @PPA rate (i.e. in effect, payment as per actuals) has been notified. Beyond 15%, a gradient band for deviation charges is notified as follows:

Abs Error (% of AvC)	Deviation Charge
15%-25%	10% of PPA rate
25%-35%	20% of PPA rate
>35%	30% of PPA rate

3. Based on the Model Regulations prepared by FOR Secretariat, Hon'ble APERC, has notified Regulations (4 of 2017) in August, 2017 for Forecasting, Scheduling and Deviation Settlement of Wind and Solar Generators. Under APERC Regulations, while the tolerance band of (+/- 15%) attracts no penalty, beyond 15%, a gradient band for deviation charges is notified as follows:

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Abs Error (% of AvC)	Deviation Charge
15%-25%	Rs. 0.50/kWh
25%-35%	Rs. 1.00/kWh
>35%	Rs. 1.50/kWh

4. The Hon'ble APERC is well aware of the fact that the tariffs discovered under competitive bidding route have come down below Rs 3/kWh for both – solar and wind power procurement.
5. If the power is sold under intrastate regulatory provision, deviation charges attracted, under the existing Regulations, are almost double as against the interstate regulatory provision for same percentage level of deviation. This has happened because the penalties under interstate transactions are in terms of percentage of tariff and the intrastate transactions attract fixed charges based on deviation slabs. This will certainly affect badly the investment in the renewable sector for sale of power within the state through bidding route. The Hon'ble APERC may please note the difference and amend the regulations to bring penalties under intrastate Regulation on par with interstate.
6. Introduction of any amendments to the existing Regulations, as proposed by the AP Transco, would have major impact on the financials of all WPDs/SPDs who have been awarded projects through competitive bidding route. We propose not to make any amendments or if decided to do so, those should be introduced on prospective basis. This will help the WPDs/SPDs to make necessary provisions in the tariffs to be quoted in future and make projects financially workable.
7. The AP Transco letter, under reference, proposes that the allowable deviation slab needs to be narrowed down and deviation settlement charges levied for deviation be raised to make the WPDs/SPDs more responsible for effective functioning of the grid. As the Hon'ble APERC is aware that the projects awarded through competitive bidding route are having very competitive tariffs, they need to be run efficiently and minimize losses and leakages to make the project financially workable.
8. With the envisaged large-scale integration of Renewable Energy Sources in the state as well as interstate level, the number of players, energy transactions, market volume, complexity of pool administration would increase manifold. But, as India is looking to have large scale renewable installations based on ambitious targets set by Central Government, we propose that the

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regulatory provisions should be facilitating in nature and not prohibitive. Relevant extracts from the "Report on India's Renewable Electricity Roadmap 2030: Towards Accelerated Renewable Electricity Deployment" by Niti Ayog in this regard are quoted below:

"We should not get into the mindset that RE is the intruder and conventional energy is the main player. Why not consider RE to be main occupants of the "house" and then work out the rest of the system around RE, essentially, because RE is the future?"

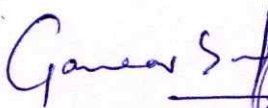
9. In addition, we request you to adjourn the above proceedings with regard to amendment of the said Regulation No. 4 of 2017 and also adjourn the proposed public hearing until such time the Hon'ble High Court finally hears and pronounces its verdict on legal and constitutional validity of the Regulations.

10. We have annexed our para wise comments herewith for your kind consideration.

Submitted for your kind consideration please.

Thanking you,

For and on behalf of **Sprng Energy Private Limited**


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Annexure

Comments on Proposed Amendments to APERC's Regulation 4 of 2017

1. Proposed Amendment 1

- a) Substitute the term "absolute error" with 'Forecast error'.
- b) Substitute the term "Available Capacity" with 'Scheduled Generation' for calculating Forecast error as per following formula.
- c) Forecast Error (%) = $100 \times (\text{Scheduled Generation} - \text{Actual Injection}) / \text{Scheduled Generation}$
"Further, since RE generation never reaches of its maximum capacity i.e. available capacity, the denominator should be replaced with the scheduled generation.

SEPL Comments –

It is submitted that in the year 2015, the Hon'ble Central Electricity Regulatory Commission (CERC), while introducing the Forecasting and scheduling Regulations has dealt with the issue of Error definition in details Based on CERC provisions, Forum Of Regulators (FOR) also framed its Model regulations for states and subsequently, all the State Commissions have followed the same, including all wind/solar energy resources rich states. The relevant portion the Statement of Reasons (SoR) issued by the Central Commission is reproduced herein as under:

6.2 Decision of the Commission

6.2.1 The Commission has reviewed the inputs of the stakeholders. The present error definition has been pointed out to be insufficient to handle varying seasons, especially very low or zero schedules, and not aligned with direct grid impact (MW deviations).

6.2.2 The Commission has noted that with the current definition, instances such as low/no generation cases cannot be covered. With due regard to these constraints and with a view to ensuring optimum and genuine forecasting, the Commission has decided to define the error percentage normalized to available capacity, instead of schedule. This will ensure that the error quantity corresponds to the physical MW impact on the grid, the forecasting models are aligned to minimize the actual MW deviations, and the error definition holds valid in all seasons.

Revised definition shall be:

Error (%) = (Actual Generation – Scheduled Generation) / (Available Capacity) x 100

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Where, Available Capacity (AvC) is the cumulative capacity rating of the wind turbines/solar inverters that are capable of generating power in a given time block. A suitable procedure along with appropriate format shall be developed by the NLDC for the submission of Available Capacity by the wind/solar generators to the concerned RLDC.

6.2.3 AvC would be equal to the Installed Capacity, unless one or more turbines/inverters are under maintenance or shutdown. Any attempt at misdeclaration, that is declaration of capacity when it is actually not available due to reasons of maintenance or shutdown etc would be treated as gaming and would be liable to action under appropriate provisions of the Act or the Regulations.

Absolute value of the Error could then be computed as follows:

Abs Error = absolute value [Error]

For every time block, Abs Error may be determined and deviation settlement done accordingly. Mean of Abs Error, also called the Mean Absolute Error or MAE, can then be calculated by taking average of Abs Error over a month or year. MAE will give an indication of the forecasting accuracy over a longer period of time.

Accordingly, suitable provision defining "Absolute Error" has been made in the final amendments to DSM Regulations. The revised definition as above shall take care of low or zero schedule scenario in the off-peak season for wind as well as solar.

It is to be noted that the stakeholder like: WIPPA, Manikaran and Ernst & Young, Sterling Agro, OGPC, MNRE had averred that in cases of zero schedules / zero generation / low resource period, the deviation calculation change with forecasts, is high in non-peak times and infinitely large in zero forecast times. Moreover, these stakeholders also suggested that there should be a separate band (or exemption) for measurement of deviation in different seasons, i.e., different tolerance band for windy and non-windy season in case of wind and monsoon and rest of year in case of solar. CERC finalised the DSM regulations considering all the above issues.

Considering the above, we request the Hon'ble APERC not to consider the proposal of APDISCOM for review and amendment of the error definition.

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2. **Amendment 2.** "Considering the diversity factor as 0.7 and 250 MWs deviation limit permitted under CERCs regulations, the allowable forecast error will be 4.89 % or say 5 %.

SEPL Comments –

None of the existing forecasting Agency is competent enough to maintain the deviations within existing first band permissible limit of (+/-15%) as per F&S regulations and if same is again reduced to 5% , the consequences / liabilities on generators will be very significant and it will be difficult for SPDs/WPDs to make the projects economically viable. This will also affect the Central Government targets under National Solar Mission as the investing IPPs may become reluctant to invest in the sector.

While the Central Government is targeting higher renewable penetration/concentration, allowing deviation limits based on the permissible deviation for the States will have negative impact on the renewable sector.

Instead of penalizing the SPDs/WPDs through such measures, incentivizing the State Discoms by allowing them to install energy storage systems would be a welcome measure. As the use of energy storage systems in Indian Grid are at infancy stage, such technologies may be used for different purposes such as Frequency Response, Regulation Up and Down etc. through Public-Private Partnership (PPP) mode. The State Discoms opting for higher offtake of renewable generation over and above the RPO may be facilitated by providing VGF on pro-rata basis through NCEF or the duty collected through imposition of SGD/BCD on modules.

3. **Amendment 3.** "It is proposed to remove the option of rescheduling of forecast on one and half hourly basis during the day of operation".

SEPL Comments –

Para 4.5 (b) & (c) of APERC Regulation stipulates maximum of sixteen (16) revisions for wind generators and 9 revisions for solar generators during the day.

The solar and wind generating stations are largely dependent on weather parameters. With available weather prediction technology and models, local weather changes cannot be predicted 1.5 hours in advance to the accuracy of +/- 15% especially the local cloud movements during the monsoon season. Removing provision of revision in schedule would reduce the flexibility and may result in penalizing the solar/wind generating stations on account of unforeseen weather changes and breakdowns during any slot.

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4. **Amendment 4.** "Above allowable forecast Error the deviation charges per unit should be Rs.2.00/kWh".

SEPL Comments

It was suggested in the Forum of Regulators 50th meeting that the difference in the deviation charges paid at State periphery level on account of deviations by the RE Generators and receipt from the RE Generators be funded through DSDF/NCEF.

Deviation charges of Rs. 2.00/kWh over and above 5% deviation for the SPDs/WPDs who have been awarded projects at tariffs below Rs 3/kWh would become NPAs if such amendment is issued on retrospective basis and no further investment will come in the state in the sector.

The existing fixed penalties for different slabs also need to be amended in percent terms, as has been provided by Hon'ble CERC. As tariffs discovered through competitive bidding are getting lower paying such penalties for SPDs/WPDs would become difficult at such tariffs.

5. **Amendment 5.** "The definition of phrase of virtual pool may be considered to be deleted from the regulation and this provision is not available in any state which were framed by respective regulatory commissions".

SEPL Comments

The clause 6.9 of existing Regulation allows aggregation of all solar and wind generating stations together as a virtual pool within the State Pool, for reducing the impact of payment of deviation charges on the generating stations using non-conventional energy sources and make it advantageous for them.

Hon'ble APERC has followed the FOR Model Regulations and Karnataka ERC has also allowed such aggregation. An Explanatory Memorandum issued by the FOR provides reasons for various clauses of the Model Regulations including for allowing aggregation. In respect of Clause 3.7 of the Model Regulations, the following explanation is provided in the Statement of reason:

3. Proposed Framework

3.1. Introduction of Aggregators

The fragmented nature of the industry which is evident from the large number of owners of wind turbines poses a challenge of direct interaction of these generators with the respective SLDCs. This

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process can quickly become unwieldy due to the sheer number of turbine owners. **Secondly, benefits of aggregation on forecasting accuracy are well documented.** Keeping in view the above reasons, the Commission proposes to formalize a new aggregator entity, termed as Qualified Coordinating Agency or the QCA. This aggregator or the QCA shall coordinate all forecasting, scheduling and commercial settlement processes for all wind or solar generators connected to a pooling station. **The QCA might aggregate one or more pooling stations, and several QCAs may come together to aggregate even at the State level for leveraging maximum benefit of aggregation.** The QCAs shall interact with the SLDC (or RLDC, if required) on behalf of the generators. This significantly cuts down the complexity both for small generators as well as the SLDC, which now has to interact with a few numbers of agencies instead of thousands of generators.

The errors of forecasting wind/solar generation tend to reduce due to aggregation of schedule at QCA level or state level as per the FOR model regulations, while QCAs make you combine forecast of few developers, the error compensation would be insignificant due to limited number of generators. On the other hand, if SLDC does this forecasting for all developers, the overall error would be much less.

Hon'ble Commission has rightly considered the above and allowed aggregation. Without a large aggregation, the solar and the wind generating stations will suffer significant financial burden.

Aggregation of schedule and actual generation at 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 and would result in minimum penalty on individual solar power generators.



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