ORIENT GREEN POWER COMPANY LIMITED

6/3/2020

OGPL/APERC/2020

04.03.2020

The Secretary,
Andhra Pradesh Electricity Regulatory Commission,
11-4-660, 4th Floor, Singareni Bhavan
Red Hills,
Hyderabad – 500 004

Dear Sir,

Sub: **Comments on the O.P. No. 2 of 2020 filed by APTRANSCO – Reg.**
Ref: **APERC Public Notice dated 13/02/2020.**

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We, Orient Green Power Company Limited, engaged in the business of Renewable Energy, are providing our detailed comments on the webhosted O.P. No.2 of 2020 in the matter of Amendment to Regulation No. 4 of 2017 (APERC Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation Regulation, 2017) filed by APTRANSCO, on behalf its subsidiaries and associate Companies.

06/03

We request that our comments be considered favourably.

Thanking You,

Yours faithfully,
For ORIENT GREEN POWER COMPANY LIMITED

Authorised Signatory.

Encl:Annexure containing 8 pages.

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6/3/2020

OGPL comments on the Proposed amendments to APERC Regulation No. 4 of 2017

APERC had issued a Public Notice dated 13/02/2020 in the matter of Amendment to Regulation No.4 of 2017 (APERC Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation Regulation, 2017, inviting views/objections/suggestions from stakeholders on or before 04/03/2020.

The Electricity Act, 2003 provides for promotion of renewable energy under Sec.86 (1) e which is extracted below:

Sec. 86 (1) The State Commission shall discharge the following functions, namely: -

e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

However, the amendments sought for would completely change the basis of providing the forecast and the commercial implications would be adverse to the generators more particularly to RE generators.

It is humbly prayed that the proposed Amendments be dropped and existing Regulations 4 of 2017 be retained for equity and justice.

Comments:

The following are the comments on each of the amendments proposed in the APERC Regulation No.4 of 2017.

Amendment No.	Existing Regulation	Amendment Proposed	Views/suggestions
1.	Clause 2.1(a) of APERC Regulation reads, Absolute Error" means the absolute value of error in the actual injection for wind or solar generators w.r.t. the scheduled generation and the Available	Substitute the term 'absolute error' with 'forecast error'. Substitute the term 'Available Capacity' with 'Scheduled Generation'	Hon'ble CERC has, in the statement of reasons, reasoned clearly for not considering the scheduled generation for calculating the deviation and absolute error. Originally in 2014, CERC brought out a

	Capacity (AVC), as calculated using the formula for each 15 minute time block Absolute Error(%) = 100 x (Actual Injection – Scheduled Generation)/AVC	for calculating Forecast error as per following formula. Forecast Error(%) = 100 x (Scheduled Generation – actual injection) / Scheduled Generation.	Regulations keeping the scheduled generation as denominator which could not be successfully implemented and hence, Hon'ble CERC came out with new Regulations after detailed discussions and considering the international practices. Absolute Error shall be retained for the following reasons as stated in the SOR: Instances of low/no generation cases cannot be covered if the scheduled generation is considered in the denominator. To ensure optimum and genuine forecasting, the error percentage shall be normalized to available capacity instead of scheduled generation. Renewable sources are variable, infirm and uncontrollable in nature. During wind season can better be predicted for larger area. If the proposed amendment is carried out, it would be retrograde and would adversely impact the generators.

			Hence, this amendment should not be carried out.
2.	Clause 2.1(j) reads ' deviation in a time block for a seller means its total injection minus its total scheduled generation'.	The definition of phrase, 'Allowable forecast error' in percentage should be considered for inclusion: 'Allowable forecast error' = 100 x (diversity factor 0.7 in control area in the beginning of FY) x (quantum of deviation limit permitted under CERC's DSM Regulation amended from time to time) / (quantum of VRE Installed Capacity)	Absolute Error shall be retained as per the existing Regulation. The proposal to bring about a much less deviation limit, linked to the CERC DSM limit is illogical. The DSM at the State Periphery can be complied by regulating other sources of power in accordance with the generation from VRE sources. The deviation in wind speed limit and wind power generation is not linear. A 15% variation in wind speed could deviate the power output by nearly 75% and hence, it is impossible to limit the deviation to such low levels as proposed in the draft. Further, wind by its very nature infirm and variable and such a source cannot be required to meet the DSM norms of Hon'ble CERC. Hon'ble CERC has reduced the technical minimum to 55% of CGS only to accommodate the variation in generation from VRE sources.

			Hence. DSM can be contained within the limits allowed by Hon'ble CERC in its regulations and APSLDC has been operating within the limits most of the time without any challenge. Forecast Error shall not be at 5% is not at all possible due to variable, infirm and uncontrollable nature of RE sources. Further, Renewable Generators are also significantly backed down by SLDC during peak wind season resulting in adverse generation and revenue loss. Hence, this amendment should not be carried out.
3.	Clause 4.1 reads, ' The methodology for day-ahead scheduling wind and solar energy generating stations which are connected to the Grid and rescheduling them on one and half hourly basis and the methodology of handling deviations of such wind and solar energy generating stations shall be as stated here under and accordingly forecasting	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 scheduling on day ahead basis.	The need for revision has been acknowledged by the FOR and Hon'ble CERC after much deliberations considering the nature of source of power and its infirm, variable and uncontrollable characteristics. It is only because of this reason that the revision in schedule upto 16 times a day was allowed, so that the forecast can be made more accurately closer to the time of generation.

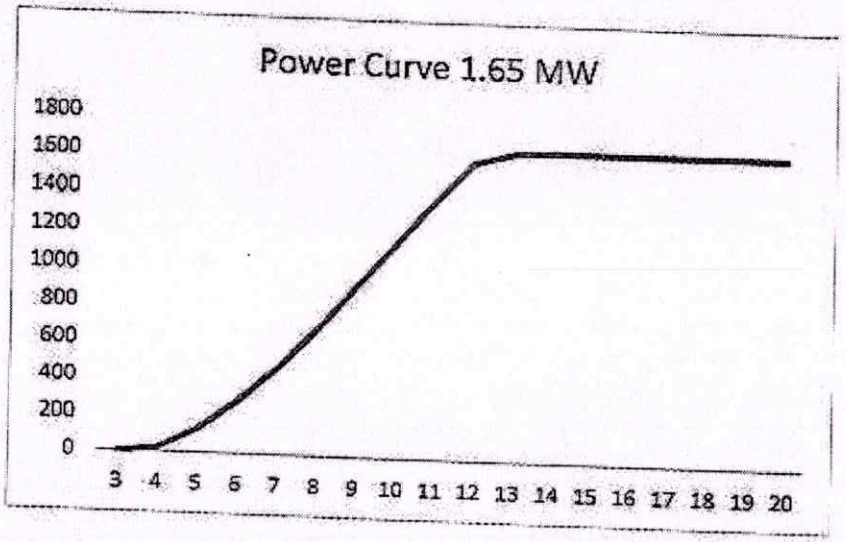
<table>
<tr><td></td><td>tools shall be provided by the generator concerned'.</td><td></td><td>It is impractical to schedule on day-ahead basis because of the variable, infirm and uncontrollable nature of wind. The existing practice shall be retained without any amendment.</td></tr>
<tr><td>4.</td><td>Clause 6.3 – Deviation charges
<table>
<tr><th>Absolute error</th><th>Deviation charges payable to State Pool Account</th></tr>
<tr><td>< = 15%</td><td>None</td></tr>
<tr><td>>15 but <=25%</td><td>At Rs.0.50 per unit for the shortfall or excess energy for absolute error beyond 15% and upto 25%</td></tr>
<tr><td>>25% but <=35%</td><td>At Rs.50 per unit for the shortfall or excess energy for absolute error beyond 15% and upto 25% + Rs.1 per unit for balance energy beyond 25% and upto 35%</td></tr>
<tr><td>>35%</td><td>At Rs.50 per unit for the shortfall or excess energy for absolute error beyond</td></tr>
</table>
<table>
<tr><th>Forecast Error in the 15 min. time block</th><th>Deviation charges payable to State Pool Account</th></tr>
<tr><td>< Allowable Forecast Error</td><td>None</td></tr>
<tr><td>*Above Allowable Forecast Error</td><td>At Rs.2.00 per unit for the shortfall or excess injection.</td></tr>
</table></td><td></td><td>The proposed amendment for DSM charges beyond Absolute Error will be adverse and will run contrary to the provisions of Electricity Act which requires promotion of Renewable Energy. The proposal to levy a deviation charges of Rs.2 per unit of deviation has no basis and is much higher. All costs namely the adequacy costs and balancing costs that are mentioned as reasons for seeking the increase are factored in the ARR and passed on as tariff to the consumers. Further, the DISCOM is obligated to fulfill its own RPO for which it has to buy RE power and the APDISCOM is claiming RECs in respect of green power purchased in excess of the RPOs and thus gets income from sale of RECs.
RE Generators cannot be compared with conventional generators who have the</td></tr>
</table>

		15% and upto 25% + Rs.1 per unit for balance energy beyond 25% and upto 35% + Rs.1.50 per unit for balance energy beyond 35%.		flexibility to ramp up or ramp down and control their generation which flexibility is not available for RE generators as RE generation is infirm, variable and cannot be controlled.
				Even with best available forecasting tools, forecast of rains on hourly basis is not possible to be predicted accurately. Wind forecast involves much more complexities as wind speed at different hub heights will have to be predicted in advance and that too on a 15 minutes basis based on which the generation of power from wind turbines is estimated for scheduling. The deviation in wind speed and the wind power output is not linear. A 15% deviation in wind speed could have a deviation of more than 75% in power output. As per the existing forecasting Regulations, deviation upto 15% on the Available capacity is permitted without any commercial implication. To contain the deviation within 15%, the prediction of wind speed has to be near accurate. Such accuracy cannot be achieved by individual wind farms and hence, aggregation of SS is an important requirement for wind power forecasting. Further aggregation is one of the best practices followed internationally for larger the area, better the accuracy. There would be compensating deviations between the substations that offset deviation and the accuracy is better.

			**** Power Curve data is provided at the end of this table for reference.** Hence, the proposed levy d would render the RE totally unviable. In these circumstances, the existing Regulations should be retained without any amendment.
5.	Clause 2.1(aa) reads, ' Virtual Pool means the virtual grouping of various pooling stations wherein the generators in such pooling stations have an option for accounting their deviational in an aggregated/combined manner through a QCA for the purpose of availing the benefit of larger geographical area and diversity'.	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.	In practice, it is not possible for scheduling of single/individual wind generator or wind farm but it can be done only for aggregation of various pooling stations. Further, aggregation is one of the best practices followed internationally for larger the area, better the accuracy. There would be compensating deviations between the substations that offset deviation and the accuracy is better. The objective of forecasting Regulation will not get fulfilled, if virtual pooling is removed from the Regulation. Hence, the existing Regulations should be retained without any amendment.

**POWER CURVE DATA

Power curve 1.65 MW			
Wind speed (M/s)	Power (KW)	% of Increase in WIND	% of Increase in Generation
3	0		
4	22		
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%
14	1650	8%	0%
15	1650	7%	0%
16	1650	7%	0%
17	1650	6%	0%
18	1650	6%	0%
19	1650	6%	0%
20	1650	5%	0%



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