Ref: JGEPL/CERC/DSM/2024-25/018 Date: 03-06-2024

To,

The Secretary Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building, 36,
Janpath, New Delhi – 110 001

Subject: Comment/Suggestions on the draft "Deviation Settlement Mechanism and Related Matters, Regulations 2024.".

Dear Sir,

We, Juniper Green Energy Private Limited (part of AT Capital Group), take this opportunity to introduce ourselves as an independent renewable energy power producer and operator of solar, wind and hybrid power projects with significant experience in conceptualizing, building, and developing renewable energy assets.

Juniper Green Energy, headquartered at Delhi NCR, commenced operations in October 2018. The business has experienced rapid growth, and it presently has an operational portfolio of about 1000MW with an under-construction capacity of more than 3GW and further development pipeline of over 2GW capacity of solar, wind and hybrid projects. The company is part of the AT Capital Group which has built and owned "Orange Renewable", a 1GW renewable energy platform in the past.

With reference to the "Draft Deviation Settlement Mechanism and Related Matters, Regulations 2024.", we hereby submit our comment/suggestions for your kind consideration at Annexure A.

Thanking You,
For Juniper Green Energy Private Limited

Enclosure: Annexure A

Juniper Green Energy Private Limited

JUNIPER Green Energy

Annexure A

Clause No.	Description	Our Suggestion	Rationale
8. (6)	Charges for Deviation, in respect of an ESS co-located with WS Seller(s) connected at the same interconnection point, shall be as follows: i) Such seller shall provide a separate schedule for WS and ESS components through the Lead generator or QCA at the interconnection point; ii) Deviation corresponding to WS component shall be charged at the same rates as applicable for WS Seller being a generating station based on solar or hybrid of wind-solar resource in accordance with clause (4) of this regulation; and iii) Deviation corresponding to the ESS component shall be charged at the same rates as applicable for a standalone ESS in accordance with clause (5) of this regulation.	Charges for Deviation, in respect of an ESS co-located with WS Seller(s) connected at the same interconnection point, shall be as follows: i) Such seller shall provide a **combined** ~~separate~~ schedule for WS and ESS components through the Lead generator or QCA at the interconnection point; ii) Deviation corresponding to **WS component + ESS** shall be charged at the same rates as applicable for WS Seller being a generating station based on solar or hybrid of wind-solar resource in accordance with clause (4) of this regulation; ~~and~~ ~~iii) Deviation corresponding to the ESS component shall be charged at the same rates as applicable for a standalone ESS in accordance with clause (5) of this regulation.~~	**The Primary purpose of ESS with WS component is to make intermittent WS source as firm and dispatchable.** When an integrated WS generator with ESS is connected at a single injection point, the ESS can quickly respond to fluctuations in renewable energy generation, helping to maintain the schedule and support grid stability. A time when WS seller is generating more or less from integrated WS + ESS component, ESS will help in consuming or discharging electricity as per scheduled requirement. Bid under firm and dispatchable RE tenders floated by different REIA also compulsory ask for minimum quantum of ESS or tender conditions requires ESS to be part of project. These PPA are designed in a way that WS generations with ESS can give a firm power. Most of time (95% plus time) this ESS capacity will be charged from integrate renewable energy source which will be part of same PPA/transactions. In the case of DSM for both WS and ESS components are kept separate they will not help in balancing the grid. For Example, Case-1 (Under Generation WS component) • Suppose for any time block WS component scheduled 100 MW and ESS has schedule of 20 MW (combined 120 MW) • Due to changes in weather WS seller can only inject 60 MW for that time block but battery has capacity to generate 60 MW. **As per the draft regulation the best scenario for developer to minimize the DSM is to inject 60 MW from WS seller and 20 MW from ESS.** 40 MW under-injection may be met by developer from ESS in case there is provision for combined schedule from WS and ESS.

Juniper Green Energy Private Limited

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<td>Case-2 (Over Generation WS component)
• Suppose for any time block WS component scheduled 100 MW and ESS has schedule of 20 MW (combined 120 MW)
• Due to changes in weather WS seller is generating 140 MW for that time block but battery has capacity to consume 20 MW.

As per the draft WS injects 140 MW and battery injects 20 MW (total 160 MW) will be the least DSM scenario for developer but will be the worst for Grid. Although developer had the capacity to restrict the injection to 120 MW as per agreed schedule using ESS.

We recommend that for the stability of grid from intermittent generation of WS, for ESS integrated with WS seller, DSM shall be for combined WS and ESS component.</td>
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<td>Charges for Deviation, in respect of a WS Seller being a generating station based on
wind or solar or hybrid of wind–solar resources, including such generating stations
aggregated at a pooling station through QCA shall be without any linkage to grid
frequency, as under:
<table>
<tr><th>Deviation by way of over injection (Receivable by the Seller)</th><th>Deviation by way of under injection (Payable by the Seller)</th></tr>
<tr><td>(i) for VLws (1) @ contract rate;
(ii) for VLws (2) @ 90% of contract rate
(iii) for VLws (3) @ 50% of contract rate,</td><td>v) for VLws (1) @ contract rate;
(vi) for VLws (2) @ 110% of contract rate;
(vii) for VLws@ 150% of contract rate;</td></tr>
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<td>The last revision in the DSM framework was released in February 2023. The newly proposed DSM framework is further tightening the band.

We request the commission to maintain the current band for the next few years before implementing the further tighter band. This will give developers and power forecasters enough time to improve their forecasts.

Implementing the new DSM band immediately will more than double the losses due to DSM.</td>
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(iv) beyond VLws (3) @ Zero	(viii) beyond VLws (3) @ 200% of contract rate.

Note: Volume Limits for WS Seller :

WS Seller	Volume Limit
A generating station based on solar or a hybrid of wind–solar resources or aggregation at a pooling station	VLWS (1) = Deviation up to 5% D_{WS} VL_{WS} (2) = Deviation beyond 5% D_{WS} and up to 10% D_{WS} VLWS (3) = Deviation beyond 10% D_{WS} and up to 20% D_{WS}
A generating station based on wind resource	VLWS (1) = Deviation up to 10% D_{WS} VL_{WS} (2) = Deviation beyond 10% DWS and up to 15% D_{WS} VL_{WS} (3) = Deviation beyond 15% D_{WS} and up to 25% D_{WS}

(iv) beyond VLws (3) @ Zero	(viii) beyond VLws (3) @ 200% of contract rate.

Note: Volume Limits for WS Seller :

WS Seller	Volume Limit
A generating station based on solar or a hybrid of wind–solar resources or aggregation at a pooling station	VLWS (1) = Deviation up to 10% D_{WS} VL_{WS} (2) = Deviation beyond **10%** D_{WS} and up to **15%** D_{WS} VLWS (3) = Deviation beyond 15% D_{WS} and up to **25%** D_{WS}
A generating station based on wind resource	VLWS (1) = Deviation up to **15% Dws** VL_{WS} (2) = Deviation beyond **15%** DWS and up to **20%** D_{WS} VL_{WS} (3) = Deviation beyond **20%** D_{WS} and up to **30%** D_{WS}