
Sterlite Power's Comments on Draft Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2021

Hon'ble Central Electricity Regulatory Commission (CERC) has been at the forefront of recognising and developing forward looking initiatives and market mechanisms. The instant draft regulations follow a discussion paper on "Re-designing Ancillary Services Mechanism in India" published in 2018, which assessed performance of existing ancillary services framework, and suggested generational reforms by way of introduction of auction-based procurement of Ancillary Services.

Sterlite Power welcomes the fact that some key suggestions from that discussion paper have been carried forward and adopted in the draft Ancillary Services Regulations, 2021. Inclusion of new technology solutions like Energy Storage and Demand Side Resources in providing Ancillary Services is also appreciable.

Our comments and suggestions on the draft regulations are submitted below. Section-I covers general comments, and Section-II includes detailed regulation-wise comments.

Section-I: General Comments

- a) **Framework for Fast Frequency Response Services:** Energy Storage Solutions, especially Battery based solutions, have been proven successful in geographies of Australia, Europe, and United States of America.

Large-scale batteries deployed in Australia have been demonstrated to be capable of delivering frequency response through the Frequency Control Ancillary Services (FCAS) market. Australian Energy Market Commission realised the potential of fast frequency response markets with quick response times (under six seconds) and proposed a Fast Frequency Response Market Ancillary Service Rules in Apr-2021.

Similarly, UK's National Grid Electricity System Operator has debuted its new fast frequency response service in Oct-2020, "Dynamic Containment", boosting its ability to respond rapidly to disturbances in the flow of energy around the grid.

India has large potential for fast response ancillary services given the rapid Integration of Renewables into the grid. We would request that as the Ancillary Services framework for Secondary Reserves and Tertiary Reserves gets finalised and implemented, the Hon'ble Commission may review the Ancillary Services markets across a year and formulate new markets frameworks like Fast Frequency Response Services as well.

- b) **Mechanism needed for market sizing:** For developers and new market entrants to determine and plan for potential of participation in Ancillary Services market, clarity around how the quantum requirement is finalised will need to be established. This would also help in attracting investor interest, along with reducing merchant risk – leading to promotion of competitive forces, creating efficient markets and lower overall cost to the system and end users.

- c) **Operation of Battery Storage Systems for ancillary services by NLDC/RLDCs:** The ancillary services market would also need to consider the complexity of ESS operational requirements to realise the full potential of these new technologies.

While large-scale batteries with application in frequency regulation may be owned by private investors, operation of such systems for the purpose of ancillary regulation should be the responsibility of the transmission system operator (either as part of the pool of assets that provide spinning reserve or standalone). The same is adopted in most countries. The system operator can manage the charge and discharge of the battery in line with the system requirements. This is important as otherwise the entity owning the asset will also have to take a call to provide the asset in UP service or DOWN service. There would be times when the developer would incur costs for charging the asset but may not be selected for UP service. This will be much less efficient and will be detrimental for the development of these assets in the country.

It is also proposed that the regulations should reflect the technical capabilities of various asset types including BESS for use in ancillary services and allow market instruments that capitalize on the fast response time of batteries. For example, to promote batteries, in 2016, Europe launched a new ancillary service known as “enhanced frequency response,” with a sub-second response time that could be met only with the help of batteries. Responsibility for frequency regulation is almost always assigned to the system operator of the synchronous control area. The National Grid, UK also created a new service known as enhanced frequency response (EFR), which requires faster ramp rates and response times to reflect the enhanced capabilities of BESS in frequency regulation.

Section-II: Detailed Comments on CERC’s draft Ancillary Services Regulations, 2021

#	Extract from Draft Regulation	Comment and Inputs
1.	<p>9. Procurement of SRAS</p> <p>(2) An SRAS Provider willing to participate in SRAS shall be required to provide standing consent to the Nodal Agency for participation, which shall remain valid till it is modified or withdrawn: Provided that standing consent cannot be modified or withdrawn without giving notice of at least forty-eight hours.</p> <p>(3) The SRAS Providers that are generating stations, shall be required to declare in such time interval as may be stipulated in the Detailed Procedure, the technical parameters as required by the Nodal Agency, including but not limited to installed capacity, Technical Minimum, Ramp up and Ramp down capability.</p> <p>(4) The SRAS Providers other than the generating stations, shall be required to declare the technical requirements as may be stipulated in the Detailed Procedure.</p>	<p>The Hon’ble Commission may issue clarification on the capacity and duration for which the SRAS Providers’ consent of participation will be valid.</p> <p>It is submitted that the SRAS Providers may be allowed to specify specific time slots through the consent period, along with the technical parameters sought along with a provision of revising the same on a monthly/yearly basis.</p>
2.	<p>10. Selection of SRAS Providers and Despatch of SRAS</p> <p>(6) The Custom Participation Factor shall be calculated as specified in Appendix-I of these regulations.</p> <p>(7) SRAS shall be despatched on regional basis through secondary control signals by the Nodal Agency.</p> <p>...</p> <p>APPENDIX – I:</p> <p>...</p> <p>SRAS signal shall be allocated among the SRAS Providers to meet SRAS requirement of the system based on the normalised Custom Participation Factor subject to the ramp limited resources available with the SRAS Provider(s). A sample illustration with five (5) SRAS Providers (A, B, C, D and E) for calculation of Custom Participation Factor has been shown in Table-1 and Table-2.</p>	<p>In the illustration, SRAS-Down and SRAS-Up services are dispatched with all five SRAS Providers in proportion to the Normalised Custom Participation Factor (NCPF) subject to ramp limited capacity. This proportionate dispatch algorithm of dispatch may not be an economically efficient way of utilizing the SRAS Services.</p> <p>It is proposed that instead of this, the highest NCPF SRAS provider to be dispatched to its maximum ramp limited capacity it could offer and the rest of the SRAS requirement to be filled by the second highest NCPF SRAS Provider and so on.</p> <p>The Hon’ble Commission is requested to issue clarification on the Despatch algorithm illustrated.</p>

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3.	<p>19. Payment for TRAS</p> <p><i>(2) TRAS-Up Provider shall receive commitment charges at the rate of ten percent of the MCP Energy-Up-DAM or the MCP-Energy-Up-RTM, as the case may be, subject to the ceiling of 20 paise/kWh for the quantum of TRAS-Up cleared in the Day Ahead Market or the Real Time Market as the case may be, but not instructed to be despatched by the Nodal Agency.</i></p>	<p>A commitment compensation structure should also be put in place for Secondary Reserves Ancillary Services (SRAS), and for TRAS DOWN service, as proposed for Tertiary Reserves Ancillary Services (TRAS-UP).</p>
4.	<p>14. Eligibility for a TRAS Provider</p> <p><i>A generating station or energy storage resource or demand side resource connected to inter-State transmission system or intra-State transmission system shall be eligible for participation as TRAS Provider, if</i></p>	<p>Correction required for inadvertent typographical error. This regulation may read as below:</p> <p><i>"A generating station or an entity having energy storage resource or demand side resource ..."</i></p> <p>Suggestion provided here is based on similar language used in Regulation 7 (1).</p>
5.	<p>15. Activation and Deployment of TRAS</p> <p><i>TRAS shall be activated and deployed by the Nodal Agency on account of the following events:</i></p> <p><i>(a) In case the secondary reserve has been deployed continuously in one direction for fifteen (15) minutes for more than 100 MW, in order to replenish the secondary reserve;</i></p> <p><i>(b) Such other events as specified in the Grid Code.</i></p>	<p>In case of an entity with PPA or any other form of tied-up capacity, first right of refusal usually lies with the beneficiary/ beneficiaries of the PPA. The Hon'ble Commission may clarify if the TRAS provider has to take consent from its original beneficiary before participating in the TRAS DAM market.</p>
6.	<p>21. Accounting and Settlement of SRAS and TRAS</p> <p><i>(3) Deviation of AS Provider in every 15 minutes time block shall be calculated as under and settled as per the procedure of DSM Regulations:</i></p> <p><i>MWh Deviation for AS Provider = (Actual MWh of AS Provider) – (Scheduled MWh of AS Provider including TRAS MWh) – (SRAS MWh of AS Provider)</i></p> <p><i>Provided that deviation from schedule by the AS Provider shall be settled first against the Ancillary Services schedule.</i></p>	<p>The Hon'ble Commission may issue clarification as to whether 'SRAS MWh of AS Provider' term in the formula refers to Scheduled or Actual MWh of SRAS service provided.</p> <p>In case the 'SRAS MWh of AS Provider' means the 'Actual SRAS MWh of AS Provider', then we infer that in the calculation of the Deviation of AS Provider in the 15 min time, the 'Actual MWh of AS Provider' should include 'SRAS MWh of AS Provider'. Accordingly, the formula used may be modified as below:</p> <p><i>"MWh Deviation for AS Provider = (Actual MWh of AS Provider) – (Scheduled MWh of AS Provider including TRAS MWh and SRAS MWh) – (SRAS MWh of AS Provider)"</i></p>

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7.	<p>22. Transmission Charges and Losses</p> <p><i>No transmission charges or transmission losses or transmission deviation charges shall be payable for SRAS and TRAS.</i></p>	<p>It is appreciated that Hon'ble Commission has stated that SRAS and TRAS providers shall not be liable to pay any transmission charges or transmission losses or transmission deviation charges.</p> <p>However, it is a possibility that some SRAS and TRAS providers could be connected to the Intra-State Transmission network, which would mean that they would be subject to Intra-State Transmission charges and losses. For this, suitable directions may be required to be issued to the different Regulatory Commissions so as to provide any such waivers.</p> <p>Also, such waiver on transmission charges and losses may be made part of the CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 by way of an appropriate amendment.</p>
8.	-	<p>New Addition proposed:</p> <p>It is suggested that in order to incentivise Energy Storage entities/ Generators to set aside resources for providing Ancillary Services, some form of 'Standby Charges' be introduced. Absence of standby charges may result in restricted participation by developers, and thus limited development of Ancillary Services Market.</p>