15th July 2021

To:
Shri Sanoj Kumar Jha
Secretary
Central Electricity Regulatory Commission
36, Janpath, New Delhi- 110001

Subject: Comments/Suggestions Draft CERC (Ancillary Services) Regulations 2021

Reference: Central Electricity Regulatory Commission Public Notice issued 30th June 2021 "Extension of date for seeking comments/ suggestions on draft Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2021

Dear Sir,

We wish to introduce ReNew Power Private Limited ("ReNew Power") which is among the top and fastest growing renewable IPPs in the country. ReNew is in the business of setting up wind, solar and roof-top power plants and has more than 10,000 MW of operational and under construction wind and solar projects spread over multiple states. ReNew Power has recently also entered into a definitive business combination agreement with RMG Acquisition Corporation II ("RMG II"); upon closing, the combined entity is expected to be listed on the NASDAQ under the new ticker symbol "RNW" at an enterprise value of 8 Billon dollars. ReNew Power's vertically integrated business model and predictable cash flows, supported by long-term power purchase agreements, make the company among the most profitable in the sector, not only in India, but worldwide.

This is in reference to the public notification issued by the Hon'ble Central Electricity Regulatory Commission (CERC) on 30th June 2021 to invite comments/suggestions on Draft Ancillary Services Regulations, 2021. ***We would like to commend the Government on bringing out such a forwarding looking regulations as they will help in relieving congestion in the network and maintaining grid stability. In addition to this, we also commend Commission's proposal to also include Energy Storage Resources to help in maintaining future grid stability. All these features will not only help in large scale integration of RE in the national grid, but also ensure expansion of RE deployment across the country.*** *Accordingly, we are hereby enclosing our comments and suggestions as Annexure I for your reference.*

We request the Hon'ble Commission to kindly consider our comments/suggestions while finalizing the Draft Regulations.

Lastly, should there be any requirement, it would be a privilege for us to support the Hon'ble Commission by providing information/data relevant to the matter.

Thanking you.

Yours Sincerely,

Authorised Signatory
ReNew Power Private Limited

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Annexure I

Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2021

Date of issue: 29th May 2021

ReNew Power Comments/Suggestions

Sr. No.	Clause No.	Clause Description	New Clause/Comments/Suggestions	Comment/ Rationale
1	**Clause 5** **Types of Ancillary Services**	**Clause 5 (3)** The mechanism of procurement, deployment and payment of Ancillary Services, referred to in sub-clauses (a) and (d) of clause (1) of this Regulation, shall be as specified in the Grid Code or under these regulations to be specified separately, as the case may be.	To avoid any kind of ambiguity in future and bring all the services under one umbrella, it is important to include Primary reserves also under same Ancillary Services Regulations.	The draft Regulation stipulates that existing generating stations (lignite, gas, hydro) shall be utilized for primary response. Existing generating station capacity should be freed up to the benefit of the rate payers and ancillary services should be procured in the market. Ancillary service markets are largely constructs of the system operator, with a degree of subjectivity in allowed speed of response. The general trend being observed is that increase in RE in the mix has not necessarily led to increase in quantum of ancillary services, instead it has led to rationalisation of existing products or creation of new fast response ones (e.g National Grid UK removing low response FFR products). PRAS, has traditionally been served by synchronous generators which have their own inherent limitations including speed of response. Therefore, use of BESS

				as an alternative to solve the limitations of performing PRAS with synchronous generators with extremely fast response under supply variations (inherent to addition of significant RE in the grid) should be encouraged. Several studies also show that more efficient/ faster or higher performing technologies provide benefits to the grid. Global experience shows that also including Primary reserve in market will result in efficiencies resulting in savings in system costs. A market for primary reserve will ensure the best technology is deployed for providing such response and also help in increasing overall penetration of renewables in the Indian grid which is the overarching objective of Government of India. In the PJM regulating market in the US, the performance of BESS is better than other resources (i.e. steam generation, thermal, hydroelectric and demand side response). PJM identified that using a faster responding and higher performing assets would lower the AS procurement needed. PJM identified that 2.3MW of conventional source (Coal/Gas/Hydro) PRAS could be replaced by 1MW of BESS, due to the performance of a BESS in the reserve market to respond rapidly and accurately. Therefore, in view of the above, the primary reserves should also be made part of the Ancillary Services Regulations and a remunerative market for such reserves should be created under these Regulations.

2	**Clause 6** **Estimation of Reserves by the Nodal Agency**	**Clause 6 (1)** The Nodal Agency shall, in coordination with RLDCs and SLDCs, estimate the quantum of requirement of SRAS and TRAS for such period and based on such methodology as specified in the Grid Code.	The Draft regulation provides for procurement of Ancillary Services on Day-ahead and real time basis. However, for setting up capacity under this market, it is critical that signals for deployment of such capacity are positive and to ensure that investment comes in, sufficient confidence, in terms assured cash flow, is required for lenders and developers.	Internationally, in ISO NE and PJM, capacity is procured through forward auctions held annually to match demand 3 years in advance. In other markets (CAISO, NGESO), there is provision of monthly procurement. Duration of bilateral contracts range from 4 years (UK NGESO tender) to 10 years (Aus AEMO). Therefore, in view of the above, we suggest that such requirement of AS should be made in advance (timeframe of 18 months) by the Nodal Agency to allow service provider to plan and deploy optimal and efficient capacities for contract durations ranging from 5-7 years.
3	**Clause 9** **Procurement of SRAS**	**Clause 9 (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.		Since SRAS is deployed closer to real-time, longer notice period may not be necessary. Shorter notice period will help the SRAS provider to assess the reserve availability and other technical parameters. Moreover, the draft regulations allow the Nodal Agency to identify the SRAS capacity on Day-Ahead and Real time basis for Section 62 generators, therefore we suggest that the duration for such withdrawal notice should be a period of 12 hours.

		Clause 9 (5) The SRAS Providers that are generating stations, shall declare their variable charge upfront on monthly basis in the manner as stipulated in the Detailed Procedure.	Variable/Compensation charge can be different for UP and DOWN service and can be on different for different TOD time slots since a project may be subject to different costs for UP and DOWN service. Additionally, such charge may be different than that determined under the statute, given that this is for a service to be provided under a market mechanism.	SRAS providers will need to be incentivized as they play a critical role in grid security. They have to respond within 30 sec and attain full obligated capacity within 15 minutes. It cannot be a case that generators are attracted towards the TRAS market (which gives an opportunity for quoting a self-determined sell price) and do not participate in SRAS.
4		**Clause 9 (6)** The SRAS Provider other than the generating stations, shall be required to declare the compensation charges upfront on monthly basis in the manner as stipulated in the Detailed Procedure.	Conventional synchronous generators providing SRAS are typically very low cost as they'd already be operating below full load and therefore, there is no opportunity cost for these generators. SRAS prices for such generators do reflect opportunity costs at system minimum load. However, upfront compensation charge for storage may include following three types of cost associated with Storage unlike conventional generating sources: 1. **Energy cost:** which represents the cost to buy energy from the grid, as well as roundtrip efficiencies that prevent the resource from discharging the full amount of energy consumed. 2. **Opportunity costs:** Since energy storage resources are energy-limited, there are opportunity costs associated with failing to charge during the lowest	Energy Storage Resources are capable of providing faster and more accurate response than conventional synchronous generators. In order to be competitive with conventional generating sources, Energy storage needs to be incentivized as being a new and emerging technology and therefore, they should be allowed to quote a different price for UP and DOWN services and also a different cost on TOD slot basis.

			priced hours or failing to discharge during the highest priced hours. 3. **Cycling costs in case of BESS**. These costs are a function of depth of discharge, ambient temperature, current rate, and average state of charge.	
5		**Clause 9 (8)** In case of the generating stations whose tariff is determined by the Commission under Section 62 of the Act, the Nodal Agency shall identify the generating stations for providing SRAS,	There would be several wind and solar capacities that will have co-located storage facilities setup under Sec 63 PPAs. Subject to consent from the beneficiaries of such PPAs, such capacities should also be allowed to provide SRAS and TRAS under the ambit of these regulations. Any additional revenue, that the developers may accrue will ultimately get factored while bidding of such Sec 63 capacities and result in lower tariff for the ultimate consumer.	
6	**Clause 11** **Payment for SRAS**	**Clause 11 (1)** SRAS Provider shall be paid from the Deviation and Ancillary Service Pool Account, at the rate of their variable charge or compensation charge, as declared by the SRAS Provider, as the case may be, for the SRAS-Up MW	In addition to the payment of variable charge/ compensation charge, the SRAS provider should also be compensated for degradation in operational norms, if any.	We believe that as proposed for TRAS, a commitment compensation structure should also be put in place for SRAS to promote adoption of new technologies and to bring efficiency to the market.

		quantum despatched for every 15 minutes time block, calculated as per clause (12) of Regulation 10 of these regulations. (2) SRAS Provider shall pay back to the Deviation and Ancillary Service Pool Account, at the rate of their variable charge or compensation charge, as the case may be, for the SRAS-Down MW quantum despatched for every 15 minutes time block, calculated as per clause (12) of Regulation 10 of these regulations		
7	**Clause 12** **Performance of SRAS Provider and incentive**	**Clause 12 (3)** SRAS Provider shall be eligible for incentive based on the performance measured as per clause (2) of this Regulation and the 5-minute MWh data calculated for SRAS-Up and SRAS-Down as per clause (11) of Regulation 10 of these regulations and	We suggest that the fast-moving resources like energy storage should be paid at higher rate compared to the slow-moving resources. By paying for such performance there would be overall savings in system costs, and therefore in line with the objective of an optimal and efficient grid.	While we appreciate the methodology illustration provided in Appendix-II to assess the performance, we request Hon'ble Commission to provide a sample calculation with real data for a day deriving the performance and incentives payable. Additionally, the proposed incentive fails to ensure just and reasonable treatment to faster-ramping resources, and do not provide the proper economic incentive for efficient market participation. The compensation mechanism must appropriately value the performance characteristics of different resources. Energy storage resources which are capable of

		aggregated over a day, as under:		providing fast ramping resources and can also provide high-quality digital inertia to the grid and increase the ability of generators to tolerate high Rate of Change of Frequency (RoCoF). For example, in a study using data from the Kilroot Energy Storage project in Northern Ireland, researchers from the Queen's University Belfast found "360MW of batteries could have provided the same amount of power after 0.1 secs as the inertial response of 3,000 MW of synchronous generators." The study calculated that in Ireland using batteries for digital inertia could result in up to €19 million in annual savings and 1.4 million metric tons of CO_2 by replacing the inertia typically provided by thermal power plants. This high-quality digital inertia will help support the Irish Single Electricity Market grid as it increases the instantaneous proportion of power being delivered by non-synchronous generation sources, such as wind and solar to more than 70%. Markets like PJM and Ireland recognized that they needed to promote the right technologies to be deployed on the grid to support higher RE penetration, and in order to do so, they would have to compensate assets that are able to provide better performance.

8	**Clause 19** **Payment for TRAS**		As and when the Ancillary Services Operations would restore the Frequency Level at desired level by providing such Services for 30 to 60 minutes, there may not be any appreciable deviation and resultantly there may be reduction in flow of fund to the Regional Deviation Pool Account Fund. Therefore, either an alternate source of funding to the AS Providers in case of insufficient fund in the Regional Deviation Pool Account Fund may be prescribed in the above Regulations Or 'Causers Pay' approach may be considered as is the case with many international AS operators like AEMO (Australian Energy Market Operator).	
		Clause 19 (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	In some countries the system operator anticipates Ancillary Services in advance, and factors in the commitment charges towards Ancillary Services in their Annual Revenue Requirement (ARR). Whatever liability towards the commitment charges is going to be socialized in the DSM pool account else it should be based on the Causer-Pays principle. The Ancillary Service market should provide incentives for setting up of Battery Storage Systems to offer services as fast tertiary sources	In the developed power market, generally, there are assured commitment charges payable to the Ancillary Service providers as they are committing their capacity for such services, in the form of capacity charge. Commitment charge of up to Rs. 0.20/ kWh appears to be too low to develop market. This has been based on thermal generating capacity already available and will do little to bring in the diversity desired for such markets. In the prevailing RRAS Regulations there is no commitment charges payable to Ancillary Services provider for making themselves available for the

		may be, but not instructed to be despatched by the Nodal Agency	considering that such projects will provide a fillip to the overall market mechanism	Ancillary Services. It is quite understood that the RRAS Ancillary services Provider(s) are adjusting the fixed charges to the original beneficiaries for the quantum of un-requisitioned surplus scheduled under Regulation Up service. That is not the case for Ancillary services Provider(s) other than NTPC stations. For generation projects providing RRAS, proposed commitment charges could be act as an incentive. However, setting up a new ancillary services resource including energy storage resource requires lot of investment. For investment to come in, sufficient confidence, in terms assured cash flow, is required for lenders and developers. Therefore commitment charges need to sufficiently cover the cost of setting-up and operating the resource and provide reasonable return on investment. **We suggest changing the cap to 50% of MCP-Energy-Up-DAM or the MCP-Energy-Up-RTM subject to a ceiling of 200 paise/kWh.**

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