CESC's submissions on Draft Ancillary Services Regulation

General Comments:

1. We welcome introduction of these provisions related to Ancillary Services. To ensure smooth transition to the new regulatory regime for Ancillary services, it is requested that to start with, participation in secondary ancillary services and tertiary ancillary services be made voluntary.

2. It is also submitted that the Ancillary Services Regulations may be reviewed after "Detailed Procedure" are finalized as many provisions of the draft regulation is dependent on information contained in the Detailed Procedure. Stakeholder should be given a chance to further provide their comments / suggestions in light of information contained in the Detailed Procedure.

3. It is understood from the draft Regulation that SRAS will be directly operated by RLDC/NLDC and TRAS will be controlled by Power Exchanges on directions from NLDC. Since the participating entities may be members of various Power Exchanges there needs to be Market Coupling Operator to monitor and control TRAS.

4. SRAS and TRAS operation may contradict the basic principle of sign reversal in DSM Regulations at different occasions. When there is a need for sign reversal of drawal according to DSM Regulations, SRAS signals and TRAS requirement may prevent such reversal of sign, thereby causing imposition of penalty on the entities as per DSM regulations. Clarification is necessary on how to take care of this aspect under these Regulations. This aspect is true for Primary Reserve Ancillary Service too, where the generators are required to be on FGMO/RGMO modes and their operations during excursions of frequency may affect the entities with imposition of penalties for violation of DSM Regulations norms.

5. It is submitted that impact of installation of Flue Gas Desulphurization (FGD) system may also be considered with respect to variable price quoted by an SRAS / TRAS Provider. Installation of FGD system would entail supplementary energy charge for a power plant and such power plant may be in a disadvantageous position in comparison to those power plants where FGD system is yet to be installed. It may be clarified how a level playing field may be ensured between such categories of power plants while implementing SRAS / TRAS.

Specific Comments on the Draft Ancillary Services Regulation:

S. No.	Reference	Draft Regulation	CESC's submission
1	**Regulation 3 (1) f Definitions and Interpretation**	*Automatic Generation Control" or "AGC" means a mechanism through which the generation of the SRAS Provider in a control area is automatically adjusted in response to the Secondary Control Signal*	• AGC is generally applicable within limits of Technical Minimum & provision of an interlock is critical to avoid operational hazards.
2	**Regulation 3 (1) t Definitions and Interpretation**	*Secondary Control Signal" means automated signal generated from the Nodal Agency through which injection or drawal or consumption of an SRAS provider is adjusted, and includes AGC signal*	• As the Nodal Agency will be able to control generation injection through AGC, it may be clarified whether they Nodal Agency will be also able to control consumption by reducing load of associated Discoms. • It may be further clarified how will load prioritization be handled in such cases?
3	**Regulation 3 (1) z Definitions and Interpretation**	*Tertiary Reserve Ancillary Service" or "TRAS" means the Ancillary Service comprising TRAS-Up and TRAS-Down and consists of spinning reserve or non-spinning reserve, which responds to despatch instructions from the Nodal Agency*	• Non-spinning reserve may be defined. • As per California Independent System Operator (CAISO): *"Non-Spinning Reserve is off-line generation capacity that can be ramped to capacity and synchronized to the grid within 10 minutes of a dispatch instruction by the ISO, and that is capable of maintaining that output for at least two hours".*

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			• This will give signal for planning such Non-Spinning Reserves.
4	**Regulation 4: Scope**	*These regulations shall be applicable to regional entities, including entities having energy storage resources and demand side resources qualified to provide Ancillary Services and other entities as provided in these regulations.*	• It may be clarified with examples which entities can be deemed as "demand side resources". • It may further be clarified whether state entities or entities embedded within a state can also participate as an Ancillary Services Provider.
5	**Regulation 6(3) Estimation of Reserves by the Nodal Agency**	*The requirement of SRAS shall be estimated on regional basis*	• SRAS on regional basis may need to be published by nodal agency prior to start of bidding of TRAS in exchanges for information of participants.
6	**Regulation 7: Eligibility for an SRAS Provider**	*(1) A generating station or an entity having energy storage resource or demand side resource, connected to inter-State transmission system or intra-State transmission system, shall be eligible to provide Secondary Reserve Ancillary Service, as an SRAS Provider, if it* *(a) has bi-directional communication system with NLDC or RLDC, as per the requirements stipulated in the Detailed Procedure by the Nodal Agency;*	• Many of the key details regarding infrastructure required to qualify as an SRAS provider is not available in the draft regulations and will be published in the "Detailed Procedure". • Comments on the same shall be provided during the stakeholders' consultation on the "Detailed Procedure" by the Nodal Agency.

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		(b) is AGC-enabled, in case of a generating station; *(c) can provide minimum response of 1 MW;* *(d) has metering and SCADA telemetry in place for monitoring and measurement of energy delivered under SRAS, as stipulated in the Detailed Procedure by the Nodal Agency;* *(e) is capable of responding to SRAS signal within 30 seconds and providing the entire SRAS capacity obligation within fifteen (15) minutes and sustaining at least for the next thirty (30) minutes;*	• It may be clarified how the capital cost incurred to create enabling infrastructure will be recovered. • It may be clarified whether a generator or a Discom under the jurisdiction of SLDC can become an SRAS provider to RLDC/NLDC with direct control to vary its input to the system by RLDC/NLDC. • It may be clarified that in case of a Discom with an embedded generating station, which entity qualifies as a SRAS provider – Discom as a distribution utility or the embedded Generator. In this case, enabling AGC may impact the Boiler response and make the unit unreliable. In such cases, the AGC can be forwarded as request or prompt which on acknowledgement by the SRAS provider can be deployed. • It is submitted that as PRAS responds immediately against any frequency change and the correction sustains for 5 minutes, the response to the

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			SRAS signal can start at 2-3 mins instead of 30 secs. • The wordings "*providing the entire SRAS capacity obligation within 15 minutes*" may be changed to "*reaching the target load generation within 15 minutes*". It is further submitted that in this case Average load during the 15 minutes may not be considered to measure SRAS' response with respect to its capacity obligation.
7	**Regulation 8 (2): Activation and Deployment of SRAS**	*(2) The Area Control Error (ACE) for each region would be auto-calculated at the control centre of the Nodal Agency based on telemetered values, and the external inputs referred to in clauses (3) and (4) of this regulation, as per the following formula:* *ACE = (Ia - Is) - 10 * Bf * (Fa - Fs) + Offset* *Where,* *Ia = Actual net interchange in MW (positive value for export)* *Is = Scheduled net interchange in MW (positive value for export)* *Bf = Frequency Bias Coefficient in MW/0.1 Hz (negative value)* *Fa = Actual system frequency in Hz* *Fs = Schedule system frequency in Hz* *Offset = Provision for compensating for metering and measurement error*	• It may be clarified at what intervals the automatic calculation of ACE would be done. • More clarity may be brought in the definition of ACE by including the definition of the term "frequency bias", "Actual Net Interchange" and "Schedule Net Interchange" and substantiating it with proper example to understand the movement and sign of power flow(import/export) for maintaining the safety, stability and reliability of the Grid.

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			• It may further be clarified how the "Offset" will be calculated and how the meter drift issues will be taken care of. • It may be clarified whether *"Fs = Schedule system frequency in Hz"* be of any value other than 50. In such case what are those scenarios.
8	**Regulation 8 (5): Activation and Deployment of SRAS**	*(5) Nodal Agency may operate SRAS in any of the three control modes viz., tie-line bias, flat frequency or flat tie-line depending on grid requirements.*	• It may be clarified in details the various control modes mentioned and their modes of operation.
9	**Regulation 9: Procurement of SRAS**	*(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.*	• It may be clarified whether there is a minimum duration for which standing consent needs to be provided by the SRAS provider.
10	**Regulation 9: Procurement of SRAS**	*(2) An SRAS Provider willing to participate in SRAS shall be required to provide standing consent to the Nodal Agency for participation, which shall*	• Since SRAS cannot be revised without giving notice of at least 48 hours, it may be clarified what happens when the

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		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* *(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.* *(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.* *(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.*	respective unit goes for forced outage. • In the event of any technical issues by a SRAS provider, it may kindly be examined if SRAS Generator(s) can be given the flexibility to switch over to TRAS arrangement on an immediate basis (i.e. bidding in TRAS mode). • It may be also clarified whether there is a minimum duration for which standing consent needs to be provided by the SRAS provider. • Comments on the technical requirements for the SRAS providers to be provided during the stakeholders' consultation on the "Detailed Procedure" by the Nodal Agency.
11	**Regulation 9: Procurement of SRAS**	*(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.*	• It may be clarified whether generating stations can declare variable charge different from its tariff determined / adopted under section 62 / section 63 of the Electricity Act.

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12	**Regulation 9: Procurement of SRAS**	*(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.*	• Comments on the Compensation Charges to be declared by SRAS provider other than the generating stations shall be provided during the Stakeholders' Consultation on the "Detailed Procedure" by the Nodal Agency.
13	**Regulation 9: Procurement of SRAS**	*(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,* *(a) on day-ahead basis, based on the capacity available after the schedule has been communicated at 2300 hrs for the next day; and* *(b) on real-time basis before the gate closure for incremental SRAS requirement.*	• The basis on which an eligible generating station are identified as an SRAS Provider on day-ahead / real-time basis may be clarified. • Does this mean that all eligible generators are not automatically qualified as SRAS Providers and only those who are identified as such by the Nodal Agency may qualify? • It may also be clarified whether the process of participation in SRAS is voluntary and not mandatory.
14	**Regulation 10 (5): Selection of SRAS Providers and**	*(5) SRAS signal shall be allocated among the SRAS Providers on regional basis to meet the SRAS requirement of the system based on the normalised Custom Participation Factor subject to*	• The timelines and modus for allocation of SRAS signal among identified SRAS providers may be clarified.

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	Despatch of SRAS	*the ramp limited resources available with the SRAS Provider(s).*	• It may be clarified how the network congestion aspects will be taken care of during dispatch of SRAS.
15	**Regulation 10 (10): Selection of SRAS Providers and Despatch of SRAS**	*The SRAS Provider shall share real-time data with NLDC and the concerned RLDCs as stipulated in the Detailed Procedure*	• It may be clarified whether the a willing SRAS Provider embedded in state grid who is presently providing real time data to SLDC also needs to share such real time data to RLDC/NLDC.
16	**Regulation 10 (11): Selection of SRAS Providers and Despatch of SRAS**	*Average of SRAS-Up and SRAS-Down MW data shall be calculated by the Nodal Agency for every 5 minutes in absolute terms using archived SCADA data at the Nodal Agency and reconciled with the data received at the control centre of the SRAS Provider and shall be used for payment of incentive as per Regulation 12 of these regulations*	• It may be clarified whether reconciliation of energy for incentive payment proposed in 5 minute blocks should be in 15 minute blocks as is it being stipulated for payment of variable or compensation charges in clause 10(12).
17	**Regulation 11: Payment for SRAS**	*(4) Methodology of computation under clauses (1) to (3) of this Regulation shall be stipulated in the Detailed Procedure.*	• Comments on the methodology of computation of Payment for SRAS shall be provided during the Stakeholders' Consultation on the "Detailed Procedure" by the Nodal Agency. • Please also refer to the comments made against "Appendix I" of the Draft Regulation at S.No. 21.

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			• It is submitted that payment of commitment charges to the generator can be allowed in case of SRAS if there is no actual despatch of the power, as is allowed in the case of TRAS.
18	**Regulation 11 (2) : Payment for SRAS**	*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*	• It is submitted that there will be certain commercial impacts to achieve SRAS Down, e.g. Steam Bypass etc. Hence, SRAS down incentive should be higher for SRAS Up.
19	**Regulation 12: Performance of SRAS Provider and incentive**	*(1) The actual response of SRAS Provider against the secondary control signals from the Nodal Agency to the control centre of the SRAS Provider shall be monitored by the Nodal Agency, as per the procedure stipulated in the Detailed Procedure.*	• Comments on monitoring of SRAS Provider's performance by the Nodal Agency shall be provided during the Stakeholders' Consultation on the "Detailed Procedure" by the Nodal Agency. • Please also refer to the comments made against "Appendix I" of the Draft Regulation at S.No. 21.
20	**Regulation 13 (1): Failure in performance of SRAS Provider**	*(1) Performance below 20% for two consecutive days by an SRAS Provider shall make the SRAS Provider liable for disqualification for participation in SRAS for a week by the Nodal Agency.*	• In case where a SRAS provider under-performs on a given day (say D0) and there is no SRAS requirement on the next day, will Nodal Agency take into

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			account the performance of the SRAS Provider on next such day when SRAS is required, in conjunction with its performance on day D0?
21	**Regulation 13 (2): Failure in performance of SRAS Provider**	*Violation of directions of the Nodal Agency for SRAS under these Regulations shall make the SRAS Providers liable for penalties as per the provision of the Act*	• It is submitted that said violations/deviations by any SRAS provider might occur due to any technical reasons not attributable to the service provider e.g communication/SCADA related issue for data exchange between the generator and Nodal Agency. Hence, clause may be suitably modified with more clarity, so that SRAS participants are not unduly penalised for any uneventful violations for reasons not attributable to the SRAS provider.
22	**Regulation 14: Eligibility for a TRAS Provider**	*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* *(a) it is capable of varying its active power output or drawl or consumption, as the case may be, on receipt of*	• It may be clarified with examples which entities can be deemed as "demand side resource". • It may be clarified if DISCOMS as a pooled entity shall be eligible to participate as a TRAS provider or whether the embedded sources/assets

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		despatch instructions from the Nodal Agency; and *(b) it is capable of providing TRAS within 15 minutes and sustaining the service for at least next 60 minutes.*	within the DISCOM as separate entities shall be treated as individual TRAS provider(s). • It may also be clarified whether willing RE generators (wind, solar, bagasse, biomass, small hydro etc.) are also eligible to participate as a TRAS provider.. • It may also be clarified whether URS power of any generator can also be bid in TRAS real time basis within Gate Closure period ending RTR for the beneficiary.
23	**Regulation 16: Procurement of TRAS**	*(1) Buy Bid: The Nodal Agency shall communicate to the power exchange(s), the quantum of requirement of TRAS-Up and TRAS-Down on day-ahead basis before commencement of the Day Ahead Market and incremental requirement, if any, over and above the procurement in the Day Ahead Market, on real-time basis, before the commencement of the Real Time Market:* *Provided that the quantum of requirement on day-ahead basis shall be communicated after considering the*	• It may be clarified whether there will be a separate market on power exchange for TRAS transactions or whether such TRAS bids will have a different identifier and the transactions will be carried out in the same Day Ahead Market / Real Time Market.

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		TRAS resources likely to be available on real-time basis.	
24	**Regulation 17: Price Discovery of TRAS**	*Price Discovery of TRAS UP* *....* *.....* *Price Discovery for TRAS-Down*	• Since TRAS-Up will be based on the principle of Uniform Market Clearing Price and TRAS-Down will be based on the principle of Pay-as-bid, it may be clarified whether transaction for TRAS-Up and TRAS-Down will happen separately on the Power Exchange
25	**Regulation 19 (2): Payment for TRAS**	*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*	• It is submitted that in order for keeping the system ancillary-service ready, the AS provider will incur a running cost for both up and down regulation readiness. • Hence, the said provision of receiving a capped commitment charges for the quantum which is ready but not required to be despatched, even if the same was cleared, shall hold back the generator from profitably selling energy into spot energy markets, further incurring an additional opportunity cost, equal to the higher revenue foregone.

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			• Thus, it is proposed to remove the capping on commitment charge and increase the said charges for TRAS providers to allow larger participation of the said reserves.
26	**Regulation 20: Shortfall in Procurement of SRAS and TRAS or Emergency Conditions**	*In case of shortfall* *(1) All generating stations, whose tariff is determined by the Commission under Section 62 of the Act and having URS power after Gate Closure, shall be deemed to be available for use by the Nodal Agency for SRAS-Up or SRAS-Down or TRAS-Up or TRAS-Down, subject to technical constraints of such generating stations.*	• It may be clarified whether generating stations whose tariffs are determined under section 62 by the State Commissions are also eligible for providing support in case of shortfall in procurement of SRAS / TRAS.
27	**Regulation 20: Shortfall in Procurement of SRAS and TRAS or Emergency Conditions**	*In case of emergency conditions* *(6) In case the Nodal Agency requires any generating station to provide Ancillary Services to meet the emergency conditions for reasons of grid security as per the provisions of the Grid Code, such generating station shall be compensated at the rate of the energy charge as determined under Section 62 of the Act or adopted under Section 63 of the Act, or at the rate of the compensation charge declared by the AS provider, as the case may be.*	• Emergency conditions may be appropriately defined as a clear definition is not available in the Indian Electricity Grid Code. • It may be clarified whether generating stations whose tariffs are determined under section 62 or section 63 by the State Commissions are also eligible for providing support in case of emergency conditions.
28	**Regulation 22:**	No transmission charges or transmission losses or transmission	• Either no transmission charges and losses should be applicable

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	Transmission charges and losses for SRAS Provider and TRAS Provider	deviation charges shall be payable for SRAS and TRAS.	for SRAS and TRAS or the SRAS and TRAS providers should be allowed to recover transmission charges and losses.
29	**Regulation 23: Detailed Procedure**	*(1) The Nodal Agency shall issue the Detailed Procedure after stakeholders' consultation within a period of 3 months of notification of these regulations and submit the same for information to the Commission.*	• It is submitted that the Ancillary Services Regulations may be reviewed after "Detailed Procedure" are finalized as many provisions of the draft regulation is dependent on information contained in the Detailed Procedure. • Stakeholder should be given a chance to further provide their comments / suggestions in light of information contained in the Detailed Procedure.
30	**Appendix-II: Methodology for Measurement of Performance of SRAS Provider**	*(1)A scatter X-Y plot shall be plotted for each SRAS Provider for comparing the actual response provided by the SRAS Provider against the secondary control signal sent every 4 seconds by the Nodal Agency on post-facto basis using SCADA data for each day. A statistical performance matrix shall be considered for measuring the*	• The Incentive Rate is dependent on the performance of the SRAS provider which is measured in percentage term. • It is not clear how the performance in percentage will be calculated from the scatter X-Y plot. Same may be clarified.

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		performance level of SRAS Provider as illustrated below. … ……	• There could be many external factors such as obligation in long term contracts, grid imbalance, government directives etc, affecting the performance of an SRAS Provider. It may be clarified how such external factors will be considered while arriving at the performance of the SRAS Provider.