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**Sent:** Monday, October 31, 2022 9:56:06 AM  
**Subject:** Statkraft Comments on Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022

Dear Sir/Maam,

Please find enclosed our comments on Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022 for your consideration.

Thanks & Regards

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**Statkraft Market Private Limited**

**Comments of Statkraft Markets Private Limited on Central Electricity  
 Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022**

S.No.	Clause No & Details	Suggestion/Clarification Requested	Rationale for Suggestion
1.	<p><b>Clause 5 (2) (i)</b>  <b>Demand Forecasting:</b>            (i) Each distribution licensee within a State shall estimate the demand in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand response, for the next five (5) years starting from 1st April of the next year and submit the same to the STU by 31<sup>st</sup> July every year.</p>	<p><b>Following is suggested:</b>            a. The forecasted demand should be made available on the website of respective SLDCs/RLDCs            b. The granularity of demand forecast shall at least be on hourly basis</p>	<p>a. Availability of data in public domain will give correct investment signal for generators and will serve as an important signal for other power market stakeholders (traders, transmission system planners, participants in financial market)            b. With increasing penetration of renewable technologies in the grid the load curve of country is changing which is being reflected in hourly prices in power exchanges. Hourly demand forecast will help DISCOMs in taking better decisions when they plan for Generation Resource Procurement</p>
2.	<p><b>Clause 5 (3)</b>  <b>Generation Resource Adequacy Planning</b></p>	<p>a. The result of Generation Adequacy Planning should be made available on the</p>	<p>a. Availability of data in public domain will give correct investment signal for generators and will serve as an</p>

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		<p>website of respective SLDCs/RLDCs</p> <p>b. It is suggested that Energy Storage System (battery and Pump Storage Hydro) should also be considered separately while doing generation resource adequacy planning. Planning should ensure that requirement of Energy Storage is correctly forecasted</p>	<p>important signal for other power market stakeholders (traders, transmission system planners, participants in financial market)</p> <p>b. With greater integration of Renewable Energy resources in the Grid, it is important that Energy Storage Requirement is also considered during Generation Resource Adequacy Planning. Draft National Electricity Plan (Generation) issued by CEA highlights the requirement for ESS</p>
3.	<p><b>Clause Chapter 5</b></p> <p><b>Clause 26 2 (b)</b></p> <p>(b) The certificates as required under clause (a) of this Regulation shall be signed by the authorized signatory not below the rank of CMD or CEO or MD of the generating company and shall be submitted to the concerned RLDC and to the Member Secretary of the concerned RPC before declaration of COD</p>	<p>May be modified as below:</p> <p>(b) The certificates as required under clause (a) of this Regulation shall be signed by the authorized signatory not below the rank of CMD or CEO or MD <b>or Company secretary or person Authorized by Board of Director</b> of the generating company and shall be submitted to the</p>	

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		concerned RLDC and to the Member Secretary of the concerned RPC before declaration of COD	
4.	<p><b>Clause 30 (10) (h)</b>            All generating stations mentioned in Table-4 (under clause (g) of this Regulation) shall have the capability of instantaneously picking up to a minimum 105% of their operating level and up to 105% or 110% of their MCR, as the case maybe, when the frequency falls suddenly and shall provide primary response. Any generating station not complying with the above requirements shall be kept in operation (synchronized with the regional grid) only after obtaining the permission of the concerned RLDC</p>	<p><b>May be modified as below:</b>            All generating stations mentioned in Table-4 (under clause (g) of this Regulation) shall have the capability of instantaneously picking up to a minimum 105% of their operating level and up to 105% or 110% of their MCR, as the case maybe, when the frequency falls suddenly and shall provide primary response. Any generating station not complying with the above requirements shall be kept in operation (synchronized with the regional grid) only after obtaining the permission of the concerned RLDC</p> <p><i>Provided that for hydro, wind, solar, hybrid ( based on renewable energy ) generators this requirement is subject to availability of water, wind, solar insolation, as the case may be.</i></p>	<p>It may be noted that generation from hydro &amp; renewable projects cannot be increased in absence of water, Solar insolation, Wind.</p>

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		<i>Further, during high inflow season hydro plant operates on overload capacity and it will not have additional capability to increase the generation</i>	
5.	<p><b>Clause 45 (4) (b)</b>            (4) Entitlement of a buyer and beneficiary:            (a) .....            (b) For all other cases not covered under Clause (a), the buyer shall be entitled for MW despatch out of declared capacity of regional entity generating station as per its contracts.</p>	<p><b>Please clarify</b> (through an example) how scheduling will happen for cases covered under 45 (4) (b) – Suppose a 1000 MW plant has has 3 buyers having PPAs of (i) Buyer-1: 300 MW (ii) Buyer -2: 200 MW &amp; (iii) Buyer-3: 500 MW. The tariff for all three buyers is different. Further, the plant has declared availability of 500 MW. Will each Buyer get scheduled in proportion to their contracted capacity or the generator will have the flexibility to schedule more power under PPA which has higher tariff</p>	
6.	<p><b>Clause 45 (5) (a) (i)</b>            (5) Requirement for Commencement of Scheduling:            (a) The following documents shall be submitted to the respective RLDC before</p>	<p><b>May be modified as below:</b>            (5) Requirement for Commencement of Scheduling:            (a) The following documents shall be</p>	Generators have to apply only for Connectivity under CERC GNA Regulations

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	commencement of scheduling of transactions under GNA or T-GNA, as the case may be: (i) Grant of GNA with effective date, by the sellers and the buyers;	submitted to the respective RLDC before commencement of scheduling of transactions under GNA or T-GNA, as the case may be: (i) Grant of GNA <b>and/or Connectivity</b> with effective date, by the sellers and the buyers;	
7.	<b>Clause 45 (10) (a)</b> <b>Optimum Utilization of Hydro Energy</b> (a) During high inflow and water spillage conditions, for Storage type generating station and Run-of-River Generating Station with Pondage, the declared capacity for the day may be upto the installed capacity plus overload capability (upto 10%) minus auxiliary consumption, corrected for the reservoir level.	May be modified as below: (a) During high inflow and water spillage conditions, for Storage type generating station and Run-of-River Generating Station with Pondage, the declared capacity for the day may be upto the installed capacity plus overload capability (upto <b>20% 10%</b> ) minus auxiliary consumption, corrected for the reservoir level	Due to inherent machine capability (as certified by manufacturer) some of the hydro projects have an overload capacity of 20% (which can be used only during peak season). Such overload capacity shall be allowed to be injected. As per Regulation 32(2) of Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electrical Lines) Regulations 2010 <i>"The maximum continuous overload capacity of the unit at the generator terminal during the high head conditions or high discharge conditions or both as guaranteed by the</i>

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			<p><i>manufacturer shall be based on the hydraulic parameters of the Station.”</i></p> <p>Hence, hydro generators should be permitted to generate up to overload of 20%</p>
8.	<p><b>Clause 45 (10) (b)</b>  <b>Optimum Utilization of Hydro Energy</b>            (b) During high inflow and water spillage conditions, the concerned RLDC shall allow scheduling of power from hydro generating stations for the overload capability upto 10% of Installed capacity without the requirement of additional GNA for such overload capacity, subject to availability of margins in the transmission system.</p>	<p>May be modified as below:            (b) During high inflow and water spillage conditions, the concerned RLDC shall allow scheduling of power from hydro generating stations for the overload capability upto <b>20%</b> <del>10%</del> of Installed capacity without the requirement of additional GNA for such overload capacity, subject to availability of margins in the transmission system.</p>	<p>Due to inherent machine capability (as certified by manufacturer) some of the hydro projects have an overload capacity of 20% (which can be used only during peak season). Such overload capacity shall be allowed to be injected</p>
9.	<b>Additional Comment</b>	Definition for Auxiliary Consumption should be added	While the draft IEGC Regulations uses Auxiliary Consumption at various places, the term has not been defined
10.	<b>Additional Comment</b>	In case a renewable energy generator or a hydro generator forecasts that its generation would not be equal to its schedule, such	The generation from renewable sources and hydro is inherently variable. Permitting such generators to buy power will help in grid balancing

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		Generators should be permitted to buy power by entering into a contract(s) covered under the Power Market Regulation or by arranging supply from any other generating station, to balance their positions	and also help such generators to avoid high DSM penalties. The Grid Code in any case is permitting generators to buy power under forced shutdown and Unit Shutdown.