From: Raman Gulati <Raman.Gulati@sembcorp.com>
To: Harpreet Singh Pruthi <secy@cercind.gov.in>, Shilpa Agarwal <shilpa@cercind.gov.in>
Cc: Mahesh Vipradas <Mahesh.Vipradas@sembcorp.com>, Kunal Kaistha <Kunal.Kaistha@sembcorp.com>, milind nigudkar <milind.nigudkar@sembcorp.com>
Sent: Tue, 01 Nov 2022 11:29:14 +0530 (IST)
Subject: Comments/Suggestions - Draft IEGC Regulations, 2022

Dear Sir/Madam,

In reference to the Public Notice No. L-1/265/2022/CERC Dated: 7th Jun, 2022 issued to invite comments on "Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022", please find attached detailed comments on behalf of Sembcorp.

Regards,
Raman Gulati

Raman Gulati
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31st Oct, 2022

Comments/Suggestions on Draft (Indian Electricity Grid Code) Regulations, 2022

<table>
<tr><th>Sr. No.</th><th>Present Clause in the Draft IEGC 2022</th><th>Comments/Suggestions/Rationale</th><th>Proposed Revised Clause in the Draft IEGC 2022</th></tr>
<tr><td>1.</td><td>Chapter 5: Commissioning and Commercial Operation code

Clause 3(a) of Regulation 22 of the Draft IEGC 2022 is as under:

(a) …For the trial run, a declaration shall be given by the generating company that no panel has been replaced or added or taken out or design of the plant has been altered: …</td><td>The Commission is requested to provide clarification on the trial run that, whether the developer can replace or add modules /panels or alter the design after the trial run if desired performance of the solar plant is not achieved during 1st trial run to ensure performance, in the repeat trial run.</td><td></td></tr>
<tr><td>2.</td><td>Chapter 5: Commissioning and Commercial Operation code

20. Data To Be Furnished Prior To Notice Of Trial Run
(1) The following details, as applicable, shall be furnished by each regional entity generating station prior to notice of trial run:
TABLE 1: DETAILS TO BE FURNISHED BY GENERATING ENTITY PRIOR TO TRIAL RUN
<table>
<tr><td>Description</td><td>Units</td></tr>
<tr><td>Installed Capacity of generating station</td><td>MW</td></tr>
<tr><td>Installed Capacity of generating station</td><td>MWh</td></tr>
<tr><td>Description</td><td>Units</td></tr>
<tr><td>Number x unit size</td><td>No x MW</td></tr>
<tr><td>Time required for cold start</td><td>Minute</td></tr>
<tr><td>Time required for warm start</td><td>minute</td></tr>
<tr><td>Time required for hot start</td><td>Minute</td></tr>
</table></td><td>The information to be furnished by generating plant in Table 1 is mainly applicable for thermal power plants and hydro power plants. Separate table need to be provided for wind and solar power plant.
The Commission is requested to include separate table for wind and solar power plants.</td><td></td></tr>
</table>

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<tr><td></td><td>
<table>
<tr><td>Time required for combined cycle operation under cold conditions</td><td>Minute</td></tr>
<tr><td>Time required for combined cycle operation under warm conditions</td><td>Minute</td></tr>
<tr><td>Ramping up capability</td><td>% per minute</td></tr>
<tr><td>Ramping down capability</td><td>% per minute</td></tr>
<tr><td>Minimum turndown level</td><td>% of ex-bus capacity</td></tr>
<tr><td>Inverter Loading Ratio (DC/AC capacity)</td><td></td></tr>
<tr><td>Name of QCA (where applicable)</td><td></td></tr>
<tr><td>Full reservoir level (FRL)</td><td>Metre</td></tr>
<tr><td>Design Head</td><td>Metre</td></tr>
<tr><td>Minimum draw down level (MDDL)</td><td>Metre</td></tr>
<tr><td>Water released at Design Head</td><td>M3/ MW</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td>3.</td><td>22.TRIAL RUN OF GENERATING UNIT

(3) Trial Run of Wind / Solar / Storage / Hybrid Generating Station

(a) Successful trial run of a solar inverter unit(s) aggregating to 50 MW and above shall mean flow of power and communication signal for not less than the period between sunrise to sunset in a single day with the requisite metering system, telemetry and protection system in service. The generating company shall record the output of the unit(s) during the trial run and its performance shall</td><td>The proposed proviso ii under both a) and b) of the Regulation 22 refers to demonstration of rated capacity of wind and solar power plant.

The proviso also specifies that, in case if it is not possible to demonstrate the rated capacity of the plant due to insufficient solar irradiation, COD may be declared subject to the condition that the same shall be demonstrated when</td><td>22.TRIAL RUN OF GENERATING UNIT

(3) Trial Run of Wind / Solar / Storage / Hybrid Generating Station

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</table>

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
	be corroborated with the solar irradiation recorded at site during the day and plant design parameters. For the trial run, a declaration shall be given by the generating company that no panel has been replaced or added or taken out or design of the plant has been altered: Provided that: (i) the output below the corroborated performance level with the solar irradiation of the day shall call for repeat of the trial run; *(ii) if it is not possible to demonstrate the rated capacity of the plant due to insufficient solar irradiation, COD may be declared subject to the condition that the same shall be demonstrated immediately when sufficient solar irradiation is available after COD.* (b) Successful trial run of a wind turbine(s) aggregating to 50 MW and above shall mean flow of power and communication signal for a period of not less than four (4) hours during periods of wind availability with the requisite metering system, telemetry and protection system in service. The generating company shall record the output of the unit(s) during the trial run and corroborate its performance with the wind speed recorded at site(s) during the day and plant design parameters: Provided that-	sufficient solar irradiation is available after COD. This implies that the COD shall be conditional, and it will be subject to demonstration of rated capacity as and when appropriate input resource (solar irradiation / wind velocity as the case may be) is available. However, such conditional COD may not be accepted by the beneficiary or lenders of the plant and it may create contractual issues at no fault of developer. There may be possibility that, appropriate input resource may not be available for longer period for the demonstration of rated capacity. Further the Clause 3(f) of same Regulation 22, proposes for repeat trial run or option of CoD with de-rated capacity. This clause is also detrimental and it can create a possibility that, developer may not be able to declare CoD of rated capacity at all. The above provisions should not be applicable for variable RE sources. It is requested to delete the proviso (ii)	be corroborated with the solar irradiation recorded at site during the day and plant design parameters. For the trial run, a declaration shall be given by the generating company that no panel has been replaced or added or taken out or design of the plant has been altered: Provided that: (i) the output below the corroborated performance level with the solar irradiation of the day shall call for repeat of the trial run; ~~*(ii) if it is not possible to demonstrate the rated capacity of the plant due to insufficient solar irradiation, COD may be declared subject to the condition that the same shall be demonstrated immediately when sufficient solar irradiation is available after COD.*~~ (b) Successful trial run of a wind turbine(s) aggregating to 50 MW and above shall mean flow of power and communication signal for a period of not less than four (4) hours during periods of wind availability with the requisite metering system, telemetry and protection system in service. The generating company shall record the output of the unit(s) during the trial run and corroborate its performance with the wind speed recorded at site(s) during the day and plant design parameters: Provided that-

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
	(i) the output below the corroborated performance level with the wind speed of the day shall call for repeat of the trial run; *(ii) if it is not possible to demonstrate the rated capacity of the plant due to insufficient wind velocity, COD may be declared subject to the condition that the same shall be demonstrated immediately when sufficient wind velocity is available after COD.* … *(f) Where on the basis of the trial run, solar / wind / storage / hybrid generating station fails to demonstrate its rated capacity, the generating company shall have the option to either to go for repeat trial run or de-rate the capacity subject to a minimum aggregated de-rated capacity of 50 MW. If the generating company decides to de-rate the unit capacity, the de-rated capacity in such cases shall be not more than 90% of the demonstrated capacity to cater for primary response.*	of both a and b and clause 3(f) of Regulation 22.	(i) the output below the corroborated performance level with the wind speed of the day shall call for repeat of the trial run; ~~*(ii) if it is not possible to demonstrate the rated capacity of the plant due to insufficient wind velocity, COD may be declared subject to the condition that the same shall be demonstrated immediately when sufficient wind velocity is available after COD.*~~ … ~~*(f) Where on the basis of the trial run, solar / wind / storage / hybrid generating station fails to demonstrate its rated capacity, the generating company shall have the option to either to go for repeat trial run or de-rate the capacity subject to a minimum aggregated de-rated capacity of 50 MW. If the generating company decides to de-rate the unit capacity, the de-rated capacity in such cases shall be not more than 90% of the demonstrated capacity to cater for primary response.*~~
4.	**Chapter 5: Commissioning and Commercial Operation code** Clause 2(b)(ii) of Regulation 24 of the Draft IEGC 2022 is as under: (2) Documents and Tests Required for Thermal (coal/lignite) Generating Stations: b) The following tests shall be performed: …	For plants being operated by Sembcorp, 0.7% ramp rates are sustainable for wide range of 50% to 100% load variation. 1% can be achieved only for short ranges of 20%. Other thermal power plants may also not be able to operate at the ramp rates of up to 1% as proposed in the	

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
	(ii) Ramp-up from fifty (50) percent of MCR to MCR at a ramp rate of at least one (1) percent of MCR per minute and sustained operation at MCR for one (1) hour.	Draft Regulations. In view of the same, it is requested to reconsider such high ramp rates which may not be possible for all the plants. Ramp rates may be specified based on design parameters or capability of the plants. Appropriate modification may be made in draft IEGC Regulations to address above genuine concern of the thermal generating plants.	
5.	**Chapter 5: Commissioning and Commercial Operation code** Clause 5(b)(iii) of Regulation 24 of the Draft IEGC 2022 is as under: (5) Documents and Tests Required for the Generating Stations based on wind and solar resources: (a) The generating company shall submit certificate confirming compliance to CEA Technical Standards for Connectivity. (b) The following tests shall be performed: …	The grid forming capability specified in Clause 5(b)(iii) of Regulation 24 is recent technology of inverter which may not be available with projects which are already bid out or under construction It is proposed that, Clause 5(b)(iii) of Regulation 24 shall be made applicable with prospective effect for projects bid out after the notification of IEGC 2022 and based on criterion specified by CEA.	Proviso for necessary clarification that Clause 5(b)(iii) of Regulation 24 shall be applicable with prospective effect shall be added Further it is suggested that grid forming capability should be based on criterion specified separately by CEA as this field is still evolving.

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
	(iii) Grid-forming capability, wherever provided, in inverter-based units that may be used as black start resource.		
6.	**Chapter 5: Commissioning and Commercial Operation code** **25.** CERTIFICATE OF SUCCESSFUL TRIAL RUN (1) In case any objection is raised by a beneficiary in writing to the concerned RLDC with copy to all concerned regarding the trial run within two (2) days of completion of such trial run, the concerned RLDC shall, within five (5) days of receipt of such objection, in coordination with the concerned entity *and the beneficiaries*, decide if the trial run was successful or there is a need for repeat trial run. (2) After completion of a successful trial run and receipt of documents and test reports as per Regulation 24 of these regulations, the concerned RLDC shall issue a certificate to that effect to the concerned generating station, ESS or transmission licensee, as the case may be, with a copy to their respective beneficiary(ies).	If the trial run is already completed, after following due procedure, it should be the responsibility of RLDC to decide if the trial run was successful or if there is a need for a repeat trial run. The beneficiary has no role to raise any objection on the trial run being supervised/conducted by RLDC. Also, there could some plants established on merchant basis, which may not have any particular beneficiary, for them also such proposed clause may not be applicable. Raising such objection by a beneficiary which has been conducted by RLDC would raise question of legitimacy of RLDC which is a Statutory authority. In view of above, it is requested to omit the proposed clause where a beneficiary is allowed to raise such	**Chapter 5: Commissioning and Commercial Operation code** **25.** CERTIFICATE OF SUCCESSFUL TRIAL RUN ~~*(1) In case any objection is raised by a beneficiary in writing to the concerned RLDC with copy to all concerned regarding the trial run within two (2) days of completion of such trial run, the concerned RLDC shall, within five (5) days of receipt of such objection, in coordination with the concerned entity and the beneficiaries, decide if the trial run was successful or there is a need for repeat trial run.*~~ **(1)** ~~*(2)*~~ After completion of a successful trial run and receipt of documents and test reports as per Regulation 24 of these regulations, the concerned RLDC shall issue a certificate to that effect to the concerned generating station, ESS or transmission licensee, as the case may be, with a copy to their respective beneficiary(ies).

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
		objection which would unnecessarily delay the process of project COD.	
7.	**Chapter 6 : Operating Code** **29 System Security** **…** (4) Except under an emergency, or when it becomes necessary to prevent an imminent damage to a costly equipment, *no user shall suddenly reduce its generating unit output by more than 100 (one hundred) MW [20 (twenty) MW in case of NER*] without prior permission of the respective RLDC.	For wind and solar projects the generation output is majorly dependent on wind speed and solar radiation, and for many instances it may not be possible to maintain the unit output as required in case of a sudden drop in the wind or solar resource. Also getting the prior permission may not be possible considering it to be a sudden and unanticipated scenario. It is proposed that referred clause 29 (4) should be not be applicable for wind and solar generators.	**Chapter 6 : Operating Code** **29 System Security** (4) Except under an emergency, or when it becomes necessary to prevent an imminent damage to costly equipment, no user shall suddenly reduce its generating unit output by more than 100 (one hundred) MW [20 (twenty) MW in case of NER] without prior permission of the respective RLDC. **Provided that, the above clause shall not be applicable to wind and solar generators.**
8.	**Chapter 6: Operating code** Clause 5 of Regulation 34 of the Draft IEGC 2022 is as under: (5) The thermal and nuclear generating stations shall be prepared for house load operation as per design. Concerned user and SLDC shall report the performance of house load operation of a generating station in the event where such operation was required.	For Sembcorp's thermal plants it is not possible to operate at house load due to technical constraints. During house load operation from full load, key parameters like feed water flow control is not possible due to TDBFPs trip to MDBFP changeover, Boiler operation from Dry state to wet state & Furnace flame stability. BTG components are expected to undergo huge system stress and may lead to forced outages.	**Chapter 6: Operating code** Clause 5 of Regulation 34 of the Draft IEGC 2022 is as under: (5) The thermal and nuclear generating stations **if capable** shall be prepared for house load operation as per design. Concerned user and SLDC shall report the performance of house load operation of **such** ~~a~~ generating station**s** in the event where such operation was required.

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<tr><td></td><td></td><td>Other thermal power plants may also not be able to operate on house load. This clause should not be made mandatory on all plants and should be applicable only for plants which are capable for such operation.</td><td></td></tr>
<tr><td>9.</td><td>30. Frequency Control and Reserves
(10) Primary Control:
(g) The generating units shall have their governors or controllers in operation at all times with droop settings of 3-6 % or as specified in the CEA Technical Standards for Connectivity as per the requirements mentioned in Table 4.
Table 4: Primary Response Of Various Types Of Generating Units
<table>
<tr><td>Fuel/ Source</td><td>Minimum unit size/Capacity</td><td>Up to</td></tr>
<tr><td>Coal/Lignite Based</td><td>200 MW and above</td><td>±5% of MCR</td></tr>
<tr><td>Hydro</td><td>25 MW and above non-canal based</td><td>±10% of MCR</td></tr>
<tr><td>Gas based</td><td>Gas Turbine above 50 MW</td><td>±5% of MCR (corrected for</td></tr>
</table></td><td>The primary response of Wind/ Solar/ Renewable Hybrid Energy Projects shall be based on the availability of wind/solar resources.
The Commission is requested to include appropriate proviso for providing necessary clarification</td><td>Following proviso may be added
<table>
<tr><td>Wind/ Solar/ Renewable Hybrid Energy Project* (commissioned after the date as specified in the CEA Technical Standards for Connectivity)^
<u>Provided that, Wind/ Solar/ Renewable Hybrid Energy Project without BESS at its Pooling Station, shall provide primary response</u></td><td>Capacity of Generating station more than 10 MW and connected at 33 kV and above</td><td>10% of the maximum Alternating Current active power capacity in case of frequency deviations in excess of 0.3 Hz</td></tr>
</table></td></tr>
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<tr><td></td><td></td><td>ambiance temperature)</td></tr>
<tr><td>Wind/ Solar/ Renewable Hybrid Energy Project* (commissioned after the date as specified in the CEA Technical Standards for Connectivity)^</td><td>Capacity of Generating station more than 10 MW and connected at 33 kV and above</td><td>10% of the maximum Alternating Current active power capacity in case of frequency deviations in excess of 0.3 Hz</td></tr>
</table>
^Wind/Solar/Hybrid plant commissioned after the date as specified in CEA Technical Standards for Connectivity shall have the option to provide primary response individually through BESS or through a common BESS installed at its pooling station.
</td>
<td></td>
<td>
<table>
<tr><td><u>subject to availability of wind/solar resources</u></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
10.	**30. Frequency Control and Reserves** (10) Primary Control: (h) 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 may be, 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.	This provision shall not be applicable to wind and solar generating plants as their response shall depend on the wind /solar resources.	30. Frequency Control and Reserves (10) Primary Control: (h) 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 may be, 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. Provided that, the provision shall not be applicable for the wind/solar/hybrid generators operating without BESS.
11.	40. FIELD TESTING FOR MODEL VALIDATION … (3) Testing requirements The following tests shall be carried out on respective power system elements: … TESTS REQUIRED: Synchronous Generator (1) Real and Reactive Power Capability assessment.	In case plants /units which does not have provision for AGC, it is requested to exempt testing of Governor performance and Automatic Generation Control f.	40. FIELD TESTING FOR MODEL VALIDATION … (3) Testing requirements The following tests shall be carried out on respective power system elements: … TESTS REQUIRED: Synchronous Generator (1) Real and Reactive Power Capability assessment.

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	(2) Reactive Power Control Capability (As per CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007) assessment. (3) Model Validation and verification test for the complete Generator and Excitation System model including PSS. (4) Model Validation and verification of Turbine/Governor and Load Control or Active Power/ Frequency Control Functions. (5) Testing of Governor performance and Automatic Generation Control.		(2) Reactive Power Control Capability (As per CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007) assessment. (3) Model Validation and verification test for the complete Generator and Excitation System model including PSS. (4) Model Validation and verification of Turbine/Governor and Load Control or Active Power/ Frequency Control Functions. (5) Testing of Governor performance and Automatic Generation Control <u>where the units have AGC provision.</u>
12.	**Chapter 7: Scheduling and Despatch Code** **45. General Provisions** (5) Requirement for Commencement of Scheduling: (a) The following documents shall be 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 with effective date, by the sellers and the buyers; (ii) Grant of T-GNA with effective date, by the buyers; (iii) Declaration by the sellers and the buyers about the existence of valid contracts for the transactions. (iv) Copies of the valid contracts by the sellers and	The Commission is requested to provide clarification if in case the GNA is yet to become effective and the generator is ready partly or fully schedule its power, which documents would be required to be submitted by the generator to RLDC for commencement of scheduling as per 2nd Provisio of Clause 22.4 of GNA Regulations	

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	the buyers, for transactions other than collective transactions.		
13.	**Chapter 7: Scheduling and Despatch Code** Clause 8(a) of Regulation 45 of the Draft IEGC 2022 is as under: (8) Declaration of Declared Capacity by Regional entity generating stations (a) The regional entity generating station shall declare ex-bus Declared Capacity, limited to 100% MCR, on day ahead basis as per provisions of Regulation 47 of these regulations. Provided that in case of REGS or ESS the available capacity shall be declared by such regional entity generating station.	For RE generators, the 'Available Capacity' is defined in the Deviation Settlement Mechanism and Related Matters) Regulations, 2022. At present the RE generators are sharing the Available Capacity on day ahead basis and hence the same is suggested.	**Chapter 7: Scheduling and Despatch Code** Clause 8(a) of Regulation 45 of the Draft IEGC 2022 is as under: (8) Declaration of Declared Capacity by Regional entity generating stations (a) The regional entity generating station shall declare ex-bus Declared Capacity, limited to 100% MCR, on day ahead basis as per provisions of Regulation 47 of these regulations. Provided that in case of REGS or ESS the available capacity shall be declared by such regional entity generating station **in accordance with CERC Deviation Settlement Mechanism and Related Matters) Regulations, 2022.**
14.	**Chapter 7: Scheduling and Despatch Code** Clause 8(b) of Regulation 45 of the Draft IEGC 2022 is as under: (b) The regional entity generating stations may be required to demonstrate the declared capacity of their generating stations as and when directed by the concerned RLDC. For this purpose, RLDC, in coordination with SLDC and the beneficiaries, shall schedule the regional entity generating station upto	The Wind and/or solar RE generators may not be able to demonstrate the declared capacity of their generating stations as and when directed by the concerned RLDC as their generation depends on the wind/solar resources which are beyond the control of generator.	**Chapter 7: Scheduling and Despatch Code** Clause 8(b) of Regulation 45 of the Draft IEGC 2022 is as under: (b) The regional entity generating stations may be required to demonstrate the declared capacity of their generating stations as and when directed by the concerned RLDC. For this purpose, RLDC, in coordination with SLDC and the beneficiaries, shall schedule the regional entity generating station upto

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	its declared capacity as declared on day ahead basis at time of first declaration. RLDC shall ask each generating station, at least once in a year, to demonstrate the declared capacity.	In view of above, it is requested to exclude such requirement to demonstrate the declared capacity. The provisions of Clause 8(b) of Regulation 45 shall not be applicable to wind/solar generating stations.	its declared capacity as declared on day-ahead basis at time of first declaration. RLDC shall ask each generating station, at least once in a year, to demonstrate the declared capacity. Provided that the above provisions shall not be applicable to the wind/solar generating stations.
15.	**Chapter 7: Scheduling and Despatch Code** Clause 11(f) of Regulation 45 of the Draft IEGC 2022 is as under: (11) Scheduling of renewable energy generating station by QCA ----- (f) Any dispute arising between the generating stations and QCA shall be resolved in accordance with the mechanism in the contracts entered into between them.	As the QCA shall be registered with RLDC and be responsible for coordination with RLDC for scheduling and commercial settlements, the disputes raised between QCA and generating stations shall be adjudicated by the Central Commission. The provisions of clause (f) shall be revised accordingly.	
16.	**Chapter 7: Scheduling and Despatch Code** Clause 9(a)(i) of Regulation 45 of the Draft IEGC 2022 is as under: (9) Ramping Rate to be Declared for Scheduling:	For plants being operated by Sembcorp, 0.7% ramp rates are sustainable for wide range of 50% to 100% load variation. 1% can be achieved only for short ranges of 20%. Other thermal power plants may also not be able to operate at the ramp	

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	(a) The regional entity generating station shall declare the ramping rate along with the declaration of day-ahead declared capacity in the following manner, which shall be accounted for in the preparation of generation schedules: (i) Coal or lignite fired plants shall declare a ramp up or ramp down rate of not less than 1% of ex-bus capacity corresponding to MCR on bar per minute;	rates of up to 1% as proposed in the Draft Regulations. In view of the same, it is requested to reconsider such high ramp rates which may not be possible for all the plants. Ramp rates may be specified based on design parameters or capability of the plants. Appropriate modification may be made in draft IEGC Regulations to address above genuine concern of the thermal generating plants.	
17.	**Chapter 7: Scheduling and Despatch Code** Clause 15 of Regulation 45 of the Draft IEGC 2022 is as under: (15) A generating station including renewable energy generating station shall be allowed to draw power from ISTS during **non-generation hours,** whether before COD or after COD, only after obtaining schedule for such drawal of power in accordance with a valid contract entered into by it with a seller or distribution licensee or through power exchange.	For wind generators it is impossible to accurately predict non-generation hours due to variability of wind. Most wind generators face sudden drop in wind resulting in nil generation that cannot be predicted. Hence, it will be very difficult (rather impossible) for wind generators to enter into contracts for start-up power without accurately knowing when start up would be required. Also considering the fact that non-generation hours for wind generators cannot be defined and are uncontrollable, it may not be possible for wind generators to provide	**Chapter 7: Scheduling and Despatch Code** Clause 15 of Regulation 45 of the Draft IEGC 2022 is as under: (15) A generating station including renewable energy generating station shall be allowed to draw power from ISTS during non-generation hours, whether before COD or after COD, only after obtaining schedule for such drawal of power in accordance with a valid contract entered into by it with a seller or distribution licensee or through power exchange. **Provided that, above clause shall not be applicable for wind generators drawing power for start-up or for other auxiliary consumption.**

Sr. No.	Present Clause in the Draft IEGC 2022	Comments/Suggestions/Rationale	Proposed Revised Clause in the Draft IEGC 2022
		accurate schedule for drawal of power on day ahead basis. In view of above, it is requested that clause 15 should not be applicable for the wind generators.	
18.	**Chapter 7: Scheduling and Despatch Code** Clause 5 (c) of Regulation 47 of the Draft IEGC 2022 is as under: (5) Grid disturbance of category GD-5: … (c) Scheduled generation of all the affected regional entity generating stations supplying power under bilateral transactions shall be deemed to have been revised to be equal to their actual generation for all the time blocks affected by the grid disturbance. Such regional entity generating station shall pay back the energy charges received by it for the scheduled generation revised as actual generation to the pool account.: Provided that, in case the beneficiaries or buyers of such regional entity generating station are also affected by such grid disturbance, the scheduled drawals of such beneficiaries or buyers shall be deemed to have been revised to corresponding actual generation schedule of regional entity generating stations.	The mentioned clause 5(c) of Regulation 47 of the Draft IEGC 2022 specifies that the schedule only for the bilateral transactions shall be revised in case of Grid Disturbance (GD). However, a generator could also have scheduled its power under collective transactions. As per the draft, in case of GD the schedule of collective transaction shall not be revised. This would result in undue DSM charges even for the period of GD on which generator would have to pay the DSM charges. As such incident of GD is not in control of Generator such schedule of collective transaction should also be revised along with all other transactions. This can also be supported by Commission's Order dated 9th Oct,	**Chapter 7: Scheduling and Despatch Code** Clause 5 (c) of Regulation 47 of the Draft IEGC 2022 is as under: (5) Grid disturbance of category GD-5: … (c) Scheduled generation of all the affected regional entity generating stations supplying power under **all the transactions** including bilateral **and collective** transactions shall be deemed to have been revised to be equal to their actual generation for all the time blocks affected by the grid disturbance. **Provided that the generating station or electricity trader or any other agency selling power from the unit of the generating station shall immediately intimate the estimated time of restoration of the unit post grid disturbance, to SLDC or RLDC, as the case may be. Scheduled generation for such generating station or electricity trader or any other agency selling power from the unit of the generating station shall be deemed to have been revised to be**

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	Provided further that in case the beneficiaries or buyers of such regional entity generating station are not affected by such grid disturbance and they continue to draw power, the scheduled drawals of such beneficiaries or buyers shall not be revised.	2019 for where in CERC has approved the "Methodology of settlement of accounts for bilateral short term and collective transactions, for the period of Grid Disturbance" In above referred Order, collective transactions are also allowed to be revised for the period of GD. It is therefore requested to continue with the same approach under the new IEGC Regulations.	**equal to their actual generation till such intimated time for restoration.** Such regional entity generating station shall pay back the energy charges received by it for the scheduled generation revised as actual generation to the pool account.: Provided that, in case the beneficiaries or buyers of such regional entity generating station are also affected by such grid disturbance, the scheduled drawals of such beneficiaries or buyers shall be deemed to have been revised to corresponding actual generation schedule of regional entity generating stations. Provided further that in case the beneficiaries or buyers of such regional entity generating station are not affected by such grid disturbance and they continue to draw power, the scheduled drawals of such beneficiaries or buyers shall not be revised.
19.	**Chapter 7: Scheduling and Despatch Code** Clause 7 of Regulation 47 of the Draft IEGC 2022 is as under: (7) In case of forced outage of a unit of a generating station (having generating capacity of 100 MW or more) and selling power under bilateral transaction (excluding collective transactions in day ahead market and real time market through power exchange), the generating station or	Under GNA regulations, generator is required to schedule all the transactions under GNA. In case of forced outage of generator, all the transactions should be given equal preference. It should therefore be made clear that whenever there is forced outage of a	**Chapter 7: Scheduling and Despatch Code** Clause 7 of Regulation 47 of the Draft IEGC 2022 is as under: (7) In case of forced outage of a unit of a generating station (having generating capacity of 100 MW or more) and selling power under bilateral transaction (excluding collective transactions in day ahead market and real time market through power exchange), the generating station or electricity

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	electricity trader or any other agency selling power from the unit of the generating station shall immediately intimate the outage of the unit along with the requisition for revision of schedule and estimated time of restoration of the unit, to SLDC or RLDC, as the case may be. The schedule of beneficiaries, sellers and buyers of power from this generating unit shall be revised accordingly. The revised schedules shall become effective from the time block and in the manner as specified in Clause (4) of this Regulation: Provided that the generating station or trading licensee or any other agency selling power from a generating station or unit(s) thereof may revise its estimated restoration time once in a day and the revised schedule shall become effective from the 7th time block or 8th time block as per Clause (4) of this Regulation, counting the time block in which the revision is informed by the generator to be the first one. Provided further that SLDC or RLDC as the case may be, shall inform the revised schedule to the seller and the buyer. The original schedule shall become effective from the estimated time of restoration of the unit.	unit, all the ongoing transactions should be reduced on proportionate basis. Even the existing IEGC Regulations provides such clarity, (refer Regulation 6.5 (19A), which specifies that in case of revision in schedule, all the transactions under LT, MT and ST Open Access (Except Collective transactions) shall be reduced on pro-rata basis.	trader or any other agency selling power from the unit of the generating station shall immediately intimate the outage of the unit along with the requisition for revision of schedule and estimated time of restoration of the unit, to SLDC or RLDC, as the case may be. The schedule of beneficiaries, sellers and buyers of power from this generating unit shall be revised ~~*accordingly*~~ **on pro-rata basis for all the transactions (excluding collective transactions in day ahead market and real time market through power exchange)**. The revised schedules shall become effective from the time block and in the manner as specified in Clause (4) of this Regulation: Provided that the generating station or trading licensee or any other agency selling power from a generating station or unit(s) thereof may revise its estimated restoration time once in a day and the revised schedule shall become effective from the 7th time block or 8th time block as per Clause (4) of this Regulation, counting the time block in which the revision is informed by the generator to be the first one. Provided further that SLDC or RLDC as the case may be, shall inform the revised schedule to the seller and the buyer. The original schedule shall become effective from the estimated time of restoration of the unit.

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20.	47. Procedure For Scheduling And Despatch For Inter-State Transactions (3) Power to revise schedules: (a) Curtailment of Scheduled transactions for grid security … (c) The generation from wind, solar, wind-solar hybrid and run of the river hydro plants with upto three hours pondage (in case of excess water leading to spillage) shall be curtailed pro rata based on T-GNA, after curtailment of generation from other sources, within T-GNA. … (iii) Transactions under GNA shall be curtailed in the following order: (b) The generation from wind, solar, wind-solar hybrid and run of the river hydro plants with upto three hours pondage (in case of excess water leading to spillage) shall be curtailed pro rata based on their GNA quantum, after curtailment of generation from other sources, within GNA.	The provisions of IEGC should specify the conditions of grid security or the CERC /SERCs should prepare detailed guidelines explaining the conditions for RE curtailments in case of grid security. Further the details and data pertaining to such conditions should be provided to stakeholders for examination and validation post RE curtailment incidence. Till such guidelines are notified by SERCs, the one provided by CERC should prevail to streamline RE curtailment.	**The proviso may be added as below:** (c) The generation from wind, solar, wind-solar hybrid and run of the river hydro plants with upto three hours pondage (in case of excess water leading to spillage) shall be curtailed pro rata based on T-GNA, after curtailment of generation from other sources, within T-GNA. **Provided that, appropriate Commission shall publish detailed guidelines for management of RE curtailment after notification of this Grid Code. Also, the details and required data for establishing the need for curtailment shall be provided by Regional Load Despatch Centre to the stakeholders.** **Provided further that till such time the appropriate Commission makes guidelines for management of RE curtailment, the guidelines notified by the Central Commission shall prevail.** (iii) Transactions under GNA shall be curtailed in the following order: (b) The generation from wind, solar, wind-solar hybrid and run of the river hydro plants with upto three hours pondage (in case of excess water leading to spillage) shall be curtailed pro rata based on their GNA quantum, after curtailment of generation from other sources, within GNA.

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			Provided that, appropriate Commission shall publish detailed guidelines for management of RE curtailment after notification of this Grid Code. Also, the details and required data for establishing the need for curtailment shall be provided by Regional Load Despatch Centre to the stakeholders. **Provided further that till such time the appropriate Commission makes guidelines for management of RE curtailment, the guidelines notified by the Central Commission shall prevail.**