

No: PCKL/DDP1/ADP4&9/CERC/2022-23 15132-37  
Encl: Annexure

Date: **31 OCT 2022**

The Secretary,  
Central Electricity Regulatory Commission,  
3<sup>rd</sup> and 4<sup>th</sup> Floor, Chandralok Building,  
36, Janpath, New Delhi – 110001.

Sir,

Sub: Submission of Comments/Views on the Notification of "Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022".

Ref: CERC letter no. L-1/265/ 2022/CERC dated 07.06.2022.

With respect to the above, Power Company Karnataka Limited (PCKL) is hereby furnishing the comments/suggestions/objections on the proposed Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022 as in Annexure enclosed to this letter for further needful in the matter.

It is requested to consider the comments/suggestions/objections furnished while finalizing the Regulations.

Yours faithfully,

*P. S. S. S. S.*  
Additional Director (Projects)  
PCKL Bangalore

Copy submitted for kind information to:

1. The Managing Director, BESCOM, K.R Circle, Bengaluru-560001
2. The Managing Director, HESCOM, Navanagar, Hubballi-580025.
3. The Managing Director, GESCOM, Station Main Road, Kalaburgi-581002.
4. The Managing Director, MESCOM, Corporate office, 4th Floor, MESCOM Bhavan, Bejai, Kavour cross Road, Mangaluru-575004.
5. The Managing Director, CESC, Corporate Office, No. CA-29, Vijaynagar 2nd Stage, Hinakal, Mysuru – 570 017.

**PCKL comments on Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022.**

**Annexure**

<b>Cl. No.</b>	<b>Sub. Cl No.</b>	<b>CERC Draft Indian Electricity Grid Code Regulations, 2022</b>	<b>PCKL Comments</b>
<b>1</b>		<b>PREAMBLE</b> “.....Clause (e) of sub-section (3) of Section 28 of the Act provides that the Regional Load Despatch Centre shall be responsible for carrying out real time operations for grid control and despatch of electricity within the region through secure and economic operation of the regional grid in accordance with the Grid Standards and the Grid Code..... Therefore, the Act envisages and assigns specific roles and functions to Central Electricity Authority, Regional Power Committees, Central Transmission Utility, National Load Despatch Centre, Regional Load Despatch Centres, State Transmission Utilities, State Load Despatch Centres, generating companies and licensees and any other person connected with the operation of the power system in order to achieve real time operation and control of the grid within the regions and amongst the regions and also within the States for not only ensuring secure, economic and stable operation of the grid but also for achieving maximum economy and efficiency of the power system. Page No.119- Provided that the renewable energy generating stations shall not be subjected to merit order dispatch (MUST RUN), and subject to technical constraints shall be requisitioned first followed by requisition from other generating stations in merit order.	<b>The Economic operation in respect of Must run project is not possible in the State of Karnataka. As the cost of the RE generator is more than the thermal generating cost. Hence, the status of Must run in respect of RE generator needs to be removed.</b>
		<b>CHAPTER1:PRELIMINARY</b>	
<b>2.</b>		<b>Scope And Extent Of Application</b>	
	(1)	These regulations shall apply to: all users, State Load Despatch Centres, Regional Load Despatch Centres, National Load Despatch Centre, Central Transmission Utility, State Transmission Utilities, licensees, Regional Power Committees and Power Exchanges to the extent applicable.	These regulations shall apply to: all users, State Load Despatch Centres, <b>REMC</b> , Regional Load Despatch Centres, National Load Despatch Centre, Central Transmission Utility, State Transmission Utilities, licensees, Regional Power Committees and Power Exchanges to the extent applicable.
<b>3.</b>		<b>Definitions</b>	



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	10	'Bilateral Transaction' means a transaction for exchange of energy or power (MW or MWh) between a specified buyer and a specified seller, directly or through a trading licensee or discovered in the Term Ahead Market at power exchange through anonymous bidding, and scheduled from a specified point of injection to a specified point of drawal for a fixed or varying quantum of power (MW) for any time period;	Bilateral Transaction' means a transaction for exchange of energy or power (MW or MWh) between a specified buyer and a specified seller, directly or through a trading licensee or discovered in the Term Ahead Market at power exchange <b>or through DEEP Portal through competitive bidding through anonymous bidding</b> , and scheduled from a specified point of injection to a specified point of drawal for a fixed or varying quantum of power (MW) for any time period;
	11.	'Blackout State' means a condition at a specific time where a part or all the operations of the power system have got suspended;	Similarly Brownout State definition may be included.
	38.	'Drawal schedule ' means the summation of the station-wise expower plant drawal schedules from all ISGS and drawal from/injection to regional grid under GNA and T-GNA;	'Drawal schedule ' means the summation of the station-wise expower plant drawal schedules from all ISGS, <b>DVC, PPA quantum</b> and drawal from/injection to regional grid under GNA and T-GNA;
	56.	'Generating Unit' means a) for all generating stations except solar photo voltaic, wind and hybrid stations, an electrical generator coupled to a prime mover within a power station together with all plant and apparatus at the power station which relate exclusively to operation of that turbo-generator	a) for all generating stations except solar photo voltaic, wind, <b>waste to energy</b> and hybrid stations, an electrical generator coupled to a prime mover within a power station together with all plant and apparatus at the power station which relate exclusively to operation of that turbo-generator
	110	'Share' means percentage or MW entitlement of a beneficiary in an ISGS either notified by Government of India or agreed between the generating company and beneficiary through contracts and implemented through GNA or TGNA, as the case may be	'Share' means percentage or MW entitlement of a beneficiary in an ISGS either notified by Government of India or agreed between the generating company <b>or allocation of</b> and beneficiary through contracts and implemented through GNA or TGNA, as the case may be
	123	'User' means and includes generating company, captive generating plant, energy storage system, transmission licensee including deemed transmission licensee, distribution licensee, solar park developer, wind park developer, wind-solar photo voltaic hybrid system, or bulk consumer whose electrical plant is connected to the grid at voltage level 33 kV and above	User' means and includes generating company, captive generating plant, energy storage system, transmission licensee including deemed transmission licensee, distribution licensee, <b>deemed distribution licensee</b> , solar park developer, wind park developer, wind-solar photo voltaic hybrid system, or bulk consumer whose electrical plant is connected to the grid at voltage level 33 kV and above
			Addition: 110 KV station to be included, as in the State of Karnataka 110 kV voltage level is being constructed
		<b>CHAPTER - 2: RESOURCE PLANNING CODE</b>	
5	(2)	Demand Forecasting: (i) Each distribution licensee within a State shall estimate the demand	<b>It is very difficult to access the demand of the open access consumer and captive generating plants for the next 5 years from 1<sup>st</sup> April of</b>

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		<p>in its control area including the demand of open access consumers and factoring in captive generating plants, energy efficiency measures, distributed generation, demand 25 response, for the next five (5) years starting from 1st April of the next year and submit the same to the STU by 31st July every year. The demand estimation shall be done using trend method, time series, econometric methods or any state of the art methods and shall include daily load curve (hourly basis) for a typical day of each month.</p>	<p><b>the next year as these consumers are not in the control of the Distribution Licensee.</b></p>
		<p>Chapter2 Resource Planning Code Demand Forecasting: (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 25 response, for the next five (5) years starting from 1st April of the next year and submit the same to the STU by 31st July every year. The demand estimation shall be done using trend method, time series, econometric methods or any state of the art methods and shall include daily load curve (hourly basis) for a typical day of each month.</p>	<p>As per clause 21 of KERC (Conditions of licensee for ESCOMs) Regulation 2004, ESCOMs shall not procure power without approval of the Commission and required to follow the guidelines issued by the Commission from time to time relating to preparation of load forecasts, power procurement plan and power procurement procedure. In this connection, State commission has to frame the Guidelines in line with Grid Code. Suitable provision shall be in the grid code.</p>
		<p><b>CHAPTER 5 :COMMISSIONING AND COMMERCIAL OPERATION CODE</b></p>	
<p><b>21.</b></p>		<p><b>NOTICE OF TRIAL RUN</b></p>	
	<p>(1)</p>	<p>The generating company proposing its generating station or a unit thereof for trial run or repeat of trial run shall give a notice of not less than seven (7) days to the concerned RLDC and the beneficiaries of the generating stations wherever identified. The concerned RLDC shall commence the trial run from the requested date or in case of any system constraints not later than seven (7) days from the proposed date of trial run. The trial run shall commence from the time and date as decided and informed by the concerned RLDC.</p>	<p>The generating company proposing its generating station or a unit thereof for trial run or repeat of trial run shall give a notice of not less than seven (7) days to the concerned RLDC, and the beneficiaries of the generating stations wherever identified along with the respective SLDC. The concerned RLDC shall commence the trial run from the requested date or in case of any system constraints not later than seven (7) days from the proposed date of trial run. The trial run shall commence from the time and date as decided and informed by the concerned RLDC <b>with information to</b></p>



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			<b>respective SLDC and beneficiaries of the generating stations if any.</b>
19	(4)	<b>DRAWAL OF START UP POWER AND INJECTION OF INFIRM POWER</b> Drawal of start-up power shall be subject to payment of transmission charges as per Sharing Regulations;	Drawal of start-up power shall be subject to payment of transmission charges as per Sharing Regulations <b>and payment of Deviation charges</b>
	(7)	RLDC shall stop the drawl of the start-up Power in the following events: (a) In case, it is established that the start-up power has been used by the generating station for construction activity; (b) In case of default in payment of monthly transmission charges.	RLDC shall stop the drawl of the start-up Power in the following events: (a) In case, it is established that the start-up power has been used by the generating station for construction activity; (b) In case of default in payment of monthly transmission charges. Addition: <b>In case of default in payment of deviation charges</b>
22	2(a)	<b>TRIAL RUN OF GENERATING UNIT</b> Trial Run of Hydro Generating Unit shall be carried out in accordance with following provisions: (a) A hydro generating unit shall be in continuous operation at MCR for twelve (12) hours	Trial run operation of Small hydro generating station may be specified
25	(1)	<b>CERTIFICATE OF SUCCESSFUL TRIAL RUN</b> 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 49 coordination with the concerned entity and the beneficiaries, decide if the trial run was successful or there is a need for repeat trial run	<b>Generating station without having PPA of any of the beneficiary , the modalities for certification of successful trial run may be specified</b>
		<b>CHAPTER 6 :OPERATING CODE</b>	
28.		<b>OPERATING PHILOSOPHY</b>	
	(7)	Every generating station and transmission substation of 132 kV and above shall have a control room manned by qualified operating personnel round the clock. Alternatively, the same may be operated round the clock from a remotely located control room, subject to the condition that such remote operation does not result in delay in	Every generating station and transmission substation of <b>110 kV</b> and above shall have a control room manned by qualified operating personnel round the clock. Alternatively, the same may be operated round the clock from a remotely located control room, subject to the condition that such remote operation does not result in delay in

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		execution of any switching instructions and information flow: Provided that a transmission licensee owning a transmission line but not owning the connected substation, shall have a round the clock coordination centre.	execution of any switching instructions and information flow: Provided that a transmission licensee owning a transmission line but not owning the connected substation, shall have a round the clock coordination centre.  <b>Rationale:</b> Karnataka State has sub-stations at voltage level of <b>110 kV and above</b> . Every generating stations and Transmission sub-stations of 110 kV and above shall only be considered.
29.	(4) & (5)	<b>SYSTEM SECURITY</b> 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. (5) Except under an emergency, or when it becomes necessary to prevent an imminent damage to a costly equipment, no user shall cause a sudden variation in its load by more than 100 (one hundred) MW without prior permission of the respective RLDC.	<b>The term sudden reduce has not been defined and in the real time operation. 100 MW can be reduced in a minute or in a second is widely been argued.</b> <b>A reduction of 100 MW of power in a large grid of 15,000 MW has no technical relevance as far as the system security is concerned.</b>
30.		<b>FREQUENCY CONTROL AND RESERVES</b>	
	(2)	The National Reference Frequency shall be 50.000 Hz and shall be measured with a resolution of +/-0.001 Hz. The frequency data measured at every second shall be archived by RLDCs.	<b>The present deviation regulation-2022 has not link with frequency. Hence, maintain grid frequency of 49.95 -50.05HZ by NLDC, RLDC and SLDC without the maintaining the frequency by DISCOMs, it may not possible. Hence the same need more clarification</b>
		<b>Control Hierarchy</b>	
	(9)	Inertia: The power system shall be operated at all the times with a minimum inertia to be stipulated by NLDC so that minimum nadir frequency post reference contingency stays above the threshold set for under frequency load shedding (UFLS). NLDC shall reschedule generation including curtailment of wind, solar and wind-solar hybrid	

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		generation, if required, in coordination with the respective RLDCs and SLDCs to maintain the minimum inertia.	
<b>31.</b>		<b>OPERATIONAL PLANNING</b>	
	2(d)	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVAR on monthly and quarterly basis for the nodes 132 kV and above for preparation of scenarios for computation of TTC and ATC by the concerned RLDC and NLDC.	Each SLDC shall submit node-wise morning peak, evening peak, day shoulder and night off-peak estimated demand in MW and MVAR on monthly and quarterly basis for the nodes <b>110 kV and above</b> for preparation of scenarios for computation of TTC and ATC by the concerned RLDC and NLDC. <b>Rationale:</b> Karnataka State has sub-stations at voltage level of <b>110 kV and above</b> .
<b>35.</b>		<b>REAL TIME OPERATION</b>	
	(1)	System state Power system shall be categorized under normal, alert, emergency, extreme emergency and restoration state depending on the type of contingencies and value of operational parameters of the power system by RLDC, NLDC or SLDC, as the case may be.	
		<b>CHAPTER 7 : SCHEDULING AND DESPATCH CODE</b>	
<b>43.</b>		<b>CONTROL AREA JURISDICTION OF LOAD DESPATCH CENTER</b>	
	(5)	Entities connected to both inter-State transmission system and intra-State transmission system shall be under control area jurisdiction of RLDC, if more than 50% of quantum of connectivity is with ISTS, and if more than 50% of the quantum of connectivity is with intra-State transmission system, then it shall be under control area jurisdiction of SLDC.	<b>1)</b> Entities connected to both inter-State transmission system and intra-State transmission system shall be under control area jurisdiction of RLDC, if more than 50% of quantum of connectivity is with ISTS, and if more than 50% of the quantum of connectivity is with intra-State transmission system, then it shall be under control area jurisdiction of SLDC and <b>if quantum of connectivity is equally connected (50% each) by both Inter-state transmission system and Intrastate transmission system, then RLDC and SLDC shall schedule the Power in coordination.</b>  <b>Rationale:</b> RLDC and SLDC shall schedule the Power in coordination, if quantum of connectivity is equally shared (50% each) by both Inter state



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			transmission system and Intra state transmission system. 2) Quantum of connectivity shall be replaced with share of power in a generating station .
43		<p>SCHEDULING AND DESPATCH CODE CONTROL AREA JURISDICTION OF LOAD DESPATCH CENTRE</p> <p>Entities connected to both inter-State transmission system and intra-State transmission system shall be under control area jurisdiction of RLDC, if more than 50% of quantum of connectivity is with ISTS, and if more than 50% of the quantum of connectivity is with intra-State transmission system, then it shall be under control area jurisdiction of SLDC.</p>	<p>Clarification required whether Generating station directly connected to ISTS network or plant is connected to both end at STU network, thereafter connected to ISTS network. Whether scheduling is being done by RLDC or SLDC</p>
45		<p>GENERAL PROVISION 12. The minimum turndown level for operation in respect of a unit of a regional entity thermal generating station shall be 55% of MCR of the said unit: Provided that the Commission may fix through an order a different minimum turndown level of operation in respect of specific unit(s) of a regional entity thermal generating station: Provided further that such generating station on its own option may declare a minimum turndown level below 55% of MCR:.</p>	<b>Procedure of Reserve shutdown is not specified</b>
46		<b>Security Constrained Unit Commitment (SCUC)</b>	
	4(b)	Beneficiaries of such stations, whose units are likely to be scheduled below minimum turndown level for some or all time blocks of the D day shall be permitted to revise their requisitions from such stations by 16:30 Hrs of D-1 day, in order to enable such units to be on bar. The revised requisition from the said generating stations, once confirmed by the beneficiaries by 16:30 Hrs of D-1 day and further reduction in drawal schedule shall not be allowed from such stations for such time blocks.	In real time there is variation in RE generation and demand hence there should be flexibility for reduction of drawal schedule as per the extant regulation.
47		<b>PROCEDURE FOR SCHEDULING AND DESPATCH FOR INTER-</b>	



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		<b>STATE TRANSACTIONS</b>	
	1 (j)(i)	Power Exchange(s) shall open bidding window for day ahead collective transactions from 10 AM to 11.30 AM of 'D-1' day.	Power Exchange(s) shall open bidding window for day ahead collective transactions from 10 AM to <b>12.00 AM</b> of 'D-1' day.
	B(i)	Entitlement of each beneficiary or buyer: (i) For generating station, where Central Government has allocated power, each State shall be entitled to a MW despatch up to the State's Share in the station's declared capacity for the day. Accordingly, based on declared capacity of such generating station, RLDC shall declare entitled share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day	<b>The downward division shall be allowed for the RE rich State of Karnataka the accurate forecast of RE generation is not possible and Regulation provides for the deviation of the 10 / 15 % of the available capacity</b>

  
**Additional Director (Projects)**  
**PCKL Bangalore**