Ref:HFE/CERC/IEGC22/RA&C/FY22-23/005 31 Oct 2022

To

Sh. Harpreet Singh Pruthi
Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building,
36, Janpath, New Delhi- 110001
Tel: 011-23353503

Subject: Suggestions/comments on draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022.

Dear Sir,

At the outset, we extend our gratitude to the Hon'ble Central Electricity Regulatory Commission for issuing the draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022 and seeking stakeholder's comments on the same.

We would like to introduce 'Hero Future Energies Private Limited' (HFEPL), the renewable energy arm of Hero group and an Independent Power Producer (IPP) primarily focusing on investment in developing the generating capacities based on solar and wind resources across the country. The HFEPL portfolio is having 1.53 GW commissioned capacity and 325 MW under development stage for commissioning.

Hero Future Energies Private Limited hereby submits its suggestions/comments on 'Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022' and same are attached as **Annexure-I** to this letter. We humbly request CERC to consider our suggestions while finalising the 'Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022'.

This letter is signed digitally, we request you to consider this communication as formally signed and submitted.

Thanking you.

For Hero Future Energies Pvt. Ltd.

Anchal Kumar
Senior Manager, Regulatory Affairs and Commercial

Enclosure : As above.

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Further clause wise suggestions/ comments are mentioned in table below

Comments on Draft Indian Electricity Grid 2022				
Sl. No.	**Clause No.**	**Existing Clause**	**Proposed Clause**	**Rationale**
1.	Chapter 1: Auxiliary Energy Consumption (Additional insertion)	Additional Insertion	'Auxiliary Energy Consumption' or 'AUX' in relation to a period in case of a generating station / ESS means the quantum of energy consumed by auxiliary equipment of the generating station / ESS, such as the equipment being used for the purpose of operating plant and machinery including switchyard of the generating station / ESS and the transformer losses within the generating station / ESS, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station; **Provided that Auxiliary Energy Consumption, in case of ESS, shall not include cycle loss occurred during charging and discharging of ESS.**	'Auxiliary Energy Consumption' definition need to be inserted as regulation is referring the Auxiliary Consumption at many places.

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			Provided that auxiliary energy consumption shall not include energy consumed for supply of power to housing colony and other facilities at the generating station and the power consumed for construction works at the generating station and integrated coal mine.	
2.	Chapter 2: Resource Adequacy Planning 5 (3) Generation Resource Adequacy Planning:	For the sake of uniformity in approach and in the interest of optimality in generation resource adequacy in the States, FOR may develop a model Regulation stipulating inter alia the methodology for generation resource adequacy assessment, generation resource procurement planning and compliance of resource adequacy target by the distribution licensees.	For the sake of uniformity in approach and in the interest of optimality in generation resource adequacy in the States, FOR may develop a model Regulation stipulating inter alia the methodology for generation resource adequacy assessment, generation resource procurement planning and compliance of resource adequacy target by the distribution licensees and levy of penalty for non-compliance of such target.	The referred clause stipulates the requirement to comply with generation resource adequacy assessment. It has been seen in the past that distribution licensee is not complying with the RPO requirement, similarly, Distribution Licensee may forgo to comply with resource adequacy targets unless such non-compliance linked with strict penal charges.
3.	Chapter 2: Resource Adequacy Planning	Additional insertion under regulation 4 (a)	Transmission deferral – ESS derive most their value inter alia from averting the installation of excessive amounts of transmission infrastructure. CTU/STU should optimize transmission system requirement with co-located ESS,	Renewable energy sources have relatively limited utilization (expressed as C.U.F) (Solar ~25% & Wind ~30%) as against conventional sources particularly thermal sources where design utilization is typically 85%. Hence, the utilisation of the associated transmission asset is comparatively low. Since transmission assets are typically

	5 (4) (a) (V) Transmission deferral (Additional insertion)		particularly while designing evacuation system for wind-solar projects located in such resource rich area. Transmission system for RE dense area shall be developed for lower peak and such energy may be stored in ESS for dispatch in non-RE hours.	created to cater the peak power requirement. This issue assumes significance in case of India which has embarked on an accelerated RE capacity addition i.e. 500 GW by 2030. A transmission system which is being used partially have both technical and cost implications. In view of same, ESS needs to capture under Transmission resource adequacy assessment so that transmission system requirement can be deferred, and system would be optimally utilised.
4.	Chapter 5: Commissioning and Commercial Operation Code Clause 3 (a)	(3) Trial Run of Wind / Solar / Storage / Hybrid Generating Station (a) ……. 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:**	(3) Trial Run of Wind / Solar / Storage / Hybrid Generating Station (a) ……. 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:**~~	Such condition is in contradiction with the condition mentioned in bidding documents being issued by the Central and State Government Implementing Agencies like SECI/NTPC/NHPC. Considering the same, we suggest not to incorporate the same.
5.	Chapter 6:	(9) Inertia:	(9) Inertia:	It has been seen in past that wind and solar generators connected with state grid have been

	Operating Code Clause 30 (4) Control Hierarchy	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 generation, if required, in coordination with the respective RLDCs and SLDCs to maintain the minimum 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 generation, if required, in coordination with the respective RLDCs and SLDCs to maintain the minimum inertia. **Provided that curtailed wind, solar and wind-solar hybrid energy shall be given deemed generation status.** **Provided further that NLDC shall implement the transparent process for data posting related to curtailment of wind, solar and wind-solar hybrid energy to ensure that such curtailment with reason of grid security will be corroborated.** **Provided further that RE generators shall be provided compensation for generation loss in a particular time-**	facing frequent backing down instructions citing grid security and many such instructions are issued verbally without any written communications, and APTEL has also recognised the same in its order vide APPEAL NO. 197 of 2019 & IA NO. 1706 of 2019 dated 2nd August 2022, wherein it has directed that such state agencies shall pay the compensation during which curtailment instruction were issued for the reason other than grid security, at the PPA tariff along with interest. In view of same, it is requested to allow deemed generation status/ compensation mechanism for curtailing wind, solar and wind-solar hybrid energy as such generators is losing revenue under such events and such provisions restrict developers.

			block based on wind speed/ solar insolation level in that time-block	
6.	Chapter 6: Operating Code Clause 30 (10) E – Primary Control	NLDC may also identify other resources such as ESS and demand resource to provide PRAS for which PRAS Providers shall be compensated in accordance with the Ancillary Services Regulations.	Clarification required in the said clause	CERC Ancillary Service regulation 2022 does not have provision related to compensation of Primary Reserve Ancillary Service. It is requested to clarify under such scenario, how Primary Reserve Ancillary Service provider will be compensated.
7.	Chapter 5: Operating Code Clause 30 (10) h	(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 maybe, when the frequency falls suddenly and shall provide primary response. Any generating station not complying with the	(h) All generating stations mentioned in Table-4 (under clause (g) of this Regulation) except **Wind/ Solar/Renewable Hybrid Energy Project** 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.	It is to be noted that Wind/Solar/Renewable Hybrid Projects do not have capability to operate at 105% or 110% of operating level when Solar insolation / Wind speed is not available at site. Moreover, MCR should not be applicable for RE. In view of same, 105% or 110% of MCR would be applicable on Thermal and Hydro units only and not on the wind, solar and hybrid of wind and solar projects.

		above requirements shall be kept in operation (synchronized with the regional grid) only after obtaining the permission of the concerned RLDC.		
8.	Chapter 6: Operating Code Clause 30 (11) (U)	All renewable energy generating stations and ESS shall be enabled with **frequency controller** to provide secondary control in accordance with the CEA Connectivity Standards and the communication system shall be established in accordance with the CEA Technical Standards for Communication.	Clarification required in the said clause	It is requested to clarify, whether it is mandatory requirement which RE generator /ESS are bound to comply as under CERC Ancillary Service Regulation 2022, SRAS/TRAS is to be provided on voluntary basis.
9.	Chapter 7: Scheduling and Despatch Code (45) 10) Optimum Utilization of	Additional Insertion	During high Solar isolation period, and if inverters have margin to increase solar generation by 5 to 10% of capacity, the same should be allowed.	Solar Projects are generally installed with high DC capacity and there may be scenarios wherein power limited to contracted capacity is flowing out and inverter having an inherent margin of 5 to 10% beyond the rated capacity. We request that the same should be allowed to inject like hydro power plant in case of high insolation period or shortage scenario.

	Hydro Energy and Solar Energy			
10	Chapter 7: Scheduling and Despatch Code 45 (11) (b)Scheduling of renewable energy generating station by QCA	NLDC shall notify a procedure for aggregation of pooling stations for the purpose of combined scheduling and deviation settlement for wind or solar or renewable hybrid generating stations within six (6) months of notification of these regulations.	NLDC shall notify a procedure for aggregation of pooling stations and **at regional level** for the purpose of combined scheduling and deviation settlement for wind or solar or renewable hybrid generating stations within six (6) months of notification of these regulations. Provided further that aggregated deviation at regional level shall be charged from such Wind and Solar Generator on proportionate to their individual deviation.	We agree with the proposed Regulation. State level aggregation of schedule by a QCA is implemented by Karnataka and, Andhra Pradesh. States follow one of the three levels of aggregation of scheduling i.e., plant-level, pooling station-level, and State-level. This specific element of the regulations has material implications for long term viability of RE projects in India. Hence, it is critical that relevance of 'Aggregating schedule of pooling substations by QCA at regional level is very much required. It is to be noted that the forecasting of RE projects is technically constrained because of the two reasons – (i) limited accuracy of weather forecasting models, and (ii) limited spatial resolution available. In such circumstances, RE projects face uphill task to comply with DSM regulations and absence of aggregation of schedule of various pooling substations at regional level by QCA at regional leaves RE project unreasonably exposed to penalty.

11	Chapter 7: Scheduling and Despatch Code Clause 11 (F) Scheduling of renewable energy generating station by QCA	Any dispute arising between the generating stations and QCA shall be resolved in accordance with the mechanism in the contracts entered into between them.	Any dispute arising between the generating stations and QCA shall be resolved by the appropriate Commission.	It is to be noted that the QCA is not an entity recognised under the Act. DSM Regulation of States have recognised the concept of QCA. Now the Hon'ble Commission has proposed to be recognised though IEGC. Therefore, any commercial impact on account of deviation is fastened to the generator or QCA, which is representing group of generators. However, QCA has no obligation to bear financial consequences and it will only pass on to the generators. Therefore, only generator is liable. This is clearly contrary and in violation to the Section 28 (4) of the Act which clearly states that the Regional Load Despatch Centre may levy and collect such fee and charges from the generating companies or licensees engaged in inter-State transmission of electricity as may be specified by the Central Commission. QCA require to be registered with the concerned RLDC. The Hon'ble Commission is requested to notify qualifying criteria, net worth, creditworthiness etc. Moreover, any dispute resolution between Generating Station/QCA should be under the jurisdiction of CERC. If the QCA is not capable for any payment due to RLDC, could be possible that it might not have received from the generator, RLDC may not allow such QCA to schedule power without payment of past dues. In such case other generators should not be suffered. Therefore, strict qualifying criteria and bringing QCA under the ambit of Hon'ble Commission is necessary.

12	47 (1)	…… Provided that the renewable energy generating stations shall not be subjected to merit order despatch, and subject to technical constraints shall be requisitioned first followed by requisition from other generating stations in merit order.	Wind , solar, wind-solar hybrid with or without storage , standalone storage drawing power from renewable energy sources and hydro power plant (in case of excess water leading to spillage) shall be treated as MUST RUN power plants and should not be subjected to curtailment due to merit order despatch as well as due to any commercial consideration. In the event of transmission constraint or system security constraint renewable energy generation may be curtailed after harnessing flexible resources including energy storage systems. In the event of extreme circumstances, when MUST RUN plant has to be curtailed, the details shall be published on the RLDC/SLDC website the following day, as the case may be, giving the date, name of RE generation plant, installed capacity, curtailment quantum in MWh, duration of curtailment and reasons thereof.	It is requested that the existing Regulation 5.2 (u) of the IEGC should be retailed. Wind and solar generators in the state of Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Karnataka face severe backing down due to commercial reason in the past. The Regulation 5.2 (u) supported the RE generators in reducing the curtailment drastically. Hon'ble APTEL in its judgement on deemed energy compensation on curtailment in the Appeal No 197 of 2019 also took shelter of the said Regulations. Now the APSLDC and TANTRANSCO has challenged the said APTEL judgement in the Hon'ble Supreme Court, we request the Hon'ble Commission to retain the said Regulation.
13	Chapter 7: Scheduling and Despatch Code	Within transactions under GNA, curtailment shall be done first from generation sources other than wind,	Within transactions under GNA, curtailment shall be done first from generation sources other than wind, solar, wind-solar hybrid and run of the river	It has been seen in past generators connected with state grid have been facing frequent backing down instructions citing grid security and many such instruction are issued verbally without any written

	Power to revise schedule 47 (3) (a) (iii) (a)	solar, wind-solar hybrid and run of the river hydro plants with upto three hours pondage (in case of excess water leading to spillage), on pro rata basis based on their GNA quantum.	hydro plants with upto three hours pondage (in case of excess water leading to spillage), on pro rata basis based on their GNA quantum. **Provided further that curtailed generation based on Wind, Solar, and Wind-Solar hybrid with and without Storage, shall be considered as deemed generation and compensated to generator by its procurer at PPA tariff.**	communications, and APTEL has also recognised the same in its order vide APPEAL NO. 197 of 2019 & IA NO. 1706 of 2019 dated 2nd August 2022, directed that such state agencies shall pay the compensation for during which curtailment instruction were issued for the reason other than grid security, at PPA tariff along with interest. In view of same, it is requested to allow deemed generation status/ compensation mechanism for curtailing wind, solar and wind solar hybrid energy as such generators is losing revenue under such events.