31.10.2022

To
The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok Building, 36, Janpath
New Delhi-110001

Subject: Comments/Suggestions on Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022

Reference: CERC Notification No L-1/265/2022/CERC dated 07.06.2022

Dear Sir,

We wish to introduce ReNew Power Private Limited ("ReNew") which is among the top and fastest growing renewable IPPs in the country. ReNew is in the business of developing wind, solar and hydro power plants and has more than 12,000 MW of operational and under construction wind, solar and hydro projects spread over multiple states.

This is in reference to the notification issued by CERC on its website inviting comments/suggestions on Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022. Accordingly, we are hereby enclosing our comments and suggestions as '**Annexure-I'** for your reference.

We request your good office to kindly consider our comments/suggestions while finalizing the draft regulation.

Thanking you.

Yours Sincerely,

Authorised Signatory
ReNew Power Private Limited

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Annexure-I

ReNew Power Comments on Draft IEGC Regulations 2022

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
1.	Chapter 1: Deemed ISTS Line (Additional insertion)	Additional Insertion	"Deemed Inter-State Transmission System (Deemed ISTS)" means the transmission system utilised to evacuate at least 75% of interstate power. Such transmission system should have received regulatory approval of the Commission as being used for interstate transmission of power and qualified the ISTS status from respective regional power committee.	There are many instances wherein transmission line being developed by State Transmission Utilities (STUs) or Intra State transmission licensees, and such transmission lines are mainly utilised to evacuate the Inter-State Power. Such transmission lines / system should be qualified as deemed ISTS under CERC IEGC Grid Code.
2.	Chapter 2: Resource Adequacy Planning Clause 5 (3) Generation Resource Adequacy Planning:	Additional Insertion	(C) Each Distribution Licensee shall have a responsibility to assess the Energy Storage requirement in different time horizons, namely long term, medium term, and short term. Additionally, while assessing the generation resource adequacy, distribution licensee has to ensure that ESS has to be utilised to store the over generation capacity during certain time periods. Under such scenario, such stored energy shall be utilised later as per requirement.	Ministry of Power (MoP)vide its order dated 22nd July, 2022 has issued Renewable Purchase Obligation (RPO) and Energy Storage obligation (ESO) trajectory till 2029-30. Hence, while Generation resource planning / demand forecasting, distribution licensees must access the requirement of ESS in long term, medium term as well as short term period. Further, under scenarios, wherein distribution licensee anticipates any excess generation from RE resource, instead of curtailing, the same can be stored and utilised during non-RE hours.
3.	Chapter 2:	For the sake of uniformity in approach and in the interest of optimality in	For the sake of uniformity in approach and in the interest of optimality in generation resource adequacy in the	The referred clause stipulates the requirement to comply with generation resource adequacy assessment.

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	Resource Adequacy Planning Clause 5 (3) Generation Resource Adequacy Planning:	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.	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.**	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.
4.	Chapter 2: Resource Adequacy Planning Clause 5 (4) (a) (V) Transmission deferral (Additional insertion)	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, 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.	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 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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
5.	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.
6.	Chapter 6: Operating Code Clause 30 (4) Control Hierarchy	(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	(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,	It has been seen in past that wind and solar generators connected with state grid have been 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

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
		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.	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.** **<u>Provided further that RE generators shall be provided compensation for generation loss in a particular time-block based on wind speed/ solar insolation level in that time-block</u>**	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.
7.	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	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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
		accordance with the Ancillary Services Regulations.		
8.	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 above requirements shall be kept in operation (synchronized with the regional grid) only after obtaining the permission of the concerned RLDC.	(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.
9.	Chapter 6: Operating Code	All renewable energy generating stations and ESS shall be enabled with **frequency controller** to	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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
	Clause 30 (11) (U)	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.		
10	Chapter 7: Clause 45 (10) (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	During high inflow and water spillage conditions, the concerned RLDC shall allow scheduling of power from hydro generating stations for the overload capability upto **20%** of Installed capacity without the requirement of additional GNA for such overload capacity, subject to availability of margins in the transmission system	In order to ensure proper utilization of hydro energy, 20% overloading should be allowed during peak season
11	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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
	Hydro Energy and Solar Energy			
12	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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
13	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.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
14	Chapter 7: Clause 47 (1) (b) (ii)	The generating station other than those having allocation of power by the Central Government shall indicate the declared capacity along with respective share of the beneficiary(ies) or buyers in accordance with the contracts entered with them. Based on declared capacity of such generating station and share of the beneficiaries or buyers as indicated by such generating station, RLDC shall declare share of each beneficiary or buyer for 0000 hours to 2400 hours of the 'D' day, by 7 AM on 'D-1' day.		Since pro rata scheduling is not mandatory in this case, can a generator choose to offer more power to a particular beneficiary as per its own discretion.
15	47 (1) (e) (iii):	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	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.	It is requested that the existing Regulation 5.2 (u) of the IEGC should be retained. 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 APSLDC and

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		from other generating stations in merit order.	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.	TNTRANSCO has challenged the said APTEL judgement in the Hon'ble Supreme Court, we request the Hon'ble Commission to retain the said Regulation.
16	Chapter 7: Scheduling and Despatch Code Power to revise schedule 47 (3) (a) (ii) (a)	Within transactions under GNA, curtailment shall be done first from generation sources other than 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), on pro rata basis based on their GNA quantum.	Within transactions under GNA, curtailment shall be done first from generation sources other than 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), 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**	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 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.

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			Storage, shall be considered as deemed generation and compensated to generator by its procurer at PPA tariff.	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.
17	Chapter 7: Clause 47 (4) (a)	Provided that scheduled transactions under T-GNA once scheduled cannot be revised other than in case of forced outage as per clause (7) of Regulation 47 of these regulations	Provided that scheduled transactions under T-GNA, **other than that of REGS and RHGS**, once scheduled cannot be revised other than in case of forced outage as per clause (7) of Regulation 47 of these regulations **Further provided that, in order to manage under/over injection, REGS and RHGS may revise their T-GNA bilateral transactions (excluding collective transactions in day ahead market and real time market through power exchange) as per clause (c) of this Regulation or may sell/procure power by entering into a contract, which includes contracts covered under Power Market Regulation, as well as bilateral contracts outside power exchange**	Unlike conventional generating stations, generation in case of REGS/RHGS is not under the control of developer but is highly weather dependant. Since in T-GNA schedule will be freezed on day ahead basis, in order to manage real time weather surprises and to avoid over/under injection, REGS/RHGS should be allowed to revise their schedule or enter into the contract, as per the convenience and requirement. This will not only ensure grid security (over/under injection shall be managed) but also encourage developers to come up to with more and more merchant renewable capacity
18	Chapter 7: 47 (4) (b) (i)	In respect of a generating stations whose tariff is determined under Section 62 of the Act, upward revision of schedule shall be allowed starting 2 PM on 'D-1' day, only in	In respect of a generating stations, **except for REGS/RHGS,** whose tariff is determined under Section 62 of the Act, upward revision of schedule shall be allowed starting 2 PM on 'D-1' day, only in respect of the remaining available quantum of unrequisitioned surplus after	Considering intermittent/varying nature of generation of REGS/RHGS, downward revision should also be allowed from developer side.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
		respect of the remaining available quantum of unrequisitioned surplus after finalization of schedules under day ahead market.	finalization of schedules under day ahead market.	
19	Chapter 7: Clause 47 (4) (b) (ii)	In respect of a generating stations whose tariff is not determined under Section 62 of the Act, revision of schedule shall be in terms of provisions of the respective contracts between the generating stations and beneficiaries or buyers	In respect of a generating stations whose tariff is not determined under Section 62 of the Act, revision of schedule shall be in terms of provisions of the respective contracts between the generating stations and beneficiaries or buyers. **Notwithstanding anything to the contrary contained in these regulations ((Indian Electricity Grid Code) Regulations, 2022,) the schedule of REGS/RHGS may be revised by developer/generator as per clause (c) of this Regulation**	Considering intermittent/varying nature of generation of REGS/RHGS, revision should also be allowed from developer side.
20	Chapter 7: Clause 47 (6)	The generation schedules and drawl schedules shall be accessible to the regional entities though user credentials controlled access. After the operating day is over at 2400 hours, the schedule finally implemented during the day (taking into account		We request commission to consider that the generation schedules and drawl schedules shall be accessible /available in public domain to all regional entities and not limited to applicant only.

SI. No.	Clause No.	Existing Clause	Proposed Clause	Rationale
		all before-the-fact changes in despatch schedule of regional entity generating stations and drawl schedule of the States) shall be issued by the concerned RLDC. These schedules shall be the basis for commercial accounting.		
21	Chapter 7: Clause 47 (7)	In case of forced outage of a unit of a generating station (having generating capacity of 100 MW or more) …… …….. from the estimated time of restoration of the unit	**In case of forced outage of a unit of regional entity generating station, including REGS/RHGS** …… from the estimated time of restoration of the unit. **Provided further that in case of REGS/RHGS, part outage of generating station (outage of single turbine in case of wind generator or invertor set in case of solar generator) shall be considered as forced outage.**	There should not be any capacity (MW) linked restriction for revising the schedule under forced outage. In order to ensure grid security, all the generating entities, including wind, solar, hydro etc. , which are connected to ISTS (CTU connected) should be allowed to revise the schedule in case of forced outage
22	Chapter 7: Scheduling and Despatch Code Clause 47 (4) (c)	**(4) Revision of schedules on request of regional entities:** (a) SLDCs, regional entity generating stations, regional entity ESSs, beneficiaries, buyers or cross-border entities may		In current regulatory framework, wind and solar generators are being allowed to revise its schedule and such revision shall become effective from the 4th time block, 1st block being the block in which notice has been given. Moreover, one revision for each time slot of one and half hours starting from 00:00 hours of a particular day subject to maximum of 16 revisions during the day. Hon'ble Commission in

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		revise their schedules under GNA as per clause (b) and clause (c) of this Regulation in accordance with their respective contracts. ……. (c) Based on the request for revision in schedule made as per sub-clauses (a) and (b) of Clause 4 of this Regulation, any revision in schedule made in odd time blocks shall become effective from **7th time block** and any revision in schedule made in even time blocks shall become effective from **8th time block**, counting the time block in which the request for revision has been received by the RLDCs to be the first one.	(c) Based on the request for revision in schedule made as per sub-clauses (a) and (b) of Clause 4 of this Regulation, any revision in schedule made in odd time blocks shall become effective from **3rd time block** and any revision in schedule made in even time blocks shall become effective from **4th time block**, counting the time block in which the request for revision has been received by the RLDCs to be the first one.	Statement of Reasons (SOR) order issued while notifying the DSM Regulations, 2014, observed as under: *5.3 Decision of the Commission:* *5.3.1 The Commission has taken note of the comments. On the issue of frequency of revisions, the Commission recognizes that accuracy of forecasting improves as one gets closer to time of dispatch. This is borne out by plenty of research that is available on how forecasting accuracy improves as more updates are done aligned with shorter scheduling intervals. In the publication, "A Review 20 of Variable Generation Forecasting in the West, Widiss et al, NREL, July 2013-Jan 2014", 14 Operating Entities (OEs) in the Western Interconnection in the United States were interviewed. Nearly all OEs were reported to have hour-ahead forecasts, the frequency of updating varying from every 10 minutes to hourly. The chart below, prepared by Alberta Electric System Operator (AESO), illustrates improving accuracy with decreasing forecast horizon:* *……* *Most stakeholders have supported the proposal of doubling the number of revisions allowed, to 16 per day. Some have suggested even further increase to enable hourly revisions. The*

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				Commission is of the view that while increasing frequency of revision would enhance forecasting accuracy, it might be difficult for beneficiaries to manage contracts due to very frequent revisions. As such, the Commission has decided to retain the number of proposed revisions to 16. ……" It is submitted that the Hon'ble Commission was also in agreement that the increasing frequency of revision would enhance forecasting of accuracy. Considering the above observation, we request the Hon'ble Commission that the revision in schedule be made effective from 3rd and 4th time block.