Comments by SUZLON on Indian Electricity Grid Code (IEGC)-2010 including all amendments

Clause No.	Clause	To be amended as	Remarks/Justification
4.6.2	Data and Communication Facilities Reliable and efficient speech and data communication systems shall be provided to facilitate necessary communication and data exchange, and supervision/control of the grid by the RLDC, under normal and abnormal conditions. All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guideline made available by RLDC. The associated communication system to facilitate data flow up to appropriate data collection point on CTU's system, shall also be established by the concerned User or STU as specified by CTU in the Connection Agreement. All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement".	Data and communication facilities… All Users, STUs and CTU shall provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guidelines ***should be standardized and need be made available by RLDC*****.** … All Users/STUs in coordination with CTU shall provide the required facilities at their respective ends as specified in the Connection Agreement, ***which are to be standardized for wind and solar generating stations.***	The telemetered power system data from pooling stations should be standardised for all RLDCs, presently different RLDCs are asking different data. The data required in respect of renewables also need be standardized

5.2.(u)	**Special requirements for Solar/ wind generators.** System operator (SLDC/ RLDC) shall make all efforts to evacuate the available solar and wind power and treat as a must-run station. However, System operator may instruct the solar /wind generator to back down generation on consideration of grid security or safety of any equipment or personnel is endangered and Solar/ wind generator shall comply with the same. For this, Data Acquisition System facility shall be provided for transfer of information to concerned SLDC and RLDC.	System operator (SLDC/ RLDC) shall make all efforts to evacuate the available solar and wind power and treat as a must-run station. However, System operator may instruct the solar /wind generator to back down generation on consideration of grid security or safety of any equipment or personnel is endangered and Solar/ wind generator shall comply with the same. ***There need to be clear guidelines and rules for back down instructions by RLDC/SLDC between renewables i.e. solar/wind and LIFO philosophy to be followed.*** For this, Data Acquisition System facility shall be provided for transfer of information to concerned SLDC and RLDC.	Presently there is no guide line and back down instruction is case dependent. The instruction for back down should come from SLDC on the basis of telemetered energy values with control authority. Daily report for back down should be transparently sent with details of curtailment by each developed to all stakeholders by SLDC and penalty provision to be imposed for non compliance. As a "MUST RUN" plant, any back-down to be defined under "deemed generation" clause as in case of SECI projects. Only Park Power Controller (PPC) based wind park curtailment should be enforced rather than feeder tripping.
5.2	New points to be added after 5.2 (i)	**a)** ***Enable the REMC/RLDC to take over the forecasting and scheduling at a state or a major pooling SS for wind and solar generating stations.***	Data from REGS is already made available to RLDC/REMC and depending upon the demand, REMC/RLDC should do

		b) ***The wind forecast is based on weather forecast, presently wind forecast is based on historical data which may not be accurate in the context of Global warming or alternately Govt. should provide forecast assistance. Therefore there should be considerable variance for wind forecast.*** **c)** ***Solar /wind generators are allowed to evacuate the available (all generated) wind power as a must run system. Hence contracted PPA MW should be allowed with variance percentage of schedule forecast. This is also required to meet the generation margin availability for free improvement. PPA should have same % variance as of schedule forecasting and above PPA generation should be allowed to be delivered during peak generation.***	Schedule/forecast.

5.3	The SLDC shall take into account the Wind Energy forecasting to meet the active and reactive power requirement.	***The SLDC shall take into account the Wind Energy forecasting to meet the active and reactive power requirement. SLDC need to discontinue the practice of forecasting and scheduling at individual wind generating station level. REMC need take the responsibility to forecast for the state level (or at a major pooling SS of ISTS or STU) and apportion the DSM to individual players.***	Permissible Absolute Error may be region specific, the acceptance limit to be decided by all stakeholders. Penalty clause should consider weather factor.
6.6	Reactive power compensation should ideally be provided locally, by generating reactive power as close to the reactive power consumption as possible. The Regional Entities except Generating Stations are therefore expected to provide local VAr compensation/generation such that they do not draw VArs from the EHV grid, particularly under low-voltage condition. To discourage VAr drawals by Regional Entities except Generating Stations, VAr exchanges with ISTS shall be priced as follows:	Reactive power compensation …. The Regional Entities ***including RE Generating station*** except Generating Stations are therefore expected to provide local VAr compensation/generation such that they do not draw VArs from the EHV grid, particularly under low-voltage condition.	Presently due to penalties on account of reactive power , even if voltage goes up and down, unity power factor is maintained and voltage related tripping starts. If this penalties are removed RE generating station will be able to support voltage and provide better stability to grid.

Other comments	
1.	At various places in the existing grid code word "Wind/solar generators" are mentioned. Considering that there would hybrid, storage plants also, these words may be suitably replaced by say "renewable generators" {to be defined as projects based on solar and/or wind, storage}
2.	Grid Code may contain provision for creating/maintaining "balancing reservoir for RE.
3.	As per CEA (Technical Standard for Grid Connectivity) (Amendment) Regulation, 2019, renewable projects are required to provide frequency. It may kindly be noted that while renewable (based on wind and solar) can reduce generation in case of high frequency, they would not be able to increase generation in case of low frequency. The Grid Code, under "Outage Planning" Code (5.7.1.c) mentions that "wind and solar plants and its associated evacuation network shall be planned to extract maximum power from these renewable sources of energy. Projects" Wind and solar plant always operate at maximum capacity commensurate with available wind speed/ solar radiation and hence it is not possible for them increase generation. Further, it is not appropriate from them to keep some spinning reserve (any reduced generation from wind/solar plants would be met by other sources like thermal, which has its own environmental costs. Thus, in the amended Grid Code, it may be mentioned that wind/solar projects would be required to provide frequency support only case of high frequency operation that too, after exhausting all other remedies like reduction in generation from other sources.
4.	Provisions related to Must Run status for wind/solar (5.2.u) need to further strengthened. Any backing down of generation from these projects to be only after giving reasons in writing.