

# **GUJARAT ELECTRICITY REGULATORY COMMISSION GANDHINAGAR**

Draft Gujarat Electricity Regulatory Commission (Gujarat Electricity Grid Code) (First Amendment) Regulations, 2016

The Gujarat Electricity Regulatory Commission in exercise of powers conferred under Section 86 (h) of the Electricity Act, 2003 (Act 36 of 2003) and under Section 42 (b) of the Gujarat Electricity Industry (Reorganisation and Regulation) Act, 2003 (Gujarat Act 24 of 2003) and all powers enabling it in that behalf has notified the Gujarat Electricity Regulatory Commission (Gujarat Electricity Grid Code) Regulations, 2013 vide notification dated 16<sup>th</sup> July 2013 taking reference of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (IEGC).

The Grid Code Review Panel was also formulated in accordance with Clause 3.1 of the principal regulations. The role of the Grid Code Review Panel is also to maintain the Grid Code and its working under continuous scrutiny and review and to ensure that the changes/ modifications proposed in the Grid Code are consistent and compatible with Indian Electricity Grid Code (IEGC) and subsequent amendments. The Grid Code Review Panel has conferred the Gujarat Electricity Grid Code bearing in mind the technological changes and amendments of the Indian Electricity Grid Code notified by the Central Electricity Regulatory Commission following the recommendations of the Enquiry Committee appointed by the Government of India, Ministry of Power in wake of the grid disturbances which led to two major grid failures in the Country on consecutive days – one on 30<sup>th</sup> July 2012 and another on 31<sup>st</sup> July 2012. Also, the Central Electricity Regulatory Commission has come up with the CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014 and subsequent amendments which has superseded the earlier Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulation, 2009. Further, the Central Electricity Regulatory Commission has proposed framework for forecasting, Scheduling & Imbalance Handling for Renewable Energy (RE) Generating Stations based on wind and solar at Inter-State Level. The Grid Code Review Panel met twice to deliberate on the amendments of the Indian Electricity Grid Code and Deviation Settlement Mechanism and related matters Regulations and has found the

need for a few amendments in the principal code and proposed the same to the Commission. The Commission has deliberated on the proposed amendments and now intends to amend the principal code. Brief information about the proposed amendment in the Gujarat Electricity Regulatory Commission (Gujarat Electricity Grid Code) Regulations, 2013 is as under;

1. The frequency band has been narrowed down to 49.90 to 50.05 Hz as included by the Central Electricity Regulatory Commission in the 2<sup>nd</sup> Amendment of the Indian Electricity Grid Code considering the proposal of POSOCO taking reference of the report of the Enquiry Committee on grid disturbances as stated above where the Enquiry Committee has found identified that over-drawals is one of the causes of grid disturbance.
2. The Central Electricity Regulatory Commission has notified the CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014 which has come into force on 17<sup>th</sup> February 2014. The said regulations have repealed the CERC ((Unscheduled Interchange charges and related matters) Regulation, 2009. Accordingly, references and relevant provisions of CERC (Deviations Settlement Mechanism and related matters) Regulations, 2014 and subsequent amendments has been taken at the appropriate places of Deviations Settlement Mechanism charges, creation of DSM Pool Account, Operations of DSM Pool Account etc. as last mile imbalance settlement mechanism with the object of improving operational discipline on the part of generators as well as drawee utilities, and not as a mere market mechanism. Also, definitions of 'Deviation', 'Pooling Station', 'Buyer' and 'Seller' have been added in accordance with the CERC (Deviation Settlement Mechanism and related matters) Regulations, 2014.
3. With introduction of tight frequency control and deviation proposed to be delinked with frequency, support may not be required. Accordingly, frequency limits have been deleted in the Grid Code.
4. Considering the prevailing system of 22 kV in the State of Gujarat, minimum working safety clearance of 2.8 Metres is added for Highest System Voltage of 24 kV, in line with minimum safety working clearance to be maintained for 36 kV Highest System Voltage, though it was not specified in the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010.

5. Central Electricity Authority has notified CEA (Technical Standards for Connectivity to the Grid) Amendment Regulations, 2013 vide notification dated 15.10.2013. To bring Gujarat Electricity Grid Code 2013 in line with the stated regulations amendment has been proposed for wind and solar generating stations using inverters. The capability of supplying dynamically varying reactive power so as to maintain power factor within limits for the wind generation stations and solar generating stations using inverters have been specified along with their fault ride through capability. The same has been incorporated in the Draft Amendment.
6. The frequency limit has been added for the restricted governor mode of operation in accordance with the Second Amendment of Indian Electricity Grid Code, where it is specified that there should not be any reduction in generation in case of improvement in grid frequency below 50.05 Hz (for example, if grid frequency changes from 49.9 to 49.95 Hz, there shall not be any reduction in generation).
7. On request of the Grid Code Review Panel, provision about mock trial runs of the procedure for different subsystems to be carried out by the Users/ STU in consultation with SLDC at least once every six months under intimation to the RLDC to acquaint the users about the Black Start/Restoration procedure.
8. The Gujarat Electricity Grid Code provides for revision of schedule in case of any grid disturbance. It is also provided that scheduled drawal of all the beneficiaries shall be deemed to have been revised to be equal to their actual generation/drawal for all the time blocks affected by the grid disturbance.
9. The said regulations do not provide the clarity regarding how the schedule is to be revised in case of tripping of generator having short-term transaction. It is proposed that to avoid any undue disadvantage to the beneficiaries/buyers of the power from a generating station which unit goes under forced outage, the schedule of all the beneficiaries/buyers should be reduced on pro-rata basis.
10. RE generation by nature is considered intermittent, uncertain and variable. Taking into consideration these aspects and to facilitate integration of RE generation in the grid, special provisions have been made in the Grid Code. However, difficulties have been experienced on implementation of these provisions. Considering the fact that wind/ solar generation is intermittent and variable in nature and also taking into account the fact that accuracy of

forecast improves as we move closer in time, the wind/solar energy generator would be allowed more opportunities to revise the schedule. There may be a maximum of 16 revisions for each fixed one and half hour time slot starting from 00:00 hours during the day instead of 8 revisions as specified in the principal regulations.