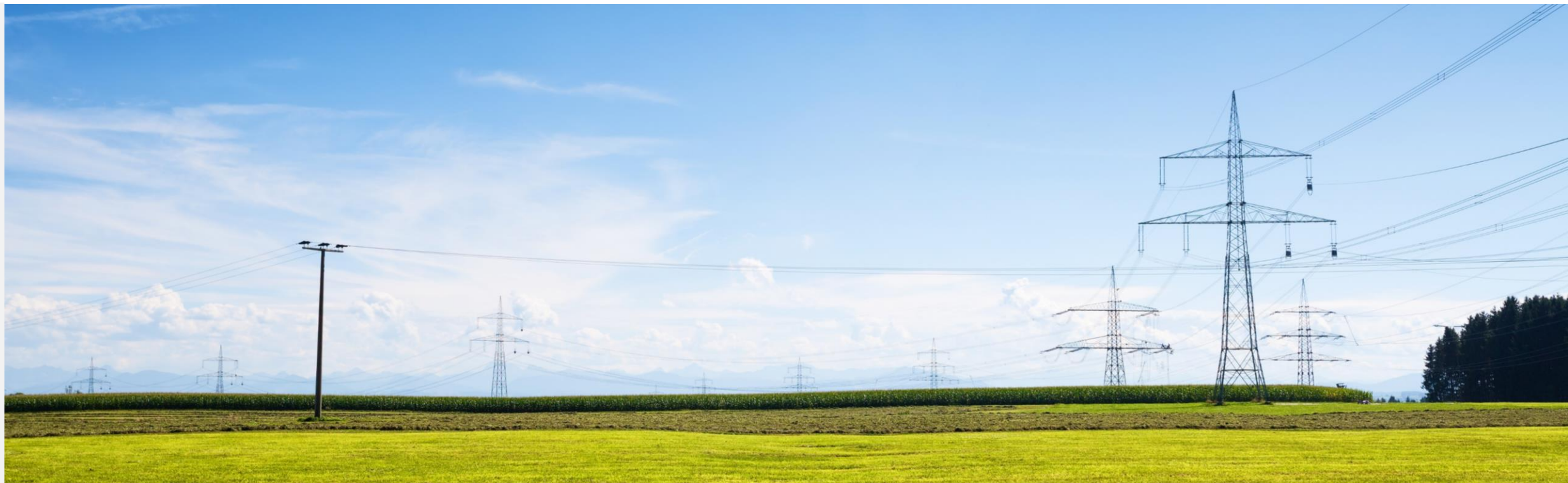


CNC Implementation – ENTSO-E updates

TOP.2

23rd GC ESC meeting, 22 September 2021



Ioannis Theologitis, ENTSO-E

Revised IGDs – feedback from the public consultation

2 Dec 2020 – 31 Jan 2021

1. Autonomous connection/reconnection and admissible rate of change of active power
2. Demand Response - System Frequency Control
3. Parameters of Non-exhaustive Requirements
4. Maximum Admissible Active Power Reduction at Low Frequencies
5. Frequency Ranges
6. Compliance Verification - Compliance Testing and Use of Equipment Certificates

IGD revisions

- The revised IGDs and the reply to the public consultation can also be found here:



https://www.entsoe.eu/network_codes/cnc/cnc-igds/

- The list of IGDs and the reply does not include yet the “Compliance Verification – Compliance Testing and Use of Equipment Certificates”
 - As explained in June’s GC ESC meeting, the comments received triggered further debates and more time was needed
 - Final versions (IGD and reply to the relevant comments) are under internal approval and are expected to be published by mid of October
 - The replies to the respective comments will be incorporated to the existing document, found in the link above

Contribution to the Issue Logger

Question from VGB to clarify who is responsible for performing interaction studies when a new grid user (i.e. PGM or demand) is connected in the close electrical vicinity of HVDC system

VGB argues that currently there is a lack of regulation providing requirements on what a new installation, located near an HVDC system should provide in terms of interactions. Maybe it should be considered the possibility to add rules in the HVDC and RfG codes covering the subject. Is DC NC relevant?

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VGB argues that currently there is a lack of regulation providing requirements on what a new installation, located near an HVDC system should provide in terms of interactions. Maybe it should be considered the possibility to add rules in the HVDC and RfG codes covering the subject. Is DC NC relevant?

Reply (ENTSO-E): The question is valid and would also apply to any other inverter based resources e.g. STATCOM, batteries. At the time when NC HVDC was drafted (2015), it was decided, that the default case - as defined in Article 29 - is that the HVDC applicant should do the interaction study. The motivation for such decision, was the absence of data, models and overall expertise which is also linked with liability aspects. However, it is also true that over the recent years the situation has changed significantly, and such interaction studies are more and more considered inevitable and necessary from a system engineering perspective.

Therefore, assigning responsibility to the TSOs would solve a number of problems, which have been discussed also at GC ESC, e.g. the confidentiality issue, on which there is a separate Q&A on the Issue Logger. The expertise has grown and the availability of models and data is emerging.

1. What has a grid-user to do if a voltage of ≥ 423 kV occurs during > 1 hour? (RFG NC limits over-voltages at maximum 60 minutes)

Question from VGB: What has a grid-user to do if a voltage of ≥ 423 kV occurs during > 1 hour? (RfG NC limits over-voltages at maximum 60 minutes)

Reply (ENTSO-E): The user would be entitled to disconnect in such case. The value of 423 kV seems arbitrary. Since the relevant NC RfG requirement define technical capabilities, they do not establish an obligation to disconnect, but on the other the relevant system operator can also not rely on the user staying connected under these conditions longer than 1 hour.

2. What has a grid-user connected at the 110 kV grid to do if a voltage above 1,15 pu is observed? (RFG NC limits over-voltages at a maximum of 1,15 pu for 110 kV grids)

Question from VGB: What has a grid-user connected at the 110 kV grid to do if a voltage above 1,15 pu is observed? (RfG NC limits over-voltages at a maximum of 1,15 pu for 110 kV grids)

Reply (ENTSO-E): The user would be entitled to disconnect in such case. Since the relevant NC RfG requirement define technical capabilities, they do not establish an obligation to disconnect, but on the other the relevant system operator can also not rely on the user staying connected under these conditions longer than 1 hour.

3. What are the actions by grid-users not subjected to RfG NC and DCC NC, when the voltage is too high or the duration of the over-voltage event is too long? Can a grid-user define independently its “disconnecting values” based on the standards / legislation applicable at the moment of original connection?

Question from VGB: What are the actions by grid-users not subjected to RfG NC and DCC NC, when the voltage is too high or the duration of the over-voltage event is too long? Can a grid-user define independently its “disconnecting values” based on the standards / legislation applicable at the moment of original connection?

Reply (ENTSO-E): For users, which are out of the scope of NC RfG or DC, the relevant national regulations and/or contractual obligations between the grid user and the relevant system operator shall apply. However it is not possible to provide a definite answer since the legal framework varies among the members states and connection agreements.

4. What are the financial consequences / compensations if a PGM has to disconnect due to an over-voltage in the grid, beyond the limits specified in line with the European NC and creating also an imbalance?

Question from VGB: What are the financial consequences / compensations if a PGM has to disconnect due to an over-voltage in the grid, beyond the limits specified in line with the European NC and creating also an imbalance?

Reply (ENTSO-E): It is not possible to provide a definite answer, because it mainly depends on the national legal frameworks and the relevant contractual right and obligations of the PGM owner/operator.

5. What about compensations if damages occur due to an over-voltage in the grid, beyond the limits as specified in the European NC?

Question from VGB: What about compensations if damages occur due to an over-voltage in the grid, beyond the limits as specified in the European NC?

Reply (ENTSO-E): It mainly depends on the national legal framework and contractual right and obligations of the PGM owner/operator which are different among EU MS and TSOs. However, from an RfG perspective, one could not an compensation in such cases, because the grid user is not forced to stay connected, but could disconnect to prevent its assets from damage.

6. Is the VDE/FNN study not the argument to ask the EC to draft also a network code for TSOs in order to protect the rights of all grid-users (including DSOs)?

Question from VGB: Is the VDE/FNN study not the argument to ask the EC to draft also a network code for TSOs in order to protect the rights of all grid-users (including DSOs)?

Reply (ENTSO-E): This has a more political flavour and cannot be answered unilaterally. In principal, EU Regulations do not aim at protecting any specific group's rights but provide a non-discriminatory framework that the whole system (all users) can benefit from. No matter what the scope of application is this overarching principle is maintained.

For clarity, CNCs have provisions and obligations for TSOs too and there are additional NCs/GLs with increased focus on TSO obligations.