

**NETWORK CODE
“REQUIREMENTS FOR GRID
CONNECTION APPLICABLE TO ALL
GENERATORS”**

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VGB WOULD LIKE TO THANK ACER TO OFFER A TRIBUNE TO EXPRESS GENERATOR'S VIEWS ON RFG NETWORK CODE

Since the disclosure of the first draft in early 2010, VGB has been deeply involved in collaboration with EURELECTRIC by reviewing ENTSO-E's proposals, by meeting several times ENTSO-E and by posting about 600 comments for the public consultation.

Despite, VGB considers the code as not acceptable.

Introducing some main concerns on :

- Biased Interpretation of the FWGL
- Lack of Pan European Vision on Future Secure Power System Operation
- Unclear Retroactive Application of the Network Code
- Missing Level Playing Field for Stakeholders and Poor Consultation Quality
- Unachieved Analysis of Realistic Technical Capabilities

Note : This presentation does not cover all the VGB concerns.

Biased Interpretation of the FWGL 1/2

- Contrary to the FWGL, the classification does not consider voltage as a criteria for small and medium generation. Therefore distinguishing requirements (as FRT) between type B small and type B medium generation is not possible.
- The FWGL 2.1 imposes harmonization as far as technically possible and economically beneficial throughout the EU. At least the values of parameters of frequency control decided by the national TSO / NRA should request coordination at synchronous level.
- The assessment of the deviations against current standards & requirements (in terms of nature and level) has not been contradictorily discussed with stakeholders. For instance, ENTSO-E has not considered as a deviation, the application of FRT requirement to small/medium generation.

Biased Interpretation of the FWGL 2/2

- The methodology and format of Cost Benefit Analysis should be more detailed.
- There are 12 mandatory requirements, 41 locally defined and 9 market dedicated. The harmonization has not been designed “as far as technically possible” to better balance local and common requirements.
- The concept of “significance test” in the framework guidelines is not used in the NC.
- The NC RfG and the Frequently Asked Questions page 18 describe that the Public Consultation will be run by the TSO instead of by the NRA. The TSO has its own interests and cannot be the correct party to run the consultation.
- The NC RfG sets out lots of additional requirements without contradictory justification.

Lack of Pan European Vision on Future Secure Power System Operation ^{1/2}

- RfG code describes the capabilities of the requirements but not their performances. Therefore, PGF owners do not have enough understanding of all their obligations to accept capabilities as proposed.
- Many requirements (e.g. FRT, frequency sensitivity modes and reactive capability) are defined using ranges based on a combination of existing values. It is not justified that these large ranges are necessary for the future needs of the electrical system and this capability would be adequate.
- Considering system evolution, there is a big risk to get a lot of derogations during the implementation phase and no change process has been implemented to open the code for future evolution.

Lack of Pan European Vision on Future Secure Power System Operation *2/2*

Critical impacts of other codes on RfG are missing and not disclosed.

- DCC:

- Different voltage ranges are specified although consumers and generators are connected to the same substations and voltages are identical.
- Applying all RfG requirements to pumping phase of storage plants is not adequate.
- Requirements for plant auxiliaries are not defined, nor RfG nor DCC

- LFC&R:

- Dynamics of frequency restoration control is not defined and shall be specified at PGF/PGM level.
- Frequency quality criterion will be defined in LFC&R. The frequency quality impacts directly plant reliability and plant aging .

Unclear Retroactive Application of The Code

- The retroactivity process as described in article 4.2 should be activated only in case of severe system security threats.
- Article 2 (definition of Cost Benefit Analysis), Article 3(2) and Article 33(2) do not consider retroactive application at the same level as other actions (grid modifications, demand management..) which have to be taken into account at both stages of Cost Benefit Analysis.
- Modernization or replacement of equipment: It is abusive to state that applying retroactively the code when replacing existing equipment will maintain the system security. The usage of spare or replacement parts having equivalent functions and performances is legitimate because this leaves system security not impacted.

Missing Level Playing Field for Stakeholders..

- All provisions can be modified each three years and can be imposed several times during the lifetime of a PGM. Poor consideration for stakeholders constraints.
- Request for derogation can only be submitted by PGF owners, not by manufacturers. Class-derogation is not allowed even in case of external regulations by imposing more stringent requirements (nuclear, hydro..). Because many requirements are not applicable (e.g. to nuclear technology), going through local derogations for standardized units will create a lot of additional, avoidable administration.
- The repeated compliance procedure throughout the lifetime of a PGM (Art 35.2) should be coordinate and not less than 10 years for all PGF owners to avoid discrimination.

and Poor Consultation Quality

- The “Justification Outlines” document is not to the point. Several hot items such as frequency Ranges are not properly addressed because the main issues (the duration at abnormal frequencies and voltages, the extension of unlimited ranges) are not treated.
- Unclear evaluation of Comments, page 35, 4.2: “the real originator is understood to be the entity where the costs occur”. What is a real originator ?
- Contradicting evaluation of Comments page 63 ,9.2.d.4 with page 36 where is stated that Art. 4.3 applies to "requirements for which additional choices.... must be made at the national level". In our opinion, Article 4.3 should apply to all articles in which choices (and so discrimination) can be made by a TSO/DSO/RNO.
- Biased evaluation of Comments, page 75, 11.3.a and page 85, 13.3. “This extreme situation does exist in some countries, motivated by political decisions which cannot be excluded as such in other countries”. Does that justify TSOs to use poor protection equipment in their grids?
- The arguments justifying wider voltage ranges, as allowed by IEC, are not correct . The conclusions of a CIGRE study are contradictory to NC provisions.

Unachieved Analysis of Realistic Technical Capabilities

- ENTSO-E wants ON LINE access to the parameters of the FSM regulation of a PGF (Art 10.2.f). This is not acceptable because cyber security rules impose a physical separation between plant control systems and TSO-PGF communication systems.
- Art. 13 Table 8: The choice of maximum Q/Pmax values has not been justified and it is not aligned on existing practices in Continental EU (0.5 to 0.75). ENTSO-E's proposal for max Q/Pmax (0.95) for Continental Europe is too high leading to outstanding costs for generators.
- Impossibility to run PGF at low frequency and high voltage simultaneously due to excessive magnetic flux in generators, motors and transformers.
- FAQ 16 pretends some capabilities (angular and frequency stability,..) does not depend on technology: In reality, Power Park Modules do not provide angular stability, and ramping rates are limited. The consequence will be or a lot of derogations or a lot of capabilities not used.
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THANK YOU QUESTIONS ?



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