

ENTSO-E responses to VGB important items from 03.03.2018 GC ESC

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FRT specifications

- **VGB**

- Upper time limit for fault-ride-through (FRT): 140 msec or 250 msec? Which methodology will be used to define it by each TSO or by ENTSOE? See Recital 18 and Tables 3.1 ; 3.2 ; 7.1 and 7.2
- Specifications of the pre-fault and post-fault grid conditions at FRT: See Recital 19 and Art. 14.3 and Art.16.3. A thorough investigation by ALL stakeholders is needed.

- **ENTSO-E response**

- ENTSO-E had published numerous supplementary documents when delivering the RfG Network Code, which inter alia explain further and give background information / recommendations on how to apply the RfG requirements and related specifications:
 - [NC RfG Implementation Guidelines \(16.10.2013\)](#), see items 3.5 and 3.9
 - [RfG requirements in the context of present practices \(26.06.2012\)](#), see item 6
 - [Frequently asked questions \(19.06.2012\)](#), see item 24

Exemptions for combined heat and power production

- **VGB**

- Combined heat and power production PGMs class A,B,C are exempt of some requirements according to Art.6.4 at industrial sites.=> not applicable at PGMs connected at 110 kV or above (= class D). But the majority of large industrial sites is connected at 110 kV or more. Is this according to Recital 28 describing the benefits of “combined heat and power plants”?

- **ENTSO-E response**

- The ENTSO-E view on power generating modules located in industrial sites, where these industrial sites are connected to the transmission or distribution system at 110 kV or above has been presented to the GC ESC on 08. March 2018. See this presentation:
https://docstore.entsoe.eu/Documents/Network%20codes%20documents/Implementation/stakeholder_committees/GSC/2018_03_08/3.%20Joint%20session_Final_Classification%20of%20PGMs.pdf

Art.5.3 : thresholds definition / coordination between TSOs

- **VGB**
 - The thresholds for the classification of PGMs has to be coordinated with adjacent TSO. Why do we see such differences between adjacent TSOs?
- **ENTSO-E response**
 - Coordination shall not be understood as harmonisation to equal values. As explained in the [IGD on selection of national MW boundaries](#), rationales for choosing thresholds are shared by adjacent TSOs but can lead to different threshold values (e.g., depending on the generation mix in each country)

Simultaneous voltage and frequency deviation

- **VGB**
 - The period of time to withstand simultaneous voltage and frequency deviations can be shorter according to Art. 16.2.a.ii. This has to be specified according to IEC.
- **ENTSO-E response**
 - In case of simultaneous deviations of frequency and voltage the shorter time period of each should be applied unless specified otherwise by the relevant TSO according to Article 16(2)(a)(ii) as recommended by the [IGD on frequency ranges](#). It is not mandatory to respect IEC standards when making such specifications, because of the legal hierarchy between the REGULATION (EU) 2016/631 and IEC standards.

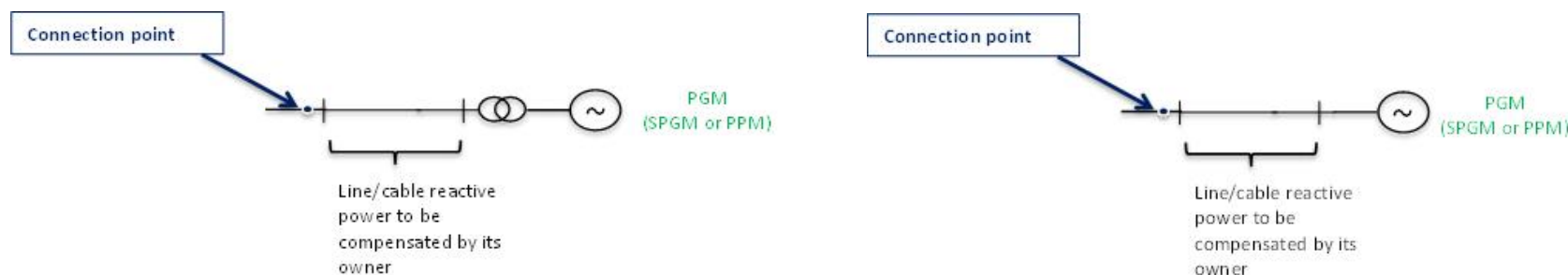
Art.18.2.a : additional reactive power

- **VGB**

- Additional reactive power (Art.18.2.a) is not clear. Requirements apply at the connection point. Why this provision? See also Art. 18.2.b.iii.

- **ENTSO-E response**

- It is correct, that the reactive power capability shall apply at the grid connection point.
- with regard to reactive power capability: the relevant system operator may specify reactive power to be compensated if the power generating module is connected by a line or cable to the connection point. This line or cable can either connect the high-voltage terminals of the step-up transformer of the power generating module with the connection point, or the alternator (or converter) terminals with the connection point, if no step-up transformer exists. This reactive power shall compensate the reactive power demand or production of the line or cable and shall be provided by the responsible owner of that line or cable.



Voltage ranges for offshore PPM

- **VGB**

- Art. 23 imposes for offshore installations that also test installations (e.g. wave energy of 800 kW) are considered as class D PGMs because table 10 has no under-limit for the voltage. We propose to respect the classification of PGMs and to add 110 kV as under limit in table 10. This would solve also the problem of some 66 kV offshore grids. (66 kV switchboard with $U_{max} = 72,5$ kV unable to respect 115% pu = 75,9 kV)

- **ENTSO-E response**

- Articles 23 – 28 shall apply to offshore power generating modules and no distinction is made between the classes A - D. The cumulative application of requirements, to which Articles 23 – 28 refer to, defines implicitly offshore power generating modules as of Type D. Consequently the voltage requirements shall be understood accordingly and therefore would not be applicable to voltage levels < 110 kV.

Monitoring

- **VGB**
 - Art.59.1 imposes a monitoring of this code by ENTSOE. ENTSOE is a stakeholder. Is this legally justified? A monitoring by ACER looks more appropriate due to the principle of separation of powers.
- **ENTSO-E response**
 - We understand this is a question to the EC.

Thank you for your
attention!
