**ACER**

**PC\_2022\_E\_08 - Public Consultation on the amendments to the grid connection network codes**

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Introduction

In the course of a public consultation recently organised by the French TSO on some aspects of its grid code, the signee identified several issues which are supposed to unnecessarily slow down the grid connection process of the different power modules and will lead to a significant cost increase.

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## RFG : Article 13. 6)

**Please add the following sentence :**

* « if a power-generating module has the technical capability to comply with the requirements, the System operator shall take into account all health and safety aspects related to the operation of this power-generating module, more in particular the consequences on health and safety of staff and of the public. Depending on the risks identified the System operator can decide to not implement this function ».

Comment : The objective of this sentence is to hold the System operator responsible for all consequences of this remote operation and thus give them a possibility to select or not the power-generating modules for this requirement.

**Articles 14 / 15 and 16** should be modified also to be compliant with this proposal.

## RFG : Article 5. 2)

**Please delete the reference to the voltage level 110kV.**

Comment : The voltage level of 110 kV doesn’t comply with the capability of future small power-generating modules installed on existing sites and which are already connected to the grid with a system voltage above 110kV. The current derogation system (article 60) is not suitable because the derogation is not sufficiently secured over the time, which blocks this type of project development.

See derogation granted on this topic :

* <https://www.creg.be/fr/publications/decision-b2028>
* <https://www.creg.be/sites/default/files/assets/Publications/Decisions/B1978FR.pdf>

## RFG : Requirements for offshore power park modules (DC / AC)

**Please introduce an obligation of coordination between TSO and PPM-DC/AC for the following subjects:**

* **On load tap changer design on main transformer located at TSO’s Offshore Substation (OSS) and offshore power-generating modules**
* **Definition and control of HVDC voltage level/range at the PCC in case of absence of an on load tap changer Earthing system of the neutral-point of the OSS main transformer’s “low voltage “side at the PCC (provided by TSO)**

Comment :

Regarding above three subjects the TSO currently does not accept to properly coordinate the design of the gird connection with the technical needs of an PPM-DC/AC which would lead to customisation of main wind farm components thus excessive CAPEX

* Today a wide majority of offshore PPM DC/AC uses the on load tap changer of the OSS main transformer to meet TSO’s voltage requirements at the PCC . It is a standard/efficient design which is suitable to have an optimized behaviour and cost efficient solution between grid connection and offshore PPM.
* If the TSO unilaterally decides not to deploy on-load tap changers on the AC transformers of a HVDC Converter station the voltage level/range at the PCC shall be properly coordinated with the technical capabilities of an offshore PPM which are typically designed according to applicable IEC standards and good industry practice.
* As per good industry practice appropriate earthing systems (earthing transformers) are currently deployed on OSS LV side to limit single fault currents circulating in the inter array cable network of the offshore PPM.

## RFG : Article 16. Table 6.2

**Please modify the voltage range 1,05 pu-1,10 pu in order to limit voltage level to 420 kV.**

Comment : Voltage level limited to 420 kV is fully compliance with the IEC standard, and equipment available on the market. This proposal is to avoid an over design (550 kV) (costly and not necessary).

## RFG : Article 25. Table 10

**Please modify the voltage range requirements to the following for offshore PPM connected to HVAC and HVDC TSO networks**

|  |  |
| --- | --- |
| 1,0 pu-1,10 | Unlimited |
| >1.10 | To be agreed between the TSO and the PPM AC/DC depending on the technical capabilities of the offshore PPM |

Comment : A Voltage level up to 1.10 pu is fully compliant with the IEC standard thus with the equipment available on the market. For the avoidance of doubt it is understood by the signee that wind turbine manufacturers are not preparing technical solutions to cope with the voltage requirements ( > 1,10 pu) of the initial revision of the RFG code .