

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL	
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QUALITY CONTROL		
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1. Expert Meeting 27.11.2014

TenneT presented the current activities within the EU which should result into a new network code: "Requirements for Generators". This code includes requirements for Power Park Modules and will become mandatory for OWF. From the topics mentioned the compensation requirements were challenged and discussed in length. TenneT recognized the fact that the OWF would have less options to mitigate reactive power without the offshore infrastructure. OWF recognized the fact that what can be delivered by the turbines should be part of this requirements to realize the most economical solution. Parties emphasized the approach to use standard type of turbines and not require modified (and therefore expensive) models. TenneT recognized this concern, but will be bound by the new RfG and can only use discrete infrastructural equipment in an economical way. Parties proposed to have TenneT study a "typical" wind park with sensitivity analysis for the design of the concept and the requirements for the OWF regarding the compensation requirements. With respect of each other's responsibilities and flexibility TenneT accepted to further investigate how this item could be addressed in a proper way.

2. Expert Meeting 29.01.2015

(...)

3. Expert Meeting 18.03.2015

Summary of concerns based on feedback during the Expert Meeting

(...)

Feedback from the meeting attendees

(...)

4. TenneT stakeholder consultation website

(...)

5. Bi-lateral meetings

Following the TenneT meeting of 27th Nov 2014 it is understood that TenneT will provide a paper in relation to the Grid Code / RfG compliance requirements which take notice of the fact that (i) the OWF will have no space at OSP to accommodate centralised solutions and (ii) the intent of the OWF developers, to minimise risk, is to employ standard WTGs rather than 'specials' – for example that may not be certified/certifiable.

We (OWF) would request that TenneT give consideration to transmission based solutions where this presents the most economical solution or the most sensible solution from a risk perspective. For example, in the UK the offshore transmission provider is responsible for provision of reactive range, voltage control and

power quality measures at the onshore interface point rather than at the offshore grid entry point – but options still exist in the UK to provide part capability in these areas from the OWF where this presents a more economical solution.

When will TenneT new offshore code (RfG compliant) be available?

We (OWF) have not attempted to provide commentary on the potential implications of different aspects of the RfG / TenneT Grid Code as this stage, this will be done following receipt of the paper referred to in the first bullet. When determining the rating of OSP switchgear on the LV side of the OSP then design interaction is required between TenneT and the OWFs – (i) obviously to understand the WTG fault contribution (ii) but also to ensure switchgear rating available/offered by WTG suppliers are adequate to accommodate design fault levels – for example, choice of TenneT OSP transformer impedance could have a material impact on WTG switchgear rating/cost/availability. We (OWF) seek close liaison with TenneT on such design issues.

Please note that we (OWF) need more information. Priority closely following 66 kV decision.

6. Other

(...)