

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL	
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QUALITY CONTROL		
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Please note that the intention of this feedback report is to illustrate the overall discussion and results. The text should be placed in the greater context of transparency about TenneT 's consultation process. This text is not legally binding and could be modified during the stakeholder consultation process.

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1. Moments of feedback

Feedback	Abbreviation
Expert meeting 27.11.2014	EM01
Expert meeting 18.03.2015	EM03
Expert meeting 15&16.04.2015	EM04
Consultation website March	WS01
Consultation website April	WS02
Consultation website May	WS03
Bi-lateral meetings	BL01

2. Feedback and action

Feedback	Feedback moment	Action
TenneT proposed to interface at the cable sealing end. While there are some next steps to be taken to fill in the details this approach was not challenged.	EM01	Notification
Developer needs direct control over connecting and disconnecting the switch.	EM03	TenneT operates the bays (see "ONL 15-079-T5_Operation of Bays_PP_v1")
Measurement point: one point of measurement or will there be individual measurements? Where do we measure for our wind farm control? Details will have to be discussed and are not yet fully investigated. This also depends on the WTG design.	EM03	For accountable measurements of power see "ONL_15-185-T9_Metering_PP_v1". For measurements for wind park control see "ONL_15-185-T8_SCADA_communication_interface_and_data_links_PP_v1"
If TenneT owns switch gear does TenneT also take full liability and operation of switch gear. Liability for switch gear? If something happens who is responsible for the damage on the wind farm?	EM03	Liabilities are considered in the connection agreements.
The connection point (CP) between the offshore power park module (PPM) and TenneT is specified at the cable termination of the inter-array cables and the switchgear installation on the platform.	EM04	Notification
I agree with the connection point notification but is this	EM04	Grid connection system (GCS) is

<p>consistent with what is stated in the RfG? Are you in compliance with the RfG? [TenneT] Yes you have a connection point at the end of every string. PPM will have 6 connections points.</p>		<p>RfG compliant.</p>
<p>If we want to use loops it must be clear where the point of common coupling is. The best benefit of a loop is if the strings are not going to the same busbars and different transformers. This depends on power quality and short circuit conditions. Operation in an open loop is no problem. The coupling point doesn't change but the amount of energy going through changes but is not a problem.</p>	<p>EM04</p>	<p>Noted</p>
<p>The internal platform cabling should preferably be done by TenneT, including the pre-installed cabling from switchgear to and including junction boxes.</p>	<p>WS01</p>	<p>Refer to " Installation interface management_PP_v1" where the cable installation interface is described. This PP will be open for discussion on the expert meeting of September. TenneT foresees direct routing from inter-array cable towards switchgear. No Junction boxes or joints are foreseen.</p>
<p>Our experience is that for us as developer has to install this cabling at the OSS yard, which we don't control, and several years before the offshore works, is difficult. It creates unfavourable constraints in relation to the timing of our cable procurement.</p>	<p>WS01</p>	<p>Refer to " Installation interface_ management_PP_v1" where the cable installation interface is described. This PP will be open for discussion on the expert meeting of September. TenneT foresees no pre-installed cabling from switchgear to and including junction boxes or joints.</p>
<p>We would strongly recommend that the interface should not be at the switchgear, but rather at the straight joint (or preferably junction box) at the cable deck. It is not our standard practice to route the array cables all the way to the switchgear, as it significantly increase the offshore works and the associated HSE risks.</p>	<p>WS01</p>	<p>TenneT has decided that the CP between the offshore PPM and TenneT is specified at the cable termination of the inter array cables and the switchgear installation on the platform. (see " ONL15-061-T3_Connection Point_PP_v1). TenneT foresees no pre-installed cabling from switchgear to and including junction boxes or joints. Refer to</p>

		"ONL-15-xxx_Installation interface management_PP_v1" where the cable installation interface is described. This PP will be open for discussion on the expert meeting of September.
The windfarm operators need direct control of the earthing switch and the cable disconnecter to be able to work safely.	WS01	TenneT will operate earthing switches and cable disconnectors. Lock-out Tag-out principles have to be agreed upon between TenneT and WPO.
In general the choice of the CP is logical. Still a number of interface specifications are required such as the maximum current, how to deal with the reactive power and the protection systems and settings have to be defined (overload / short circuit protection).	WS01	Incorporated in the other topics
Clear regulations are necessary to ensure a safe operation of AC strings.	WS02	See " ONL 15-079-T5_Operation of Bays_PP_v1")
We (OWF) would request consideration of an alternative boundary between TSO and OWF, whereby the OSP array cable switchgear (full switchboard, including transformer incomers) is owned by the OWF (UK model).	BL01	Position discussed is different (see " ONL15-061-T3_Connection Point_PP_v1)
Irrespective of final primary ownership boundary the OWF will require access to the OSP and potentially, subject to detailed discussion/design secondary equipment on OSP.	BL01	See "ONL 15-184-T4_Access to platform_PP_v2"
We (OWF) can provide further detail of how their proposed ownership boundary works in the UK.	BL01	Noted