

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL	
Type:	Position paper
Work stream	Technical
Topic:	T.3 Connection Point
Filename	ONL15-061-T3_Connection Point_PP_v1
Version	1 - release for Expert Meeting 18.03.2015
Pages	3

QUALITY CONTROL	
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Release	Public

## Table of Contents

<b>1. BACKGROUND MATERIAL.....</b>	<b>2</b>
<b>2. POSITION TENNET .....</b>	<b>2</b>
<b>3. IMPACT ON COST .....</b>	<b>3</b>
<b>4. TOPIC CONSULTATION .....</b>	<b>3</b>

## 1. Background material

None available.

## 2. Position TenneT

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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.

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In June 2014, the Dutch government took the preliminary decision to appoint TenneT as the offshore transmission system operator. This decision, which results in the design, the realization and the operation of the offshore grid by TenneT, implies a connection point<sup>1</sup> (CP) between TenneT and offshore Power Park Module<sup>2</sup> (PPM). This paper describes the CP with the underlying motivation.

In the onshore grid of TenneT, as well as in the distribution grids, customer connections are by definition part of the system. The policy applied for these customer connections is that the customer connection is owned by the customer, except for the bay in the HV installation of the system operator. These bays are maintained and operated by the system operator. This policy results in a logical CP between the connected party and TenneT, the connection terminal (line or cable) and the bay of TenneT. For connections with cables this CP is defined as the point between the cable termination and the switchgear installation in the substation. Operation of the switchgear bay is performed by the TenneT dispatch centre on request of the customer.

Also for offshore substations TenneT will keep the same policy for customer connections of PPM. 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. This, standardized by IEC 60859, defines a clear interface which is also applicable for responsibilities regarding the realisation phase, as well as the maintenance phase. Next to that, it prevents different ownerships of the switchgear installation for the different functionalities: connection of PPMs, transformer feeders, possible reactive power compensation and coupling of bus bars.

The above presented preferred solution implies that the system operator and PPMs shall make arrangements and agreements how to cooperate during the realization, normal operation, failure situation and maintenance. With respect to the normal operation phase, for offshore PPM customer connections the

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<sup>1</sup> In accordance to ENTSO-E RfG: 'connection point' means the interface at which the power generating module, demand facility, distribution network or HVDC system is connected to a transmission network, offshore network, distribution network or HVDC system, as identified in the connection agreement.

<sup>2</sup> In accordance to ENTSO-E RfG: 'power park module' or 'PPM' means a unit or ensemble of units generating electricity, which is either non-synchronously connected to the network or connected through power electronics, and that also has a single connection point to a transmission network, distribution network, closed distribution system or HVDC system.

same procedure shall be applied as onshore: the switchgear shall be operated on request of the customer by the dispatch centre of the system operator. These points will be addressed to in the 'Customer Connection Agreements (ATO)'.

### **3. Impact on cost**

This decision, which is based on adhering to the TenneT wide connection standard, is considered to have no impact on the LCoE for society.

### **4. Topic consultation**

The expert meeting of March 18, 2014 gives TenneT the opportunity to get feedback from developers on their position regarding on its position regarding the point of common coupling.