

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL

Type:	Position paper
Work stream	Technical
Topic:	T.4 Access to platform
Filename	ONL 15-184-T4_Access to platform_PP_v1
Version	0 - draft preparation
Pages	4

QUALITY CONTROL

Prepared:	TenneT team	
Reviewed:	M. Müller	01.05.2015
Approved:	F. Wester	01.05.2015
Release		

Table of Contents

1. BACKGROUND MATERIAL.....	2
2. SCOPE AND CONSIDERATIONS.....	2
<i>General</i>	2
<i>Technical</i>	3
<i>Ways of access to the platform</i>	3
3. POSITION TENNET	4
4. TOPIC CONSULTATION	4

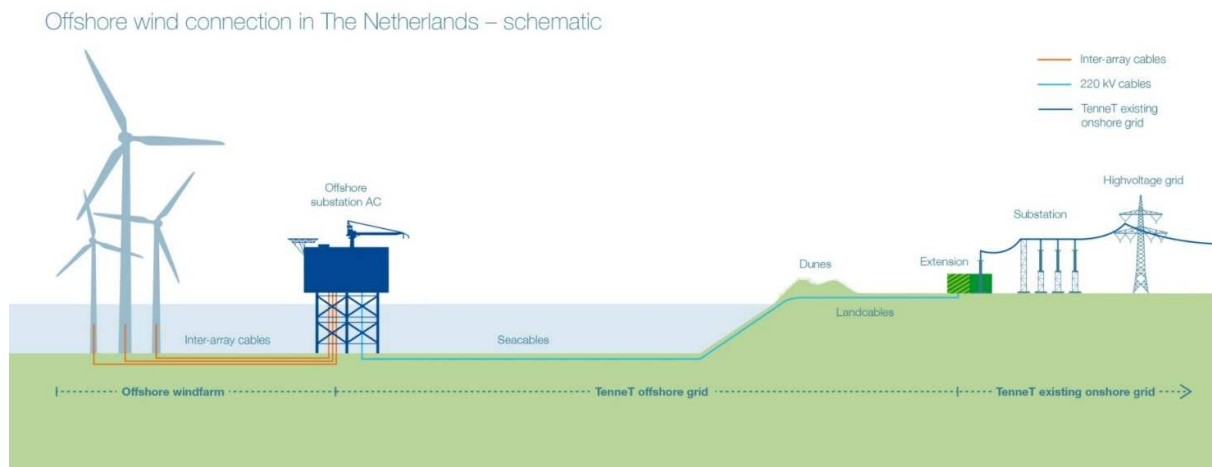
1. Background material

Literature used:

- N.A.

2. Scope and considerations

Error! Reference source not found. shows the connection of an offshore wind farm to the onshore electricity grid. TenneT will supply and install the grid connection up to, and including, the offshore substation. The wind park, including the wind turbines and the array cables, up to the offshore Connection Point (CP)¹ at the switchgear installation on the offshore substation of TenneT, is to be supplied and installed by the owner of the Power Park Module (PPM²).



Schematic of the offshore electrical grid. Source: TenneT

Each inter array cable string connects a number of turbines of a PPM to the offshore substation. TenneT intends to standardise the offshore substations as much as possible for all five wind areas to be realised in the coming years in line with the Energy Agreement. This paper describes how TenneT as the platform owner proposes to deal with the access to its offshore substations, for the different parties involved.

General

The Energy Agreement requires a 40% cost reduction for offshore wind to be realised over the period 2014-

¹ The connection point (CP) between the offshore power park module (PPM) and TenneT is specified [Ref: position paper T3] at the cable termination of the inter-array cables and the switchgear installation on the platform.

² Ref: position paper T3

2024. Realisation of this cost reduction is expected to require a combination of measures³, including - but not limited to standardisation of the offshore electrical infrastructure and larger capacity wind turbines within larger wind farms. TenneT contributes to this overall cost reduction target, through a strategic long term vision on the development of the offshore grid, focussing on the initial investments, but certainly also on operational expenses during the lifetime of its grid connections. In other words, reduce the contribution of the grid infrastructure to the LCoE of offshore wind farms.

Technical

There are two ways to travel personnel and goods from harbour to the offshore platform:

- By helicopter
- By boat

In general, travel by helicopter is faster and less dependent on weather conditions, but risks and costs are higher and capacity is limited. New development of vessels increase the safety of boarding and the effectivity of applying ships for maintenance.

Compared to the helideck, the cost impact of a helicopter hoist / winch area is limited while helicopter transport is still possible.

Ways of access to the platform

When access to platform is concerned, the following stakeholders require access:

- TenneT and its subcontractors;
- Both wind park owners and their subcontractors (WPO's representative(s)).

As a design principle, equipment owned by TenneT or the Connected Parties of a platform will be installed in separate rooms, having separate entrance doors. A room will only be accessible to the owner of the equipment inside this room. A general day crew room with necessary basic facilities - including emergency accommodation - will be accessible to all stakeholders⁴.

Following feasible ways of access have been identified by TenneT for WPO's representative(s) (as well as TenneT's subcontractors):

1. **Accompanied only:** Access of WPO's representative(s) to the platform only when accompanied by (a) TenneT representative(s).
2. **Partly independent access:** The WPO's representative(s) is/are allowed to independently access the platform for the room(s) with WPO owned equipment without accompaniment by a TenneT representative, but under the safety and operational regulations and requirements, as (to be) determined by TenneT. This will also include the general day crew room. For access to rooms with TenneT owned equipment, accompaniment by a TenneT representative is required (for example access to a switchgear room to conduct cable measurements).

³ [http://tki-windopzee.nl/files/2015-01/20141124_TKI_Roadmap.2015-2020_EZU_F%20\(1\).pdf](http://tki-windopzee.nl/files/2015-01/20141124_TKI_Roadmap.2015-2020_EZU_F%20(1).pdf)

⁴ A shelter on the cable deck with all required equipment for emergency stay will be accessible without any restrictions and is not taken into account in this position paper as this shelter is required by native standards

Compared to option 1, option 2 has a slightly lower impact on maintenance costs as in some cases a TenneT representative is not required to accompany the WPO's representative(s). However, this impact will be marginally low.

From a safety point of view, TenneT considers both options as equals since for both options the same safety and operational regulations and requirements will be applicable. With option 2, WPO's have the responsibility to only allow representatives to access the platform which have the right qualifications.

3. Position TenneT

These considerations lead TenneT to the following position:

TenneT is inclined towards standardising the offshore platform providing a helicopter hoist facility on the platform, but no helicopter landing platform. This due the short distances to shore, the reliability of the system (>98%, for power to the platform even more), the expected amount of maintenance and the usability of heli-transport for maintenance and emergency purposes (for materials a boat is needed).

TenneT is inclined towards allowing access for WPO's representative(s) to the offshore platform without accompaniment. However, only specific rooms (WPO equipment room(s) and general room) will be accessible. If WPO's representative(s) needs to access other areas (e.g. switchgear rooms where inter array cables are connected), accompaniment by (a) TenneT representative(s) is required.

Above positions are applicable to all five platforms to be realised by TenneT up to 2023.

4. Topic consultation

The expert meeting of 12-13 May, 2015 gives TenneT the opportunity to get feedback from developers on their position regarding "Access to platform". The main goal of this meeting will be to assess whether TenneT's views as documented within this position paper, and background data above, are shared by the industry.