

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL	
Type:	Feedback report
Work stream	Technical
Topics:	P.01 Planning
Filename	ONL 15-149 P01_Planning_FBRe_v2
Version	2 – public release
Pages	8

QUALITY CONTROL		
Prepared:	Anna Ritzen	
Reviewed:	Michiel Müller	
Approved:	TenneT: Thomas Donders	29.06.2015
Release	Public	

Table of Contents

1. EXPERT MEETING 27.11.2014	3
2. EXPERT MEETING 29.01.2015	3
3. EXPERT MEETING 18.03.2015	3
<i>Feedback from the meeting attendees</i>	3
4. EXPERT MEETING 15&16.04.2015	3
<i>Summary of concerns based on feedback during the Expert Meeting</i>	3
<i>Feedback from the meeting attendees</i>	3
5. EXPERT MEETING 12&13.05.2015	4
<i>Summary of concerns based on feedback during the Expert Meeting</i>	4
<i>Feedback from the meeting attendees</i>	4
6. TENNET STAKEHOLDER CONSULTATION WEBSITE MARCH	5
7. TENNET STAKEHOLDER CONSULTATION WEBSITE APRIL	6
8. TENNET STAKEHOLDER CONSULTATION WEBSITE JUNE	8
9. BI-LATERAL MEETINGS	8
10. OTHER	8

1. Expert Meeting 27.11.2014

N.A.

2. Expert Meeting 29.01.2015

N.A.

3. Expert Meeting 18.03.2015

Feedback from the meeting attendees:

A note on the timeline of the RfG code is made. This could be proven to be too ambitious.

A note on the timeline of the ATO/REA is made – the earlier the draft documents are available the better. In case the documents are available on the short term the “notify” box in the rolling planning could potentially be shifted backwards in case necessary.

A topic which is missing in the overview is harmonics and transient study. Developers need to have a clear understanding of which of studies TenneT would like to see from the operator and when these studies should be ready.

A topic which is missing is on the onshore interface point; the developer would preferably have space/ a allocation available at the onshore location.

A document on HSE requirements should be included.

Who is deciding the final position of the platform. Would this be EZ, RVO or TenneT?

4. Expert Meeting 15&16.04.2015

Summary of concerns based on feedback during the Expert Meeting

- Preference to install the platform and cables as soon as possible
- From a seasonal point of view it is inconvenient that TenneT plans to be finished in august

Feedback from the meeting attendees

We would like to see export cable one year ahead of first wind turbine. Split up planning export cable and platform installation.

From a seasonal point of view and our installation planning, it is not very good that TenneT plans to be finished in august. We would like to start installing the wind turbines in de second quarter of the season. If we install in 2019 we will be installing foundations in 2018 and then running our infield cables plus installing the cables on TenneT's jacket (without topside). 'park' our cable waiting for the topside. Reservation if start at 2018 is possible.

2018 seems unlikely (with regards to long lead items etc).

The buffer between readiness platform and first wind turbine is too tight. Foundation and cables most probably in 2019.

Which case is this planning? [TenneT]: No risk assessment done yet. Is checked and validated. 2. ½ years is based on experience in Germany. But that was an HVDC project.

Not sure I can share everything here and/or with TenneT but this seems optimistic.

From my experience if you, TenneT, order your cable first of January 2017 you do not need more time. We would prefer not to give you an additional year with the risk of being late. Cable supplier is the critical path of the realisation track.

Approval grid development plan is delayed to Q1 2016. Does this include relevant information for our tender? [EZ]: The main items will be set in the scenario of EZ and TenneT will have to look at the fact that their plan matches this scenario and if it is done in a time and cost efficient way. Before publishing the tender the investment plan and scenario should be informally approved within parliament.

It will be important that the new 380kV south west-line is ready in time to deliver the electricity. [TenneT]: the way we see it we don't need the 380 south west to be ready. For Borssele Beta it is necessary. This discussion is an internal one and not for this session.

5. Expert Meeting 12&13.05.2015

Summary of concerns based on feedback during the Expert Meeting

- Request for a clear start date for compensation scheme (connection of cables)
- Request for a clear date for availability of cable deck (for cable pull in)
- Request to include risk/sensitivity analysis in the TenneT planning

Feedback from the meeting attendees

If we look at the planning there are two elements to that. If we compare this to our WF construction. It takes about 3 years between signing contract and producing MWh. If we assume Financial Close for OWF at the end of 2016 this would mean first power would be produced in 2020. This planning assumes two seasonal

construction: foundation in 2019 and WTG in 2020. This is based on the permit restrictions with regards to piling in the Netherlands. If this restriction is 'relaxed' you could think of a one season construction period. Then you would build and connect in 2019.

In the case we go for the two season approach 2019 for TenneT is good. If permitting restrictions are changed ('relaxed') then August 2019 would be tight. If installation of our cables would only start in august 2019 that would be too late.

Why would you prefer to install everything in one go? OWF: this is better for the business case. Early income (2019) is good for NPV and good weather for installation/ pipeline issues.

Anyway we need a fixed plan from TenneT; one which we can rely on.

That is correct if you (TenneT) say August 2019 we will base our bid on that date.

Additionally two other dates which are important for our (OWF) installation schedule: jacket and topside installation. Would you be willing to fix that date in legal documents?

Topside/ foundation/cable deck. We need this to put our cables on. The development schedule of the WF is depending on this for cable installation planning.

Have you also made a worst case planning? What will happen if you run into mistakes in permit for instance?

Yes we (TenneT) are working on a more scientific stress test based planning.

With regards to HSE and coordination we would like to plan our installation preferably without TenneT being out there in installation as well. What is expected from this? How does TenneT intent to do this?

6. TenneT stakeholder consultation website March

The time schedule as presented often meets our milestones but on some subjects it does not comply with these milestones. We suggest to discuss these topics and find mutual solutions for these existing differences.

In the 'Adviesgroep' of February 18th 2015 we have presented the following critical milestones for the planning of the tender period:

1. "Tenderperiod, 'benchmark' for start:

The benchmark which marks the beginning of the tender period is the moment at which sufficient data is available with which we can prepare a serious offer. This should contain at least:

- *All, to be certified, published data (soil, wind climate both current and historical, etc.)*

- *(Draft) connection requirements and grid codes published by (eg requirements for frequency , power quality , reactive power capability, backup generator , 33 or 66 kV , etc.)*
- *Published (draft) 'kavelbesluit' including mitigating measures ecology*
- *SDE and final 'Ministriële Regeling'*

AND:

2. During "Tenderperiod" no changes:

There will be no specific changes in:

- *Data should be certified within three months after the benchmark date.*
- *Final connection agreement and grid codes should remain unchanged with regards to the design*
- *Mitigating measures for environmental impact*
- *No significant changes which will influence the choice for or design of: turbine, foundation, cables, work methods/statements and lay out of park*

In case of significant changes the benchmark date will shift accordingly.

On the planning documents we would like to have more clarification on the various items. For the planning of the bidding process the critical design choices should be made at 9-12 months before the bidding deadline. In general more time means the possibility for the developer to optimise LCOE.

Realisation of Borssele 1 is planned for mid-2019. Have you also taken into account the planning of the 380kV connection between Borssele and Rilland. This connection will have to be completed mid-2019 as well in order to create enough transportation capacity for 700MW of offshore wind energy.

7. TenneT stakeholder consultation website April

Please provide more details in the planning of the realisation of platform and land cables, so that we can see when the first turbines can really be connected and have power supply. This should be possible earlier than mid 2019.

The new 380 kV line South-West between Borssele and Rilland should also be ready mid 2019 to be able to transport 700 MW additional power to the national grid. With 700 MW additional power injection in Borssele there is no (n-1) contingency in the present network situation.

TenneT showed a planning 2015-2020, the general feeling is that this is rather optimistic planning:

- *There is no buffer between OSS and the planned WTG installation, which is a very high risk*
- *The planning is considering only net time. A reliable planning should include likely risks of delays*
- *For TenneT the critical path runs through their permitting process. Assumption is that permits will be irrevocable in December 2016, no slag time foreseen*
- *The planning showed a very short period (mid 2015-mid 2016) for arranging the land leases for the onshore part of the cable. Depending on what routing is chosen, this can take longer (up to 2 years)*

- The tender period for the platform is too squeezed (March 2016-Dec 2016).

Both TenneT & Economic affairs should be aware of the above planning risks as this will have mayor impact on the overall feasibility of the 1st tender round and on the bid levels that can be expected. Up to now, there is no integral planning or governance approach that oversees the cross links between the planning of the tender, the plot decrees and the grid connection and substation. We would like to invite both parties to deliberate on the interfaces between the different parts of the offshore tender set-up such that all critical links are well defined and possible problems can be solved upfront.

The most important issue for us as a possible developer is to have certainty in TenneT's time table, that TenneT's schedule is realistic and robust and that TenneT's schedule is well aligned with the developer's schedule. Furthermore, we will recommend that TenneT's and developer's schedule is aligned in a way that minimizes the probability that two operators have to perform offshore work within the same area at the same time. This in order to reduce the risks of accidents and conflicting activities.

In order to minimize costs, a firm date for finalizing TenneT's construction work is important to lower the overall schedule risk for bidding wind farm developers. This date should allow for the developer to perform installation in time periods with acceptable expected weather conditions. Lack of flexibility and robustness in TenneT's or the developer's schedule will represent an additional risk to the project and make the project less attractive to the investors.

From the developers position a realistic, robust and cost effective time table for a wind park construction would be installation of foundations, transition piece and lay-down of intra-array cables during one summer season. Installation of WTGs would then commence the following summer season. The sub-station should be in place by the time the inter-array cables are laid down (i.e. that this has to be done in due time before the start of the summer season). The rationale is that this way the risk of damage to cables is minimized as no jack-up operations are performed in the sub-station area once the cables are in place. Additionally, pull-in of cables to the substation can be performed during the laying campaign, leading to reduced number of installation days.

If we assume that the foundations are to be installed in 2019, the substation(s) should preferably be installed before 1st April 2019.

We recommend that TenneT's schedule is adjusted to cater for a cost effective, robust and safe execution of Borssele 1. This will ideally imply that one whole summer season is allocated to installation of foundations, transition piece and lay down of intra-array cables, at that these activities are finalized before start of installation.

8. TenneT stakeholder consultation website June

How does the realisation date (August 2019) of the first TenneT platform relate to submitting to the first tender on the 1st of April 2016 and announcing the winner on the first of July 2016?

1: August 2019 will be too late when building works take place in one season. This should be June 2019.

2: When building works take place in two seasons, August 2019 is OK. This provides six month slack with regard to the WTGs for project finance.

PM: The choice for allowing construction works in one or two seasons is partly determined by allowing for piling earlier in the year. This is currently being discussed in another working group within the framework of the plot system.

Which dates would OWF communicate to TenneT for the date that the jacket and cable deck should be finished?

1: When construction works take place in one season:

Cable deck ready for pulling in infield cables: April 2019

Final assembly cables: May 2019.

2: When construction works take place in two seasons:

-cable deck ready in August 2019 is not critical. Cables will pulled in and assembled after the platform is finished. Transport of electricity is required after March 2020.

9. Bi-lateral meetings

(...)

10. Other

(...)