

Concluding technical and legal session

Papendal, 9 November 2015

November-9-2015

TenneT ONL



Stay tuned. Safety first!

For your safety as well as our own we would like to draw your attention to the following safety measures.

In case of an emergency, the following instructions also apply:

- Follow the escape route as indicated.
- Use the stairs instead of the lift.
- Go the assembly point.
- Follow the instructions of the in-company emergency worker who is present at that moment.



Time schedule



08h30	Room opens
09h00	Welcome
09h30	Highlighting changes in technical position papers
09h45	Main topics Realisation Agreement, Connection and Transmission Agreement, and General Terms and Conditions
12h30	Lunch
13h30	Annexes to Realisation Agreement and Connection and Transmission Agreement
17h00	Closing

Roles



- Participants from several backgrounds with several roles
 - TenneT TSO
 - Project developer
 - Legal counsel, representing company
 - The Ministry of Economic Affairs and ACM
- Please sign the participants list circulating in the room

Since last meeting



- Technical Expert Meeting 21 October
- Feedback received until 27 October
- Publication of presentations and feedback reports of both legal and technical meeting
- Publication of updated position papers, new draft model agreements including Annexes, general terms and conditions by 4 November
- Concluding meeting 9 November

Way forward



- After this session, opportunity exists until **13 November** to provide your feedback to TenneT via netopzee@tennet.eu
- Publication of
 - Anonimised Q&A overview
 - Dutch version of the offshore model agreements (based on 4 November drafts) expected on 13 November 2015
 - Comments on translation may be provided until 20 November 2015. **Note:** feedback on correct translation only, not content.
 - Feedback report by TenneT summarizing main topics and conclusions from this session
- Prior to opening of the first offshore wind SDE+ subsidy tender TenneT will conclude and publish the model agreements for connection to Borssele Alpha
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Overview highlighting changes in position papers



T.12 Redundancy availability

Entered in the position of TenneT: TenneT has decided not to update the single line diagram ("Option 2"). As it is currently not known how offshore wind farms are allocated per section or per transformer, TenneT decided leave this open, and have final decision when winners are known.

T.13 Installation interface management

R/A/C in tables has been adjusted according to discussion expert meeting

Scour protection J-tubes

T.14 O&M interface management

Elaboration on work permitting process (2.2.3)

Elaboration on metering activities (2.3.4)

T.18 Shared data acquisition systems

Shared services table has been adjusted according to discussion expert meeting (shipping radar and CCTV)



T.13 Installation interface management

Notification



T.13 Installation interface management

Summary of feedback

Consensus: There is a general consensus this is a good approach to define interfaces and agreed details should be defined after WPO has been selected

Mixed opinion: There is a mixed opinion on whether or not a junction box is needed in order to cover more risk during/after cable pull-in

Notification

TenneT's position on 'T.13 Installation interface management':

TenneT intends to manage interfaces by involving all stake holders as early in the project as possible and to define clear roles for each interface.

In the position paper the major technical interface categories have been identified and briefly described. Further details of these interfaces shall be determined in mutual agreement between the WPO and TenneT in a later phase.



T.14 O&M interface management

Notification



T.14 O&M interface management

Summary of feedback

Consensus. There is a general consensus this is a good approach to define O&M interface management and agreed details should be defined after WPO has been selected

Notification

TenneT's position on 'T.14 O&M interface management':

The major O&M interface categories have been identified and briefly described. Further details of these interfaces will be worked out in cooperation with the connected parties of the Borssele Alpha platform (during the construction phase) and will be applicable for the other four platforms.



T.15 Harmonics and transient study

Notification



T.15 Harmonics and transient study

Summary of feedback

Consensus. There is a general consensus this is the information which can be provided at this point of time. Further details will be provided at a later stage

Request: WPO request TenneT to state significant room is reserved in the case active filters need to be installed

Notification

TenneT's position on 'T.15 Harmonics and transient study':

It is the responsibility of each connected party to fulfil the requirements with respect to the total harmonic distortion and the emission limits. TenneT specifies the maximum allowed harmonic distortion at the 66 kV level. If more than one OWF is connected to one single 66 kV bus bar, the emission planning level will be distributed proportional to the rated power of each connected party.

The necessary measures to be taken by the OWF to fulfil the requirements with respect to the harmonic distortion, are the responsibility of the OWF.

TenneT will take the responsibility to investigate and specify the needed measures to make sure that at the onshore connection point there is no harmonic amplification caused by the offshore installation of TenneT and the installation of all connected OWFs.



T.17 Compliance testing

Notification



T.17 Compliance testing

Summary of feedback

Consensus. There is a general consensus this is a good approach to define and execute compliance testing

Request: WPO request a separate document with short circuit levels and voltage levels

Notification

TenneT's position on 'T.17 Compliance testing':

With respect to the SAT activities of the Offshore PPM connection to the TenneT platform, the OWF shall submit their SAT program to TenneT for approval.

Furthermore, it is the responsibility of each connected OWF party that its Offshore PPM has the required capabilities according to the TenneT requirements. TenneT requires the OWF to perform all compliance activities. The planning of all activities shall be agreed with TenneT.

Once all compliance tests of the entire connection are performed successfully, the OWF realisation phase is considered to be finalised.



T.18 Shared data acquisition systems

Notification



T.18 Shared data acquisition systems

Summary of feedback

Consensus. There is a general consensus this is a good approach to shared data systems

Concern: WPO pose the question if bird and bat radar will automatically be sufficient to comply with regulation

Notification

TenneT's position on 'T.18 Shared data acquisition systems':

With respect to data acquisition on the offshore platform, TenneT aims to share systems with WPO's where possible in order to save on cost, space, weight and power consumption. The data acquisition systems have been described as summarized in Table 1.1 of the position paper, including possibilities for sharing.

TenneT will outsource the shared data acquisition to RWS. RWS will develop a business model. The cost of the shared data acquisition systems will be shared between the users.

Some data systems cannot be shared. TenneT will make available all provisions required for installation and operation of these systems including mounting facilities and auxiliary services.



Main topics Realisation Agreement, Connection and Transmission Agreement and General Terms and Conditions



Topic: Planning (i)

- Binding date in the agreements is limited to the date set in the Scenario
- For information exchange, planning, access and operational matters, parties will jointly prepare a planning for information purposes, including the following milestones:
 - (a) the date (or dates) on which TenneT or its contractor has obtained the permits to realise the Connection;
 - (b) the period in which the Connected Party may install equipment on the Platform when it is under construction onshore;
 - (c) the period in which the Connected Party may install equipment in TenneT's onshore substation;
 - (d) the date on which TenneT's onshore substation is ready;
 - (e) the date on which TenneT's export cables are ready;
 - (f) the date as from which the Connected Party's 66 kV cables may be hung to the Platform when it is under construction offshore;
 - (g) the physical connection of each respective 66 kV cable from the Installation to the Connection;
 - (h) the date on which the Platform is ready for cable pull in;
 - (i) the delivery of the Connection in accordance with Article 4.1;
 - (j) EON; energisation of the first 66 kV cable;
 - (l) ION (ION1 and ION2);
 - (m) FON; full operation;;(EON, ION and FON as will be referred to in the annex to the Connection and Transmission Agreement regarding compliance activities)

or such other milestones as the Parties agree are necessary.



Topic: Planning (ii)

- Based on the respective planning of both the Connected Party and TenneT, a joint planning will be prepared
- Once the joint planning has been established between the OWF and TenneT the parties may agree upon binding milestones, including liability or other consequences for not meeting milestone (works either way)

Question to OWFs



A side note related to the Topic Planning:

- TenneT is currently preparing its Invitations to Tender related to Platform, Cables and other equipment.
- In order to sufficiently reflect OWF's needs in TenneT's ITT's, TenneT appreciates input on
 - Expected scope of activities and expected lead time by OWF
- For the following milestones as previously mentioned:
 - (b) the period in which the Connected Party may install equipment on the Platform when it is under construction onshore; and
 - (c) the period in which the Connected Party may install equipment in TenneT's onshore substation;
 - f) the date as from which the Connected Party's 66 kV cables may be hung to the Platform when it is under construction offshore;
 - (g) the physical connection of each respective 66 kV cable from the Installation to the Connection

Topic: Compensation



- Any consequences of delay or unavailability of the Connection or the Offshore Transmission System will be solely governed by section 5.27 of the Act and no provision of this Connection and Transmission Agreement will reduce or extend the Connected Party's rights for compensation under the Act or give rise to contractual liability of TenneT in relation to delay or unavailability of the Connection or the Offshore Transmission System.

Topic: Phasing of agreements



- Realisation agreement governs the period until the Connection is ready within the meaning of the Scenario, regardless whether the Installation (of the Connected Party) is ready for generation. The draft Scenario indicates this means: (i) ready for commissioning and testing of the Installation, (ii) capability to transport full power and (iii) two-way communication
- Connection & Transmission Agreement governs the period thereafter
- Cannot be linked to EON or ION as this is also dependent on planning of OWF

Topic: Delivery of the Connection

- Independent expert will confirm if Connection is indeed ready in accordance with the Scenario
- OWF will be consulted on delivery criteria
- TenneT will notify OWF in advance of delivery date
- Delivery in accordance with Scenario (and ending of REA) does not mean remaining issues will not be picked up

Topic: Tariffs, fees and costs



TenneT will charge only ex ante by ACM established tariffs, fees and costs (fees) that are based on an ex ante ACM approved methodology or may be reviewed by ACM ex post, or for shared/additional services which the OWF decides to take from TenneT

Currently foreseen (this might be subject to change in the future):

- Offshore Power Park Module:
 - No initial and periodical connection tariff, no transmission tariff for feeding-in of electricity
 - Costs for compliancy (including compliance costs incurred by TenneT)
 - Fees for auxiliary services performed by TenneT upon request of the Connected Party
 - Transmission tariff for consumption will be established (to be decided/confirmed by ministry, expected to be EHS tariffs)

Topic: Insurance



- Limited feedback received regarding insurance
 - CAR-insurance not included (therefore waiver of subrogation not necessary)
 - Insurance which should be in place
 - Third party liability
 - Workers compensation and employer's liability
 - Marine protection and indemnity insurance
- Feedback on inclusion of threshold and if so, amounts are welcome

Topic: Liability



- Limited feedback received on article 11 GTC
- Provision regarding CAR-insurance has been deleted
- TBD: inclusion of liability cap and if so, what should the amount be?

Topic: Overplanting



- Basic rule: use of overplanting capacity (feed-in above 350 MW per connection) is always at free disposal of CP
- Curtailment principles in Annex 3, three step approach:
 - Alignment of the Connected Party's generation forecasts to dynamic cable loading capabilities
(TenneT provides actual cable conductor temperature data)
 - Actual curtailment of the power output by the Connected Party
 - Actual curtailment of the power output by TenneT
- Besides specific offshore curtailment regime: NCC can restrict power output of any connected party in order to maintain system security



Topic: Suspension and termination

- No suspension for financial obligations
- Termination ground related to not using the Connection extended in time and now includes provision in relation to technical difficulties

Compare position papers vs Annexes



Topic Number	Title	Annex		PCC	Technical requirements offshore connection	Technical requirements offshore grid	Compliance testing	Operational arrangements	Art	Art
		1	2							
T 1	Voltage level	CTA	REA, CTA							
T 2	Number of J-tubes and bays			REA, CTA					3.8	
T 3	Point of Common Coupling		REA, CTA	REA, CTA						
T 4	Access to platform						REA, CTA			
T 5	Operation of bays			REA, CTA						
T 6	Protection			REA, CTA						
T 7	Reactive Power Compensation			REA, CTA	REA, CTA					
T 8	SCADA, communication interface, datalinks		REA, CTA	REA, CTA						
T 9	Metering	CTA	REA, CTA							7
T 10	Implementation of RIG				REA, CTA					
T 11	Overplanting	CTA		CTA						3
T 12	Redundancy/Availability		REA, CTA							
T 13	Installation Interface Management						REA, CTA			9
T 14	O&M Interface Management						CTA			9
T 15	Harmonics & Transient Study			REA, CTA	REA, CTA					
T 16	Location		REA, CTA							
T 17	Compliance testing						CTA		8	11
T 18	Data acquisition systems			REA, CTA			REA, CTA			
P 1	Planning								6	

REA, CTA

proposed in current drafts

Overview Agreements



Overview Annexes



Closing remarks



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Taking power further

