Legal Framework

Werkatelier

30-03-2015

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Today's key messages

Informing you about a legal framework for offshore connection requirements

- Information on TenneT´s consultation process – please visit
  www.tennet.eu/nl/offshore-grid-nl.html

- Why the OWF and TenneT both benefit from a timely set offshore legal framework

- Content and planning of the offshore legal framework

- Invitation to contribute – please give your feedback to
  netopzee@tennet.eu

Content

- TenneT's consultation process
- Background of the legal framework
- Content of the Offshore Code
- Content of the Connection Agreements
- Planning of the development of the legal framework
- What we invite you to do

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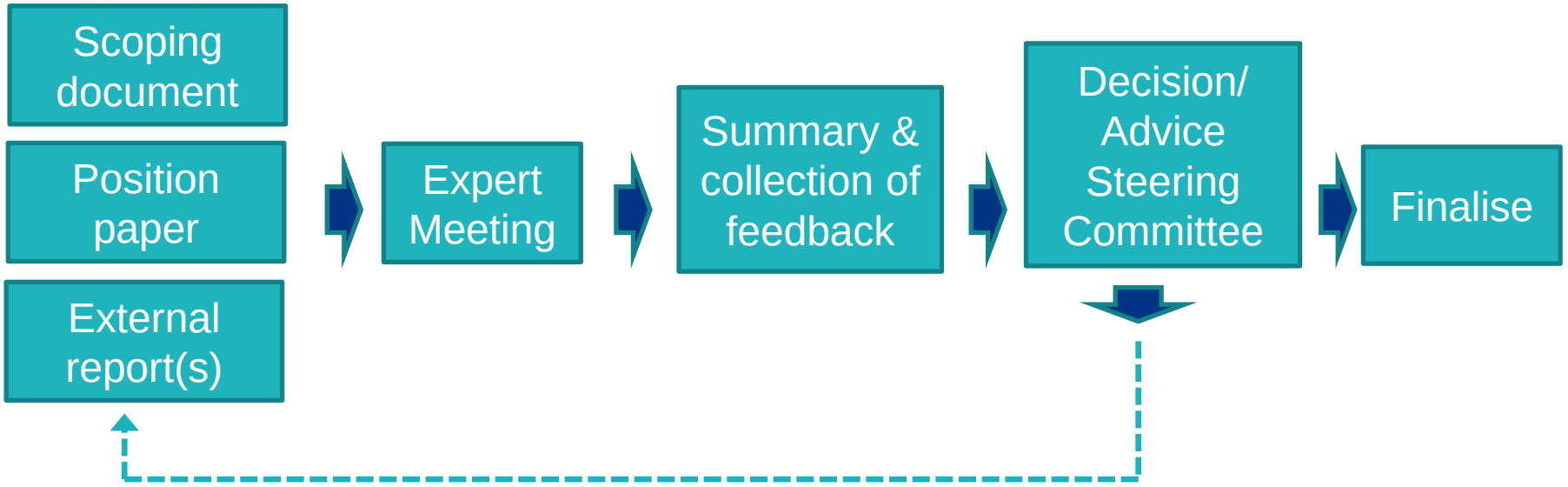
Objective of the managed stakeholder engagement process

To ensure ...	through ...	where ...
> the best possible preparation of TenneT for its role as the Dutch offshore grid operator > a decision process with respect to the development, design, planning, construction and operation of the offshore grid which is clear, transparent and with complete and in-depth consultation of all relevant stakeholders > upfront legal certainty regarding legal and technical requirements for offshore connected parties	> a definition/development process of the offshore electrical infrastructure together with the stakeholders that ensures: > transparency on key choices/decisions > provision of a complete set of fact-based documentation that forms the basis of choices > maximum consensus on these choices where possible > transparency on projected cost and (future) cost reduction	> TenneT takes a leadership role in realising the Energy Agreement > by listening to the stakeholders involved, > pro-actively contributing its knowledge and expertise, > incorporating input from the stakeholders, and > making final decisions in the interest of society

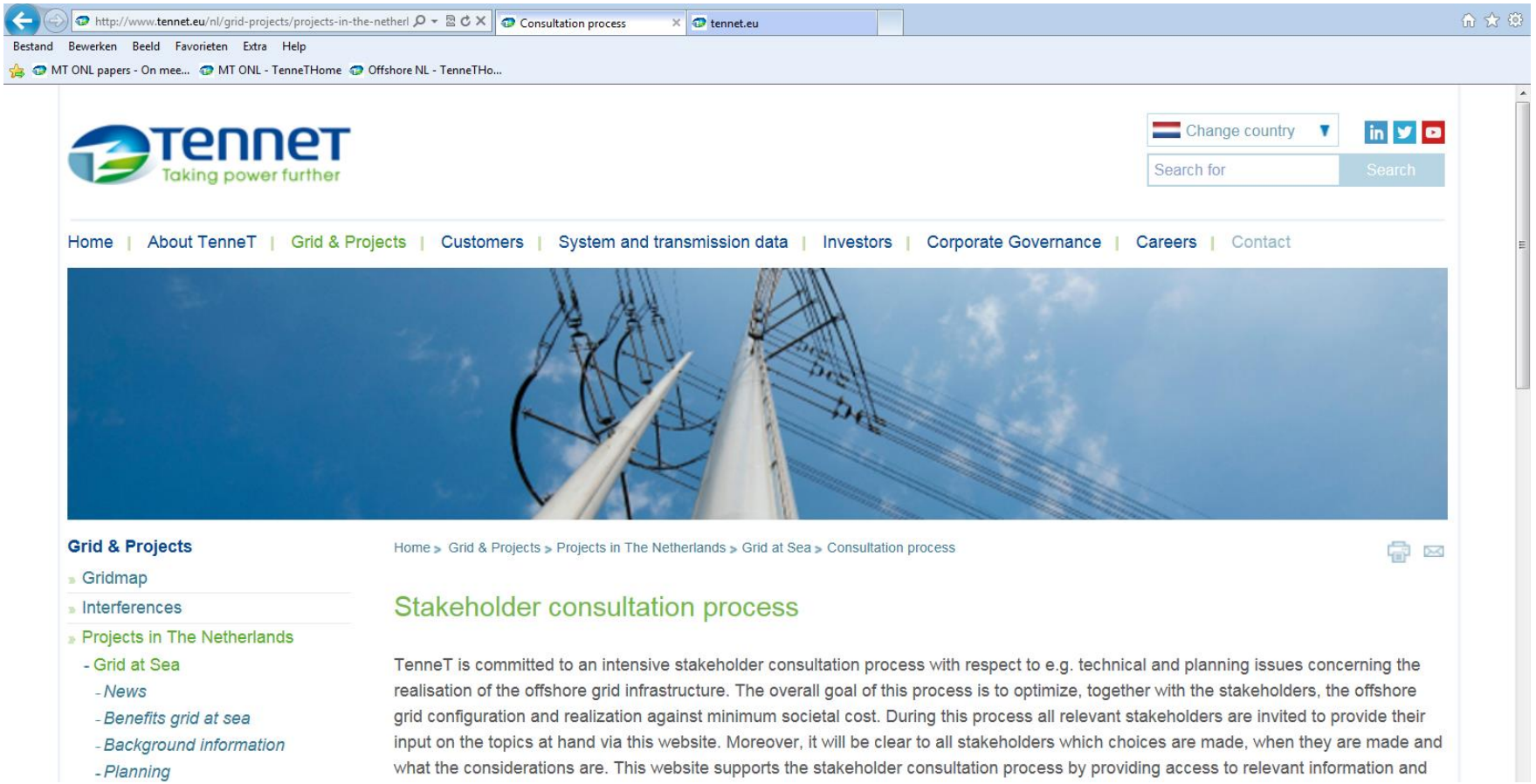
Stakeholder consultation format

- Expert Meetings with bidding parties on invitation basis only to ensure focused in depth



- Agenda and background documents for each expert meeting provided on website two weeks prior to the meeting. **Feedback enabled on website**.
- Summary of expert meeting, collected feedback and follow-up actions publicly released on on website after the meeting.

Website for consultation process



www.tennet.eu/nl/offshore-grid-nl.html

E-mail: netopzee@tennet.eu

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL

Type: Position paper

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Table

4. Position TenneT

TenneT states that in case of 66 kV inter-array cables (based on 84 MW per cable) a standard platform

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Cost impact: high level breakdown

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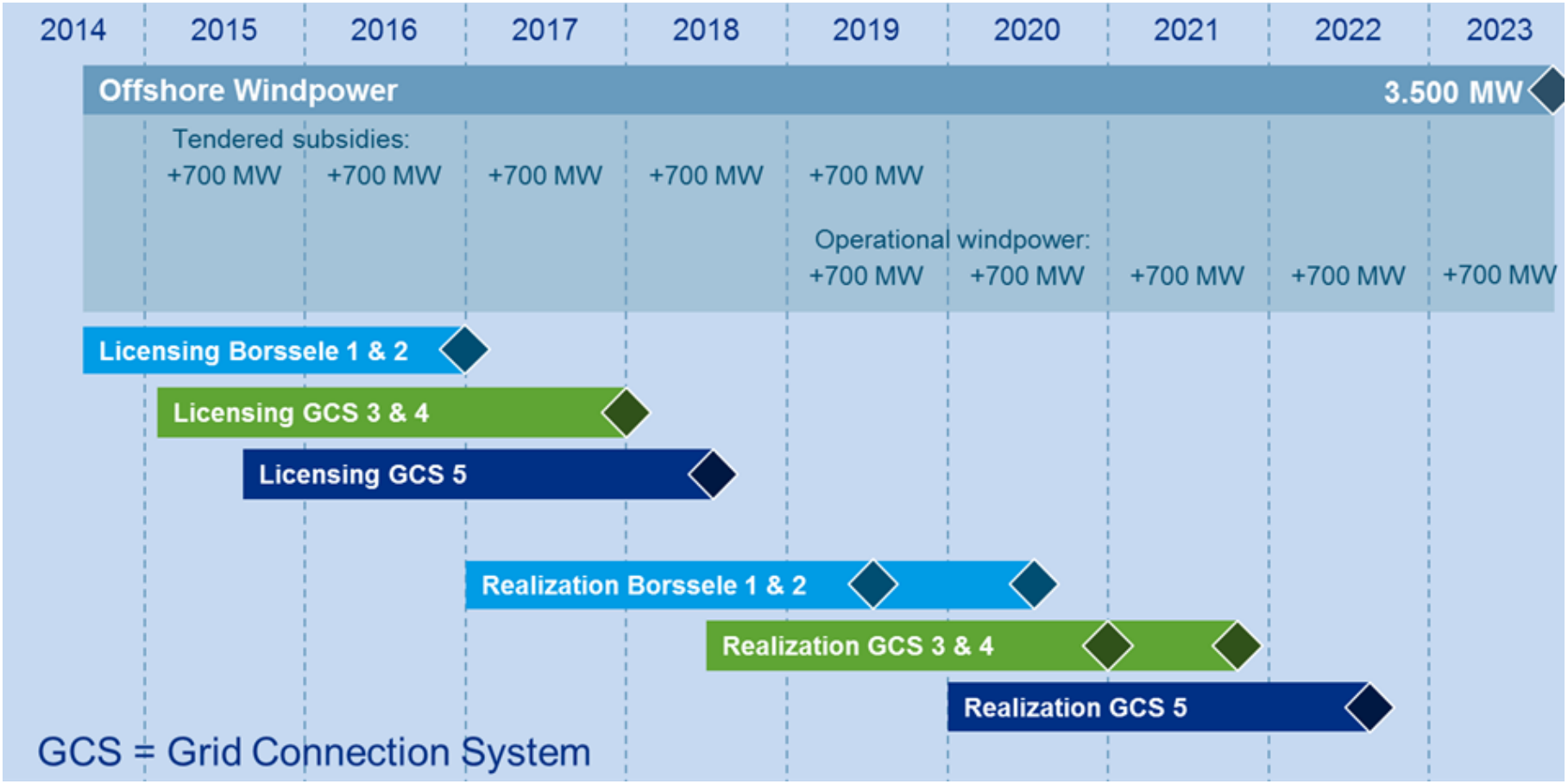
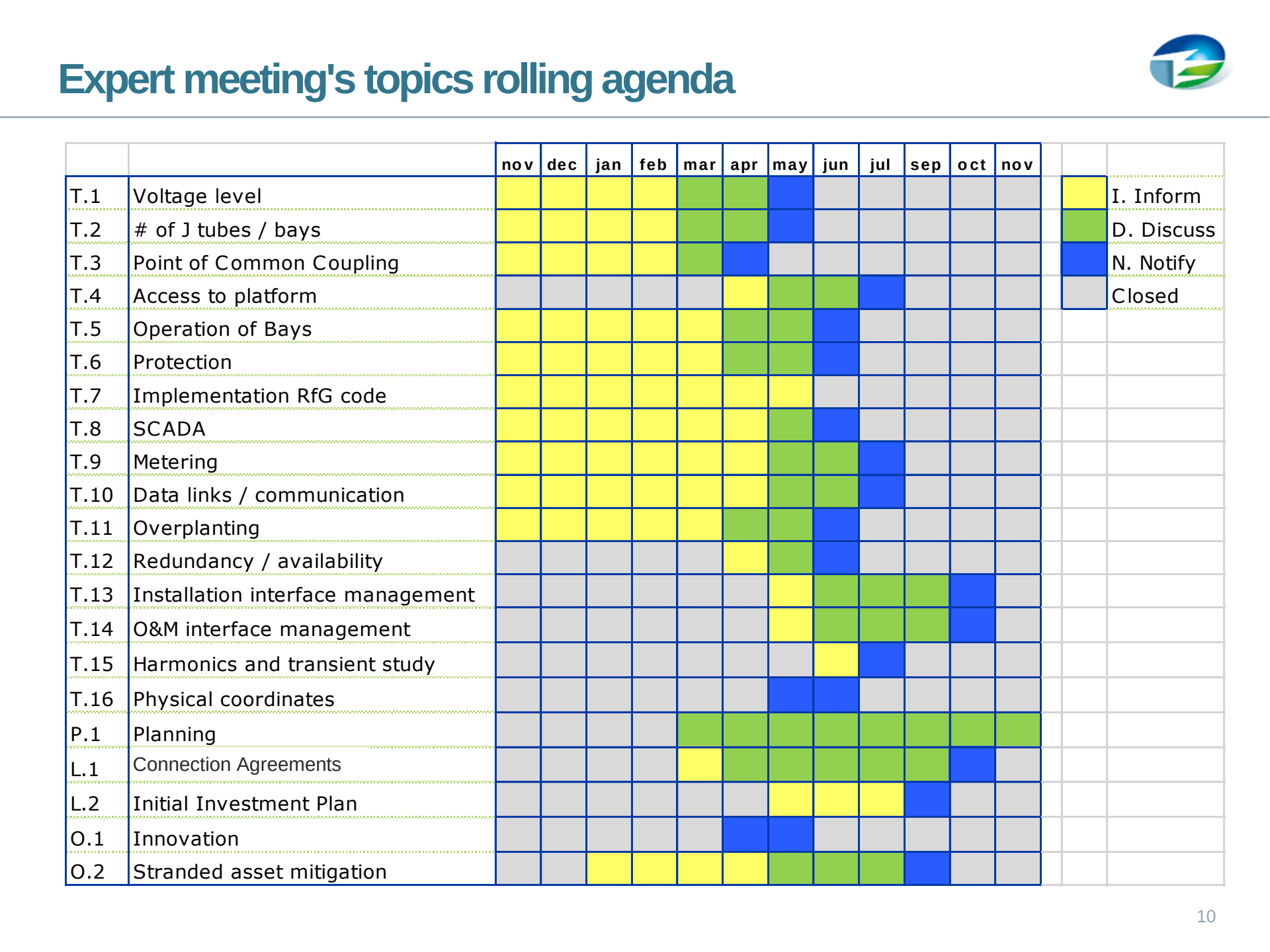
engagement website of TenneT. The feedback on the topic can be summarised as follows (see feedback report for details on the collected feedback):

- **Concern.** More than one spare J-tube is considered desirable in order to cope with
  - ➢ Mitigation/Follow-up: To address this concern TenneT has requested Ecofys:
    1. Please prepare initial wind farm layouts for all five wind areas (Borssele Al Beta, Hollandse Kusten Zuid and Noord), with a specific attention for possi constraints that give reason to believe that additional strings are required (350 MW.
    2. In addition TenneT will careful re-consider its position on minimum number require to facility sufficient flexibility to developers.
- **Concern.** Is there enough room to incorporate infield redundancy schemes that re Tubes?
  - ➢ Mitigation/Follow-up: To address this concern TenneT has requested DNV-GL:
    3. Please provide information in how many percent (in terms of operational ca currently operational wind farms, infield redundancy schemes (i.e. looping with less than the maximum number of turbines per string) have been appl

Overall planning



Expert meeting's topics rolling agenda



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Background

Legal framework: Offshore Code + Connection agreements

- Connection agreements for construction and operational phase
- Offshore Codes: technical requirements

Prior to STROOM /
Upon start of 1st subsidy tender

- Offshore Connection Agreements (models), completed draft Offshore Code requirements
- *Aim: Preliminary Offshore Code approved by ACM;*
  acceptable models for Connection Agreements

STROOM in force

- Offshore Code
- Offshore Connection Agreements

Currently applicable legal procedures are being used for development of the Offshore Legal Framework

Principles for regulation

TenneT is obliged to use conditions and charge tariffs that are *objective, transparent and non-discriminatory*

- It evolves from TenneT's *mandatory tasks* as a transmission system operator to deal with system operational challenges in an early stage of development

- TenneT is obliged to perform *(cost) efficient* grid management:
  - *Careful consideration of investments on the platform for ancillary services versus the alternative: ancillary services provided by generators*
  - *Efficient measures should be future-proof, taking into account that from time to time grid load will be fully dependent on wind*
  - *It is not feasible to extend the platform investment after the design phase*
  - *Offshore flow to land grid must be stable, peak transport capacity must be guaranteed*

- TenneT and generators recognize their *mutual interdependencies*

- Due to the discrimination prohibition, TenneT may only distinguish between connected parties on land and at sea, as long as there is a *justification* to treat such parties different

- The legal framework should be *applicable one-on-one* to the other Dutch offshore projects

Offshore Legal Framework

Technical Code amendments

- Offshore Code provisions regarding offshore grid connections

Public law based general applicable rules regarding connections to the transmission system at sea

- elaboration based on European Network Code RfG
- technical conditions for connecting to the platform (system specifics)
- technical requirements for installations of connected parties (OWFs)

Model Offshore Connection Agreements

- *Agreement for realisation of the offshore connection*

Civil law based agreement, regarding the construction of the connection, also for future constructional changes; temporal character, entered into before operational phase

- Legal general conditions regarding the realisation phase
- Access to the platform for connecting the inter-array cables
- Terms of delivery for the connection
- Mandatory compensation in case of exceeding the time of delivery
- Basic design of the connection

- *Agreement for connection and power transmission*

Civil law based agreement, establishing enduring obligations between system operator at sea and connected party

- Legal general conditions for the exploitation phase of the OWF
- Maximum available capacity and contracted transport capacity
- Applicability of connection, transport and metering tariffs
- Mandatory compensation in case of interruption of power transmission
- Control centre arrangements (*bedrijfsvoeringsafspraken*)

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Content Offshore Code (1)

Technical conditions regarding connection to the offshore transmission system

- *Netcode, Systeemcode* (and possibly *Meetcode*) should be extended with technical requirements for offshore AC platforms and connected parties offshore (offshore wind farms)
- Onshore code requirements that are applicable offshore without any deviations should explicitly be extended to sea, such as:
  - Balancing responsibility
  - Congestion management
- N-1 quality requirement not applicable offshore (STROOM)
- Standard connections points OWF-TenneT on the platform
- Location kWh meters on the platform
- Connection voltage on the platform standard (66 or 33 kV t.b.d.) + maximum amount of inter array cable connection points (t.b.d.)
- Overplanting: maximum load transmission (t.b.d.)
- Hub function platform (t.b.d.)

Content Offshore Code (2)

Technical requirements for offshore connected parties (OWFs)

Basis: current *Netcode*:

- Switchgear operation
- Location of SCADA equipment (t.b.d.)
- Insulation coordination
- Neutral point of transformer
- Planning

Basis: NC RfG / current *Systeemcode*:

- Frequency stability
- Fault ride through capability
- Voltage stability requirements
- Reactive power capability
- Robustness
- System restoration
- General system management requirements

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Connection Agreements: realisation

TenneT builds, owns and manages the offshore connection units as part of the offshore transmission system and connects the OWF within an agreed period

- Agreement on:
  - Planning of the realisation of the connection
  - Time setting for operational readiness
  - Commitment to compliance on technical requirements (a.o.: compliancy tests)
- Legal general conditions
- Annexes: technical conditions (specifics) regarding the platform
  - Basic design connection (*basisontwerp*)
  - Planning schedule
- STROOM providing for financial compensation in case of delay

Connection Agreements: enduring provisions

Agreement establishing an enduring relationship between the offshore system operator and the connected party (OWF), regarding mandatory connection and power transmission obligations

- Agreement on:
  - Maximum available capacity and contracted transport capacity
  - Applicability of connection, transport and metering tariffs
  - Metering
  - Entry into force
  - Station operation engagements (*bedrijfsvoeringsafspraken*)

- Legal general conditions

- Annexes:
  - Description and technical specifications of the connection unit
  - (Reference to) technical connection requirements regarding the offshore platform
  - Control centre contact arrangements & exchange of information

- STROOM providing for financial compensation in case of power transmission interruptions

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Procedure to approved model Offshore Connection Agreements

Draft model Offshore Connection Agreements

- Models drafted by TenneT
- Q1 2015

Negotiation

- Bilateral between TenneT and offshore windfarm representative organisations
- Q2 2015

Approved Connection Agreements

- Formal legal acceptability check by ACM
- Published on TenneT's website November 2015

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Procedure to establishment of Offshore Code requirements

Draft Offshore Code
[May 2015]

- Drafted by TenneT on behalf of cooperating grid managers
- Based upon European Network Code *Requirements for Generators* ('RfG') as far as regards Offshore Power Park Modules
- Technical input & implementation generated from TenneT's Expert Meetings = technical track
- Legal input (to be organized) = legal track

Proposed Offshore Code
[June 2015]

- Cooperating grid managers (Netbeheer Nederland) submits the proposal to Gebruikersplatform Elektriciteits- en GasNetten (GEN)
- GEN discusses the proposal

(Preliminary) Approved Offshore Code
[November 2015]

- After discussion within GEN, Netbeheer Nederland submits the proposed Offshore Code to regulator ACM
- ACM might preliminary approve of the proposed requirements
- Formal establishment of the Offshore Code simultaneously with entry into force STROOM

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What we invite you to do

- React on TenneT's Position Papers
- Provide input on proposed applicability of offshore technical (connection) requirements
- Opinions regarding (proposed) legislative implementations:
  - European Network Code RfG
  - Technical code amendments
  - STROOM

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Thank you

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