

STAKE HOLDER CONSULTATION PROCESS OFFSHORE GRID NL	
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QUALITY CONTROL		
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## 1. Consultation feedback

The topic of the number of J tubes on the offshore TenneT platform has been discussed with stakeholders on numerous occasions. It was a topic of discussion during the first two expert meetings (27.11.2014 and 29.01.2015) and several Bi-lateral meetings with potential bidders for the offshore wind subsidy. Substantiated with the TenneT position paper on the topic, it has been discussed again during the Expert Meeting of 18.03.2015. In addition, market feedback on the topic has been collected through the stakeholder engagement website of TenneT. The feedback on the topic can be summarised as follows (see the public feedback report for details on the collected feedback):

- **Concern.** More than one spare J-tube is considered desirable in order to cope with repair actions.
  - Mitigation/Follow-up: To address this concern TenneT has requested Ecofys:
    1. Please prepare initial wind farm layouts for all five wind areas (Borssele Alpha, Borssele Beta, Hollandse Kust Zuid-Holland and Noord-Holland), with a specific attention for possible site layout constraints that give reason to believe that additional strings are required (more than 7 per 350 MW).
    2. In addition TenneT will carefully re-consider its position on minimum number of spare J tubes required to facilitate sufficient flexibility to developers.
- **Concern.** Is there enough room to incorporate infield redundancy schemes that require more J-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 capacity) of the currently operational wind farms, infield redundancy schemes (i.e. looping of in-field cables, with less than the maximum number of turbines per string) have been applied in practice of the industry today.
- **Concern.** 630 amp is considered an upper level of what is feasible. This results also in an upper level with respect to the maximum transport capacity of the cables and hence the number of J tubes is calculated as the bare minimum.
  - Mitigation/Follow-up: TenneT considers this concern to be addressed sufficiently by follow-up actions 1-3 above, as they will evaluate both whether specific site constraints will require additional strings and common industry practice with respect redundancy/spares.
- **Mixed opinion.** While some developers are requesting additional spare J Tubes, others confirm that they design the wind farm layout to achieve an absolute minimum in the number of strings (and J tubes consequently).
  - Mitigation/Follow-up: N/A.

## 2. Feedback follow-up and next steps

Based on the internal evaluation, external reports and collected feedback during the stakeholder engagement process the following next steps have been defined:

- The topic T.2 J tubes is put on the agenda for the next Expert Meeting (15-16.04.2015) for a final consultation discussion.
- TenneT has undertaken all mitigation/follow-up actions as defined above.
- An updated TenneT position paper based, including all follow-up actions will presented to the next Expert Meeting.