

NSWPH in the context of the North Seas Offshore Energy Clusters study

NSWPH Consultation Session

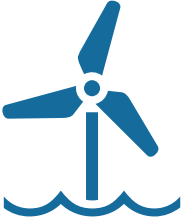
**European
Commission**



Together with commercial and public stakeholders, we aim to trigger early-stage hybrid offshore development in the North Seas region

Context and objectives

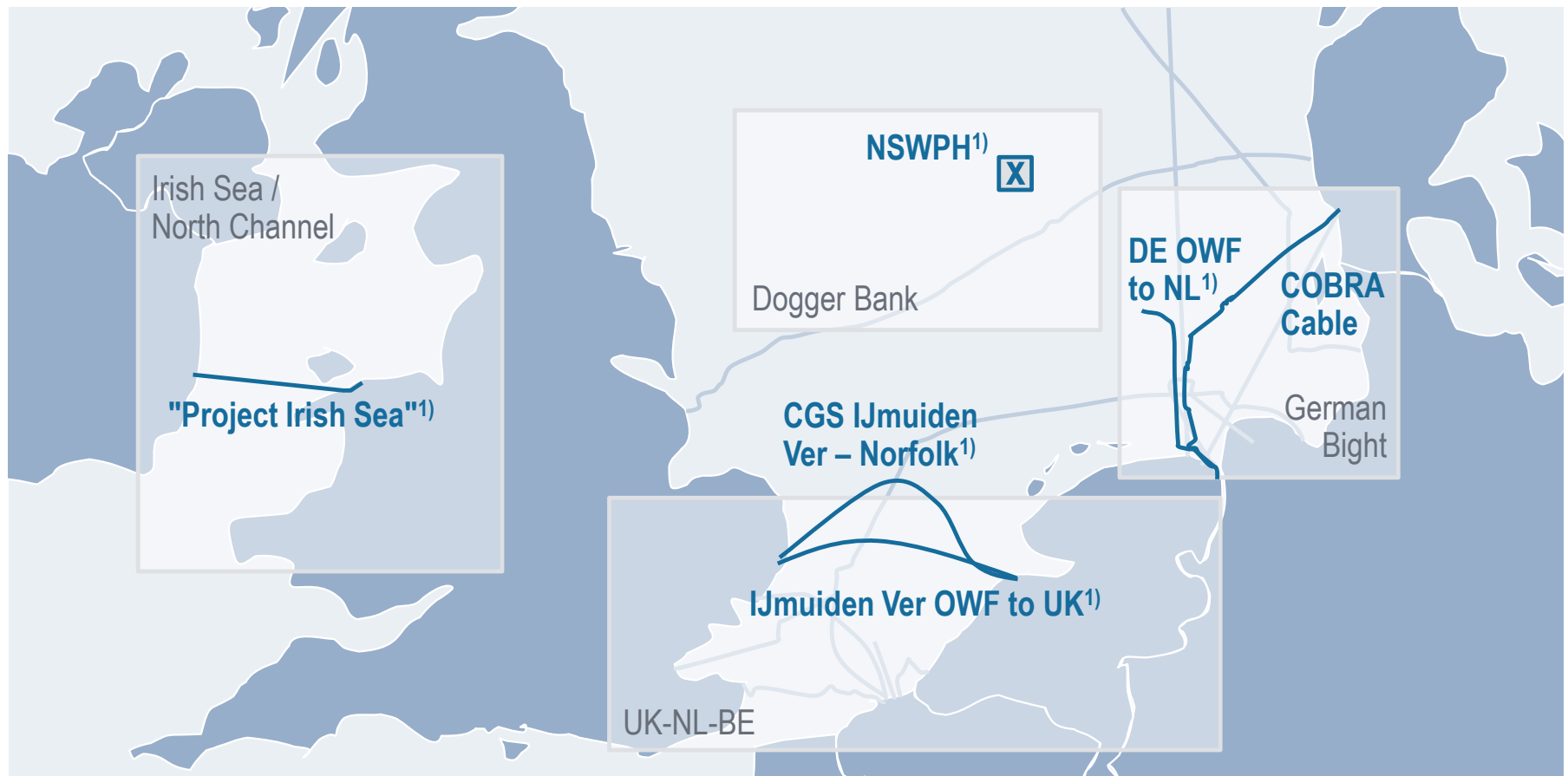
Objectives



- The hybrid project concept is currently gaining momentum – Stakeholders show genuine interest and start own project initiatives
- The objective of North Seas Offshore Energy Clusters study is twofold:
 1. Demonstrate the benefits of the hybrid approach, by comparing costs / benefits of hybrid projects to conventional reference cases
 2. Develop measures to overcome barriers to hybrid project development and agree concrete actions with stakeholders
- The study analyses hybrid project ideas with 'real' assets in early stage planning – Focus on projects with a realistic chance of implementation
- Hybrid projects can pave the way towards a more coordinated and more efficient offshore development – Prerequisite for exploiting the offshore wind potential in the North Seas region

In a two-step approach we selected six hybrid project ideas across all clusters to focus on

Selected hybrid project ideas



1) Location / routing indicative

Five key learnings from the selection process show that hybrid projects are an important part of the future energy system

Key learnings

1

Assessments reveal **no general principle**

2

Hybrid projects show **significant lifetime benefits**

3

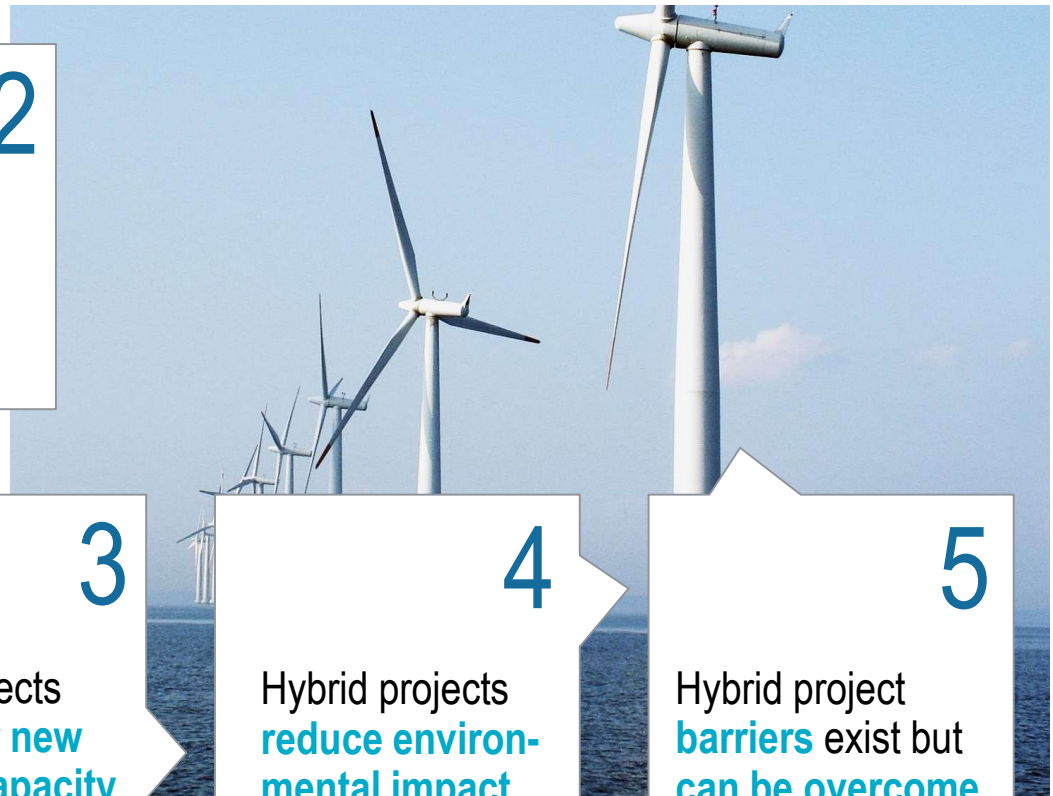
Hybrid projects may trigger **new IC / RES capacity**

4

Hybrid projects **reduce environmental impact**

5

Hybrid project **barriers** exist but **can be overcome**

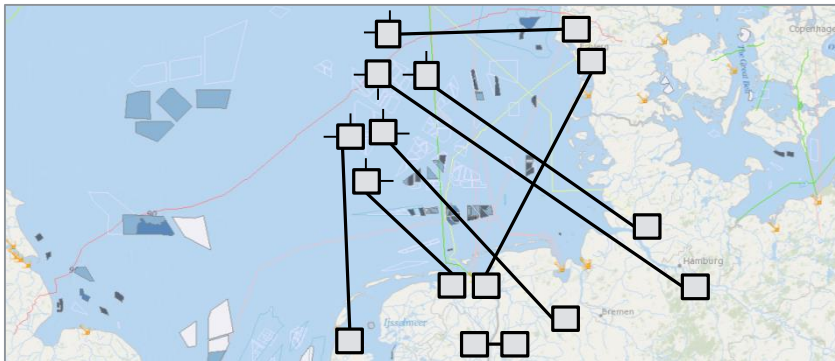


NSWPH hybrid project is an offshore hub concept with an artificial Dogger Bank island linking multiple OWFs in vicinity to shore

Reference and hybrid case profile

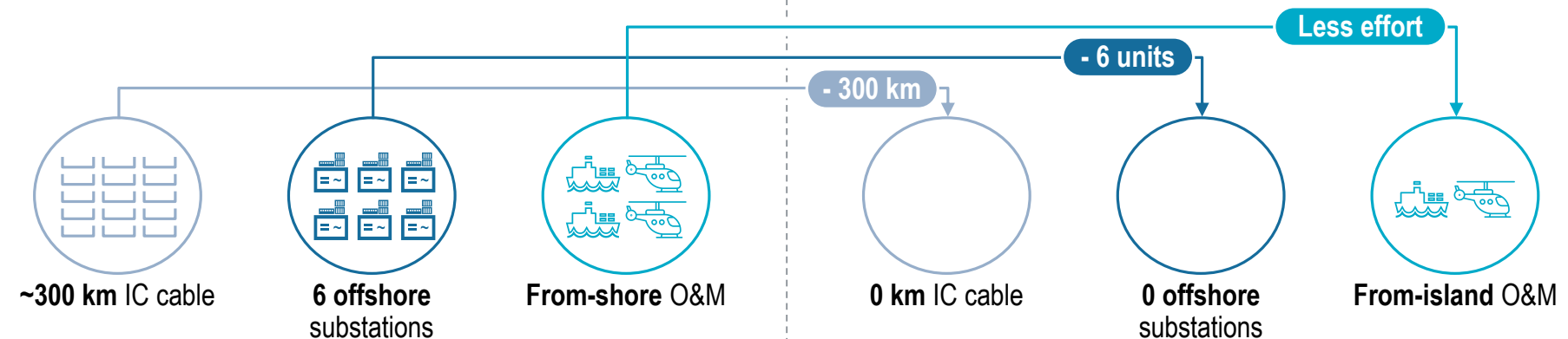
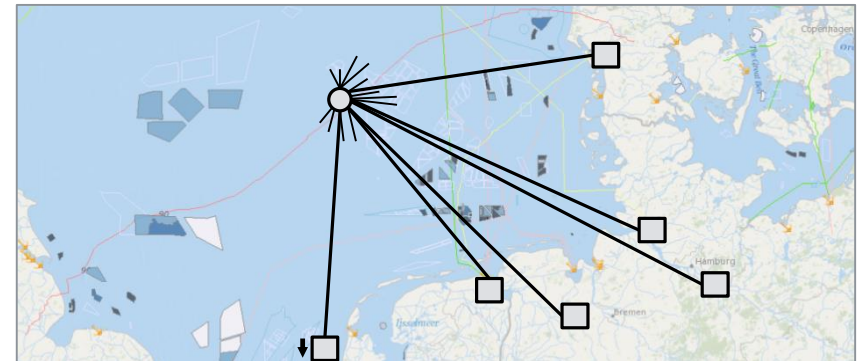
Reference case

Indicative



Hybrid case

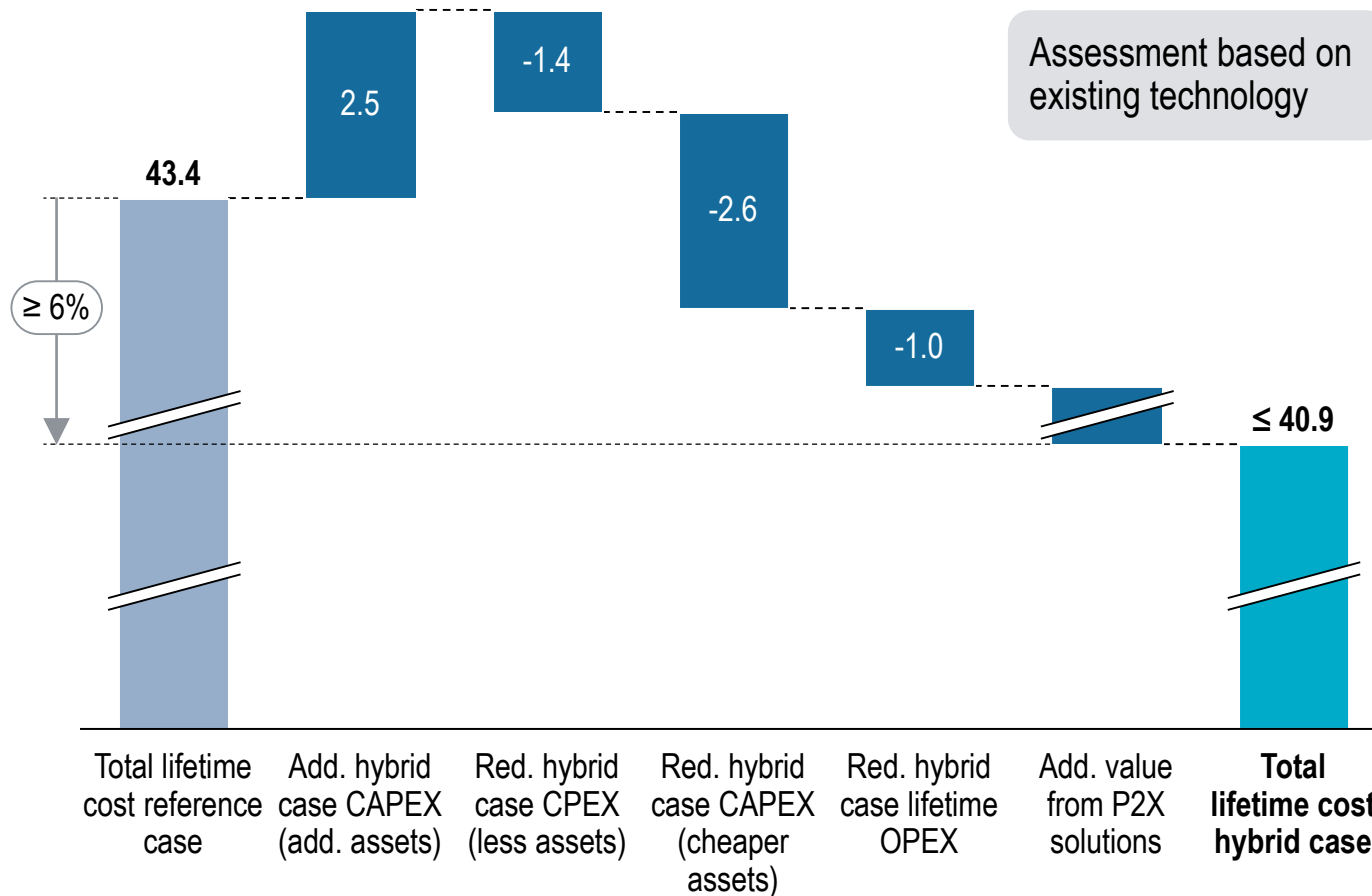
Indicative



□ Converter station — Transmission cable

Initial cost assessment during selection process yielded significant lifetime cost reduction for NSWPH when compared to ref. case

Deep-dive learning 2: Significant lifetime benefits [EUR bn]¹⁾



2

Hybrid projects show **significant lifetime benefits**

- > Add. assets include artificial island and on-island HVAC equipm.
- > Red. assets include elimination of add. IC assets and cheaper on-island equipment
- > Red. OPEX from usage of island as maintenance hub

1) Results are subject to barriers; currently no deal-breakers (8% discount factor) assumed

Throughout the remainder of the study, we will further try to foster progress towards the realisation of the NSWPH project idea

Deep-dive learning 5: Barriers can be overcome



Roland Berger Study

- > Identify project-specific barriers (up to 16 barriers to be overcome for comm. project development)
- > Conceptualise mitigations
- > Define Action Plans to develop and implement mitigations

Action Plan implementation

- > Conceptualise missing mitigations
- > Implement conceptualised mitigations through
 - Short-term project-specific intergovernmental agreements (IGA)
 - Long-term harmonisation of EU / national rules and regulation
- > Pre-develop project by commercial stakeholders

Hybrid project implementation

- > Initiate commercial hybrid project development based on certainties provided through implemented barrier mitigations

5

Hybrid project **barriers** exist but **can be overcome**

- > No general "showstoppers"
- > Barriers concern
 - Legal clarifications
 - Planning procedure
 - Energy market rules
 - Business case and financing
 - Political support

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THINK:ACT

