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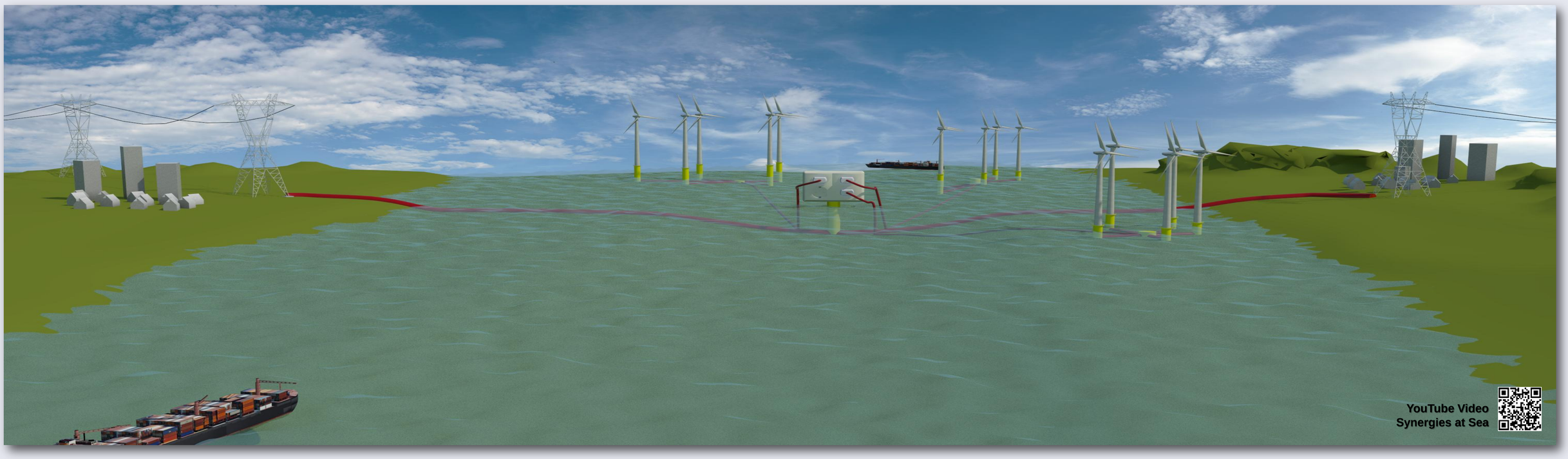
SYNERGY OF “INTERCONNECTION” AND OFFSHORE WIND FARMS

SYNERGIES AT SEA



MOTIVATION

Interconnecting offshore wind farms (OWF) in the UK and Dutch part of the North Sea leads to the following synergy advantages:

- There is a redundant connection from the OWF to shore.
- Cross-border trade of electricity generated onshore via the same infrastructure
- Electricity can be sold to the country with the highest price of electricity.

A positive business case is expected, looking at:

- Increased revenues from the electricity produced by the OWF.
- Profitable existing interconnectors (IC)
- Lower probability of production loss due to cable failure

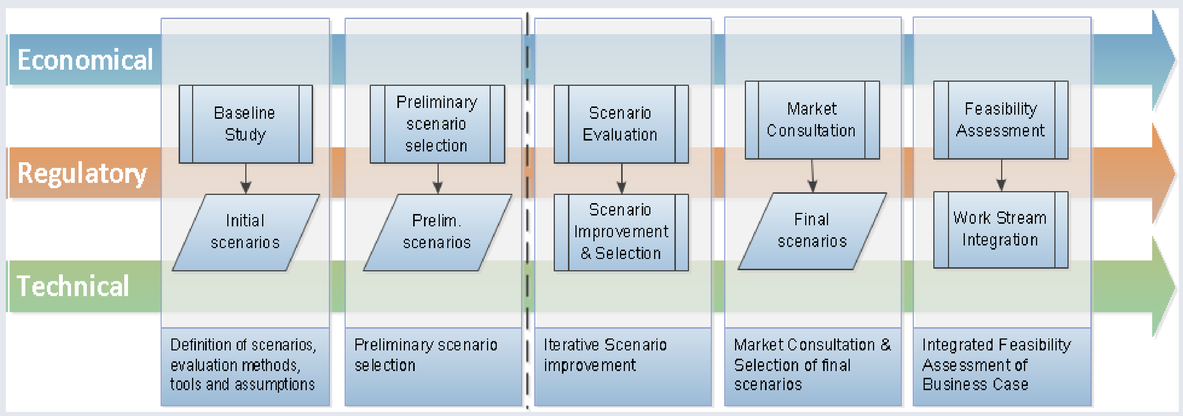
PROJECT OBJECTIVES

- Deliver a statement on feasibility and the conceptual design of this specific case, contributing to a lower Cost of Energy for offshore wind energy.
- Proof of Concept of design innovations, including technical and regulatory aspects, which are relevant to this particular case and other offshore grids including OWF’s.

RESEARCH QUESTIONS

- Which feasible solutions exist for an IC/OWF combination between UK and NL?
- What is the potential effect on the cost price of offshore wind energy?
- Under which circumstances will public/ private actors decide to invest in an IC/OWF combination?
- Is the IC/OWF combination technically, economically, and regulatory feasible from the perspective of both actors?

METHODS



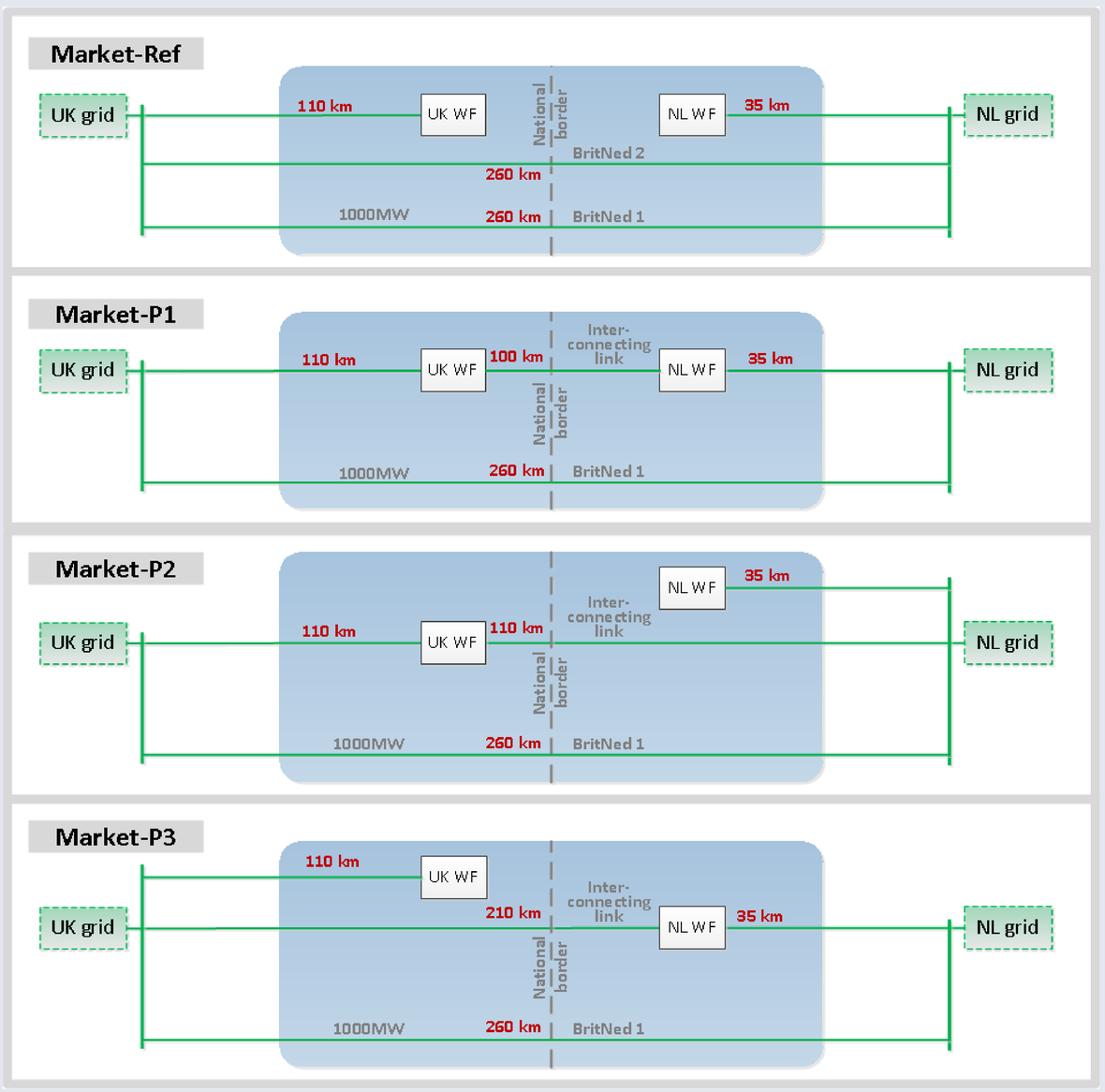
Economical Socio-economic benefit assessments using EU-market model COMPETES. Business case models, e.g. public/private investors’ viewpoints.

Regulatory implications of national, EU & Internat. legal framework, e.g. regulated vs. exempted “Interconnector”; legal status of “Interconnecting Link” between OWF’s.

Technical cost-benefits assessment; incl. losses, reliability of HVAC/HVDC solutions.

Cyclic integration of the themes above.

SCENARIOS



For each Market scenario different technical and regulatory solutions are defined.
Preliminary scenario selection has been made using baseline study results.

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