Offshore windfarm connection meets interconnection

Solving legal challenges to an offshore grid

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Presentation overview

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- Conclusion

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OFFSHORE TRANSMISSION
NETWORKS

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PROgress on Meshed HVDC Offshore Transmission Networks

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691714.

Political Context

Political Declaration on energy cooperation between the North Seas Countries

- Aim: Create good conditions for offshore wind energy to ensure sustainable, secure and affordable energy supply in the North Seas Countries
- Facilitate the building of energy links and allow more trading of energy and further integration of energy markets
- Reinforcing regional cooperation will help reduce greenhouse gas emissions and enhance security of supply in the region
- Declaration's action plan focuses on four main areas:
  - Maritime spatial planning
  - Development and regulation of offshore grids and other offshore infrastructure
  - Support framework and finance for offshore wind projects
  - Standards, technical rules and regulations in the offshore wind sector
- Signed by energy ministers from BE, DK, FR, DE, IE, LU, NL, NO, SE,

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Objectives

- Identify **technical requirements** and investigate possible **topologies** for **meshed** HVAC/DC **offshore grids**
- Develop **protection components** and **schemes for offshore grids**
- Establish components **interoperability and initiate standardisation**
- Develop recommendations for a coherent EU and **national regulatory framework** for DC offshore grids
- Develop **recommendations for financing mechanism** of offshore grid infrastructure deployment
- **Demonstrate cost-effective** Offshore HVDC equipment
- Develop a **deployment plan** for HVDC grid implementation

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APPENDIX

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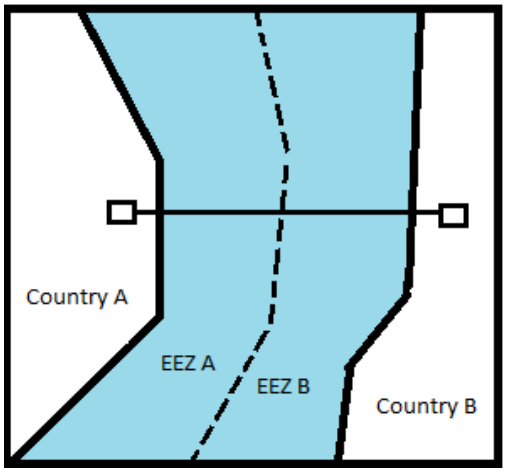
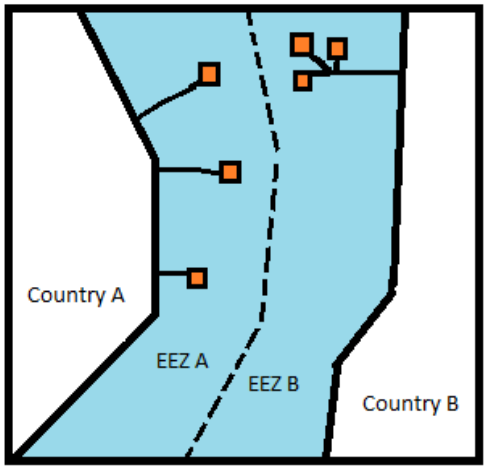
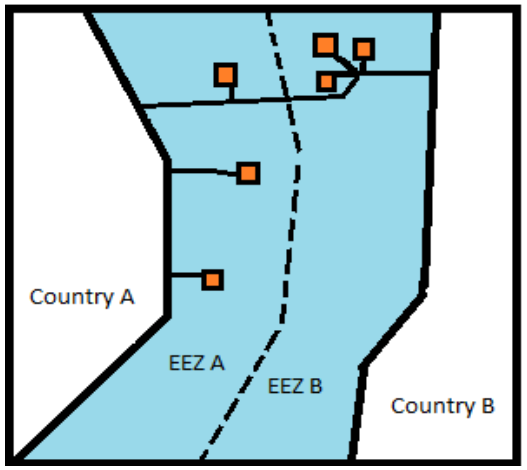
OWF Connection vs interconnection

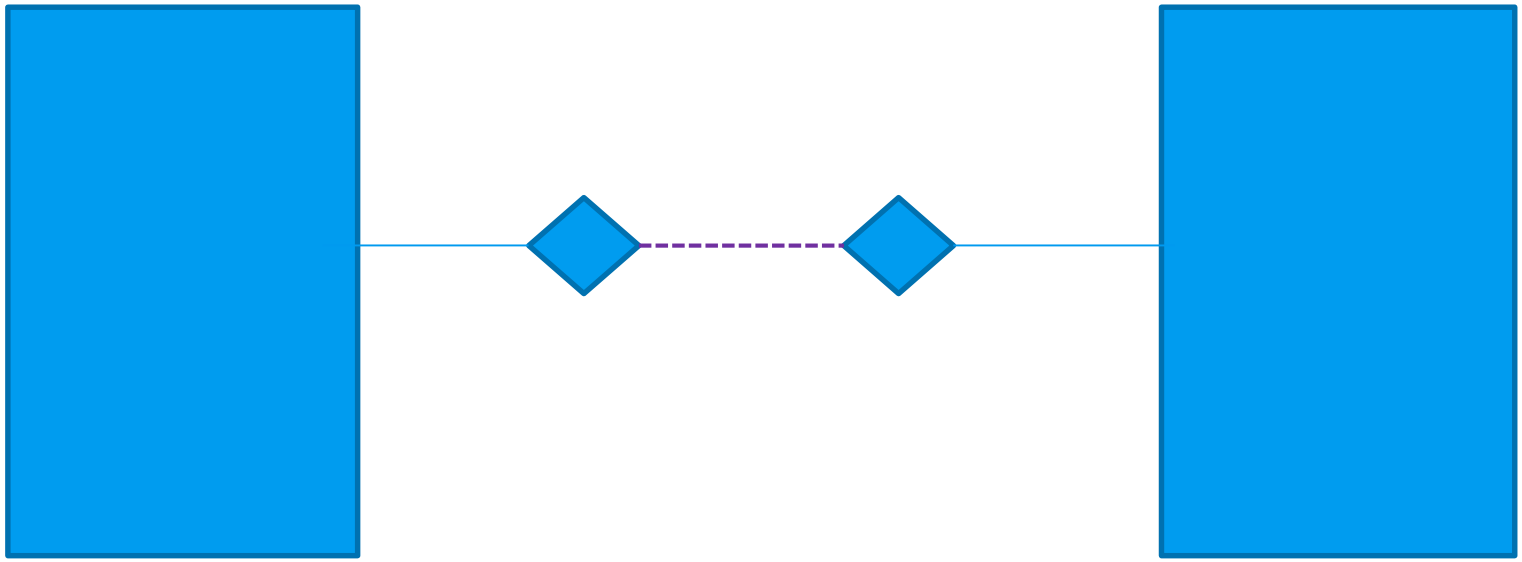






Regulatory aspects

› What is the status of the cables?



› Export cable, interconnector, something else?

International law

- Different functions offshore wind connection vs interconnector
- Offshore wind production = exploiting (wind) resources at sea = part of the exclusive economic zone
- Interconnection = cable without any relation to the resources of the sea it is in = freedom to lay cables for every state
- Influences amount of jurisdiction states have

European law

- Is EU law applicable? Depends on jurisdiction
- What EU law is applicable? Depends on classification
- Offshore grid in the North Sea: what to do with Norway and the UK?

Country-specific legal systems

- Different legal systems:
  - Civil law / common law
- National differences:
  - BE/DK/FR/GE/NL/NO/SE/UK
- Incompatibilities between legal systems
  - Specific topics
  - Case studies

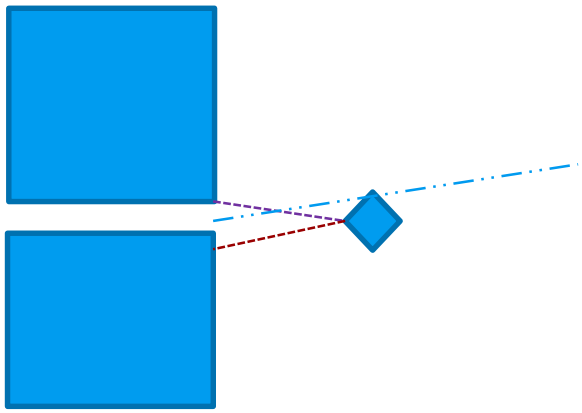
Legal barriers: Int'l and EU Law

- International Law – issues of jurisdiction concerning hybrid cables and offshore grid
- International/EU Law: how to deal with non-EU Member States in an offshore grid
- EU Law: how to classify hybrid cables under E-directive and regulation?
- EU Law: implementation varies considerably: national differences also lead to legal barriers

Legal barriers: national law

- Licensing and permitting (esp. in cross-border situations): how to streamline?
- Support schemes for OWFs connected to another country's grid
- Legal classification of hybrid assets under national law
- Decommissioning: how to deal with decommissioning obligations and varying lifetimes of OWFs and grid components?
- Offshore Grid Operation: which Network Code applies?

Cross-border connections



How to solve these barriers?

- Analysis: which legal barrier should be dealt with on which level?
- Per legal barrier:
  - Find out: what exactly causes the problem?
  - What are different approaches to overcome/mitigate the legal barrier?
  - Check these approaches on
    1. feasibility
    2. effectiveness and efficiency in facilitating an offshore HVDC grid,
    3. coherence in legal framework

    Check this in cooperation with stakeholders
  - Make recommendations on which approach will work best
- Forge this all together in one legal target framework

Conclusion

- There are legal barriers to hybrid solutions (and an offshore grid) under international, European and national law
- These should be solved to facilitate technological development
- Barriers can be solved by first analysing what causes the barrier, finding different solutions and checking which solution is best from different perspectives
- This should lead to recommendations to policymakers

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