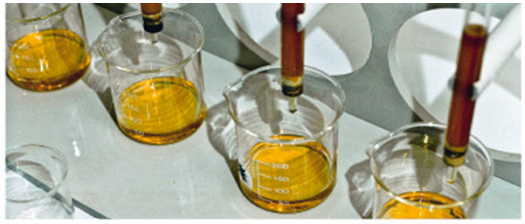
Workshop on Renewable Energy
Wind and Hydro-Energy

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

“Spatial Offshore Grid Plan”

Geneva, 3 June 2014

Anna Hunke, LL.M., Federal Maritime and Hydrographic Agency



Content of Presentation

BUNDESAMT FÜR SEESCHIFFFAHRT UND HYDROGRAPHIE

I. Uses and Maritime Spatial Plan in the North and Baltic Sea

II. Current status of offshore wind energy in the North and Baltic Sea

III. Spatial Offshore Grid Plan for the North and Baltic Sea

1. Background and aim
2. Draft procedures and crossborder participation
3. Main stipulations
4. Aspects of the Strategic Environmental Assessment

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North Sea: Uses and Activities

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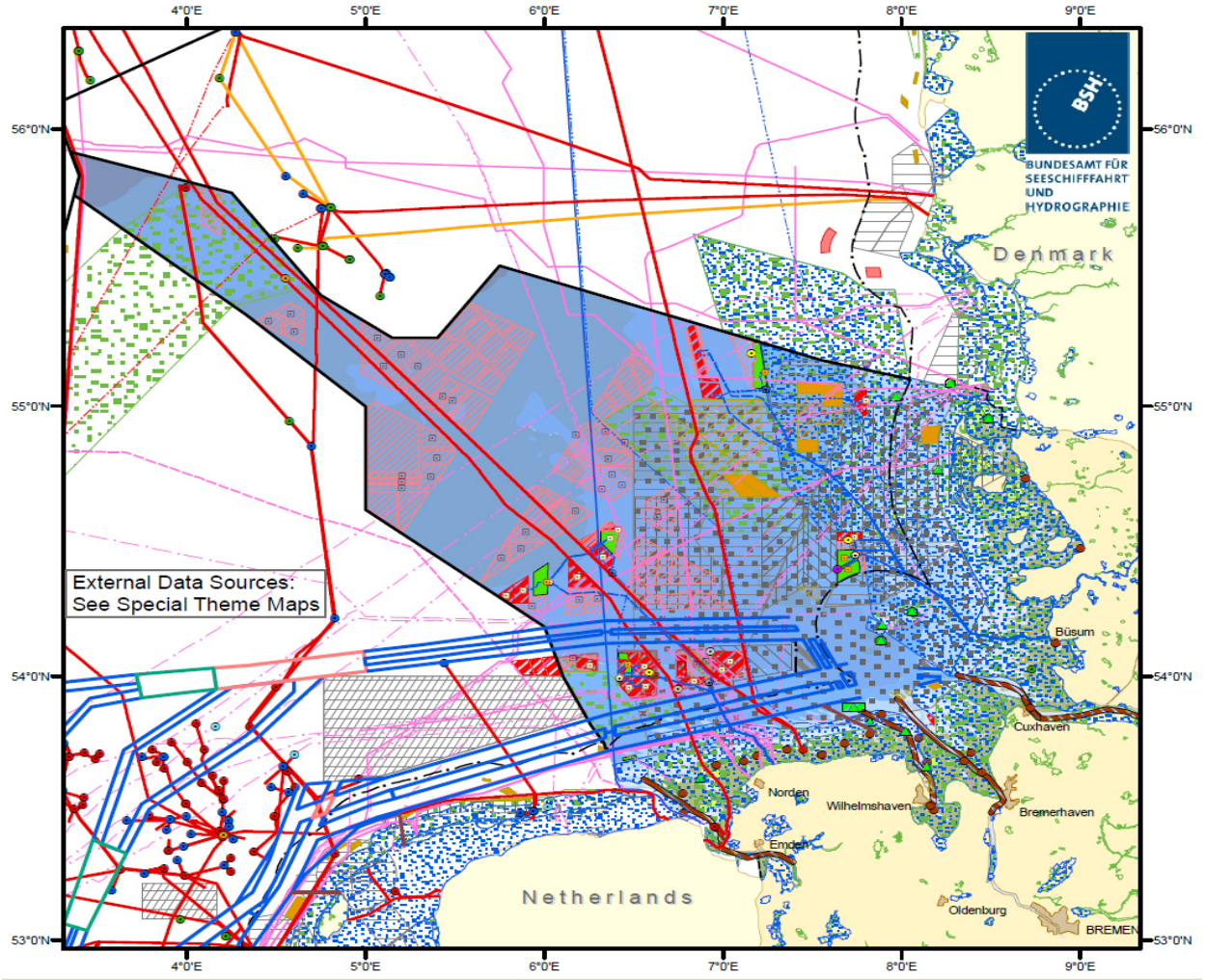

"Traditional"

- Shipping
- Fisheries
- Oil and gas industry
- Sand and gravel extraction
- Pipelines
- Electricity & telecommunication cables
- Military training
- Scientific research
- Nature conservation sites

"New"

- Offshore Wind farms

Baltic Sea: Uses and Activities

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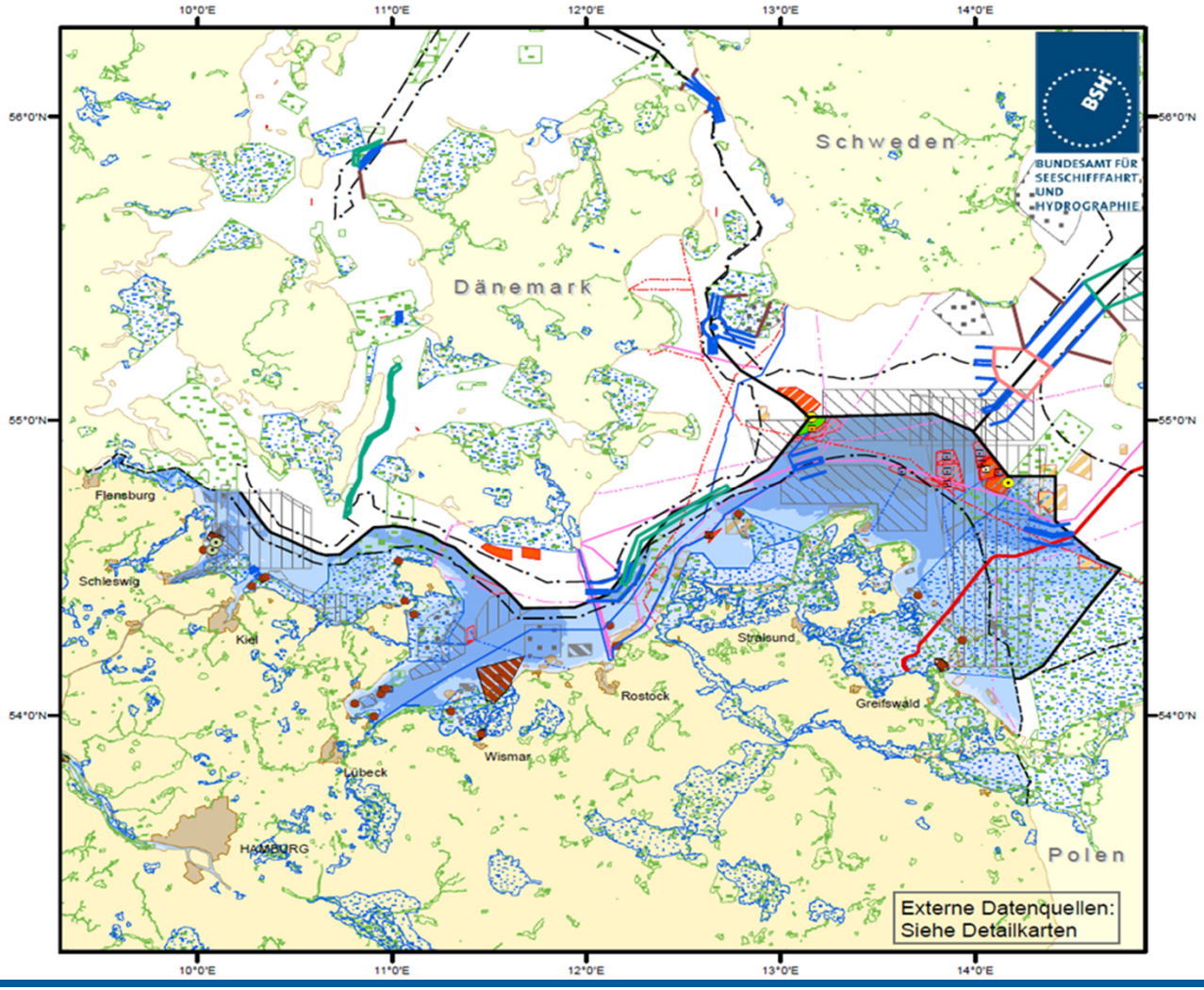

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North Sea – EEZ: Maritime Spatial Plan

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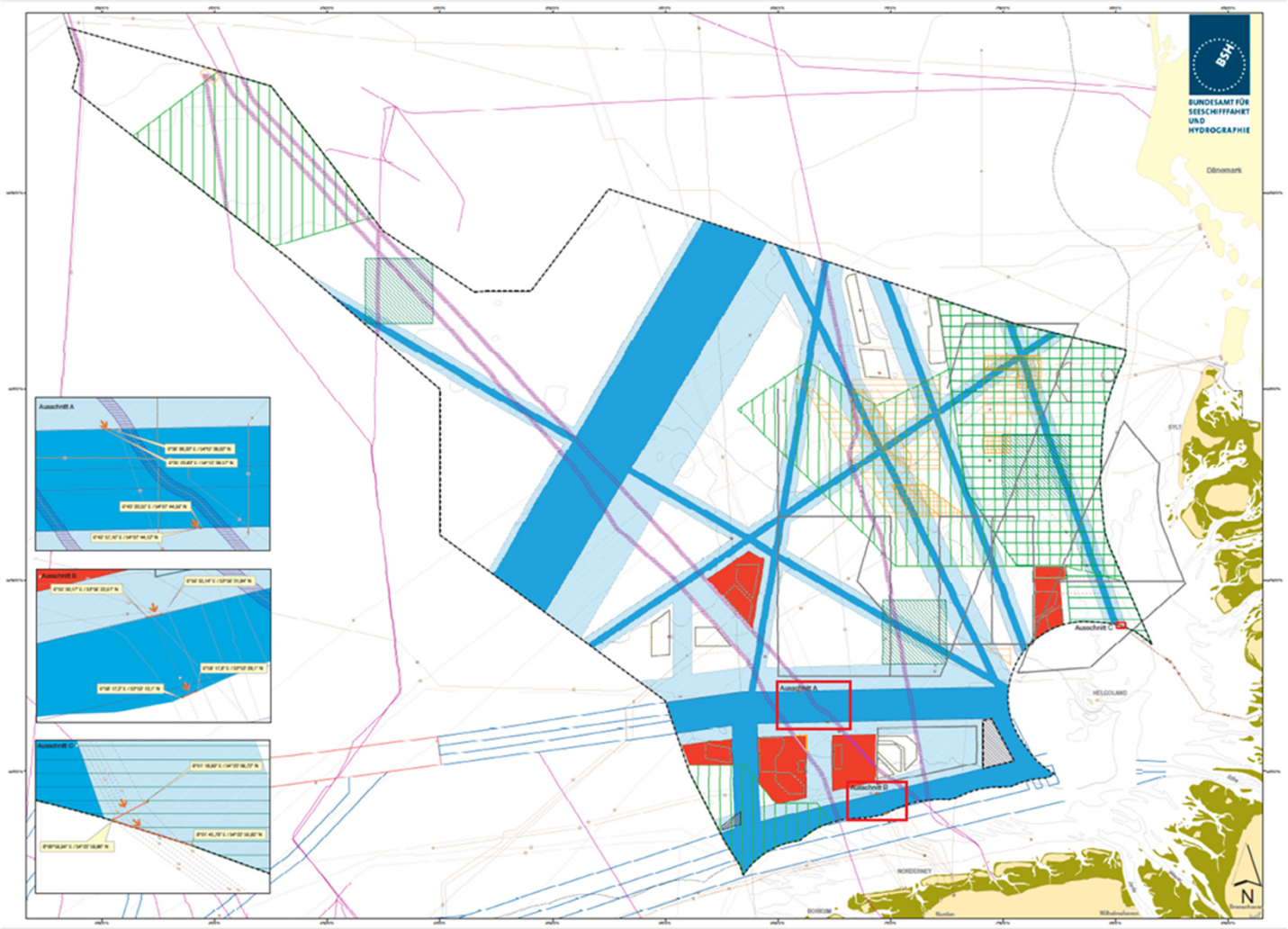

First instrument of spatial management of different uses in 2009:

- Priority areas for shipping, pipelines and offshore wind energy
- Targets and planning principles
- First guidelines for cable routing

Baltic Sea – EEZ: Maritime Spatial Plan

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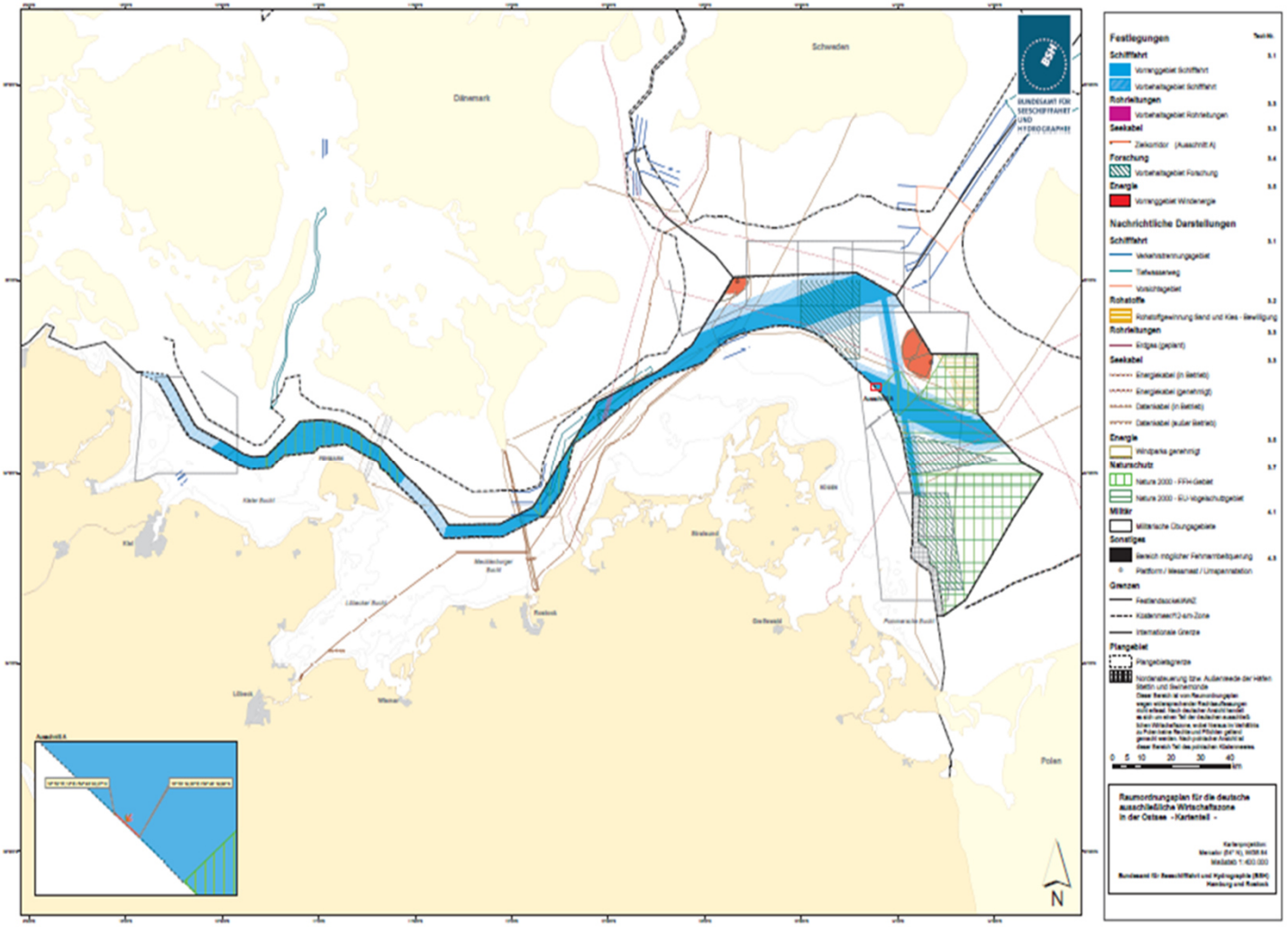

First instrument of spatial management of different uses in 2009:

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North Sea – EEZ:
State of offshore wind energy

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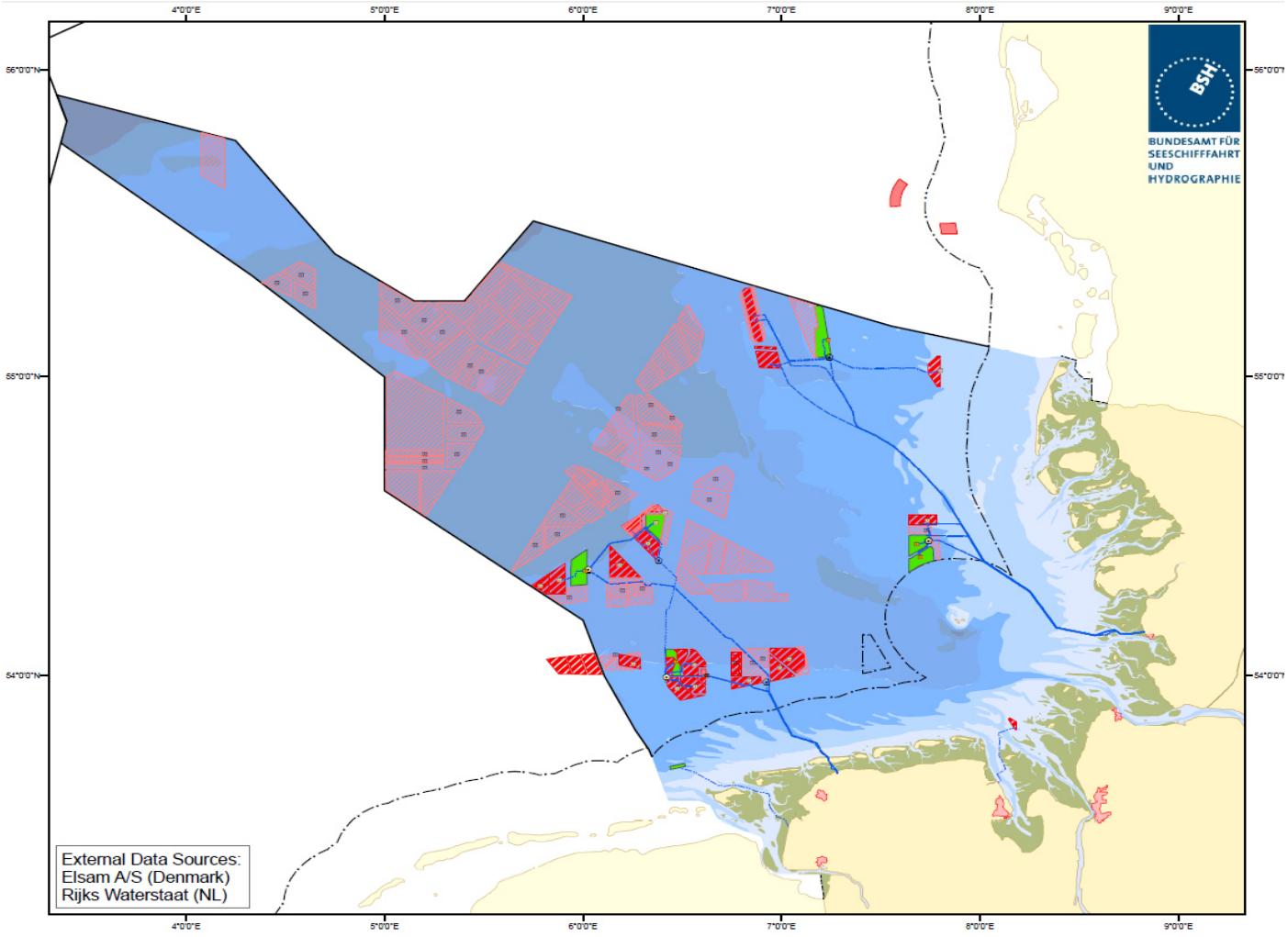
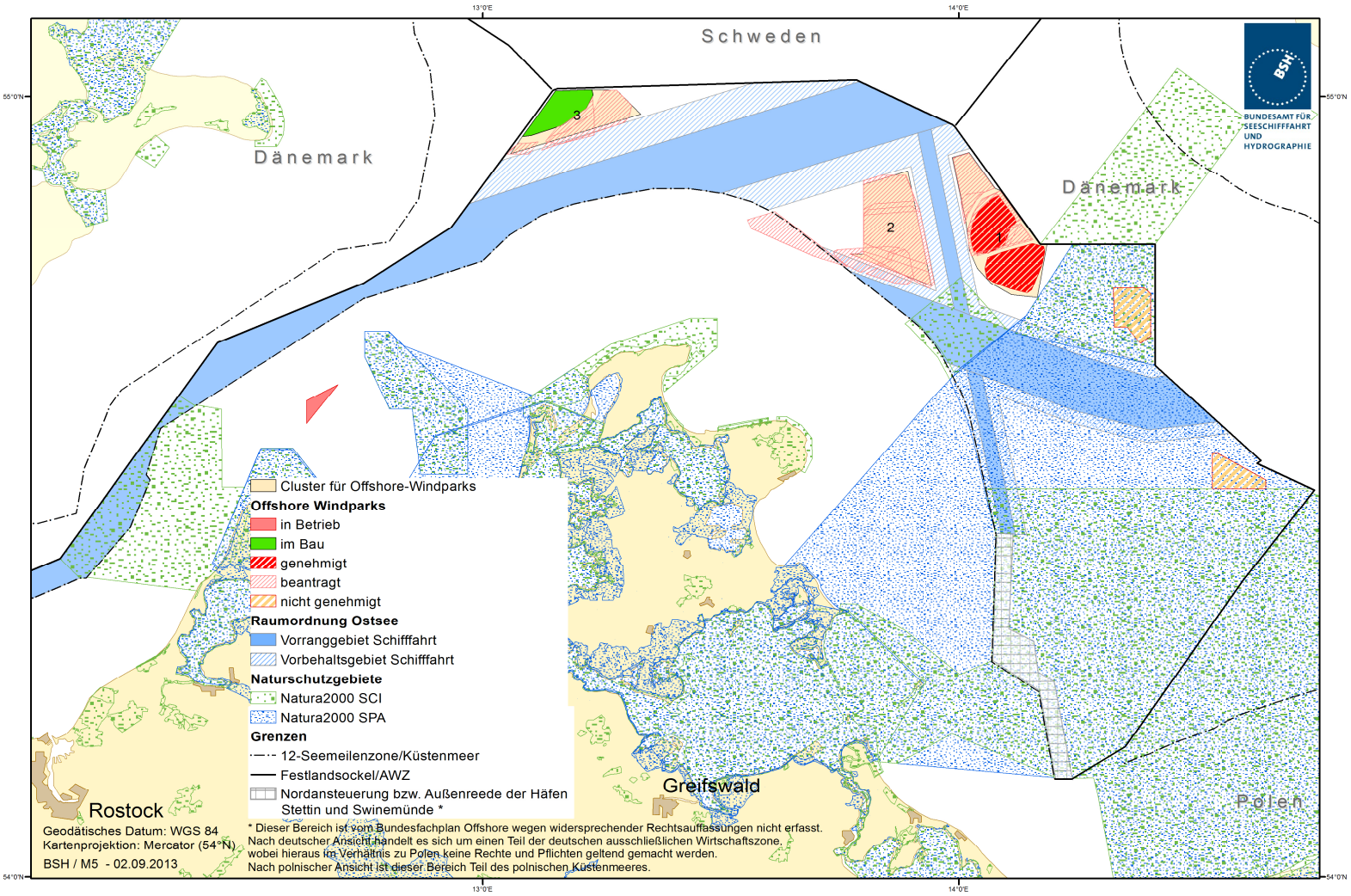


Offshore wind farms

- 8 projects being built
- 30 approved projects
- several projects applied for

→ **No integrated planning approach for grid infrastructure in the past**

Baltic Sea – EEZ:
State of offshore wind energy



Offshore wind farms

- 1 project being built
- 2 approved projects
- several projects applied for

→ No integrated planning approach for grid infrastructure in the past

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Spatial Offshore Grid Plan

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Development and yearly update

→ Ensuring coordinated and consistent spatial planning of

- Offshore wind farms in spatial context and suitable for collective grid connections (“clusters”)
- Corridors for grid connections of offshore wind farms
- Gates for cables crossing the border between EEZ and the territorial sea
- Sites for converter platforms or transformer substations
- Corridors for interconnectors
- Corridors for possible cross-connections
- Standardized technical rules and planning principles

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Draft Procedures and Crossborder Participation

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- **Informal planning phase**
- **First draft Spatial Offshore Grid Plan and structure of Strategic Environmental Assessment** (SEA)
- **Scoping**
- **Development Spatial Offshore Grid Plan and SEA**
- **National and international consultation (following SEA-Protocol)**
- **Public hearing**
- **Public announcement and publishing of final Spatial Offshore Grid Plan**
- **Yearly update**

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North Sea: Offshore Grid Plan – Technical Concept

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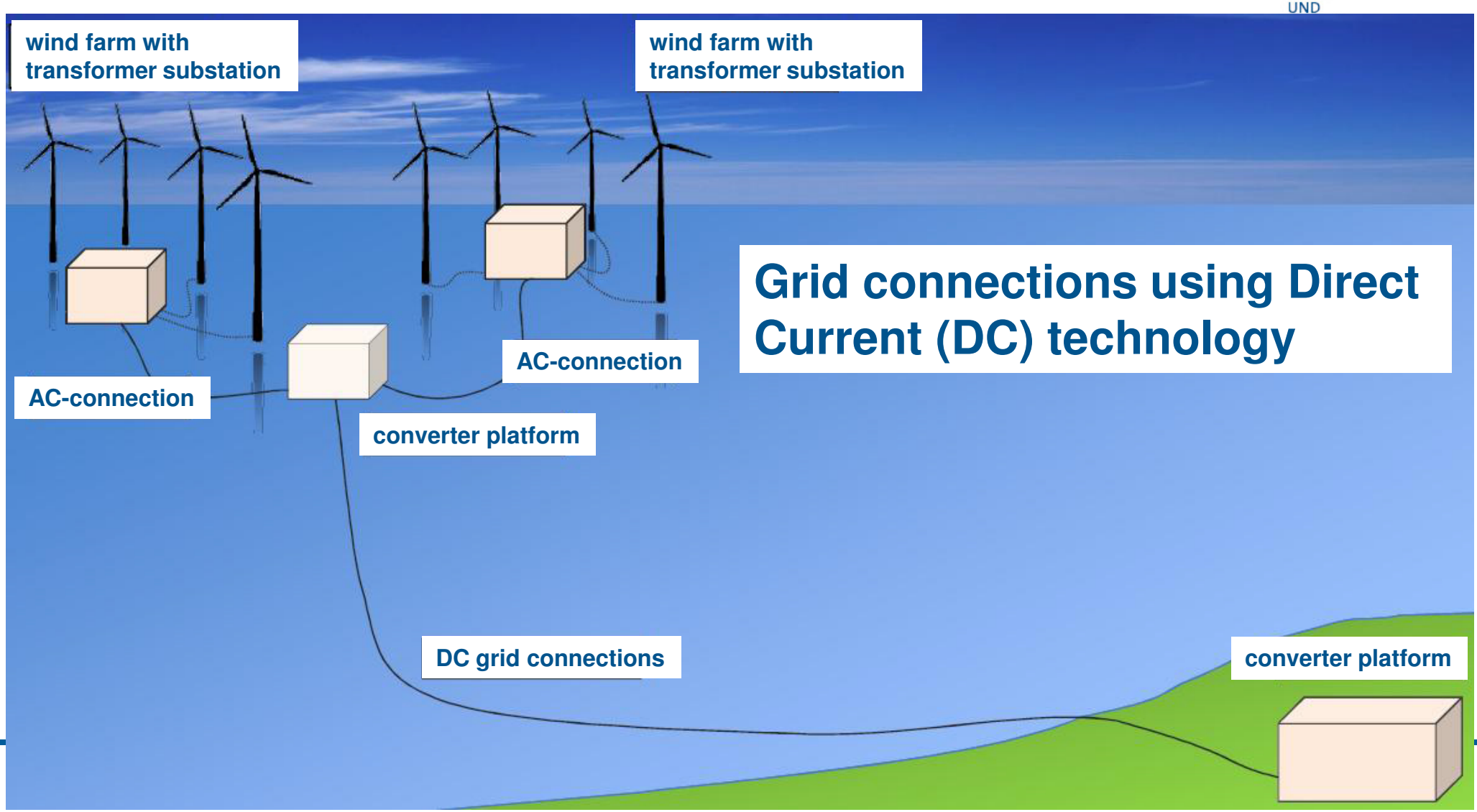

Grid connections using Direct Current (DC) technology

Baltic Sea: Offshore Grid Plan – Technical Concept

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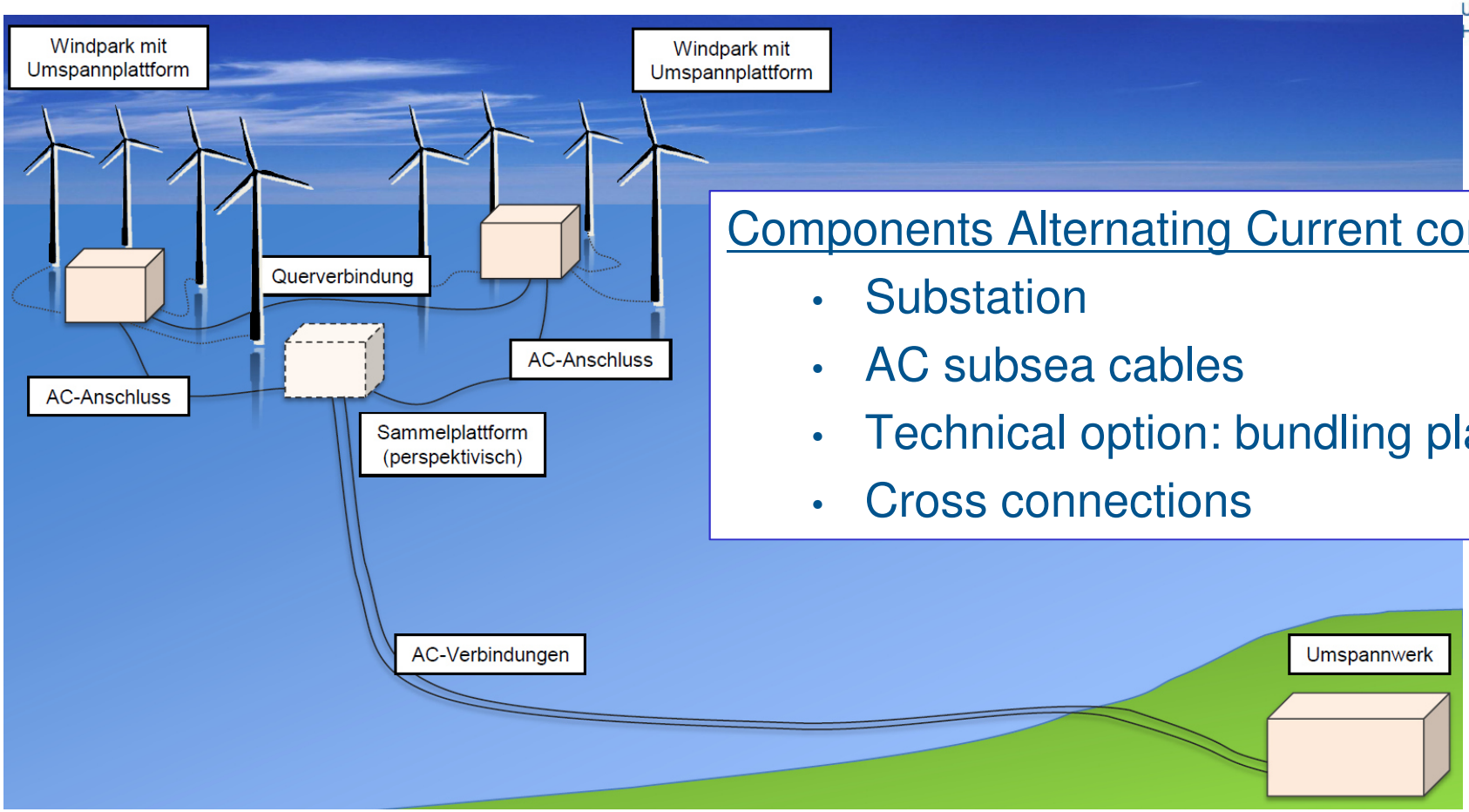

Components Alternating Current concept

- Substation
- AC subsea cables
- Technical option: bundling platform
- Cross connections

Quelle: TSO – Offshore Network Developmentplan

North Sea – EEZ: Spatial Offshore Grid Plan

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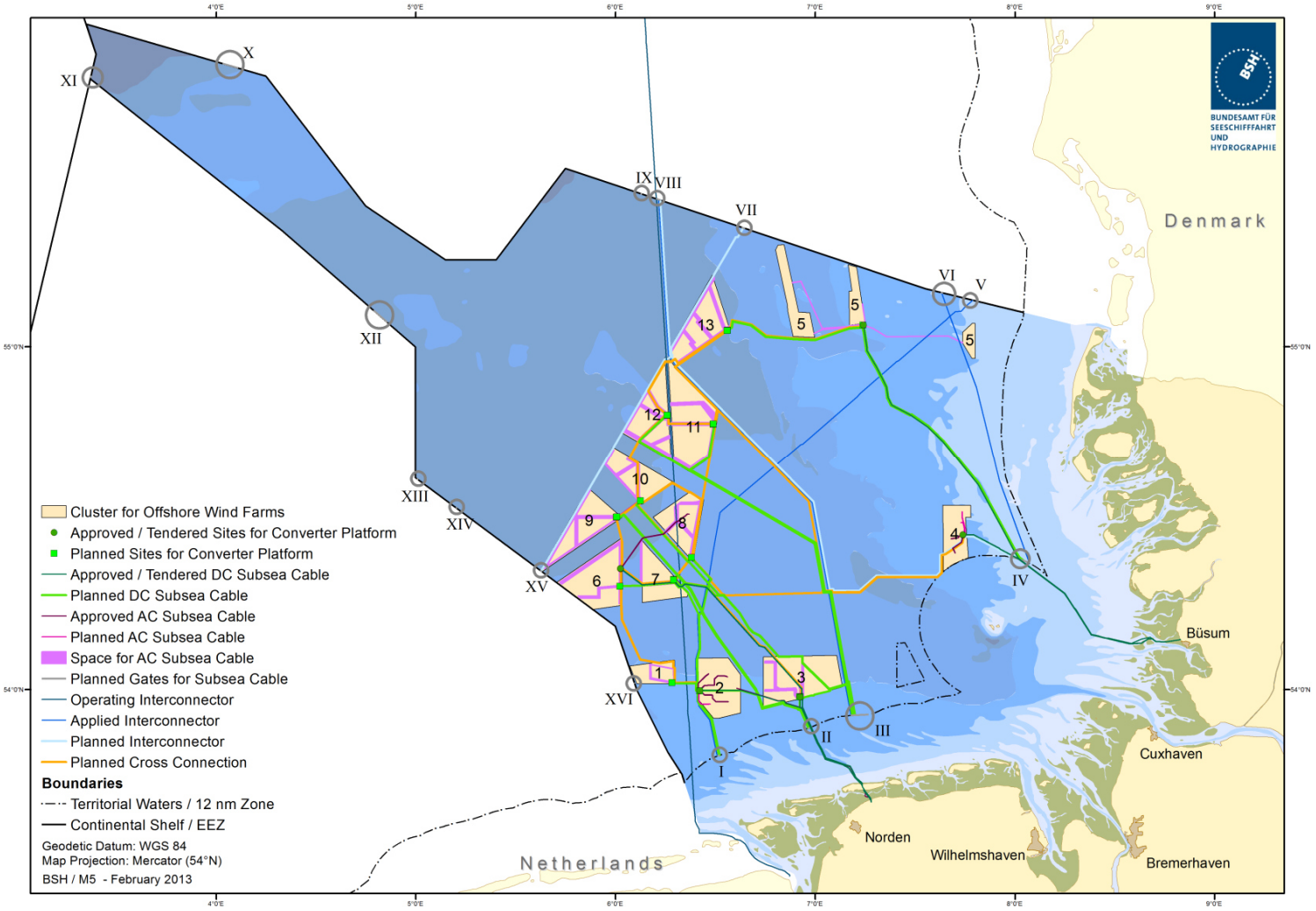

Baltic Sea – EEZ: Spatial Offshore Grid Plan

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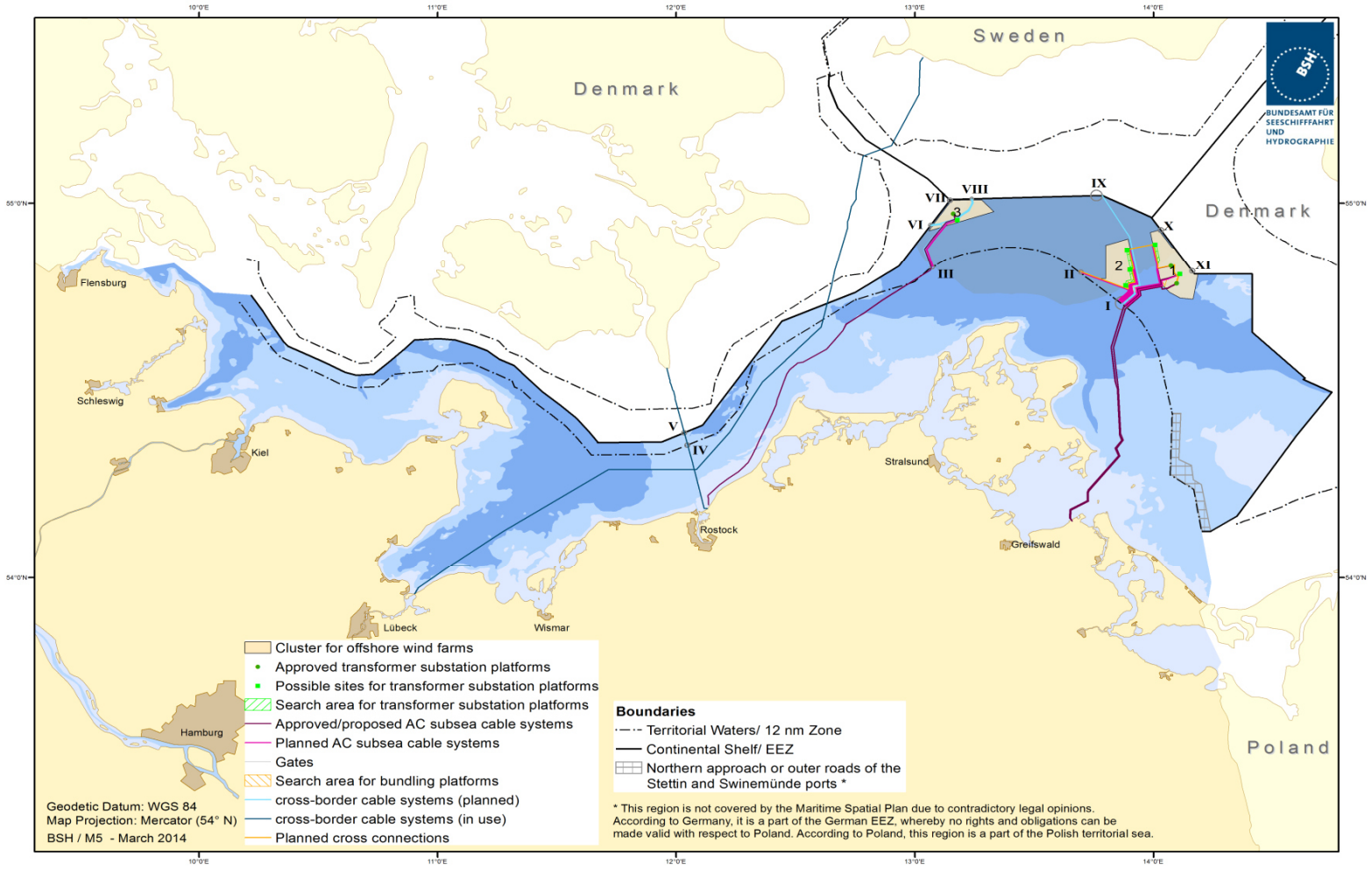
Spatial Offshore Grid Plan for the German Exclusive Economic Zone of the Baltic Sea 2013



Baltic Sea – EEZ: Spatial Offshore Grid Plan

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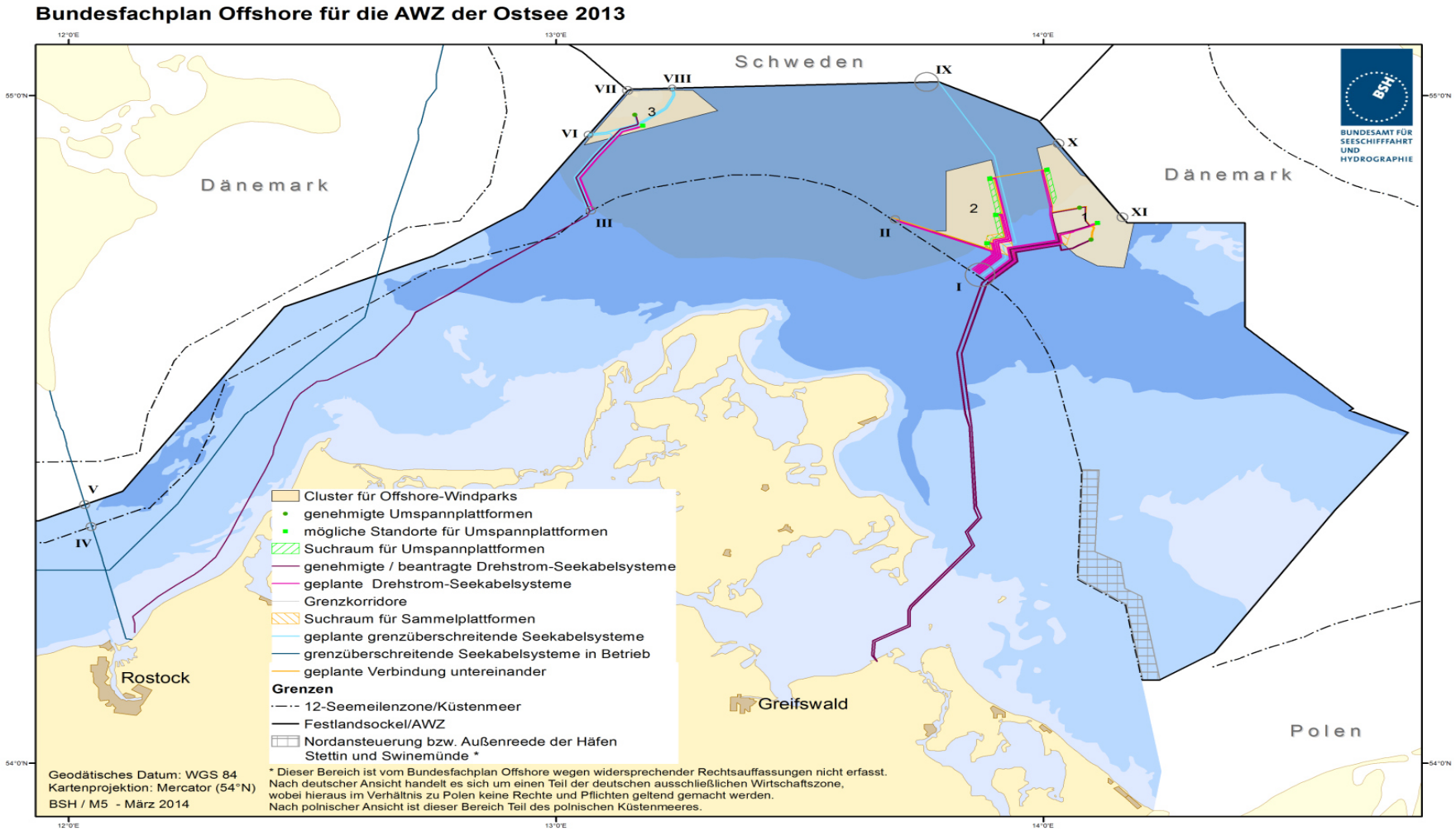

Baltic Sea:
Interconnector Denmark – Germany:
"Kriegers Flak Combined Grid Solution "

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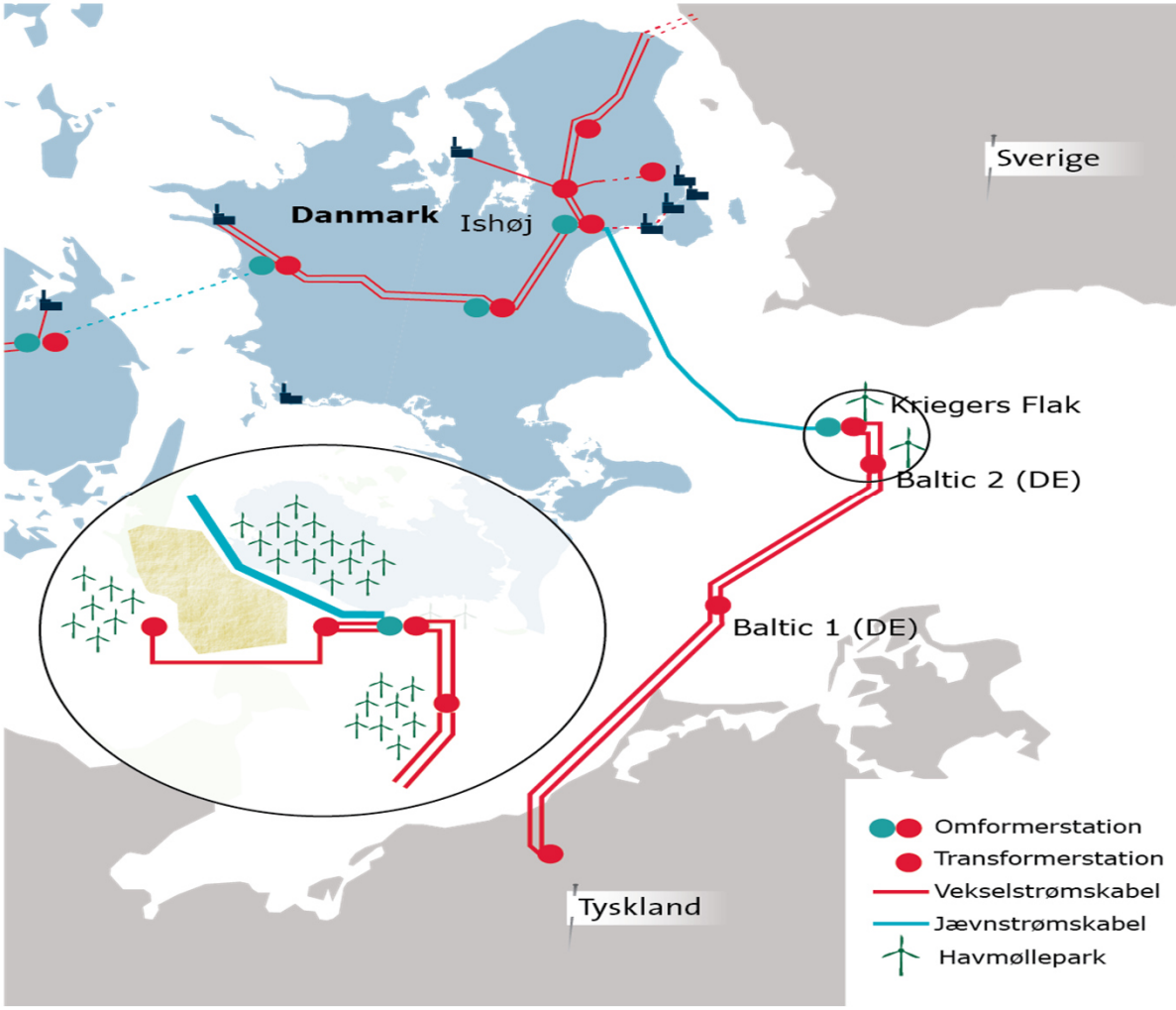

Project of Common Interest (PCI) under Regulation (EU) No 347/2013 of 17 April 2013 on guidelines for trans-European energy infrastructure

Source: 50Hertz Transmission GmbH

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Main Components of SEA Report

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Description and Assessment of the Environmental Status with regard to

- seabed and water
- plankton
- benthos/ biotope types
- fishes
- marine mammals
- seabirds and migratory birds
- bats
- biodiversity
- air/ climate
- landscape
- cultural heritage
- humans/ human health

Development in Case of Non-Implementation

Description and Assessment of the Adverse Impacts of the Implementation of the Plan on the marine environment

Species Conservation

FFH Impact Assessment

Prevention and Mitigation Measures

Examination of Possible Alternatives

Monitoring Measures

Potential Impact on Marine Environment

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SEA Report

identifies, describes and assesses potential adverse impacts of the implementation of the planned

- platforms and
- subsea cables

on the marine environment during

- construction,
- operation and
- removal

Examination of Possible Alternatives

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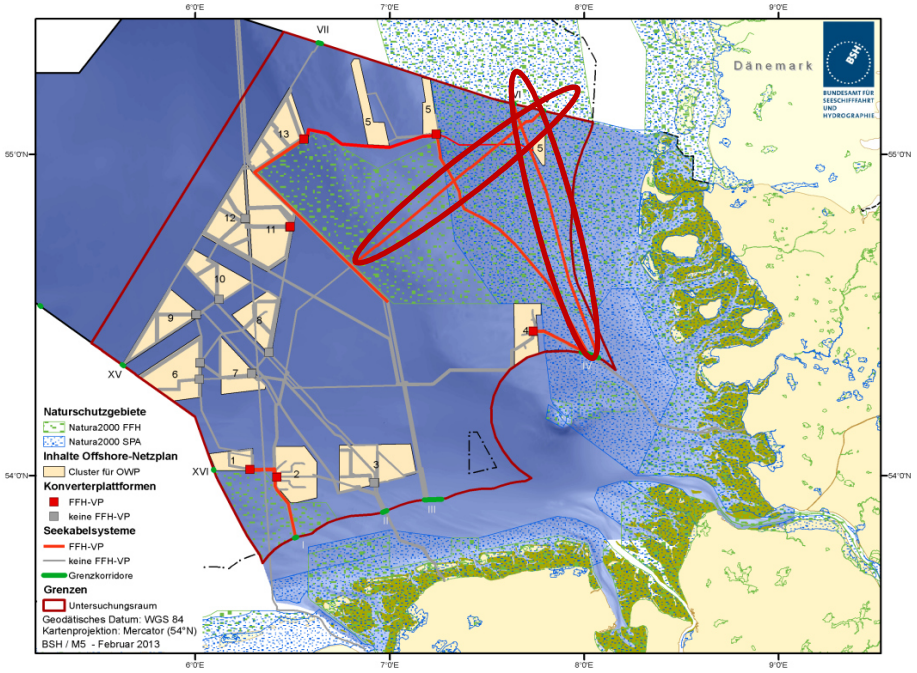
- alternative cable corridors restricted due to
  - existing uses and rights of use and
  - provisions of the Maritime Spatial Plan

- In the context of the Habitats Directive impact assessment 2 alternatives to cable corridors that cross Natura2000 areas examined

Habitats Directive impact assessment



- Zero-alternative (non-implementation of the plan) is not considered:
  Without bundling principle there would be increased area consumption.
  This would also entail more adverse environmental effects.

Conclusion of the SEA

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- According to available knowledge and in compliance with prevention and mitigation measures (e.g. avoiding routing through protected areas) no significant effects on the marine environment expected
- SEA supports the Environmental Impact Assessment (EIA) of offshore wind farms and the grid connections on project level and aims at accelerating permitting procedures
- Results of EIA must be considered in yearly update of Grid Plans and SEA

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Thank you for your attention!

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