



Baltic
InteGrid

Integrated Baltic Offshore
Wind Electricity Grid Development

WP4 – Prefeasibility studies

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EUROPEAN
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DEVELOPMENT
FUND

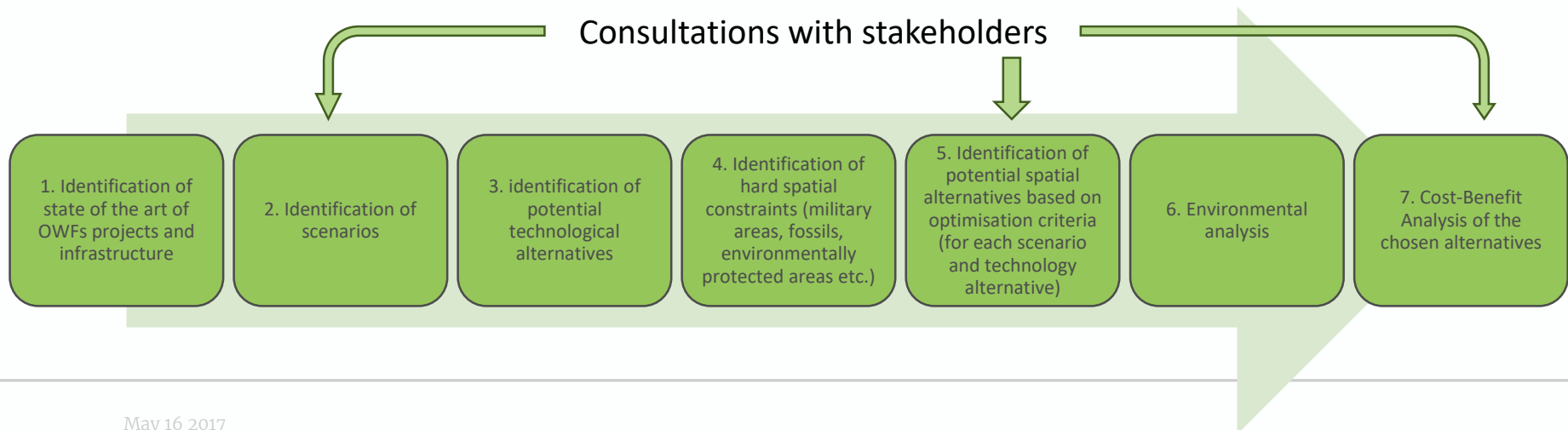
Prefeasibility studies

- **Goals and methodology**
- **Polish-Swedish-Lithuanian**
 - Scenarios and assumptions
 - Ideas of technology and grid layout
 - Next steps
- **German-Swedish**
 - Ideas of technology and layout
 - Next steps



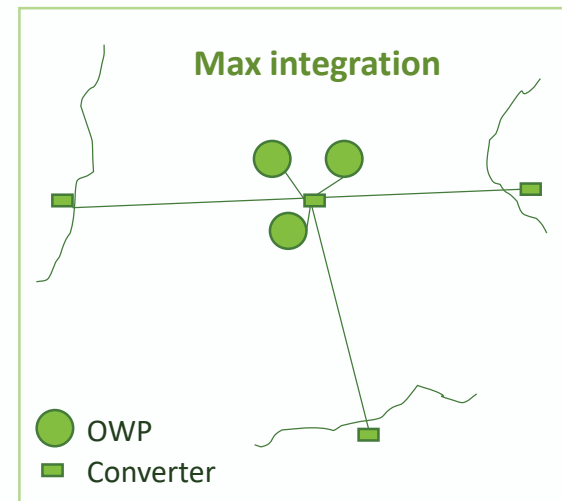
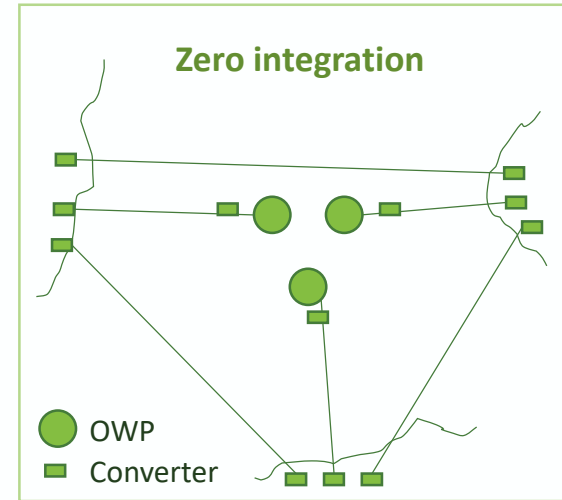
Goal of the Pre-feasibility studies

- Compare a meshed grid approach with a radial approach for future OWP and interconnectors
- Provide potential technical designs with general quotations for different alternatives
- Provide general spatial alternatives
- Provide comparison of costs and benefits of different approaches.

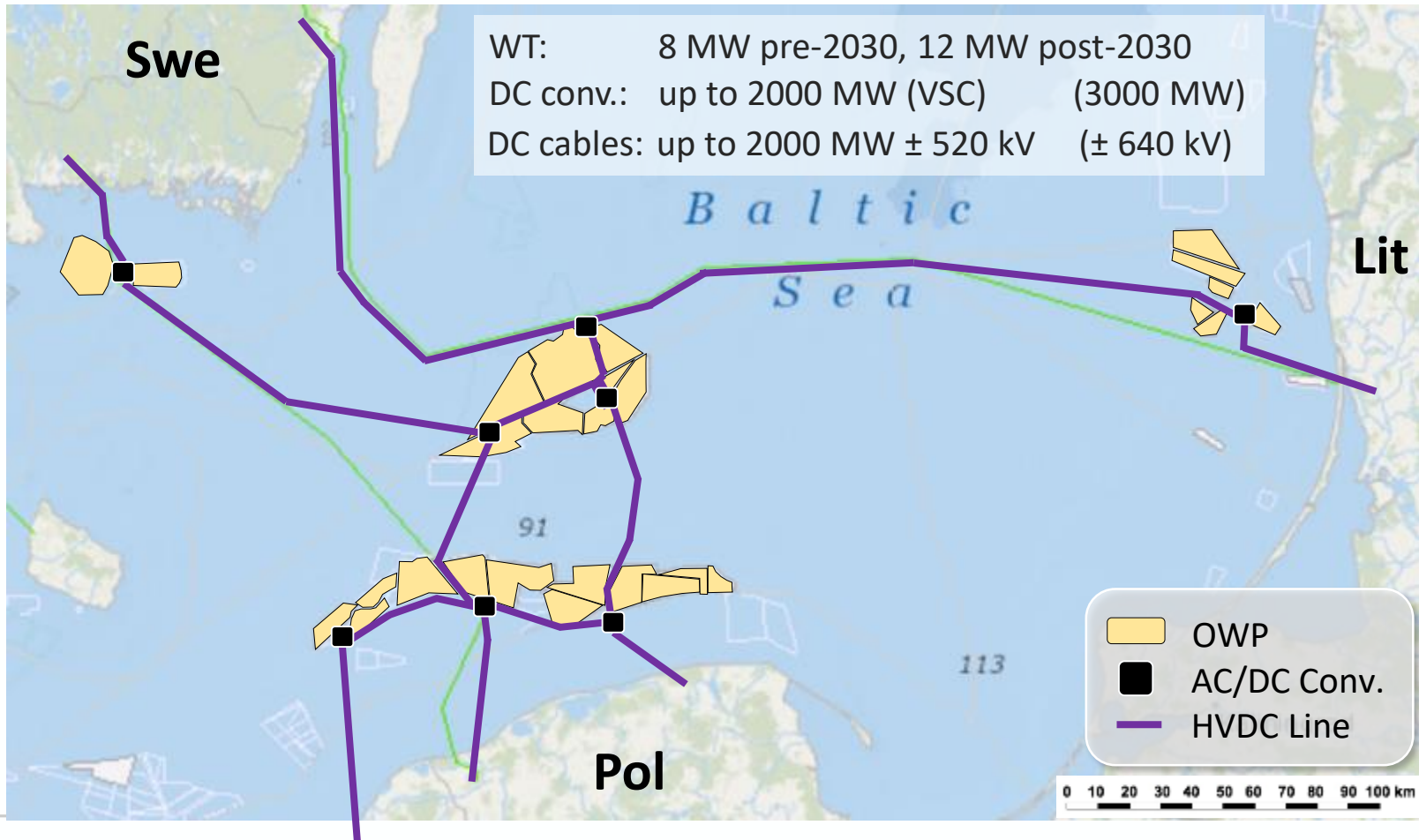


Scenarios

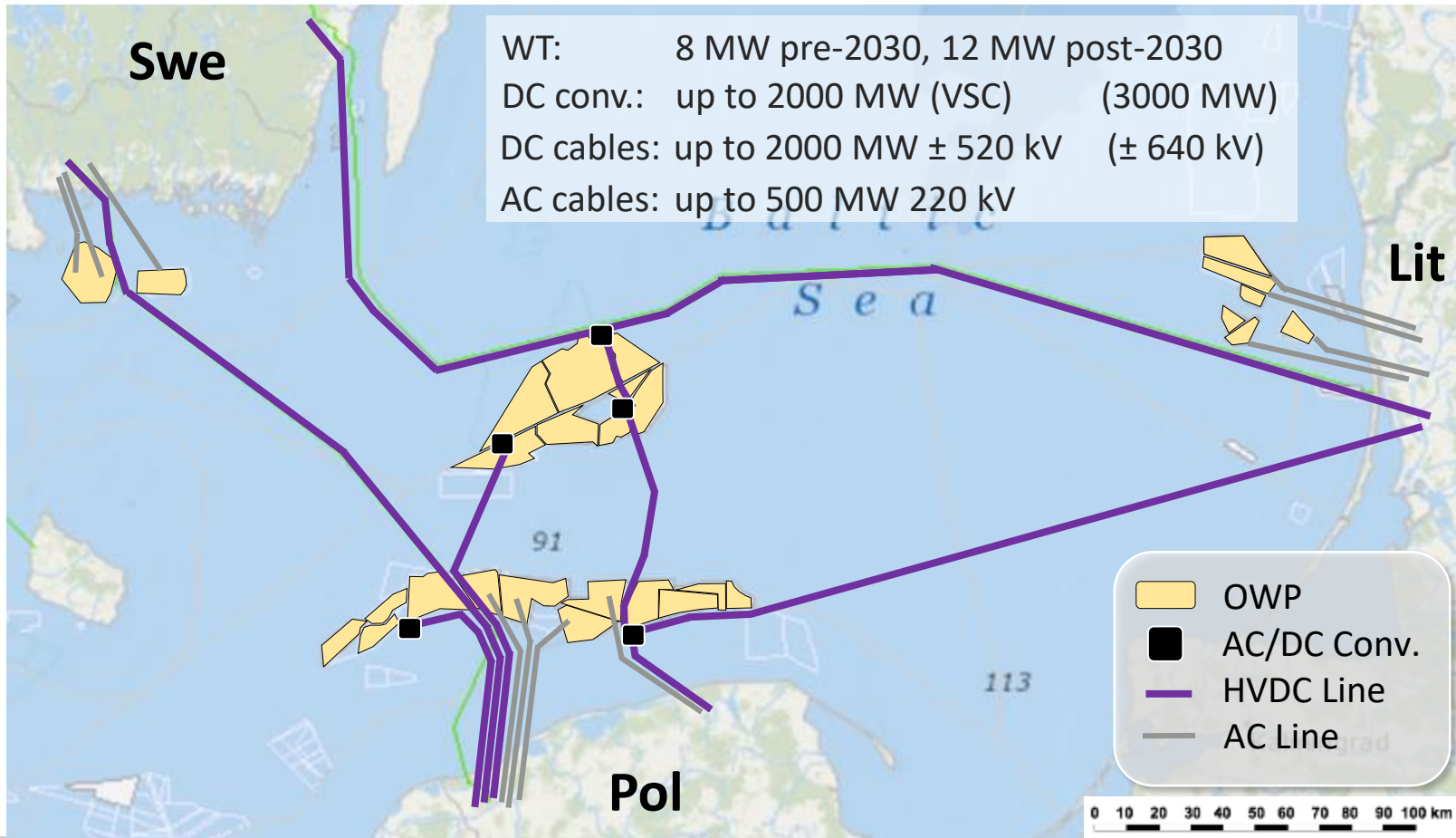
- Timeline for all scenarios: 2025-2045
- High/Low offshore wind power build-out
- Zero/partial/maximum Integration
 - Different dimensions, flexibility, complexity, cost, etc.
- Road maps
 - Snapshots with 5 year steps
 - Including different grid investment strategies



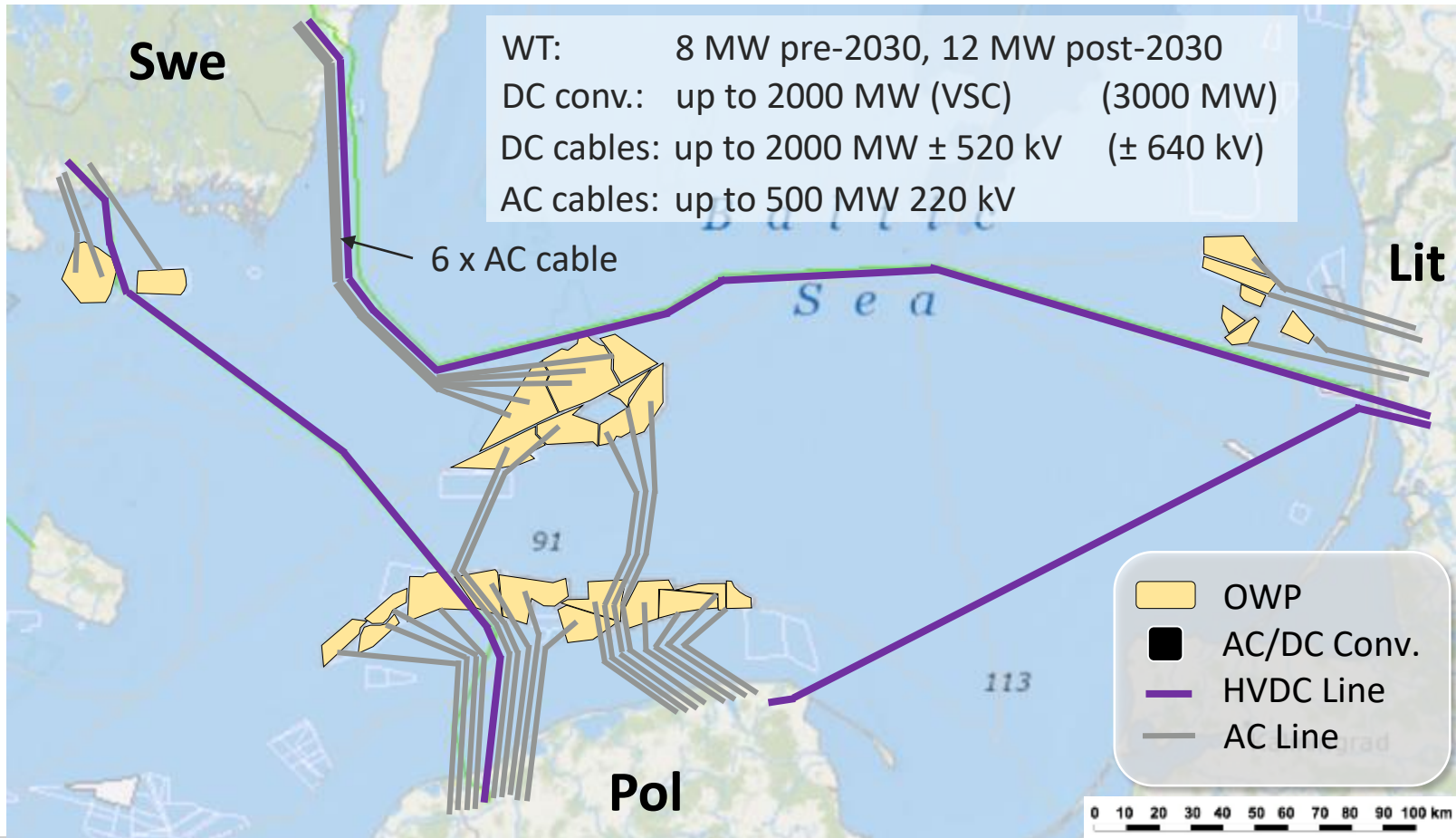
Maximum integration - Layout and technology ideas



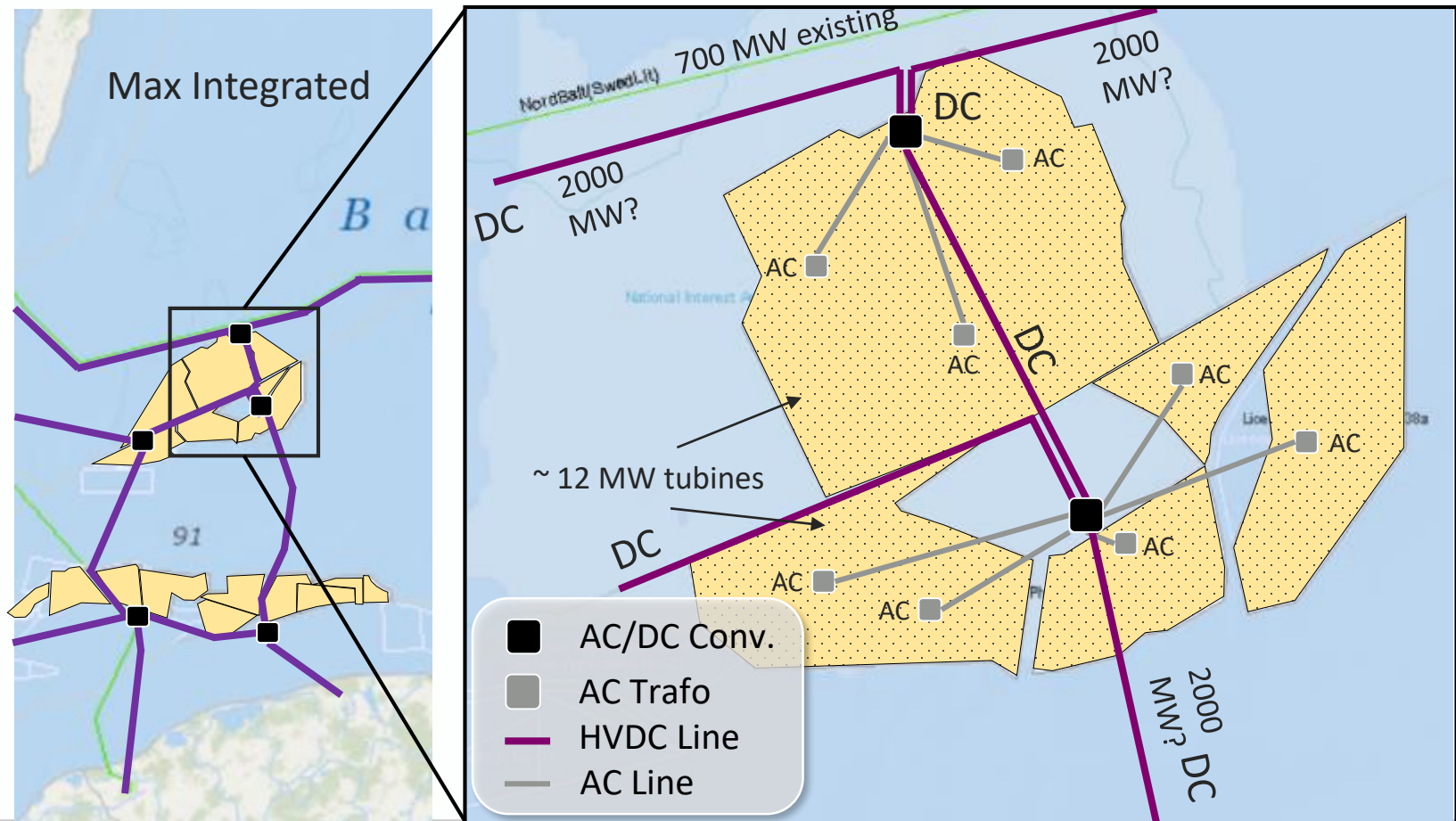
Partial integration – Layout and technology ideas



Zero integration – Layout and technology ideas



Wind power cluster level



Next steps

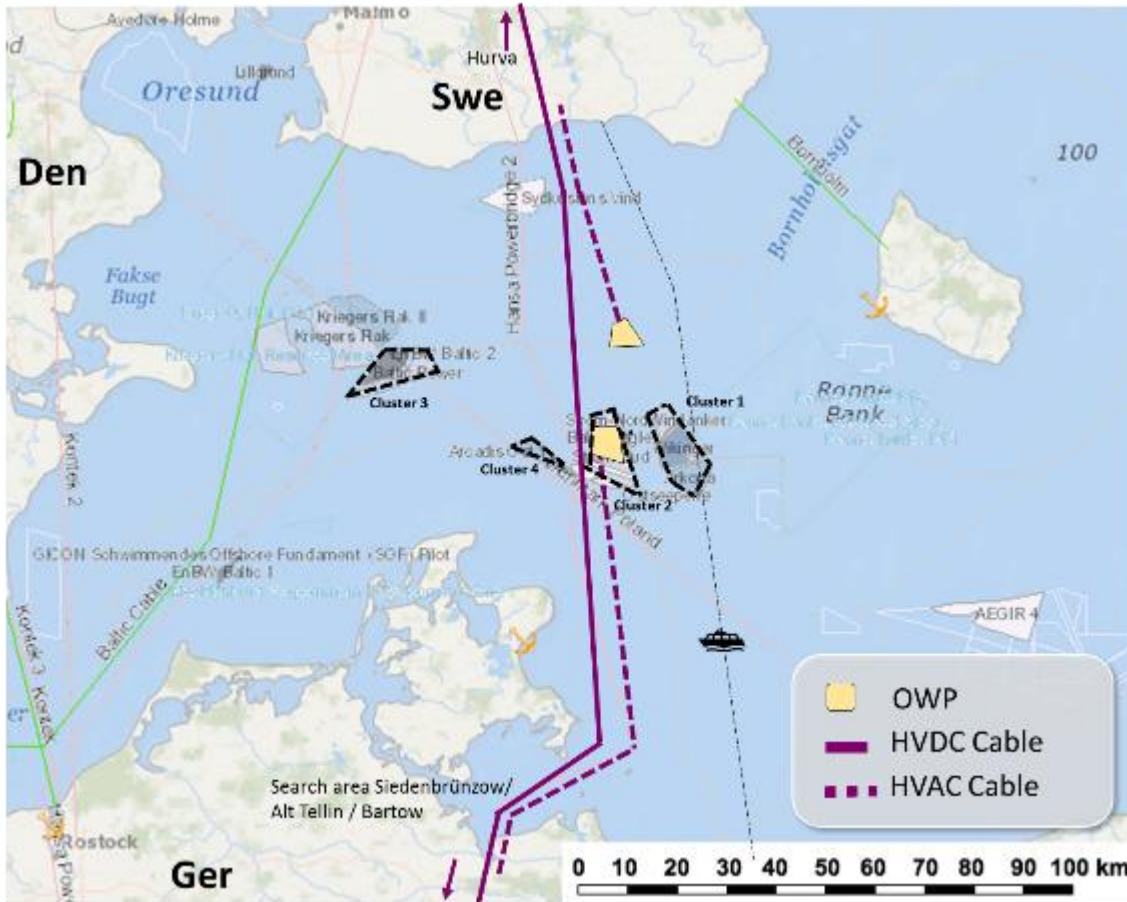
- Additional investigation on possible **wind power expansion**
- **Various designs** on wind power plant clusters and grid connections
(dependent on system requirements, technologies and operation strategies)
- Analysing different **scenarios and roadmaps** (High/Low OWP – Zero/Partial/Max integration)
- **Economic evaluation** (to some extent)
- Input to and from...
 - Cost benefit analysis
 - Supply chain
 - etc.

Case Studies

- Polish-Swedish-Lithuanian case study
 - Scenarios and assumptions
 - Ideas of technology and grid layout
 - Next steps
- **German-Swedish case study**
 - Ideas of technology and layout
 - Next steps



No Integration – Radial Connections



Cables

- HVDC cables (2 cables each ± 200 kV with a power capacity 400MW)
- HVAC cable to shore

Grid Connection Points

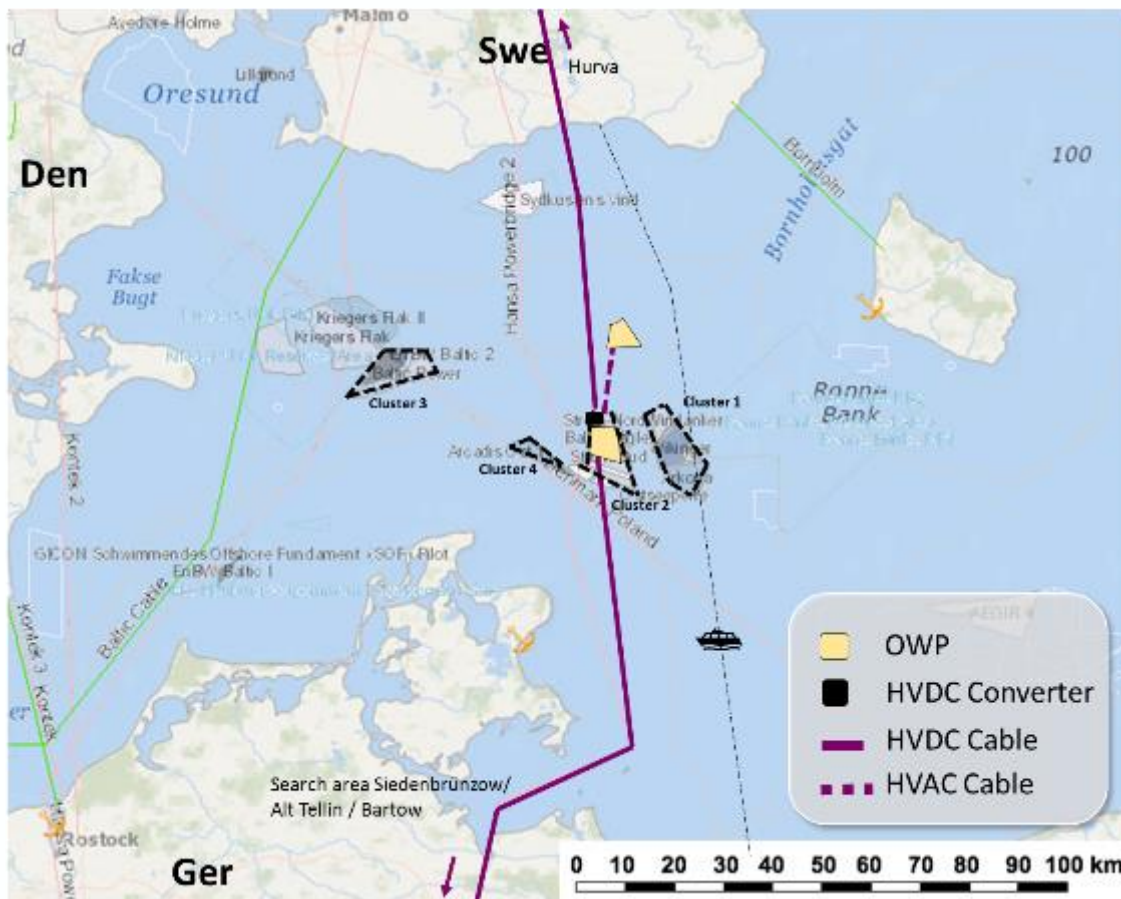
- SE: tbd.
- DE: tbd.

OWFs

SE: cf. map; capacity ~ 300 MW (depending on CBA)

DE: Location BSH Cluster 1 or 2; capacity 400-500 MW (depending on CBA)

Integrated Scenario



Cables

- HVDC cables (2 cables each ± 200 kV with a power capacity 400MW)
- HVAC cable (substation to HVDC converter station)

Grid Connection Points

- SE: Hurva
- DE: Search area Siedenbrünzow/Alt Tellin/Bartow

HVDC converter

VSC-HVDC Converter; Capacity ≥ 800 MW (depending on CBA)

OWFs

Sweden: cf. map; capacity ~ 300 MW (depending on CBA)

Germany: Location BSH Cluster 1 or 2; capacity 400-500 MW (depending on CBA)

Next Steps

- Consultation with German TSO 50Hertz (esp. capacities, corridor routing, grid connection points)
- Analysing different scenarios and roadmaps
- Input to and from...
 - Cost benefit analysis
 - Supply chain
 - MSP
 - etc.

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