Baltic InteGrid

Integrated Baltic Offshore
Wind Electricity Grid Development

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Interreg
Baltic Sea Region

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The Baltic InteGrid

- Baltic InteGrid among 35 selected out of 300 concept notes
- Project running until 2019
- EUSBSR Flagship Project

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EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP

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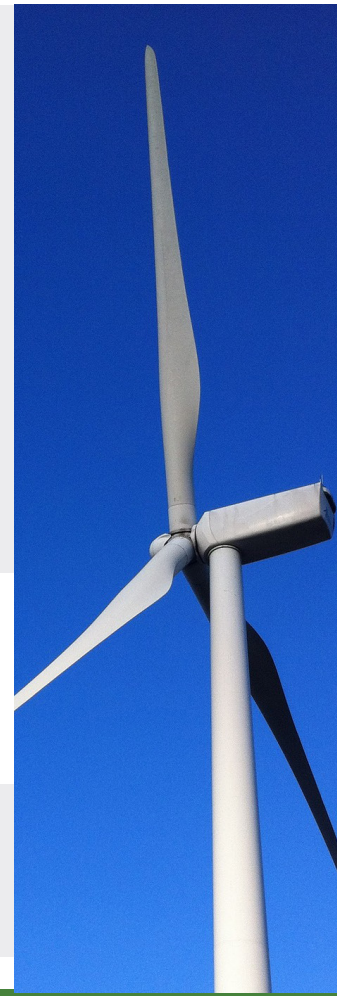
Offshore wind in the Baltic Sea region

- BASREC: 40 GW OWE capacity in BSR
- Only about 1,5 GW actually installed
- Vast majority of EU OWE capacity is in the North Sea
- OWE market in BSR smaller & earlier stage



Knowledge transfer potential from North Sea

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Meshed offshore grid

- High initial investment
- Highly complex regulatory, legal, market, policy & tech obstacles to navigate

+ Annual savings compensate
+ Resilience for operators
+ Coordination has already begun
+ RES & market integration

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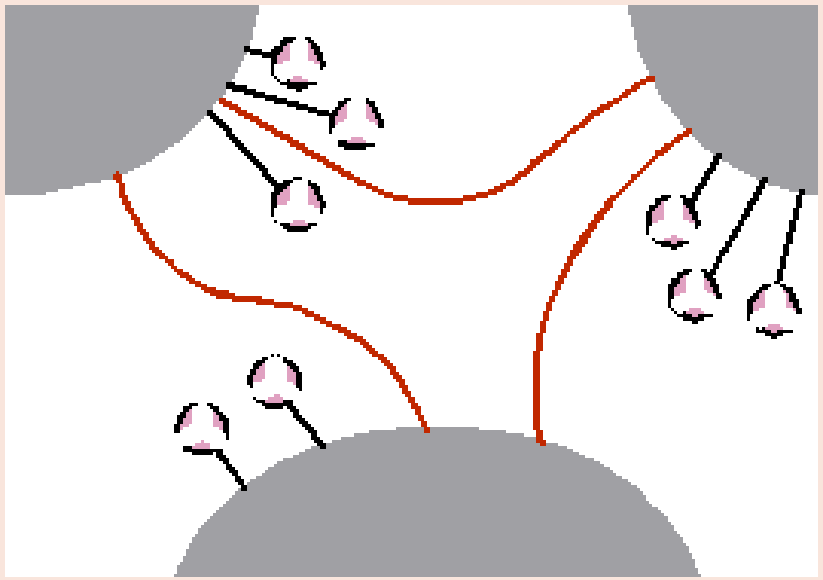
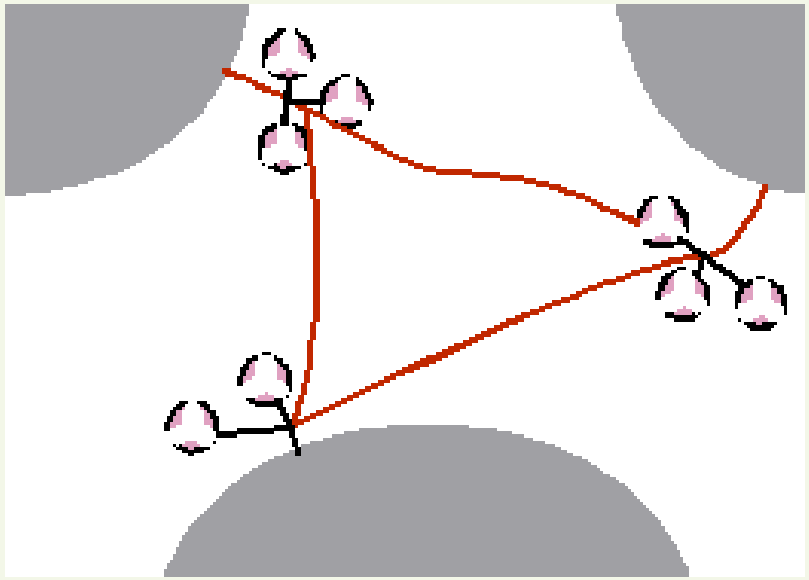
Radial approach



Meshed approach



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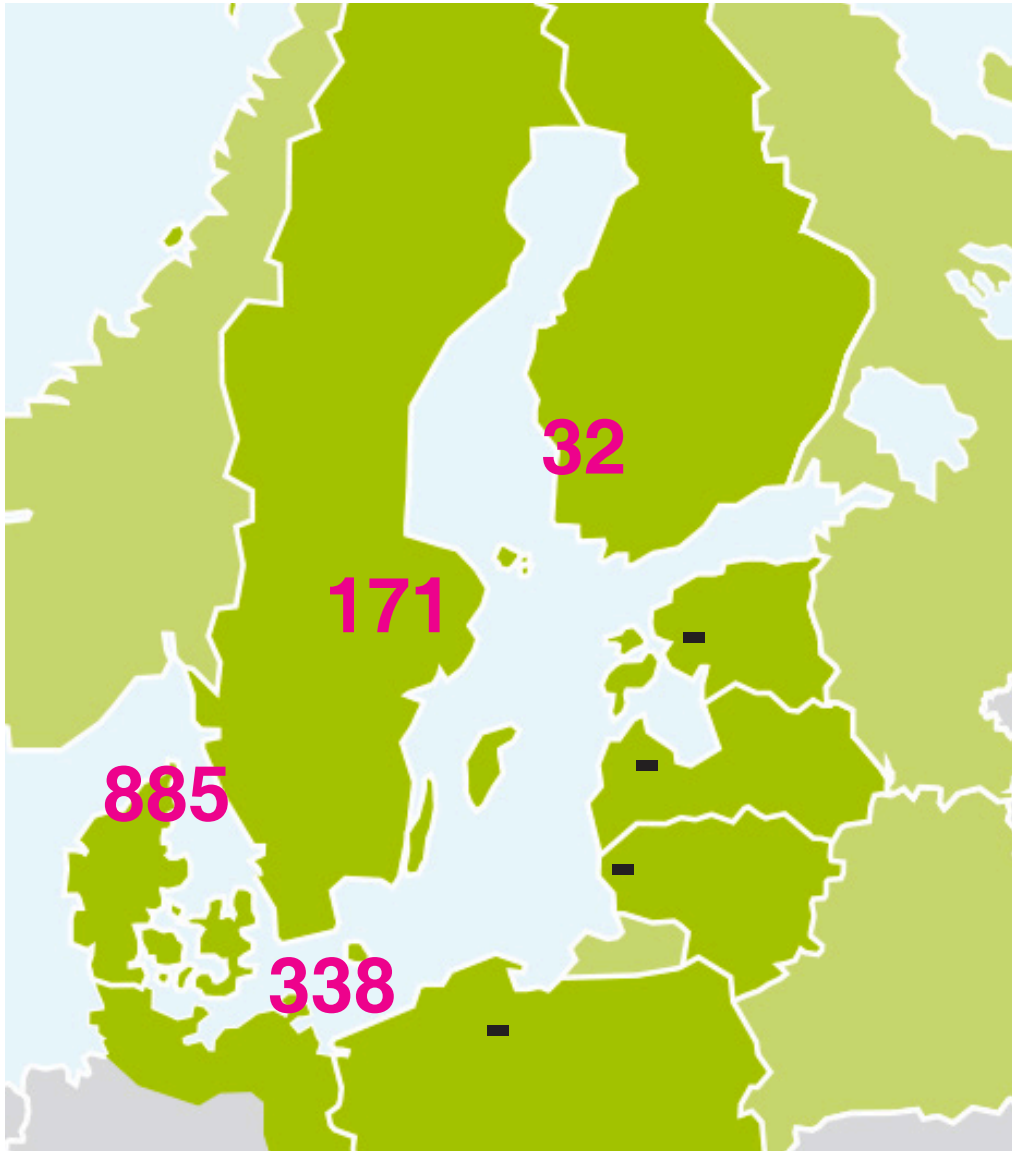
BSR: Offshore wind (MW)

	Installed	Construction	Planned
Germany	338,8	350	5391
Denmark	885		
Sweden	171		10,009
Finland	32	42	3687
Estonia			4816
Latvia			1375
Lithuania			1559
Poland			12,807



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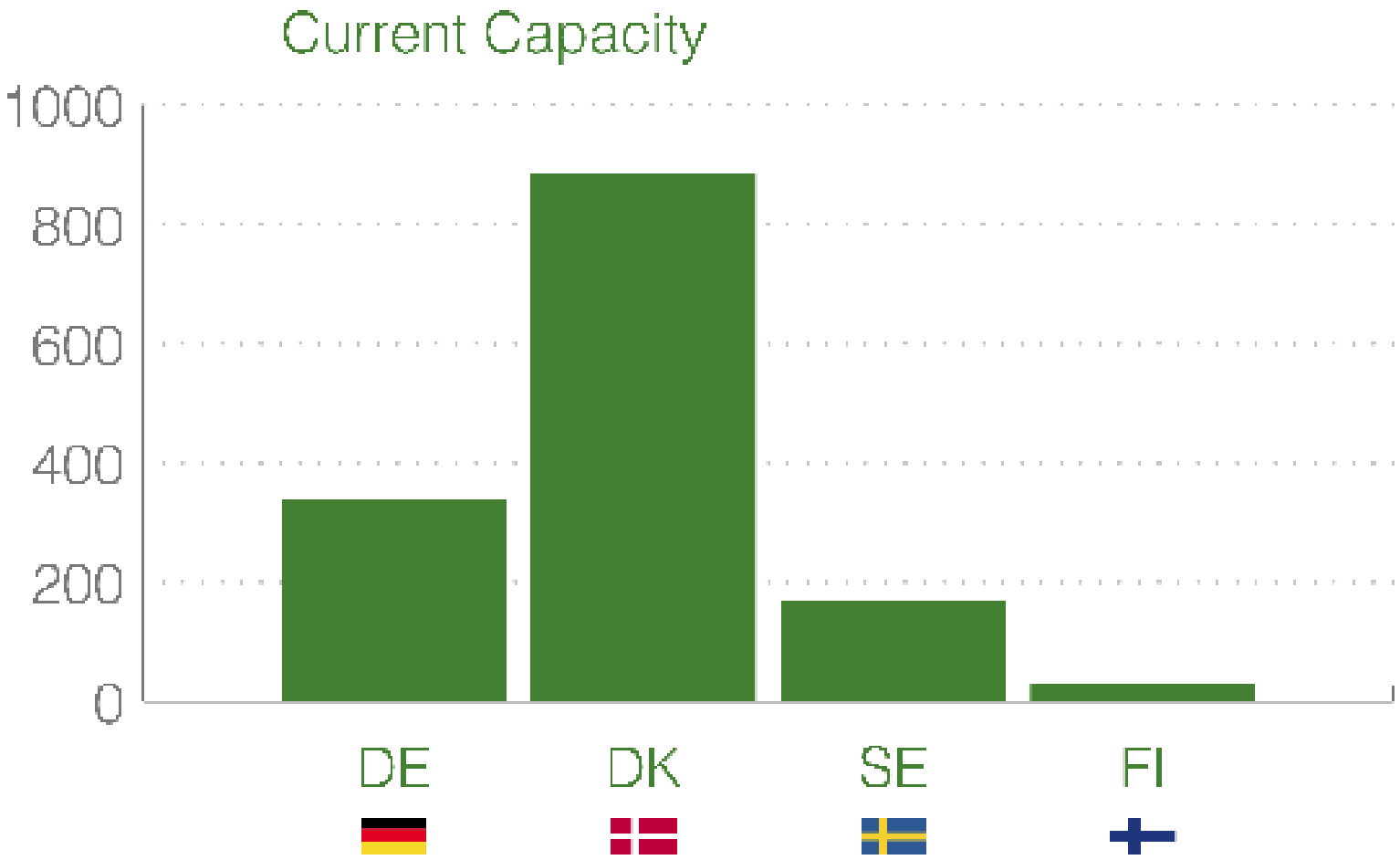
Current OWE in the BSR (MW)



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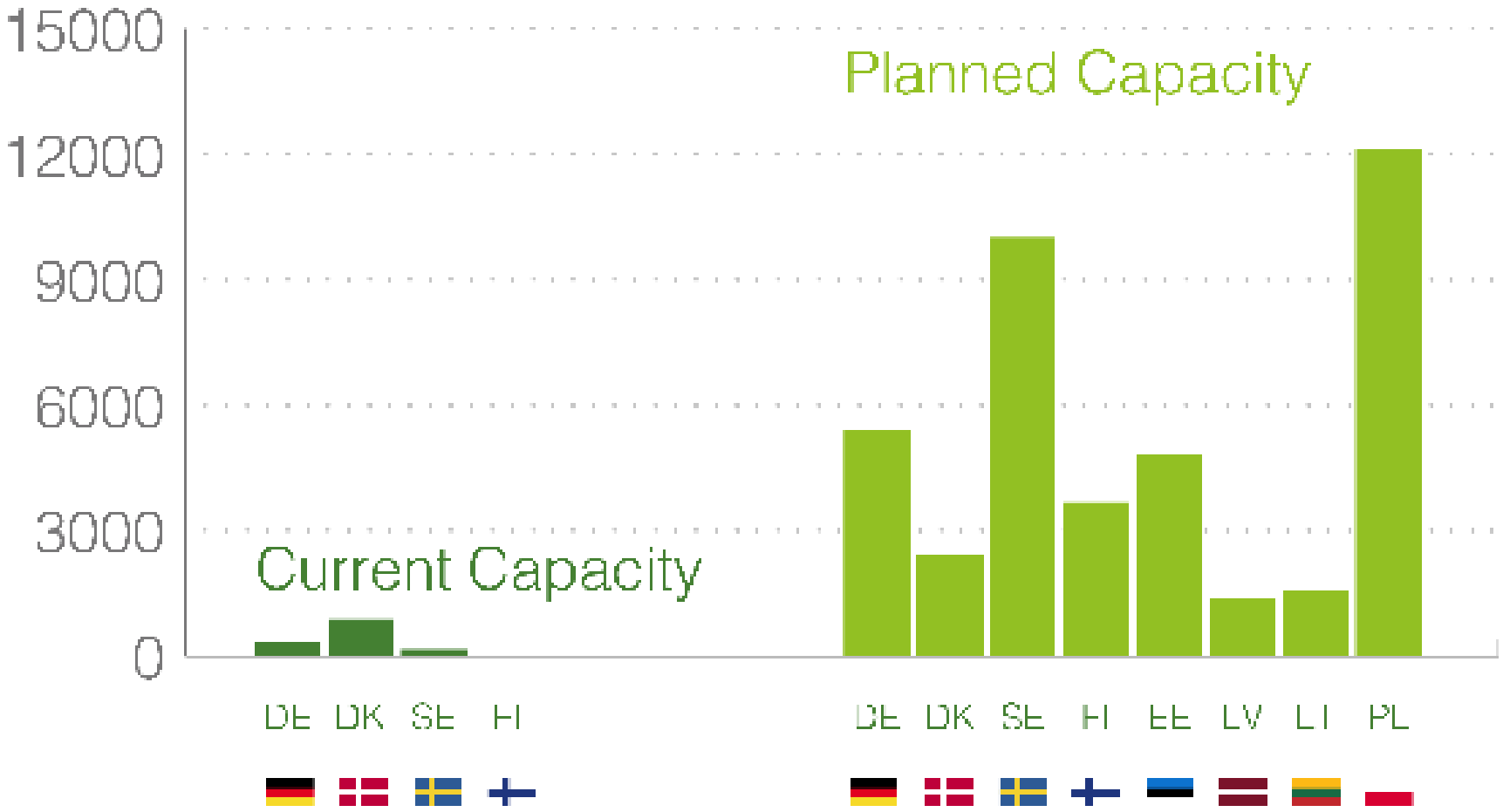
Current and planned OWE in the BSR (MW)



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Electricity market integration in the Baltic Sea region

- Need for enhanced coordination OWE & grid planning
- Regional electricity exchange increase to 2030
- Need for more interconnectors

*BASREC Study “Electricity Grid Expansion in the Context of Renewable Integration in the Baltic Sea“

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Coordinated OWF development

Regional electricity market integration

Meshed grid in BSR

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Policy and Strategic Alignment

- EU interconnection targets: 10% by 2020, 15% by 2030
- EU Energy and Climate Policy *20-20-20 Targets*

  Regulation No 347/2013 on trans-European energy infrastructure
- Directive 2014/89/EU: framework for maritime spatial planning
- EU BSR Strategy: subobjective Reliable Energy Markets
- BEMIP (Baltic Energy Market Interconnection Plan)
- EU Energy Union

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Core pillars of the Baltic InteGrid

The Forum
- Network & conference platform

The Concept
- Interdisciplinary research

The Pre-feasibility studies
- In-depth perspective on 2 cases

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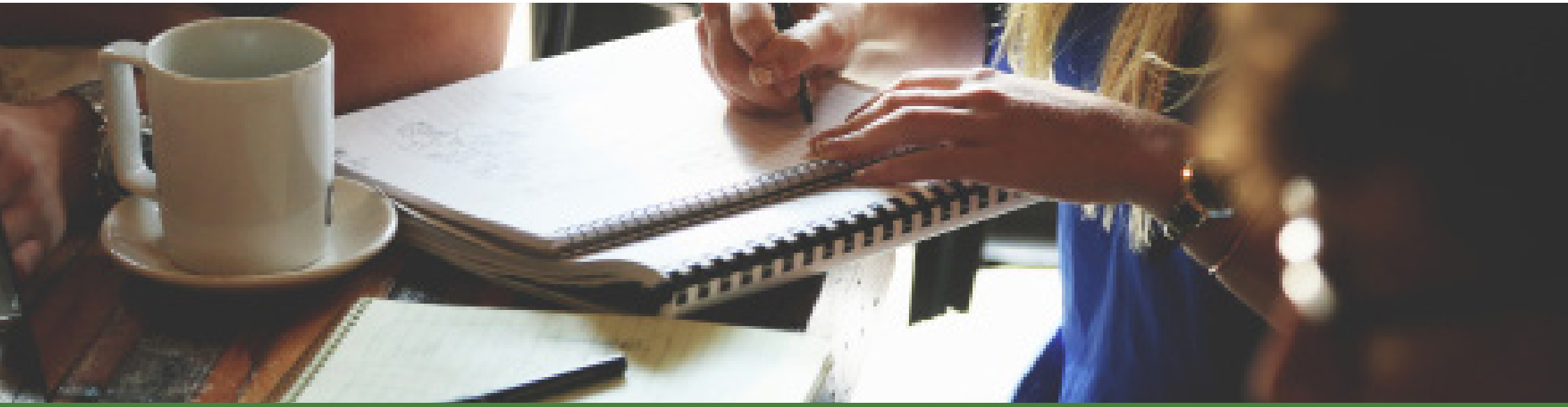

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The Baltic Offshore Grid Forum: Expert network platform

22 events over the project lifetime:

- 6 Country Workshops
- 12 Thematic Working Groups
- 4 Key events

→

1. *Policy & regulation*
2. *Market & supply*
3. *Technology & grid*
4. *Environment & society*
5. *Spatial planning*
6. *Cost-benefit analysis*

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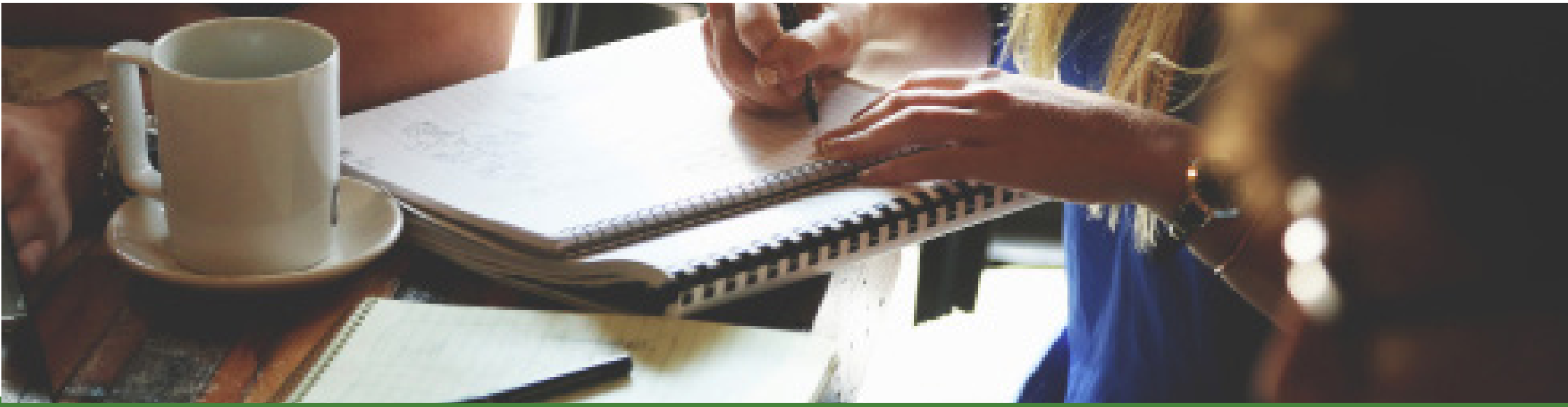

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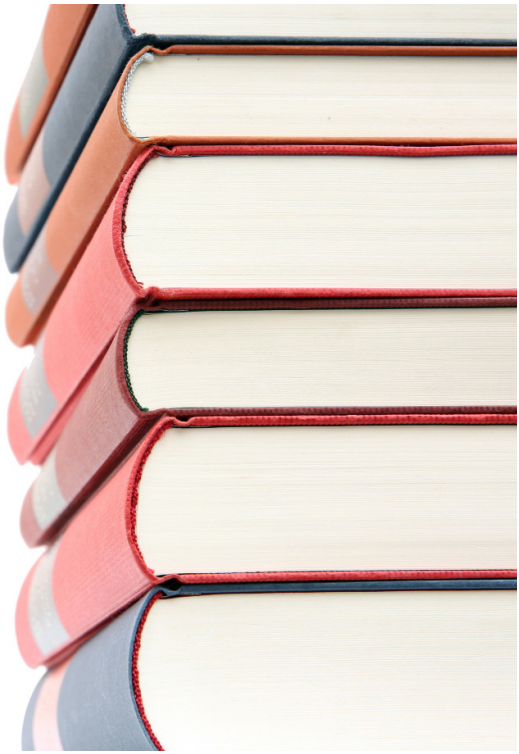
The Baltic Offshore Grid Concept: Research study

Interdisciplinary research on meshed grid development from 6 angles:

1. Policy & regulation
2. Market & supply
3. Technology & grid
4. Environment & society
5. Spatial planning
6. Cost-benefit analysis



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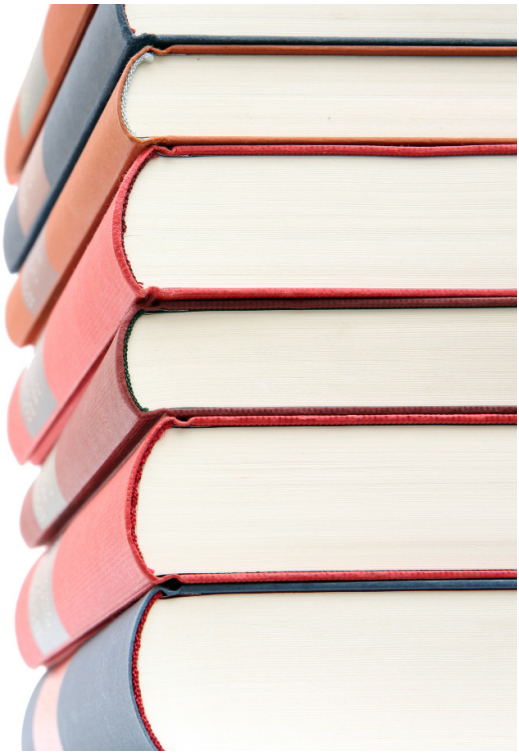

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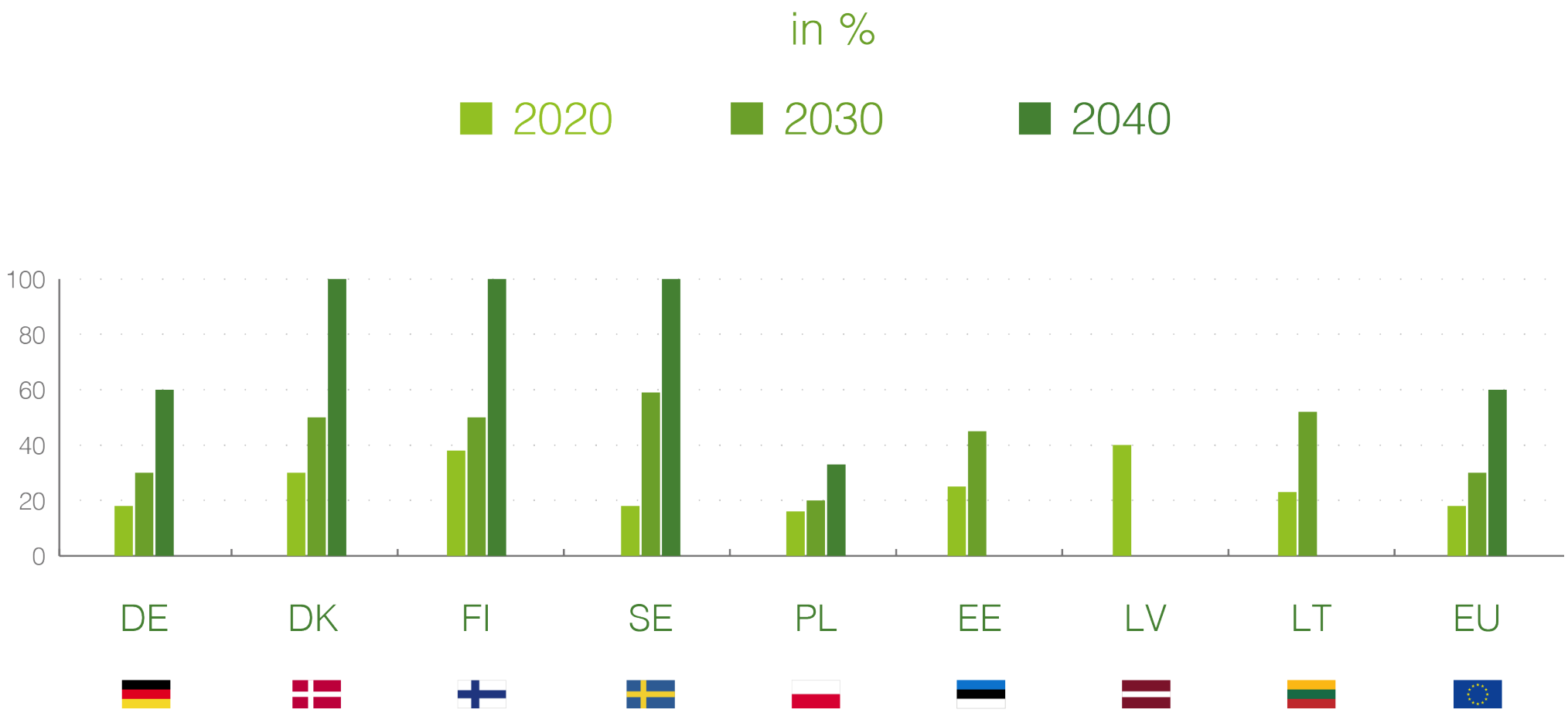
Political targets in the BSR: RES integration



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Determination of remuneration rate

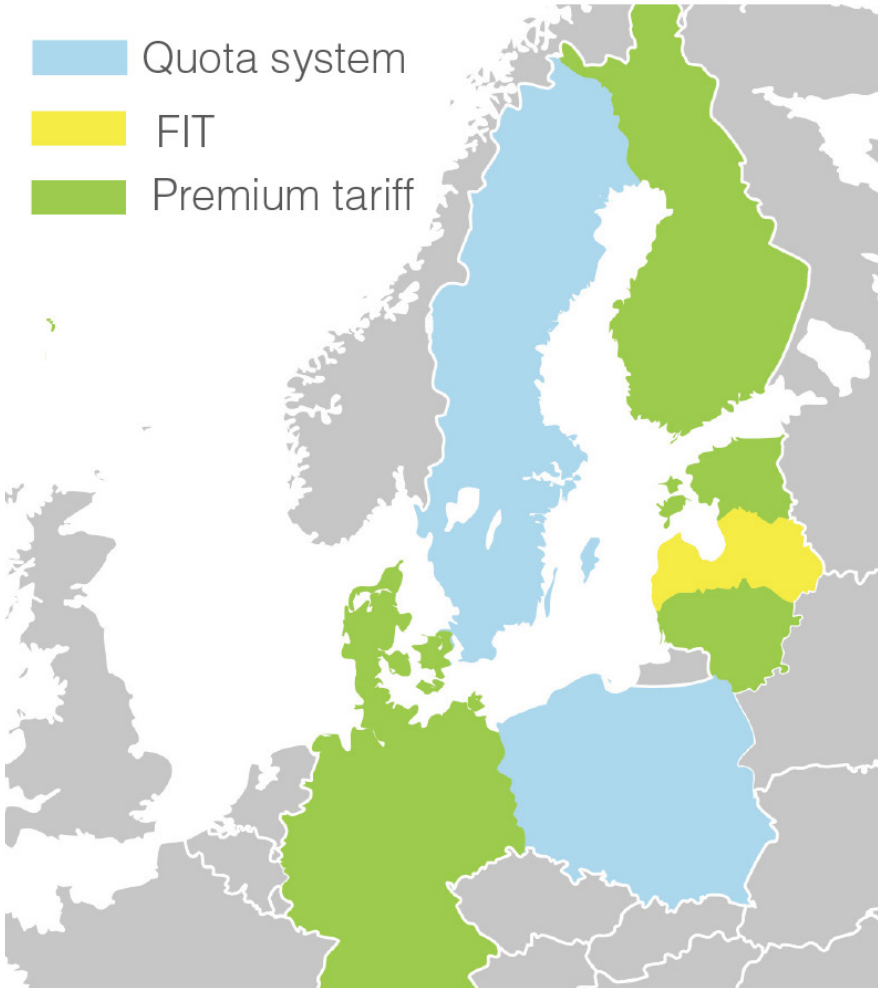
Tender

DE EE

Administrative

LV DK FI PL LT

OWE support schemes



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Who builds what?

Construction by TSO

Construction by project developer

79 – 80 ptc

DK Offshore

DE

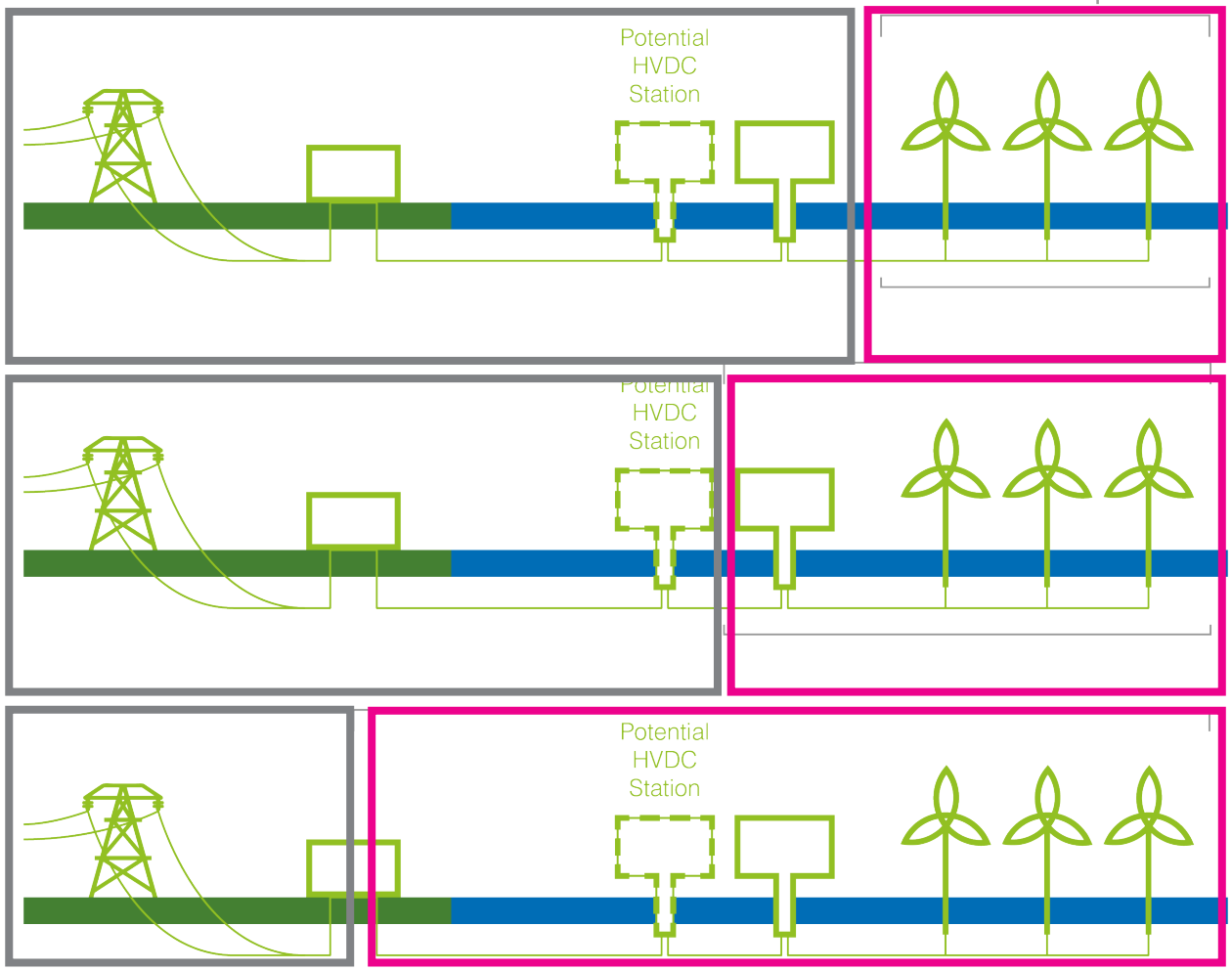
LT

DK Nearshore

LV

EE

SE



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Challenge: Monetizing social benefits

The long-term benefits of a meshed offshore grid are there. The question is: How do we translate these into short-term benefits that incentivize investment in this infrastructure?

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Pre-feasibility Studies

2 case-studies on offshore wind farm interconnectors

1) Polish - Swedish connection (possible inclusion LT and DE)

2) Swedish - German connection

Address the option of a South Baltic transmission grid ring

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Recommendations and outputs

- Environmental impact study & mitigation strategy
- Cost-benefit analysis and quantative model
- Business cases of Market & Supply Chain
- Policy inventory & recommendations (roadmap)
- MSP maps and technology catalogue

Target groups

- TSOs
- Policy-makers
- OWE industry
- Investors
- Research
- Academia
- Civil society
- (Maritime) spatial planners
- Environmental organisations

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The partners

14 partners from the 8 EU Member States

1. IKEM | Germany
2. Foundation for Sustainable Energy | Poland
3. Rostock Business and Technology Development
4. Technical University of Denmark | Denmark
5. Energy Agency for Southeast Sweden | Sweden
6. Deutsche WindGuard | Germany
7. Maritime Institute in Gdansk | Poland
8. Stiftung OFFSHORE-WINDENERGIE | Germany
9. Latvian Association of Local and Regional Governments | Latvia
10. Aalto University | Finland
11. University of Tartu | Estonia
12. Klaipeda University Coastal Research and Planning Institute | Lithuania
13. Lund University | Sweden
14. Aarhus University | Denmark

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The AO's

Germany
- Siemens AG
- BMUB (Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of Germany)
- Ministry of Energy, Infrastructure and State Development of Mecklenburg- Vorpommern
- 50Hertz Transmission GmbH
- Ecologic Institute
- Kisters AG
- Becker Büttner Held
- Eclareon

Denmark
- Danish Energy Association
- Energinet.dk
- Danish Wind Industry Association

Latvia
- Ministry of Economics

Finland
- Finnish Wind Power Association

Estonia
- Elering-generating opportunities

Lithuania
- The Ministry of Energy
- Litgrid AB

Poland
- Inwestycje Infrastrukturalne Sp. Z O.O
- Maritime Office in Gdynia
- PGE Energia Odnawialna S.A.
- Polish Offshore Industry Association
- PSE S.A. Polskie Sieci Elektroenergetyczne
- Baltex Energia i Górnictwo Morskie SA SKA

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Save the date!

EU STRATEGY FOR THE BALTIC SEA REGION
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Baltic
OffshoreGrid
Forum

15 May: Country workshop

Offshore Wind Energy Infrastructure:
Opportunities and Challenges in Latvia

16 May: Conference

Towards a Meshed Grid:
Offshore Wind Energy and Interconnectors in the Baltic Sea Region

About

The EUSBSR Flagship project Baltic InteGrid (Integrated Baltic Offshore Wind Electricity Grid Development) combines state-of-the-art interdisciplinary research with a professional network for the exchange of expertise on the optimization potential of offshore wind energy in the Baltic Sea Region by applying the meshed grid approach. The partners of the European project „Baltic InteGrid" cordially invite you to learn more about first results of the project!

Sign up!

For regular updates on the research and events of the Baltic InteGrid, sign up for our newsletter!
The agenda, venue and registration of the Country Workshop and Meshed Grid Conference will be available on our website www.baltic-integrid.eu soon. We look forward to connecting with you!

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Newsletters, conferences and latest project developments

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„We need innovative and large-scale projects so that offshore wind can play an even bigger part in our future energy supply.“

Peder Østermark Andreasen, CEO of Energinet.dk

TenneT Netherlands, Energinet.dk and TenneT Germany signed trilateral agreement on North Sea Wind Power Hub connecting 70 GW to 100 GW of OWE on 23 March 2017 in Brussels.


Image: TenneT


Thank you!

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Thank you!

Anika Nicolaas Ponder

Project manager

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