Baltic InteGrid – Project Overview
Pierre Ståhl & Thilo Krupp
Copenhagen, 31. October 2018
EU Project funded by
Interreg Baltic Sea Region
- Subfield: Renewable Energy
- Duration: 03/2016 – 02/2019

EUSBSR Flagship project
Project Partners

1. Institute for Climate Protection, Energy and Mobility (IKEM)
2. Foundation for Sustainable Energy
3. Rostock Business and Technology Development GmbH
4. Technical University of Denmark
5. Energy Agency for Southeast Sweden
6. Deutsche WindGuard
7. Maritime Institute in Gdańsk
8. German Offshore Wind Energy Foundation
9. Latvian Association of Local and Regional Governments
10. Aalto University
11. University of Tartu
12. Coastal Research and Planning Institute
13. Lund University
14. Aarhus University
Offshore Wind in the Baltic Sea

BSR – Installed Offshore Wind (GW):
≈ 1.8 GW

Economically attractive potential by 2030:
750 Twh/yr with 186 GW

Source: Unleashing Europe’s offshore wind potential – A new resource assessment, June 2017, WindEurope & BVG Associates
Radial

Meshed (integrated)

Meshed Grids:
+ Cost Savings (e.g. cables)
+ Security of Supply
+ RES + Market integration

− Legal & regulatory barriers
− High initial investments

TOWARDS A BALTIC OFFSHORE GRID: CONNECTING ELECTRICITY MARKETS THROUGH OFFSHORE WIND FARMS
Pre-Feasibility Studies report
September, 2018
Pre-Feasibility Studies

**Integration level**

- **Zero Integration**
  - High OWP → Scenario 1a
  - Low OWP → Scenario 1b

- **Partial Integration**
  - High OWP → Scenario 2a
  - Low OWP → Scenario 2b

- **Max. Integration**
  - High OWP → Scenario 3a
  - Low OWP → Scenario 3b
Case Study 1: Low Offshore Wind Development
Case Study 1: High Offshore Wind Development

- Hanö Bay: 4.8 MW/km²
- South Middle Bank: 4.2 MW/km²
- Slupsk Bank: 3.8 MW/km²
- Lithuanian coast: 5.3 MW/km²

Total OWE capacity: 11.2 GW

Commissioning years:
- 2025
- 2030
- 2035
- 2040
- 2045
Case Study 1: High Offshore Wind Development – Zero Integration

Scenario 1a
Scenario 2a
Scenario 3a
Case Study 1: High Offshore Wind Development – Partial Integration
Case Study 1: High Offshore Wind Development – Maximum Integration

- Scenario 1a
- Scenario 2a
- Scenario 3a
Case Study 1: Conclusiones – Spatial Analysis

Case Study 1
Total length of cables passing through other uses of the sea
High OWP

- Nautical routes/navigation lines
- Navy exercise areas
- Fishing areas – high exploitation
- Fishing areas – medium exploitation
- Fishing areas – low exploitation
- Nature 2000 areas

Legend:
- 1a – high wind, zero integration
- 2a – high wind, partial integration
- 3a – high wind, max integration
Case Study 1: Conclusiones – CBA
For details check the report and our website...

www.baltic-integrid.eu
1. **TYNDP**
   (ten year development plan)  
   2018 submitted

2. **MSP**
   (maritime spatial planning)

3. **Policy & Regulation**
Nordic & Baltic market

- Snapshot from last week
- Overseas trading

Netto export / import

<table>
<thead>
<tr>
<th>Country</th>
<th>Exporterar</th>
<th>Importerar</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVENGER</td>
<td>1 215 MW</td>
<td></td>
</tr>
<tr>
<td>DANMARK</td>
<td>631 MW</td>
<td></td>
</tr>
<tr>
<td>NORGE</td>
<td>4 407 MW</td>
<td></td>
</tr>
<tr>
<td>FINLAND</td>
<td>2 253 MW</td>
<td></td>
</tr>
<tr>
<td>ESTLAND</td>
<td>29 MW</td>
<td></td>
</tr>
<tr>
<td>LETTLAND</td>
<td>534 MW</td>
<td></td>
</tr>
<tr>
<td>LITAUEN</td>
<td>1 253 MW</td>
<td></td>
</tr>
</tbody>
</table>

31.10.2018
Baltic Sea

Potential Offshore Wind farms

- 4c data base
  www.4coffshore.com/
- Partner input
- BVG suggestions
Baltic Sea

Installed Offshore Wind power:

- **2030 Upside scenario:**
  >9 GW

- **Vision 2050:**
  35 GW, 145 TWh/year
Baltic Offshore Grid – BOG

- Conceptual design
- Realistic example
- Based on study cases
- Vision 2050 wind farms

Goals

- Easier to connect OWF
- Increased security of supply
- Further integration of energy markets
- Cost reduction
Baltic InteGrid Final Conference
26–27 February 2019, Berlin

www.baltic-integrid.eu
News • Events • Reports
Thank you for your attention!

For further information:

Mail: info@baltic-integrid.eu
Web: www.baltic-integrid.eu

Baltic InteGrid represented by the Lead Partner:

Institute for Climate Protection, Energy and Mobility (IKEM)

Magazinstraße 15–16, 10179 Berlin, Germany
Phone: +49 (0) 30 408187015
Mail: info@ikem.de
Web: www.ikem-online.de

The content of the presentation reflects the author's/partner's views and the EU Commission and the MA/JS are not liable for any use that may be made of the information contained therein. All images are copyrighted and property of their respective owners.