Baltic InteGrid
Integrated Baltic Offshore Wind Electricity Grid Development
• Baltic InteGrid among 35 selected out of 300 concept notes
• Priority area: Management of Natural Resources
• EUSBSR Flagship project; running until 2019
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
Meshed offshore grid

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

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

Meshed approach
Baltic InteGrid

Coordinated OWF development

Regional electricity market integration

Meshed grid in BSR
Policy and Strategic Alignment

- EU Energy Union
- 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)
Core pillars of the Baltic InteGrid

Baltic Offshore Grid Concept
- 6 thematic research packages
Pre-feasibility studies
- In-depth perspective on 2 cases
Baltic Offshore Grid Forum
- Network & conference platform
Core pillars of the Baltic InteGrid

Baltic Offshore Grid Concept
Pre-feasibility studies
Baltic Offshore Grid Forum

- 6 thematic research packages
- In-depth perspective on 2 cases
- Network & conference platform
The Baltic Offshore Grid Concept

- Status quo
- Drivers forward/trends
- Challenges
- Recommendations

6 thematic fields affecting OWE/meshed grids
Policy, law and regulation

*Inventory re. OWE & grids, compatibility/conflict, recommendations*
Market and supply chain

*Trends in OWE/cable supply chain, ramifications for the BSR market*
Technology & grid
State and outlook on offshore wind and grid design in the BSR, LCOE for HVDC connected wind clusters

Image: Subsea World News
(JDR cable system selected by DONG energy for Gunfleet Sands OWF)
Environment & society

Impact assessment environment and sea users + mitigation strategy
Maritime spatial planning
Identification / mapping grid corridors based on new MSP data
Cost-Benefit Analysis

Quantitative (elect. prices, CO2 emissions) & qualitative analysis
Results:

1. Policy & regulation
2. Market & supply
3. Technology & grid
4. Environment & society
5. Spatial planning
6. Cost-benefit analysis
Core pillars of the Baltic InteGrid

Baltic Offshore Grid Concept
Pre-feasibility studies
Baltic Offshore Grid Forum

- 6 thematic research packages
- In-depth perspective on 2 cases
- Network & conference platform
Pre-feasibility Studies
2 case-studies on offshore wind farm interconnectors

1) Polish - Swedish connection (extending to Lithuania)
2) Swedish - German connection

*Address the option of a South Baltic transmission grid ring*
Core pillars of the Baltic InteGrid

Baltic Offshore Grid Concept
Pre-feasibility studies

Baltic Offshore Grid Forum

- Interdisciplinary research
- In-depth perspective on 2 cases
- Network & conference platform
The Baltic Offshore Grid Forum

- Expert interdisciplinary network platform
- Connect with target groups to ensure relevance & uptake
- 22 events during the project lifetime
Thematic Working Groups
1. Policy & regulation
2. Market & supply
3. Technology & grid
4. Environment & society
5. Spatial planning
6. Cost-benefit analysis

- Thematic focus
- Focus: Region-wide

Country workshop
- Latvia
- Poland (*2)
- Germany
- Finland
- Lithuania

- Interdisciplinary
- Focus: national

Key events
- Kick-off conference
- First results conference
- PL-SE case study
- Final conference

- Interdisciplinary
- Focus: Region-wide
### Timeline

#### 2017

- **Thematic Working Groups**
  - Market & supply
  - Technology & grid
  - Cost-Benefit analysis
  - Environment & society
  - Maritime spatial planning

- **Country Workshops**
  - Lithuania

#### 2018

- **Thematic Working Groups**
  - Policy & regulation
  - Market & supply (April-May)
  - Technology & grid
  - Cost-benefit analysis

- **Country Workshops**
  - Poland
  - Finland
  - Germany

- **Key event**
  - PL-SE Case study

#### 2019

- **Key event**
  - Final conference
Recommendations and outputs

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

First reports spring 2018

Target groups

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

Finland
- Finnish Wind Power Association

Estonia
- Elering-generating opportunities

Latvia
- Ministry of Economics

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

Denmark
- Danish Energy Association
- Energinet.dk
- Danish Wind Industry Association
www.baltic-integrid.eu

Newsletters, conferences and latest project developments
Thank you!