Offshore Wind Energy and Electricity Grids: Plans and Synergies in Estonia

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1. Estonia’s energy policy & maritime spatial planning

2. Estonia’s first offshore wind power projects

3. Possible synergies
• Regulation of offshore developments adopted in February 2010:
  – Water Act (building permission & permit for the special use of water required);
  – Electricity Market Act (annual fee for using a public water body).

• Development Plan of the Estonian Electricity Sector until 2018 states 900MW wind energy:
  – 400MW onshore
  – 500MW offshore

• National Renewable Action Plan sees by 2020:
  – 400MW onshore
  – 250MW offshore
POLICY - ENERGY

- Energy Market Development Plan 2030+, approved by the Government in 2016:
  - 50% of Renewable Energy in local electricity consumption by 2030
  - „Given Estonia’s good wind conditions, the availability of biomass and the number of the projects in the pipeline the local renewable energy developers have very good opportunities for flexible co-operation between other countries to develop renewable energy generation units."

- Estonia negotiating the use of co-operation mechanisms with other countries:
  - Statistical transfer;
  - Joint projects;
  - Joint support schemes.
POLICY - PLANNING

- National Spatial Plan „Estonia 2030+“
- **Maritime Spatial Planning** (MSP) in two areas
- Government expected to launch MSP in other sea areas
Estonia’s first MSP established by the Governor of Hiiumaa (June 2016)

MPS in Pärnu & Liivi Bay established by the Governor of Pärnu (April 2017)
Hiiumaa Offshore Wind Farm, developed by Nelja Energia

- Planned in the shoals in the North-west and North of the Hiiumaa island coast with planned capacity 700 - 1100 MW.
- Wind measurements done, extensive studies made.
- Distance from shoreline min 12 km.
- Depth max 30m, sandy seabed. Gravity-based foundation
- LOI signed with the local government in the island of Hiimumaa
LEGEND

- Kõrgepinge alajaam
- Merekaabel
- Mäismaakaabel
- Planseeritud loodusvööndikaitseala
- Tuulepargi asukoht 2006. a
- Tuulepargi asukoht 2010. a
- Tuulepargi asukoht 2013. a
- Tuulepargi asukoht 2016. a
- Mereala teemaplaneering - planeeritud võimalik tuuleenergia tootmise ala - PT

MÄRKUSI:
KAARDI VÄLJAVÖTE REGIO
07.12.2016

SKEPAST&PUNKIM OÜ
HIUUMAA AVAMERE TUULEPARK
TUULEPARGI PLAAAN 07.12.2016
Print A4 M 1 : 300 000
• Planned in the area South of Kihnu island in the Gulf of Riga.
• Feasibility studies show that the wind generators could be built with a total output of ca 960MW.
• Average depth 20m.
• Carried out environment impact assessment studies:
  – State of the art bird survey with 3D radar and impact assessment by University of Tartu;
  – Wind measurements at sea and on Kihnu island;
  – Ice measurements with acoustic measurement instrument
• Environmental impact assessment starts in 2017.
Gulf of Riga Offshore Wind Farm, developed by Eesti Energia
POSSIBLE SYNERGIES

• Major trends:
  • price of offshore wind power falling
  • energy production moving to the sea and in Estonia from east to west

• Possible synergy with the Baltic synchronization to the continental power grid
  • Estonian-Finnish AC link via Paldiski for synchronizing Baltic-Nordic power systems
ESTonia is a country that extends beyond its borders. Here bright ideas meet a can-do attitude.

High wind, low waves - bEST place for offshore wind power.