“Success stories in Estonia and a vision for the Baltic Region”

Martin Kruus
CEO, Nelja Energia AS
Chairman of the board, EWPA

Sept 2017
Nordic-Baltic renewable energy producer

12 y of experience in wind and bioenergy
- Assets 450 MEUR
- EBITA 37 MEUR

Baltic’s largest wind power producer
Estonian pilot off-shore wind farm: Hiiumaa

**Fact sheet**

**General**
- Developer: Nelja Energia AS
- Capacity: 700MW - 1 100MW
- Nr. WTGs: 100-160
- Foundations: Ice-proof gravity foundations

**Location**
- Location: Hiiumaa, Estonia
- Distance from shore: Min. 12 km
- Sea depth: 10m - 30m
- Total area: 200 km2
- Distance to on-shore grid connection point: 45 km

**Production**
- Annual production: 3TWh-5TWh
- Capacity factor: Ca 50%
- Average wind speed: Ca 9 m/s

**Status**
- Marine spatial planning and Strategic Environmental Impact Assessment (EIA) approved in 2016
- Detailed EIA report submitted for approval of Ministry of Environment
- Seabed right and building permit process ongoing
The Baltic Sea Declaration has been approved on the 15th of June, 2017 by the following members of the Baltic Sea Offshore Wind Forum:

- Danish Wind Industry Association (DWIA) - Jan Hyleberg
- Estonian Wind Power Association (EWPA) - Martin Kruus
- Finnish Wind Power Association (FWPA) - Anni Mikkonen
- German Offshore Wind Energy Foundation (SOW) - Andreas Wagner
- Latvian Wind Energy Association (VEA) - Paulis Barons
- Lithuanian Wind Power Association (LWPA) - Aistis Radavičius
- Polish Wind Energy Association (PWEA) - Janusz Gajowiecki
- Swedish Wind Energy Association (SWEA) - Charlotte Unger Larson

The Baltic sea declaration is about

- Turning cost-effective offshore wind resources to the feasible renewable baseload, export of green electricity and this way boosting economy of the region.
- To develop industry supply-chain, electricity market design, transmission grids, renewable energy cooperation mechanisms, spatial planning
Baltic Sea advantage
Large weather window and less extreme winds lowering CAPEX and OPEX

- Average wind speed in the west of Hiiumaa islands is ca 9 m/s.
- Due to calmer seas the wind park sites are accessible for most of the year.
- Shorter construction periods, less standby hours, less cost for heavy installation equipment, more time to carry out maintenance works.
- Higher technical availability, lower O&M, and lower CapEx.

**Wind conditions**

**Load hours**
- <1 000
- 1 000 – 1 250
- 1 250 – 1 500
- 1 500 – 2 000
- 2 000 – 2 500
- 2 500 – 3 000
- >3 000

**Sea conditions in the Baltics Sea versus North Sea**

- 4x more time for operations at sea in the Baltic Sea

**Average wave height, m**

- North Sea
- Baltic Sea
- Safety threshold

North Sea 1992-2007 monthly averages; Baltic Sea 1996-2012 averages
Vision of connecting Baltic Sea offshore windparks into integrated transmission system

Renewable baseload. Offshore wind energy combined with hydropower, strong interconnectors and smart grid applications can provide renewable baseload in the Baltic Sea region but it can also supply clean energy to the Central Europe.

More energy security
By connecting offshore windparks directly across the Baltic Sea it is possible to create Baltic-Nordic synchronous system, thus desynchronize Baltic States from Russia’s power system.

Last but not least
Its more environmental friendly to develop future transmission grid with cables at the sea instead of massive overhead lines onshore.

The overall offshore project pipeline in the Baltic Sea is ca. 30 GW

Source: www.4coffshore.com/offshorewind, Benefits of the Meshed Grid, European Commission
RES Cooperative Mechanisms

What are RES Cooperative Mechanisms?

- According to the European Directive (2009/28/EC, Art 6 - 8) it is possible for Member States to cooperate in order to jointly achieve their national renewable targets.
- A Member State can ask another Member State to produce renewable energy for them by supporting such installations and getting green statistics in return.
- Therefore, the transfer of green statistics is only rational, when the cost of domestic green energy per MWh is significantly higher than the other Member State’s cost.

What do State Aid Guidelines say?

- To facilitate the better functioning of the internal electricity market, the guidelines also promote the use of cooperation mechanisms to facilitate cross-border support of renewable energy where possible and appropriate.

Distance to 2020 renewable energy targets of countries missing their 2015 trajectory targets

As % of gross final consumption

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Missing in TWh, based on 2015 consumption

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Source: EC Renewable Energy Progress Report, 2017; Eurostat

Premise of the statistics transfer

- Renewable energy subsidy
- Option for equipment and service exports
- Option for investment

Project country

Sponsor country
Thank you!

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