Litgrid

Wind energy in Lithuania

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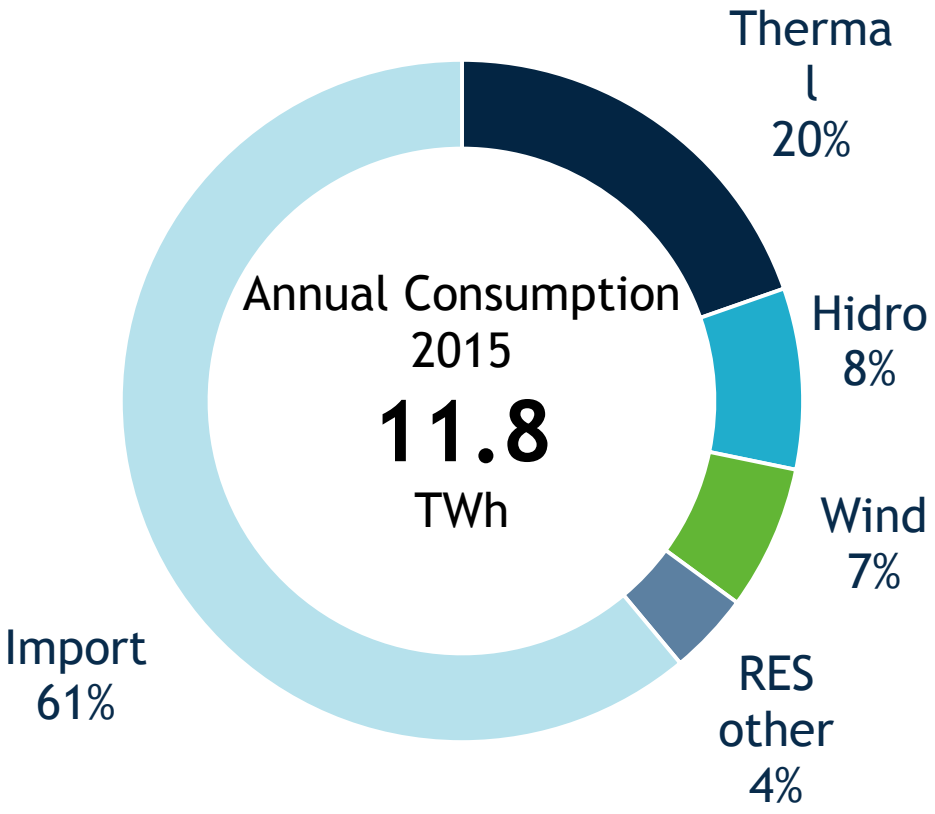
Wind energy within Lithuanian power system



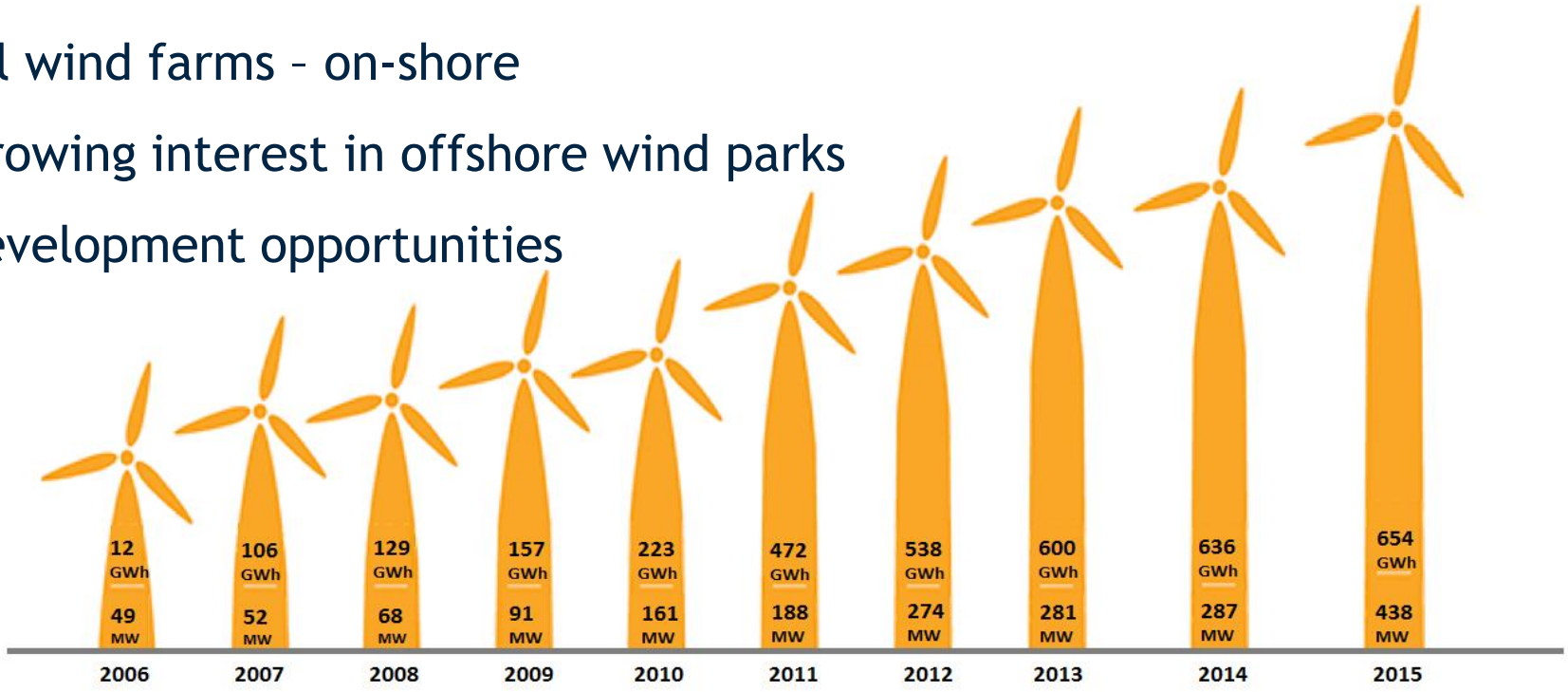
System hourly consumption:
Pmax ~ 1800 MW (h)
Pmin ~ 750 MW (h)

Year 2015:

- Annual consumption – 11.8 TWh (including pump storage.)
- Wind energy acounted:
  - for 18% of total production
  - and 7% of consumption
- Offshore wind energy – 0%

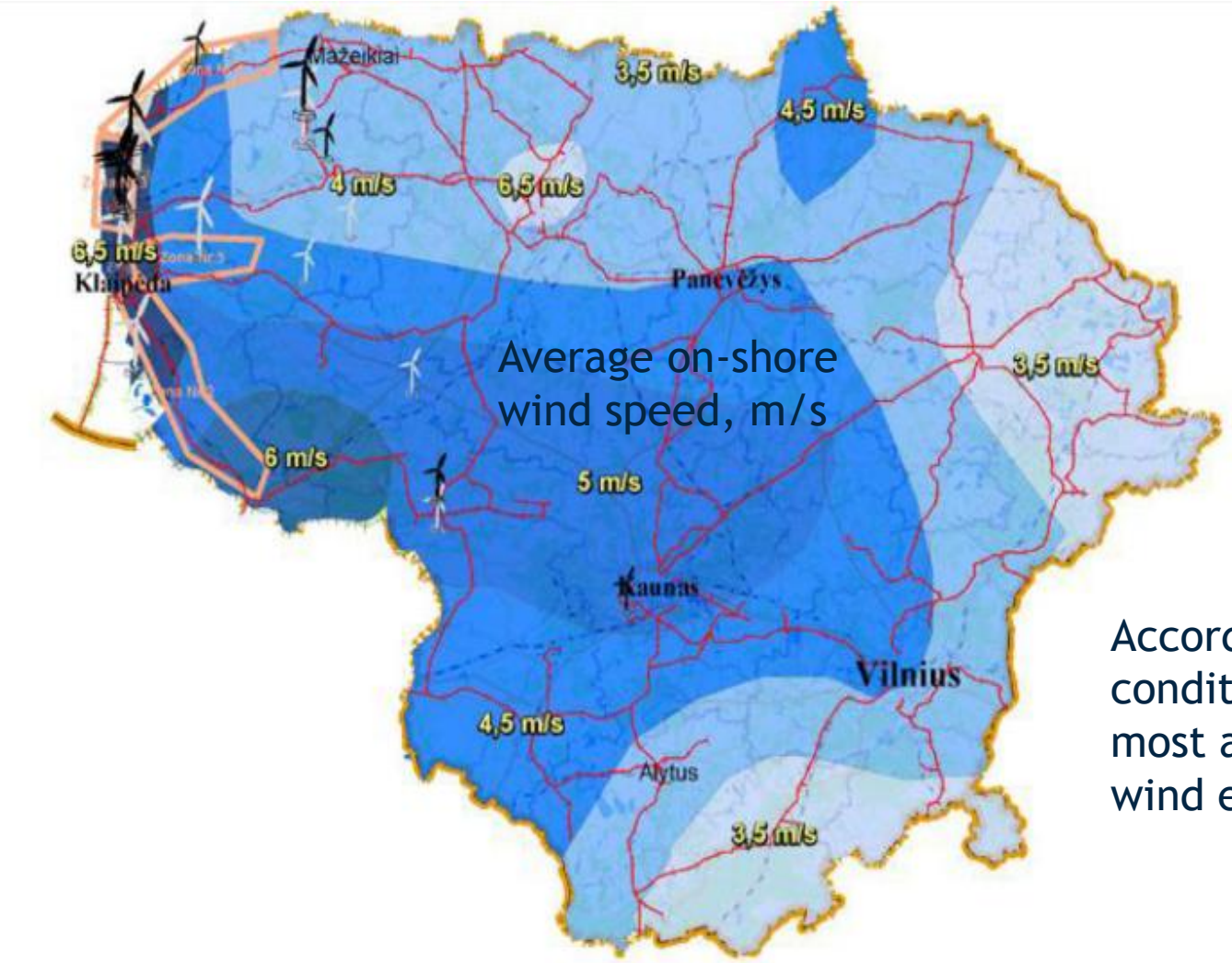
Wind capacity evolution in Lithuania

- Wind energy activity started in 2006
- All wind farms – on-shore
- Growing interest in offshore wind parks development opportunities



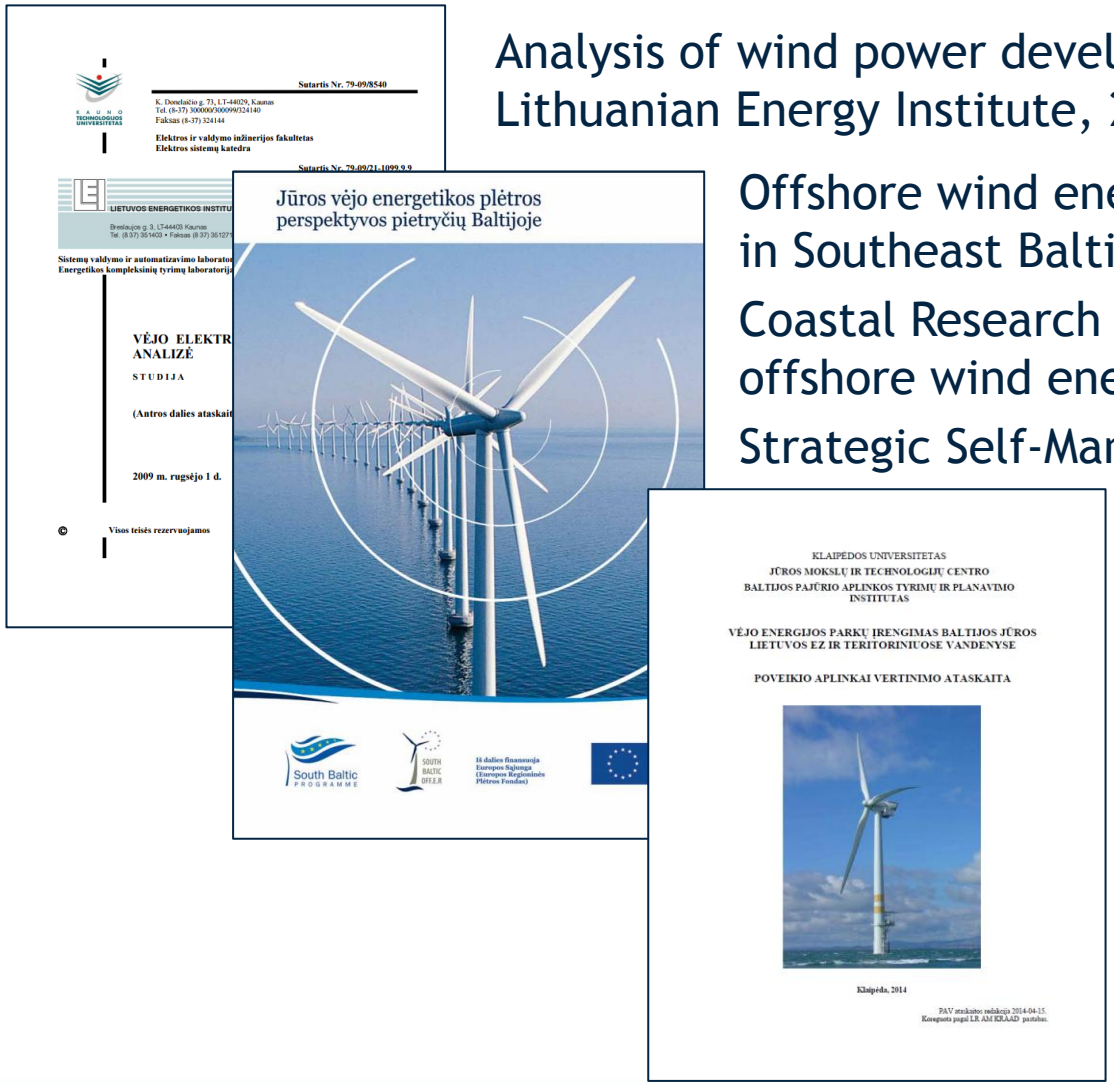
Currently no legislation governing the development of off-shore wind farms. The development of legalisations is expected in future.

On-shore wind potential in Lithuania



According Lithuania's climate conditions, the seashore is the most attractive location for wind energy development

Studies and analysis for off-shore wind possibilities



Analysis of wind power development opportunities, Lithuanian Energy Institute, 2009

Offshore wind energy development prospects in Southeast Baltic, Klaipeda University

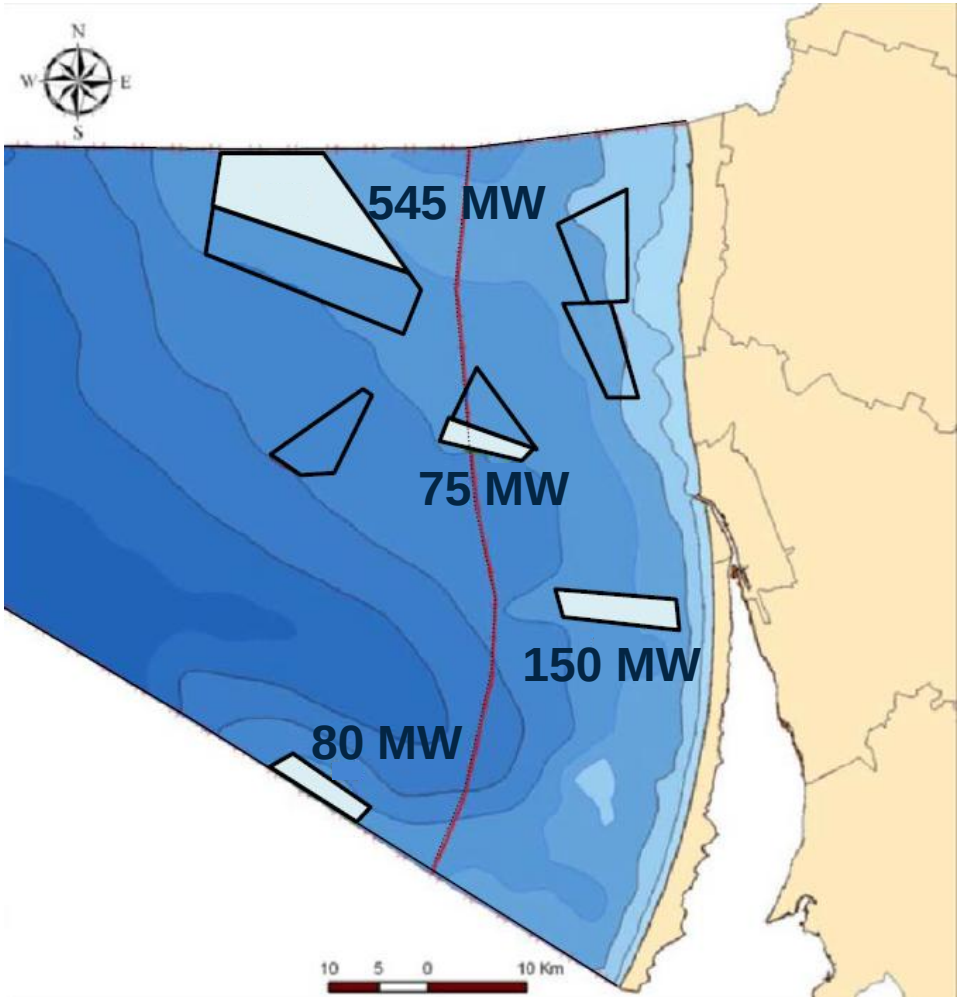
Coastal Research and Planning Institute, Polish offshore wind energy community and

Strategic Self-Management Institute, 2013

Wind parks installation in the Baltic Sea territorial waters of Lithuania, Environmental Impact Assessment Report, Klaipeda University

Marine Science and Technology Center Coastal Research and Planning Institute, 2014

Potential areas for off-shore parks



Potential location of off-shore wind farms identified taking into account:

- Port area and shipping routs;
- Fishing;
- Soil dumping and sand mining;
- Existing equipment and installations;
- Restricted areas;
- Protected areas.

Lithuania's Baltic Sea coastline is 99 km.

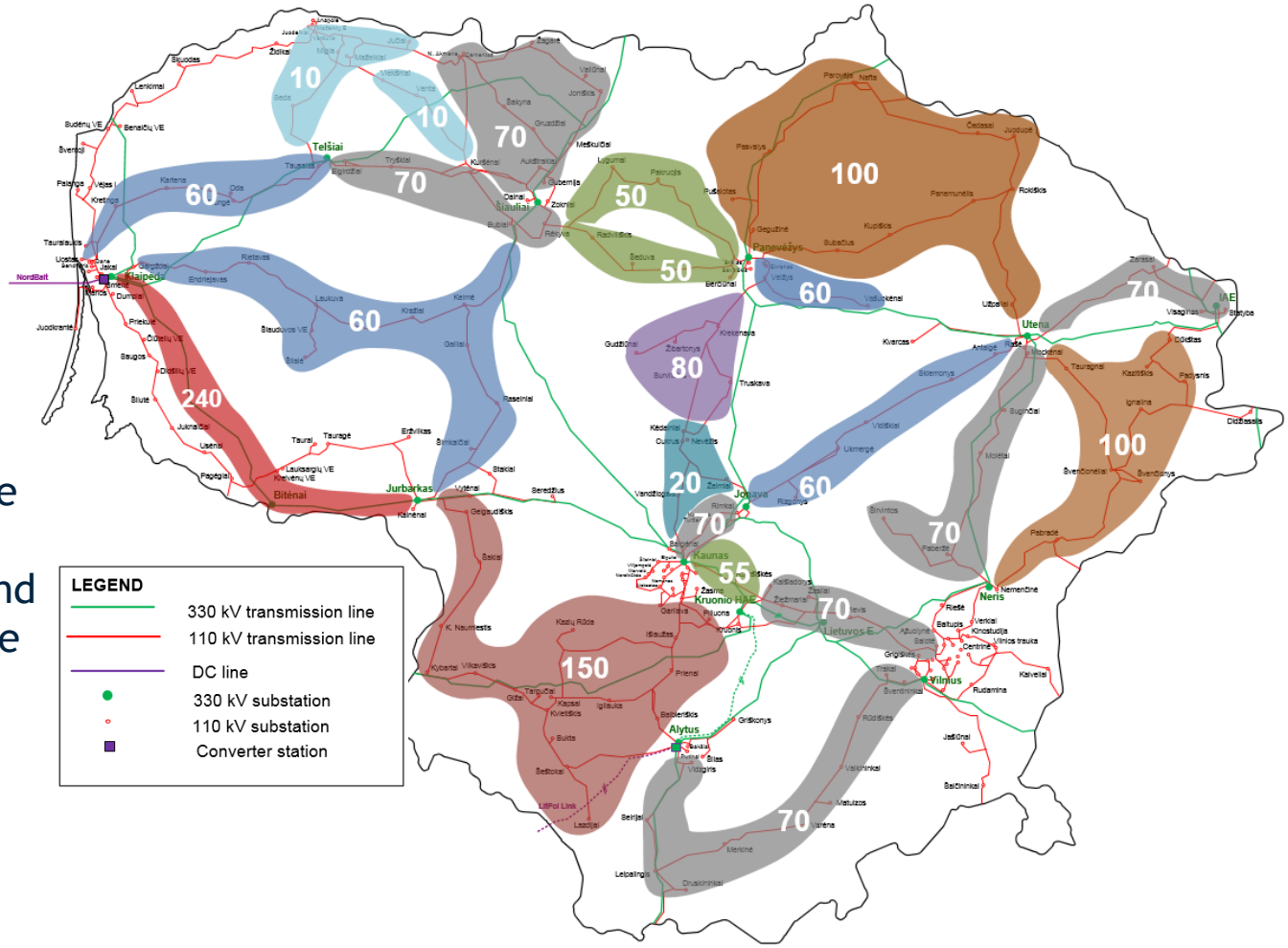
Transmission network capability

- 330-110 kV network capability in Western part of Lithuania is fully utilized

On-shore wind potential:

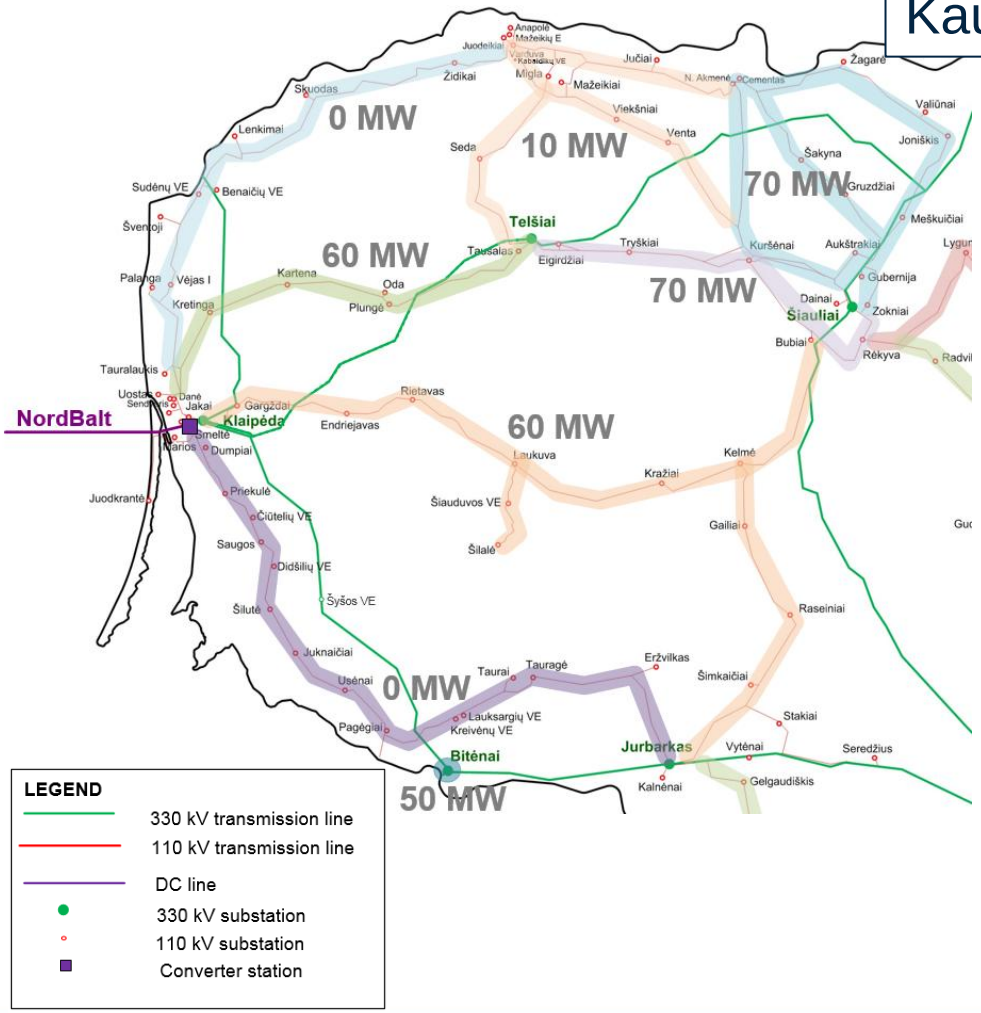
- Taking into account natural conditions, free areas and topology of the 110 kV transmission network, ~400 MW of wind parks may additionally be built in mainland

- Connection to 330 kV network on mainland should be analyzed separately



Connection of off-shore wind farms

RES integration feasibility study till 2030, Kaunas university of Technology, 2014



For offshore wind connection transmission network development is necessary

Five 330 kV network development alternatives has been identified

Choice of alternative depends on capacity and location of off-shore wind farms.

Moving forward

- Creation of legal framework, governing the development of off-shore wind farms
- Identification of off-shore wind development volume
- Detailed analysis for necessary transmission network development


Thank you for your attention