



Developing offshore in Lithuania – looking from the other side

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Offshore basics

Why offshore

- Better wind conditions
- The only possibility to build large scale wind energy projects
- Logistic possible for very large units
- Limited impact on the population
- Smaller impact on the environment

Onshore

- 1.2-1.8 MEUR/MW
- Turbine makes 80% of it
- Capacity factor - 25-35% (newest large rotor parks – 40-45%)
- Total installed capacity (EU27) 101 GW
- Cost of energy - very competitive compared to new fossil fuel power plants
- Sites are getting scarce, though educated population allows reasonable growth (e.g. Danish case)

At the same time

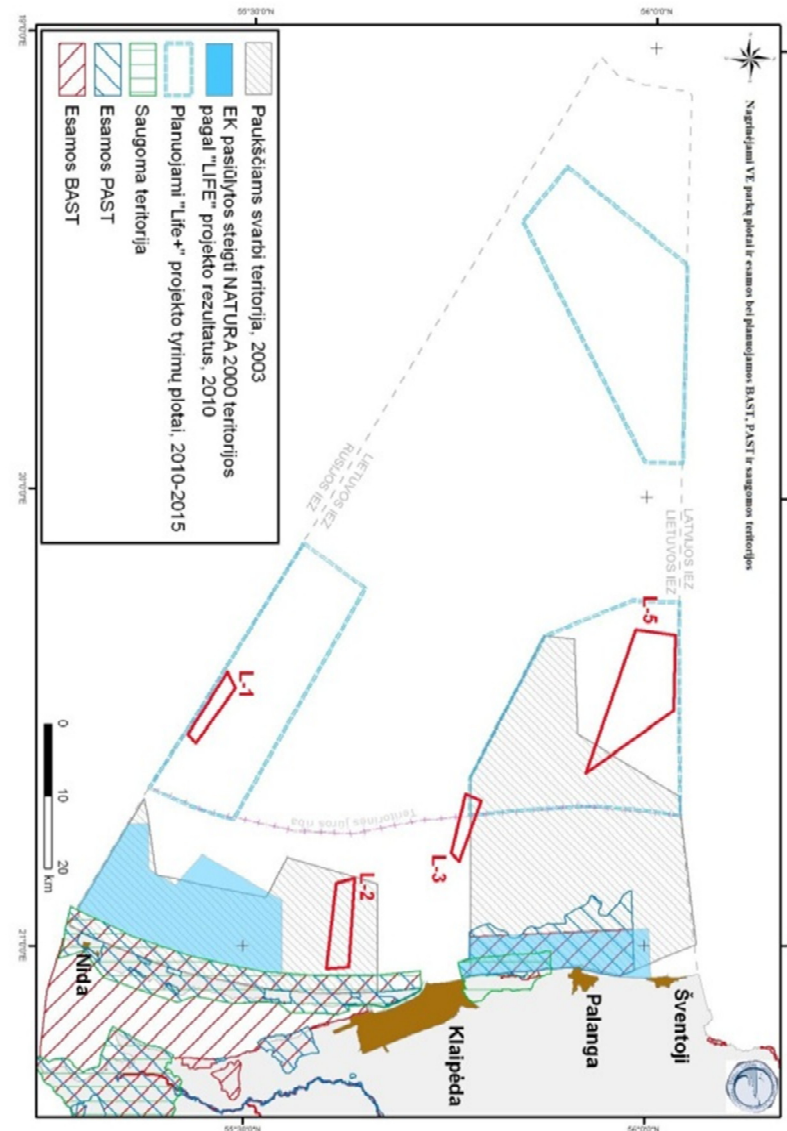
- Currently more expensive than onshore wind energy
- Certain technical challenges (ice, salt, service etc.)
- Environmental impacts not widely known

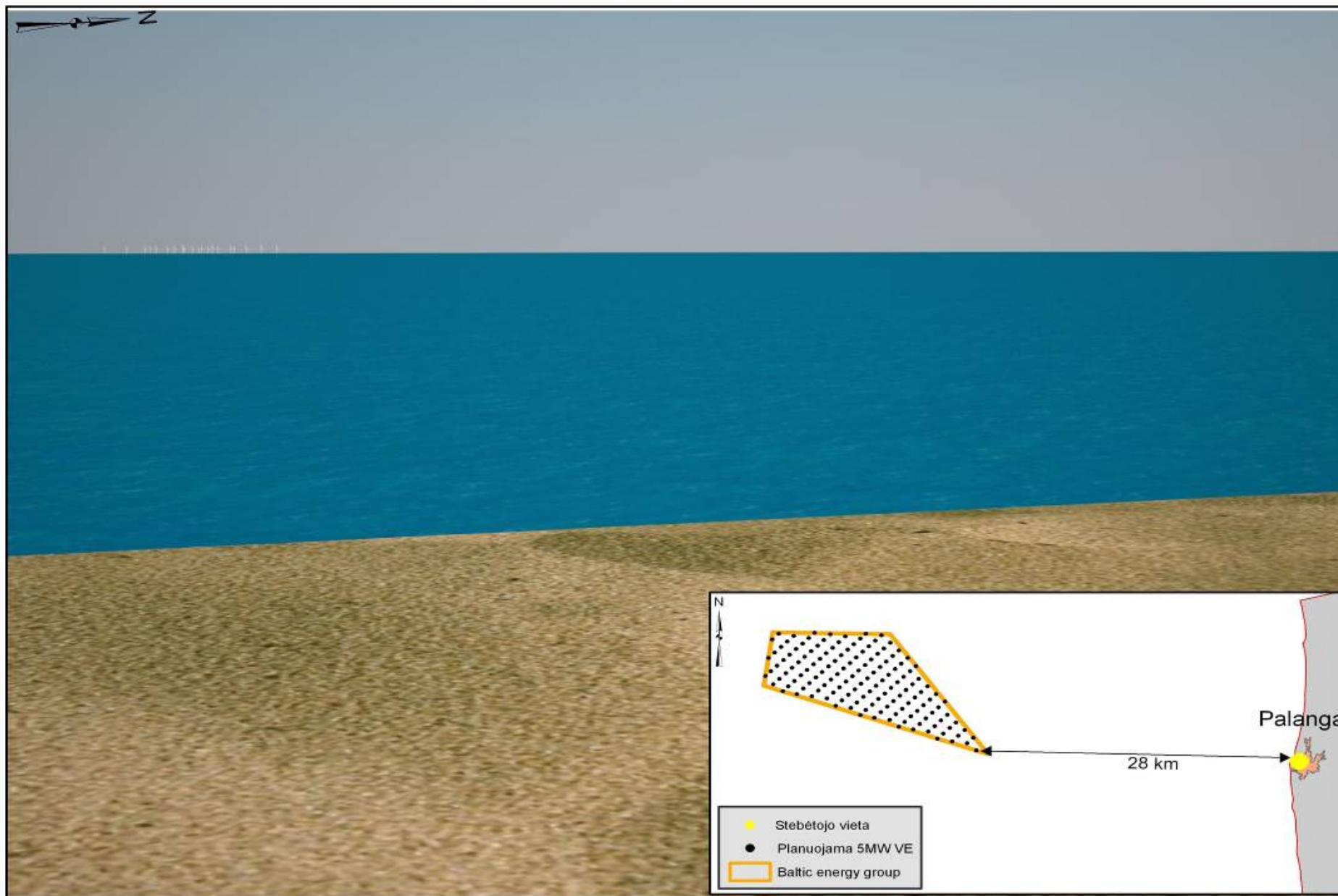
Offshore

- 2.5-4 MEUR/MW
- Turbine makes 20-40% of investment
- Capacity factor - 45-50%
- Total installed capacity (EU27) 8,4 GW
- Cost of energy – still more expensive than onshore wind
- Sites are only started to be exploited; virtually unlimited

4e offshore development

- Nelja Energia - renewable energy company active in the Baltic states
- With 223 MW of in 15 operational wind parks, No1 wind company in the Baltic
- NE's subsidiary Baltic Energy Group is developing 400-800 MW offshore wind park in Lithuanian waters since 2008
- 4 sites have been identified for development
 - ▶ area 17 to 121 km²
 - ▶ depth around 30 m
 - ▶ distance from closest turbine to the shore 3,4 – 31 km
- Sites for development have been selected based on existing study which identified those sites as the ones with least usage conflicts and impact to the environment





4e offshore development

- ▶ Estimated production (at 45% CF)
 - ▶ 400 MW – 1,57 TWh
 - ▶ 800 MW – 3,1 TWh
 - ▶ Total consumption in Lithuania 8-9 TWh
- ▶ Estimated investment
 - ▶ 400 MW – 1200 MEUR
 - ▶ 800 MW – 2400 MEUR
- ▶ For precise calculations of investments, production, grid effects etc. substantial investments are needed into research and development of the park, e.g.
 - ▶ Wind measurements
 - ▶ Studies of deeper geology of the seabed
 - ▶ Foundation design
 - ▶ Grid studies
 - ▶ Connection design

Deep studies are expensive so no significant further steps can be taken without clear outlook of the project

- Clear legal environment
- Seabed rights
- Positive attitude from the Government
- Financing outlook

It takes years if not decades to develop an offshore project, so it is important to start early!

Legal context

- No legislation available at the time of the start of the development
- Law on renewables approved in 2011 which explicitly mentions offshore wind farms
- Key provisions
 - Plots for development will be allocated via tender to be initiated by State or developer
 - Winners of the tenders are selected based on:
 - capacity of the applicants
 - obligation they are ready to undertake
 - preparedness to proceed
 - Precise tender rules of the tenders still to be prepared by the Government or designated body
 - Winner of the tender get exclusive right to develop the project for 4 years after which he should take decision whether to build the park or not; in case Developer decides not to build, his exclusive rights may be annulled
 - No tariff for offshore wind energy has been set
 - Tenders are to be started 3 month after application, however only for the areas with existing spatial planning documents
 - The general plan for Lithuanian marine territory is in preparation (Strategic EIA of the proposed plan is ongoing) most likely not be finished before end of 2013

Mixed success so far...

- EIA started 06 2008
- Program of the EIA has been prepared 07 2008
- Comments from involved institutions received 11 2008
- EIA program approved 01 2009
- Public hearings 11 2009
- EIA report submitted for stakeholders comments 05 2010
- All but one institution approved the EIA report 09 2010
- Department of Protected Areas gave negative response 03 2011
- Debate with the Department ongoing ever since

- Main reason – EU financed project Denoflit (Life+) has been started in **2010!** with a task to investigate need for additional protected areas in the EEZ of Lithuania

- Official response – no comprehensive data on wintering birds in some of the areas is available

- Monitoring of wintering birds has been carried out in winter 2011/2012; Result – area L5 is far from meeting even minimal criteria for establishment of the protected areas; concentrations of wintering birds tens to hundreds times lower than in costal areas where no protected areas have been established

- Department of protected areas is of opinion that more data is needed

Offshore EIA specifics

Natural specifics; EIA is one of many steps in a long way of development, especially in countries with no transparent legislation and experience

- ▶ Difficult to specify some details early in the process
 - ▶ turbine model
 - ▶ foundation type
 - ▶ cabling routes

Administrative barriers

- ▶ Lack of knowledge
- ▶ Lack of clear basic information or “common knowledge”
- ▶ “normal” deficiencies of the bad governance:
 - ▶ Missed deadlines
 - ▶ Changing comment to same report
 - ▶ Avoiding responsibility – including into the process all and any institutions
 - ▶ Fear to take “yes” decision but nobody responsible for “no”
 - ▶ Not transparent processes in some cases, e.g. in case of military radars

There is clear need for more public scientific data from existing offshore wind farms and EIA reports both for developers and scientists but more important for general public and civil servants

To conclude...

- Offshore wind parks can reliably provide significant amounts of electricity
- Cost of offshore wind energy will follow the downward trend of onshore wind which is already competitive to conventional energy production
- Offshore projects are very large by nature and require adequate attention from the governments first of all by providing adequate and clear legal climate
- Governments show little or no interest in the offshore projects as renewables are still considered to be luxury only needed to fulfill EU demands
- State institutions have very little competence on the matter
- Legal framework is incomplete, in some cases non existent
- There is clear need for more public scientific data from existing offshore wind farms and EIA reports both for developers and scientists but more important for general public and civil servants