



AS Augstsprieguma tīkls – the part of integrated Baltic and European power system

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The Long term issues

- Balancing the unpredictable renewable energy sources (RES) – Wind, Sun and Biomass/Biogas.
- High surplus by 2020 expected in the Nordic countries will need to be transmitted to the Continental Europe.
- Grid development may not be in time if RES targets are met as scheduled, due to internal grid reinforcement restrictions.
- Uncertainties regarding the market development on the EU-Russian border.
- Large uncertainty regarding generator investments is a challenge for grid development.
- North - South flow direction in all the Baltic Sea countries.
- Changing of power balance in Germany is significant in the short term.

Wind energy – the most challenging forecasted generation unit in grid operation



EIP Regulation

HV interconnection development in Europe and European Commission financing allocation will be based on EC Directive and Regulation, named “European Infrastructure Package”.

- PCI projects for electricity shall contribute significantly to at least one of the following specific criteria:
 - ✓ market integration;
 - ✓ sustainability;
 - ✓ security of supply.
- Evaluation of the PCI projects for electricity will be based on the energy system-wide cost-benefit analysis (CBA) methodology, including network and market modeling. Methodology will be elaborated by ENTSO-E.
- CBA calculation will be prepared on the Regional level until 31.07.2013.
- PCI list finalization until 30.09.2013.
- The new EIP regulation will be adopted in the March 2014;
- Financing allocation for the each PCI project will be decided by EC, taking into account the specific criteria;
- On the national and regional level PCI projects are worked out by TSOs, NRAs and representative of Member States.

The Long term challenges for transmission grid

The main objectives are:

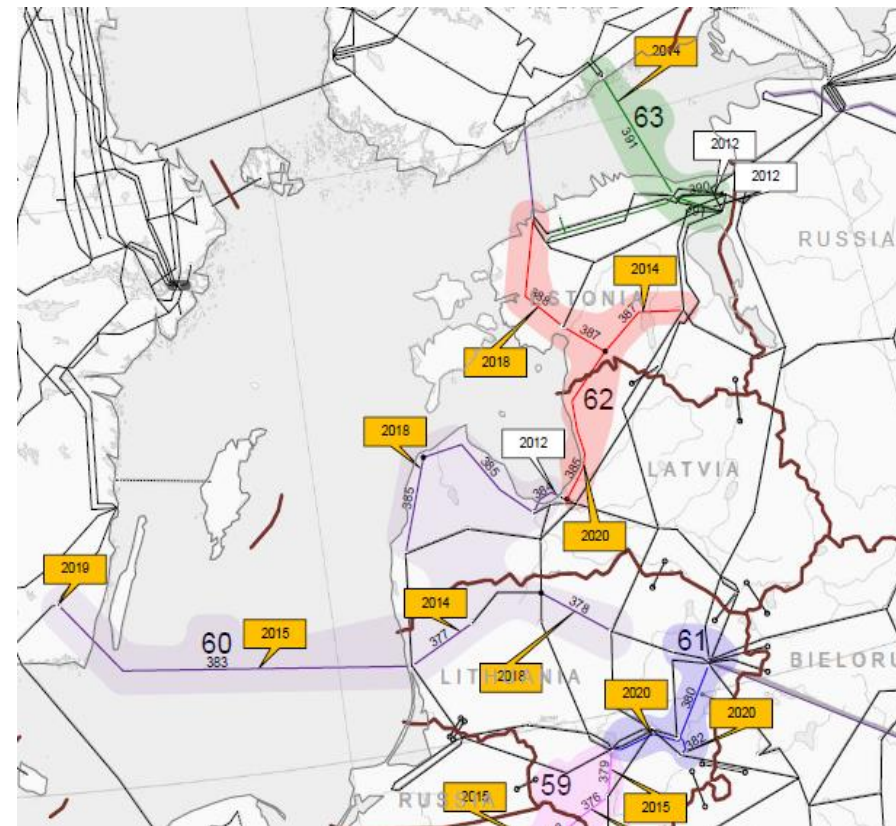
1. increase of the security of supply;
2. increase of the competition in liberal electricity market;
3. development of the robust and reliable transmission system;
4. Baltic States integration in European power system;
5. RES integration.

External interconnectors:

- ✓ NordBalt –2016;
- ✓ Estlink2 – 2014;
- ✓ LitPol link – 2015.

Internal reinforcements in 2020 (LV, LT un EE):

- ✓ EE-LV 3rd interconnection – 2020;
- ✓ Kurzemes ring, LV – 2018;
- ✓ Panevezis-Musa-Klaipeda, LT – 2018;
- ✓ Harku-Sindi-Tartu, EE – 2018.



Prefeasibility Study on the interconnection variants for the integration of the Baltic states (Lithuania, Latvia and Estonia) to the EU internal Electricity market

The main goal of „Feasibility Study on the interconnection variants for the integration of the Baltic states (Lithuania, Latvia and Estonia) to the EU internal Electricity market” is to investigate Baltic transmission network interconnection variants with EU countries transmission networks and Baltic electricity market integration to the EU internal electricity market.

Prefeasibility Study on the interconnection variants for the integration of the Baltic states (Lithuania, Latvia and Estonia) to the EU internal Electricity market

The main steps of the Prefeasibility study are:

- **Analysis of the previous studies** (Already done)
- **Load flow calculation** (Already done)
- **Stability analysis** (End date of activity :June 2013)
- **Assessment of interconnection variants** (End date of activity : August 2013):
 - ✓ Socio-Economic and financial issues
 - ✓ Legal and Regulatory issues
- **Final Report and stakeholder communication** (End date of activity is September 2013)

The expected completion of the Prefeasibility study is Autumn 2013

Concerns regarding presence of NPP in the Baltic states

- In the case there are nuclear power plants present (NPP) in the Baltic region it seriously endangers security of supply of the region in case of NPP failure especially for synchronous operation of Baltics with Continental Europe.
- Both possible NPP projects are over 1000MW which means that in case of loss of these units they have to be compensated by:
 - fast (primary) reserve e.g. emergency power exchanges via DC and AC links which in this case have to be kept free otherwise load disconnection has to be performed.
 - secondary reserve has to be compensated by secondary reserve e.g. conventional power plants which may be not available within required time depending from the season
 - system has to be ready for the next N-1 which is largest unit or the most loaded link in direction to the Baltics e.g. 700MW in NordBalt case and for this there is no sufficient reserves at all



Thank you for attention

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