



From competition
to cooperation with the EU:
The case of Kaliningrad

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ROSATOM

Energy sector is transforming under new energy policy of the EU

EU targets for energy sector:

- New design of European electricity market without electricity islands
- Improving the sustainability of energy systems
- Increasing industry competitiveness
- Power supply security for the consumers
- Decarbonizing the economies
- Focusing on modern and innovative technologies
- Energy efficiency increase

Targets are fixed in documents of Energy Union and Paris agreement:

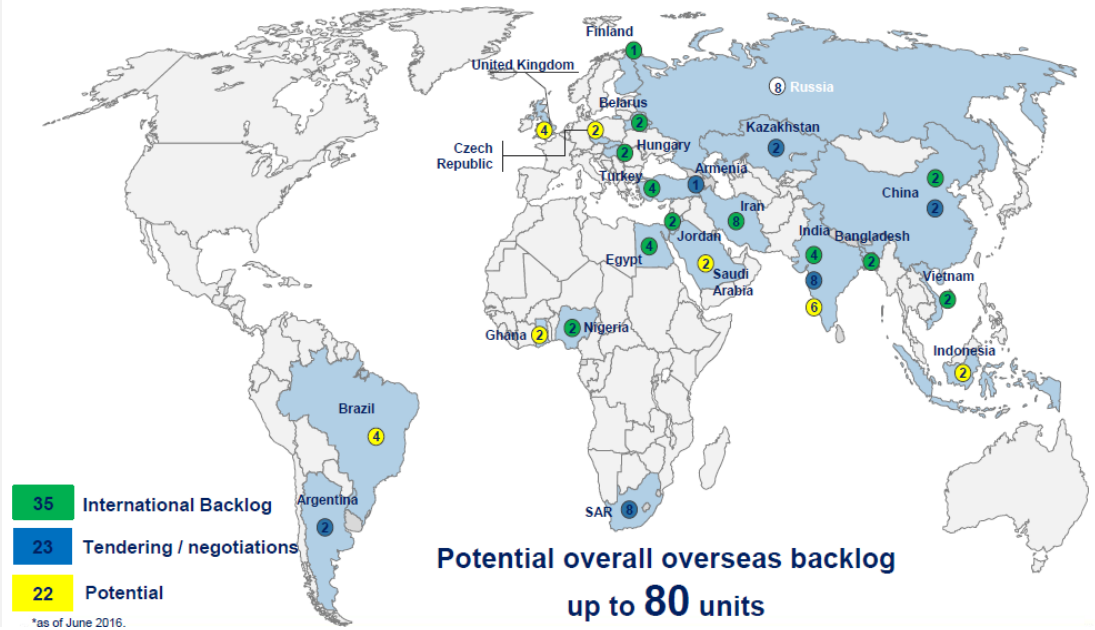
- 40% CO2 emission decrease by 2030
- 27% RES share by 2030
- 10% Interconnection target by 2020 and 15% - by 2030



Rosatom VVER – referenced technology with global presence

Nuclear power is a win-win solution for energy sector:

- ✓ NPP grid infrastructure could integrate power systems
- ✓ Return the investments without burden on consumers and market imbalance
- ✓ Price leaps elimination and restriction of CO2 certificates cost rising for market sustainable
- ✓ Sustainable power supply



Rosatom is at the cutting edge of nuclear industry development:

- 44 NPP Units under construction globally
- First Generation 3+ unit has already been put into operation on Novovoronezh NPP
- Implementation of modern fast-breeder reactors
- Multi-level safety systems
- Complete life-cycle products and services in nuclear power
- 4 EU-oriented VVER projects: Hanhikivi, Paks, Ostrovets, Baltic (Kaliningrad)

Baltic NPP could act like an Energy Hub for Market Integration

Export oriented Baltic NPP is located in Kaliningrad region.
Installed capacity - 2x1200 MW, Annual production - 17 TWh , modern generation 3+ reactor



WHY Baltic NPP (3rd country partner)?

- ✓ Extension of electricity transmission systems
- ✓ Safety of NPP generation is priority: generation III reactor
- ✓ Supporting EU 15% interconnection target
- ✓ More generation units – less price leaps
- ✓ CO2 emission cut – 15,4-19,6 mln t/year*

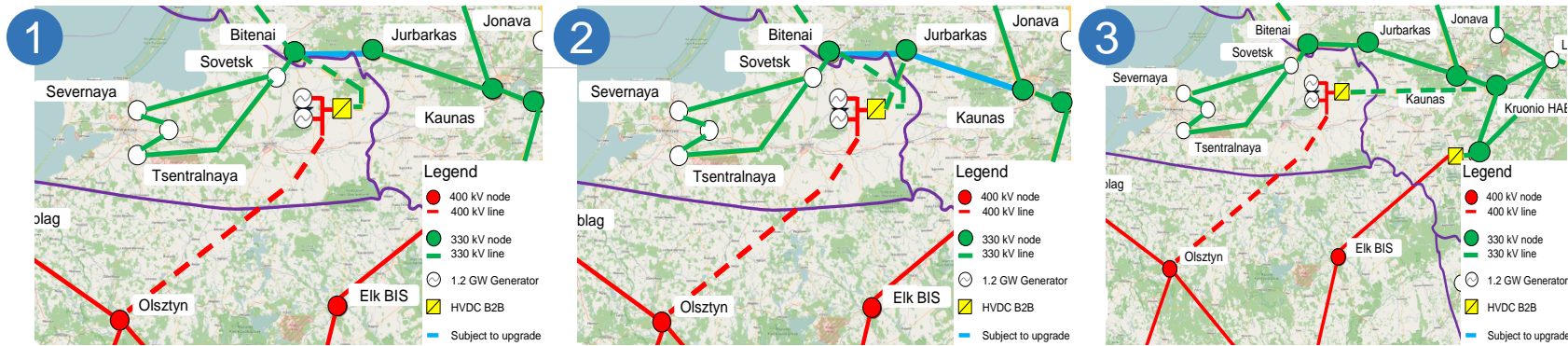
Stimulation of economy and regional co-operation

- ✓ Avoid energy Islands in Baltic Sea Region
- ✓ External investments in EU transmission interconnection
- ✓ Up to 50% of equipment from European companies
- ✓ Additional opportunities for EU companies to be partners and contractors



*Up to 17% of annual Polish power sector emissions.
Preliminary Cost Benefit Analysis based on ENTSO-E guideline (see Annex)

Baltic NPP interconnection is efficient in different scenarios of synchronization



Most economical and technical reliable Power transmission schemes of BNPP (3 of 11)

Lines (km)	• 211 new, 65 upgrade	• 233 new, 125 upgrade	• 327 new
Investment	• 459 mEUR	• 493 mEUR	• 521 mEUR
Type	• Double circuits on all new build transmission lines and 3 x 600 MW HVDC B2B station in Lithuania direction		

Potential schemes of partnership in interconnection project – ideas for discussion

Short-term partnership scheme

- Partner and Rosatom established a JV for interconnector construction project with shares 70/30 – Rosatom puts feasibility study results as a part of share.
- Rosatom gradually buys Partner's share providing guarantee IRR:
 - E.g. 30% at the construction authorization date (funding of grid construction with shares 40/60)
 - E.g. final 40% at the commercial operation date of Baltic NPP

Long-term partnership scheme

- Partner secure project conditions, construction and implementation of the grid.
- Rosatom pays transmission fee according to log-term agreement providing guarantee IRR for the Partner.

Detailed terms and conditions of schemes are subject to discuss as far as others possible schemes of partnership.