The Baltic Sea Regional Power Market
Escape from Isolation!

Taavi Veskimägi
CEO
Elering AS

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5500 km HV electricity lines; HVDC connections EstLink 1 and EstLink 2

900 km HP gas pipelines

Emergency reserve power plants and 145 substations

Eurobond listed on London Stock Exchange, Moody’s A3/stable

222 employees

Asset value ca MEUR 850
Themes for Today

- European Energy policy context
- Integrated Baltic Sea regional power market - is it ready now?
- Estonian power Market liberalisation success story
- Regional power system development
- Joining the Synchronous Area of Continental Europe
Strategic Goal # 1: Common Nordic-Baltic Power Market Based on PEX!

Strategic Goal # 2: Synchronous Connection Between Baltics and Continental Europe!
European Energy Policy Context

- The third legislative package on EU electricity and gas markets
  - Security of supply must be ensured through well-functioning markets

- Second Strategic Energy Review
  - Move towards an integrated EU energy market

- Joint Declaration of the Baltic Prime Ministers
  - To create an open and transparent regional energy market
  - New infrastructure: NordBalt, LitPol, Visaginas nuclear plant, BalticConnector, regional LNG terminal

- **BEMIP** *(The Baltic Energy Market Interconnection Plan)*
  - Integration of current isolated areas in the Baltics with European energy market
  - Common Nordic-Baltic balancing cooperation
  - Synchronous connection between Baltics and Continental Europe
  - Connecting the Eastern Baltic Sea countries to the integrated European gas network

- Energy Union
  - Energy security, solidarity and trust
  - A fully integrated European energy market
  - Energy efficiency contributing to moderation of demand
  - Decarbonising the economy
  - Research, innovation and competitiveness
Functioning Electricity Markets = Market Rules + Adequate Transmission Capacity

**Software: market rules**
- Efficient dispatching: generation and demand
- Efficient use of transmission capacity
- Better competition

**Hardware: transmission capacity**
- Reduction of congestions - efficiency improvements
- Price convergence

Common rules by 2014: "European market model"

2020+
Day-Ahead Electricity Price

27.04.2015, EET: 03.00

[Map showing Day-Ahead Electricity Price across Europe]
Example: Estlinks vs Production in Estonia

![Graph showing EstLink 2 outage between specific dates with consumption and production data for the period from April 15, 2015, to May 31, 2015. The graph indicates fluctuations in consumption and production data.]
Integrated Baltic Sea COMMON Power Market - is it Ready Now?
Baltic Cooperation, BAU!
## Baltic Electricity Market

### Preconditions for market integration agreed in BEMIP

- Open electricity market
- More cross-border capacities (new infra projects)
- Development of financial market
- Unbundled TSOs
- Common PEX (day-ahead and intraday)
- Common reserves and balancing market
- Capacity calculation and allocation method
- Harmonized market rules towards 3rd countries

### Actual situation

- EE and LV - 100%
- LT regulated prices for small customers
- EstLink 2 FI-EE since 2014;
- LT-SE, LT-PL from 2016,
- new line between EE-LV planned
- Nasdaq OMX EBAD Tallinn, Riga, Helsinki
- Unbundled TSOs
- Common PEX NPS (day-ahead and intraday)
  - Common Baltic imbalance agreement
  - Project for harmonized balancing market (CoBA) by 2018
  - Coordinated Baltic CACM rules
  - PTR-Limited auctions on EE-LV border
- Baltic and FI interfaces different
Estonian Power Market liberalisation success story: Delivering benefits for end-users and trust to market players
Wholesale to Retail Market Liberalisation

2009
Closed market
Regulated price (31 EUR/MWh)

2010
TSO unbundled
NPS Estonia price area
35% of market opened

2013
100% open market
Data Hub

2014
Risk hedging instruments (PTR)

2015
Common Baltic imbalance agreement
5 months average market price 32 EUR/MWh

713 000 consumption points
576 000 electricity contracts (93-94% of energy)
   411 000 fixed price contracts
   165 000 contracts linked to the spot price
137 000 universal service (no contract, 6-7% of energy)

• More than 40 electricity sellers, 10 of which active countrywide
• „National champion’s“ market share ca 60% (2009: 100%)
• Both second and third hold ca 10% of the market
Wholesale to retail Market

• Liberalisation

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Andmeladu
INFORMATION SYSTEM

MY METERING POINTS

38ZEE-00638393-C Raja 1, Tallinn, Raja 1, Tallinn

Grid operator: Elektriliiv OÜ
EIC: 38ZEE-00638393-C
Metering type: remote-read
Connection state: connected
Location: Raja 1, Tallinn, Raja 1, Tallinn

Grid operator: Elektriliiv OÜ
EIC: 38ZEE-00638393-C

Metering data:

- Chart
- Excel
- XML

Last year:
Consumption: 7113.725 kWh

Supply agreements:
- IMATRA ELEKTER AS 2013-01-01 - ...

Grid agreements:
- 2011-07-05 - ...

created by
elering

Hello,
TAAVI VESKIMÄGI
EIC: 38X-AVP-5YA600ET

Choose a role
Taavi Veskimägi

Log out

Frequently asked questions
Technical support:
help.andmeladu@elering.ee
Estonian data hub information phone:
(+372) 6160160
Actual support for the open electricity market

NETWORK OPERATOR
• Hourly measured data kWh
• Grid service agreements info

SUPPLIER
• Submits supply agreements info
• Receives measurement data for offers and actual settlement

DATAHUB
• Data exchange between network operator - supplier - market participant
• Calculations for settlement:
  • Suppliers aggregated volumes per grid areas

MARKET PARTICIPANT
• Submits

ADDITIONAL DEVELOPMENTS:
• Combined electricity and grid service bill (mediation)
• More calculations and reports
• Statistic dashboard
• Production register: link for RES subsidies (application) and Guarantees of Origin
Data Sharing Platform ESTFEED

Energy Consumption & Contract Management

Free Platform for Smart Energy Consumption Apps
Power System Development
Baltic States’ Interconnectors

- Baltic States are technically strongly connected to Russian power market.
- Baltic States have strong cross-border interconnections, but mainly to the East. Fairly weak connection with EU countries.
- Estonian transmission network allows to import all power needed.
Generation Capacities in Estonia CHANGE until 2030

- **N-1-1**: Two biggest units of Estonian electricity system EstLink 2 and 3rd Estonia-Latvia interconnector are unavailable (due to maintenance or forced outage)
- Remaining capacity besides generation: import capacity 750 MW from Latvia and 350 MW from Finland
Do We TRUST Our Neighbours?
Renewables Challenge the Market Model

**Dispatch**
- Renewables not sensitive to price signals
- More difficult for the "the invisible hand" to balance supply and demand

**Investments**
- Renewables push down wholesale market prices
- Profitability of market based investments disappears
- No investments for back-up capacity

- Active demand response
- "Plan B": Central dispatch + nodal pricing?

"Plan B":
- Capacity markets?
- Subsidies for all generation?
Capacity Mechanisms

Summary for System Development

The key to the energy SoS at a reasonable price is not having definitely (subsidy-based) 100 %+ production capacity in Estonia but to be part of a well-functioning Nordic-Baltic power market.

Only JOINT RESPONSE is effective! It doesn’t matter if Estonia is running a 0,5GW surplus when Germany has a 10GW deficit.
Joining the Synchronous Area of Continental Europe
Separating from the east, connecting to the west!
Separating from the east, connecting to the west!

EST- LV 3rd line (2020)

NordBalt (2015)

LitPol 1 (2015/2020)
LitPol 2 (~2025)
Thank you!