Energy Security Changes in the Baltic Region in 2022 – 2024

Lithuanian Energy Agency

2025-10-29

LITHUANIAN ENERGY AGENCY FUNCTIONS

Administration of energy projects

Strategic oil reserver management

Energy innovation

Analysis and data monitoring

Promotion of renewables

Energy security

Energy efficency

Participation in international projects

Study overview: Energy Security Changes in the Baltic Sea Region in 2022–2024

In the light of geopolitical changes PA Energy project allows to perform a study on energy security, trying to find best examples and to provide recommendations how to increase energy security in the region.

Main aim

Analyse the energy security situation in the Baltic region, focusing on Finland, Estonia, Latvia and Lithuania.

Review landscape of different energy sectors in these countries and changes in them determined by 2022 Russian war against Ukraine.

Identify strengths and weaknesses of energy sectors.

Scope

4 A's Framework

- **Availability:** the physical existence and reliability of energy resources.
- **Accessibility:** the ability to access available energy resources, which is often constrained by infrastructure, geopolitical factors, and technology.
- **Acceptability:** the social, political, and environmental acceptability of energy sources.
- **Affordability:** the economic dimension of energy security, focusing on the impact of energy prices on consumers and economic stability.

FINLAND

AVAILABILITY

- **Domestic generation (via increases of OL3+wind) covers demand**
- Diversified energy imports away from Russia

ACCESSIBILITY

- **Inkoo LNG**
- Balticconnector
- EstLink 1 and 2 (new EstLink 3)
- Substantial investments in energy networks

AFFORDABILITY

- **Lower wholesale prices via OL3 and wind**
- Price volatility after 2022
- Governement support

ACCEPTABILITY

- **Strong public acceptance of nuclear power**
- Broad support of renewables and climate goals
- Local opposition to some onshore wind farms

Olkiluoto nuclear power plant/ *Source: yle.fi*

ESTONIA

AVAILABILITY

- **Oil Shale Phase-Out by 2035**
- Rapid RES expansion
- Shift from Russian gas to LNG & interconnections
- Biomass-based district heating

ACCESSIBILITY

- **Rare Earth elements hub**
- Grid synchronization
- Critical infrastructure resilience and digitalisation
- Balticconnector and LNG integration

AFFORDABILITY

- **Price volatility after 2022**
- Governement support
- Price stabilization through domestic generation

ACCEPTABILITY

- **Demand for a just transition**
- Social support for nuclear (SMR) development
- Commitment to carbon neutrality by 2050

Europe's largest rare-earth magnet factory in Narva, Estonia | *Source: European Comission*

LATVIA

AVAILABILITY

- **Hydropower backbone for system flexibility**
- Growing RES capacity share and generation
- End of Russian gas imports and full regional diversification

ACCESIBILITY

- **Inčukalns gas storage**
- Grid synchronization
- Grid upgrades needed for further RES integration

AFFORDABILITY

- **High price volatility after 2022**
- Partial stabilization via market recovery and subsidies
- Targeted governement support

ACCEPTABILITY

- **Strong public support for energy independence**
- Biomass dominance and sustainability concerns
- Emerging hydrogen sector

Inčukalns Gas Storage/ ***Source: Skulte LNG***

LITHUANIA

AVAILABILITY

- **Shift from Russian gas to LNG (Klaipėda LNG)**
- Rapid growth in wind and solar generation
- Kruonis HAE and large-scale battery storage

ACCESIBILITY

- **National ownership of FSRU Independence - energy autonomy**
- Grid synchronization
- GIPL gas pipeline connects Baltic region to EU market

AFFORDABILITY

- **High price volatility after 2022**
- Household prices subsidized with state subsidies
- Gradual price stabilization through increased domestic generation

ACCEPTABILITY

- **Nuclear know-how for possibility of SMRs**
- Strong public and political consensus on ending Russian supply
- Strong support for RES expansion and energy storage

FSRU Independance / ***Source: Lietuvos Aidas***

PHYSICAL AND CYBER SECURITY OF ENERGY INFRASTRUCTURE

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Physcial Threats

- Advancements in drone warfare;
- Undersea infrastructure sabotage;
- Supply chain vulnerabilities;
- Single points of failure;

HYBRID ACTIONS

Cyber Threats

- State-sponsored advanced persistent threats (APTs);
- Disinformation;
- Industrial control (automation) system vulnerabilities;

February 24, 2022

Russia‘s full-scale invasion of Ukraine

September 26, 2022

Nord Stream pipeline sabotage

October 8, 2023

Balticconnector pipeline damage

December 25, 2024

Eslink 2 cable damage

RECOMMENDATIONS FOR INCREASING ENERGY SECURITY

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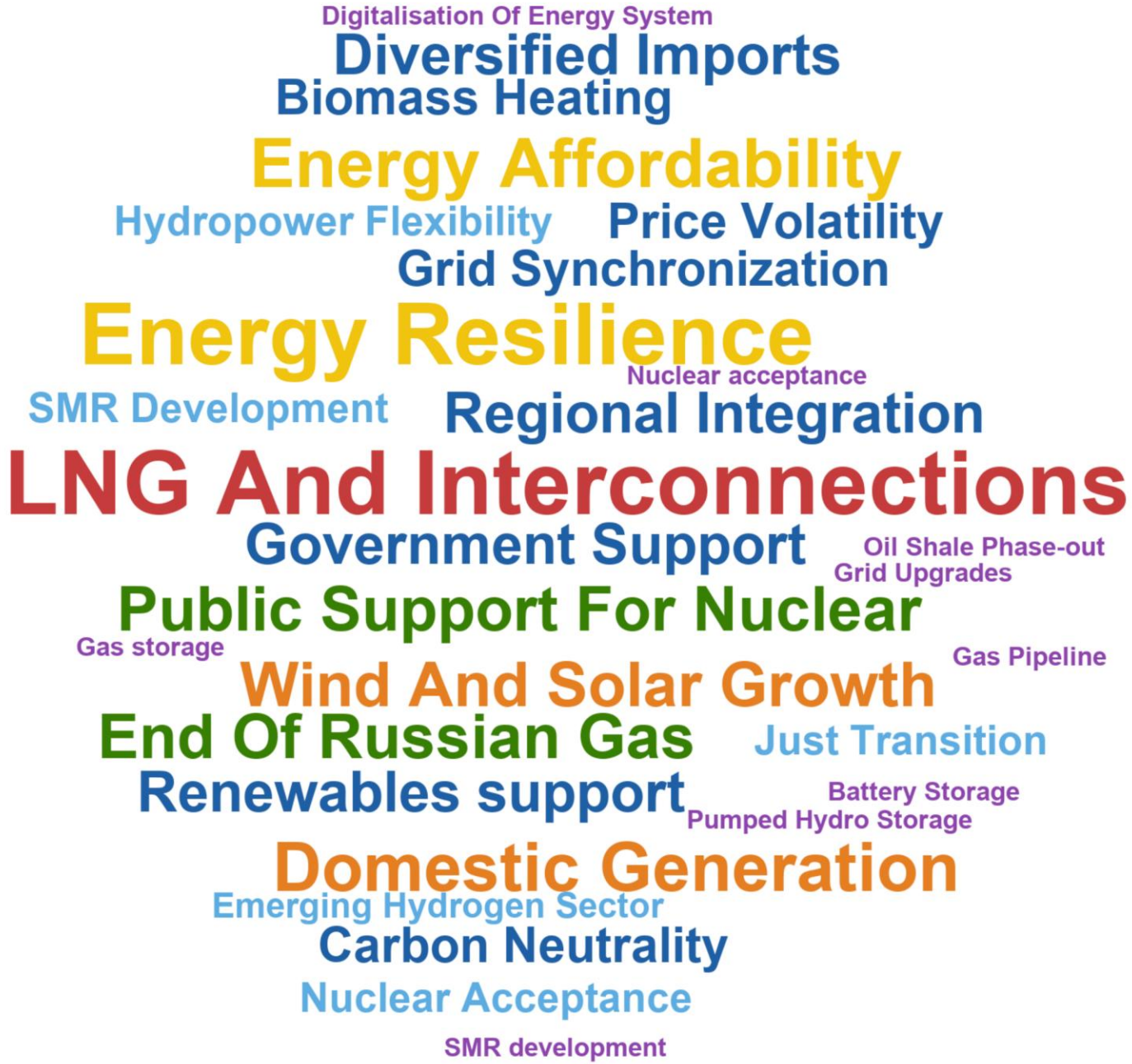
- **Leverage nuclear know-how for possible SMRs.**
- Minimize single points of failure with expansion of interstate connections.
- Expand RES, grid capacity and battery storage.
- Continue pursuing the goals set in National Energy Independence Strategy.

- **Overhaul permitting processes for RES.**
- Prioritise grid modernisation to accommodate the rapid expansion of wind and solar.
- Prioritise investment in non-seasonal flexibility.
- Provide enough financial support to advance National Energy Climate Plan goals.

- **Develop RES while keeping existing generation fleet for security of supply.**
- Ensure a socially and economically just transition for the oil shale region.
- Strengthen the resilience and security of critical subsea energy infrastructure.
- Keep advancing the SMR project

- **Develop the necessary infrastructure to support a future hydrogen economy**.
- Improve the reabsorption of waste heat.
- Address the long-term future of the existing nuclear fleet to secure baseload power.
- Invest in transmission grid expansion to connect northern generation with southern demand.


Digitalisation Of Energy System
Diversified Imports
Biomass Heating
Energy Affordability
Hydropower Flexibility
Price Volatility
Grid Synchronization
Energy Resilience
Nuclear acceptance
SMR Development
Regional Integration
LNG And Interconnections
Government Support
Oil Shale Phase-out
Grid Upgrades
Public Support For Nuclear
Gas storage
Gas Pipeline
Wind And Solar Growth
End Of Russian Gas
Just Transition
Renewables support
Battery Storage
Pumped Hydro Storage
Domestic Generation
Emerging Hydrogen Sector
Carbon Neutrality
Nuclear Acceptance
SMR development

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