2025 OVERVIEW OF THE LITHUANIAN HYDROGEN MARKET SURVEY RESULTS

RESEARCH METHODS

RESEARCH OBJECTIVE – to update information on the planned development of the hydrogen market in Lithuania: production and consumption capacities, and transportation needs, with the aim of designing the Nordic–Baltic Hydrogen Corridor

QUESTIONNAIRE SURVEY

- A public invitation was distributed to market participants – hydrogen project developers, industrial companies, and infrastructure operators.
- Objective – to gather specific information about planned projects, including their scale, locations, and expected timelines.
- Survey format – electronic questionnaire.

STRUCTURED INTERVIEW

- Interviews were conducted with strategic hydrogen market participants and potential infrastructure users.
- Objective – to gain a deeper understanding of their plans, risks, interests, and opportunities for collaboration.

EXPERT EVALUATION

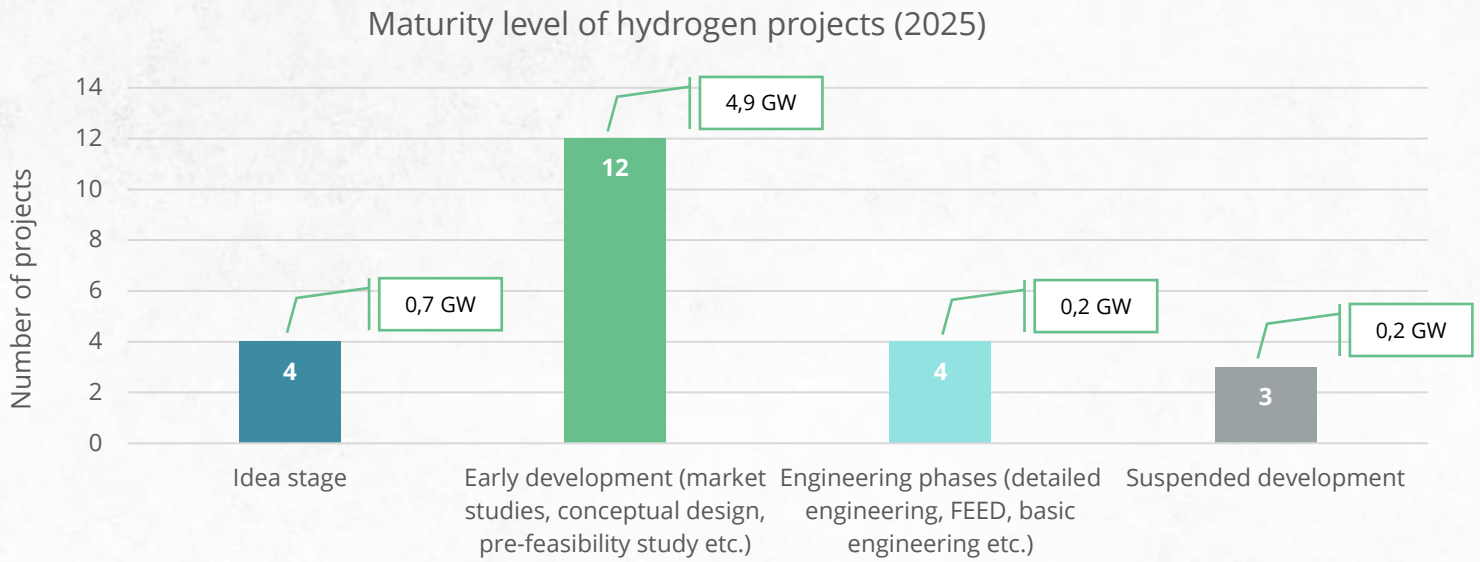
- Assessed aspects included technological readiness, the EU and Lithuanian regulatory environment, and synergies with other sectors.
- Expert insights were integrated into the market analysis.

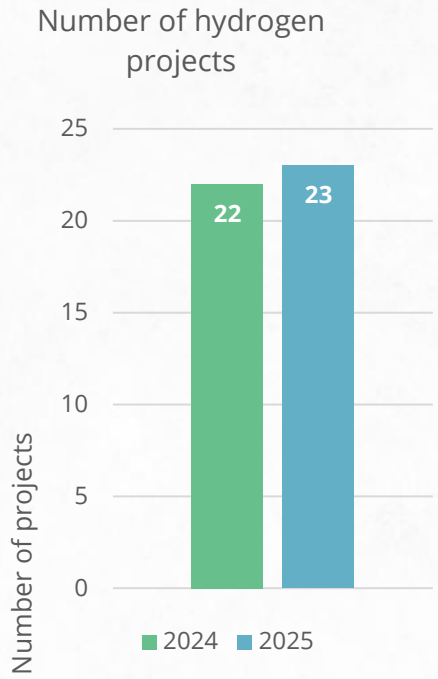
DYNAMICS OF HYDROGEN PROJECTS IN LITHUANIA

The number of hydrogen projects in 2025 has slightly increased compared to 2024 (from 22 to 23), but the majority of projects are still in the early development stage (12 out of 23). Only a small number of projects are in the design stage (4), while some have been suspended (3).

8 market participants indicated that they would use hydrogen for internal consumption or for the production of derivative products such as e-methanol, e-methane, and e-ammonia.

10 producers are focusing on supplying hydrogen to the market – both within Lithuania and for export to neighboring markets.



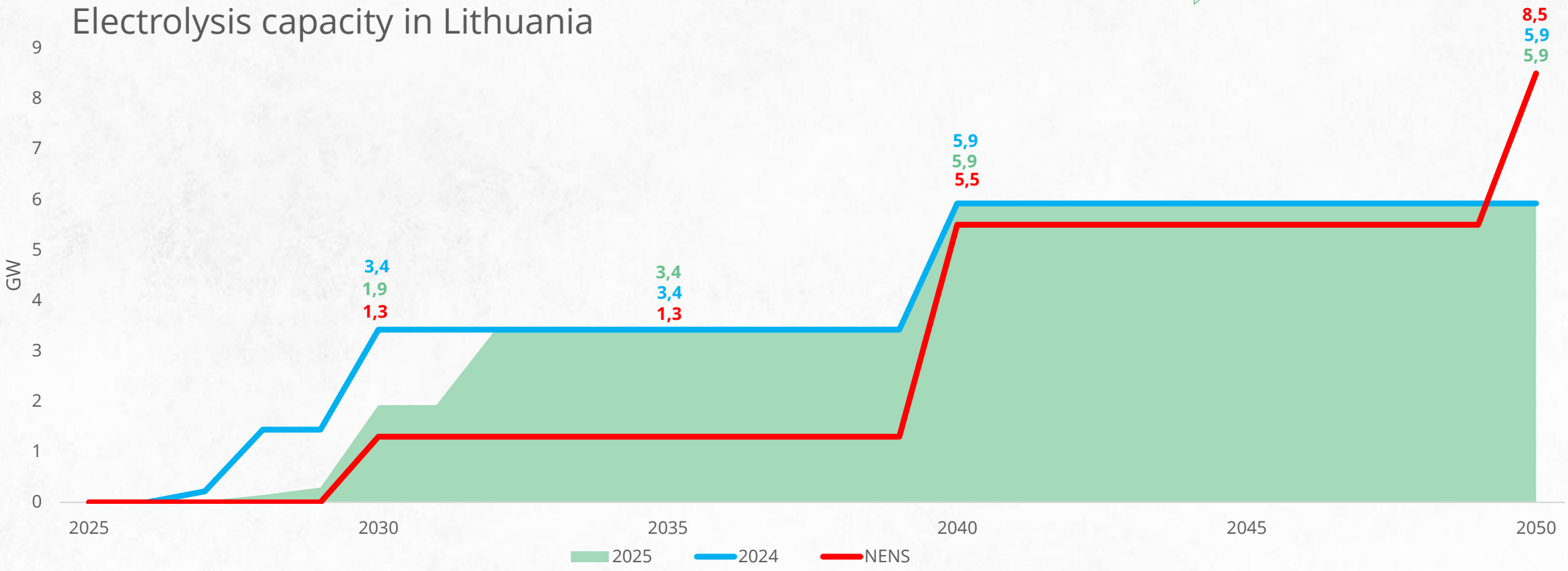


HYDROGEN PRODUCTION CAPACITY

5,9 GW

electrolysis capacity planned to be installed in Lithuania by 2050, based on the 2025 and 2024 survey data

Electrolysis capacity in Lithuania



NENS - National Energy Independence Strategy

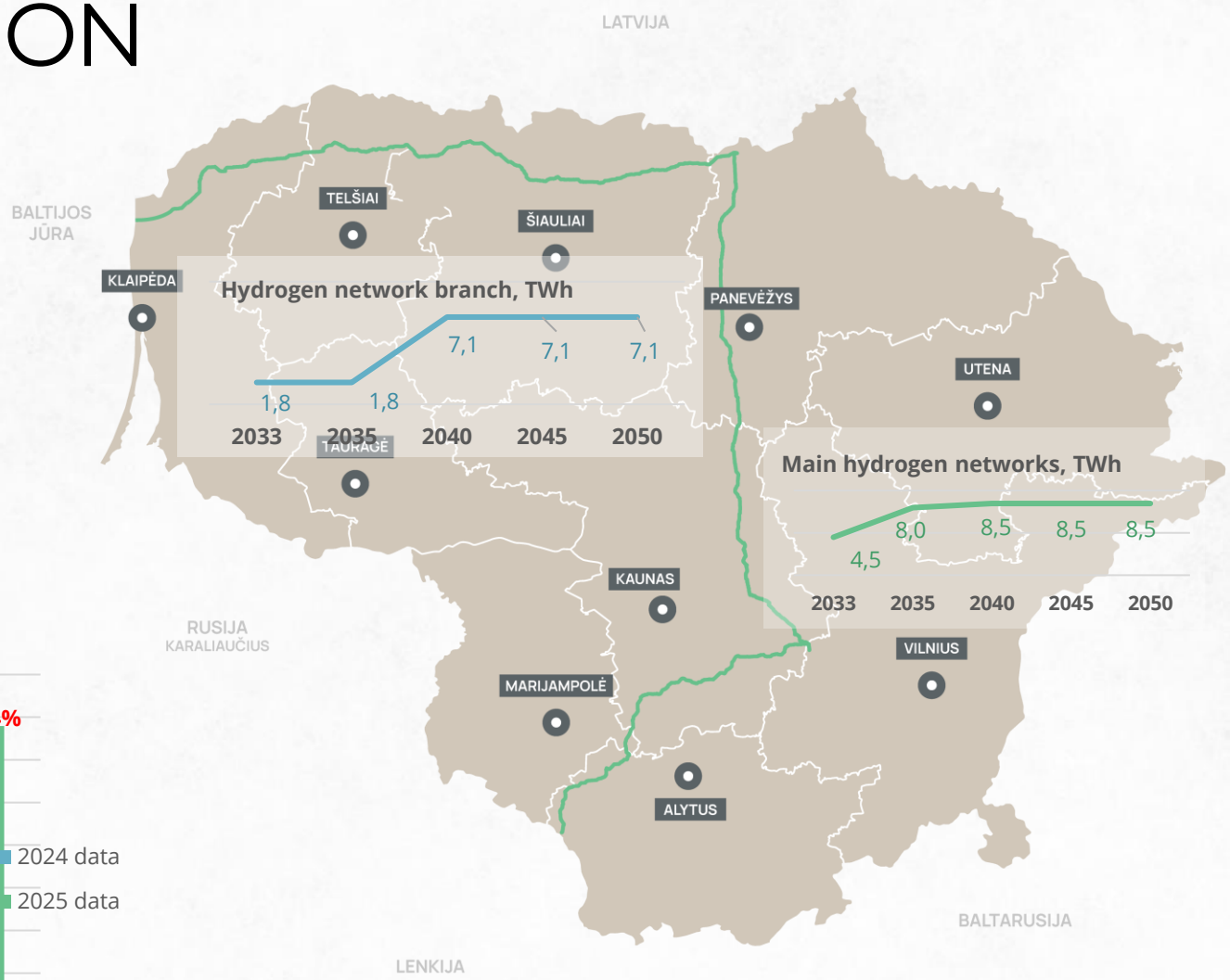
DEMAND FOR HYDROGEN INJECTION INTO THE GRID

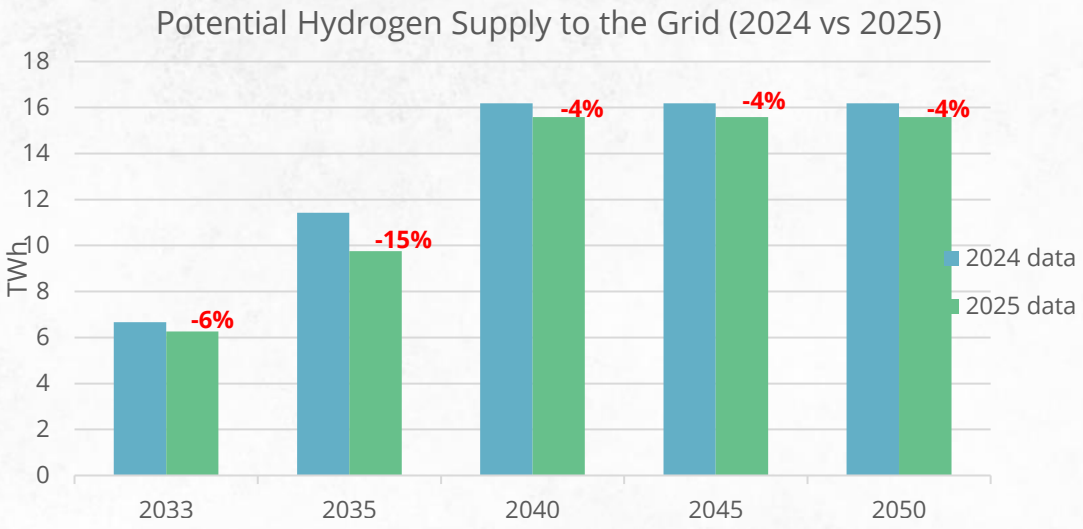
15,6 TWh

annual hydrogen injection into the hydrogen transmission network by 2050, according to the 2025 survey data

4,5 TWh

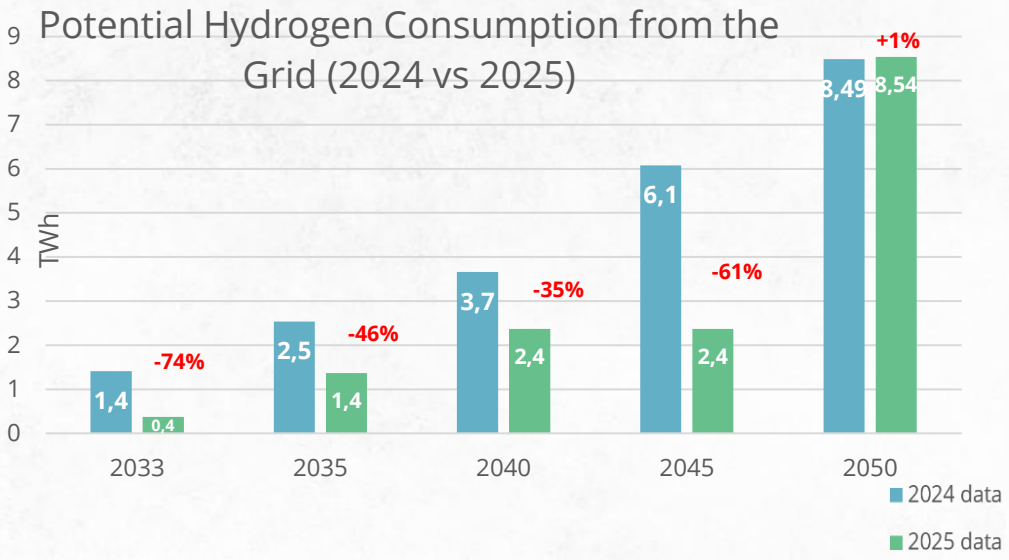
of hydrogen would already be injected into the main network by 2033, while the demand for injection into the hydrogen network branch from Klaipėda by **2040** would amount to **1.8 TWh**.

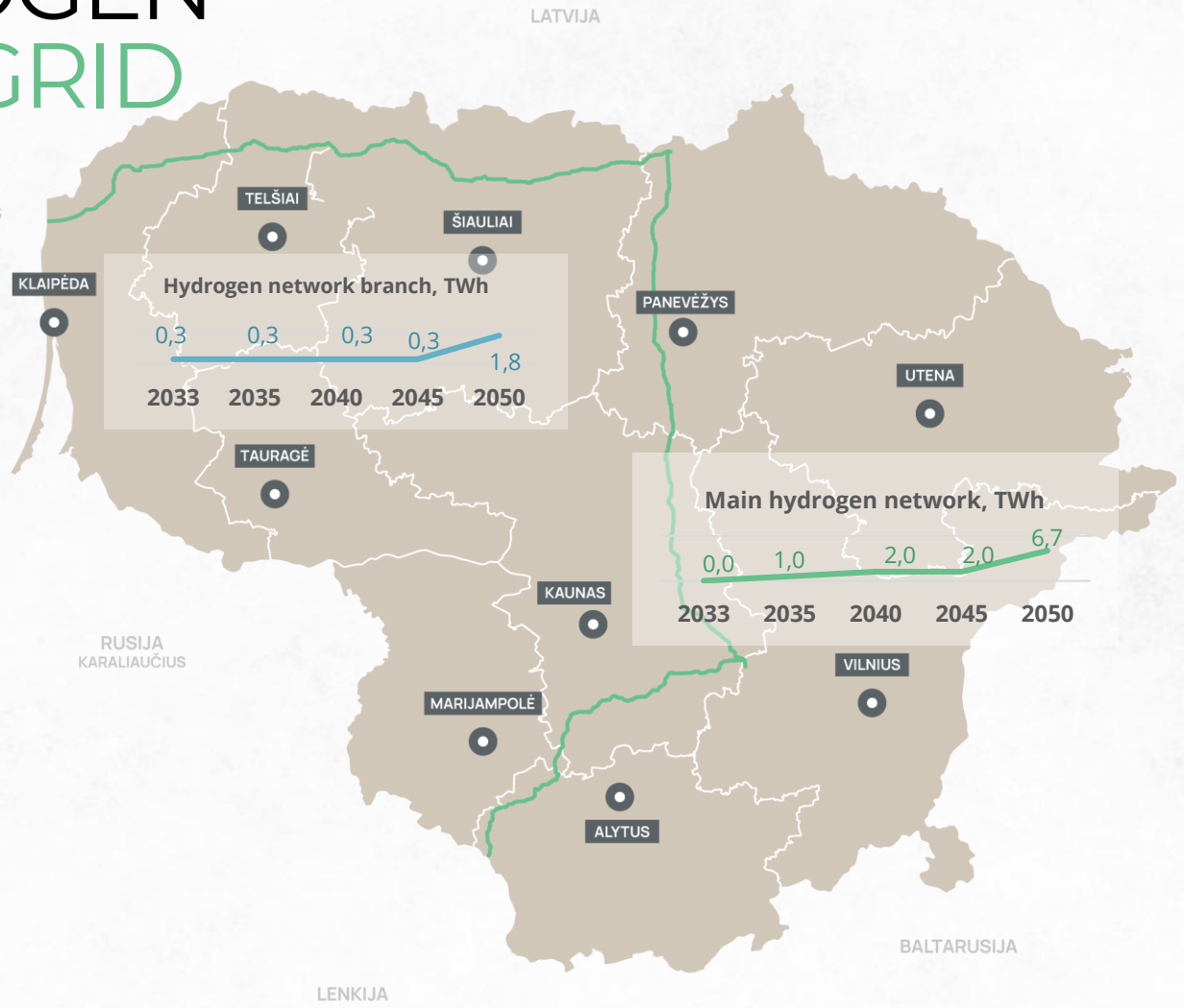




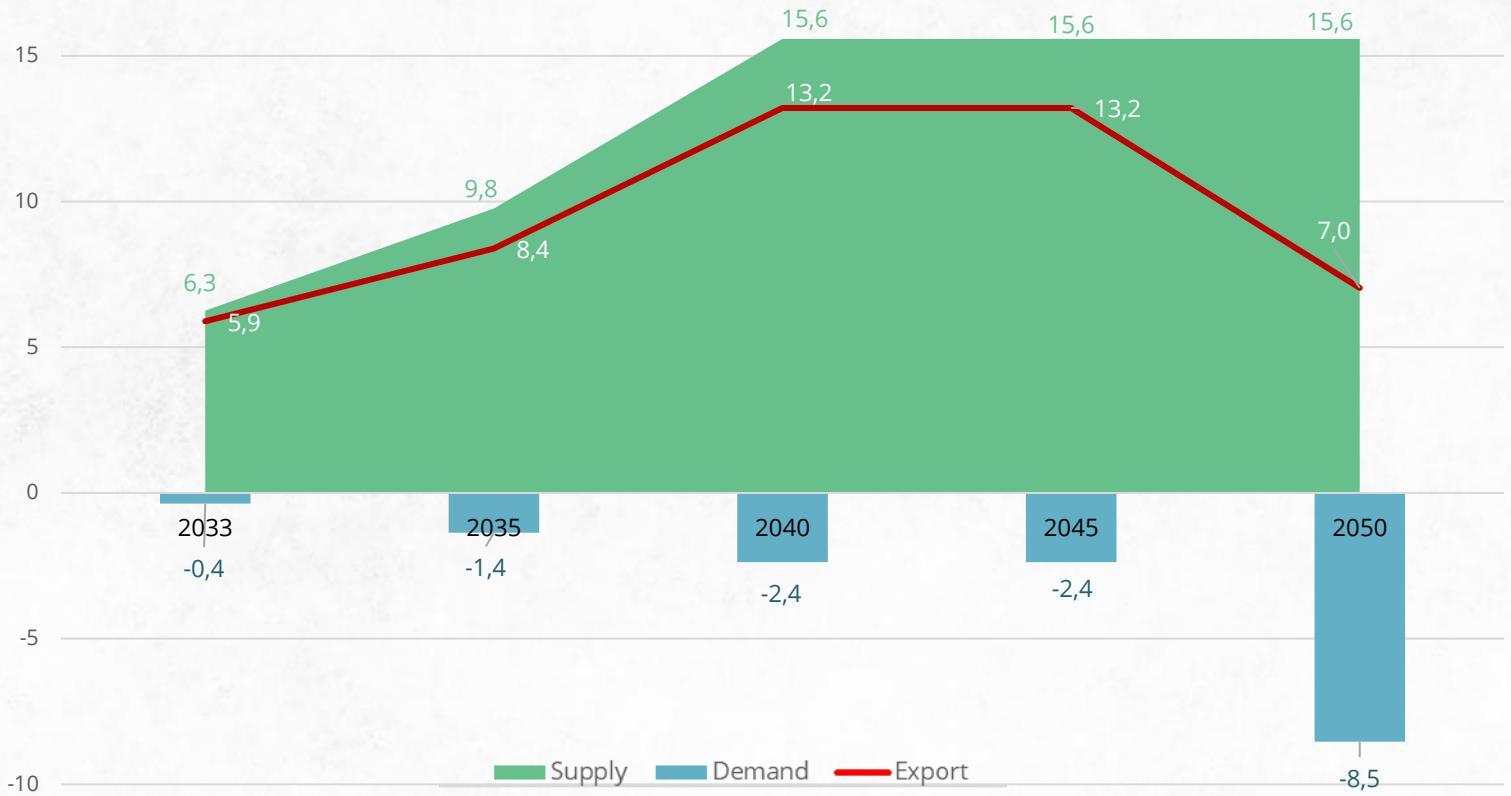
DEMAND FOR HYDROGEN OFFTAKE FROM THE GRID

- Hydrogen demand in Lithuania is primarily associated with the obligation of energy-intensive industrial companies to reduce greenhouse gas emissions.
- By 2050, hydrogen offtake from the grid is expected to reach approximately 8.5 TWh.





HYDROGEN TRANSMISSION NETWORK BALANCE



Market participants identify that Lithuania has the potential to become a hydrogen exporting country

Up to 7 TWh

Of hydrogen could be exported to Poland and Germany by 2050.

CONCLUSIONS

CONCLUSION I

According to hydrogen market participants, the key accelerators of the hydrogen market in Lithuania could be:

- The development of hydrogen production capacity in Lithuania is largely directly linked to the **development of hydrogen transmission infrastructure.**
- Timely development of the hydrogen network is particularly important for enabling the hydrogen market, along with active **communication** with future hydrogen market participants to identify the most suitable areas for electrolysis development, integrating perspectives of the electricity transmission system, renewable energy, and hydrogen network development.
- **Simplification of RED and RFNBO requirements** would enable the revival of suspended projects, both in the field of industrial decarbonization and in the development of higher value-added hydrogen products.
- Project **financing** is crucial for the expansion of hydrogen production capacity, given the complexity of these projects—especially in the production of synthetic gases and synthetic fuels.

CONCLUSION II

THE DYNAMICS OF THE HYDROGEN MARKET ARE HETEROGENEOUS

While some of previously planned projects are currently on hold due to unfavorable economic or regulatory conditions, new initiatives are emerging—especially among renewable energy developers who see the potential of hydrogen not only for industry and transport, but also for providing balancing services

CONCLUSION II

MAJOR HYDROGEN PRODUCTION AND CONSUMPTION PROJECTS ARE STRATEGICALLY LOCATED NEAR THE PLANNED HYDROGEN TRANSMISSION NETWORK

This ensures the potential for hydrogen export and import and enables the development of the hydrogen market in Lithuania.


Amber Grid