

**BUSINESS
TURKU**

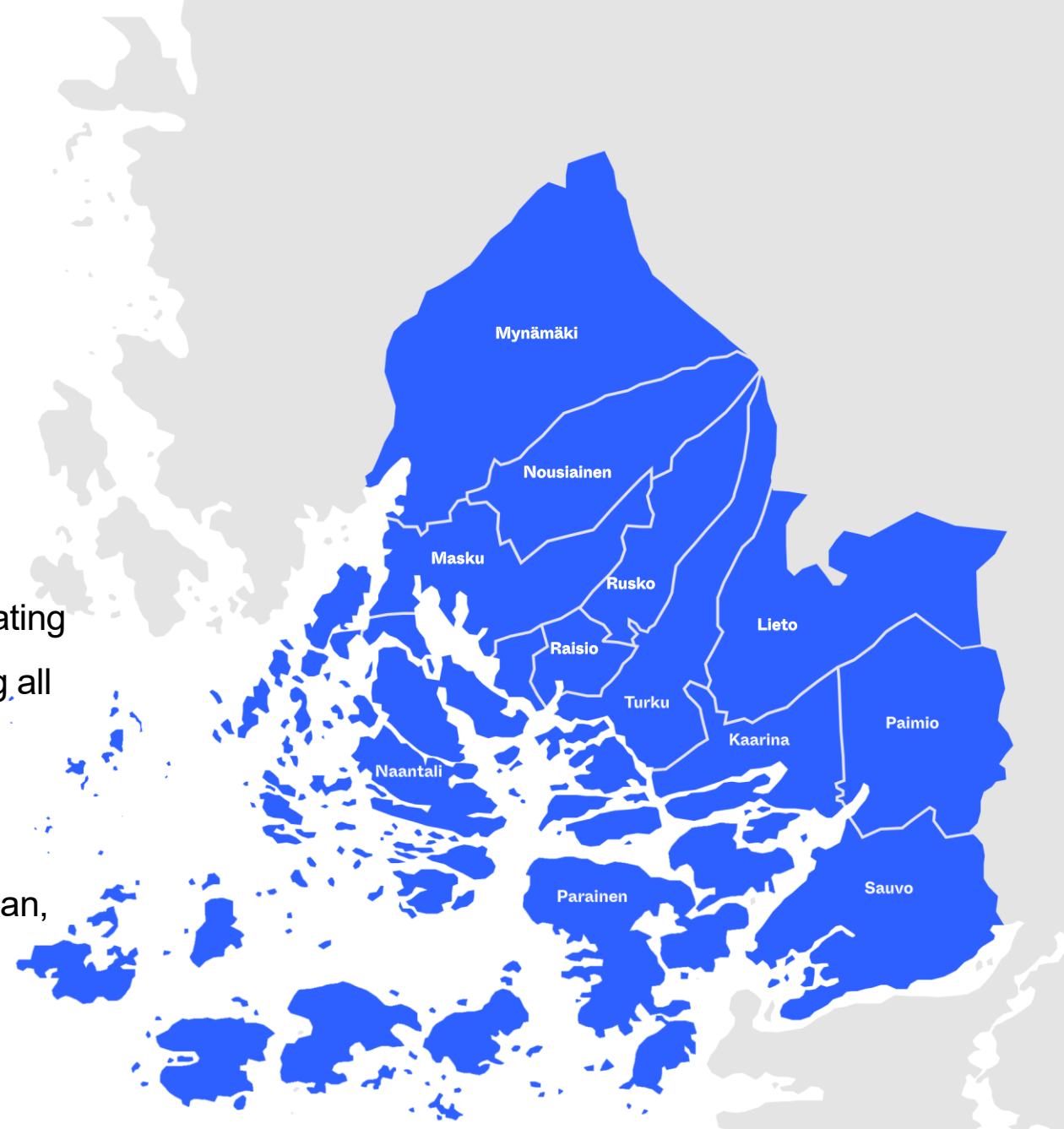
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Hydrogen Industry Hub in Turku Region

CETP local H2 industry hubs event,
15.12.2025

A Vibrant Business and Innovation Hub in Finland

- The Turku region is a growth center in the Baltic Sea area, consisting of the city of Turku and its ten surrounding municipalities.
- The area's absolute strengths lie in its multidisciplinary operating environment and the tight-knit and agile collaboration among all business sectors, aiming to create new possibilities for businesses.
- International companies also appreciate the safe, stable, clean, and predictable operating environment.



The Turku region in numbers

11

municipalities

130

nationalities

53,000+

university students

28,000

companies

#1

in business-friendly
municipalities (The
Federation of Finnish
Enterprises, 2022)

355,000

inhabitants

The growing Turku H2 cluster in numbers

75

companies

4

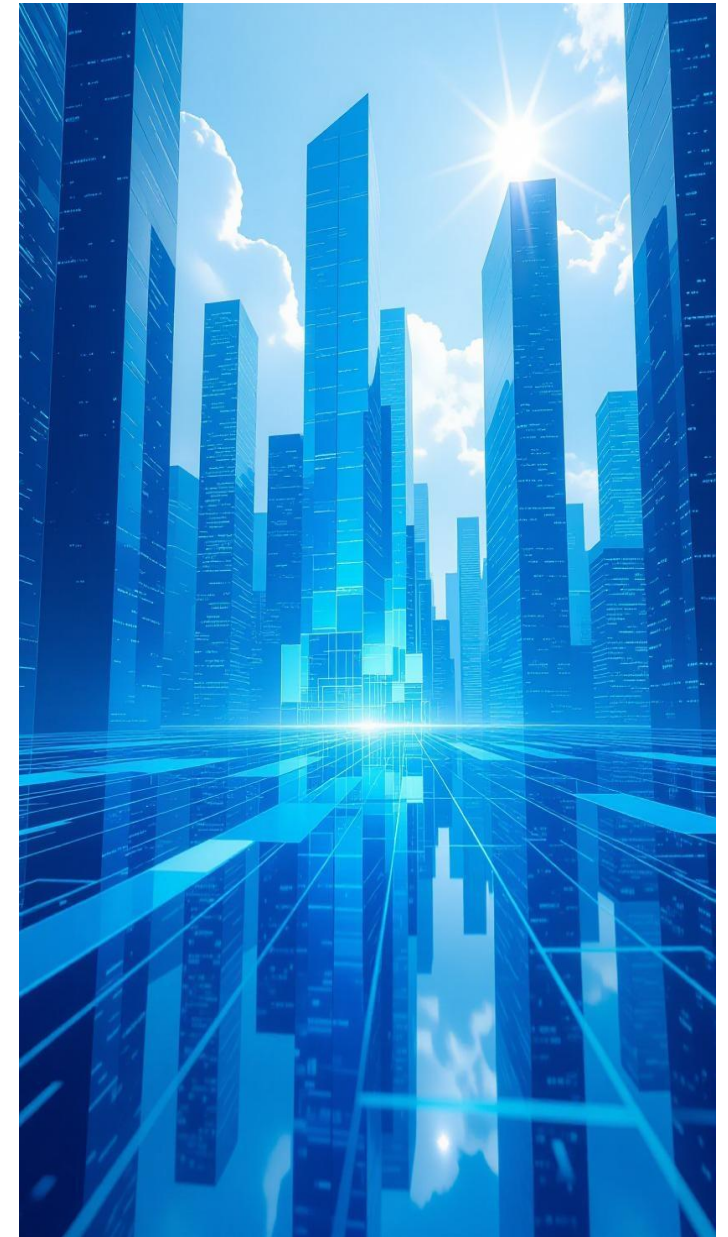
universities

2

State
agencies

140

persons



BUSINESS TURKU

Network of Hydrogen actors in Turku Region

Companies

- Green North Energy Oy
- Qpower Oy
- Vireon Oy
- Elomatic Oy
- Sensorex Oy
- Afry Oy
- LSJH Oy
- Ren-Gas Oy
- Detector Oy
- Norsk e-Fuel
- Liquidwind
- Turku Energia Oy
- Fortum Oyj
- Meyer Oy
- Zelk Energy
- Fimpec Oy
- Ferroman Engineering Oy
- Skarta Energy Oy
- Wärtsilä Oyj
- Viking Line Oyj
- Port of Naantali
- Port of Turku
- Naantalin Energia etc..

Universities

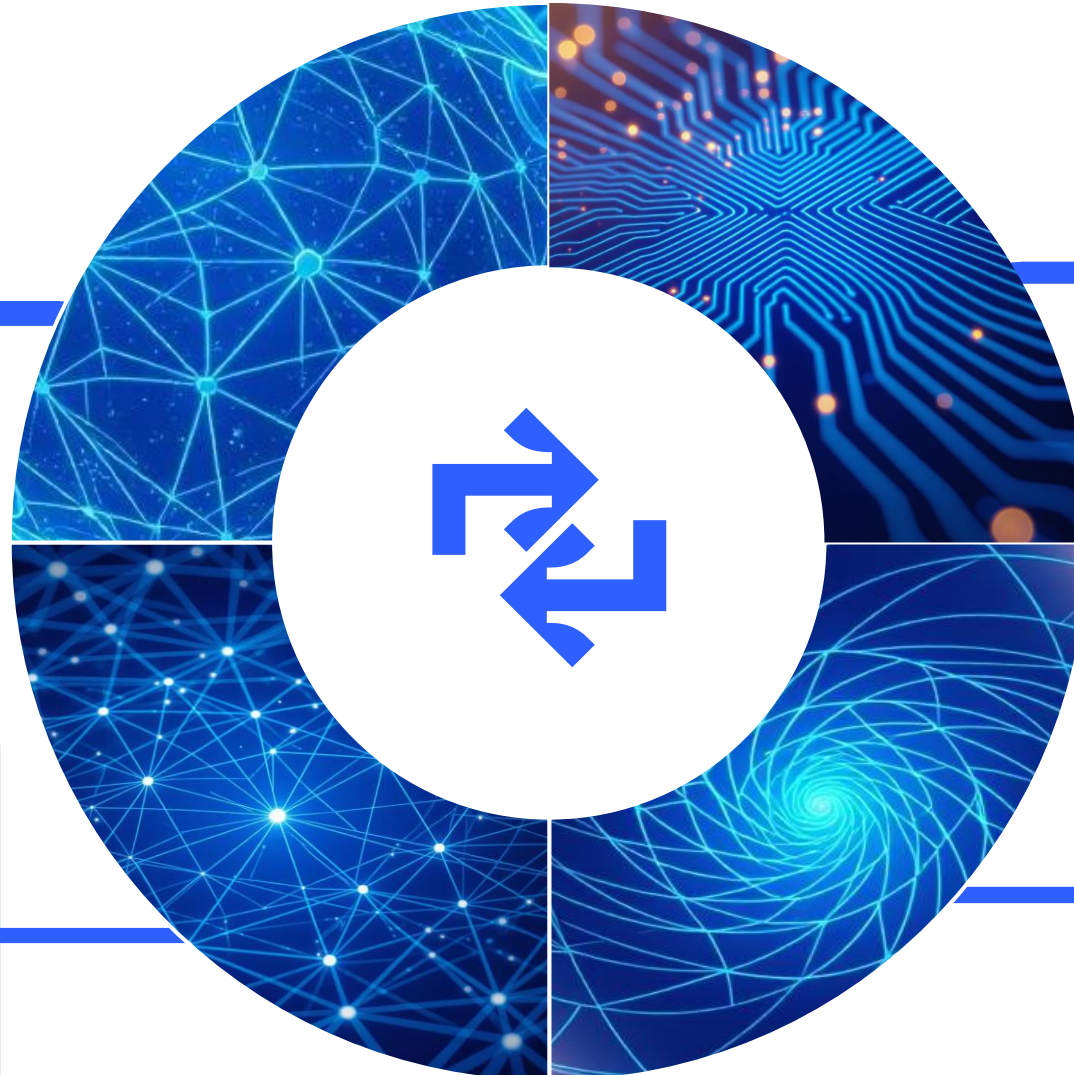


Public infrastructure actors



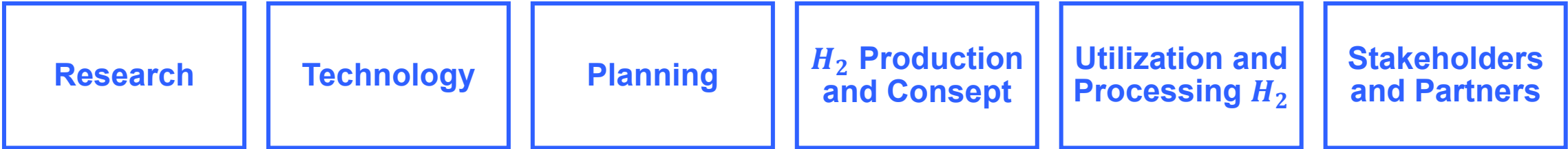
Public actors

- Centre for Economic Development, Transport and the Environment
- Regional Council of Southwest Finland
- Turku EU office
- Business Finland

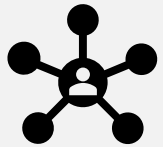


Business Turku H2 Cluster

Network and value chain



Hydrogen economy opportunities in the Turku region and Southwest Finland



There are already more than a dozen companies in the Turku region that are developing technology and solutions related to the hydrogen economy. Companies in the region have excellent export opportunities to Europe and the world. The area has two out of five of Finland's export ports of the European TEN-T core network.



Another strength of the region is its extensive education and research community, with a total of about 53 000 undergraduate and graduate students at universities



The universities of Turku have two hydrogen professorships, in-depth expertise in chemical engineering, heat and systems engineering, and process chemistry, all of which play an essential role in the development of the hydrogen economy.



In addition, the Turku School of Economics and the educational responsibilities of Industrial Engineering and Management and Maritime Transport diversify expertise in developing and scaling hydrogen business.

Geographical positioning



The southern west coast of Finland is the best environment for industrial investments due to export opportunities, a comprehensive service network, the availability of workforce and higher education institutions.



The model of a single price area in the Finnish electricity market enables the realization of the industrial potential of Southern Finland.

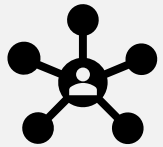


The most feasible and significant offshore wind potential in Southern Finland can be found in Åland, to which there is already a submarine cable from the Port of Naantali.



As a node in the TEN-T core network for land and maritime transport between Finland, Sweden and Europe, the Turku region is a natural place for building a hydrogen-based refueling network. The ports in the Turku region are the contact point for hydrogen-based products to the other Nordic countries.

Industrial scale drivers of hydrogen economy in the Turku region



There is a great need for low-emission solutions in maritime transport, from ship manufacturing to maritime transport. Southwest Finland already has an active ecosystem of operators in the maritime industry and shipping, for which hydrogen derivatives and related solutions will be part of the development in the coming years.



A green shipping corridor is planned between Turku and Stockholm by 2035, which will lead to significant demand for hydrogen-based fuels in the region (such as synthetic methane, ammonia, methanol...).



LNG vessels already operate between Turku and Stockholm, and their propulsion systems can use synthetic methane without major modifications



One of the world's first and largest green ammonia production plants is planned for Naantali, which will strengthen Finland's security of supply and serve agriculture, industry and maritime transport. A significant part of Finland's ammonia-based fertilizers is produced and used in Southwest Finland.

Security of supply



In terms of security of supply, the West Coast has always played a significant role as it is as far away from the eastern border as possible, under the protection of the archipelago. In the current world situation, the importance of location is once again emphasized.



The Turku region can act as a hub for the security of supply of the Baltic Sea, as well as a storage and logistics center for future fuels and critical chemicals. The ports of Turku and Naantali already serve logistics between Finland and Europe, which are critical in terms of security of supply.



Gasgrid is routing a national hydrogen pipeline through Turku area, which extensively contributes to the flexibility of hydrogen projects in the region.



NATO's future needs may include a secured national fuel supply, which can be achieved with hydrogen derivatives

Green
North
Energy





Naantali Ammonium Plant

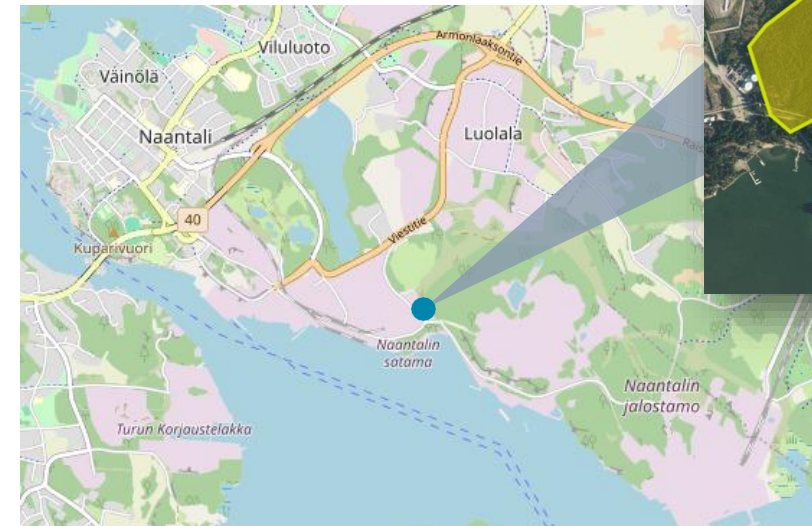
Overview

- Green North Energy Oy (“GNE”) has been developing a P2GA project in Finland since 2021, established by Elomatic
- EIA process completed in 2024, valid environmental permit in 2025
- Strategic partnership with Meridiam in 2024
- Long-term and strategic offtake and power purchase agreements
- Partnership opportunities in excess heat, oxygen and steam increases profitability and the level of innovation of the project
- Phase 1 will target the production of 100 ktpa of green ammonia, with potential to scale up to 200 ktpa in the second phase

Key Figures		Phase 1
Electrolysis Capacity		140 MWe
Electricity Consumption		1.1 TWh pa
Green Ammonia Production Capacity	NH₃	Approx. 100,000 tpa
CAPEX ¹		Up to c. EUR620m

Strategic Location

The project is strategically located in Naantali’s industrial area in **Southwest Finland**, next to the Naantali deep water port operating all-year around








Liquid Wind





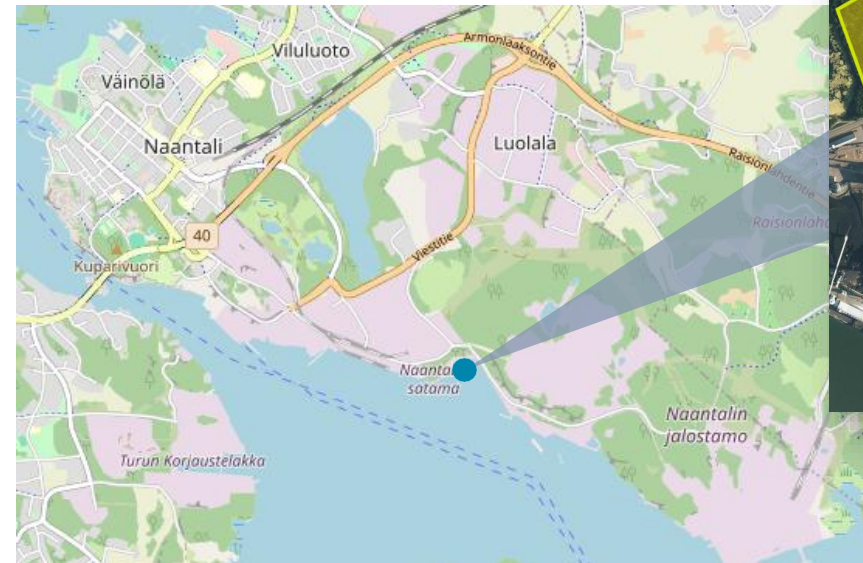
Overview

- The facility is planned to be located next to TSE's local power plant, Naantali 4, which will supply biogenic CO₂ and steam for the production of eMethanol.
- the facility will produce 100,000 tons of eMethanol per year, made from green hydrogen and biogenic CO₂.
- Final investment decision (FID) is planned for 2026, and the facility will be operational in 2029.

Key Figures		Phase 1
Electrolysis Capacity		100 MWe
Electricity Consumption		0.8 TWh pa
Green Methanol Production Capacity	CH₃OH	Approx. 100,000 tpa
CAPEX ¹		Up to c. EUR420m

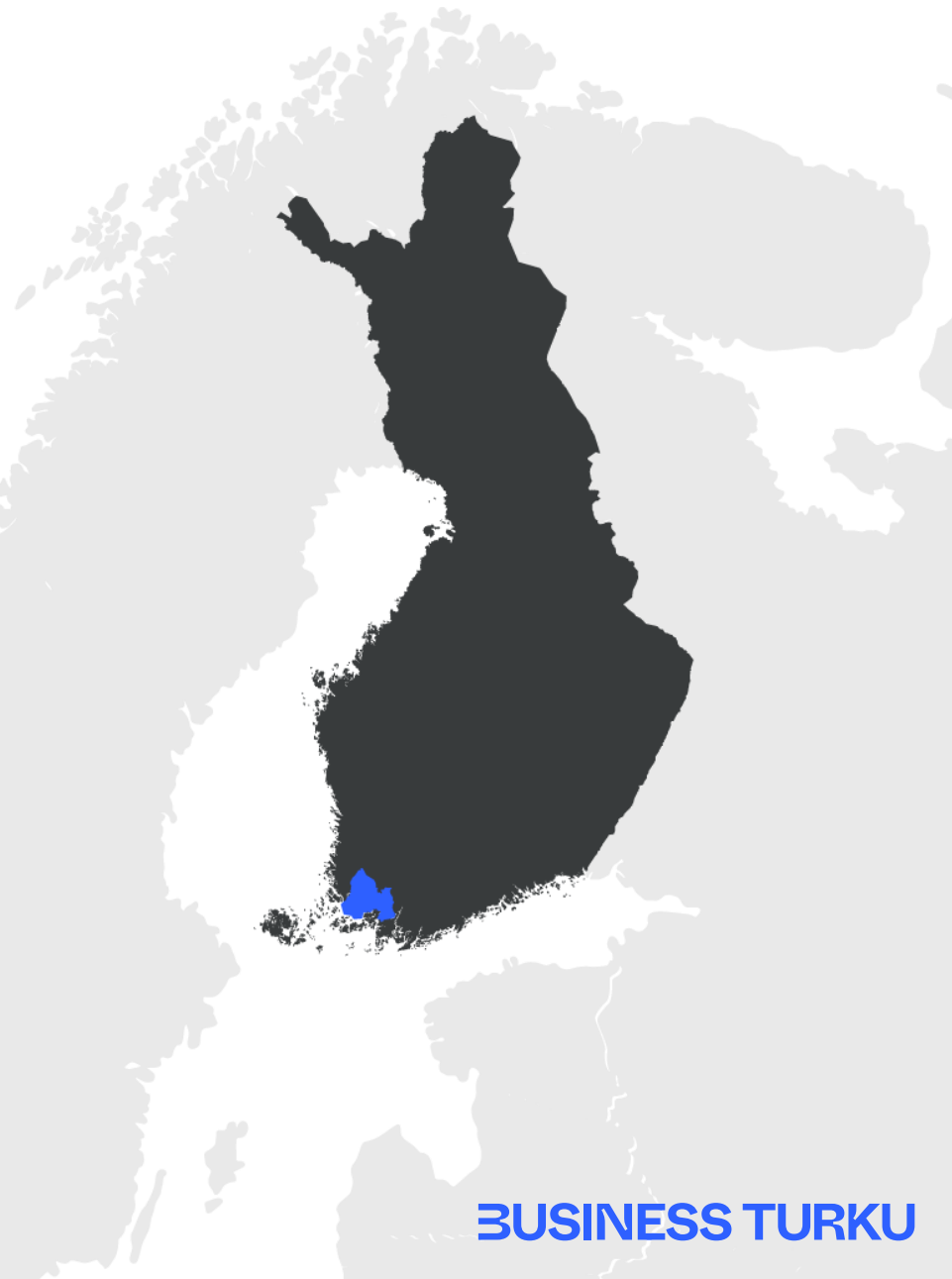
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Challenges and Barriers

- Fingrid's 110 kV grid upgrade in 2031, timing vs. industrial investments.
- Availability and transmission of wind power (Åland offshore wind, sea cables)
- Hydrogen pipeline schedule and connection points (Gasgrid), coordination with production
- Financing and interest rate environment, FID uncertainty 2026, CAPEX and supply chain availability.
- Securing offtake agreements (bunkering, marine fuels, industrial users)
- EU RFNBO regulation, additionality and hourly correlation, GoO certificates and taxonomy
- Securing year-round availability and supply reliability of biogenic CO₂ through close integration with TSE Naantali



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Thank you!



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