



Grid Vision for Future Energy System

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BOWE2H – Baltic Offshore Wind Energy to Hydrogen
OFFSHORE WIND AND HYDROGEN DEVELOPMENTS IN LITHUANIA AND LATVIA

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Litgrid – the centre of the energy future

6966 km overhead lines

322 km cable lines

2 HVDC connectors

241 substations and switchyards

418 energy experts



Key steps towards energy vision

Baltic synchronisation

RES integration

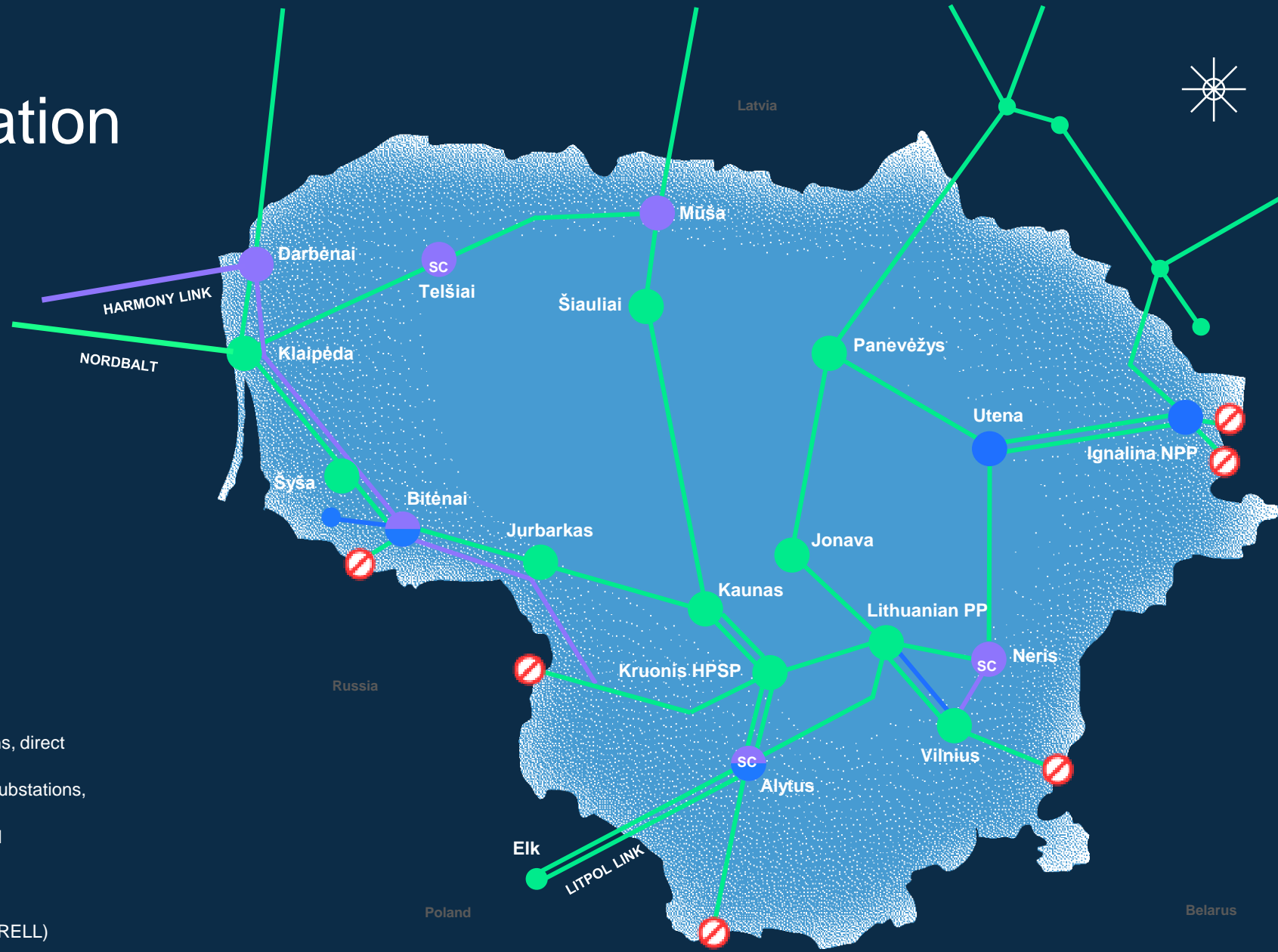
Management of changes in electricity generation and demand

Concept of future grid



Baltic Synchronisation

- Agreed date: Feb 2025
- Main tasks: synchronous condensers, network control systems, grid reinforcements
- Darbėnai switchyard – also connection point for offshore wind – will be finished at the end of 2024 and mid 2025



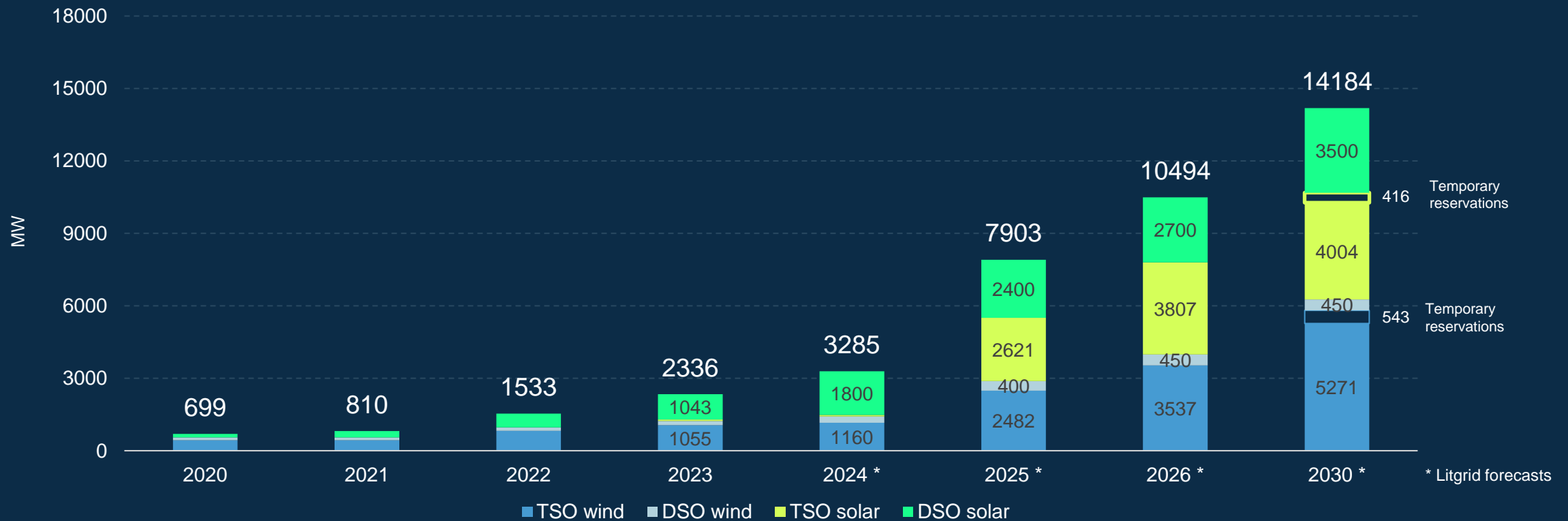
- Existing 330 kV electricity transmission lines and substations, direct current connections
- Construction and reconstruction of transmission lines and substations, direct current connections
- Construction and reconstruction projects already completed
- Installation of synchronous condensers
- Disconnection for separation from the IPS / UPS system (BRELL)



RES growth

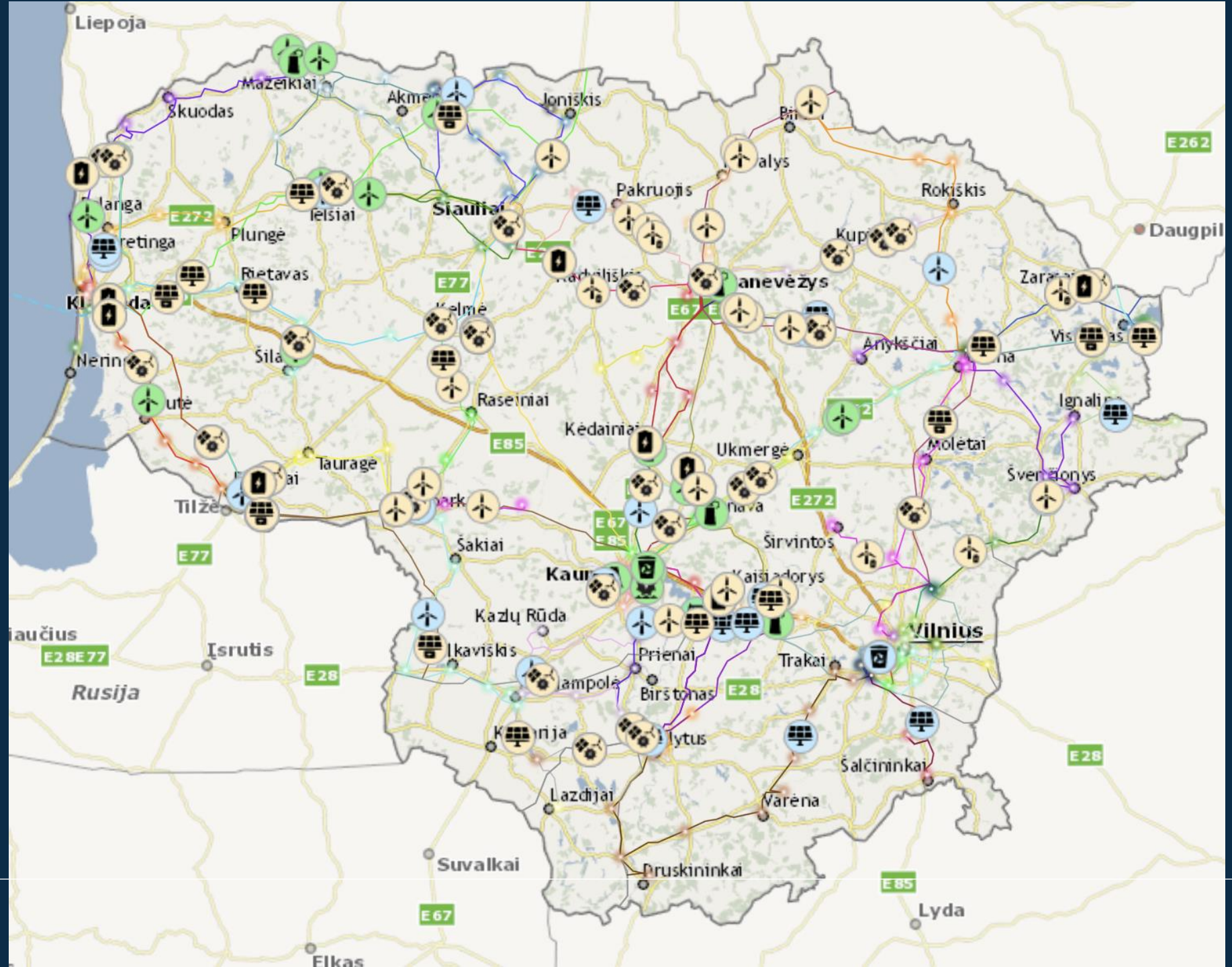
More than 14 GW of reserved capacity

Estimate based on ongoing projects, financially guaranteed letters of intent and DSO forecasts

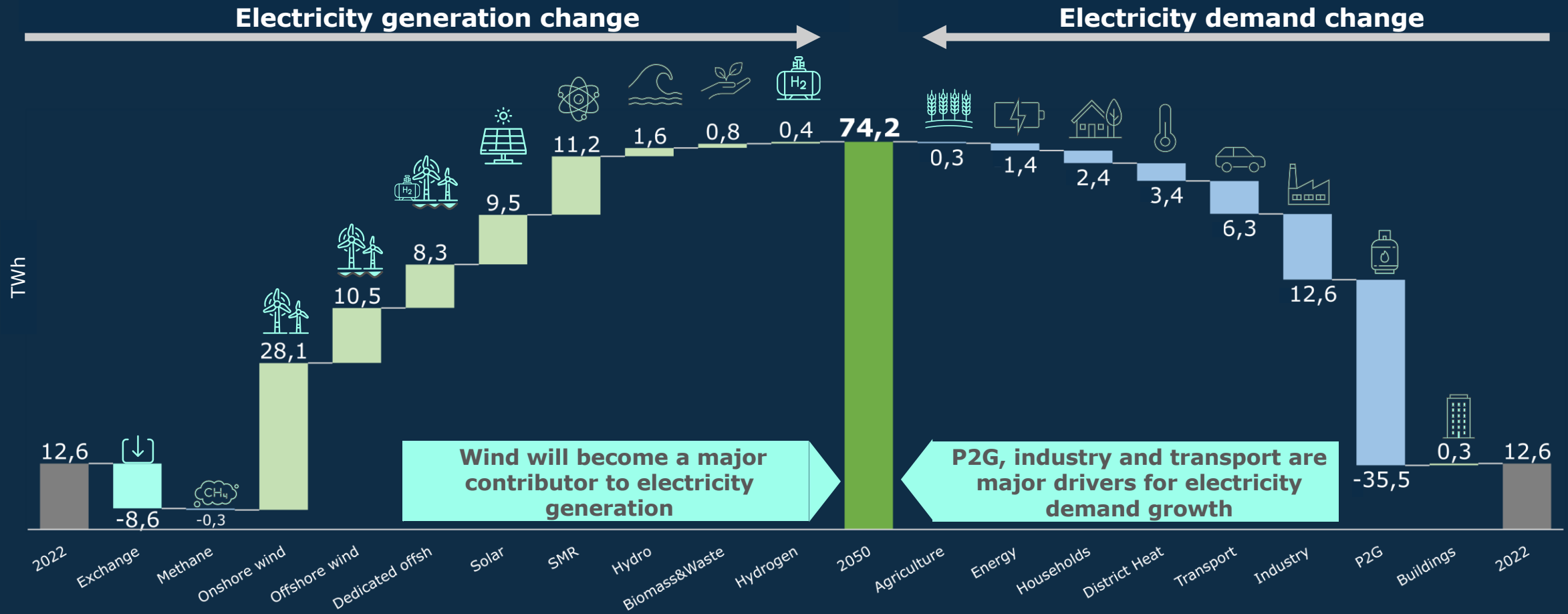


Grid

More than 14 GW already reserved for current and potential projects



Electricity generation and demand change to 2050 – Roadmap scenario



Source: Lithuania Energy System Transformation to 2050

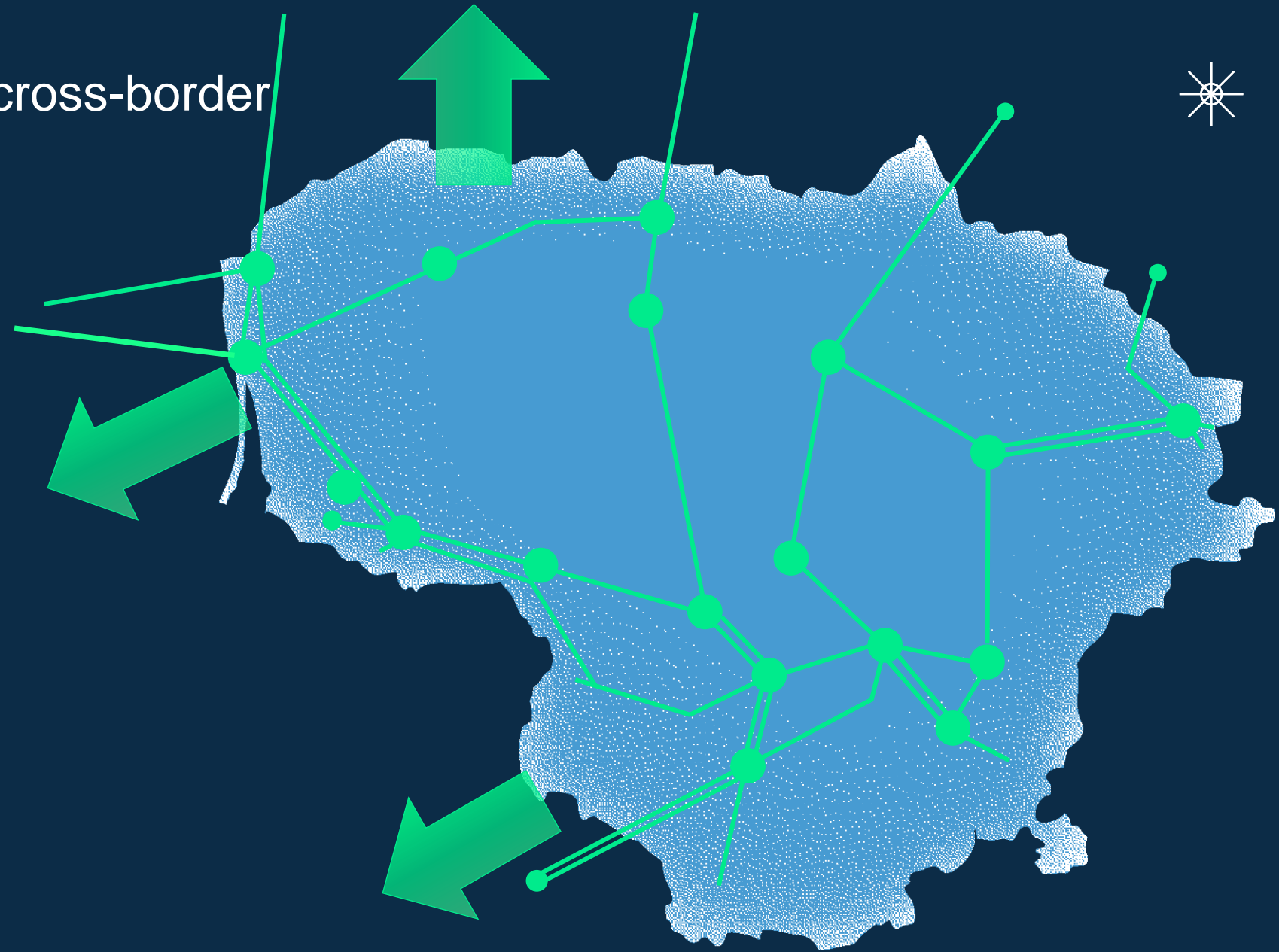
DNV outcomes based on Energy Transition Model

Further development of cross-border interconnections

Lithuanian energy system transformation study suggests that Lithuania will need 5 GW interconnection capacities for 2050.

Litgrid analyses possibilities to increase or develop new interconnections in three main directions:

- Baltic States
- Central Europe
- Nordic countries



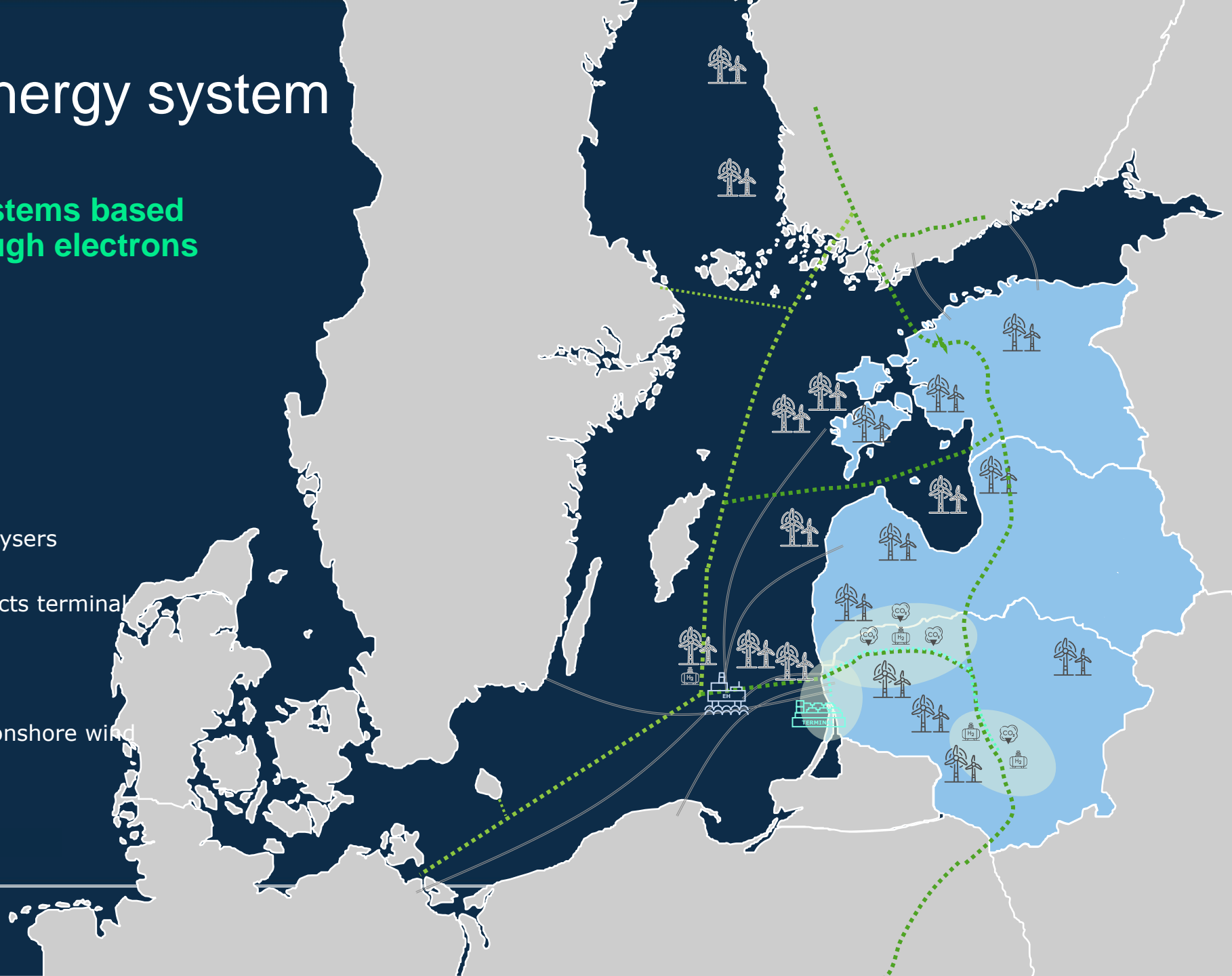
Future of Baltic energy system

Interconnected system of systems based on green energy carriers through electrons and molecules

- Hydrogen Backbone
- Power interconnections
- CO₂ pipelines
- CCU
- H₂ electrolyzers
- CO₂ products terminal
- Energy Hub
- Offshore/onshore wind

Source: Lithuania Energy System Transformation to 2050

Grid vision for future energy system





Thank you!
Ačiū!