

Nordic Energy Efficiency Conference Oslo 2025

**Flexibility markets: How to unlock
the value of demand side flexibility**

Svein Jørgen Sønning
NODES



Summary and key takeaways

Flexibility markets: How to unlock the value of demand side flexibility Svein Jørgen Sønning, NODES.

Sønning started off by presenting his company. NODES is a technology company specialising in optimising the electricity system. This is done by integrating renewable energy sources, enhancing grid stability, and reducing overall system costs. They also provide a trading platform where grid operators, consumers, producers, and storage operators can trade flexible capacity and energy.

Sønning pointed out that there are different kinds of flexibility. Implicit flexibility is that consumers shift energy use to cheaper time periods. With explicit flexibility, consumers can actively respond to system operators' price signals.

Flexibility, according to Sønning, can help the energy system by avoiding peak hours, deferring grid investments, and accelerating electrification. To unlock the demand-side flexibility, buyers and sellers need a transparent and trusted price to be able to make investment decisions. Further, it is necessary to have a digital flexibility value chain and market participants, including TSOs (Transmission System Operators), DSOs (Distribution System Operators), and Flexibility Service Providers (FSPs).

Lastly, Sønning stated that the production was previously adjusted to meet demand, but in the future demand must react to available production.

Key takeaways:

- Flexibility markets are essential to balance demand and supply in renewable-based energy systems.
- Shifting to demand-driven flexibility is essential for a stable and low-carbon energy system.
- Demand must respond to available production, not the other way around.



Flexibility and saving energy are the same thing from different angles.

Svein Jørgen Sønning,
NODES.

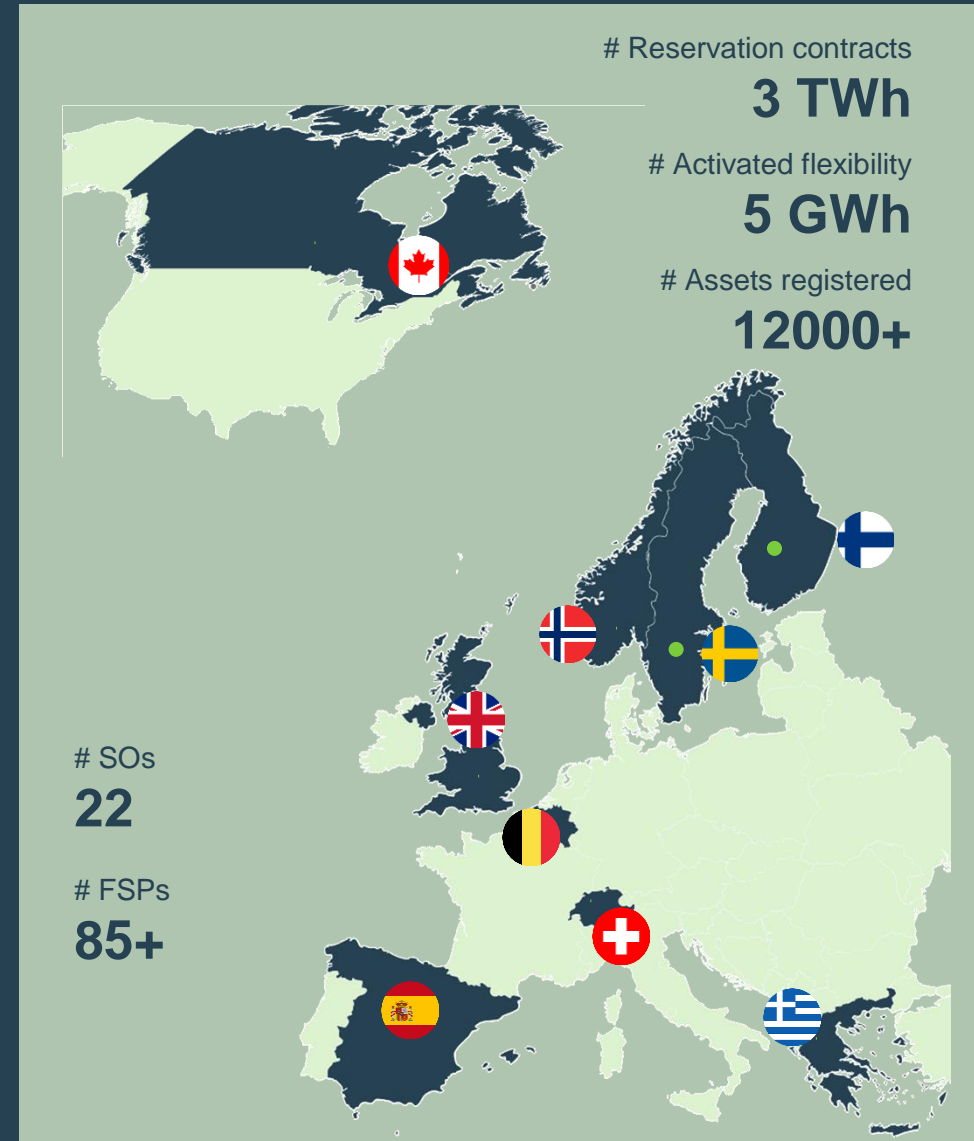


NODES AS



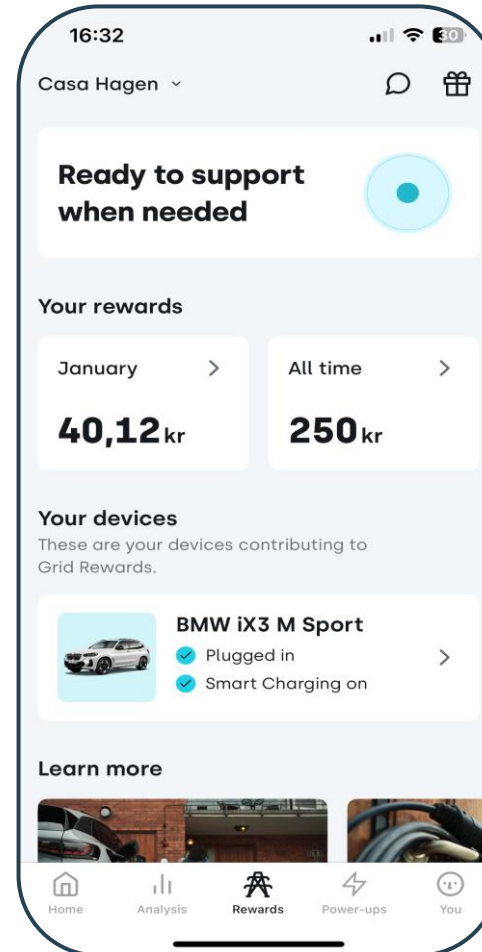
NODES is a technology company focused on helping optimise the electricity system by integrating renewable energy sources, enhancing grid stability and reducing overall system costs.

With our advanced trading platform and services, we are enabling grid operators, consumers, producers and storage operators to trade flexible capacity and energy. This is crucial for balancing supply and demand for a decarbonised and decentralised energy system.



What is the link between energy efficiency and flexibility?

- ⌘ Energy efficiency initiatives include technical solutions enabling loads to be controlled remotely
- ⌘ Controllable loads can respond to price signals
- ⌘ A response can be **implicit** or **explicit** flexibility

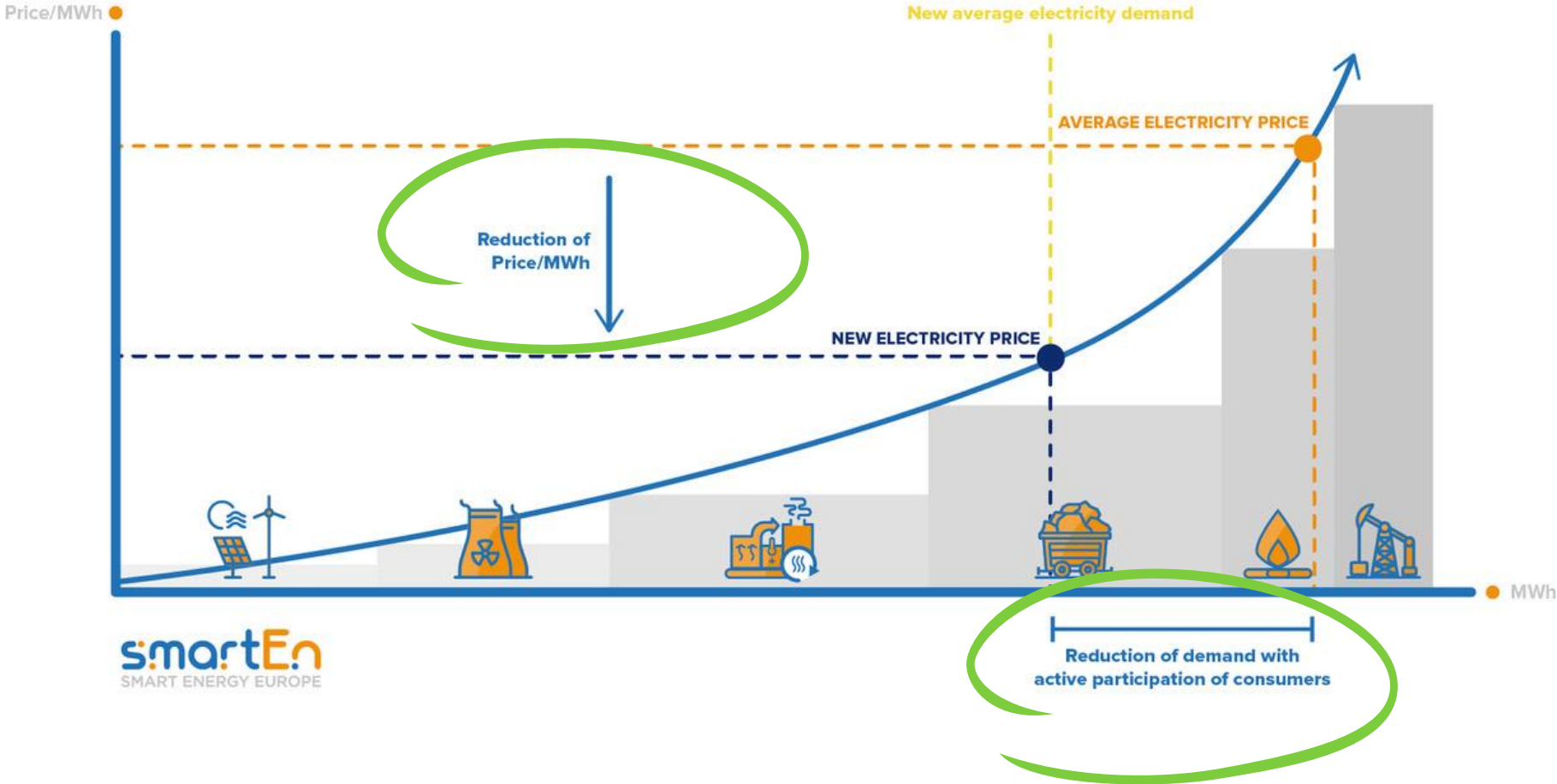


Example: Tibber

Smart Charging delivers **implicit** flexibility shifting load to hours with a lower price.

Grid Reward delivers **explicit** flexibility responding to System Operators' (SOs) price signals.

Using flexibility to avoid peak hours



Using flexibility to defer grid investments



Europe by 2030: Key drivers & market value from DSO markets alone

Grid infrastructure investments
€584 bn

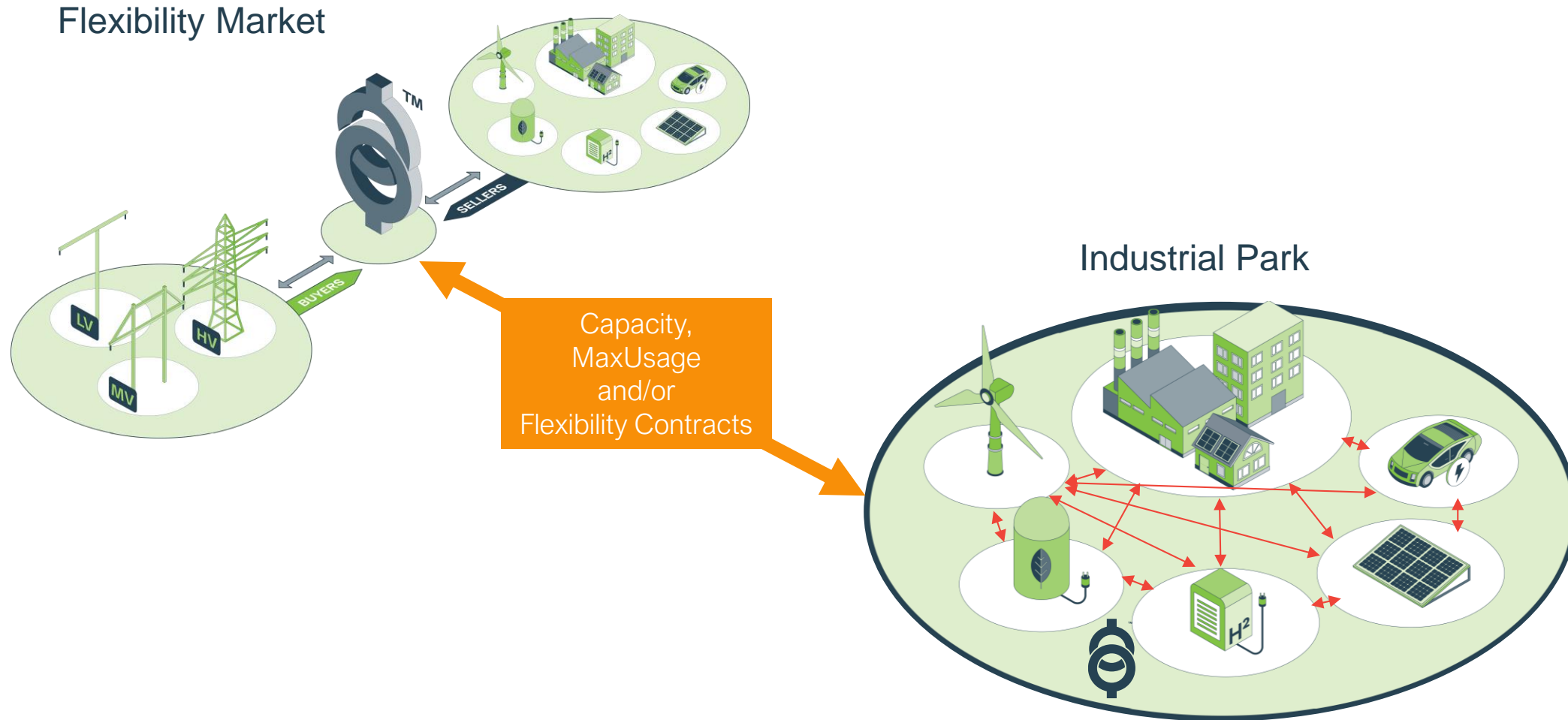
Share of distribution grid Investments

€375 - 425 bn

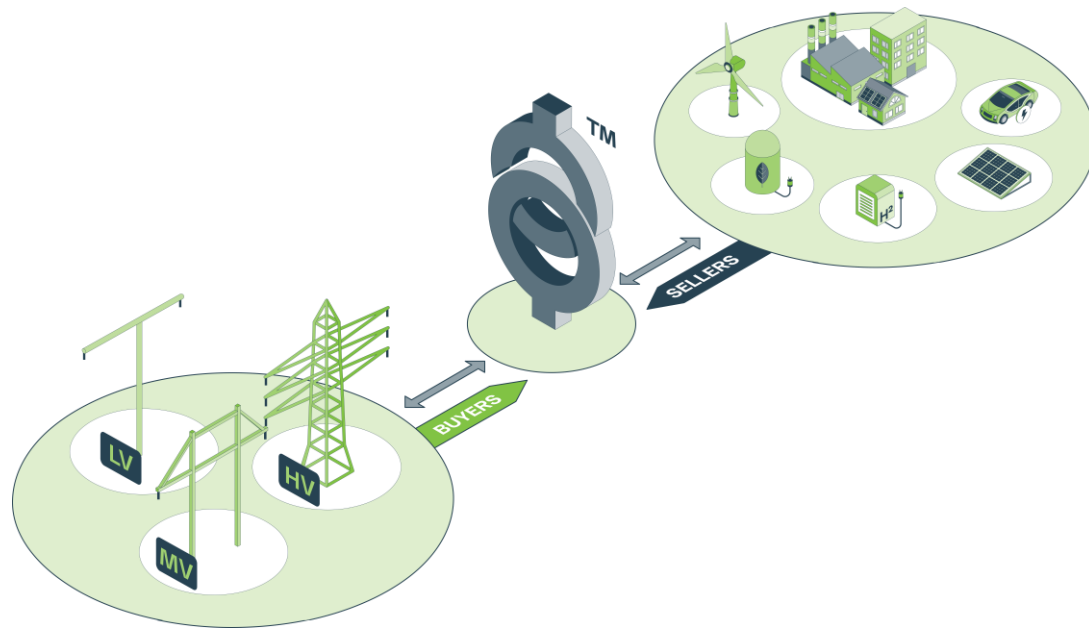
NODES™

Enabling DSOs to defer its planned investments by giving them access to decentralised flexibility

Using flexibility to accelerate the energy transition and electrification



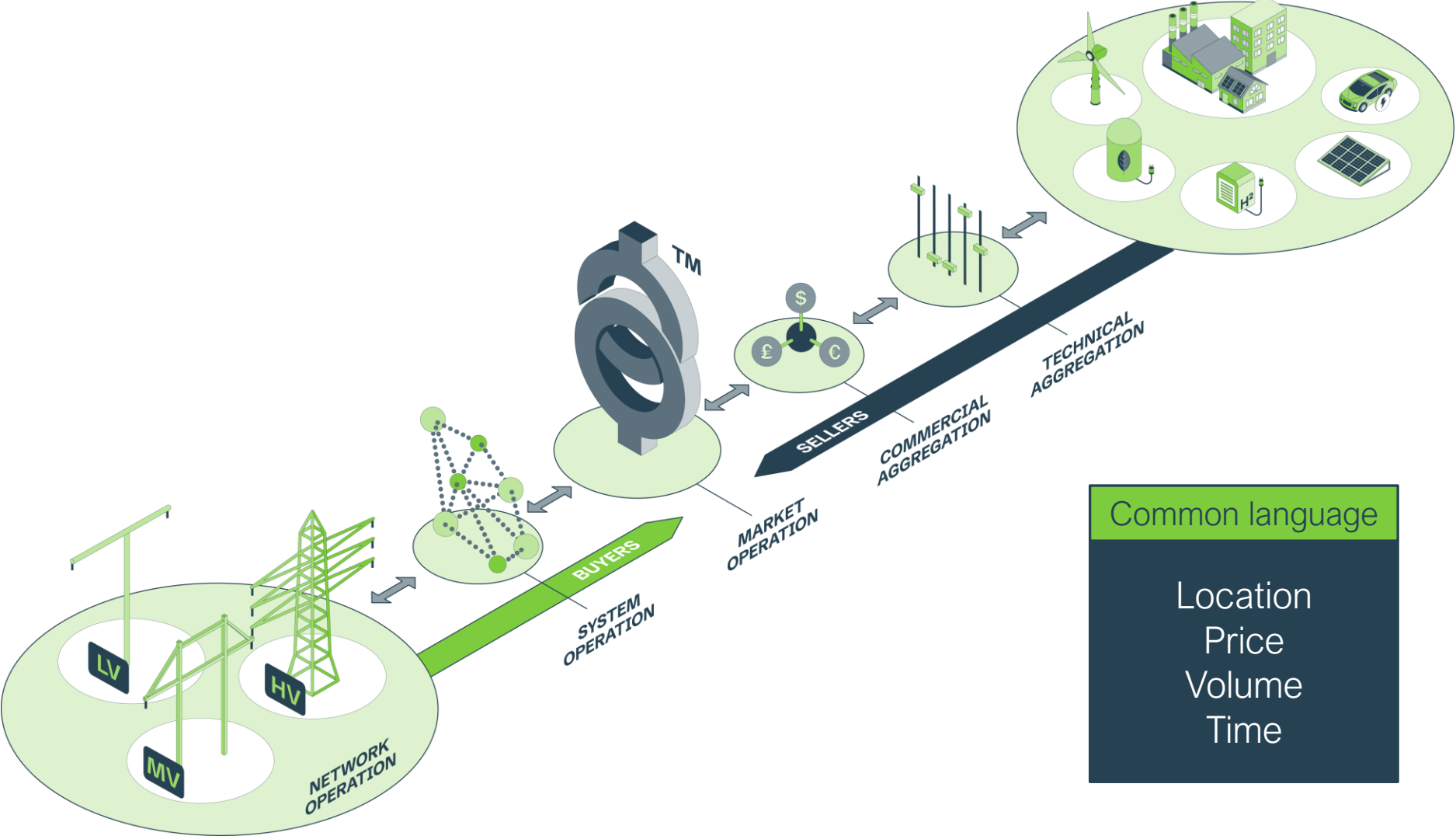
How to unlock demand side flexibility?



Buyers and sellers need
a **price** they can **trust!**

To enable
investment decisions
for the future
&
optimise for today.

Digital flexibility value chain



Flexibility comes in many shapes and forms



Market data

NODES
Reservation tenders Constraint areas

Reservation tenders

Reservation of flexibility ahead of time (years, months, seasons, or weeks ahead). An accepted reservation contract is an obligation to make the agreed volumes available in the activation market. Hide

Order by: Open to

Oslo syd des 24- jan 25 Closing in 2 days
By Elvia in Elvia Market

↑ LongFlex 10 MW NOK 143 NOK 5,000

Nedre Glomma des 24- jan 25 Closing in 2 days
By Elvia in Elvia Market

↑ LongFlex 10 MW NOK 143 NOK 5,000

Øra Temp. avhengig Long flex Closing in 4 days
By Elvia in Elvia Market

↑ LongFlex 1 MW NOK 143 NOK 5,000

Opsahl-Tveten Vinter 24/25 Closing in 30 days
By Elvia in Elvia Market

↑ LongFlex 5 MW NOK 120 NOK 4,000

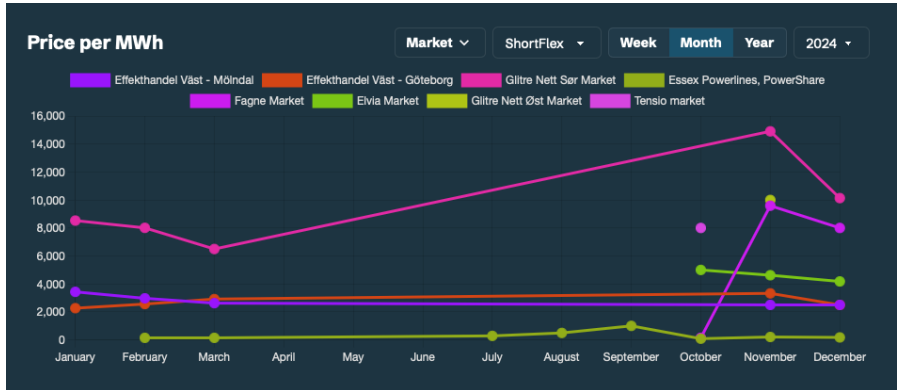
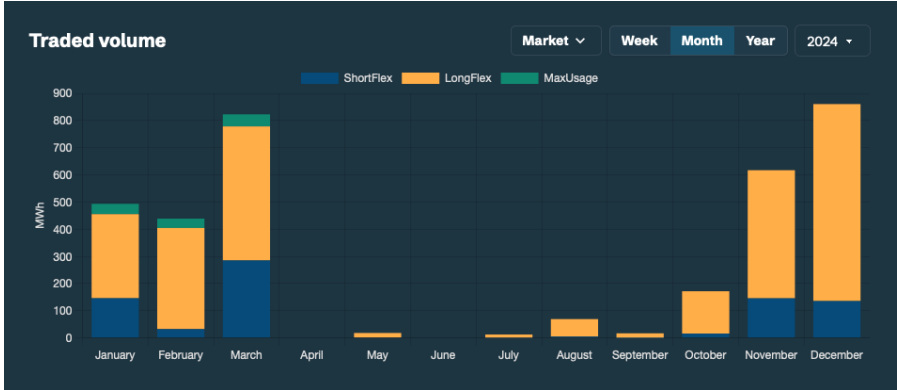
LongFlex Sagene des 24-feb 25 Closing in 30 days
By Elvia in Elvia Market

Open reservation tenders

1225 MW
Requested tender capacity

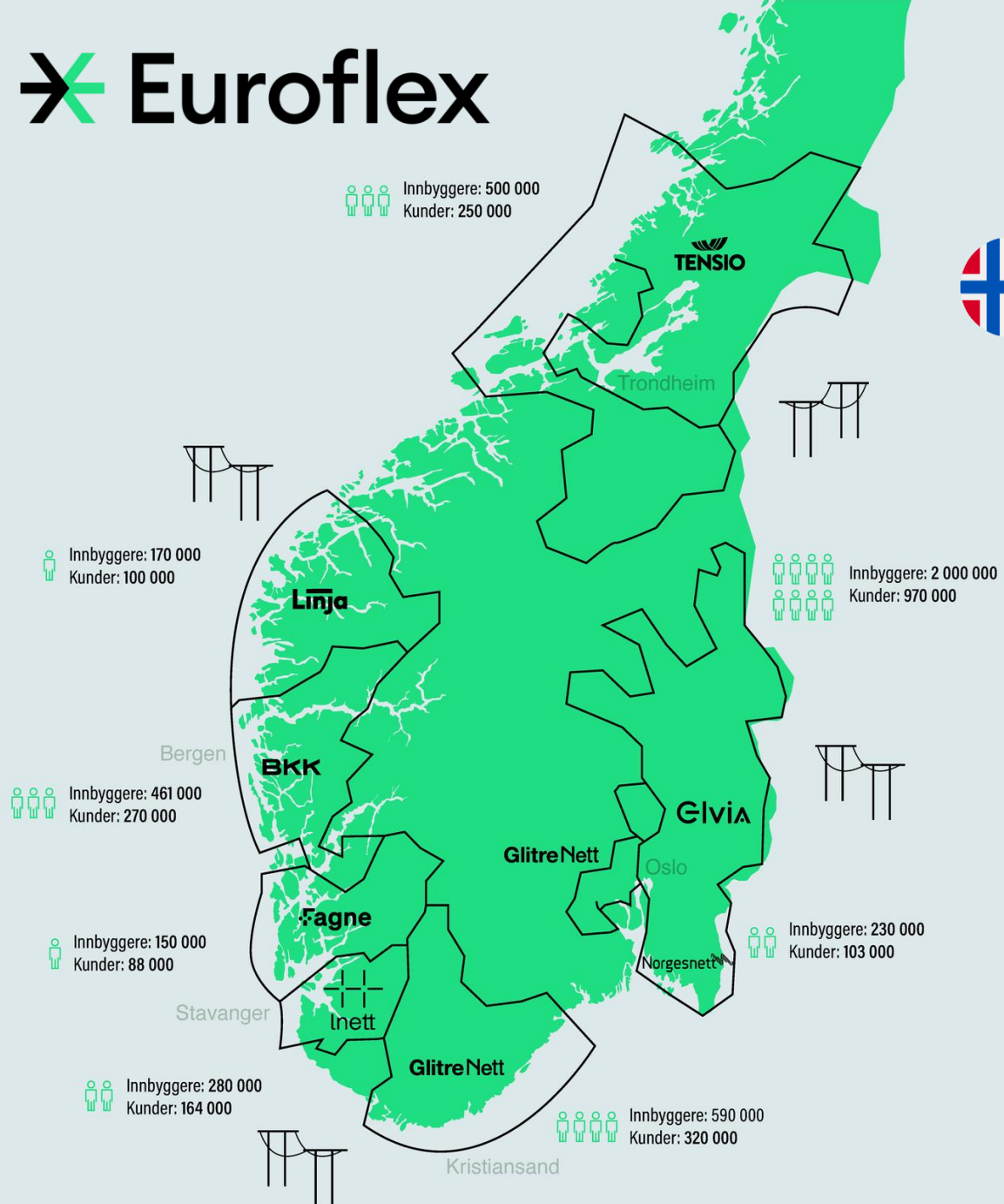
458
Open tenders

450
Grid nodes



Euroflex

Innbyggere: 500 000
Kunder: 250 000



GOAL

Piloting, development and scale a complete value chain for buying and selling demand response flexibility

PARTNERS

Å
ENERGI



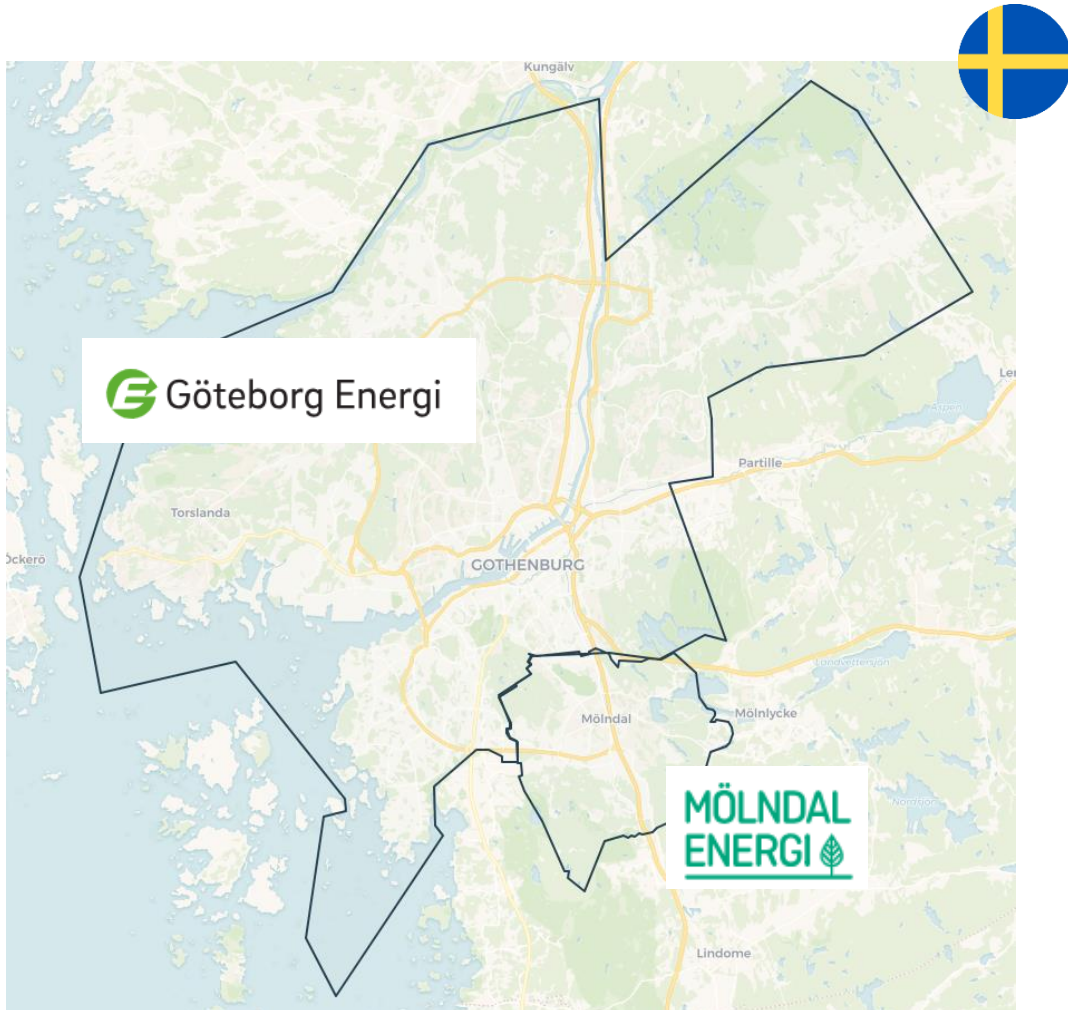
Collaborators:

Open for all flexibility service providers

FINANCING

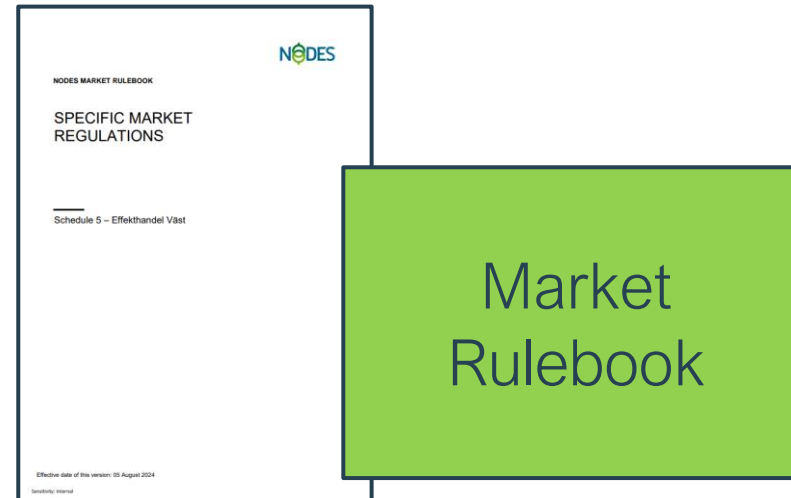


Effekthandel Väst

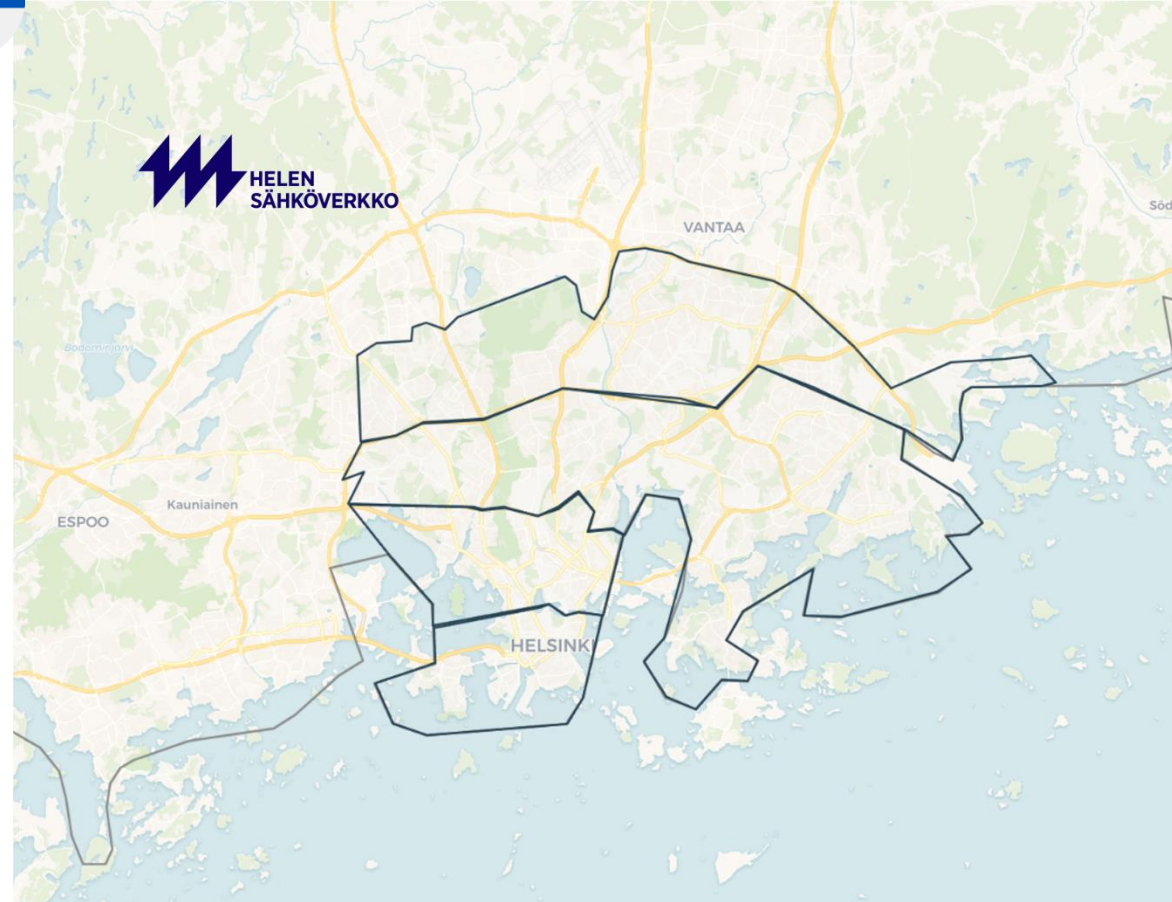


	Bids MWh	Trades MWh
LongFlex	2700	130
MaxUsage	900	120
ShortFlex	5200	450

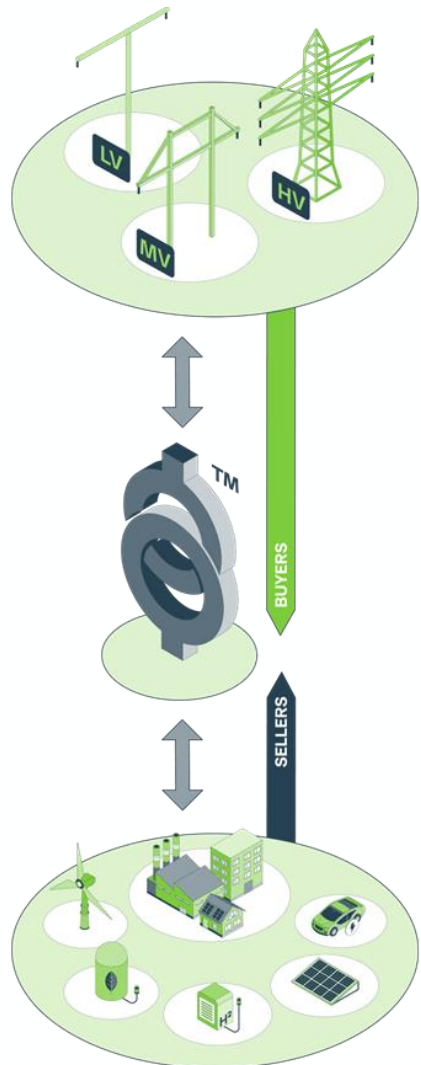
Aggregated figures since initiation winter season 21-22



FinFlex – one common TSO/DSO market



New role for coordination of market activity



TSO
IPTO in Greece
Fingrid in Finland

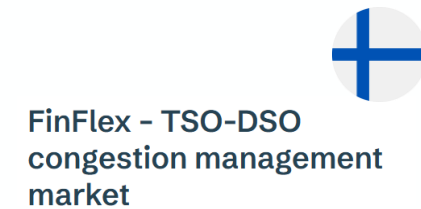
DSO
Hedno in Greece
Helen Sähköverkko in Finland

Market Coordination Tool
Operated by the **Coordination Role**

Flexibility Market
Operated by NODES

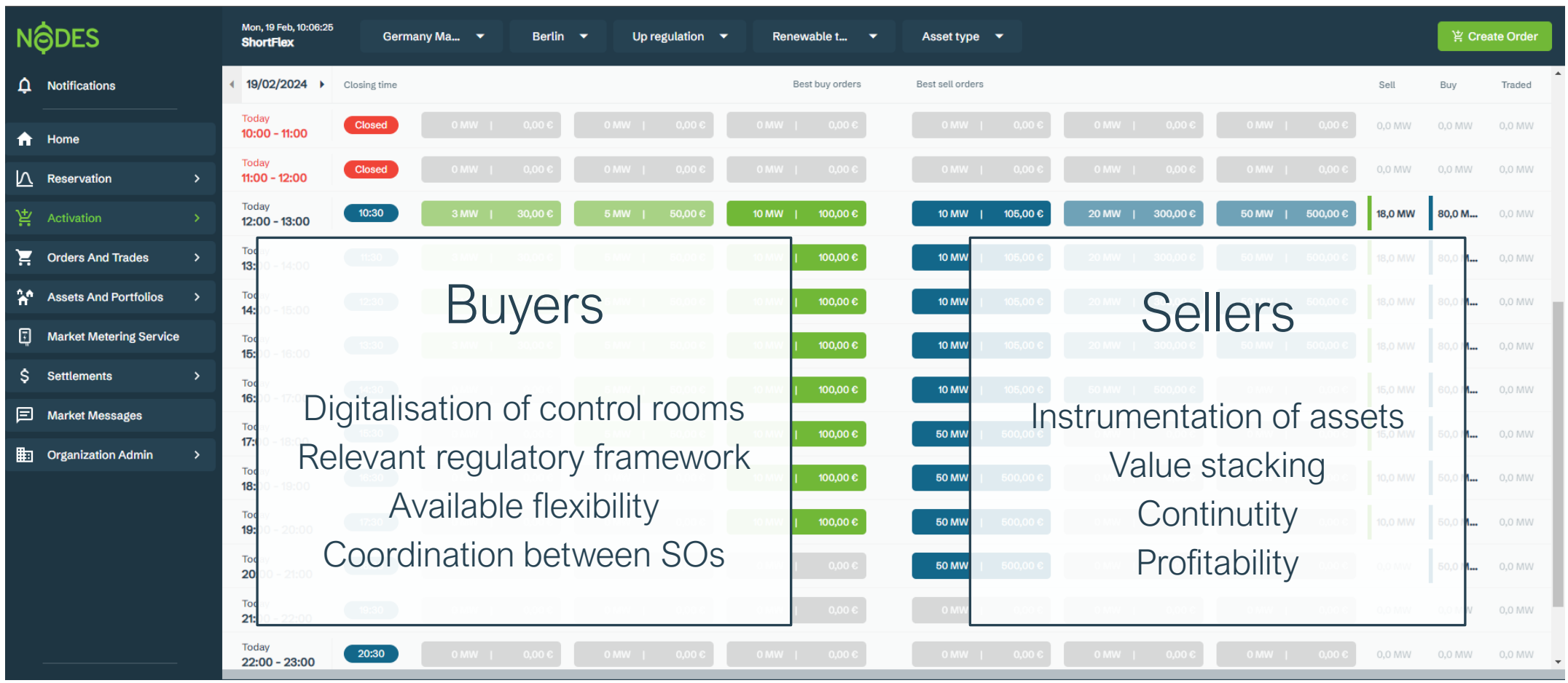
Flexibility Service Provider
Multiple FSPs

- ⌘ Coordination and exchange of data, including trading
- ⌘ Traffic light system to market coordination



Outlook – whats important?

Yesterday: Production reacts to demand → Tomorrow: Demand must react to production



Buyers

- Digitalisation of control rooms
- Relevant regulatory framework
- Available flexibility
- Coordination between SOs

Sellers

- Instrumentation of assets
- Value stacking
- Continuity
- Profitability