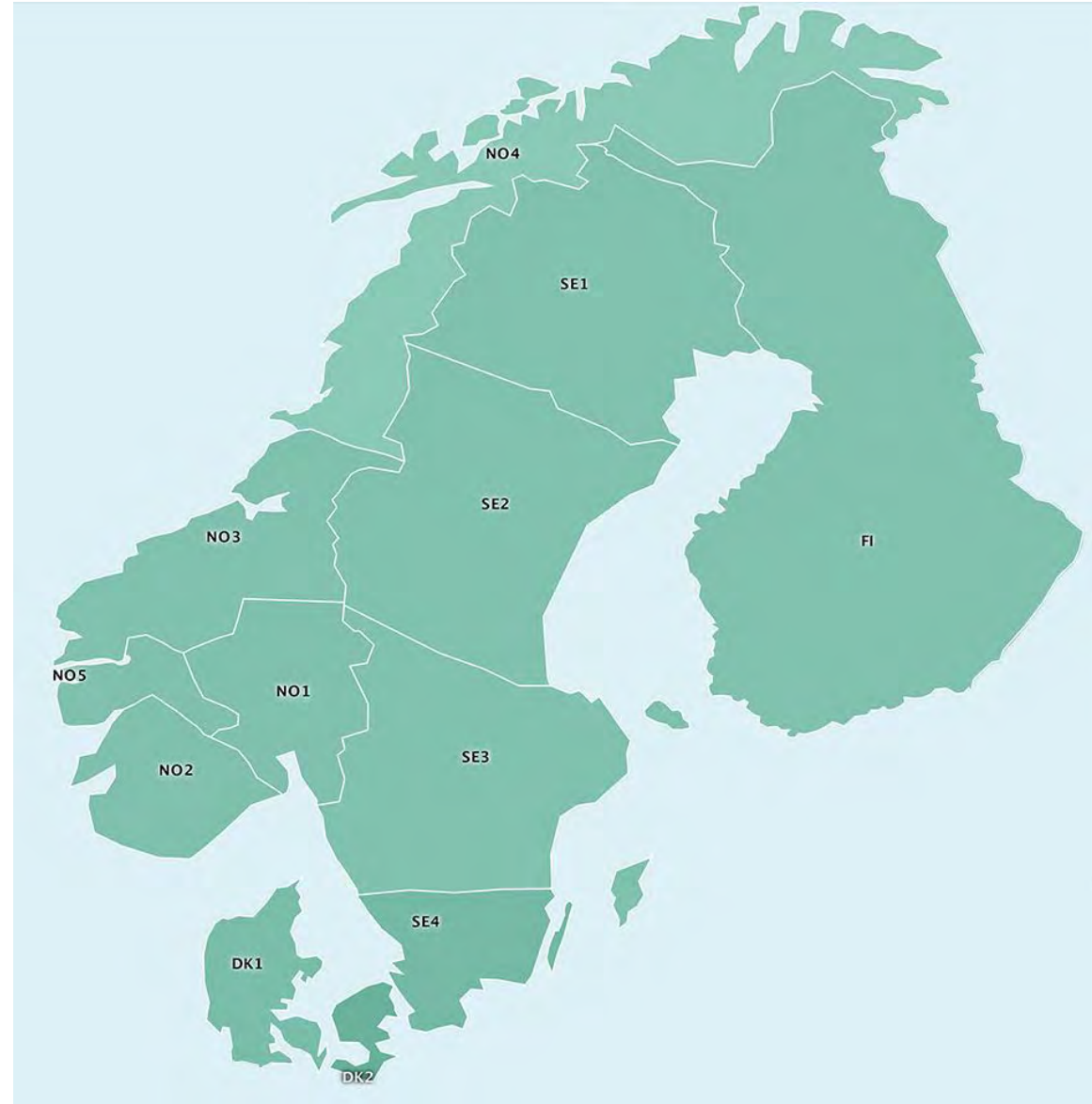


Zonal pricing in Sweden

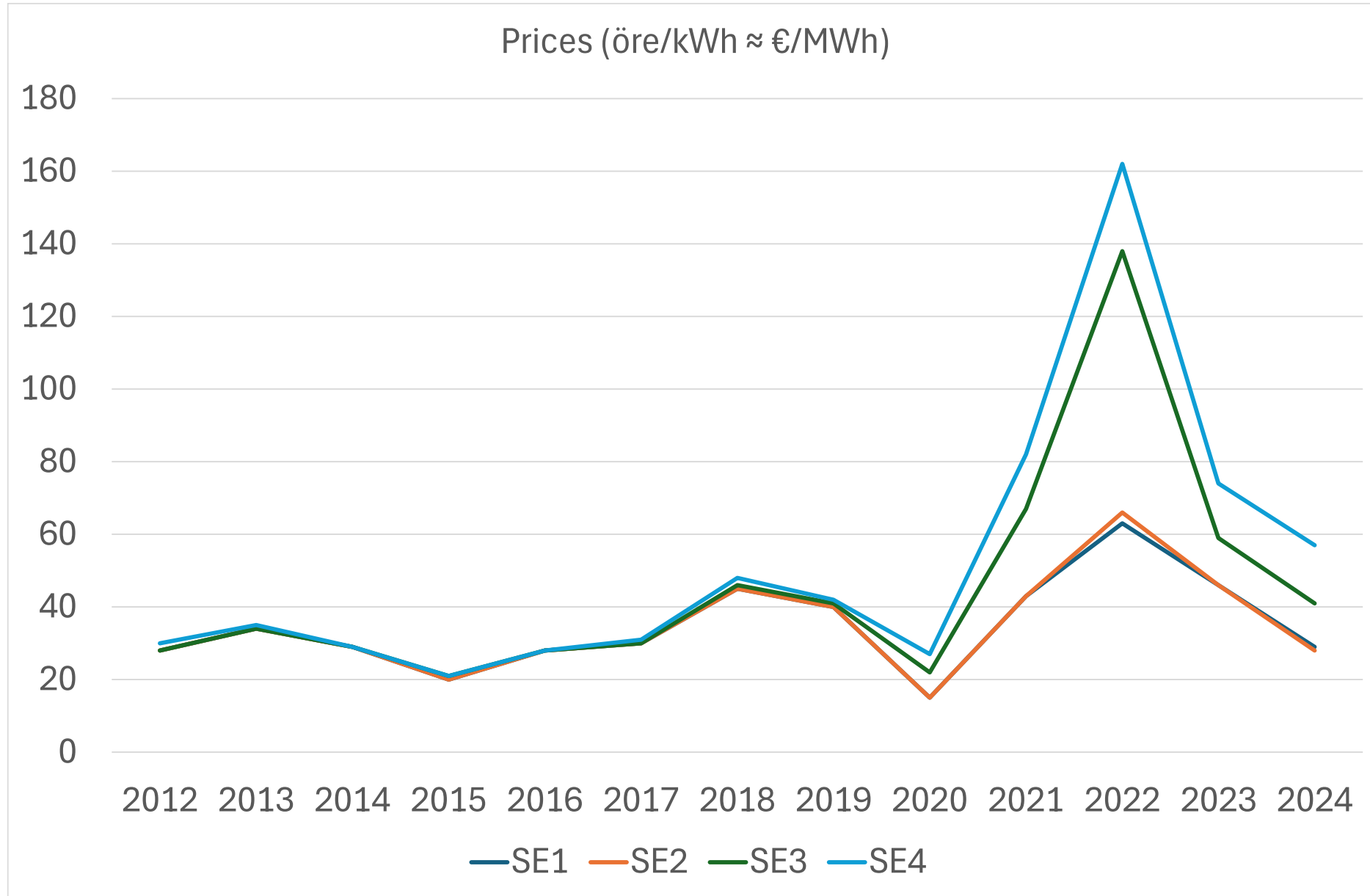
Pär Holmberg
EPRG Spring seminar May 23, 2025

Nordic zones

Country	Number of zones
Denmark	2
Finland	1
Norway	5
Sweden	4



Zonal electricity prices in Sweden



Drivers of price divergence after 2020

- Denmark/Norway have increased exports to UK and Germany => higher prices in southern Sweden.
- Sweden has closed several old nuclear reactors in the south.
- The south has a relatively high population density. Also, the military does not like wind-power in the south => difficult to obtain permits for wind-power in the south (price signals are not working).
- Currently most of the wind power is built in the north where it is easier to build.

Prices may converge in the future

- New energy-intensive industries are mainly built in the north (price signals are working)
- Batteries and solar power are installed in the south (price signals are working)
- Houses close to wind-power plants and affected municipalities may get better compensation in the near future.
- Price signals put pressure on politicians in the south to accept more wind power.
- The government wants to build new nuclear reactors in the south.
- Increased grid capacity and increased transmission in existing grid.
- Most politicians oppose new export cables to Continental Europe, before Swedish prices have converged.

Financial market

- Nord Pool has a system price, a synthetic Nordic price, where congestion is neglected.
- Forward contracts based on the Nordic price have fairly high liquidity on the Nasdaq exchange.
- Less liquid after stricter collateral requirements were introduced by regulators and Nasdaq.
- Bilateral PPA contracts are popular => less liquidity in Nasdaq exchange.
- For each zone, there is an EPAD, a contract on the difference between the zonal price and system price.
- EPADs are less liquid and are mainly traded over the counter (OTC) via brokers.
- Total trade in forward market not much affected by introduction of zonal pricing in Sweden, but EPAD became less liquid.
- Svenska kraftnät (SvK) introduced EPAD auctions in 2023. This increased liquidity in the market.

Bid-ask spreads at Nasdaq

- During 2016-2020, average spread was 0.2-0.3 Euro/MWh for system-price (Nordic price) products.
- During 2016-2019, average spread was around 1 Euro/MWh for EPADs. But significantly worse in 2020.
- Most of the EPADs are traded over the counter (OTC) => Difficult to interpret how spread for EPADs at Nasdaq should be interpreted.
- During 2016-2022, average spread was around 0.1 Euro/MWh for Germany and around 0.5 Euro/MWh for France and Netherlands.

Early issues in SE4

- Unpredictable price with potential exposure to high prices in Continental Europe.
- Not much local production => low local supply of forward contracts
- Relatively few retailers and they had higher mark ups. Some included adjustment clauses in initial one-year “fixed-price” contracts.

Bidding zone review 2025

- Sweden has a new issue with east-west congestion (since 2020)
 - Norway has increased exports to UK and Germany
 - Finland has a new nuclear power plant.
 - Sweden has recently closed two old nuclear plants on the west coast.
- Four alternatives with a new zone in the eastern part have been evaluated, but authorities have opted to keep the old zones.
- Sweden's government wants less zones, preferably only one. A new inquiry has started.

