



Montel Swedish Energy days

GO-Prices: Will we ever see EURO 10/MWh again?

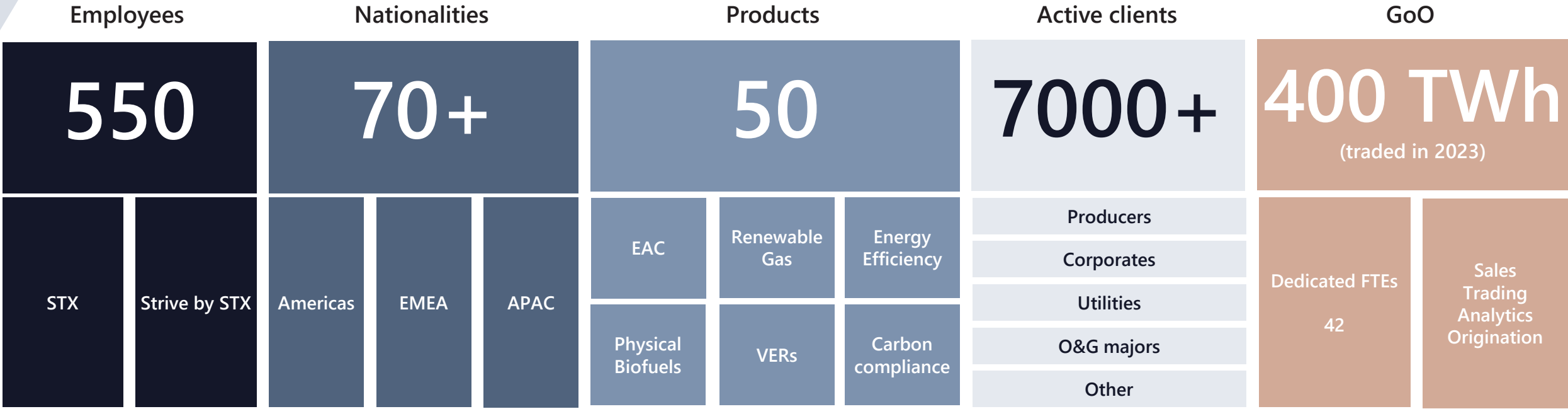
Mathijs Huls

Global Renewable Power Analyst

5/31/2024



Founded in 2005, STX Group a leading environmental commodities trader with global presence



Agenda

- 1** GO market 2023
- 2** Price drivers and development
- 3** Looking ahead



Production – AIB Wide

960 TWh was produced on 2023 (+15% increase year on year)

Wind: +17%

Solar: +26%

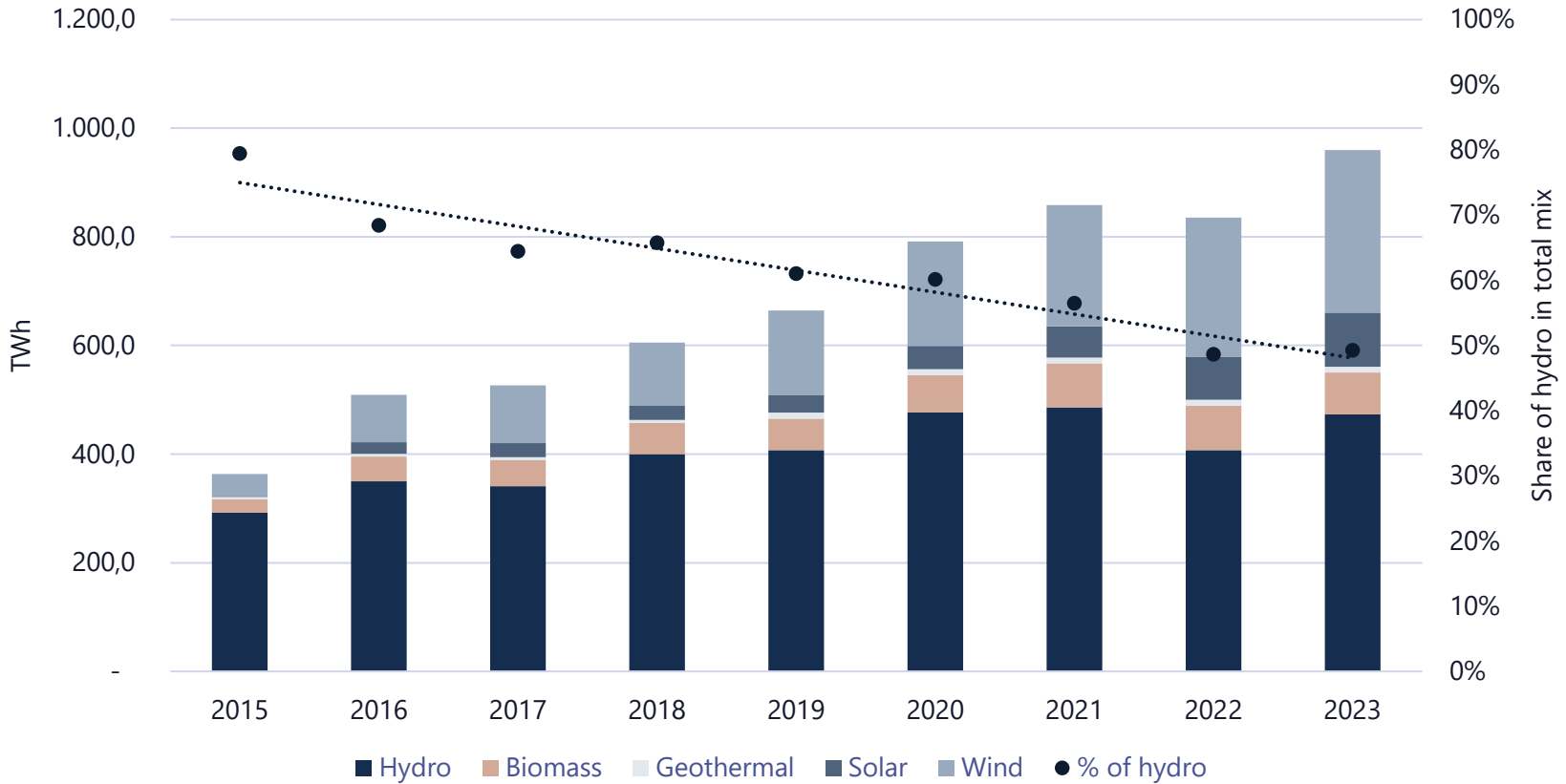
Biomass: -6%

Hydro: +16%

Hydro production recovered strongly in the second half of 2023 due to higher precipitation throughout Europe and most of Scandinavia.

Wind and Solar production continued to increase strongly due to added capacity.

GoO Production per Technology (AIB + Domestic)



Production – Sweden

110 TWh was produced in 2023
(+11% of GOs in AIB countries)

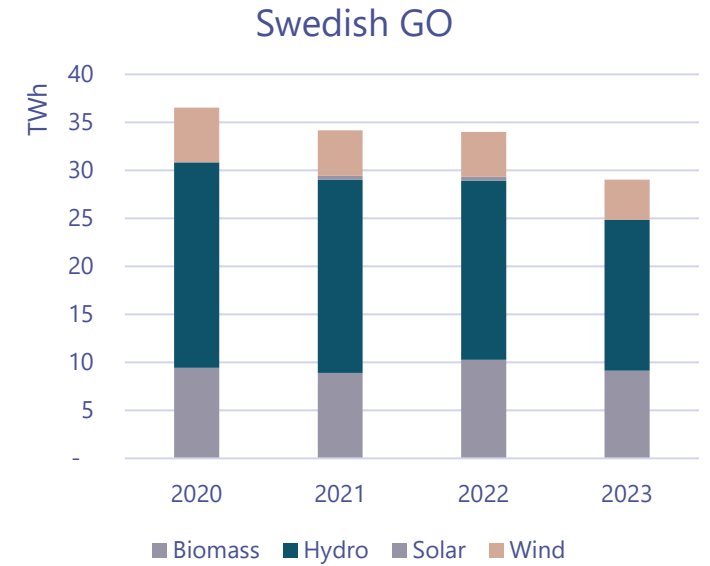
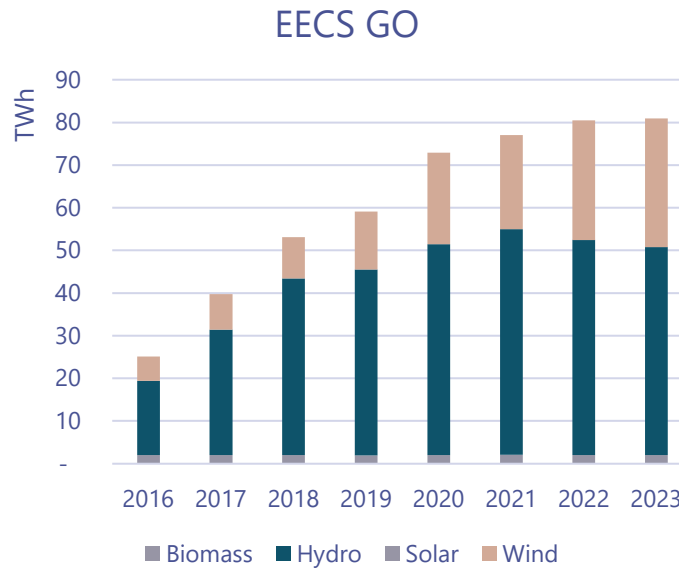
Hydro: 59%

Wind: 31%

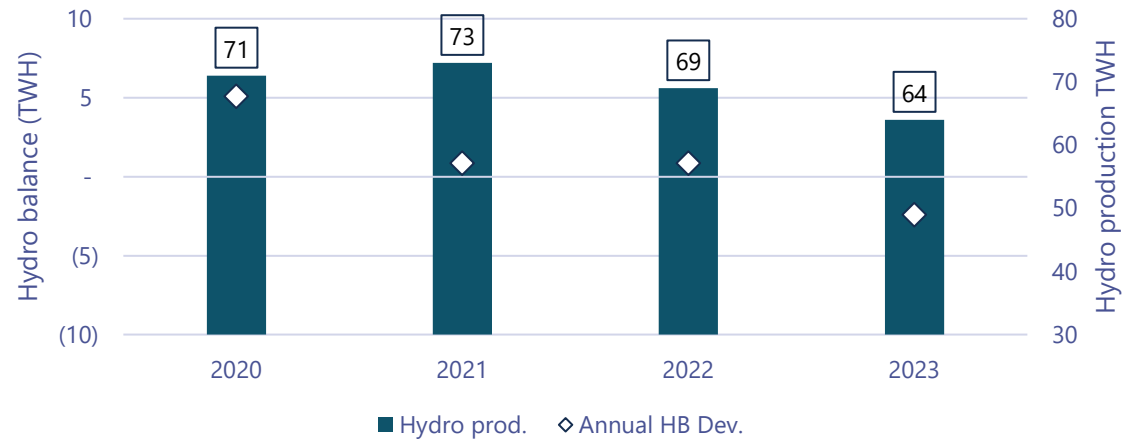
Biomass: 10%

Solar: 0%

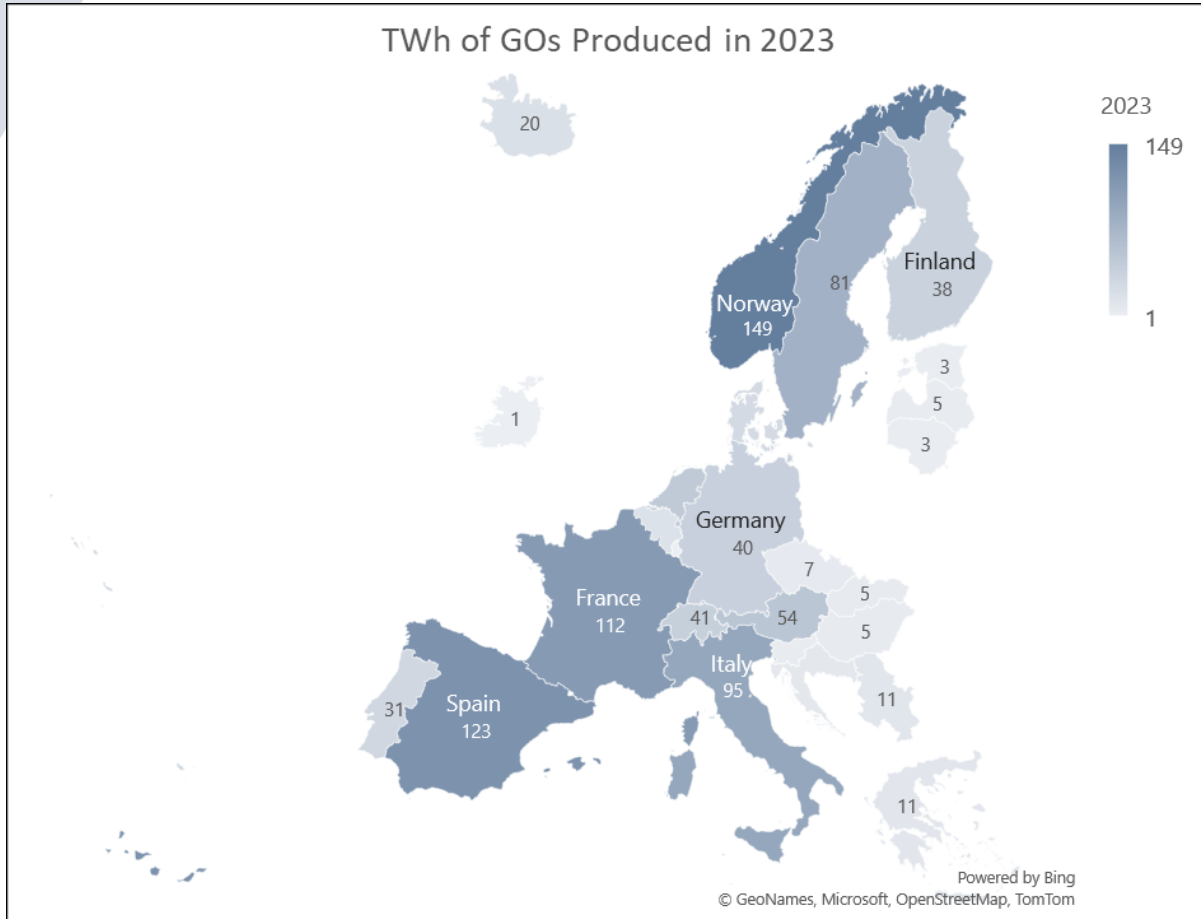
While Hydro production recovered strongly AIB wide, 2023 was an even worse year in Sweden due to a 4-year low annual hydro balance.



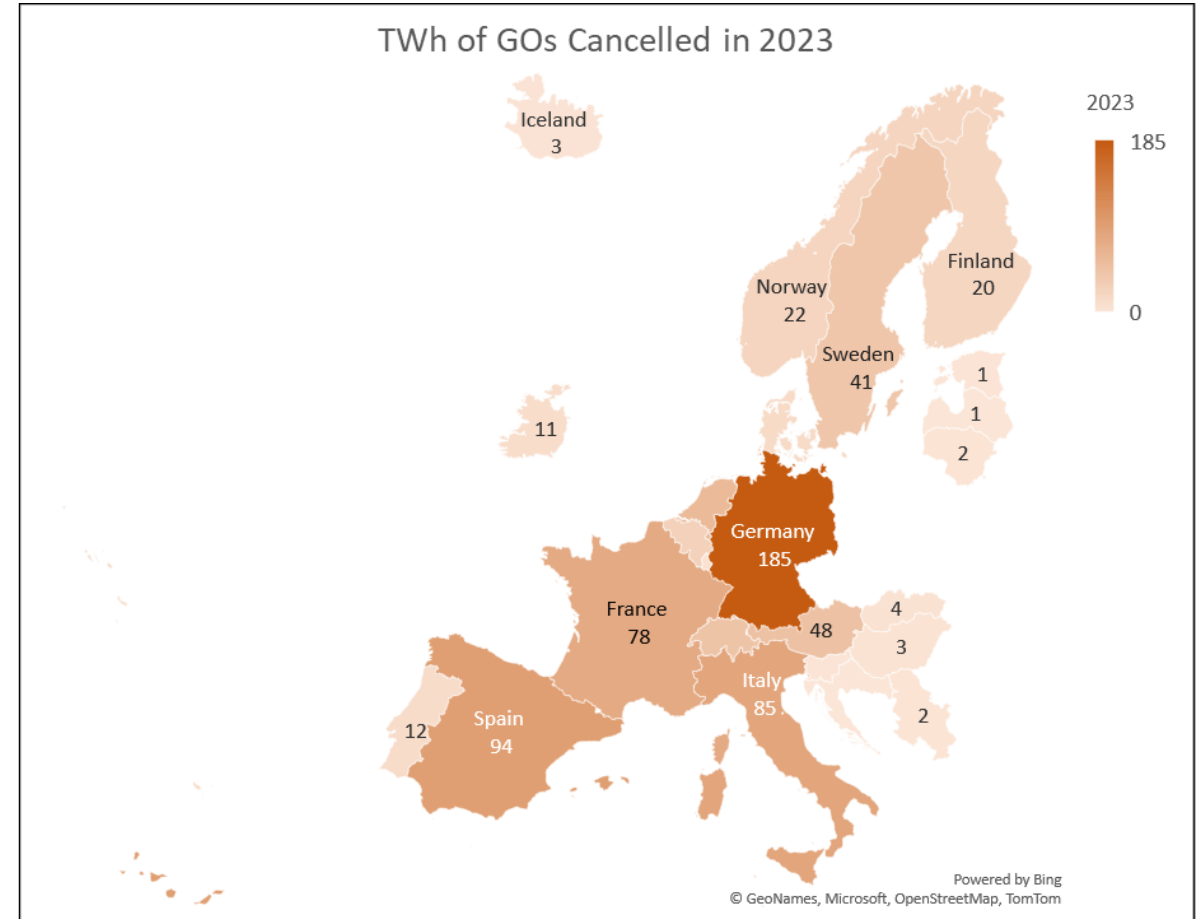
Hydro production vs Hydro balance



Issuance versus Cancellations

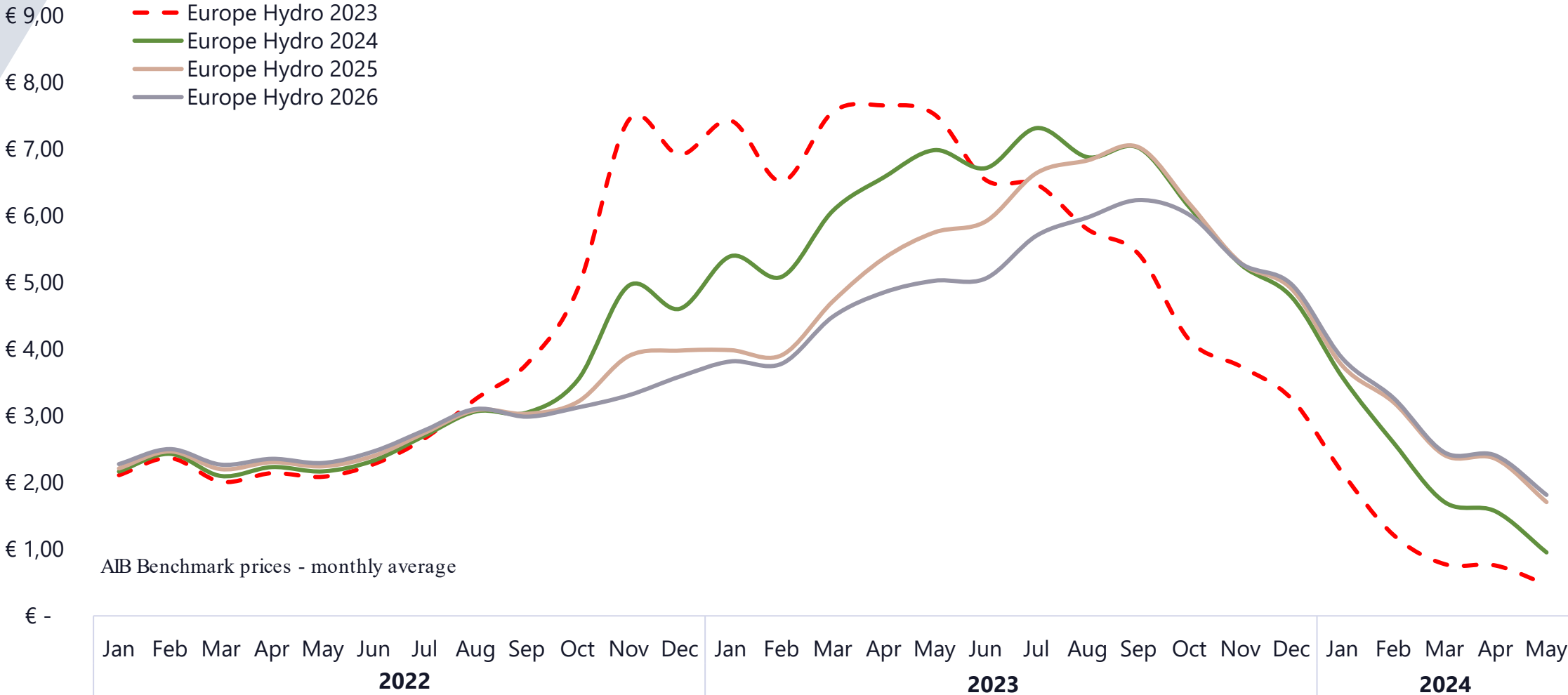


- Largest increase from France (19 TWh), Italy (15 TWh) and Spain (13 TWh)
- Smallest increase from Luxembourg (0.0 TWh), Iceland (0.1 TWh) and Estonia (0.1 TWh)

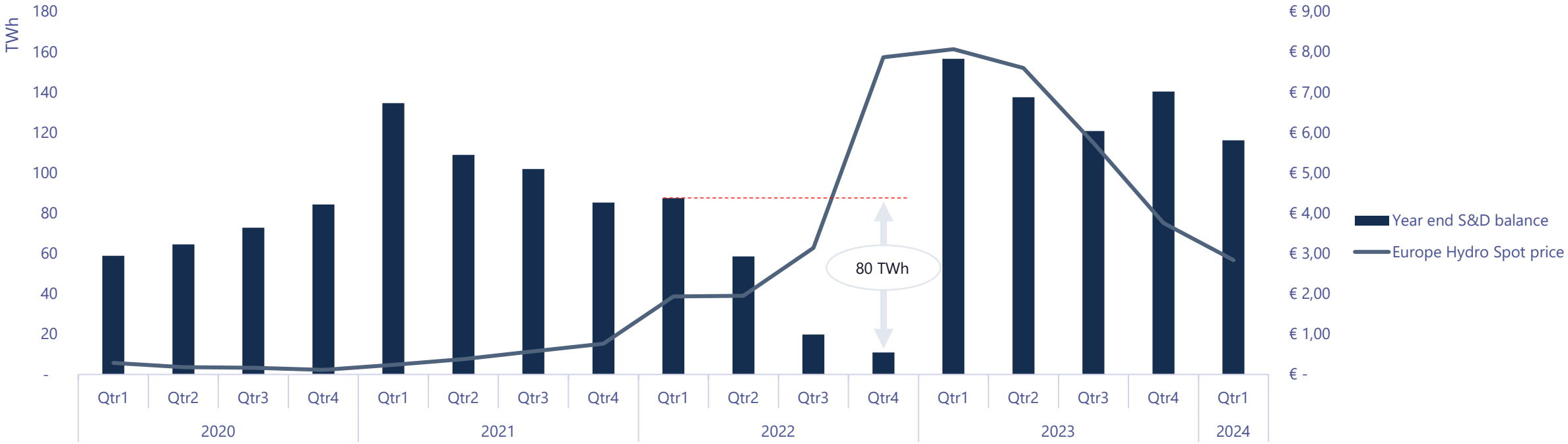


- Largest increase from Germany (43 TWh), Italy (14 TWh) and France (11 TWh)
- Largest decrease from Sweden (-24 TWh), Finland (-8 TWh) and Norway (-7 TWh)

Price Development of AIB GOs – Backwardation to Contango

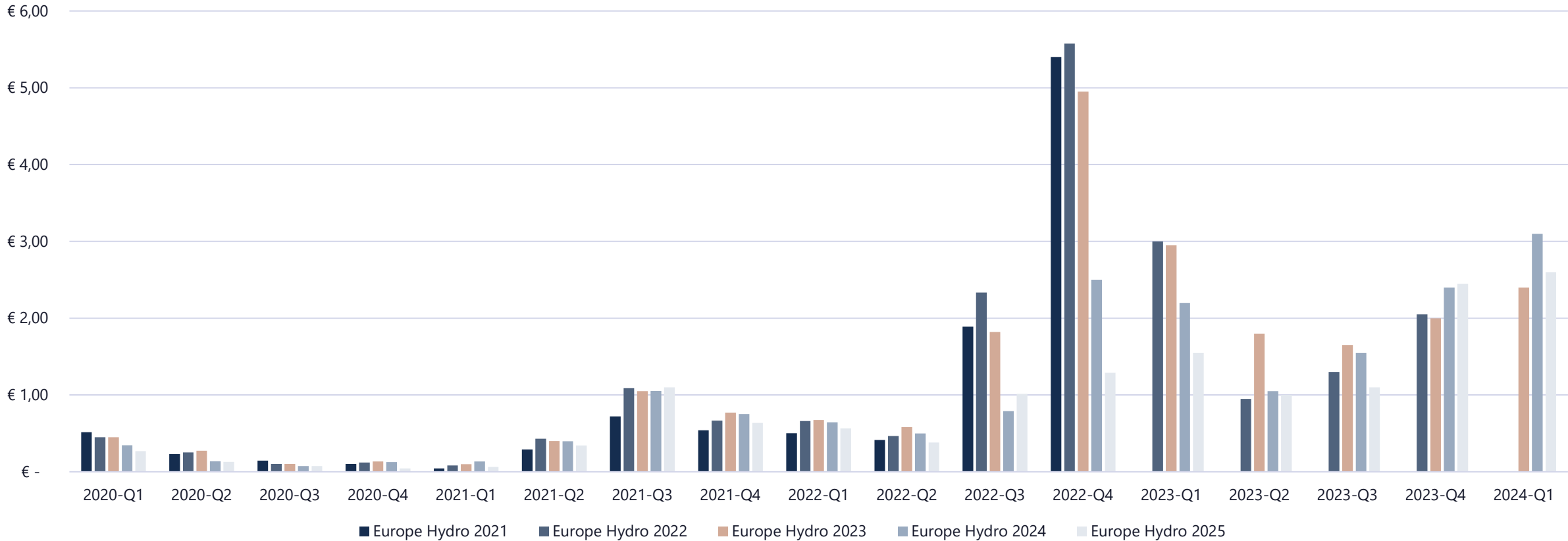


A slight imbalance due to reduced production can squeeze prices



GOOs are increasingly more volatile

Monthly Volatility of European Hydro GO price



The market is maturing

1

Hedging behaviors

- Higher volatility is resulting in ad-hoc buying/selling becoming substantially more risky
- Increased demand for longer term solutions
- New pricing structures (floating price and options)

2

Increased transparency

- Increased amount market data available
- Additional platforms and auctions
- Full disclosure

3

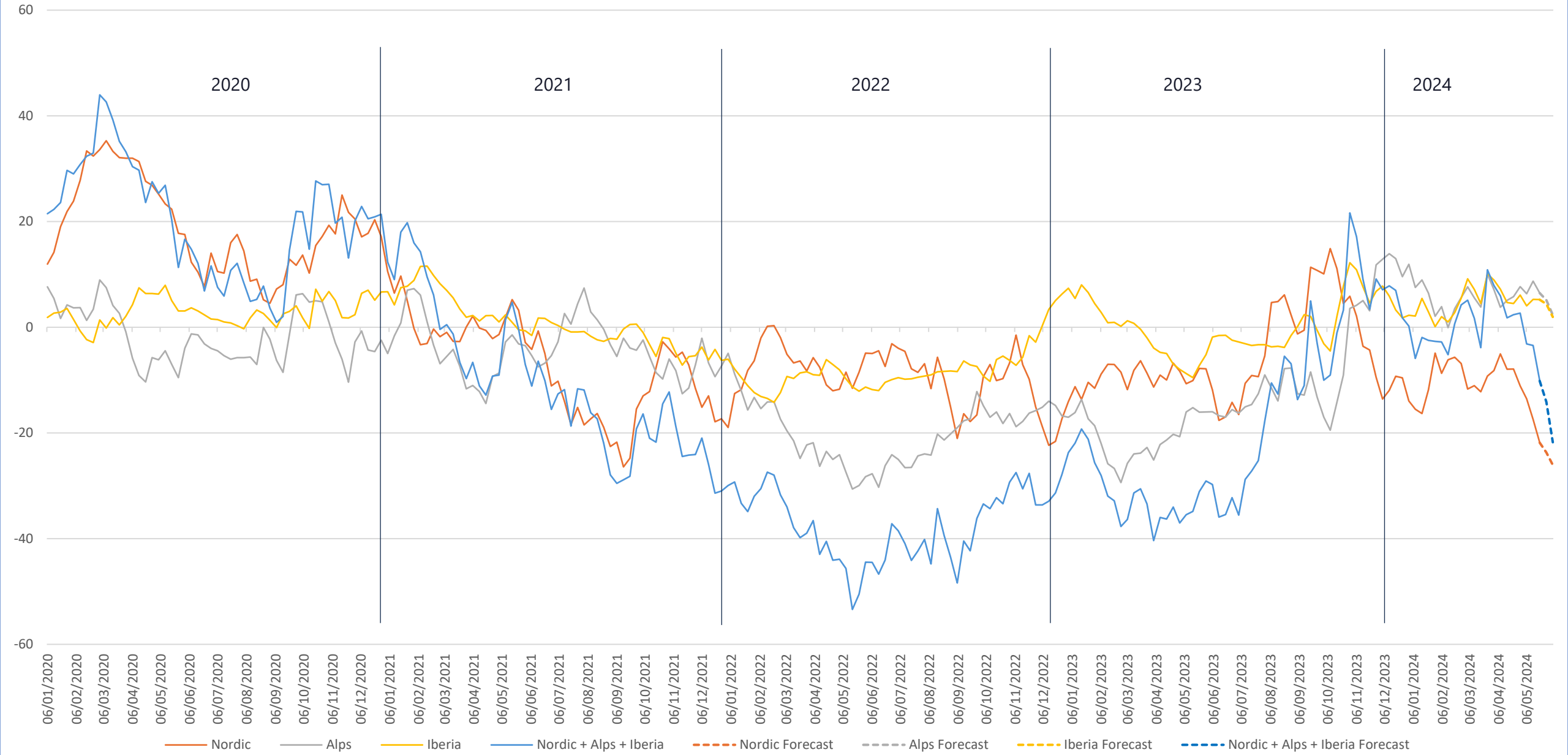
Higher frequency of trade

- Market is growing in all aspects
- New trading-oriented counterparties entering the market
- Market participants are becoming more educated



Average Alps + Iberia + Nordic balance

Hydro balance - Nordic, Alps, Iberia



80 TWh change in S&D increased prices 800% - Back to €10/MWh?

What is the effect of potential policy changes on prices?

Norway out of AIB

Either internally driven resistance to pay a premium for renewable power or a future ban by AIB over location vs market based renewable claims can shift the current in- and export.

Germany issuing supported GOOs

European policy harmonization could change eligibility criteria for GOO issuance. It could result in Renewable production that is currently excluded from receiving GOOs in Germany becoming eligible to trade or auctioned.

RFNBO driven GOO demand

RFNBO targets seek to boost non-biomass renewable energy in the energy mix, spurring a significant increase in renewable energy generation. This surge in generation is expected to drive up demand for corresponding GOOs

Energy community mutually recognized by EU

The Energy Community are discussing the roadmap to mutual recognition that allows GOO trading with the EU market. Potentially increasing the Supply of renewable GOs in the AIB market.

Bullish: Nett Supply impact -120TWh

150 TWh of supply is leaving the AIB against only **30 TWh** of demand.

Bearish: Nett Supply impact +330TWh

330 TWh of supply does not receive a GO. Germany would export 100 TWh rather than import, if policy is changed.

Bullish: Nett Demand impact +500 TWh

500 TWh of renewable demand added by 2030 according to the EU-C.

Bearish: Nett Supply impact +60TWh

Recognition of Energy Community-issued GOs (excluding Serbia) could add 60 TWh to the market



Thank you for listening!

Mathijs Huls
Global Renewable Power Analyst
Mathijs.Huls@stxgroup.com
stxgroup.com