



EnAppSys

- part of **MONTEL** GROUP



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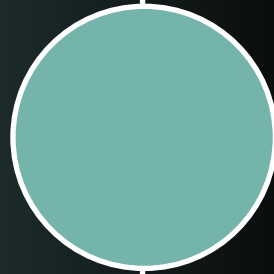
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**Providing Context to
Intraday Trading**

**Jean-Paul Harreman
EnAppSys**



1. Introduction
2. Analyzing Day-Ahead Market Sensitivities
3. Intermittent Renewables Cause Intermittent Conventionals

We are an energy company providing European market insight.

Founded in 2003 • with offices in Stockton-on-Tees, UK and Terneuzen, NL



We are passionate about market transparency

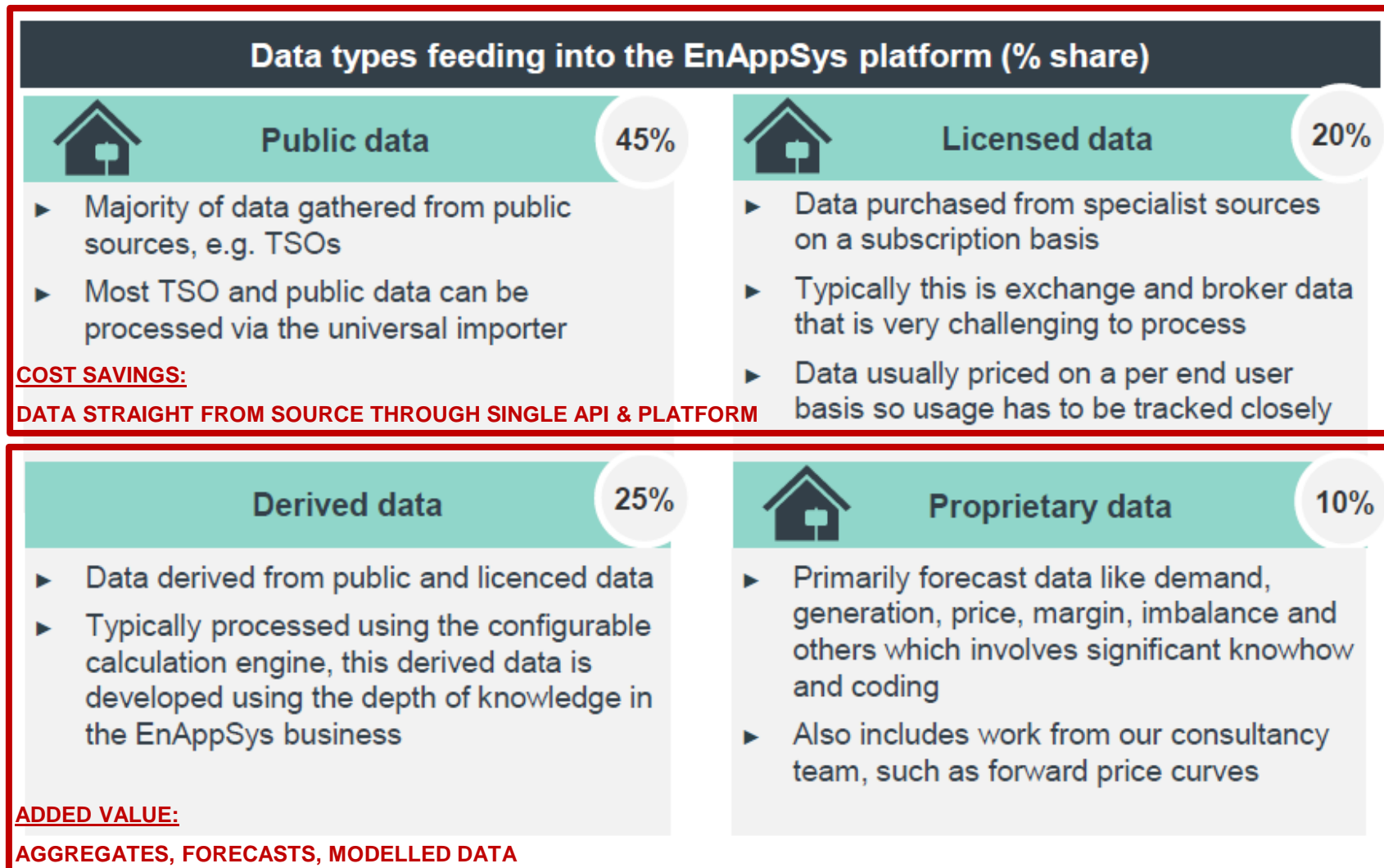
We believe that, by making our insight available to stakeholders in the market we can facilitate a faster energy transition at the lowest possible cost for customers



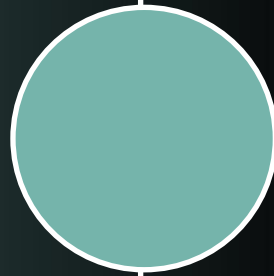
Market Data & Forecasting Services

We collect data from every data source we can find, to save time, effort, and costs through our data platform:

- Charts
- Customizable Dashboards
- Download
- API Access
- Weekly Market Reports
- Twitter/Linkedin
- Talk to our Market Experts



Looking for sensitivities



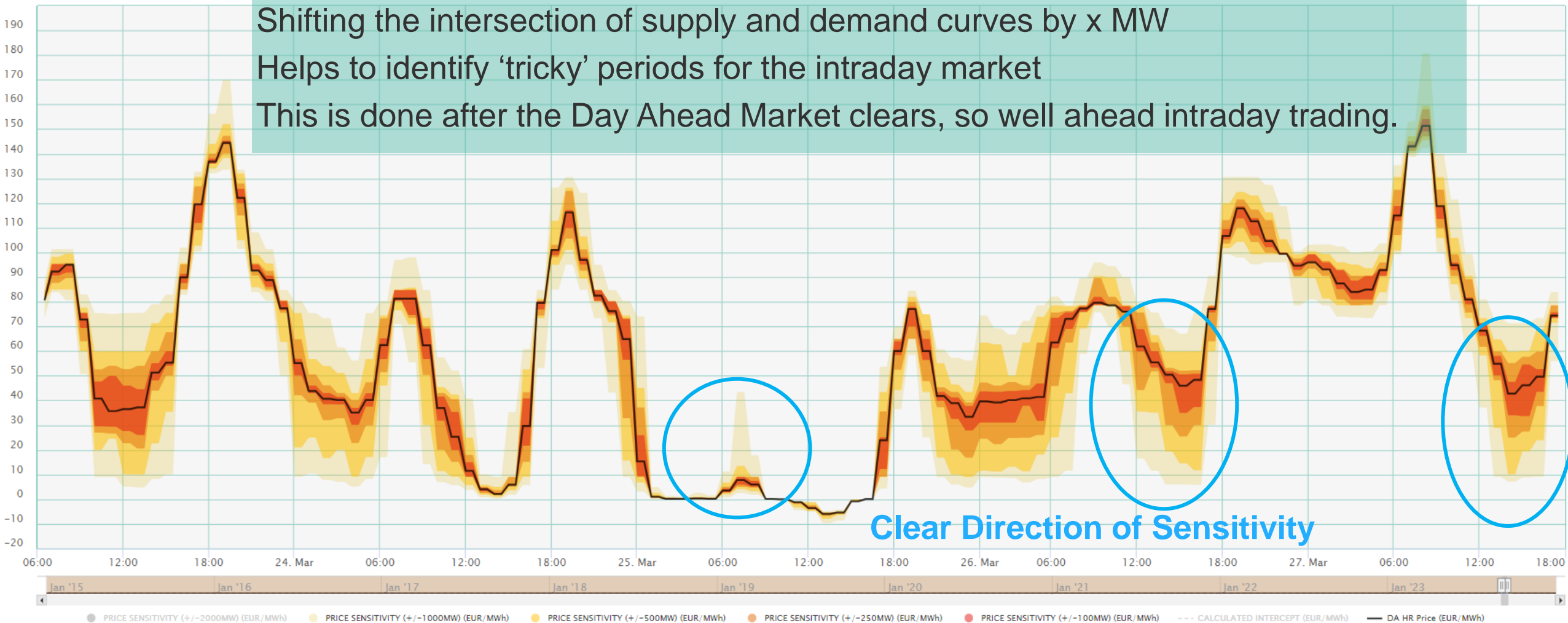
Analysing Day-Ahead Results

What-if Analysis:

Shifting the intersection of supply and demand curves by x MW

Helps to identify 'tricky' periods for the intraday market

This is done after the Day Ahead Market clears, so well ahead intraday trading.



Clear Direction of Sensitivity

Example: 11 April 2023

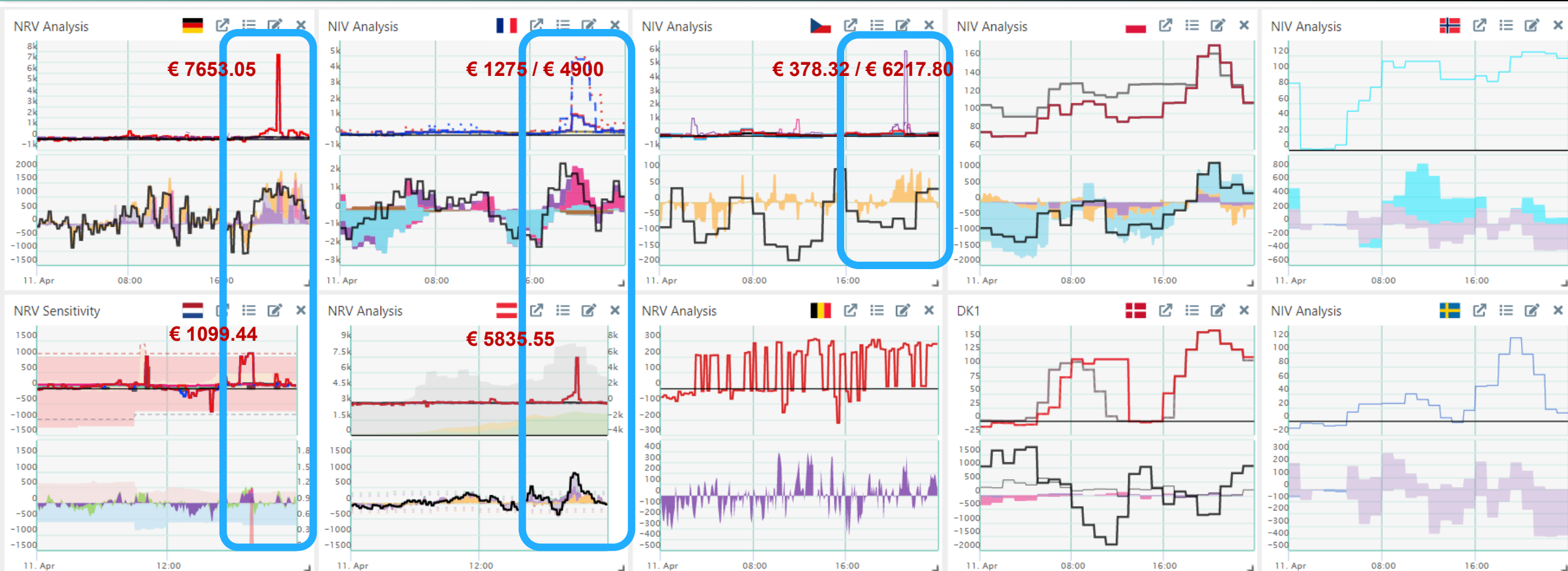


Sensitivity:

Massive sensitivity in upward direction for all of the most important border markets. Largest sensitivities in AT, BE & DE.

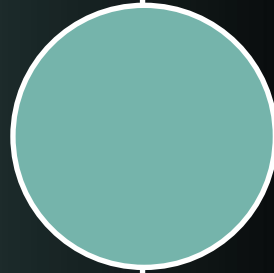
This implies a tightness on intraday and balancing markets in upward direction.

Example: 11 April 2023



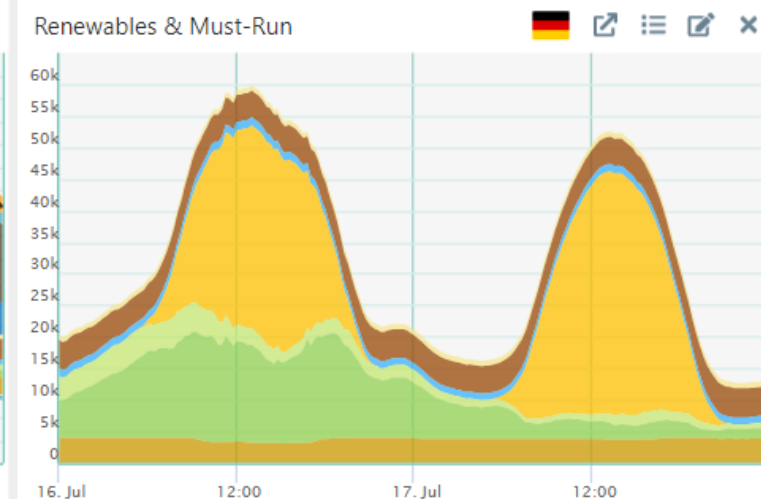
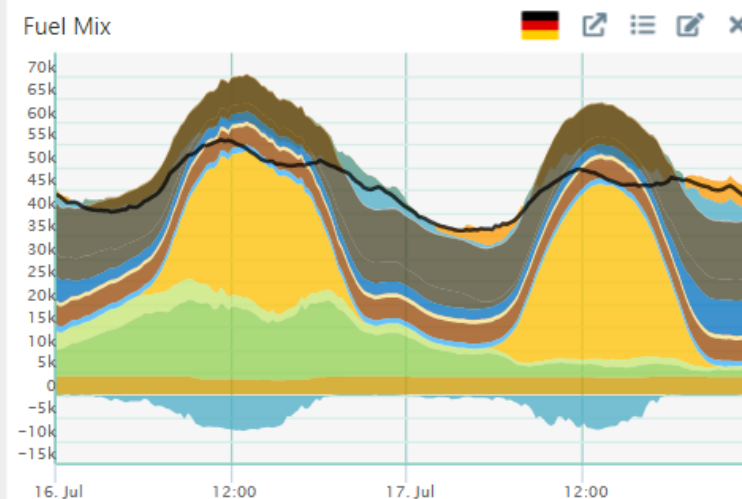
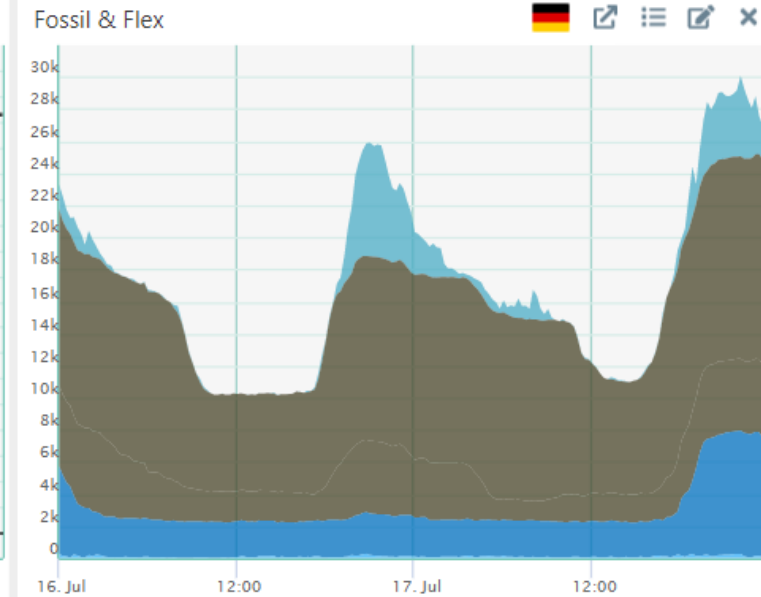
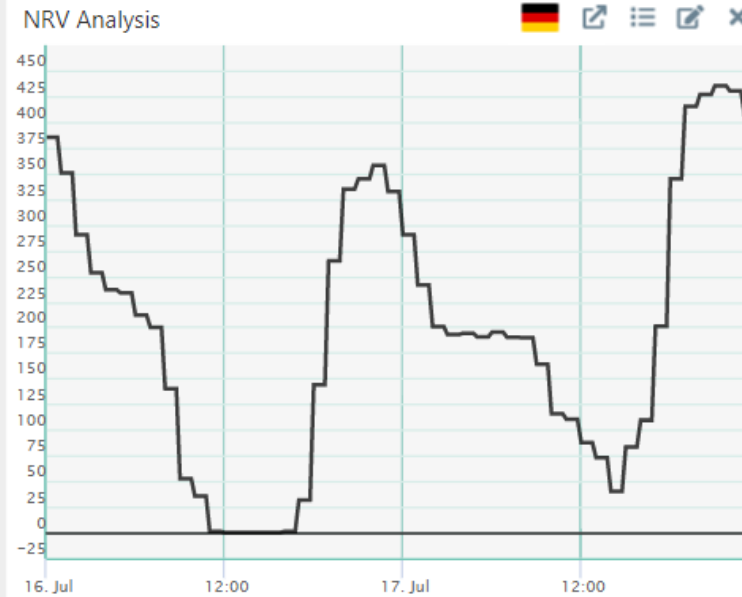
In the evening peak, extreme prices were seen in DE, FR, NL, AT and CZ.
All neighbouring countries facing a shortage on the balancing market, due to a drop in wind generation.

Intermittent Renewables vs Intermittent Conventional

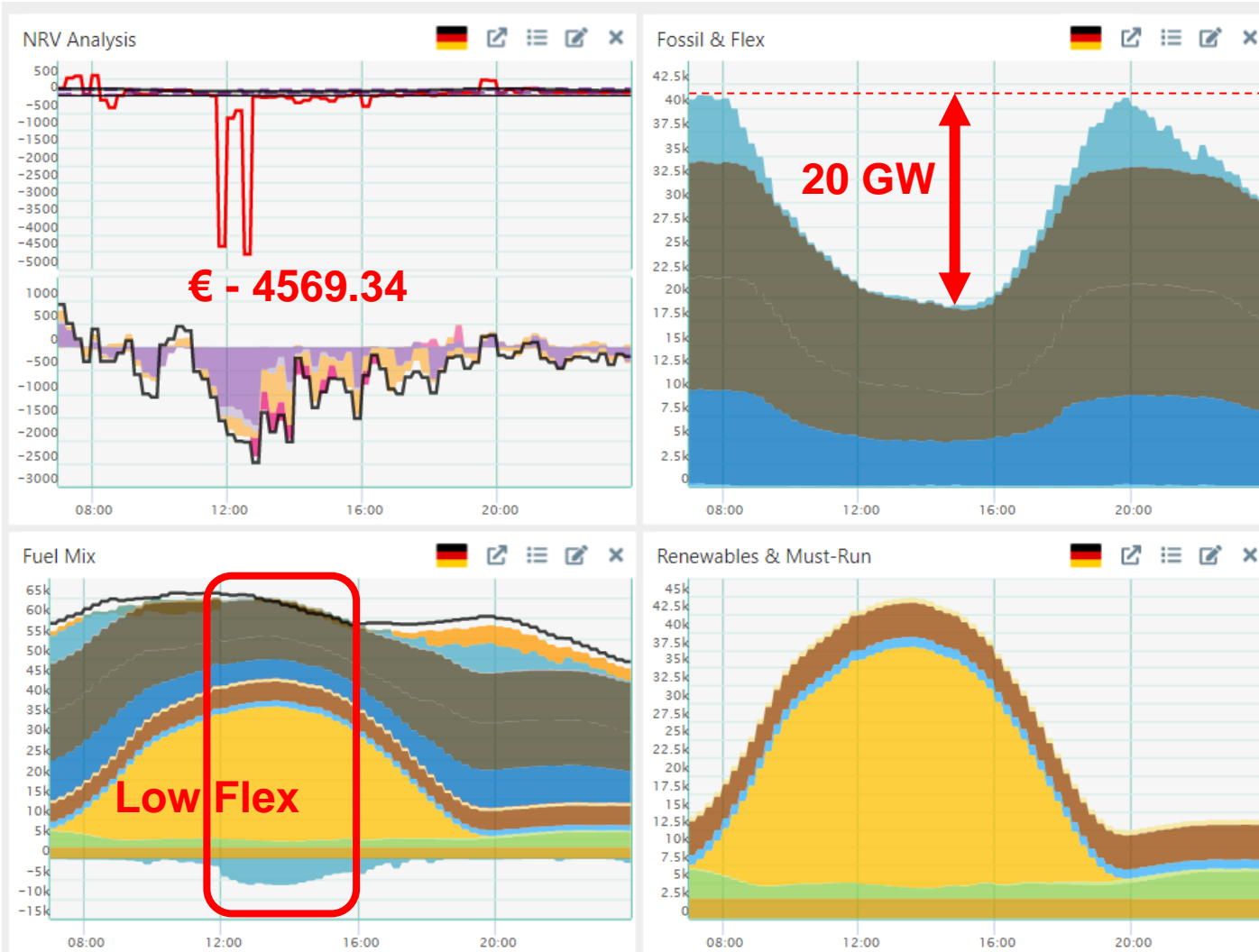


Introducing Intermittent Conventional Power

- We have seen massive development of renewable capacity during the energy crisis.
- As the extent of new capacity is starting to present itself in the fuel mix we see that it pushes conventional generation out-of-merit.
- Gas, coal & lignite run at minimum levels during solar peak, of even switch off.
- This means there is very little downward flexibility during the solar peak



Example: 4 April 2023



As renewables push conventional power out-of-merit, the volume and slope of ramps becomes steeper.

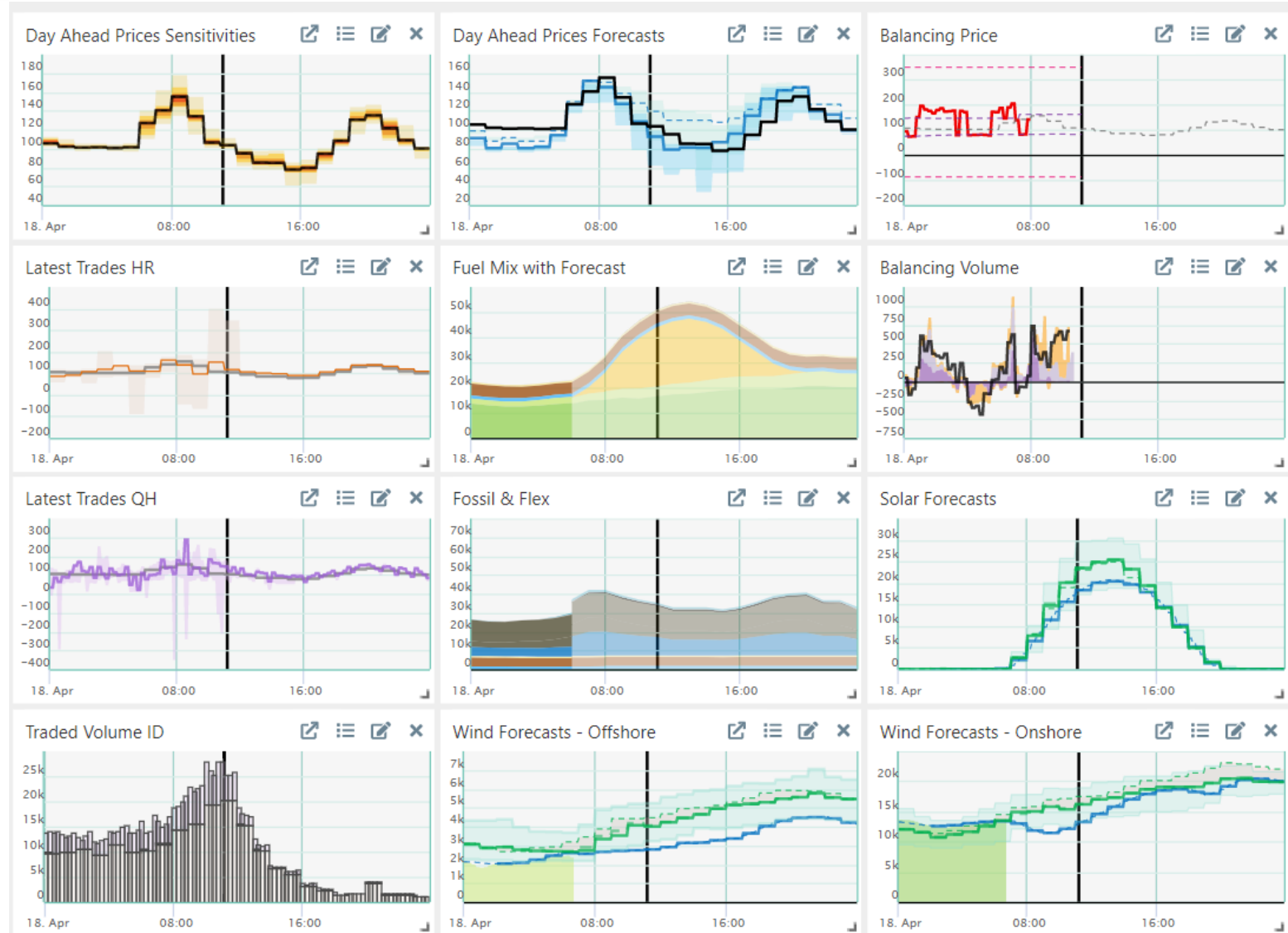
During solar peak, the volume of conventional and flexible generation that is available for ramping down is low.

Even with nearly 10 GW of pumped storage consumption, the surplus could not be balanced out.

In the evening peak, conventional power and pumped storage had trouble keeping up with dropping renewables.

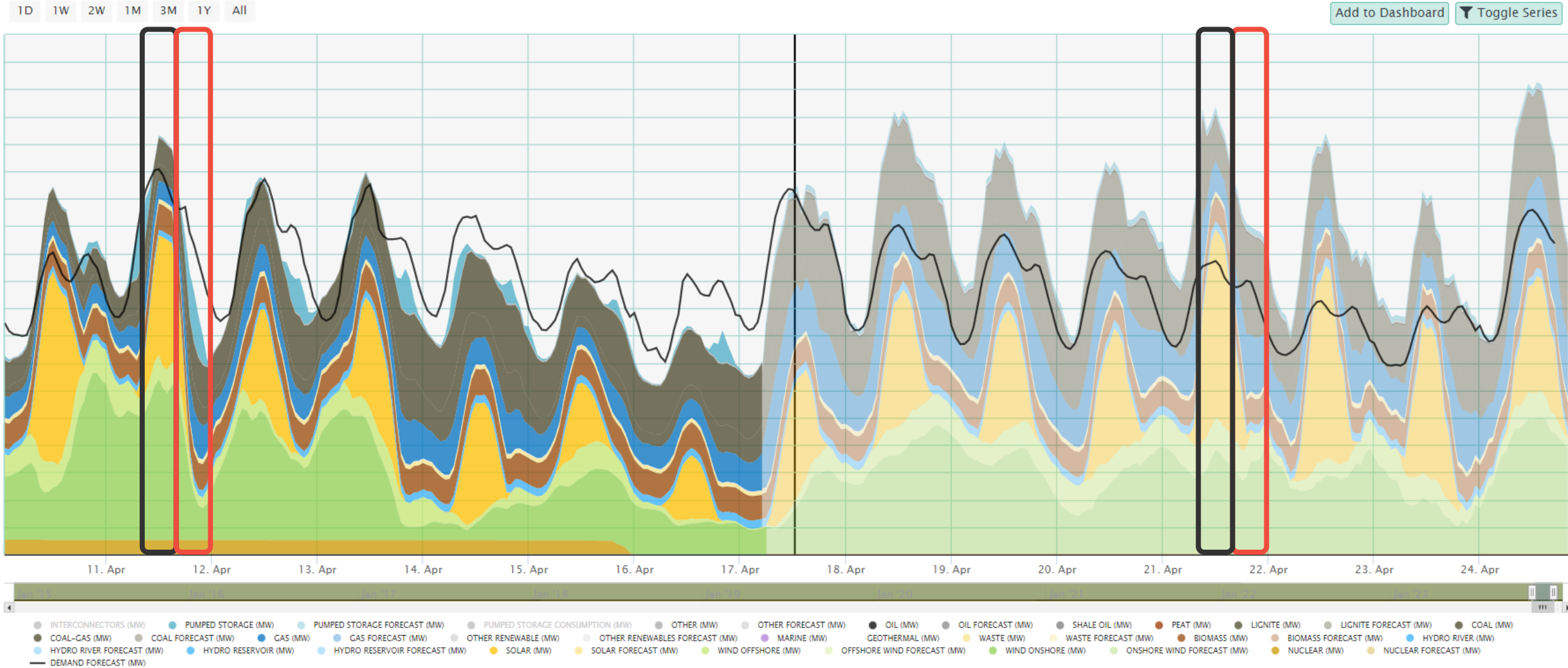
Looking Ahead

- Where sensitivities and steep ramps line up, we will see volatility.
- Keep in mind that ramps will get steeper in the summer.
- Looking at the generation forecast (part of day ahead forecast) is crucial.
- Solar and wind forecast deviations will continue to have a major impact, especially when there is low spinning reserve and during ramps.

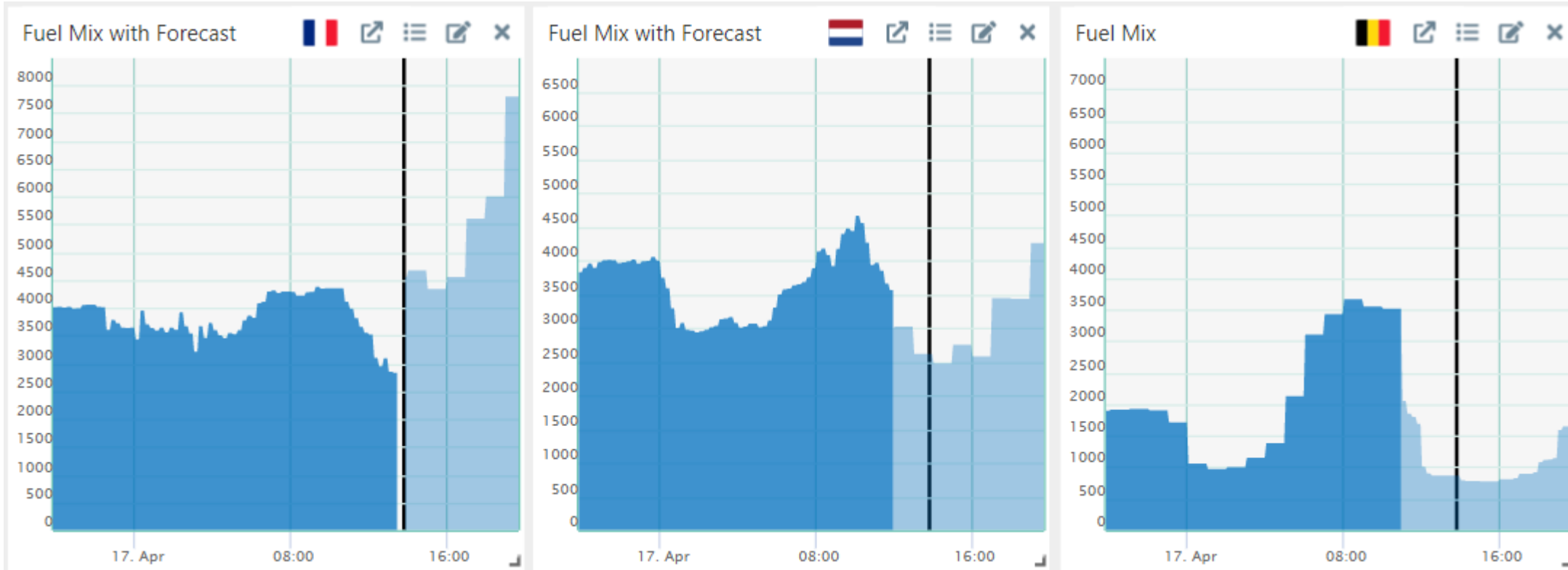


Spot Bottlenecks and Anticipate

GERMAN FUEL MIX WITH FORECAST FOR 10/04/2023 01:06 TO 24/04/2023 21:00 (MW)

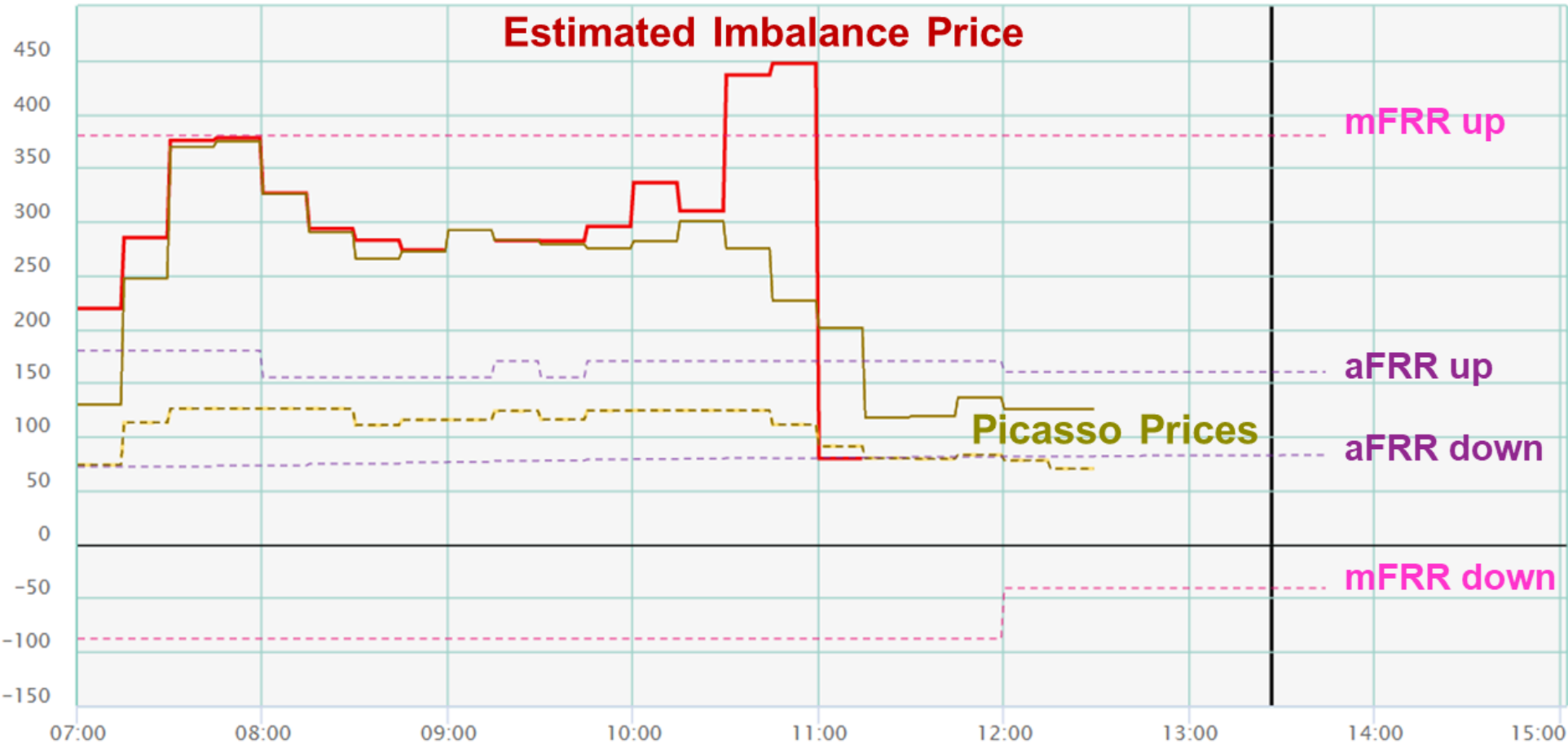


Adjacent Countries



Comparing generation forecasts across countries tells us what the required ramp speeds will be. It can also tell us if there is a chance of cross border trading to solve any issues. If all countries show steep ramps at the same time...

Balancing Markets – Time is of the essence



German balancing data is behind:

- Balancing Price > 30 days behind
- Estimated balancing price +/- 2hr
- Picasso Prices +/- 1hr
- Regelleistung activation prices until current period

Use insight and judgment to assess risk and opportunity

Summary

- Analyzing sensitivities should be the basis of trading decisions
- The sensitivities combined with fuel mix forecasts, sensitivity forecasts and intraday trading behaviour can help you make sense of wholesale and balancing markets
- Adjacent countries will influence even a market as big as Germany, we are not an island!
- We can help you make sense of the data sources and train your traders (and bots)



Thank you for your attention

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