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The World of 15-min Resolution in SDAC

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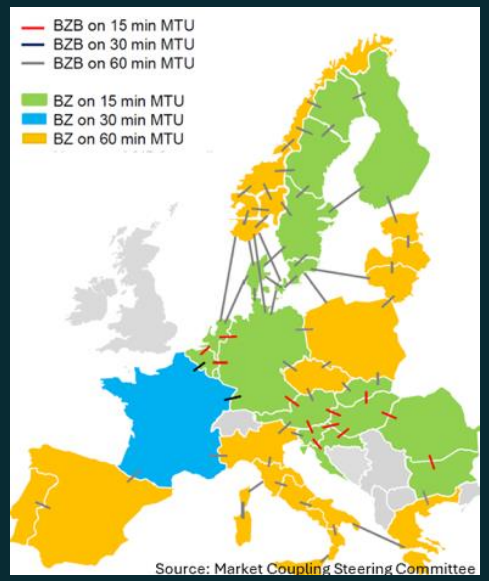
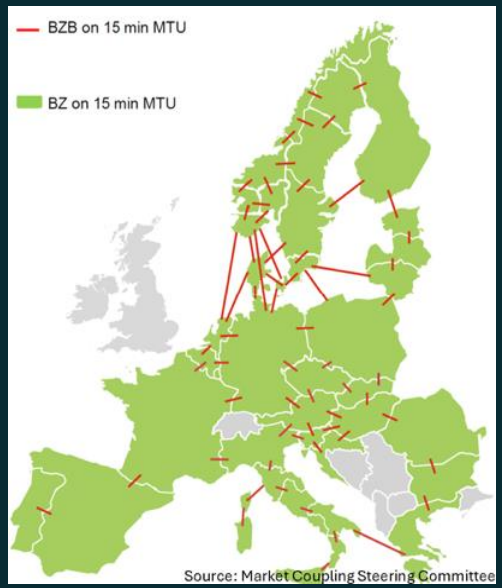
Agenda

- The road to 15min MTU in SDAC
- Fundamentals and Prices - the role of PV
- Modelling in the new 15min MTU World
- Challenges
- Next Steps

The Road to 15min MTU in SDAC

Regulation (EU) 2019/943 of the European Parliament : Nominated Electricity Market Operators shall provide market participants with the opportunity to trade energy in time intervals which are at least as short as the imbalance settlement period for both day-ahead and intraday markets

2011-2014	June 2024	Dec 2024 – Jan 2025	March 2025	~~June 2025/~~ -> Oct 2025
German ID continuous and auction in 15min MTU		Baltics, France, Italy	Nordics, Poland, Spain, Portugal	
	GoLive Pan European Intraday Auctions			Planned GoLive 15min MTU SDAC

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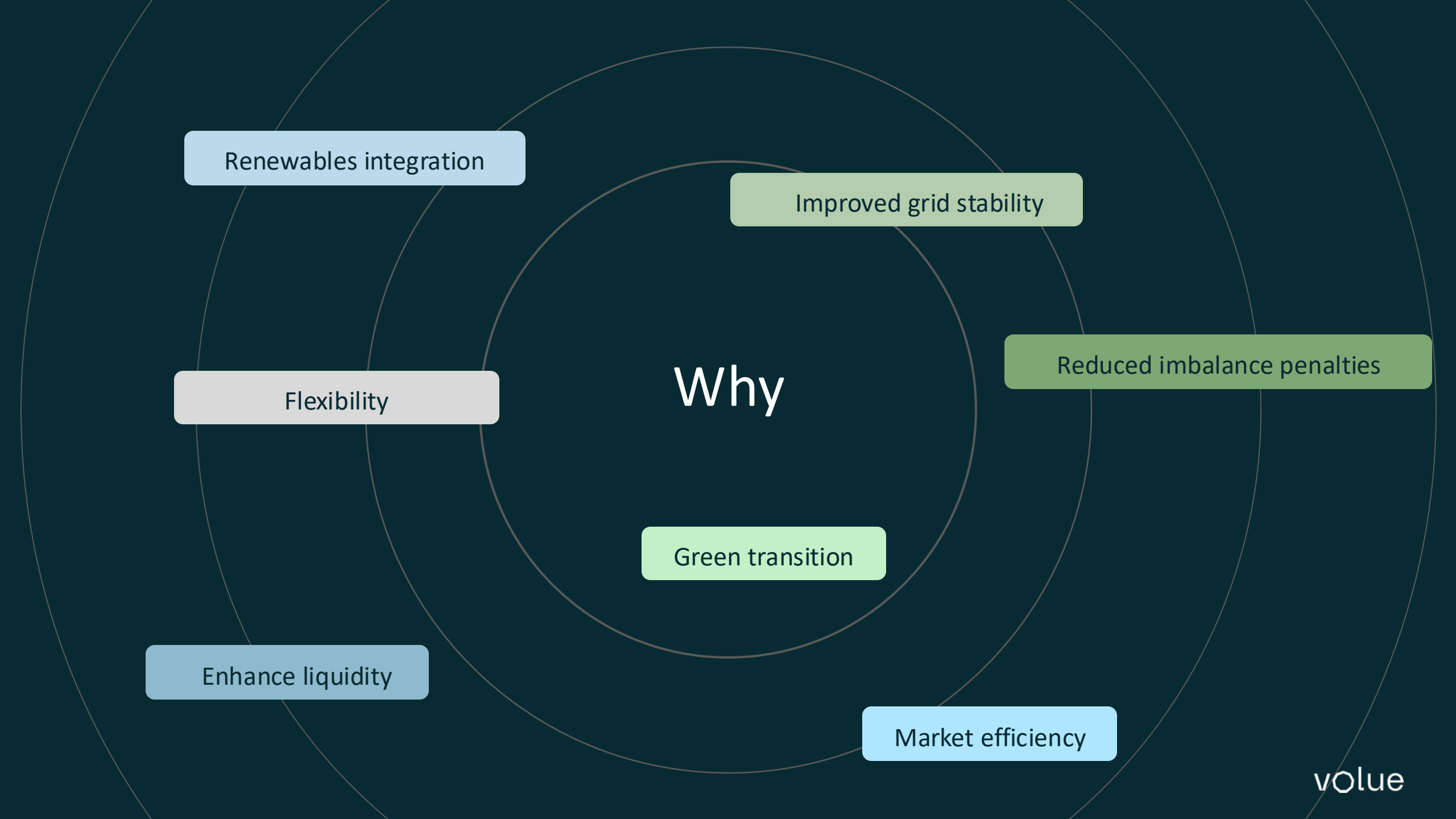
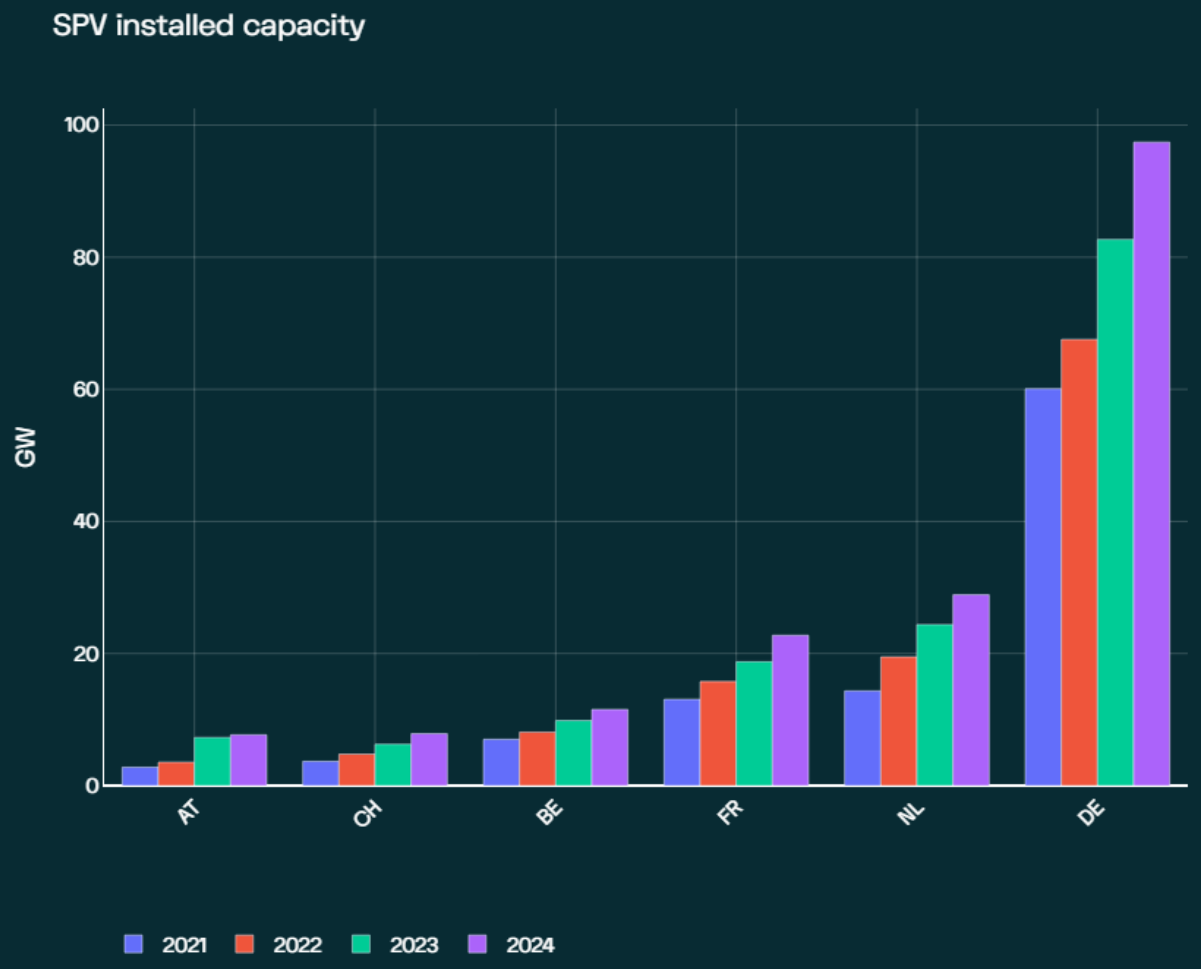
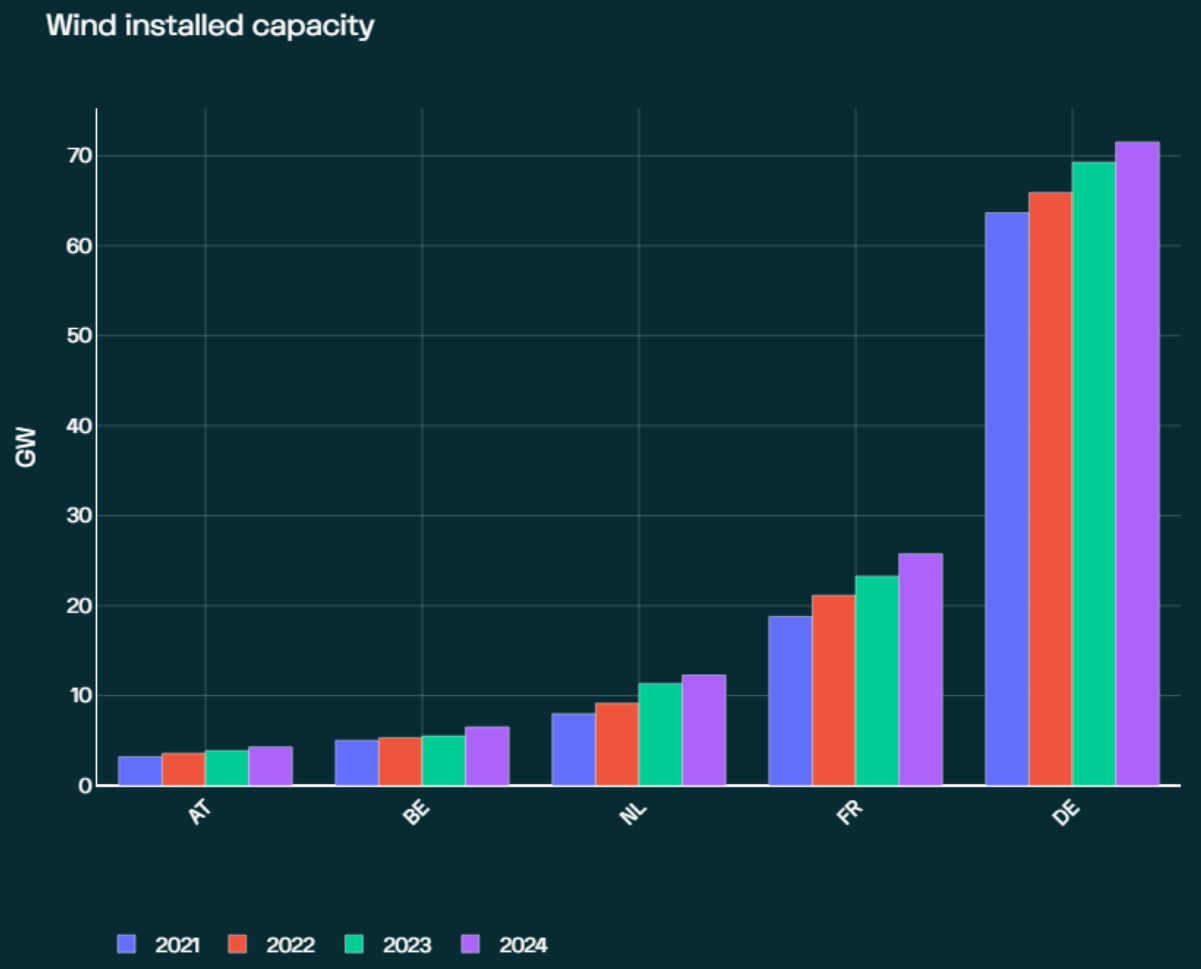

Renewables integration
Improved grid stability
Why
Reduced imbalance penalties
Flexibility
Green transition
Enhance liquidity
Market efficiency

Renewables Capacity Growth





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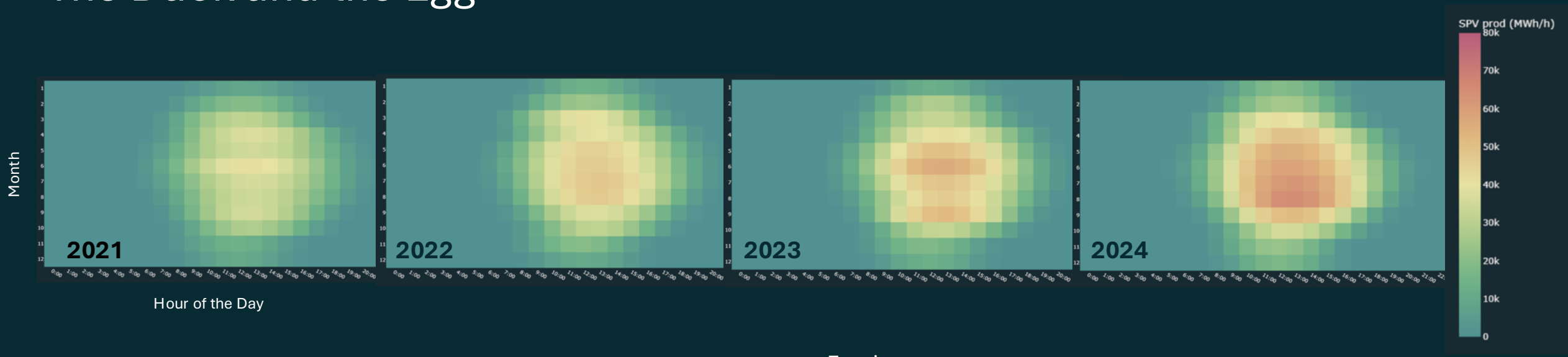
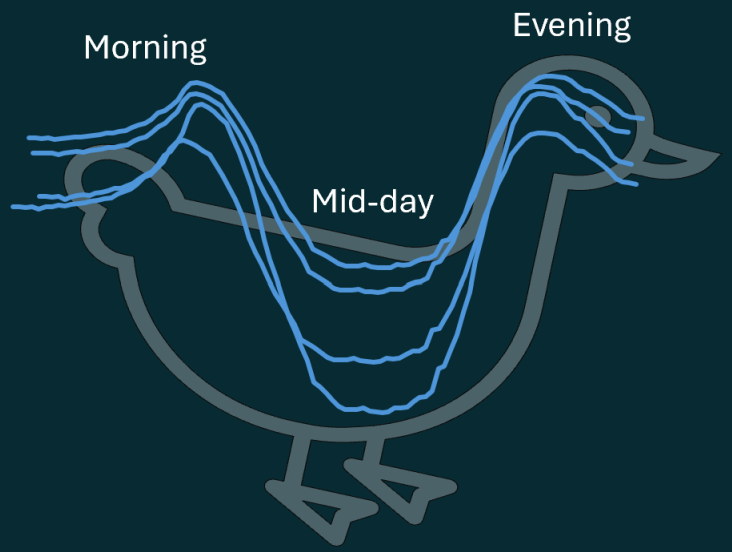
Average SPV Production CWE areas

The Duck and the Egg





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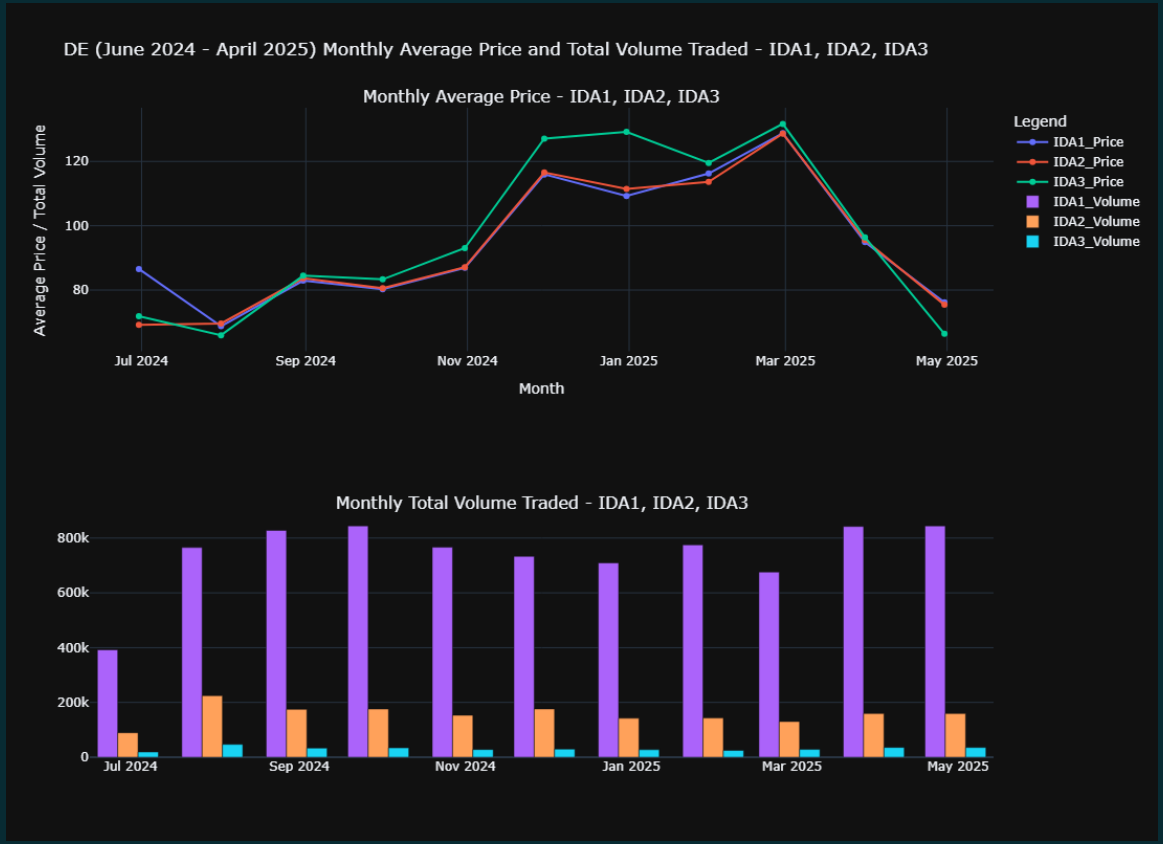
Intraday Auction Prices (IDA) – focus on Germany



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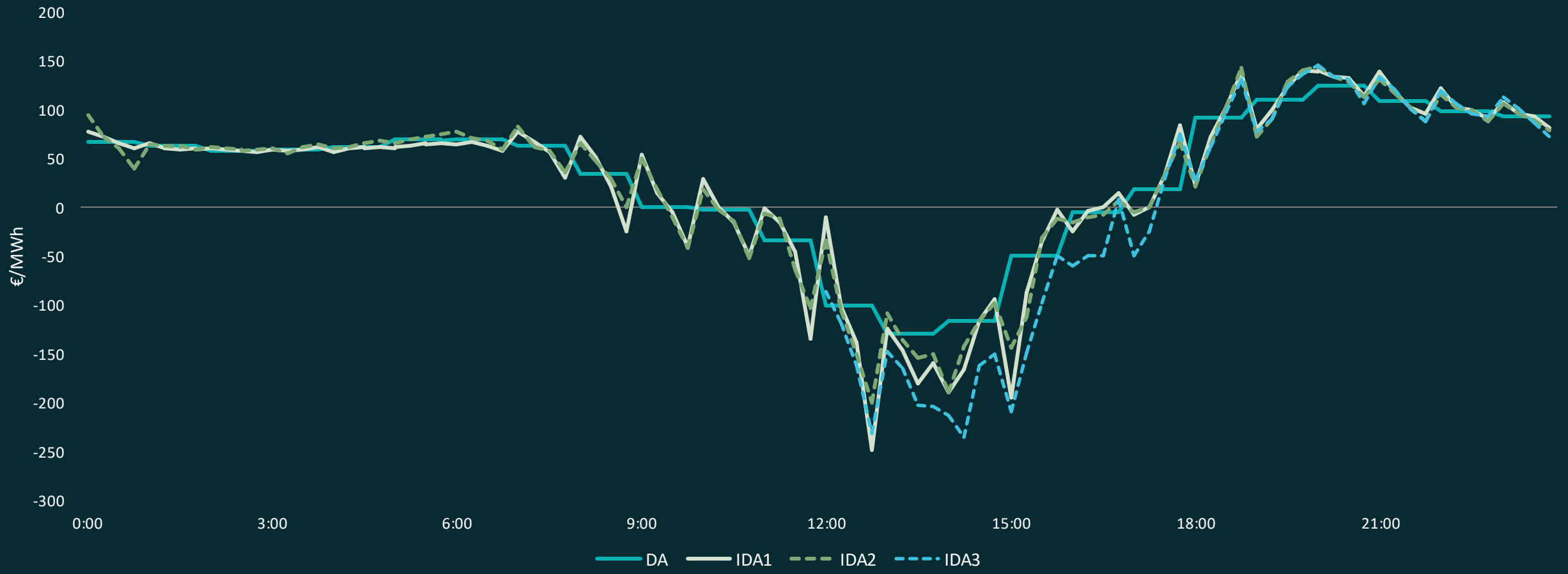
IDA1,2,3 Against DA Spot

Germany, 27 April 2025



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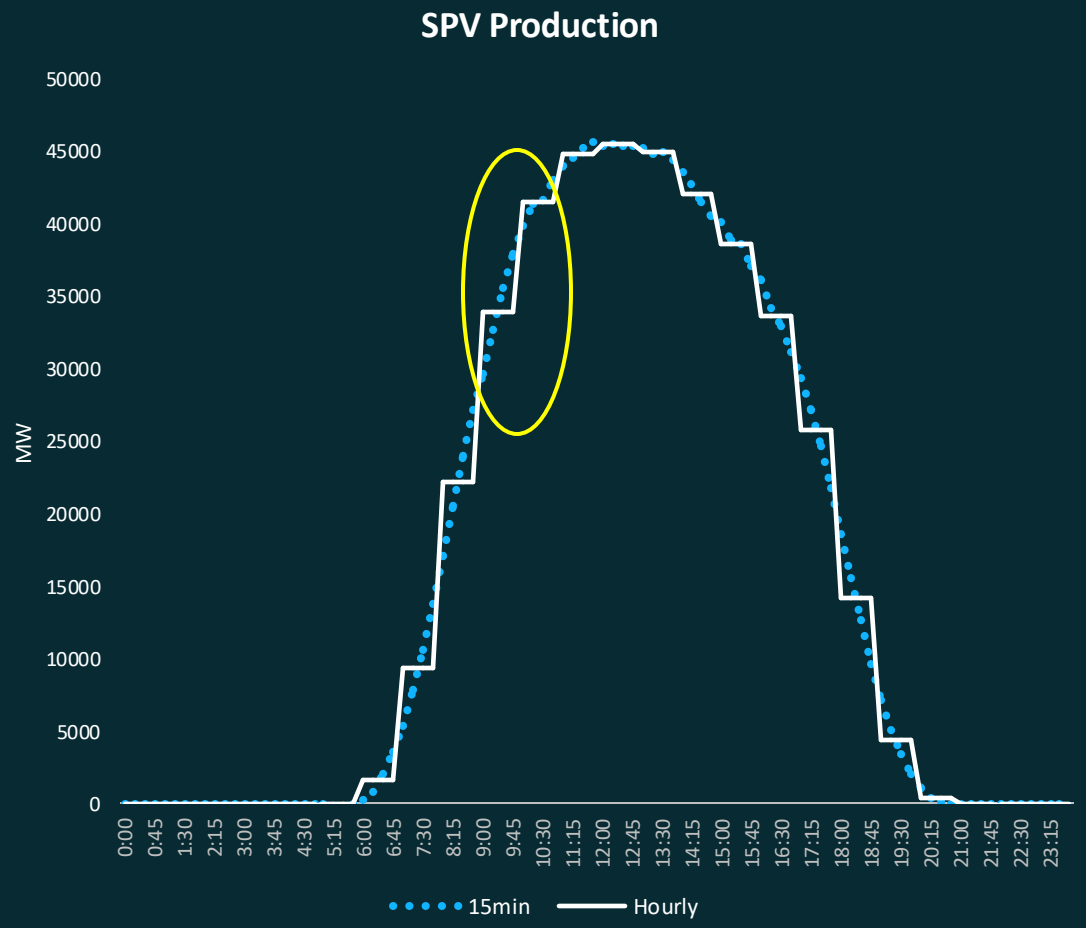
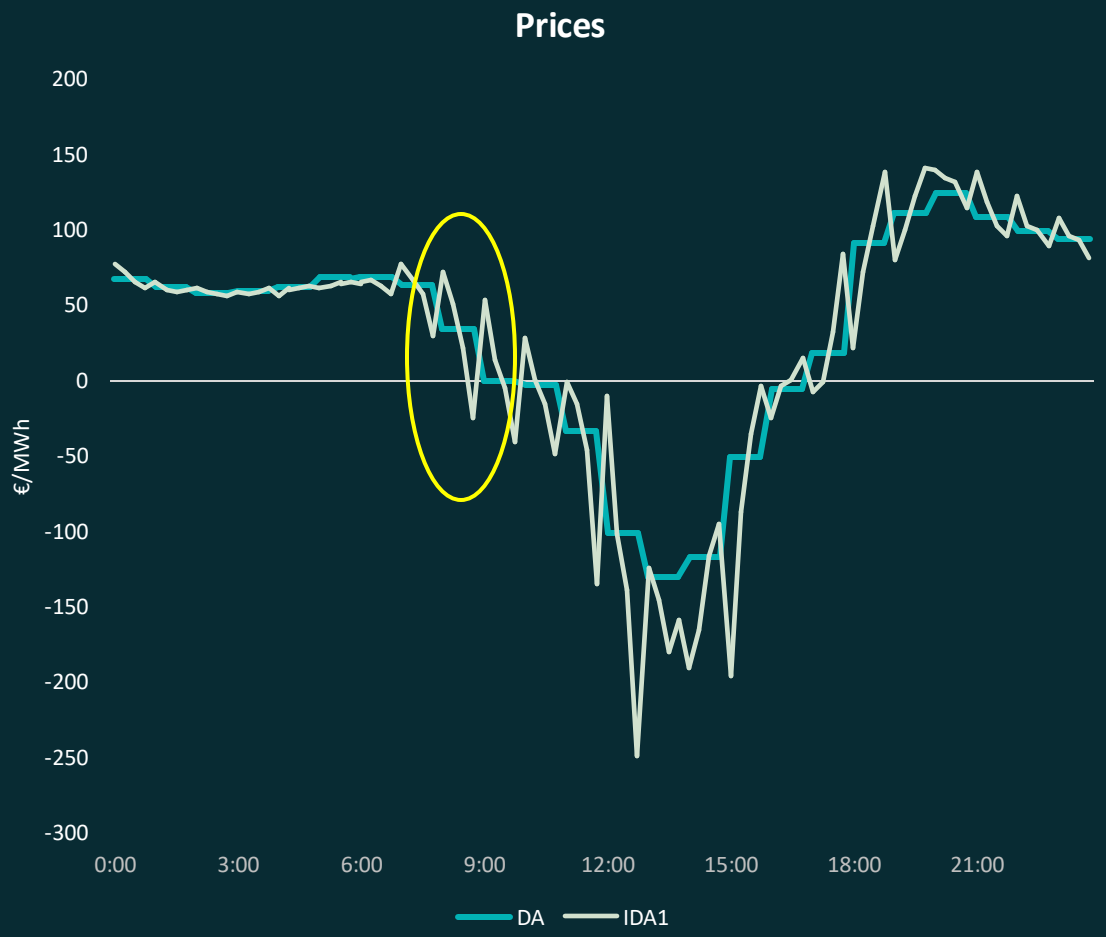
Solar injection and 15min MTU

Example for Germany





See : CREG (Commission for Electricity and Gas Regulation – Belgium) : study on the impact of renewable energy sources on short-term electricity markets

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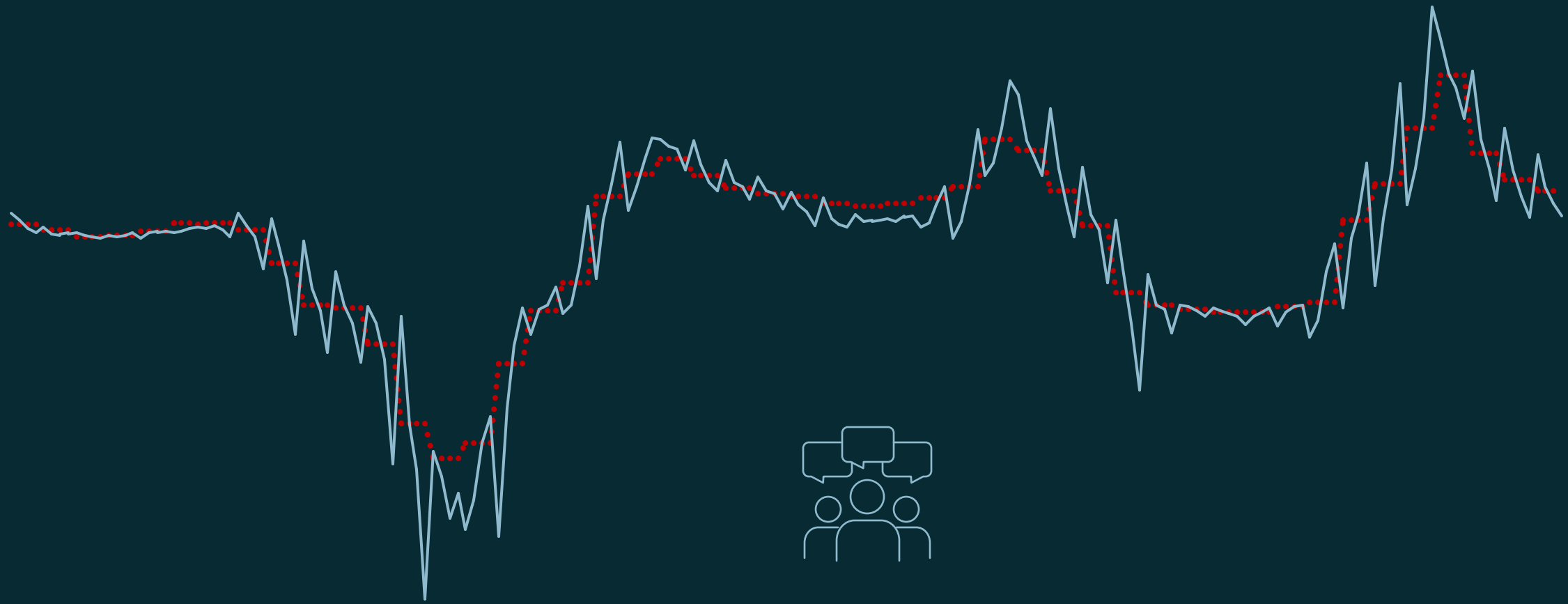
How will the world look like in the new SDAC 15min MTU?



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Modelling in the new 15min MTU World

Volue Insight’s modelling approach

- 15+ years of experience in modelling power prices and fundamentals
- Models and forecasts with Pan European (& Japan) coverage
- Translate the weather risk into price forecasts
- Learnings from the German 15min intraday auction forecasting

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SpotEx – Model Concept

A collection of models that work together:

- For each area, one model predicts the price curve
- One Machine Learning (ML) model per region

Uses a solver to calculate the optimal exchange between regions, based on:

- Predicted price curves
- Predicted available transfer capacities (ATC) and PTDFs (flow-based)
- PTDF forecasts based on internal ML model

Different scenarios for different weather runs:

- Now: ECMWF{00|12|00ens|12ens|monthly} weather30,

  GFS{00|06|12|18}
- Later: based on AI-Weather

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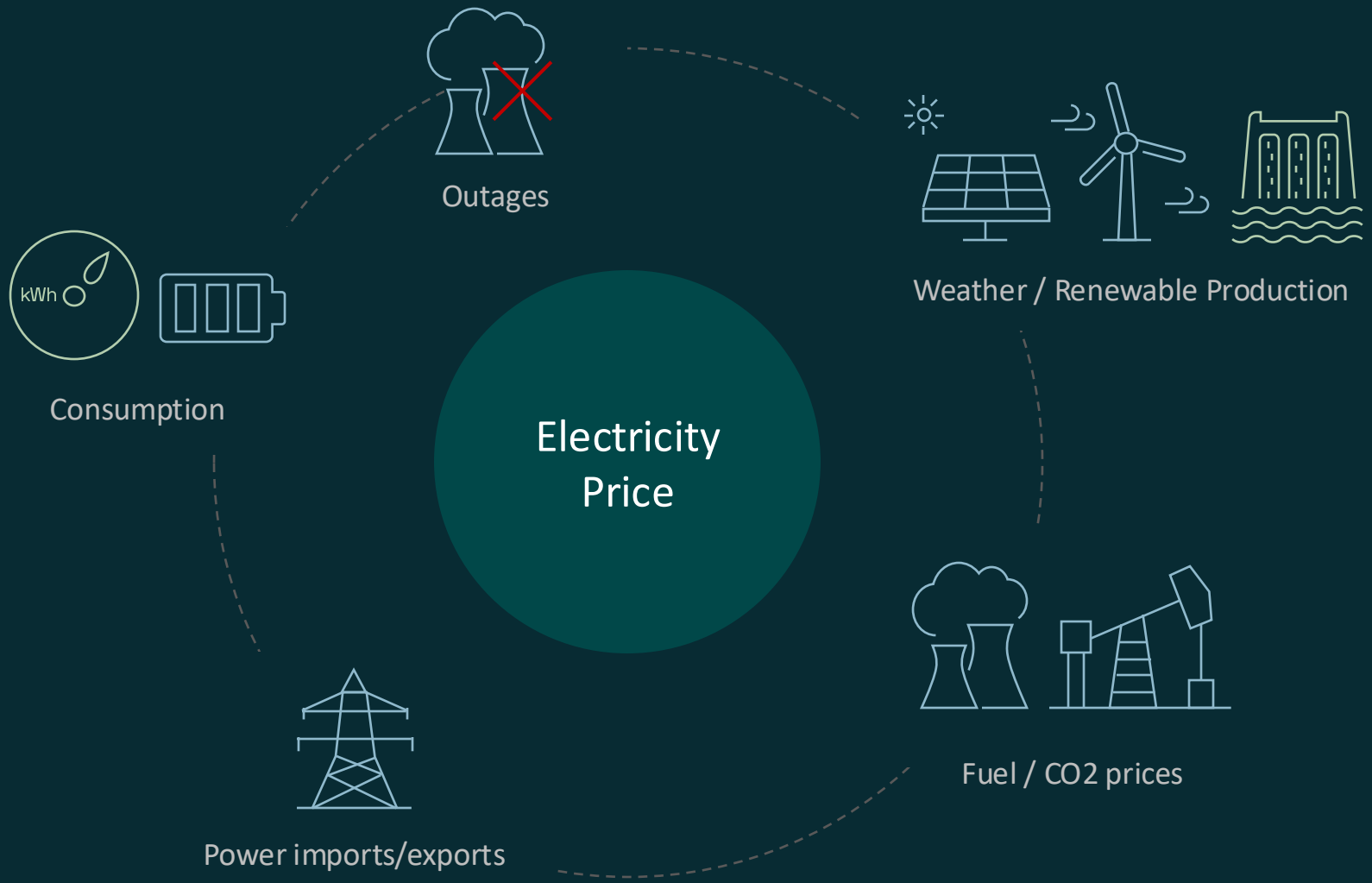
Model Training Features



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Challenges with the 15min MTU switch

From H to 15min

- The current model is trained and publishes forecasts on 1-hour resolution.
- The entire pipeline – training, predictions, publishing - is built around the 1 H resolution assumption.

Prices and Exchanges

- Exchange optimization algorithm must be adapted as well

4x More Data

- Cloud resources
- Publication times

Runtimes

- Ensure that the model runtimes remain acceptable in the 15-minute world, for the Pan-European scope

No Actuals

- No actual data available yet to train the model
- Currently no back-casting possibility
- No chance to perform internal parallel run

Data Sources

- Adjust all data loaders and back-up sources

No 15min fundamentals

- Fundamental inputs are in hourly resolution

GoLive date

- ~~Uncertainties about the~~ GoLive Date

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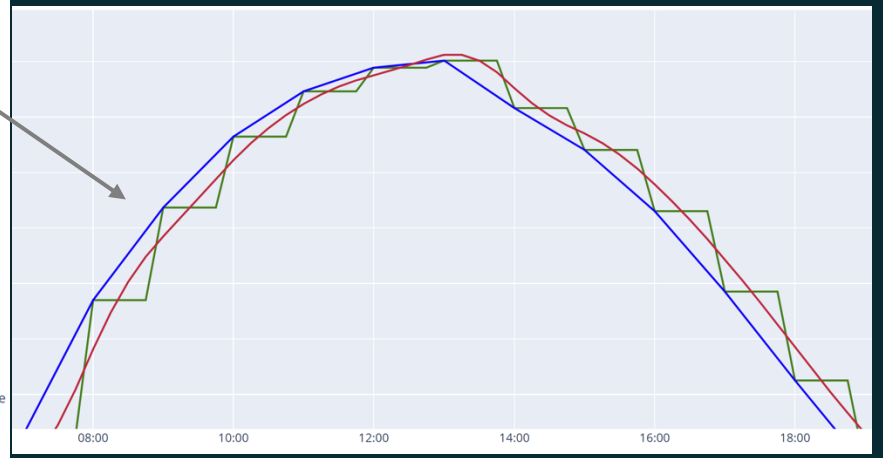
SpotEx15 Approach

- Interpolation to 15min MTU for the fundamental features
  - Pre-processing inside the model
- Training, predictions and publishing jobs adjusted to the new 15min regime
- All model outputs in 15min time unit
- PTDFs (Flow-based) and ATC as hourly input
- Info Blog for Insight customers with up-to-date facts on the switch and data structure
- Webinar: Get Ready for the 15-Minute Market – Insights and Strategies to Stay Ahead

SpotEx15

Pre-processing fundamentals: hypothetical switch date in the future



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SpotEx15 Roadmap

Now

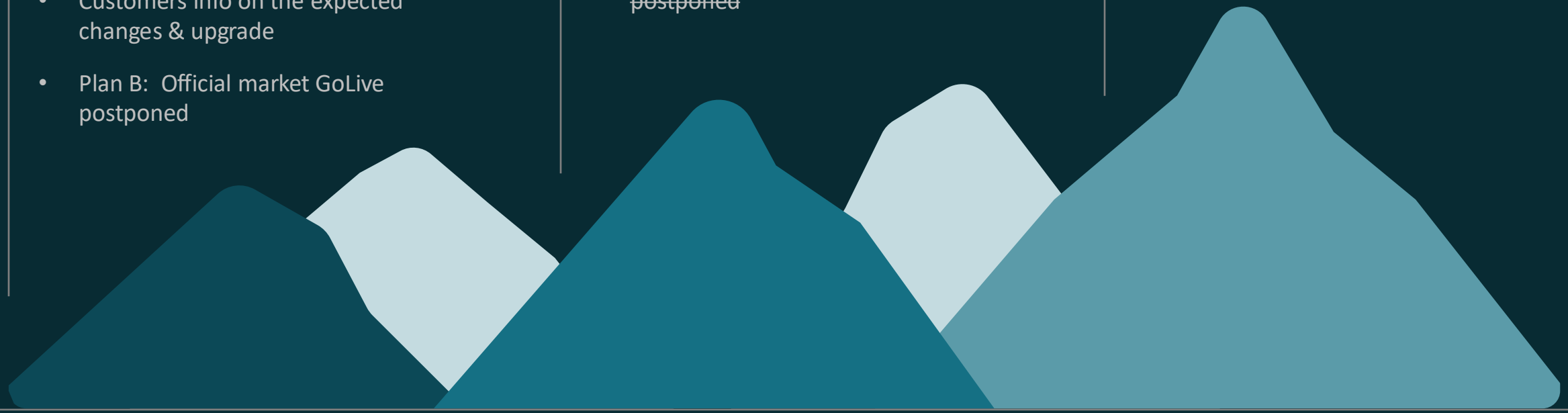
- Prepare curves and loaders for the switch
- Model run with switch date 1st of October
- Customers info on the expected changes & upgrade
- Plan B: Official market GoLive postponed

Next

- New model launch SpotEx15
- Enhanced SPV forecasts as input into the new model
- ~~Plan B: Official market GoLive postponed~~

Later

- Improved visualization
- New price forecasts based on AI-Weather



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Wrap-up

The switch to 15min MTU in SDAC will lead to a more flexible and efficient energy market, better equipped to handle the variability of renewable energy sources.

- ✓ Ready to GoLive
- ✓ Modelled with experience
- ✓ Improved inputs
- ✓ Plan B – the new reality

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Thank you