

Software challenges in the the 15-min SDAC transition

Today's speaker



Marco Boninella

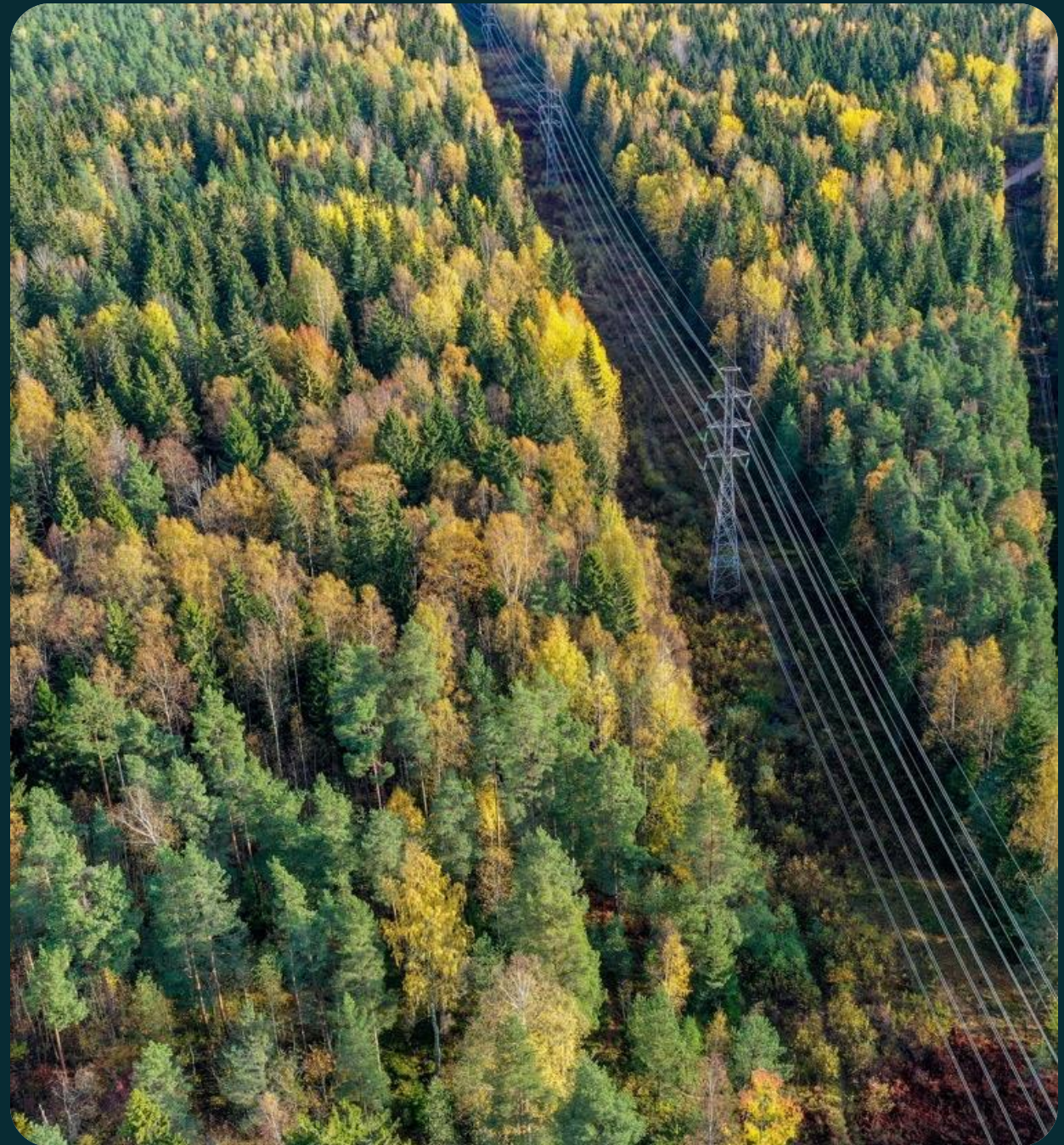
Head of Sales in growth markets

Agenda

- 01** Operational challenges driven by a 15 - minute MTU market

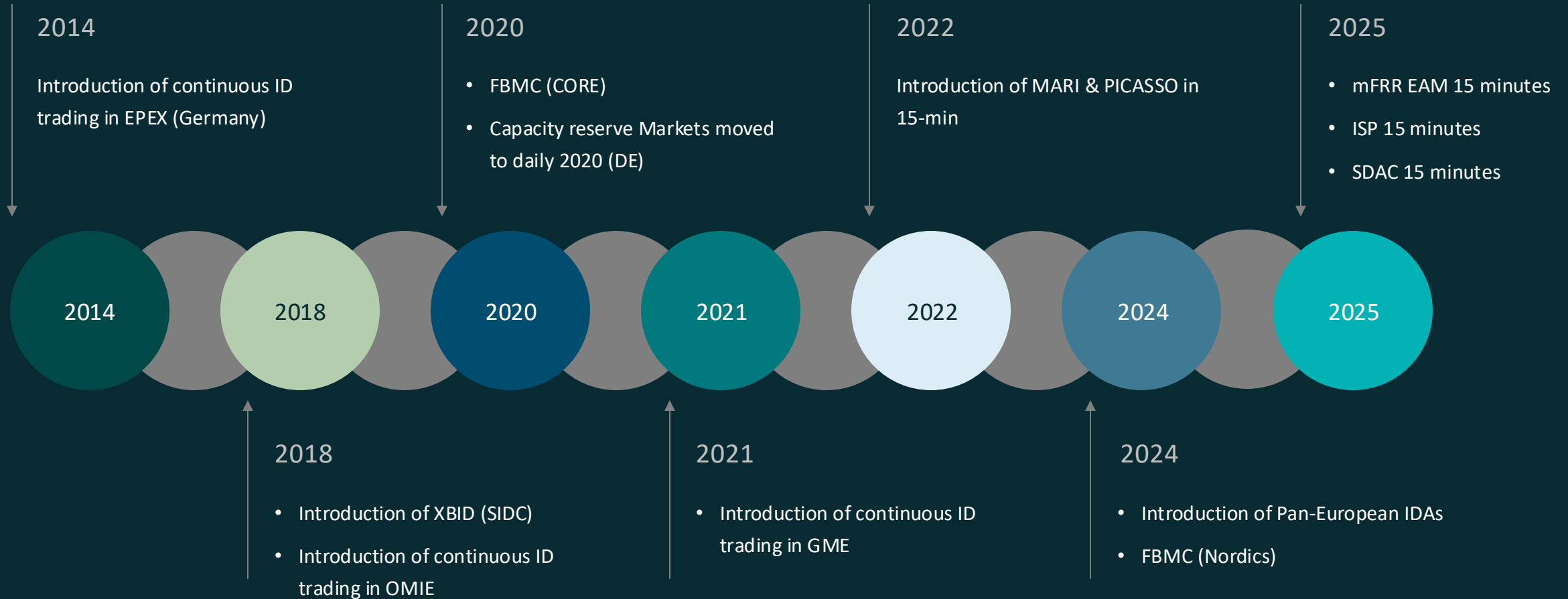
- 02** Requirements on software solutions driven by these market changes

- 03** Value Auction Bidding example

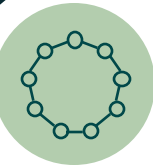


SDAC change to 15 min resolution - not an isolated change

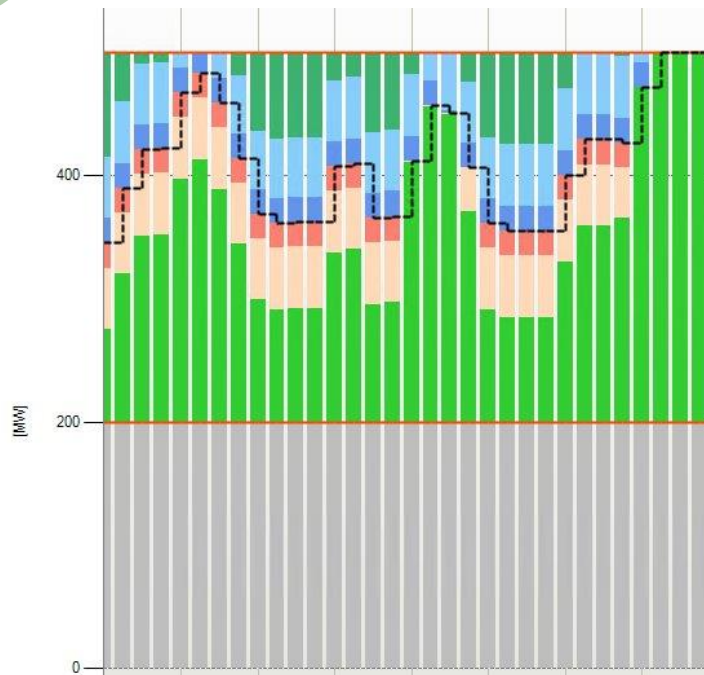
Some of the relevant market changes 2014 - 2025



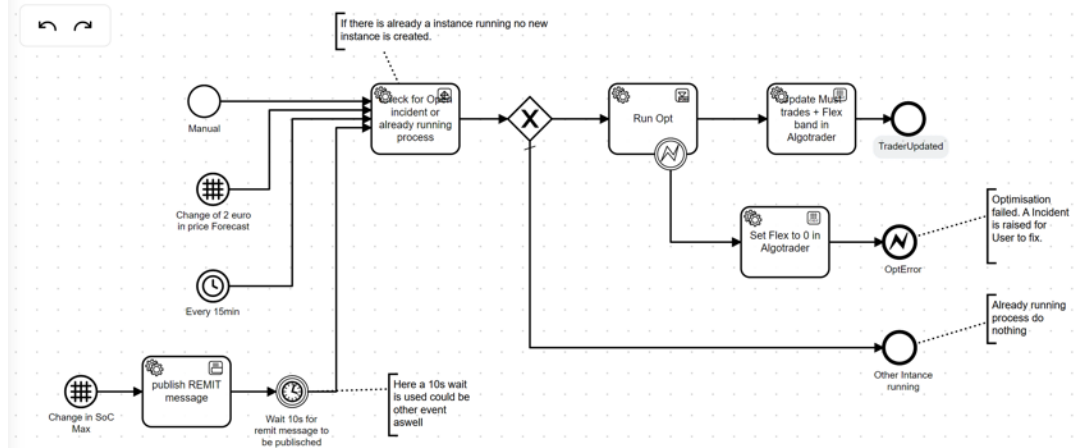
Change in bidding resolution is only a part total complexity



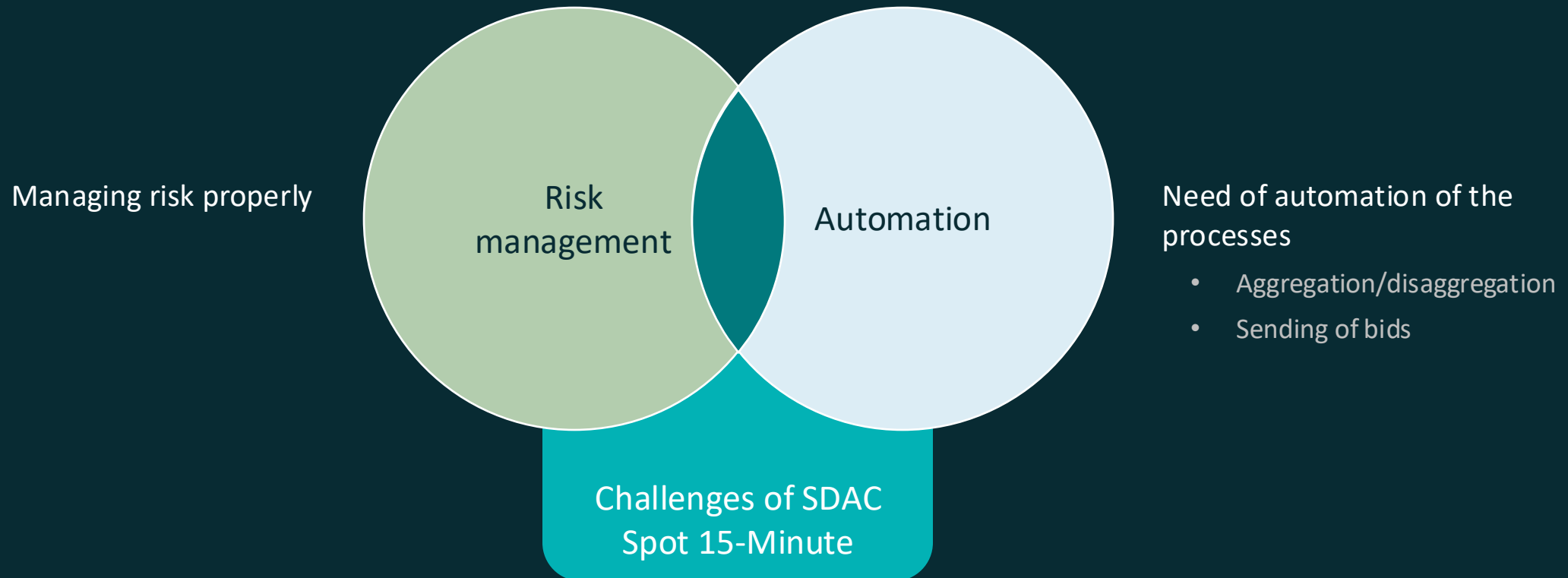
Data structuring and generation of production plans



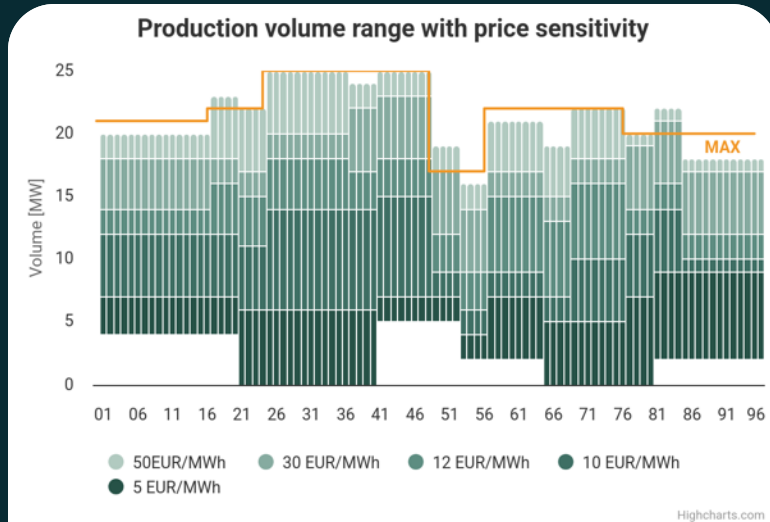
End to end automation



Auction bidding – challenges brought by 15 minutes



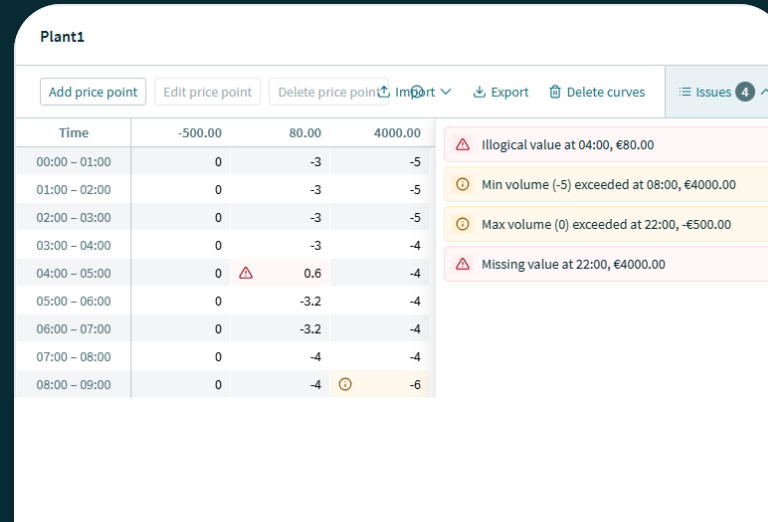
Managing risks with increased data volumes



Are you able to evaluate your order?

Visualizations play a key role in ensuring your orders are meaningful:

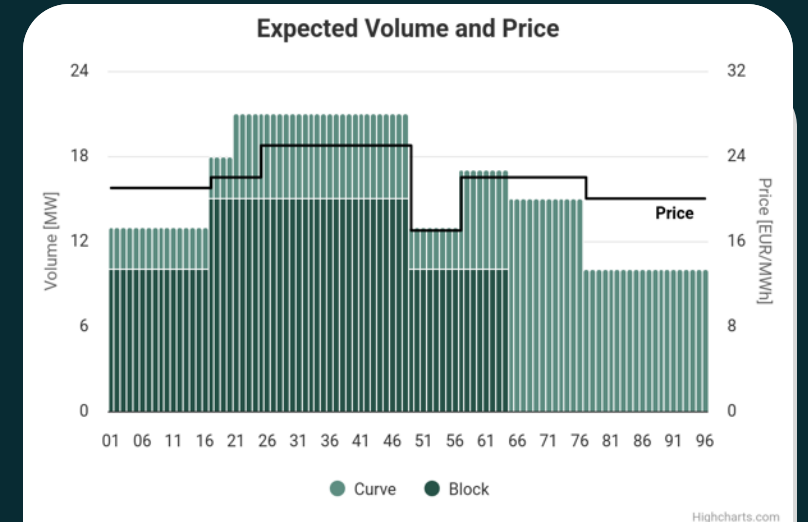
- Shape of the order
- Price sensitivity
- Limits



Do you have any incorrect or suspicious data?

Validation of orders, with clear indications

- Do you see where the error is?
- Do you see what the error is?



What is the expected outcome?

- If the price hits your forecast, will you get the expected volume?
- How does the volume change if the price differs from the expected price?

Value Auction Bidding

High-grade bidding solution for asset operators



Day-ahead auctions and intraday auctions (IDAs)



EPEX, NordPool, HUPX



All order types – curves and blocks



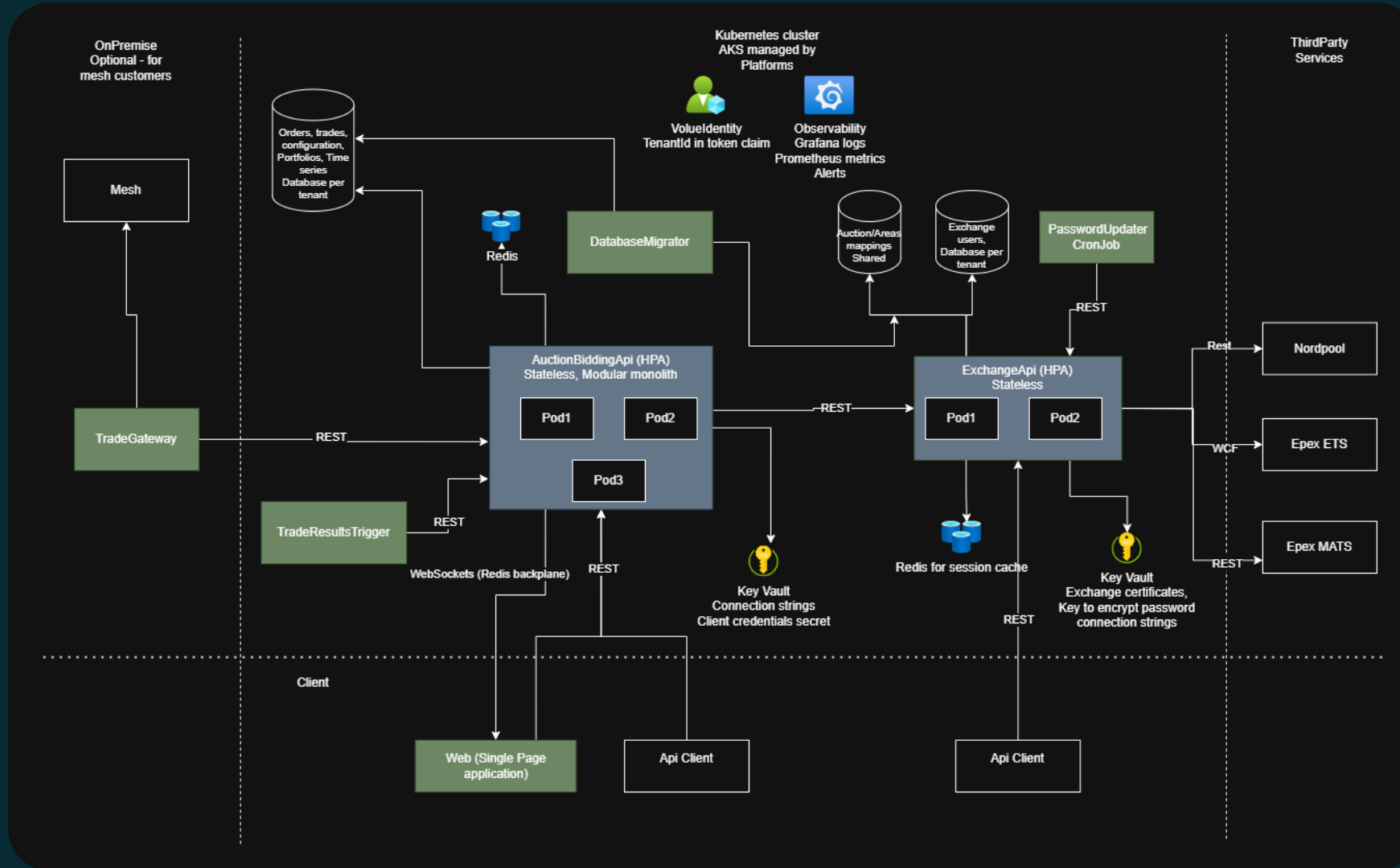
API first



SaaS-based and modern GUI

- Highly flexible portfolio concept to manage orders on subportfolio levels for production, consumption and third parties
- Out of the box **aggregation and disaggregation** to market portfolio level
- Fully or partly **automate your bidding process**, regardless of complexity
- Native integration with Value Smart Power production planning. Easily **integrate with own or 3rd party** systems
- Scalable and secure solution with validations and risk management functionalities

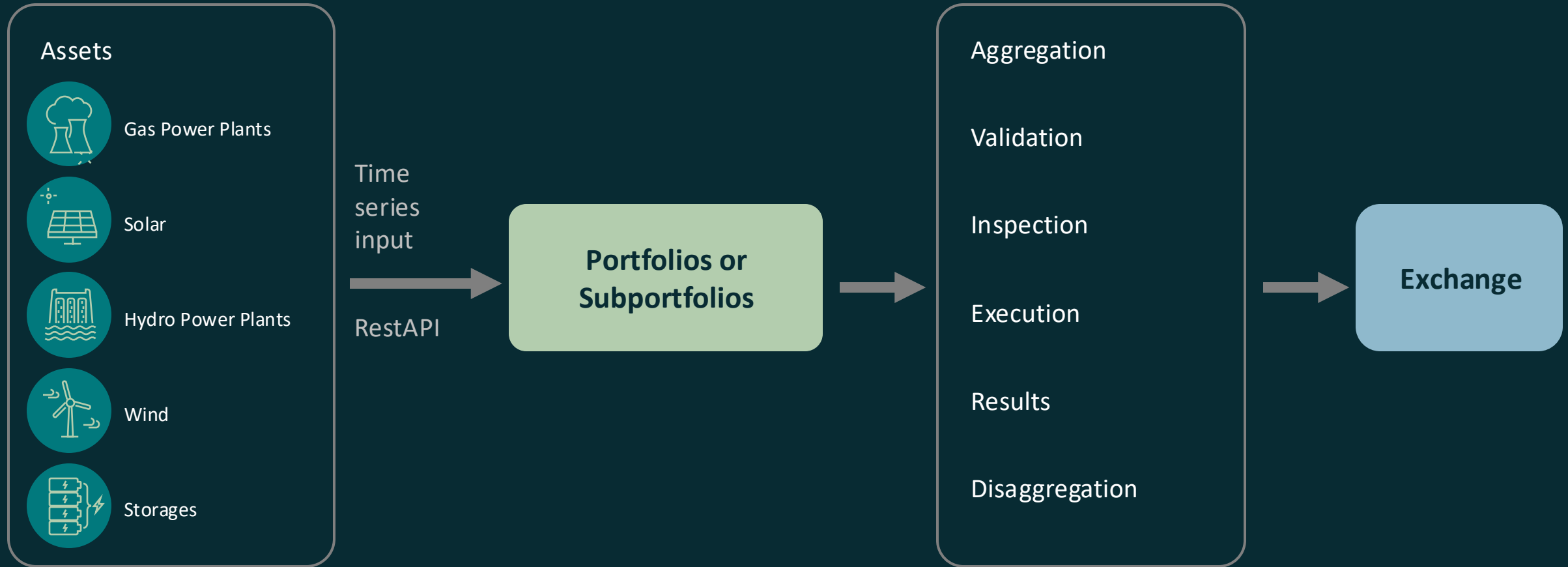
Architecture | SaaS application



- Multi-tenant SaaS application
- Separate database
- Modern technologies – automatic horizontal pod scaling and redundancy
- Value Identity
- Exchange agnostic user- and API interface (Auction Bidding Service)
- Postgres database with persistence for REMIT

Bidding Workflow

Automation with Complete Control



User Interface | Curve Orders

value Auction Bidding

Auction: Day-Ahead Delivery date: 2024-10-11 Operating time: UTC (11:52)

File

Dashboard Bidding

Search objects

Area 1 Area 2 Area 3 Area 4

Generator 1.1.1.1 Units: EUR/MWh Order type: Curve Block

Version 2 — Sent 11:29, 12.03.2024

Recover version Aggregate Send

Ver1 sent 11:03, 12.03.2024

Ver2 sent 12:29, 12.03.2024

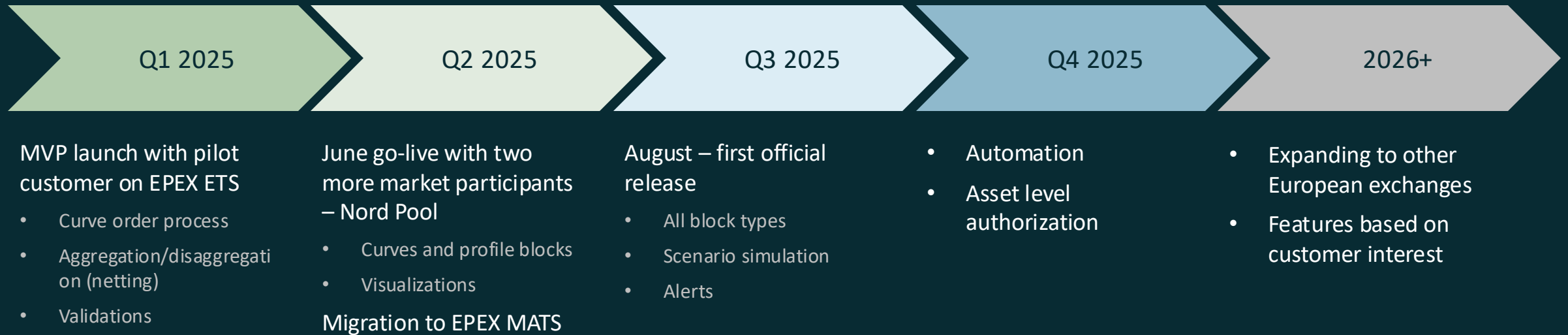
Current: Ver3 sent 13:12, 12.03.2024

Import order Export order Delete order Error list Graphs

Time	-500,00	-400,00	-300,00	-200,00	-100,00	-50,00	0,00	700,00	800,00	900,00	1000,00	1100,00	1200,00	4000,00				
08:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
08:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
08:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
08:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
09:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
09:15	800	15	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
09:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
09:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
10:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
10:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
10:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
10:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
11:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
11:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
11:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
11:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
12:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
12:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
12:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
12:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
13:00	800	700	42 600	32 500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
13:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
13:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
13:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
14:00	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
14:15	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
14:30	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800
14:45	800	700	600	500	400	300	200	100	80	80	100	200	300	400	500	600	700	800

- See overview of portfolios, subportfolios and status of orders
- View and adapt orders on portfolio and subportfolio level
- View and adapt curve (bid matrix) or block orders
- Manage automated schedules to automate order generation for parts or all of the subportfolios
- Send orders to exchange and receive auction results

Auction Bidding Roadmap



Block bidding view

value Auction Bidding

Auction: Day-Ahead ▾ Delivery date: 2024-10-11 ▾ Operating time: UTC (11:52) File ▾ ⌚ 🔔 RB

Dashboard Bidding Results

Search objects

Portfolio 1

- Watercourse 1.1
 - Plant 1.1.1
 - Generator 1.1.1.1
 - Generator 1.1.1.2
 - Generator 1.1.1.3
 - Generator 1.1.1.4
 - Plant 1.1.2
 - Generator 1.1.2.1
 - Generator 1.1.2.2
 - Generator 1.1.2.3
 - Plant 1.1.3
 - Generator 1.1.3.1
 - Generator 1.1.3.2
 - Generator 1.1.3.3
 - Generator 1.1.3.4
- Portfolio 2
 - Watercourse 2.1
 - Watercourse 2.2
- Portfolio 3

Area 1 Area 2 ✓

Watercourse 1.1

Version 1 · 09:31 · 12.01.2025 ▾ Aggregate Send

Curve Block

Import blocks from Time Series Export order Delete order Error list ▾ All Graphs ▾

Name	Trade object	From — To	Volume	MAR%	Price	00:00	00:15	00:30	00:45	01:00	01:15	01:30
Block 2												
Add block +												
<input type="checkbox"/> Block 1	Generator 1.1.1.2	00:30 - 01:15	50 MW	80 %	€ 80,00	—	—	80,00	80,00	80,00	80,00	—
<input type="checkbox"/> Block 2	Generator 1.1.1.1	01:00 - 02:00	40 MW	60 %	€ 100,00	—	—	—	—	100,00	100,00	100,00
Linked blocks 1												
Add link family +												
My First Link Family												
<input type="checkbox"/> New Kids On The Block	Generator 1.1.1.4	01:00 - 10:30	88 MW	40 %	€ 36,00	—	—	—	—	36,00	36,00	36,00
<input type="checkbox"/> A Profile Block	Generator 1.1.1.3	00:00 - 07:30	200 MW	20 %	€ 120,00	—	—	—	—	—	—	—
<input type="checkbox"/> Block Watne	Generator 1.1.1.5	00:00 - 07:00	75 MW	40 %	€ 225,00	225,00	225,00	225,00	225,00	225,00	225,00	225,00
Groups 0												
Add group +												
Loop 0												
Add loop +												

- View and adapt block orders on portfolio and subportfolio level
- Validation of block orders
- Visualize block volumes together with curves
- Send orders to exchange and receive auction results

Thank you!