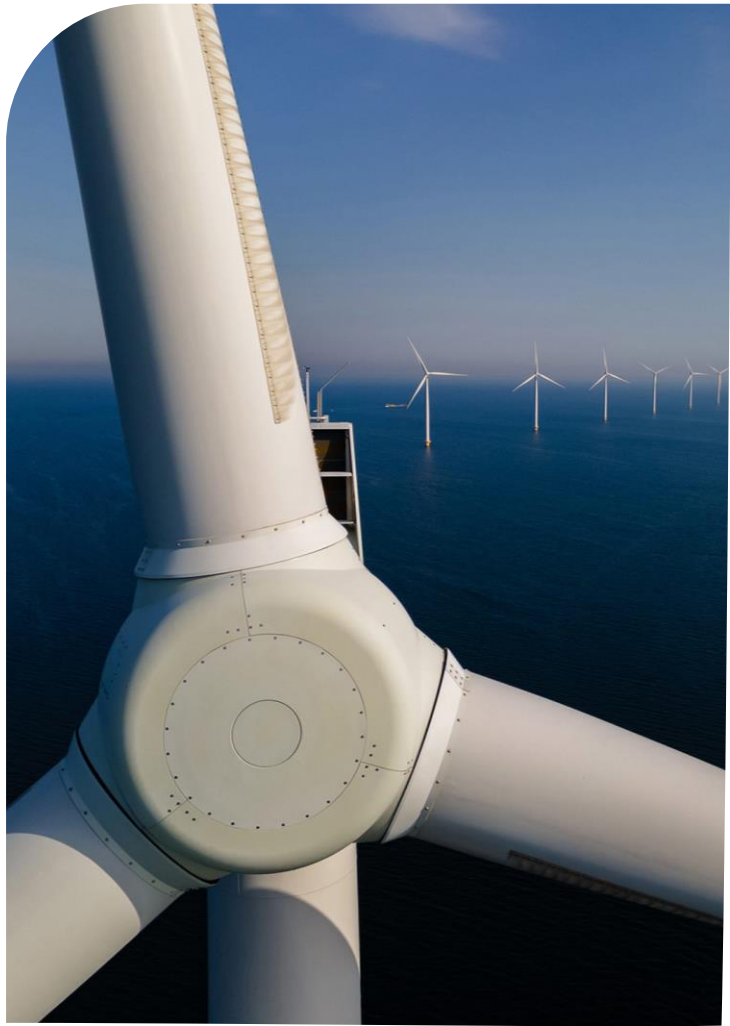
eSett News

Customer Committee meeting 15.10.2025

Diana Welander

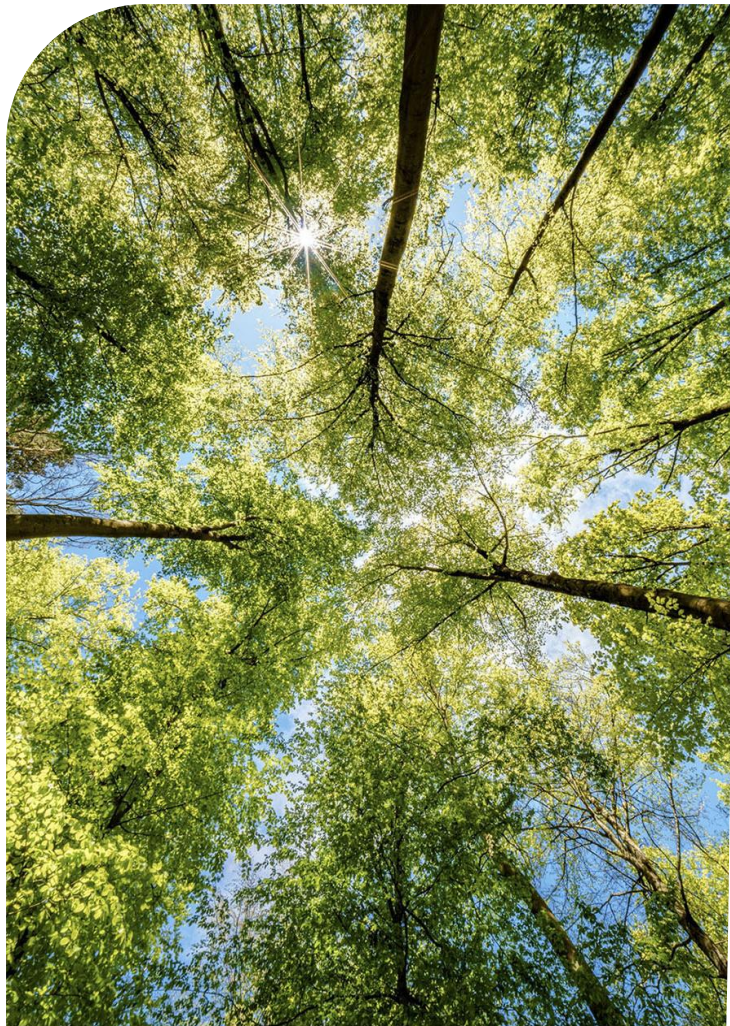
eSett News since last meeting

- eSett's Q2 Report published on the website
- Since the last Customer Committee meeting, there were four successful go-lives
  - Capacity Reserves for aFRR in Norway
  - Independent aggregator for aFRR in Finland
  - Losses on DK1-SE3 cable for day-ahead
  - Capacity Reserves for FCR in Norway
  - 15 min Day-ahead trading
- Handbook update during October
- CRM
  - Customer Information
  - Market Monitoring
  - Customer feedback



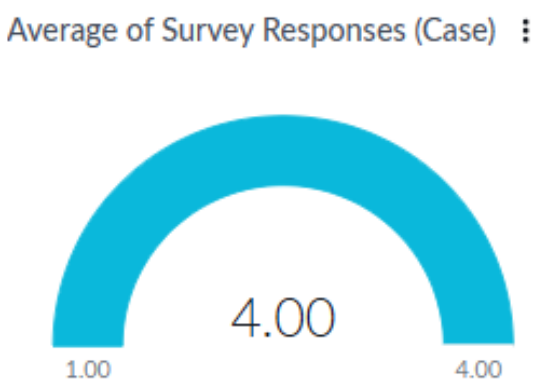
Different settlement services in eSett

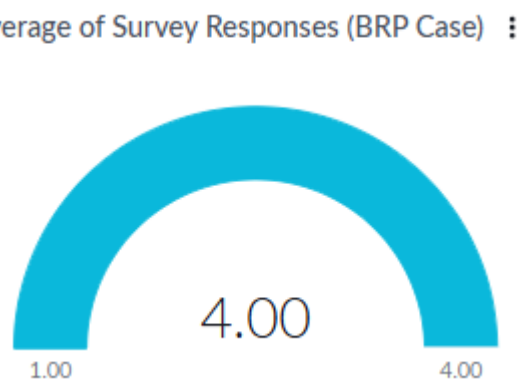
Imbalance settlement (BRP)		✓	✓	✓	✓
Reconciliation settlement (BRP)		-	-	-	✓
Complete settlement & invoicing for BSPs (instead of the local TSO):					
mFRR	Activated reserves market Market parties which act also in BRP role	✓	✓	✓	✓
	Activated reserves market Market parties which can act only in (individual) BSP role	✓		✓	
	Capacity reserves market		✓	✓	✓
	Independent Aggregator				
aFRR	Activated reserves market Market parties which act also in BRP role	✓	✓	✓	✓
	Activated reserves market Market parties which can act only in (individual) BSP role	✓		✓	
	Capacity reserves market		✓	✓	✓
	Independent Aggregator	✓			
FCR	Activated reserves market Market parties which act also in BRP role	✓	✓	✓	✓
	Activated reserves market Market parties which can act only in (individual) BSP role	✓			
	Capacity reserves market		✓	✓	✓
	Independent Aggregator				
FFR	Capacity reserves market				1.5.2027

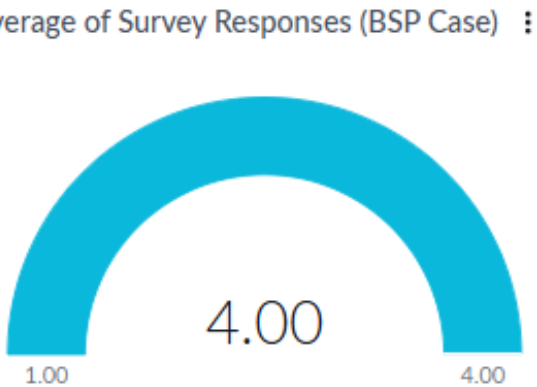


Customer feedback

- Feedback is requested after case resolution (Normal Case, BRP, BSP).
- Customers can respond via eSett portal or survey link in email.
- Feedback includes overall grade and optional comments.
- eSett team regularly reviews all submitted feedback.
  - Insights contribute to service improvement and future enhancements.







eSett Customer Satisfaction Survey 2025

The survey was open for two weeks between 12.9.2025 – 28.9.2025

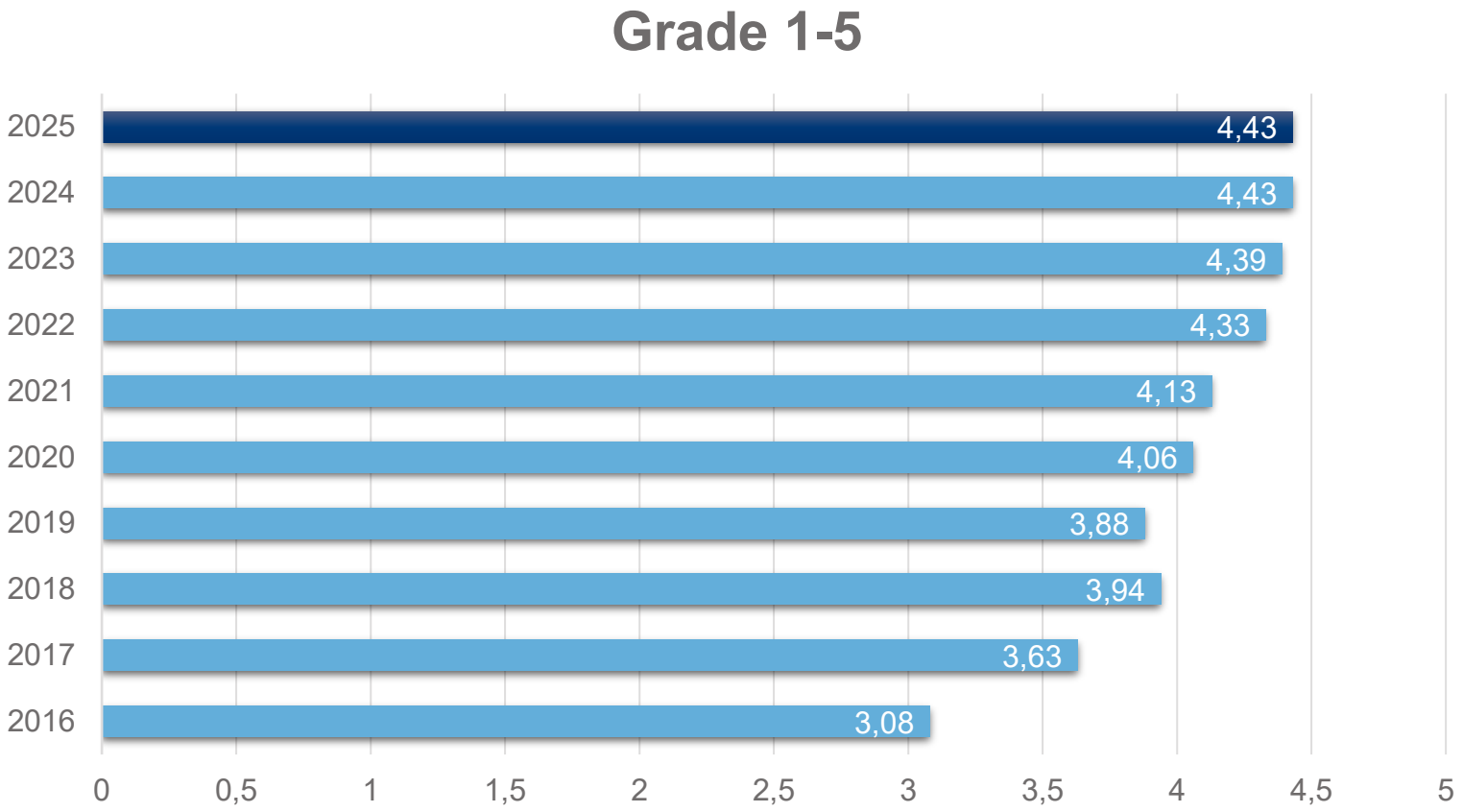
- A reminder was sent out 19.9.2025 to those who had not already answered the survey by that time

Language options: English, Finnish, Swedish, Norwegian

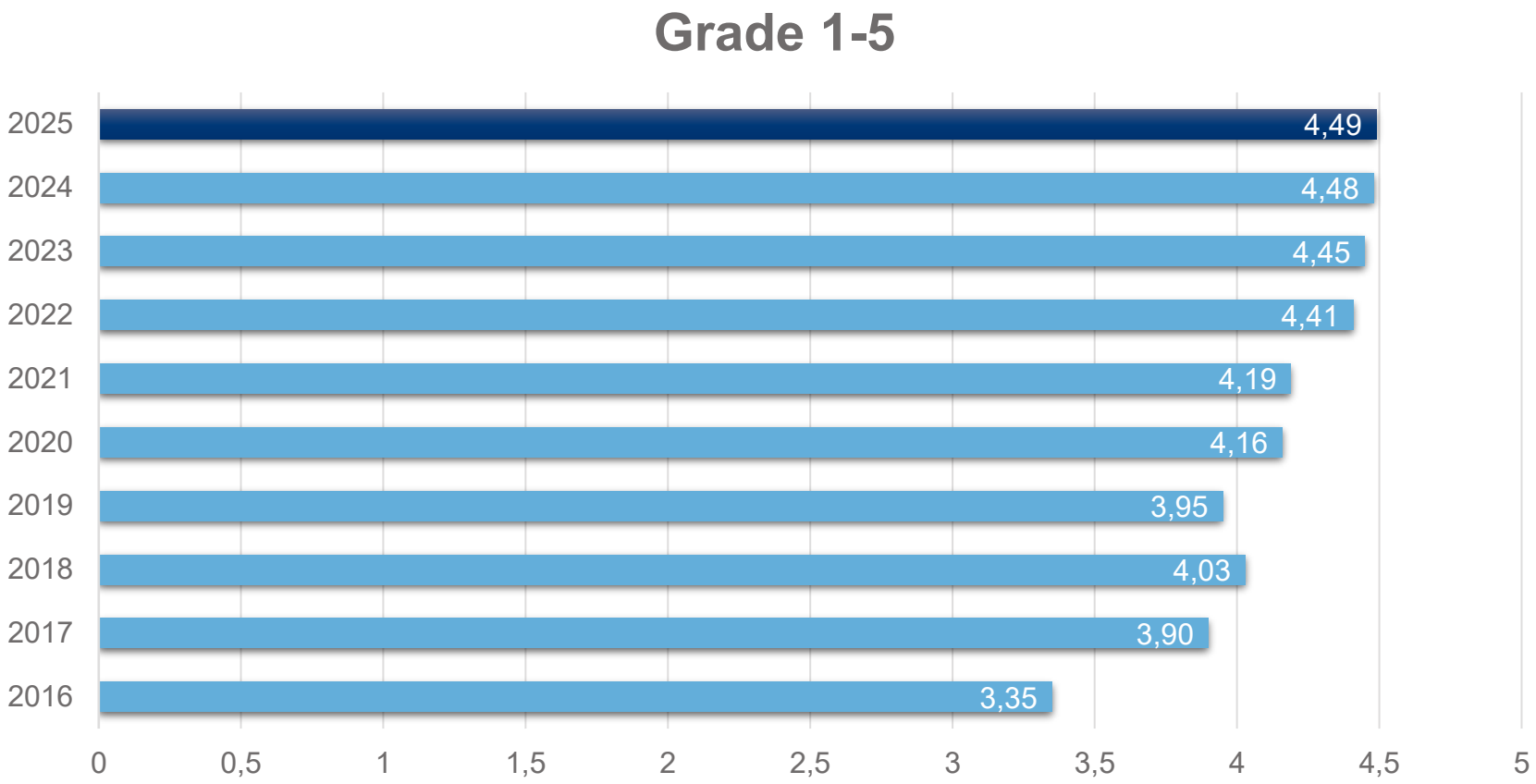
The survey was sent out to all active Online Service end users

- 2023 invitations sent
- Response rate 9,49 %
- **192 answers received**

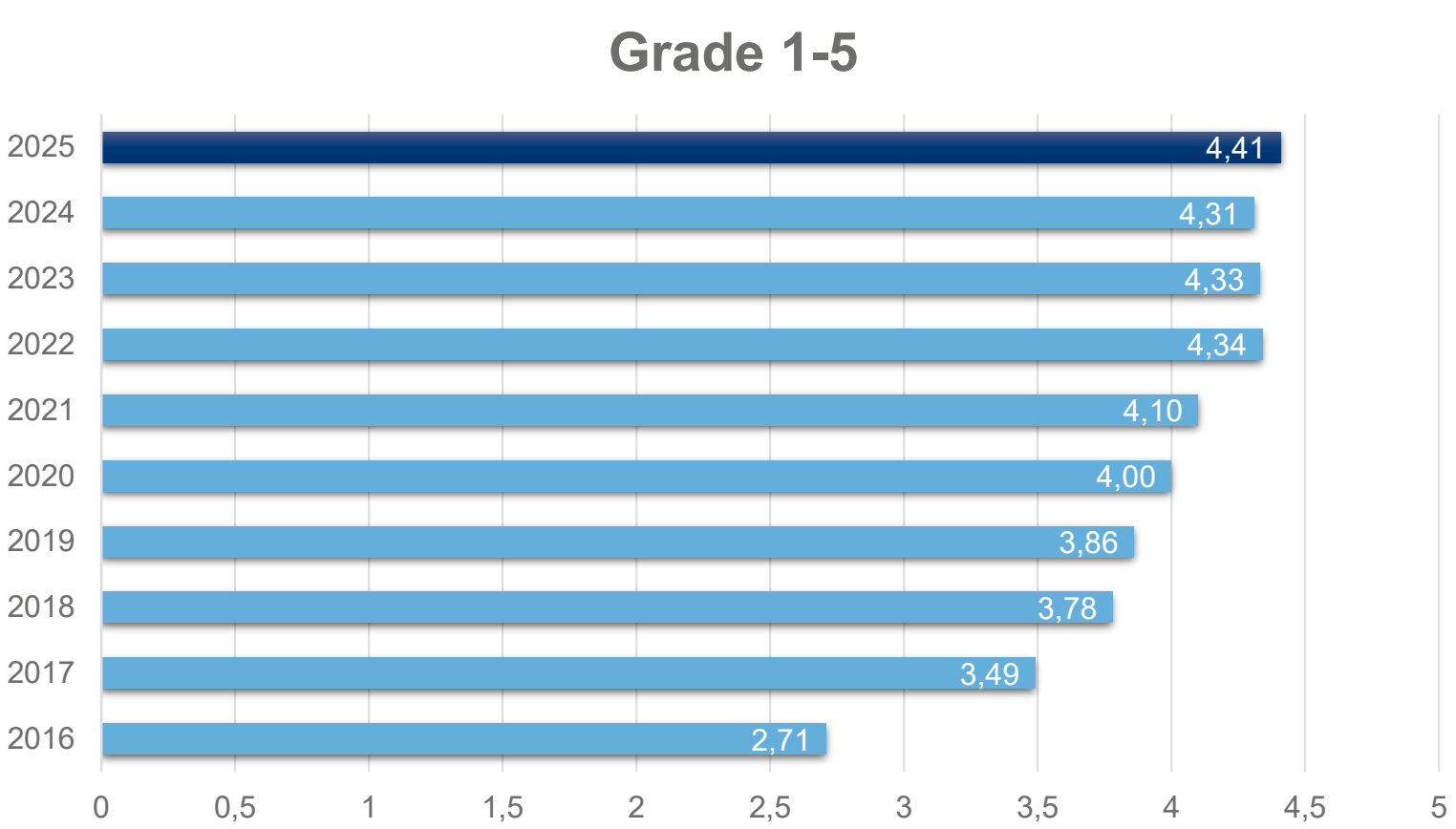
Give an overall grade for eSett´s customer service

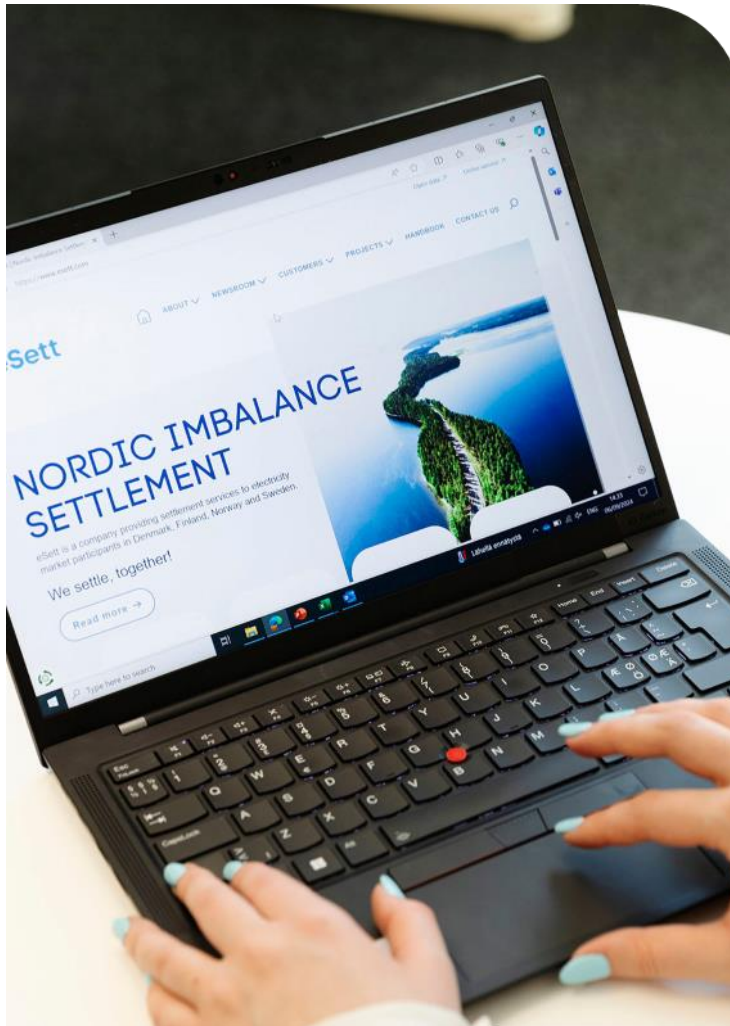


How professional is eSett's customer service?

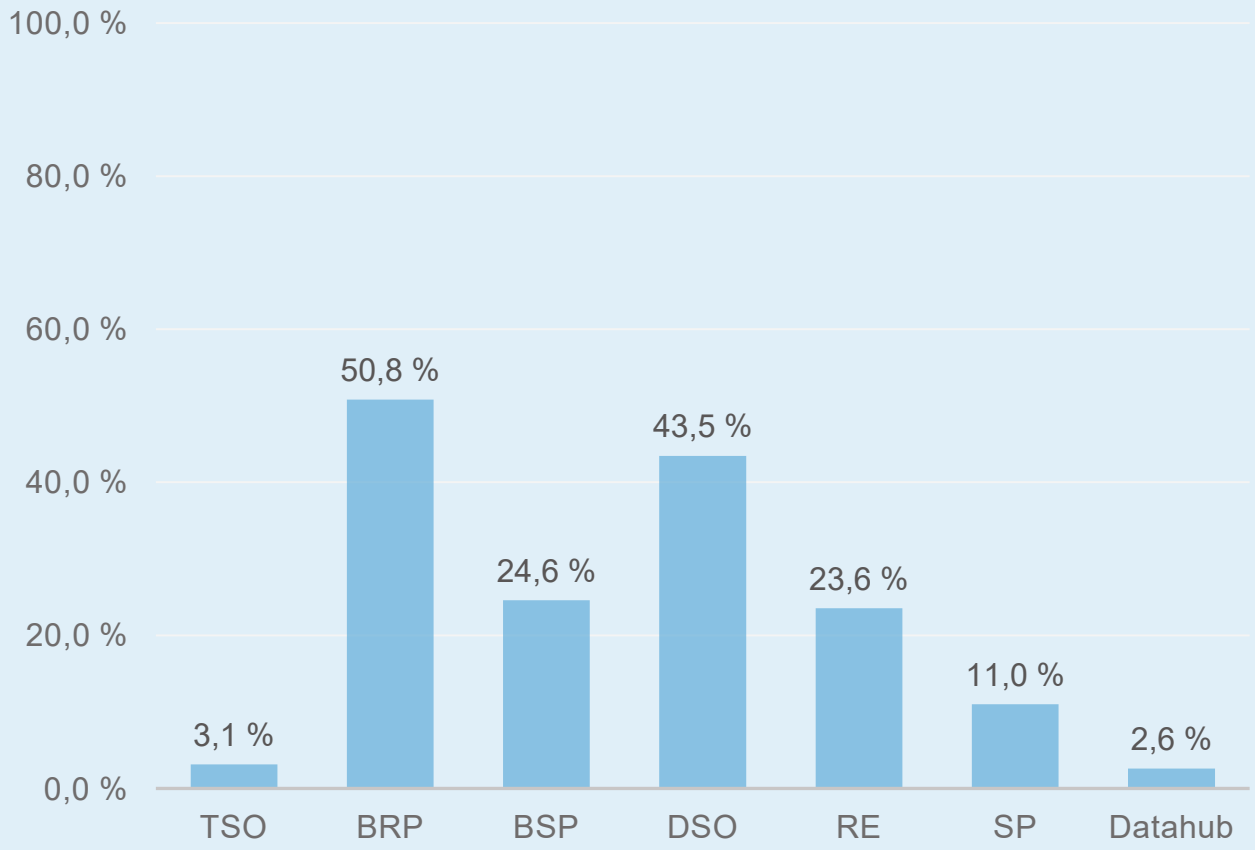


How satisfied have you been with the service request resolution times?



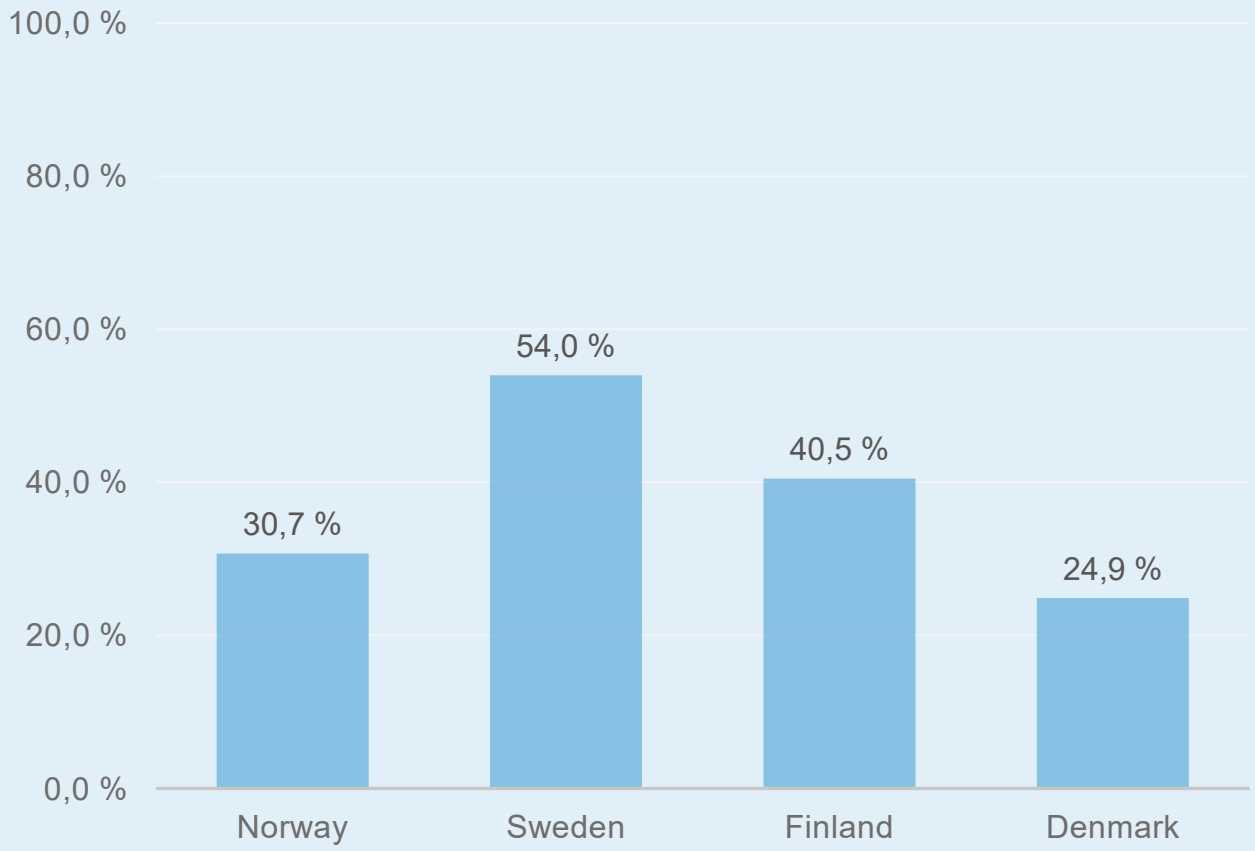


Market Participant Role



- BRPs were also this year the most active.
- Possible to select multiple roles.

Countries



- Very similar distribution to previous years.
- Swedish market parties were again the largest group to respond with over half of the answers.
- Possible to select multiple counties


eSett
eSett API project

eSett API project phases

Phase 1:
Design completion

- API architecture, integrations
- Completed in 2024

Phase 2:
Development and testing

- Core functionality development, documentation and user guides
- **Ongoing**, finalized by the end of 2025

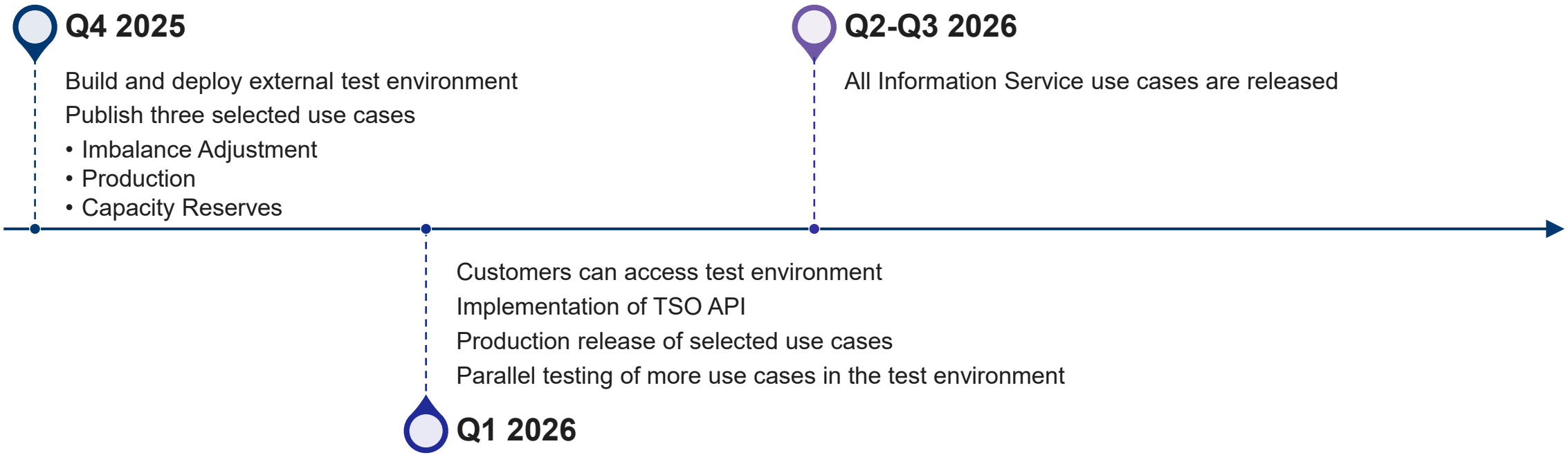
Phase 3:
Launch and support

- Customer access, support, maintenance
- From beginning of 2026

Phase 4:
Further development

- First, any remaining Information Service scope
- Afterwards, additional development e.g. two-way API and additional data

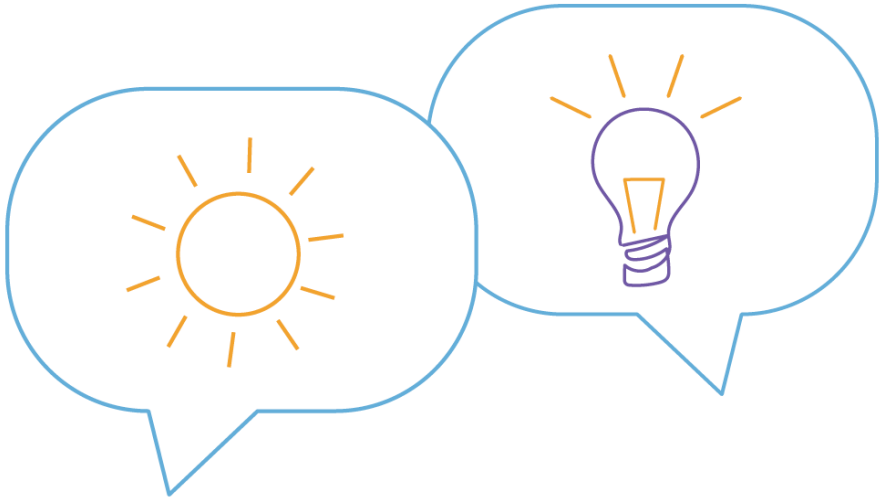
Timeline estimate



First version of API

Customer feedback:

- *“Data should be on its most detailed level – aggregations can be done by the customers themselves”*
- *“Releases as soon as something is ready even if everything isn’t finalized”*
- *“Data security needs to be considered in everything”*

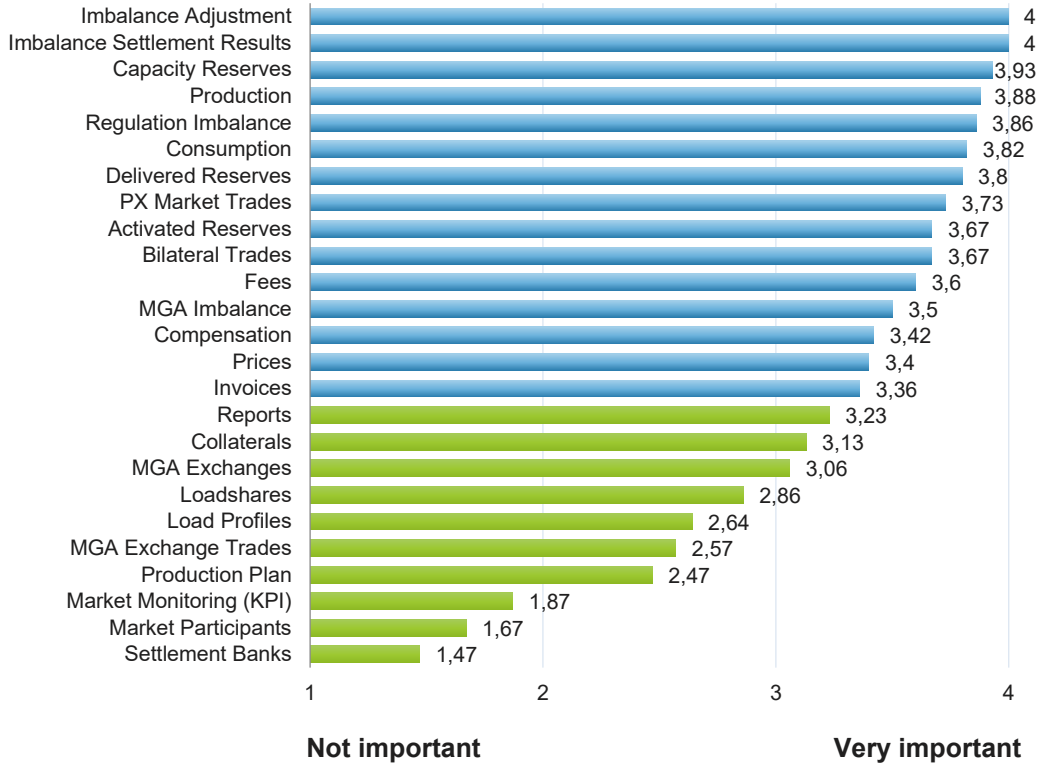


Results: data and time aggregations

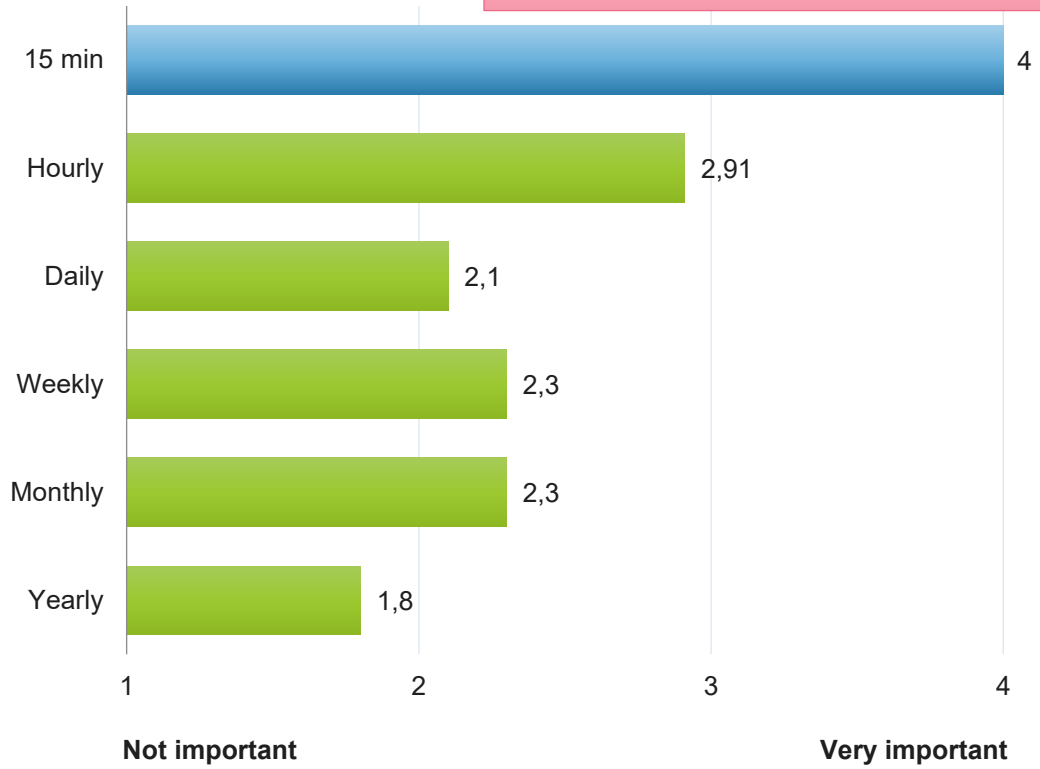
Conclusions:

- Data > Time aggregations
- Rough priority list for data
- Not all data was listed (open answers) e.g.
  - MEC Changes
  - MGA-MBA relations

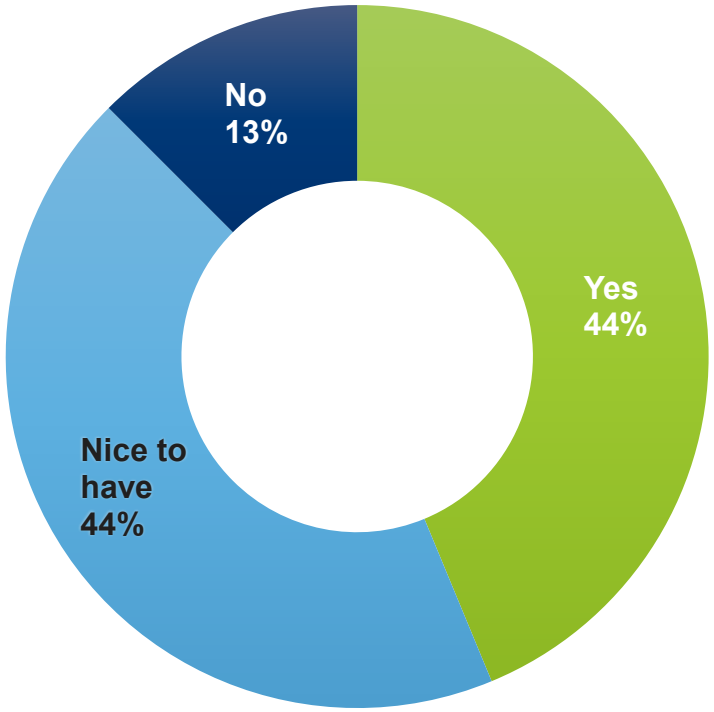
What data is important? – Average



What time aggregations a



Two-way API ⇄



Data types to be reported to eSett:

- Bilateral Trades
  (multiple same answers)

Conclusions:

- A two-way API should be developed within some time frame.
  - However, it's not the first priority.
- Needed at least the for BRPs and BSPs.
  - Usage for other parties needs to be evaluated further.


eSett
We settle, together!

Independent Aggregator

Why, how, and what to expect?

15.10.2025

Agenda

Background

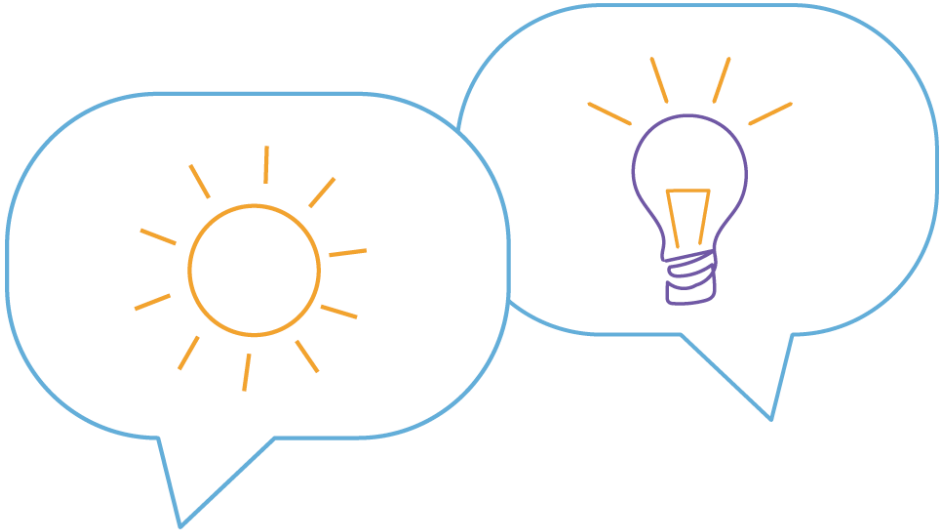
- Why independent aggregators?
- Independent aggregation in settlement
- Nordic situation

Independent aggregator model

- Summary of main changes
- New settlement data explained (delivered reserves)
- Imbalance adjustment
- Compensation model
- Regulation imbalance
- Changes in data exchange

Other

- Open issues
- Future development
- Q/A



Background

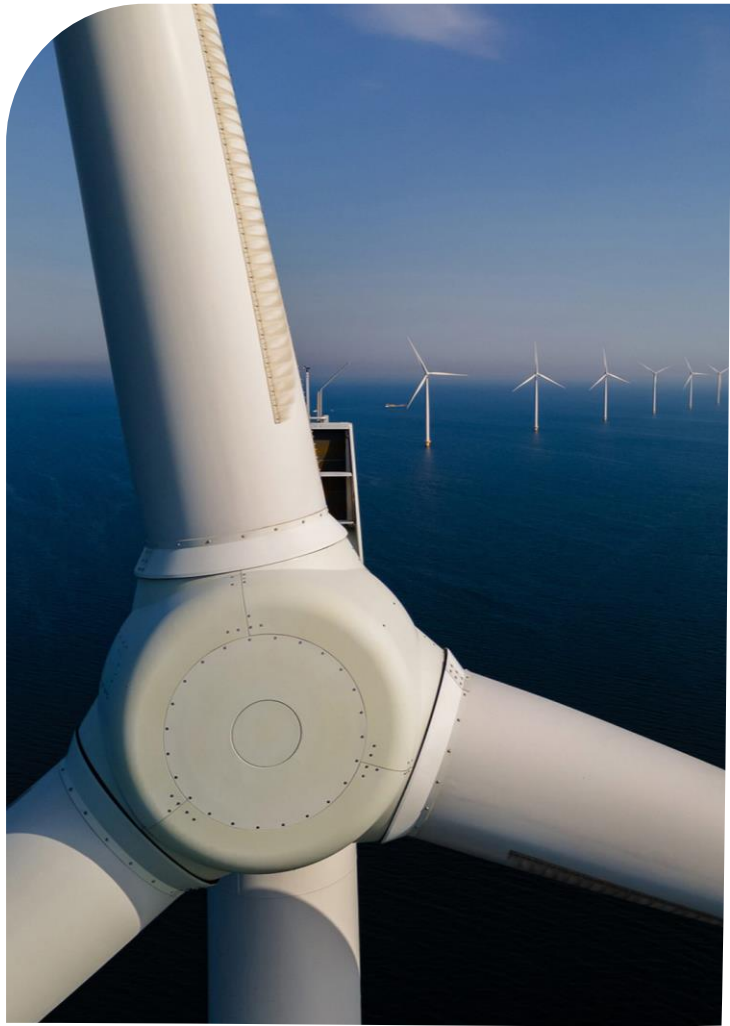
Why Independent Aggregators?

Simple reason: all capable flexibility is wanted for the use of the markets.

- Reasoning: *“If ‘traditional market players’ can’t or won’t provide all their flexibility, maybe some other market participants (independent aggregators) can and will.”*

The reasoning above has led to regulation:

- EU: Member states must allow independent aggregators in the national regulation.
  (Directive (EU) 2019/944, Art. 17(3)(a))
  - Finland: End user doesn’t need permission from DSO or RE to enter into agreement with independent aggregator. RE can’t set terms/fees to prevent independent aggregations.
    (Electricity market act, EMA 588/2013)
  - Denmark: ”An electric customer is free to enter into agreements with any aggregator company on aggregation without the consent of the electricity customer's electricity trading business.”
    (The electricity Supply Act, LBK nr 1248 of 24/10/2023)

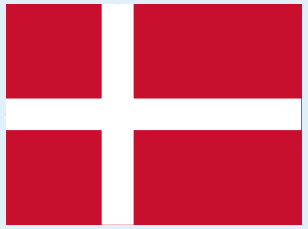


Independent Aggregation in Settlement

- Independent aggregators provide same balancing services as other BSPs.
  - Also, they can combine “normal” balancing services and independent aggregation, so the line between a “normal BSP” and independent aggregator can be quite blurred.
  - ➢ Independent Aggregator = **BSP**

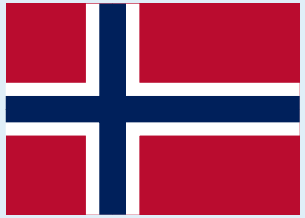
- However, independent aggregation…
  - causes **imbalance adjustment** for **multiple BRPs** per single regulation object.
  - needs to be **compensated**.
  - causes “balance responsibility” for the BSP regarding the resources (**regulation imbalance**).
  - ➢ Independent aggregation needs to be separated from the other methods on timeseries level.
    - ➢ A complex independent aggregator model was required for the settlement.

Independent Aggregator Implementation in Nordics

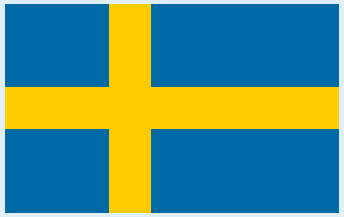


- Not in use.
- mFRR expected in Q2–Q3 2026.
- Datahub will play major role.

- Used for aFRR energy since 5.6.2025.
- mFRR expected in Q3–Q4 2026.
- FCR already in use outside of eSett.



- Not in use.
- No regulation or plans at the moment.

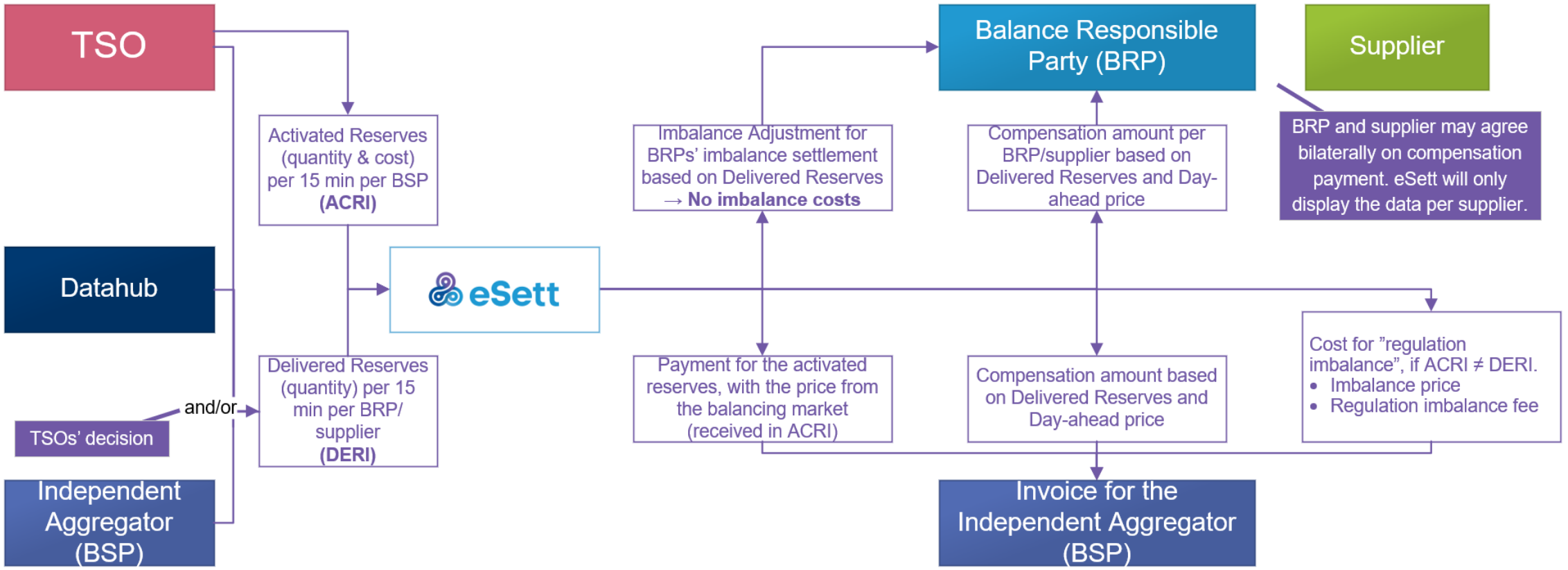


- Not in use.
- No timeline for the implementation.
- Prerequisite is the BSP model implementation.

Independent Aggregator Model

15.10.2025

High-level Model

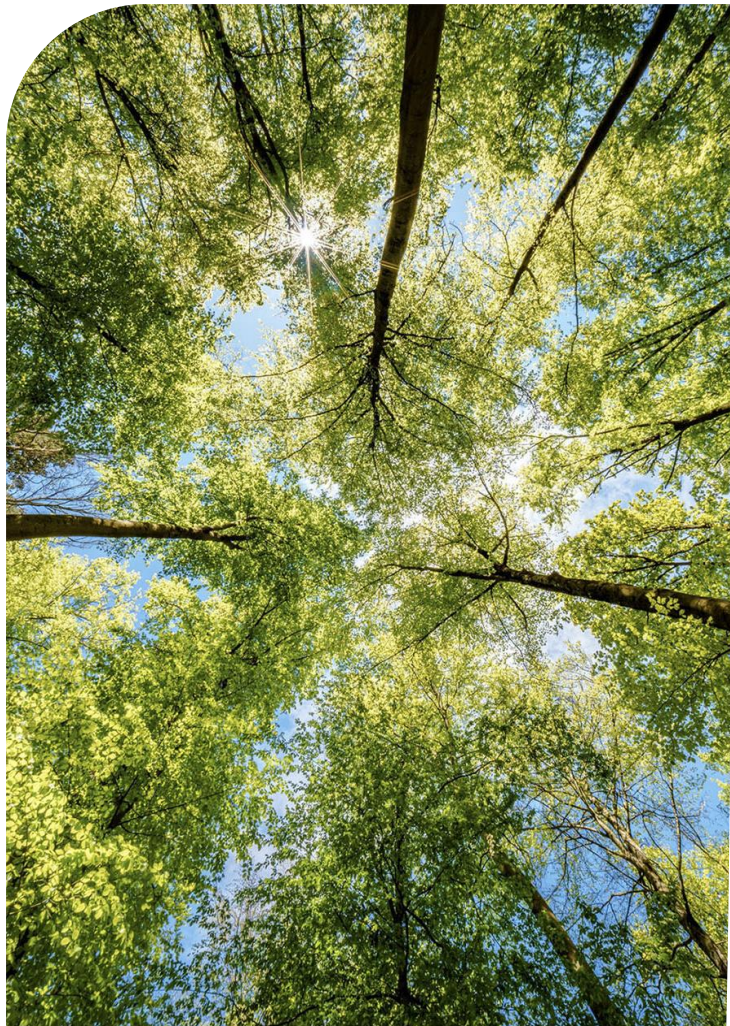


List of Main Changes

Area	Before	After
Activated Reserves	Reported per BRP and BSP	Reported per BSP only (no link to BRP)

Delivered Reserves	N/A	• Actual reserve energy
		  • per RE and MGA, or
		  • per BRP and MBA
		• Misdelivered energy
		  • BRP's "responsibility" of the regulation imbalance
		• Discloses the *method(s)* of the delivery
		  • Defines if it should be compensated or not

Imbalance Adjustment	Activated Reserve qty → Imbalance Adjustment	Activated/Delivered Reserve qty + Misdelivered qty → Imbalance Adjustment
Regulation Object	Single BRP per RO	One BRP for production plans, multiple for reserves
Collateral for BSP	N/A	Finland: • Collateral requirement (min. 40 000 EUR) if BSP delivers independent aggregation
Compensation	N/A	Independent aggregation compensated between BSPs and BRPs with day-ahead price
Regulation Imbalance	N/A	BSP is responsible for differences between activated and delivered reserves with imbalance price



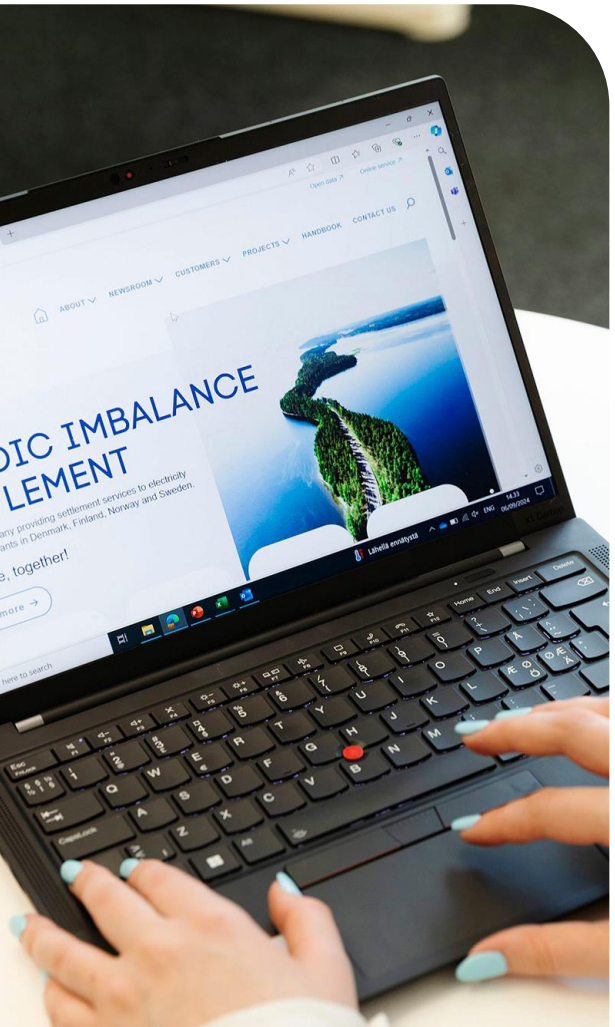
Delivered Reserves

- **Applicable for** the combination of **balancing sub-service and country** from the set go-live
  - E.g. Finland: *aFRR*, *aFRR aof* & *aFRR non-aof*
- **Who reports** – depends on the activation method and the country
  - Reporting tables and scenarios on the next table – subject to change especially for Norway and Sweden
- Reported with DERI messages per BSP
- BRP and RE delivered reserves are their own timeseries
  - BRP is per MBA
  - RE is per MGA
    - ➢ BRP information can be derived by eSett

Sender	DK	FI	NO	SE
TSO	(✓)	✓	(✓)	(✓)
Datahub	✓		(✓)	
BSP		✓		(✓)

Activation method	DK	FI	NO	SE
BRP-BSP own resources	**Datahub** reporting per **RE** or **BRP**	**TSO** reporting per **RE** or **BRP**	**Datahub?** reporting per **RE** or **BRP**	**TSO** or **BSP** reporting per **RE** or **BRP**
BSP has a contract with a BRP (a), or **BSP has contracts with multiple BRPs** (b)	N/A	(a): **TSO** reporting per **RE** or **BRP** (b): **BSP** reporting per **RE** or **BRP**	N/A	N/A
Independent aggregation	**Datahub** reporting per **RE**	**BSP** reporting per **RE**	**Datahub?** reporting per **RE**	**BSP?** reporting per **RE**
Combination (i.a. + other)	**Datahub** reporting per **RE** (and **BRP**)	**BSP** reporting per **RE** (and **BRP**)	**Datahub?** reporting per **RE** (and **BRP**)	**BSP?** reporting per **RE** (and **BRP**)

Delivered Reserves – Misdelivery



- Delivered reserves consists of four time series
  - Up delivered reserve quantity
  - Down delivered reserve quantity
  - **Up misdelivered quantity**
  - **Down misdelivered quantity**
- Misdelivered quantity = difference between activated and delivered reserves, where the BRP is responsible
  - Applicable only for contractual activations
  - Negative value (-) = “underdelivery”
  - Positive value (+) = “overdelivery”
- BSP allocates the “regulation imbalance” for the BRP
  - No regulation imbalance (+ fee) for BSP
  - Imbalance adjustment (→ change in imbalance) for the BRP
- **Case is valid only for the contractual BSPs in Finland**
  - Why: Enables “status quo” for the contractual reserves
- Misdelivery data is available for the BRPs in the *Delivered Reserves data package*

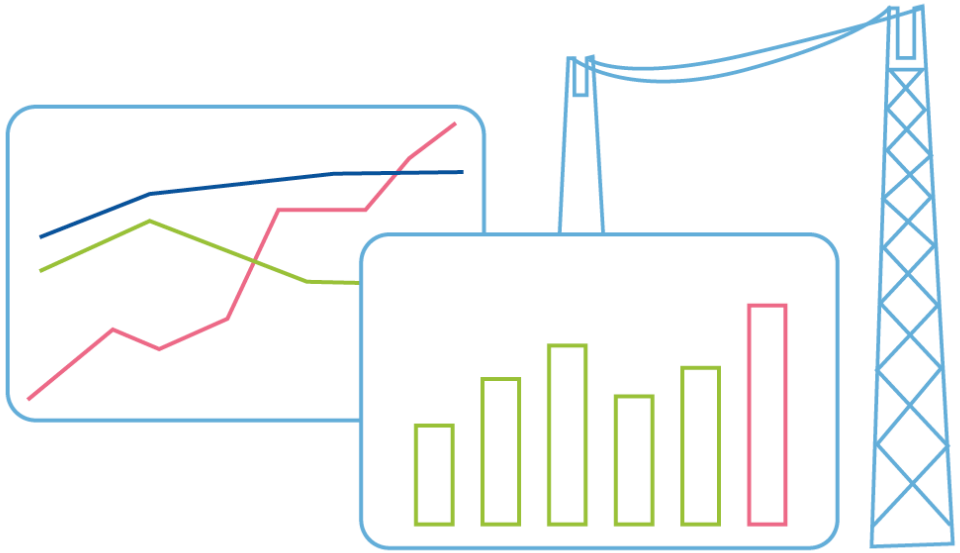
Imbalance Adjustment

Before:

- Activated Reserves qty → Imbalance Adjustment

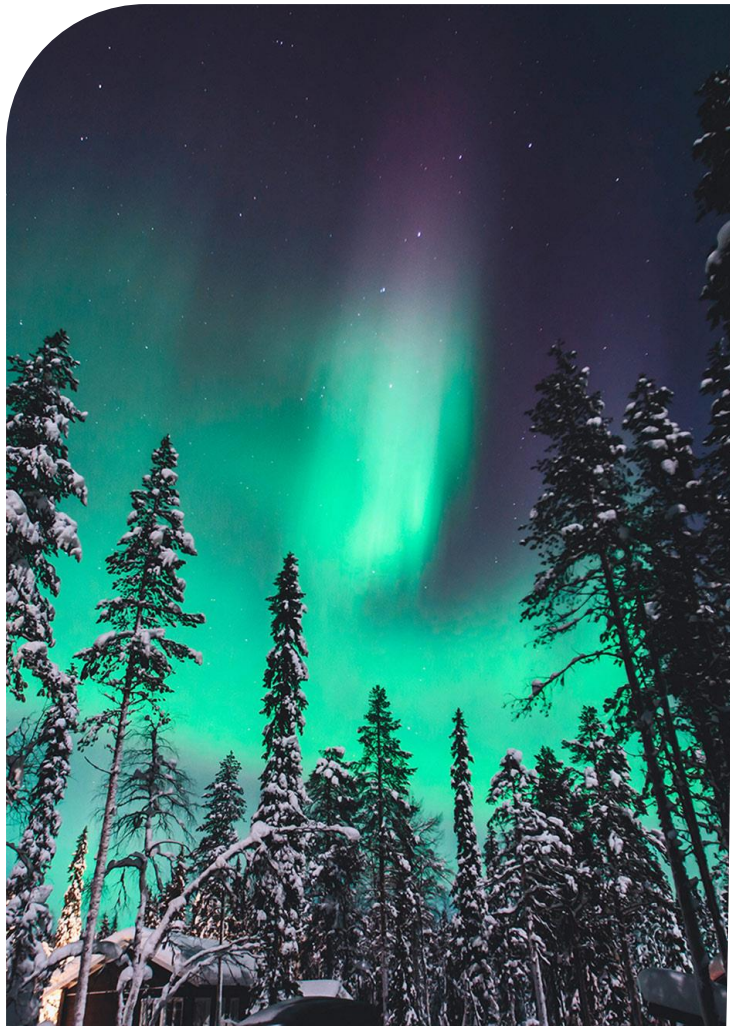
Now:

- SUM of…
  - **Activated Reserves** – for products where independent aggregation **is not** possible
  - **Delivered Reserves** – for products where independent aggregation **is** possible
  - **Misdelivery** – for products where independent aggregation **is** possible and when in contractual reserves activated and delivered quantity is not matching
    - Only in Finland
    - Not relevant for majority of BRPs



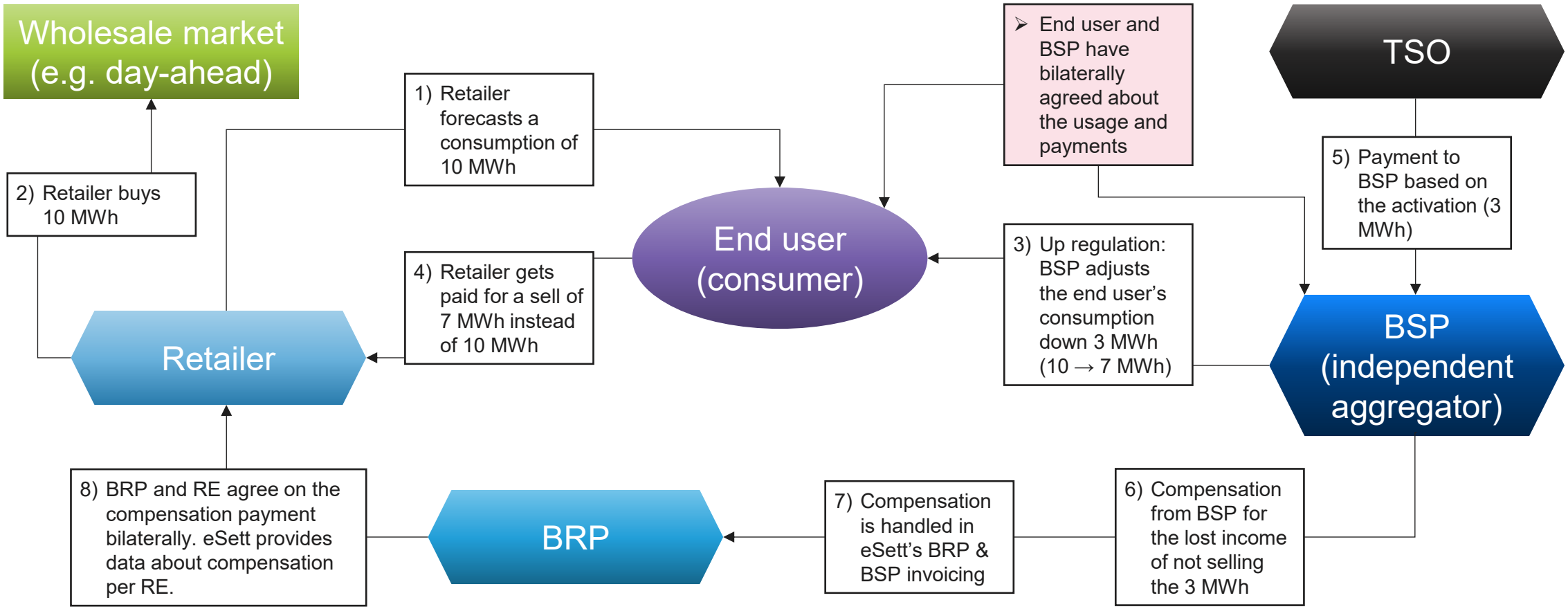
Compensation Model

- Applicable only for reserves caused by independent aggregation
  - Except in Norway, the initial plan is to apply this for every reserve
- Compensation is a money flow between BRPs and BSPs
- Paid due to an increase or decrease of RE's consumption/production, which causes some financial income or loss
  - The **idea** is to try to **cancel the financial impact** for the RE that is caused be the reserve activation.
  - In practice, it is impossible without the knowledge about the agreement between RE and end user
    - Fixed price, spot price or some combination agreement + any margins?
    - ➢ **Day-ahead price** is the "best" easy alternative that has been identified at the moment



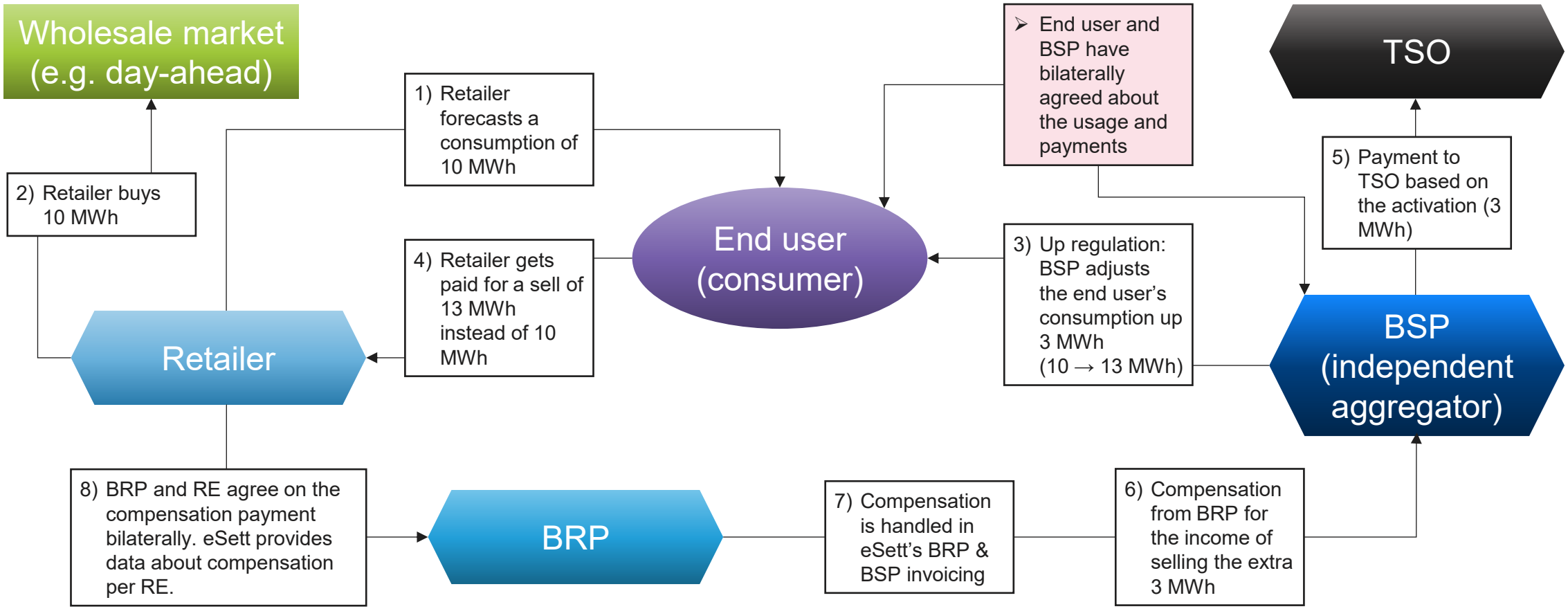
Compensation model – up-regulation example

TSO has activated up-regulation (3 MWh) from the BSP (independent aggregator)
Both spot-price and up-regulation price are positive in the example.



Compensation model – down-regulation example

TSO has activated down-regulation (3 MWh) from the BSP (independent aggregator)
Both spot-price and up-regulation price are positive in the example.



Regulation Imbalance Model

- Comparable to BRP's Imbalances
- Difference between *allocated volume* and *final position* of a BSP
  - = *Activated Reserves* vs. *Delivered Reserves*
- Should occur only for independent aggregation
  - BRP/BSP own resources: *same value reported* – differences end up to BRP's imbalances (same as now)
  - Contractual: *usage of misdelivery* – differences end up to BRP's imbalances (same as now)
- Imbalance price and *regulation imbalance fee* is applied
  - Regulation Imbalance Fee will have same level as imbalance fee: 1,15 €/MWh
- Invoiced from the BSP
  - Except if there is a combination invoice BRP-BSP
- Different products and ROs net each other out per MBA
  - E.g. surplus in mFRR and deficit in aFRR are netted

Data Exchange Changes

For the balancing sub-service and country combinations, where independent aggregation is allowed.

To eSett:

- Changes are mainly for TSOs and/or Datahubs
- **BSPs in Finland**, send *Delivered Reserves* **if they**…
  - provide independent aggregation, or
  - have a contractual delivery for multiple BRPs

From eSett (data packages):

- *Activated Reserves* can't be sent to BRPs as the data refers to BSP
- *Delivered Reserves* – new data for BRPs and BSPs
- *Compensations* – new data for BRPs and BSPs
- *Regulation Imbalances* – new data for BSPs

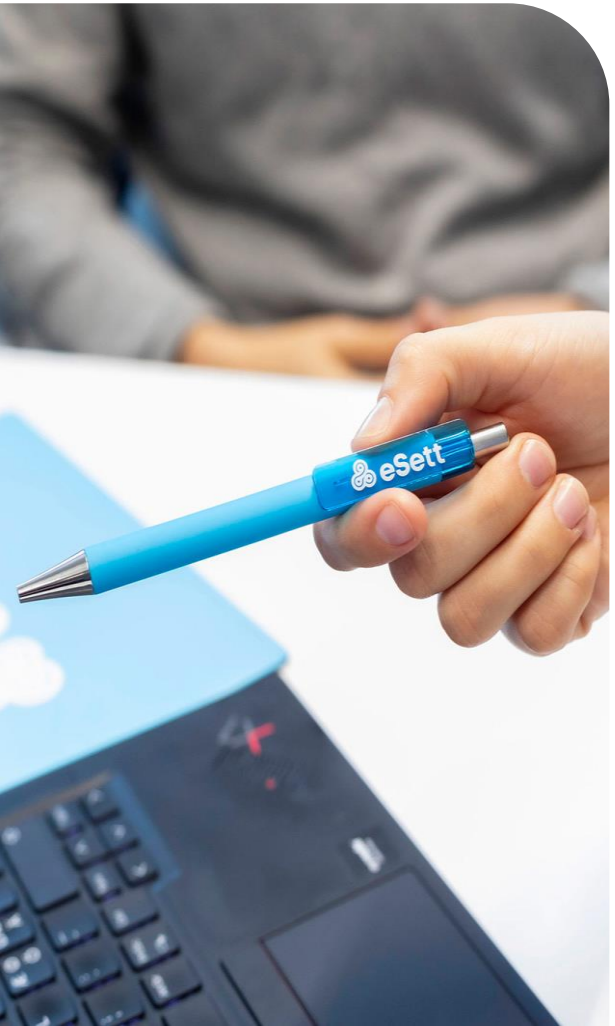
Other Topics

15.10.2025

Some Known Challenges of the Model

Challenge	Possible solution?
Correct **reference price** for the **compensation**?	In theory, it's the actual retail price. In practice, starts with day-ahead price, evaluate other options later.
BRP is unaware of any activations made by the independent aggregator – could trigger counter-activation which negates the reserve.	No solution found. BRP would need real-time data which isn't available. BRP can try to provide all flexibility from their portfolio to the market themselves.
Baseline method – i.e. what would have happened without the activation?	In aFRR market there is a real-time reporting requirement. For other markets there is no solution found.
Possible **counter activation** of a same type in the same endpoint. For example, a demand response (down) with a heat pump and turning up an electric heating.	Regulation to forbid. Proper validation of the demand response by e.g. flexibility register or similar.
Competition on the same markets – BSPs (independent aggregators) may compete with BRPs and REs, while BRPs and REs still need necessary data for their own operations.	In Finland, REs and BRPs can see data aggregated per RE, MGA and RO. However, RO and BSP information (names) are hidden.
Equal playing field for all market participants.	Same rules, requirements and financial impacts for all market participants for the same actions.
How to avoid **market disturbance** with the model?	Model shouldn't favour one type of market party over another.
Rebound effect – increase or decrease of volume in the reserve resource. For example, an electric vehicle is charged few hours later.	No solution found.
Possible independent aggregation in **intraday** and **day-ahead markets**.	No solution found.

Future Development



- Dynamic collateral model for BSPs that provide independent aggregation in Finland
- Independent aggregation for mFRR energy market in Denmark
- Independent aggregation for mFRR energy market in Finland
- Displaying all BRP-RO relations in Online Service
  - Naturally all hidden information will stay hidden.
- Upcoming *Network Code on Demand Response*
  - New requirements and changes coming?
- Plans in Norway and Sweden?

Questions & Answers

15.10.2025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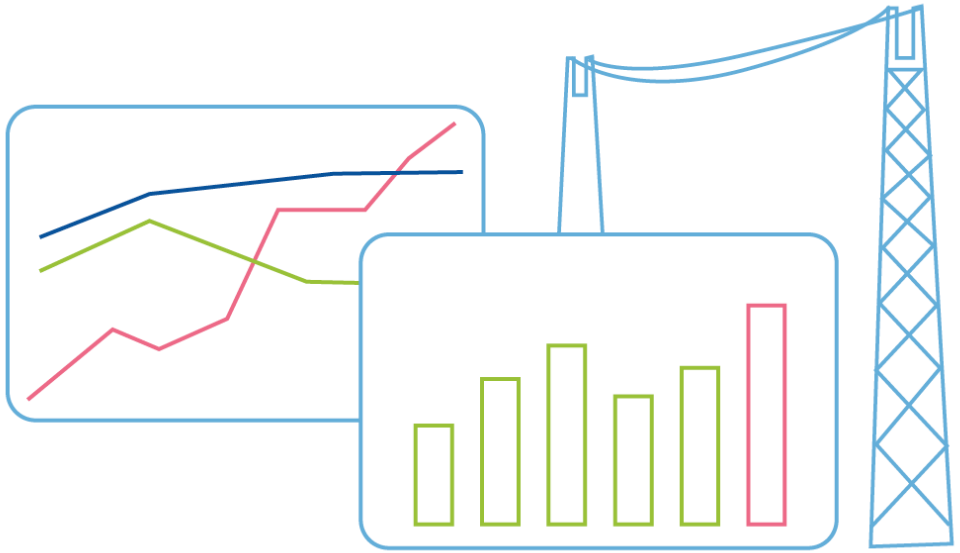
We settle, together!

Market Analysis

What has been analyzed

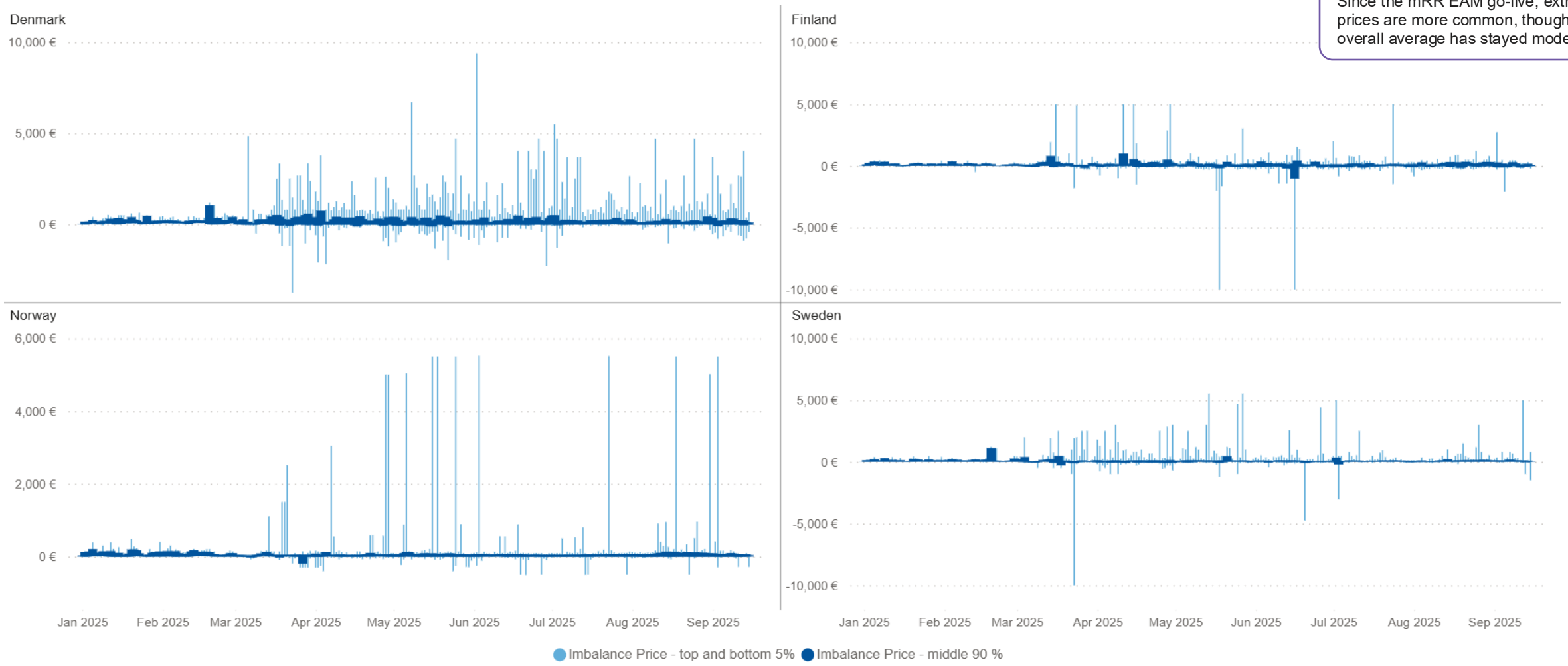
- Market changes during 2025
  - mFRR EAM 4.3.2025
  - 15 min imbalance pricing 19.3.2025
  - 15 min Intraday cross-border 19.3.2025
  - 15 min Day-ahead trading 1.10.2025
- Prices
- Reserves and Imbalance
- Trading
- Market Parties



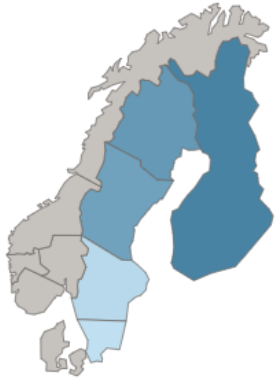
Prices

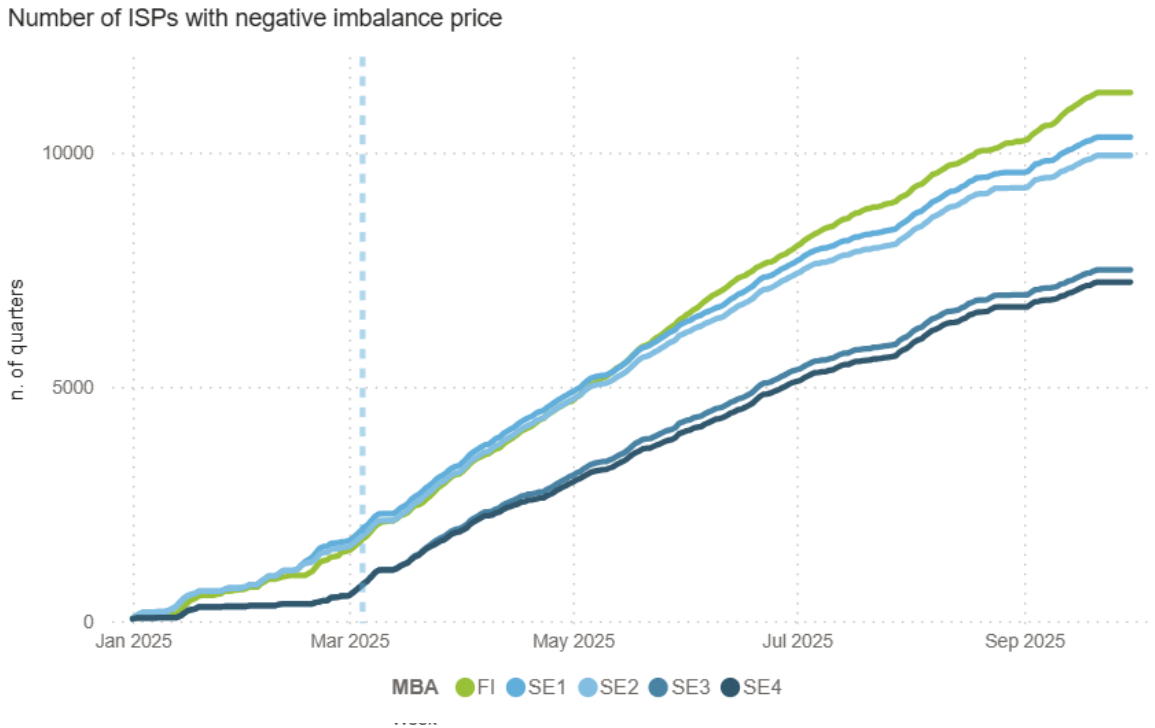
Imbalance price variation in the Nordic Countries

Since the mRR EAM go-live, extreme prices are more common, though the overall average has stayed moderate.

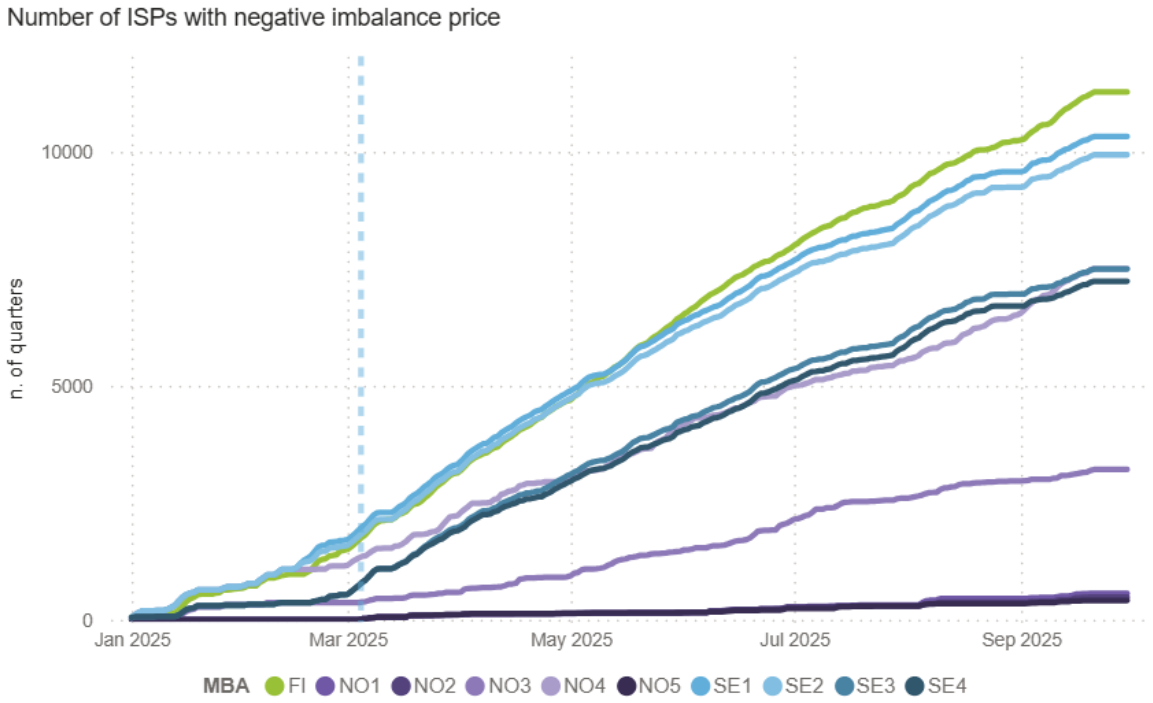


Negative imbalance prices

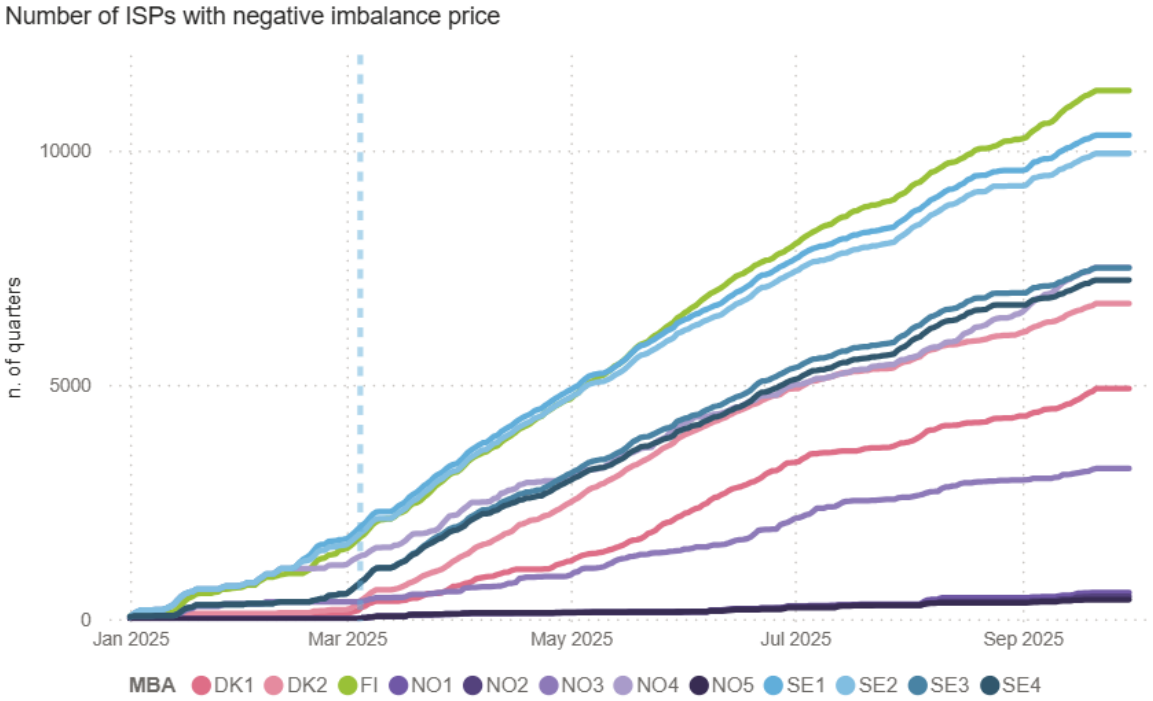




Negative imbalance prices



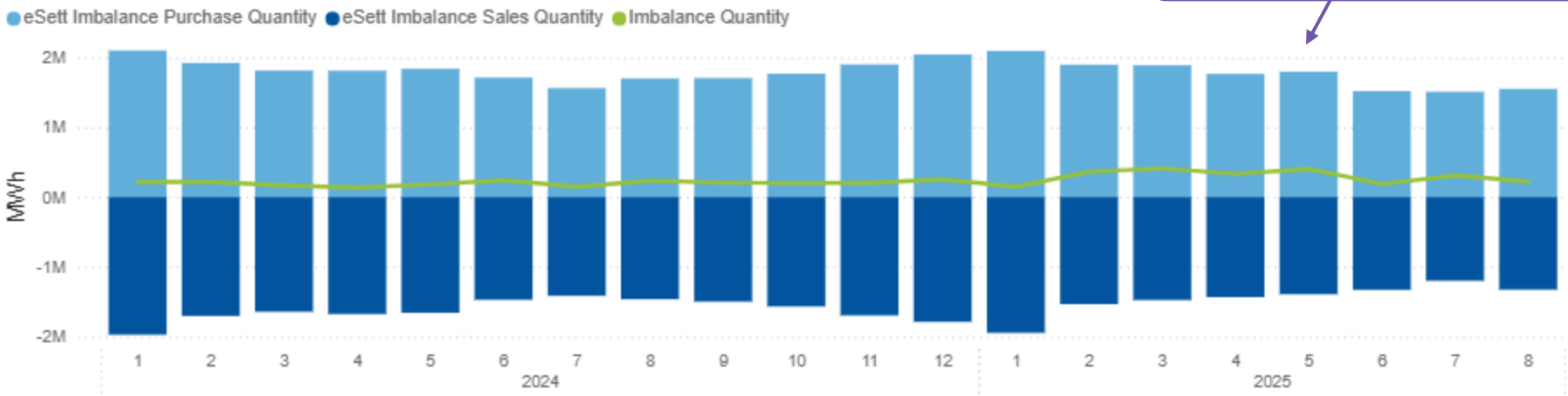
Negative imbalance prices



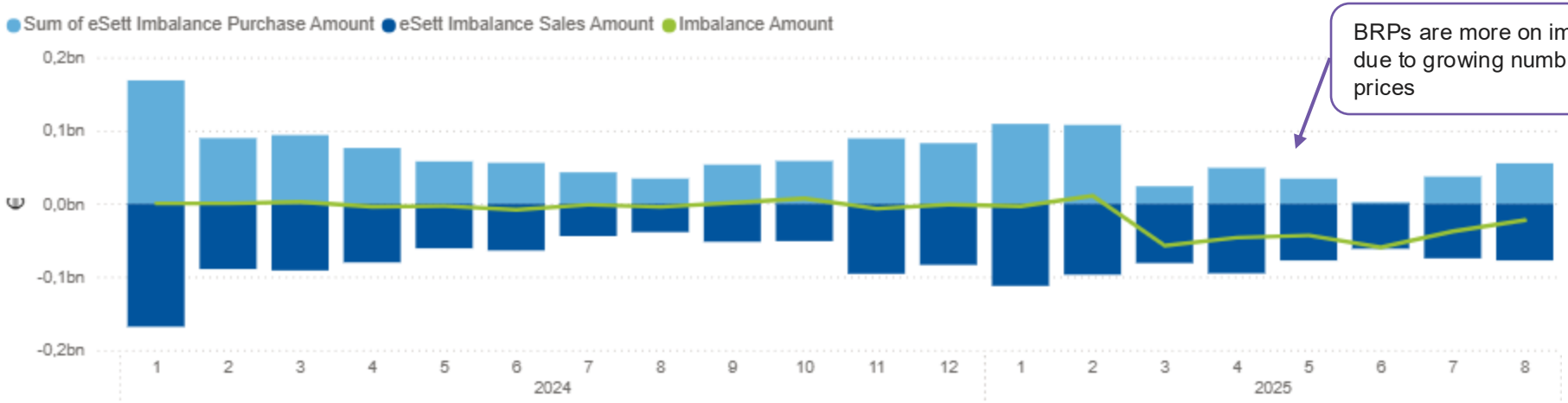
Reserves and Imbalance

Imbalance quantities and amounts

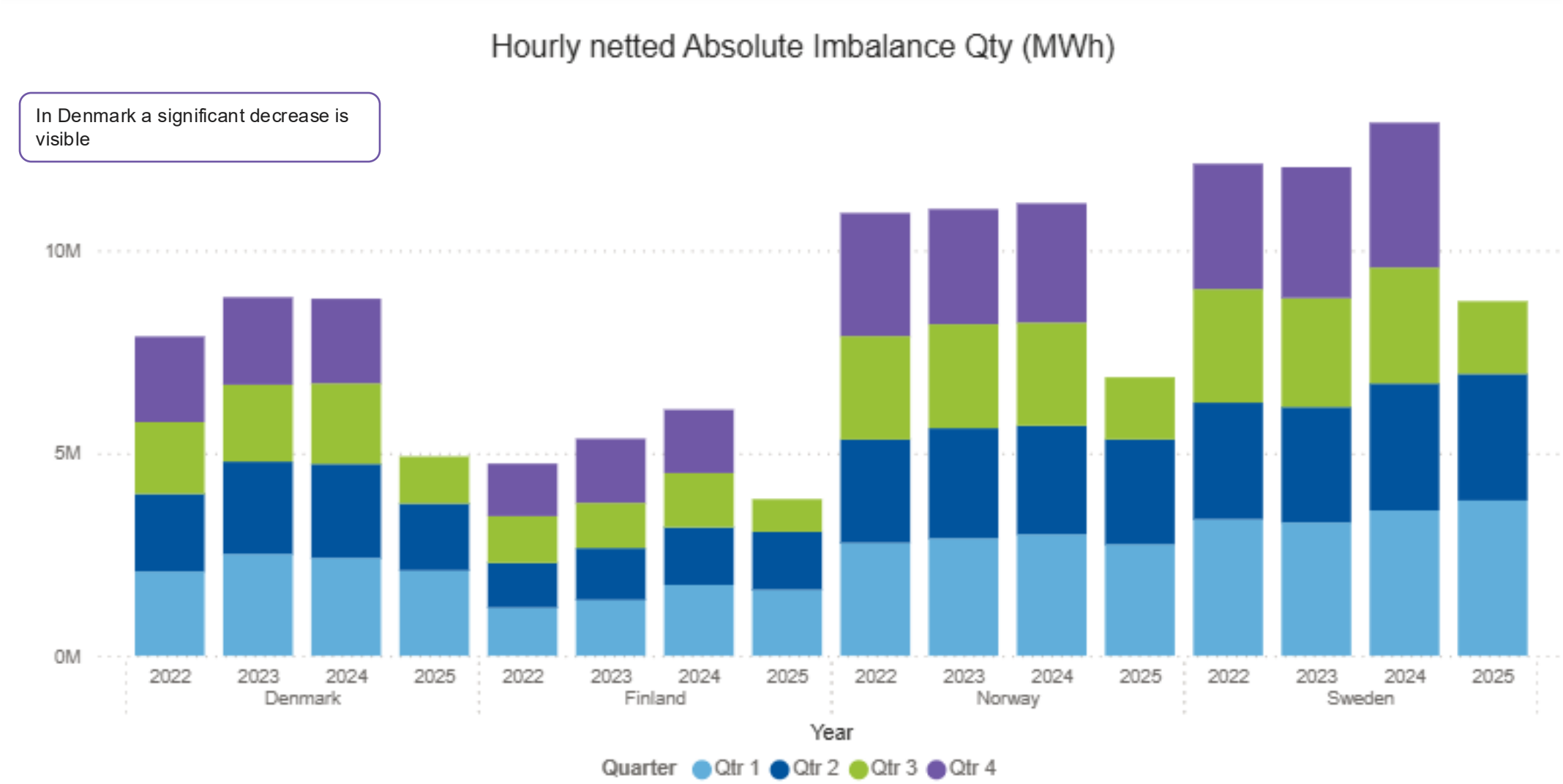
No significant change visible in absolute imbalance volumes, slightly more skewed on imbalance surplus side



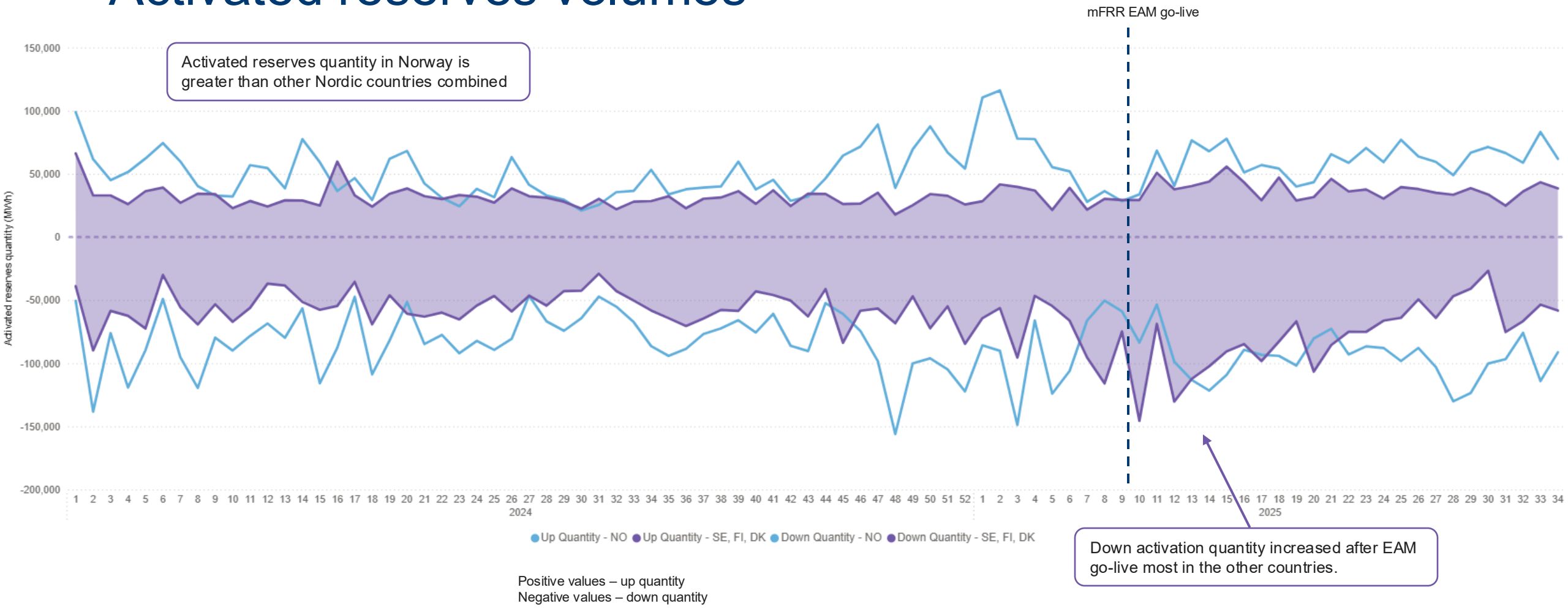
BRPs are more on imbalance purchase side due to growing number of negative imbalance prices



Imbalance quantities and amounts



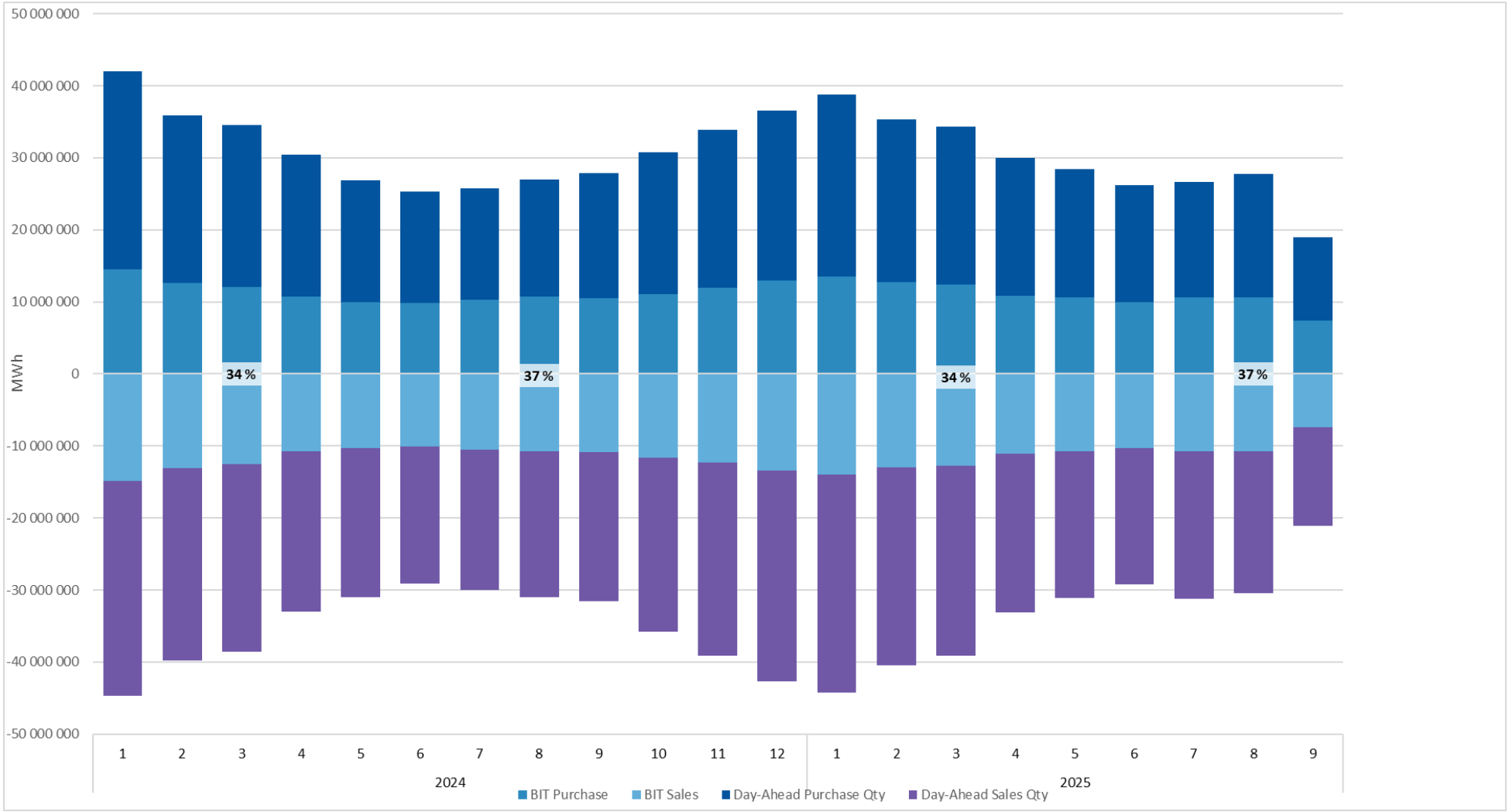
Activated reserves volumes



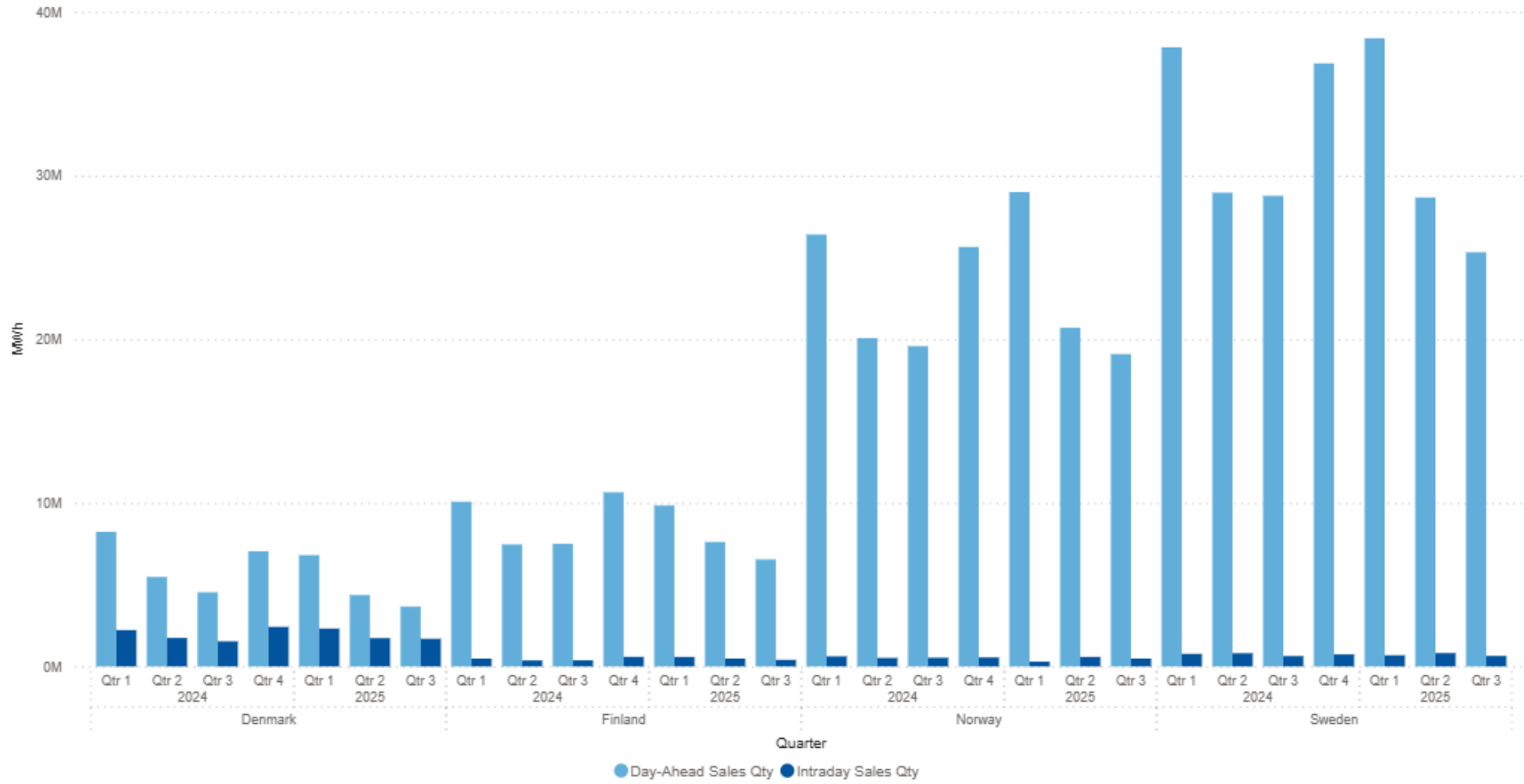
Positive values – up quantity
Negative values – down quantity

Trading

Day-ahead and Bilateral Trade volumes in the NBS countries

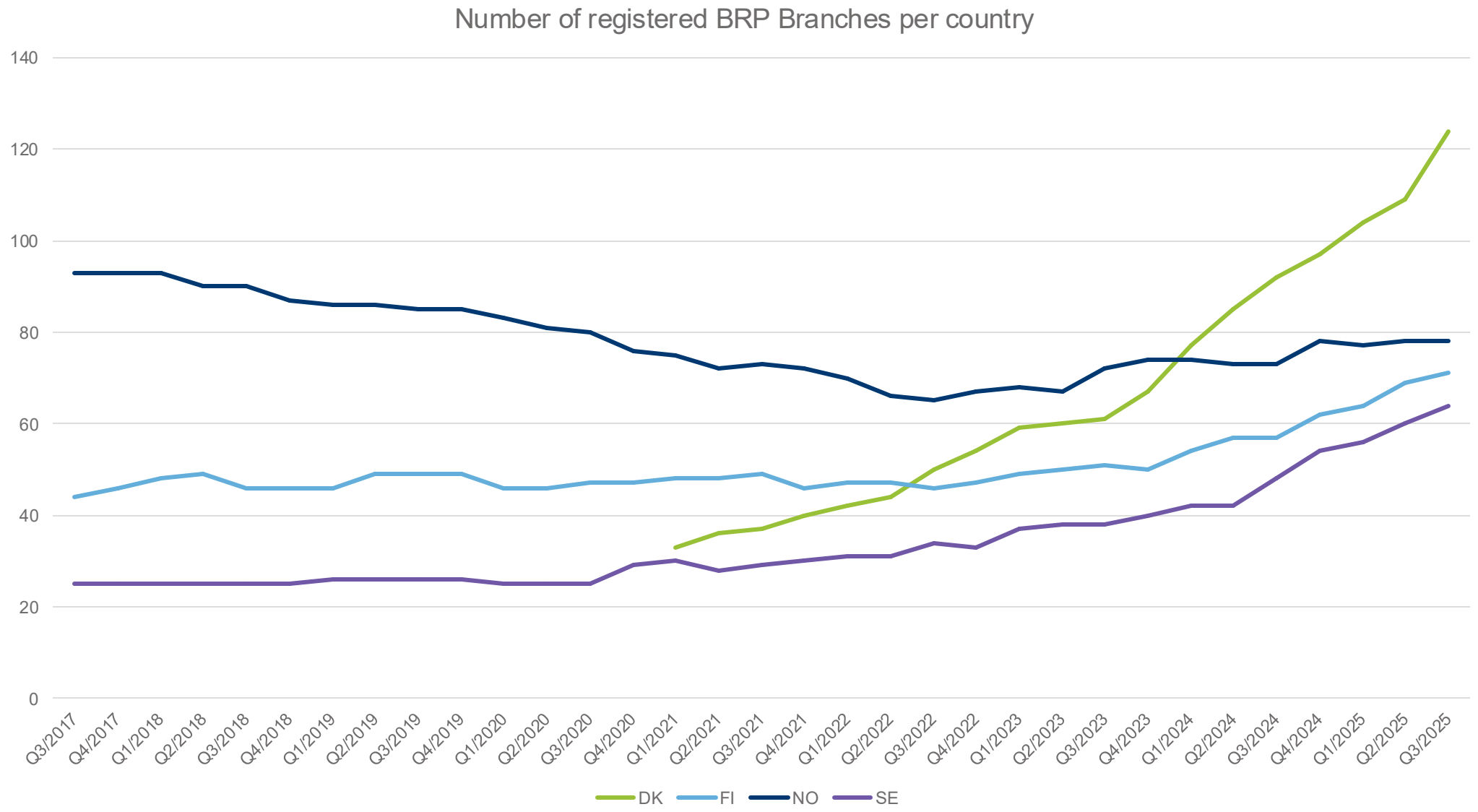


Day-ahead and Intraday volumes in the NBS countries

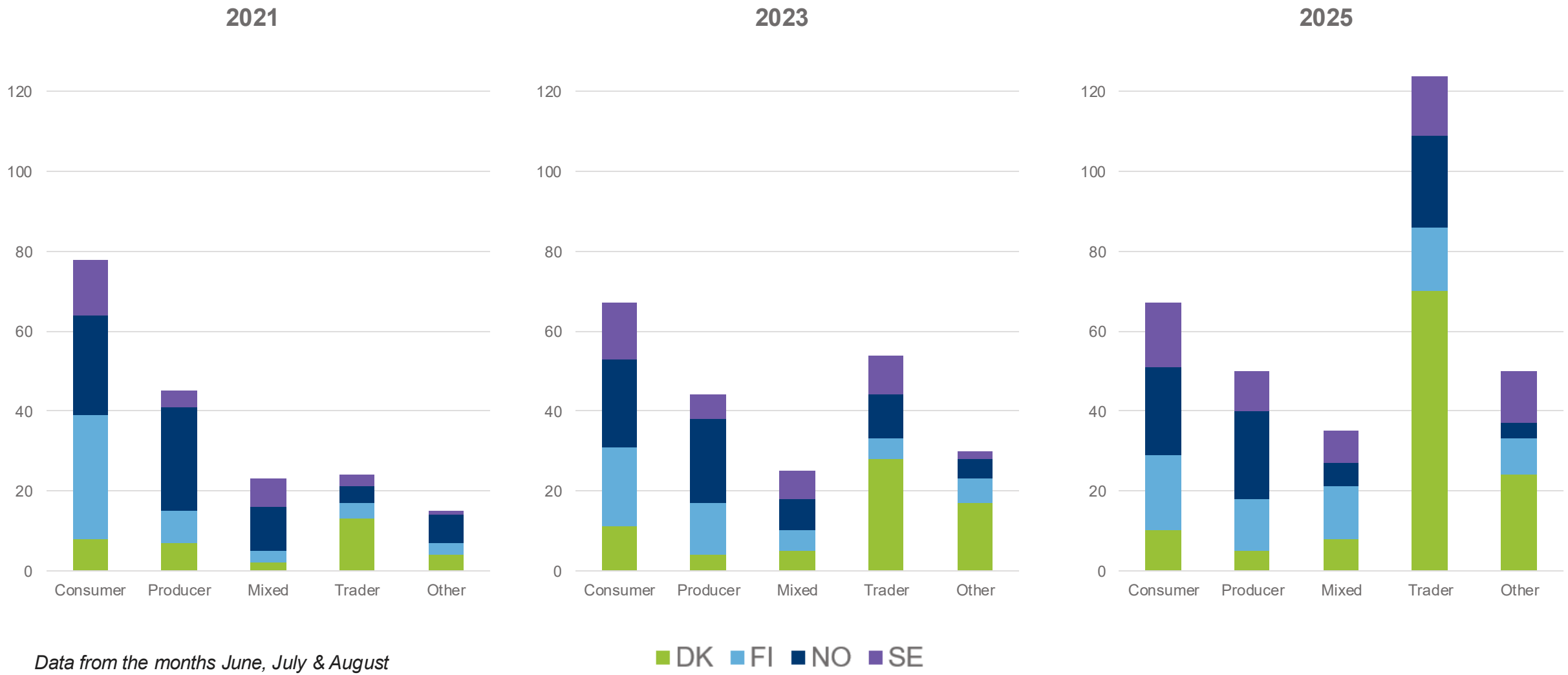


Market Parties

Number of BRPs in eSett



Classification of BRPs



Data from the months June, July & August

Number of BSPs in eSett