



Commissioning Plan

Independent Aggregator

eSett Oy | 12.09.2024 (version 1.0)

Commissioning Plan for Independent Aggregator (BSP)

Purpose of this document is to describe on a high-level how the independent aggregator shall be introduced into the Nordic imbalance settlement model.

The development of the model is ongoing together with Nordic Transmission System Operators (TSOs) and eSett, with a stepwise delivery per country and balancing service.

The first go-live is planned for the aFRR energy market in Finland around March-April 2025.

This document is an initial commissioning plan, and it will be updated based on the updated information on the project and input from the stakeholders. The model will likely change in one or another way as the regulation around independent aggregator finalizes and the national plans will make progress.

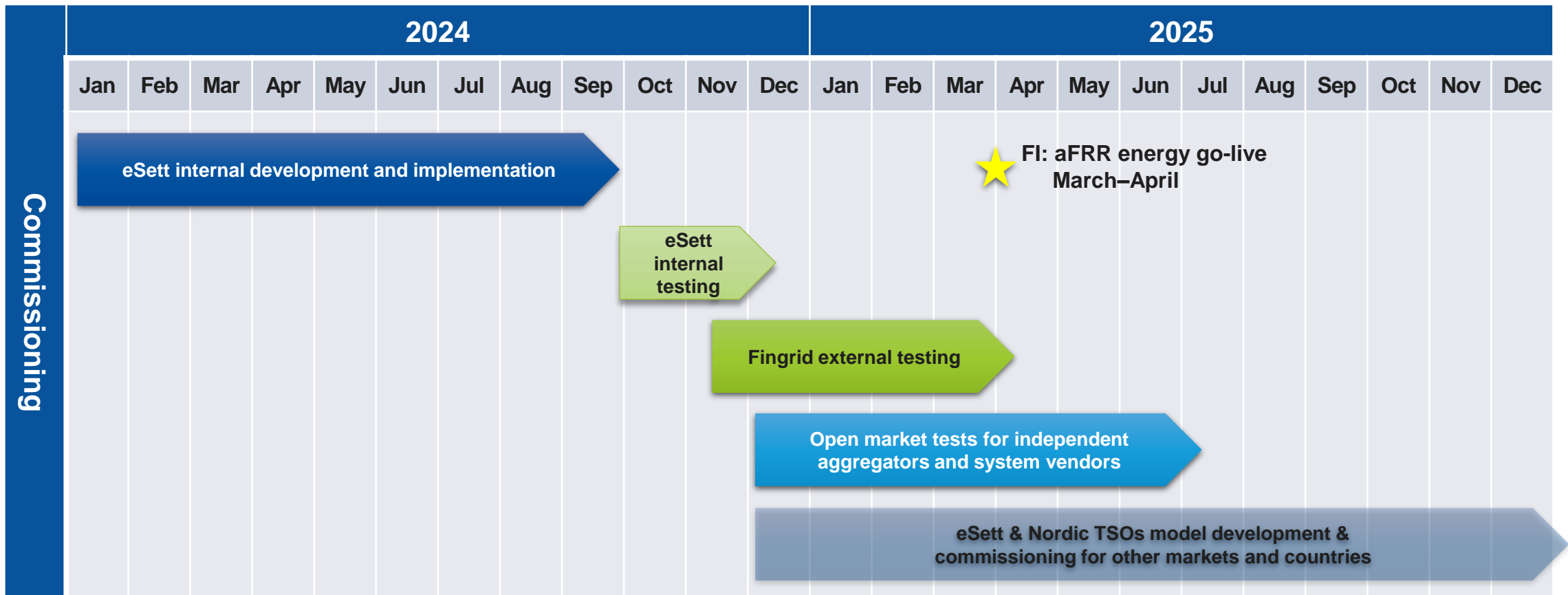
Disclaimer

The presented model is still a draft.

- There are several open questions regarding e.g. compensation and regulation imbalance in many countries.
- There is no applicable regulation in all countries.
- The presented parts will most likely be implemented gradually.
 - Some parts won't be ready and implemented for the first go-live.
- Changes may be introduced during and after the project.



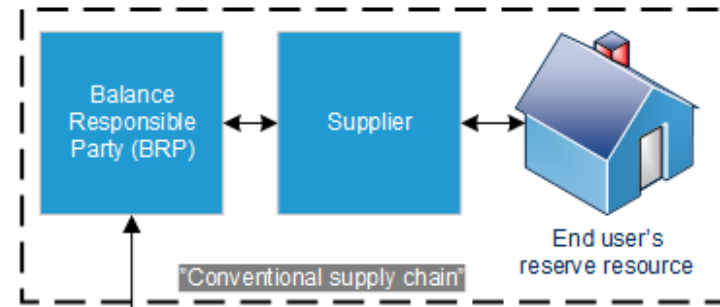
Commissioning Timeline – eSett



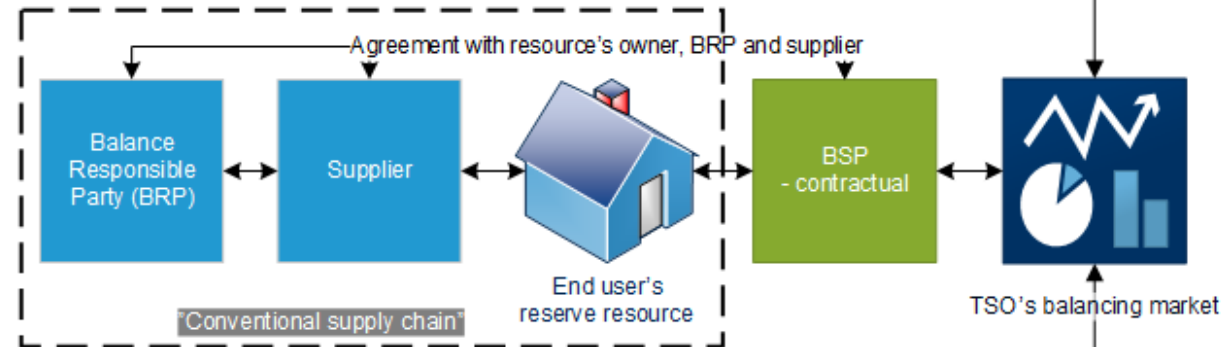
Independent Aggregator

- Independent Aggregator = Balancing Service Provider (BSP) which activates resources from another supplier or BRP (without explicit agreement)
- Delivering balancing services as independent aggregator causes:
 - Payment for balancing services to/from BSP (independent aggregator)
 - Imbalance adjustment for the BRP
 - Compensation between BSP (independent aggregator) and related BRP
 - Possible Regulation Imbalance for the BSP (independent Aggregator)

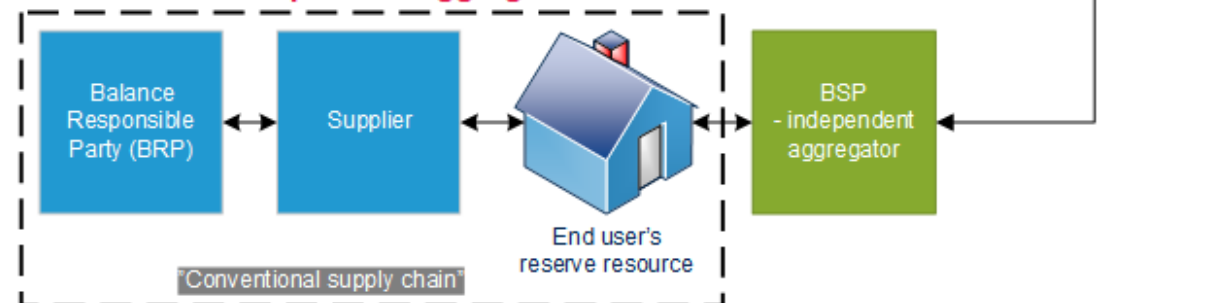
#1 BRP is acting as the BSP



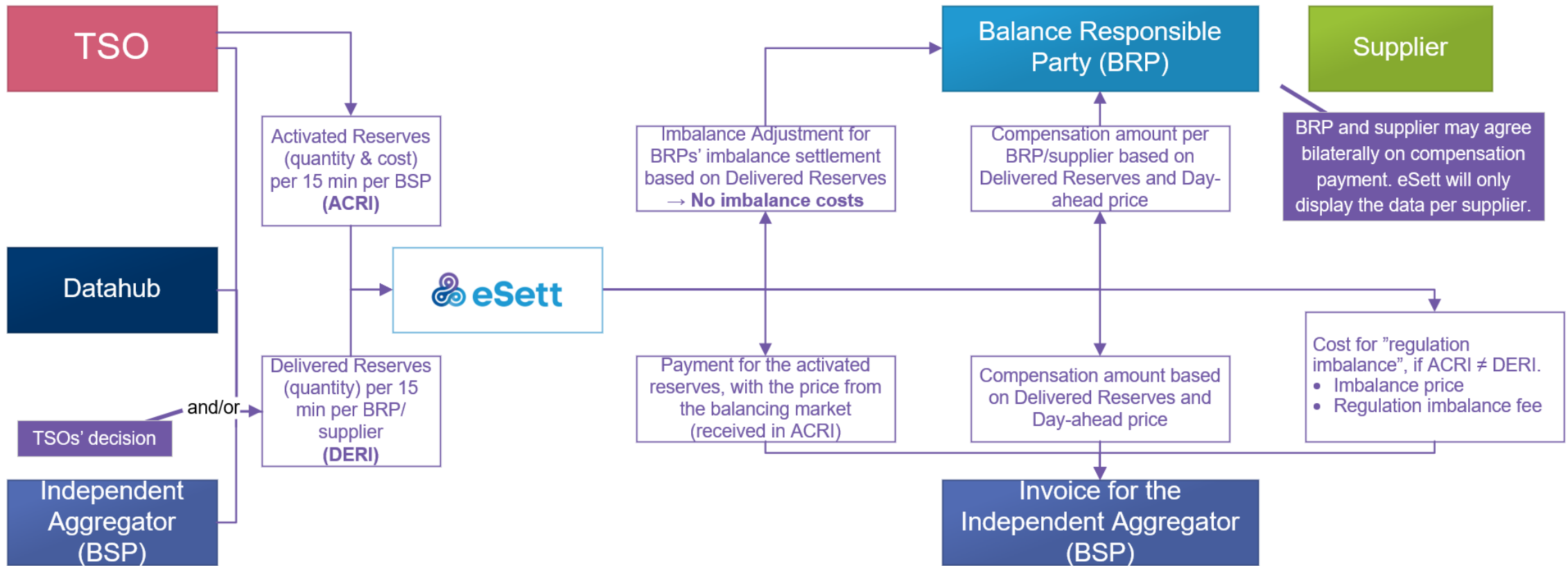
#2 BSP operates based on a contract



#3 BSP is an independent aggregator



Planned process for imbalance adjustment and compensation with independent aggregator model



Changes for market
participants due to
independent aggregator

Settlement Structures

Regulation Object – BRP relation

- Several BRPs may be linked with a Regulation Object (RO) that is used for independent aggregation
- BRPs will see the ROs they have been linked to
 - RO name
 - RO code
 - RO type (Production/Consumption)
 - RO – BSP relation
 - RO – MBA relation
- Similarly as above, there will be RO – RE relation for independent aggregation, and visibility for RE
- Notice! For production plans there can still be only one RO – BRP relation



Input Data

One new input data type: Delivered Reserves

- Very similar to Activated Reserves, but there are only quantities and no amounts (i.e. costs in EUR)
- Independent aggregation data is reported per retailer
- In case of activation of contracted resources, a misdelivery may be reported
 - Relevant only for Finland
 - Applies only if the BRP is responsible for the misdelivery (difference between activation and delivery) of the BSP.
 - BSP allocates a volume of under or over delivered reserves to BRPs responsibility
- Reporting responsibility depends on country, but can be
 - BSP, and/or
 - TSO, and/or
 - Datahub



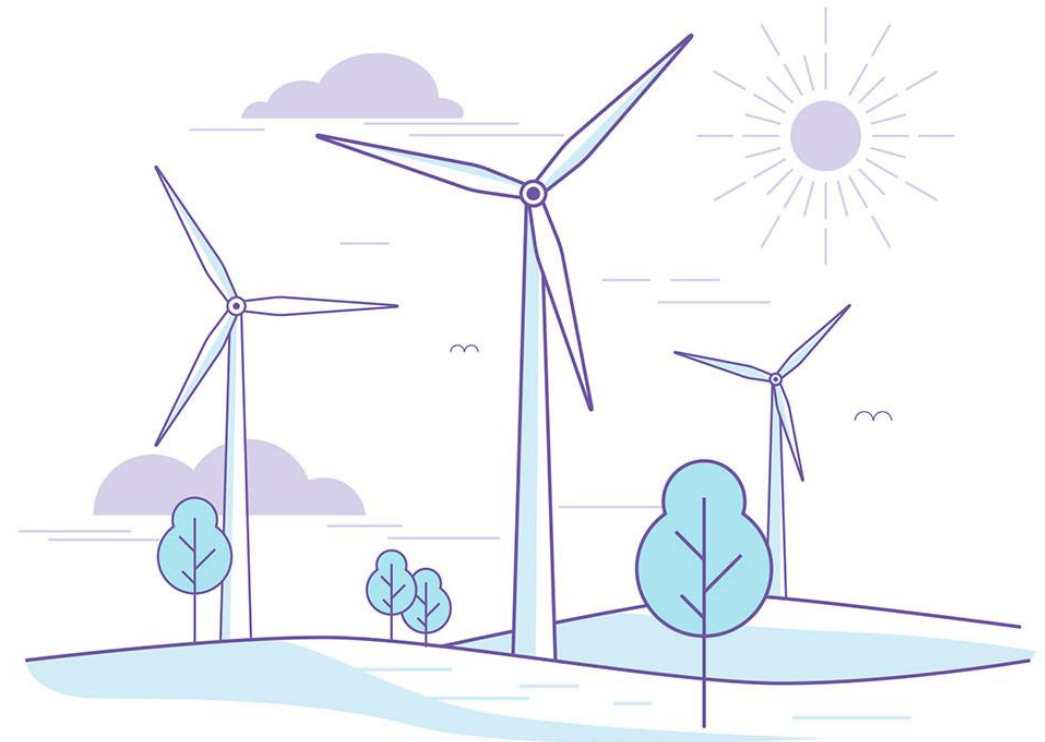
Data Exchange

- New incoming data flow: Delivered Reserves (DERI)
 - Sender may be TSO, Datahub **and/or** BSP
 - Based on the ENTSO-E Activation Market Document
 - CIM format – documentation is published in <https://ediel.org/nordic-balance-settlement-nbs/>
- Multiple new outgoing data flows:
 - DP – Delivered Reserves (for BRP and BSP)
 - DP – Reserve Compensations (for BRP and BSP)
 - DP – Regulation Imbalances (for BRP and BSP)



Imbalance Settlement – New data and calculations

- Activated Reserves
 - Coming from TSO – no changes
 - Aggregations – no changes
- Delivered Reserves
 - As reported in the new data flow DERI
 - Aggregations – similarly as with activated reserves
- Imbalance Adjustments for BRP's settlement
 - Calculation from **Delivered Reserves** if used for the balancing sub-service (e.g. mFRR Balancing Power)
 - Applicable if BSP acts as an independent aggregation or as a contractual BSP aggregating resources from multiple BRPs portfolios
 - No changes in calculation logic
- Compensation → (see next slide)
- Regulation Imbalance → (see next slide)
- Regulation Imbalance Fee
 - Applied for regulation imbalance similarly as BRPs' imbalance fee for imbalances
- Collateral demand for BSP
 - At least initially only for Finland and only regarding activations done as independent aggregator



Calculations with independent aggregation



→ Compensation

- Energy: aggregation of compensated energy (e.g. delivered energy as an independent aggregation)
- Amount:

$$\text{Compensation energy} \times \text{Reference price}$$

→ Regulation imbalance

- Calculated as sum of all balancing sub-services
- Energy:
 - $Qty_{delivered\ reserves} - Qty_{activated\ reserves}$
 - National thresholds may be applied, so minor differences might not end up being regulation imbalance
- Amount:

$$Qty_{regulation\ imbalance} \times \text{Imbalance price}$$

Invoicing and Collaterals

- New products will be included into the weekly invoices
 - Compensation – BRP & BSP invoices
 - Regulation Imbalance – BSP invoices
 - Also, BRP invoices in case of reported misdelivery
 - Regulation Imbalance fee – BSP invoices
- In Finland, a collateral demand will apply for BSPs that operate as independent aggregators
 - In the beginning, there will be a manually set demand
 - In the future, it will follow the collateral formula:

$$\text{Collateral Demand} = 3 \times (S_1 + S_2) + X$$

where

S_1 = Average of the sums of invoiced fees per week for the last three invoiced weeks, including any VAT on these amounts

S_2 = Average of the absolute amounts of the sums of invoiced regulation imbalances in a week for the last three invoiced weeks, including any VAT on these amounts.

X = 40 000 EUR.



Market Behaviour Monitoring

- There are no changes in the public KPIs with Independent Aggregator
- TSOs and eSett will monitor the performance of BSPs
 - E.g. comparisons between Activated and Delivered reserves



Online Service views for verifying reserve data

New views for BRPs, BSPs and REs that compile the activated reserve data and provides drill-downs

Overview of reserve data – example for BRP

Period	Delivered Reserves Up [MWh]	Delivered Reserves Down [MWh]	Compensation Up [MWh]	Compensation Down [MWh]	Compensation Amount Up	Compensation Amount Down
16.05.2024 00:00-01:00					0,00	0,00
16.05.2024 01:00-02:00					0,00	0,00
16.05.2024 02:00-03:00					0,00	0,00
16.05.2024 03:00-04:00					0,00	0,00
16.05.2024 04:00-05:00					0,00	0,00
16.05.2024 05:00-06:00					0,00	0,00
16.05.2024 06:00-07:00					0,00	0,00
16.05.2024 07:00-08:00					0,00	0,00
16.05.2024 08:00-09:00					0,00	0,00
16.05.2024 09:00-10:00					0,00	0,00
16.05.2024 10:00-11:00					0,00	0,00
16.05.2024 11:00-12:00					0,00	0,00
16.05.2024 12:00-13:00					0,00	0,00
16.05.2024 13:00-14:00					0,00	0,00
16.05.2024 14:00-15:00					0,00	0,00
16.05.2024 15:00-16:00					0,00	0,00
16.05.2024 16:00-17:00					0,00	0,00
16.05.2024 17:00-18:00					0,00	0,00
16.05.2024 18:00-19:00					0,00	0,00
16.05.2024 19:00-20:00					0,00	0,00
16.05.2024 20:00-21:00					0,00	0,00
16.05.2024 21:00-22:00					0,00	0,00
16.05.2024 22:00-23:00					0,00	0,00
16.05.2024 23:00-24:00					0,00	0,00
Min	0,000	0,000	0,000	0,000	0,00	0,00
Max	0,000	0,000	0,000	0,000	0,00	0,00
Total	0,000	0,000	0,000	0,000	0,00	0,00

Peak values for filtered time period
Rows count: 24 of 24

Drill-down view of reserve data – example for BRP

Period	Up Regulation				Down Regulation		
	BSP 01	Not authorized *		Not authorized	Not authorized		Not author
	RO A01	Not authorized	Not authorized	Not authorized	Not authorized		Not author
	-	RE 21	RE 22	RE 44	RE 20	RE 21	RE 38
	Contractual Reserves	Independent Aggregation	Independent Aggregation	Independent Aggregation	Independent Aggregation	Independent Aggregation	Independent Aggregation
16.05.2024 00:00-01:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 01:00-02:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 02:00-03:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 03:00-04:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 04:00-05:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 05:00-06:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 06:00-07:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 07:00-08:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 08:00-09:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 09:00-10:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 10:00-11:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 11:00-12:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 12:00-13:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 13:00-14:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 14:00-15:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 15:00-16:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 16:00-17:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 17:00-18:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 18:00-19:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 19:00-20:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 20:00-21:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 21:00-22:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 22:00-23:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
16.05.2024 23:00-24:00	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Min	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Max	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Total	0,000	0,000	0,000	0,000	0,000	0,000	0,000

Responsibilities with the new model

In addition to existing responsibilities, the new independent aggregator model will bring some new responsibilities.

Balancing Service Provider (BSP)

- Managing correct RE/BRP information on regulation objects
- Reporting of delivered reserves (in some cases)
- Verifications of reported data and calculation results

Balance Responsible Party (BRP)

- Verifications of reported data and calculation results
- Handling of compensation payments with own retailers bilaterally (outside of eSett)

Retailer (RE)





- Handling of compensation payments with own BRP bilaterally (outside of eSett)

Transmission System Operator (TSO)

- Reporting of delivered reserves (in some cases)
- Model design and commissioning time schedules



National differences

	Denmark 	Finland 	Norway 	Sweden 
Structures		<ul style="list-style-type: none"> BRP/RE not authorized to see BSP or RO information on independent aggregations. 		
Input data		<ul style="list-style-type: none"> Misdelivered reserves 		
Data exchange	<ul style="list-style-type: none"> DERI reported by DataHub 	<ul style="list-style-type: none"> DERI reported by BSP or Fingrid (depending on type) Misdelivered reserves in DERI 	<ul style="list-style-type: none"> No decision on DERI sender(s) 	<ul style="list-style-type: none"> No decision on DERI sender(s)
Calculations	<ul style="list-style-type: none"> Compensation calculation for mFRR: the price difference between ramping ISP and “main ISP” will be invoiced from EN instead of it being part of BSPs compensation. 		<ul style="list-style-type: none"> Possibly compensation for all reserves, not only for independent aggregation 	
Invoicing		<ul style="list-style-type: none"> Regulation imbalance Regulation imbalance fee 		
Collaterals		<ul style="list-style-type: none"> Collateral formula for BSPs with independent aggregation 		
Online Service		<ul style="list-style-type: none"> Visibility: see <i>Structures</i> 		
Other			<ul style="list-style-type: none"> No regulation in place yet Model is subject to change 	<ul style="list-style-type: none"> Model is subject to change

Change Log

Date	Version	Change Log
12.09.2024	1.0	Initial version



WE SETTLE, TOGETHER!

