Commissioning Plan

Independent Aggregator

eSett Oy ǀ 27.05.2025 (version 1.2)

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 will be for the aFRR energy market in Finland.

This document 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 applies mainly for the Finnish aFRR energy market. Changes to the model may arise as this is implemented in other countries and products.

- 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
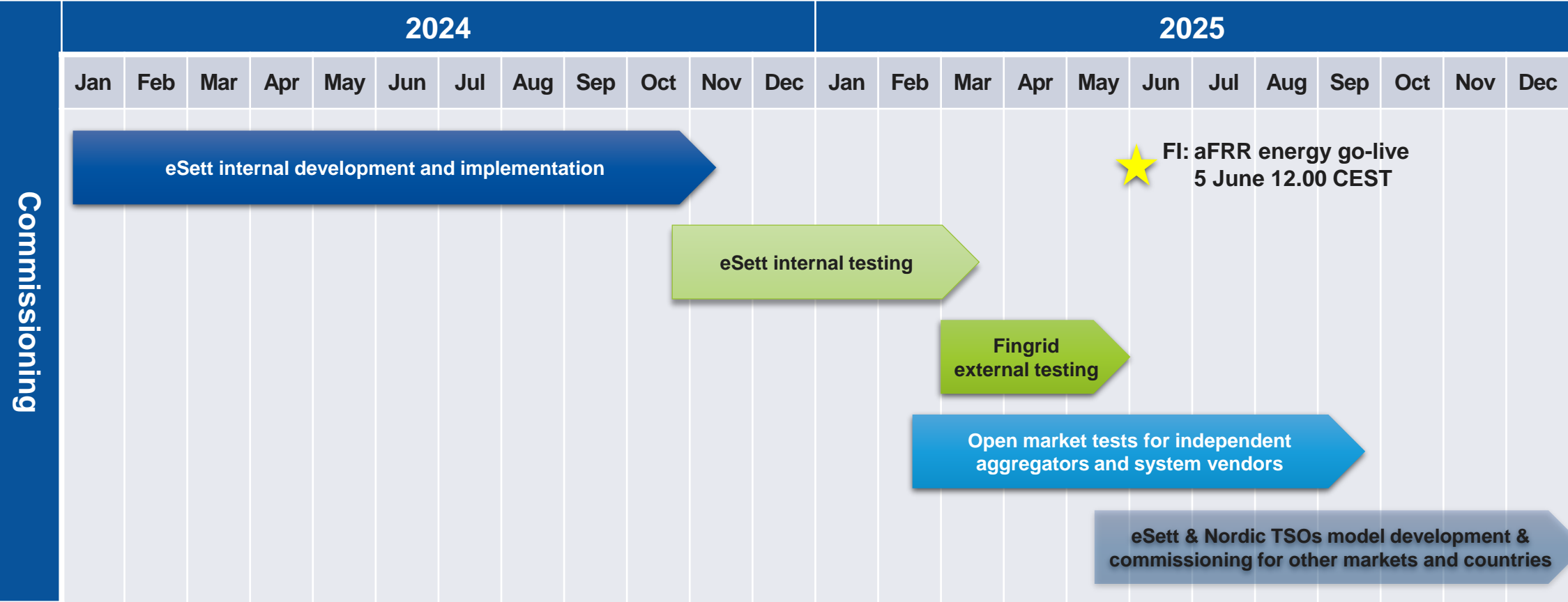
Independent Aggregator

- 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
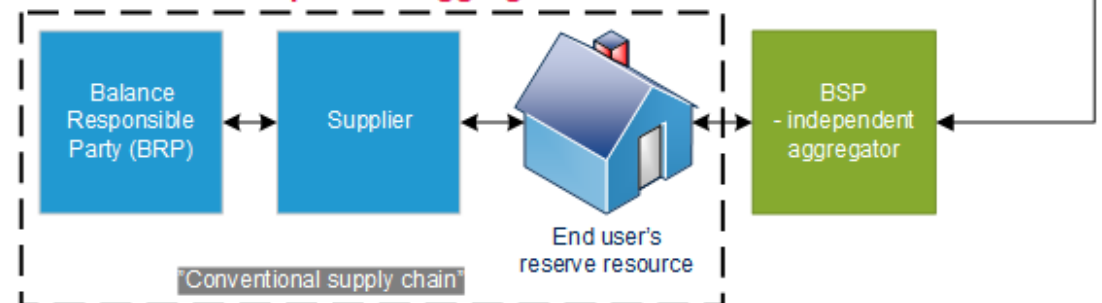 - Possible Regulation Imbalance for the BSP (independent Aggregator)
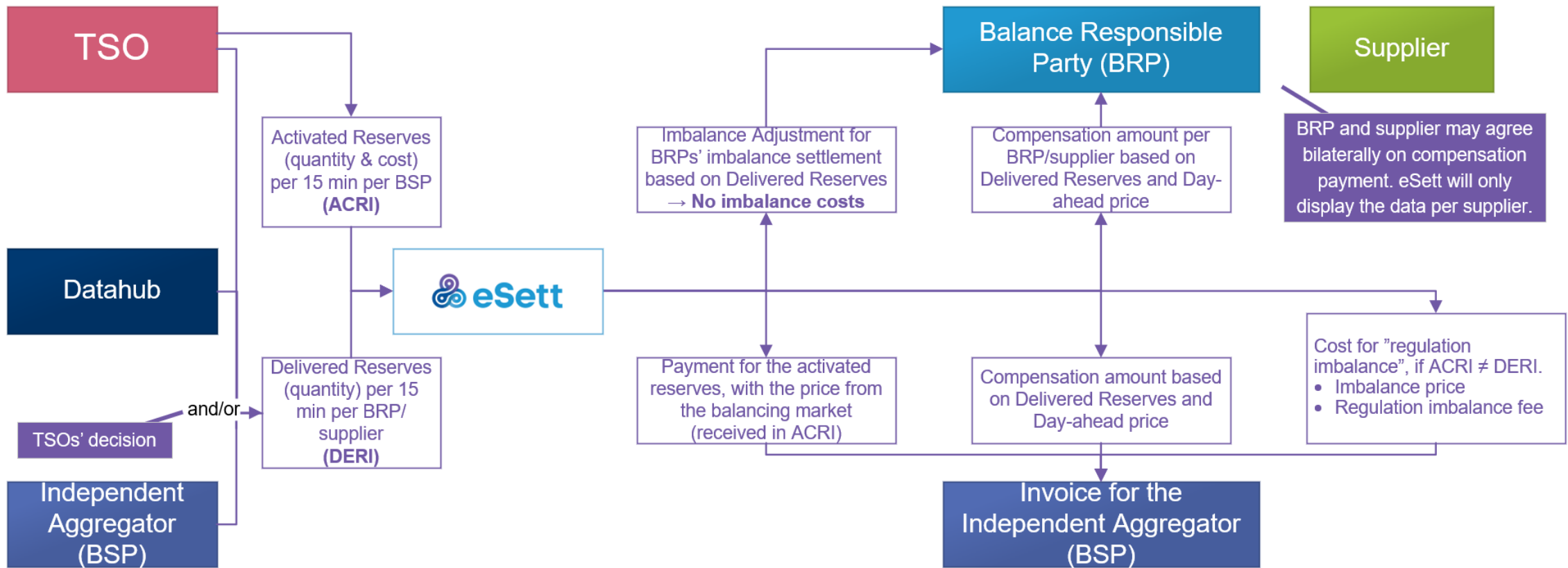

#1 BRP is acting as the BSP
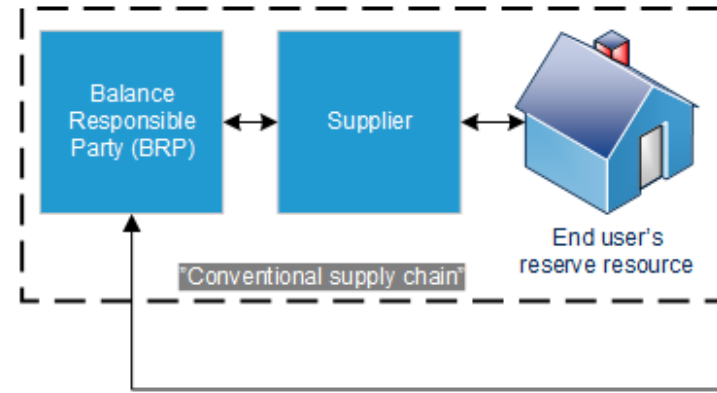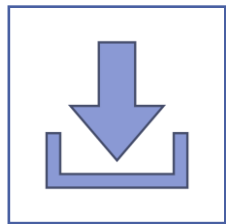
#2 BSP operates based on a contract
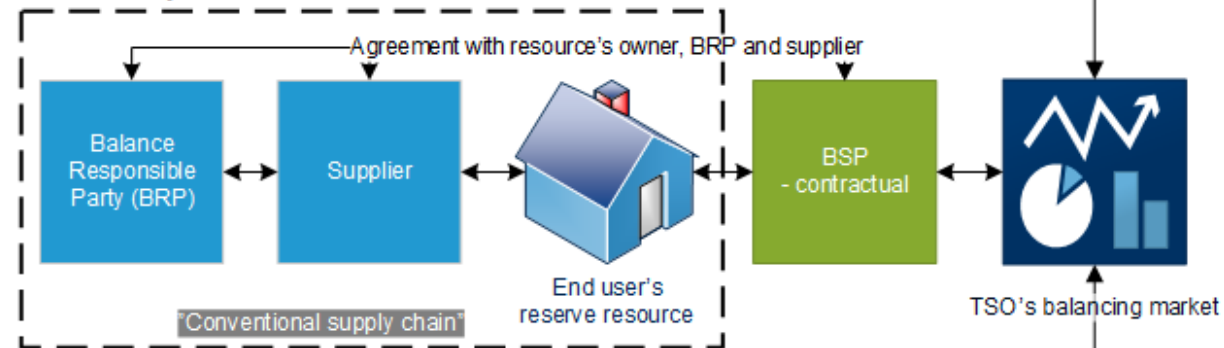
#3 BSP is an independent aggregator

Planned process for imbalance adjustment and compensation with independent aggregator model

TSO

Datahub

Independent Aggregator (BSP)

TSOs' decision

and/or

Activated Reserves (quantity & cost) per 15 min per BSP **(ACRI)**

Delivered Reserves (quantity) per 15 min per BRP/ supplier **(DERI)**

eSett

Imbalance Adjustment for BRPs' imbalance settlement based on Delivered Reserves → **No imbalance costs**

Payment for the activated reserves, with the price from the balancing market (received in ACRI)

Balance Responsible Party (BRP)

Compensation amount per BRP/supplier based on Delivered Reserves and Day-ahead price

Compensation amount based on Delivered Reserves and Day-ahead price

Invoice for the Independent Aggregator (BSP)

Supplier

BRP and supplier may agree bilaterally on compensation payment. eSett will only display the data per supplier.

Cost for "regulation imbalance", if ACRI ≠ DERI.
- Imbalance price
- Regulation imbalance fee

Summary of major changes

Inputs

- Delivered reserves
  - DERI data flow
  - Quantity up & down
  - Misdelivery quantity up & down
- Activated Reserves per RO-**BRP**
  → Activated Reserves per RO-**BSP**

Outputs

- Imbalance adjustment
  - From: *ACR + DER + Misdelivery*
- Compensation for BRP
- Compensation for BSP
- Regulation imbalance
- Collateral demand for independent aggregator (BSP)
- New and changing data packages

Invoicing

- Payment for reserves for BSP
  - No changes
- Compensation for BRP
- Compensation for BSP
- Regulation Imbalance for BSP
- Regulation imbalance fee for BSP

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

- The relations can be seen in Delivered Reserve views

  - Note! BRPs and REs are not authorized to see the BSP nor RO information in Finland.

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 balance responsibility

- Reporting responsibility depends on country, but can be
  - BSP, and/or
  - TSO, and/or
  - Datahub

Input: 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*
  - Causes also changes to the Activated Reserve data packages for BSP

- Who reports – depends on the activation method and the country

- Reporting tables and scenarios on the next table
  - What is indicated to eSett – subject to change

- Reported with DERI messages per BSP

- BRP and RE delivered reserves are own timeseries
  - BRP is per MBA
  - RE is per MGA → BRP can be derived

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**)

Input: Misdelivered Quantity

- 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, <u>where the BRP is responsible</u>
  - 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 ($\rightarrow$ change in imbalance) for the BRP

- **Case is valid only for the contractual BSPs in Finland**

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)

DERI – Delivered Reserves

- *Sender*: TSO, DSO (i.e. datahub) or BSP
  - *Subject Party*: When TSO or Datahub sends, BSP is in the header
- *Related Party*: BRP or RE of the delivered resource
- *Business Type*: High-level category, e.g. *mFRR*
- *Connecting Area*: MBA or MGA
  - MGA if reported per RE
  - MBA if reported per BRP
- *Direction*: Up (A01) / Down (A02)
- *Reserve Object Status*: Delivered or misdelivery
  - Activated (A07): Delivered reserves quantity (+)
  - Delta (A73): Misdelivered quantity (+/-)
- *Reserve Object*: RO code
- *Reason Code [1st]*: Exact balancing sub-service
- *Reason Code [2nd]*: Own resources (Z84), contractual (Z85) or independent aggregation (Z86)

Header - occurs once per message file

CIM Activation_MarketDocument	Attribute type	CI.	Content	Descriptions and comments
Reserve Activation Result Document		[1]		
Document Identification (mRID)	ID_String	[1]	Document ID	Unique identification of the document
Document Version	ESMPVersion_String	[1]	Version number	Running number incrementing by 1 for each update
Document Type	MessageKind_String	[1]	A83	A83 Activated balancing quantities
Process Type	ProcessKind_String	[1]	A16	A16 Realised
Sender Identification	PartyID_String	[1]	Party ID	Unique identification of the market party, sending the document
Sender role	MarketRoleKind_String	[1]	A04 A09 A46	A04 System Operator / A05 Imbalance Settlement Responsible / A09 Metered Data Aggregator / A46 Balancing Service Provider (BSP)
Receiver Identification	PartyID_String	[1]	44X-00000000004B	Unique identification of the Imbalance Settlement Responsible, receiving the schedule
Receiver role	MarketRoleKind_String	[1]	A05	A05 Imbalance Settlement Responsible / A46 Balancing Service Provider (BSP)
Creation Date Time	ESMP_DateTime	[1]	Creation date/time	The date and time that the document was prepared for transmission by the application of the sender.
Reserve Bid Time Interval	ESMP_DateTimeInterval	[1]	Start and end date of the time series	The beginning and ending date and time of the period covered by the document.
Domain	AreaID_String	[1]	Nordic Market Area ID 10Y1001A1001A91G	identification of the area covered by the document, i.e. 10Y1001A1001A91G (Nordic market area)
Subject Party Identification	PartyID_String	[0..1]	Party ID	Unique identification of the subject market party / Used when sender is not BSP (A46)
Subject Party Role	MarketRoleKind_String	[0..1]	A46	A46 Balancing Service Provider (BSP) / Used when sender is not BSP (A46)

Timeseries - several repetitions per message file

Time Series	TimeSeries	[0..*]		
Time Series Identification (mRID)	ID_String	[1]	Time series ID	Unique identification of the Time Series (unique over time for the sender in question)
Resource Provider Party Identification	PartyID_String	[1]	BSP ID	Unique identification of the party providing the resources (i.e. BSP)
Related Party Identification	PartyID_String	[0..1]	RE/BRP ID	Unique identification of the party whose resource is activated
Related Party Role	MarketRoleKind_String	[0..1]	A08 A12	A08 Balance Responsible Party / A12 Energy Supplier (retailer)
Business Type	BusinessKind_String	[1]	Business Type	A95 Frequency containment reserve / A96 Automatic frequency restoration reserve / A97 Manual frequency restoration reserve / C26 Frequency Containment Reserve-Normal (FCR-N) / C27 Frequency Containment Reserve-Disturbance (FCR-D) / Z85 Fast frequency reserve
Acquiring Area	AreaID_String	[1]	BZ ID	Unique identification of the Bidding Zone (BZ) where the energy is purchased. This will be the same BZ as the Connecting Area, except for supportive power (incl. transit) where the resource is connected in another BZ.
Connecting Area	AreaID_String	[1]	BZ or MGA ID	Unique identification of the Bidding Zone (BZ) or Metering Grid Area (MGA) where the resource is connected.
Measure Unit Quantity	MeasurementUnitKind_String	[1]	Measure Unit	KWH kWh (kilowatt hour) / MWH MWh (megawatt hour)
Direction	DirectionKind_String	[1]	A01 A02	A01 Up / A02 Down
Reserve Object Status	Status_String	[1]	A07 A73	A07 Activated / A73 Delta (used for reporting misdelivered quantity, where correction applies to a BRP instead of the BSP) / *Note:* / *Reserve Object Status "A73 Delta" uses signed values, i.e. will be negative in case of an 'underdelivery' and positive in case of an 'overdelivery'.*
Reserve Object	ResourceID_String	[1]	RO ID	See dependency matrix below / Mandatory for NBS

Period (Reserve Activation Time Series Level)	Series_Period	[1..*]		
Time Interval	ESMP_DateTimeInterval	[1]	Start and end date time	The start and end date and time of the time interval of the period in question.
Resolution	Duration	[1]	Resolution	In NBS hourly or quarterly resolution is used, i.e., PT1H, PT60M or PT15M.
Point	Point	[1..*]		
Position	Position_Integer	[1]	Position	Position
Quantity	Decimal	[1]	Quantity	Quantity / The resolution is maximum in Watt, i.e., max 3 decimals for kWh and max 6 decimals for MWh
Reason Code	ReasonCode_String	[0..*]	Reason Code	Reason code / Not used in NBS on this level

Reason (Reserve Activation Time Series Level)		[1..*]		**1st repetition**
Reason Code	ReasonCode_String	[1]	Reason Code	Z29 FCR (Frequency Containment Reserve) / Z30 aFRR (Frequency Restoration Reserve - Automatic) / Z31 mFRR, Balancing Power (Frequency Restoration Reserve - Manual activated reserves, Balancing Power) / Z34 mFRR, Quarter regulation (Frequency Restoration Reserve - Manual activated reserves, Quarter regulation) / Z35 mFRR, Special Regulation (Frequency Restoration Reserve - Manual activated reserves, Special Regulation) / Z36 Hour Change Regulation / Z37 Power Transaction / Z38 TSO Internal Countertrades / Z39 Day Ahead Production Adjustment / Z40 Frequency Containment Reserve, Normal operation (FCR-N). / Z41 Frequency Containment Reserve, Disturbance (FCR-D). / Z56 Fast Frequency Reserve (FFR) / Z63 Period shift activation / Z77 aFRR AOF activation / Z78 aFRR non-AOF activation

Reason (Reserve Activation Time Series Level)		[1..*]		**2nd repetition**
Reason Code	ReasonCode_String	[1]	Reason Code	Z84 Activation of own resources as BRP/RE / Z85 Activation of contracted resources (as contractual BSP) / Z86 Independent aggregation

Activated Reserves DP for BSPs

```xml
<?xml version="1.0" encoding="utf-8"?>
<ReserveAllocationResultDocument
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:ediel:org:neg:errp:reserveallocationresultdocument:1:0">
    <DocumentIdentification v="ACR12345ABCDE"/>
    <DocumentVersion v="1"/>
    <DocumentType v="A38"/>
    <ProcessType v="A29"/>
    <SenderIdentification v="6420616416660" codingScheme="A10"/>
    <SenderRole v="A04"/>
    <ReceiverIdentification v="44X-00000000004B" codingScheme="A01"/>
    <ReceiverRole v="A05"/>
    <CreationDateTime v="2025-01-28T05:15:55Z"/>
    <ReserveBidTimeInterval v="2025-01-19T22:00Z/2025-01-26T22:00Z"/>
    <Domain v="10Y1001A1001A91G" codingScheme="A01"/>
    <AllocationTimeSeries>
        <TimeSeriesIdentification v="ACR12345ABCDE1"/>
        <TenderingParty v="6420123456789" codingScheme="A10"/>
        <BusinessType v="A12"/>
        <AcquiringArea v="10YFI-1--------U" codingScheme="A01"/>
        <ConnectingArea v="10YFI-1--------U" codingScheme="A01"/>
        <MeasureUnitQuantity v="MWH"/>
        <Currency v="EUR"/>
        <ReserveObject v="ROTHP1234" codingScheme="NFI"/>
        <Direction v="A02"/>
        <Period>
            <TimeInterval v="2025-01-19T22:00Z/2025-01-26T22:00Z"/>
            <Resolution v="PT15M"/>
            <Interval>
                <Pos v="1"/>
                <Qty v="0.00"/>
                <SettlementAmount v="0.00"/>
            </Interval>
            ...
```

- With Independent Aggregators, TSO no longer knows which BRP(s) are involved with the activation
  - Independent Aggregator may use 1..n BRPs' assets in the activation and has no obligation to list them for the TSO

- "TenderingParty" in the Activated Reserve data package file doesn't have "TenderingPartyRole" attribute that could tell us if the timeseries refers to BRP or BSP

- Starting from the delivery days and BSS for which independent aggregator is allowed, "TenderingParty" in the file shall refer to BSP code instead of BRP code
  - So, if independent aggregation would be allowed in Finland for aFRR products from delivery day **D**, the data for D and following delivery days will refer to BSP and not BRP for aFRR products.

- BRP will not receive this information

Changes in Outgoing Data Exchange

Existing but is affected

Format	Data	Channel	Dataflow name	To party	Detailed contents	Note
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Primary Frequency Containment Reserves (FCR)	**BSP**	Energy and cost up/down for BSP per (BRP,) MBA, RO and Balancing Sub-Service	Tendering Party: BRP if DERI is **not** allowed for BSS and country combination
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Secondary Frequency Restoration Reserves (FRR)	**BSP**	Energy and cost up/down for BSP per (BRP,) MBA, RO and Balancing Sub-Service	Tendering Party: BRP if DERI is **not** allowed for BSS and country combination
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Tertiary Replacement Reserves (RR)	**BSP**	Energy and cost up/down for BSP per (BRP,) MBA, RO and Balancing Sub-Service	Tendering Party: BRP if DERI is **not** allowed for BSS and country combination
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Primary Frequency Containment Reserves (FCR)	**BRP**	Energy up/down for BRP per MBA, RO and Balancing Sub-Service	Only BSS products for which DERI is **not** allowed in the country.
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Secondary Frequency Restoration Reserves (FRR)	**BRP**	Energy up/down for BRP per MBA, RO and Balancing Sub-Service	Only BSS products for which DERI is **not** allowed in the country.
ENTSO-E ReserveAllocationResultDocument	Activated Reserves	Data Package	Tertiary Replacement Reserves (RR)	**BRP**	Energy up/down for BRP per MBA, RO and Balancing Sub-Service	Only BSS products for which DERI is **not** allowed in the country.
CIM Activation_MarketDocument	Delivered Reserves	Data Package	Delivered Reserves	**BSP**	Energy up/down for BSP per MBA/MGA, market party, RO and Balancing Sub-Service	Copy of DERI contents, including "delta" if it was reported
CIM Activation_MarketDocument	Delivered Reserves	Data Package	Delivered Reserves	**BRP**	Energy up/down for BRP per MBA/MGA, market party, RO and Balancing Sub-Service	Including "delta" if it was reported, data for BRP itself and for REs under the BRP
NEG ESP Energy Account Report Document (EAR)	Compensation	Data Package	Reserve Compensations	**BSP**	Energy and amount for BSP per ISP, party (RE), area (MGA) and type (Balancing Service)	
NEG ESP Energy Account Report Document (EAR)	Compensation	Data Package	Reserve Compensations	**BRP**	Energy and amount for BRP per ISP, party (RE), area (MGA) and type (Balancing Service)	
NEG ESP Energy Account Report Document (EAR)	Regulation Imbalance	Data Package	Regulation Imbalances	**BSP**	BSP's Regulation Imbalance energy and cost per MBA	
NEG ESP Energy Account Report Document (EAR)	Regulation Imbalance	Data Package	Regulation Imbalances	**BRP**	BRP's Regulation Imbalance energy and cost per BSP and MBA	

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

- Compensation

- Regulation Imbalance

- 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
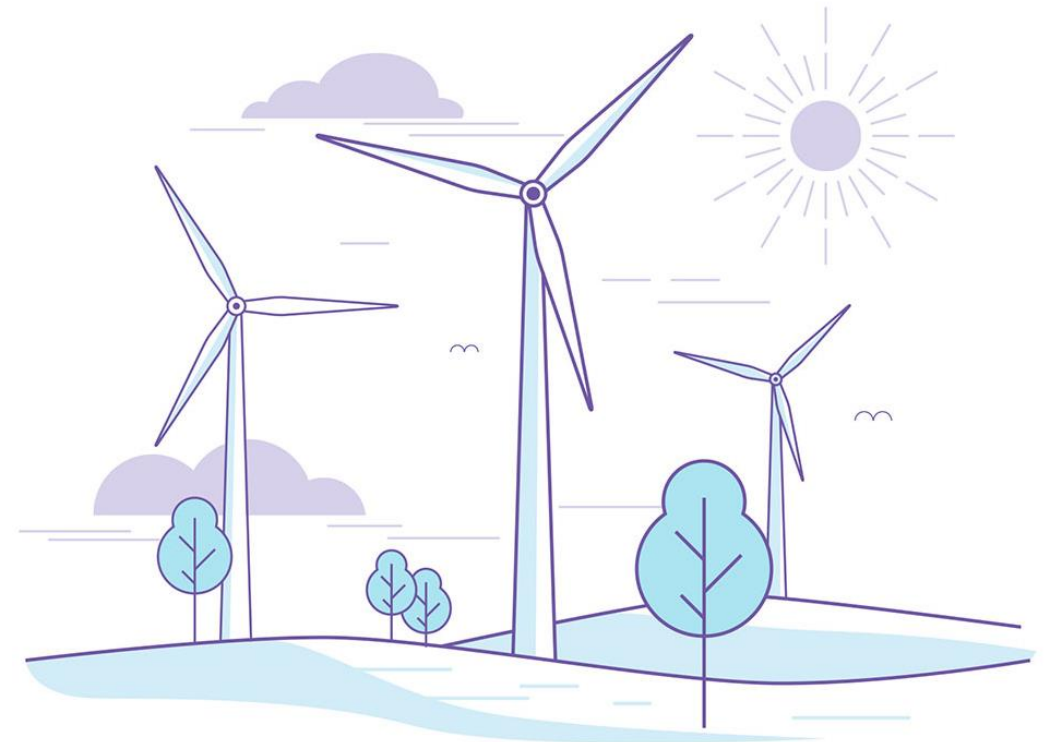
Output Data: Imbalance Adjustment

- Imbalance Adjustment = correction of BRP's imbalances due to activation of reserves

- Imbalance adjustment is no more only the aggregation of Activated Reserves (BRP)

- Delivered Reserves will replace the activated reserves for products where they are used
  - So, Imbalance Adjustment is aggregation of Delivered Reserves (where applied for the product) and Activated Reserves (where Delivered Reserves are not applied for the product)

- Special case is the misdelivery where too much or too little reserves were delivered
  - Only for **contractual** reserves with **multiple BRPs** in **Finland**
  - BSP allocates the "imbalance" to BRP via imbalance adjustment
  - BRP doesn't have "regulation imbalance" like BSP – the "BRP imbalance" is adjusted with the imbalance adjustment

Up Quantity:

$$-1 \times \left(Up_{BRP\ ACR\ qty} + Up_{Activation\ DER\ qty} \right) + Up_{Misdelivered\ DER\ qty}$$

Down Quantity:

$$\left(Down_{BRP\ ACR\ qty} + Down_{Activation\ DER\ qty} \right) - Down_{Misdelivered\ DER\ qty}$$

Compensation

- Compensation is a money flow between BRP and BSP

- Paid due to an increase or decrease of RE's consumption/production, which causes financial income or loss

- Applicable only for reserves caused by independent aggregation
  - Except in Norway, the plan is to apply this for every reserve

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.

Wholesale market (e.g. day-ahead)

TSO

1) Retailer forecasts a consumption of 10 MWh

2) Retailer buys 10 MWh

> End user and BSP have bilaterally agreed about the usage and payments

5) Payment to BSP based on the activation (3 MWh)

End user (consumer)

4) Retailer gets paid for a sell of 7 MWh instead of 10 MWh

3) Up regulation: BSP adjusts the end user's consumption down 3 MWh (10 → 7 MWh)

Retailer

BSP (independent aggregator)

8) BRP and RE agree on the compensation payment bilaterally. eSett provides data about compensation per RE.

7) Compensation is handled in eSett's BRP & BSP invoicing

6) Compensation from BSP for the lost income of not selling the 3 MWh

BRP

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.

Wholesale market (e.g. day-ahead)

1) Retailer forecasts a consumption of 10 MWh

2) Retailer buys 10 MWh

4) Retailer gets paid for a sell of 13 MWh instead of 10 MWh

Retailer

End user (consumer)

➤ End user and BSP have bilaterally agreed about the usage and payments

3) Up regulation: BSP adjusts the end user's consumption up 3 MWh (10 → 13 MWh)

TSO

5) Payment to TSO based on the activation (3 MWh)

BSP (independent aggregator)

8) BRP and RE agree on the compensation payment bilaterally. eSett provides data about compensation per RE.

BRP

7) Compensation is handled in eSett's BRP & BSP invoicing

6) Compensation from BRP for the income of selling the extra 3 MWh

Output: Regulation Imbalance

- Difference in the quantity between
  - TSO's activation (ACRI)
  - BSP's delivery (DERI)
- Should occur only for independent aggregation
  - BRP/BSP own resources: *same value reported*
  - Contractual: *usage of misdelivery*
- 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

*Imbalance price = 100 €/MWh

	Activated Reserves	Delivered Reserves	Regulation Imbalance	Regulation Imbalance
	Quantity [MWh]	Quantity [MWh]	Quantity [MWh]	Amount* [€]
00:00–00:15	1,000	1,000	0,000	0,00
00:15–00:30	1,500	1,600	0,100	-10,00
00:30–00:45	0,860	0,800	-0,060	6,00
00:45–01:00	0,433	0,400	-0,033	3,30

In the example:
Negative amount = credit to BSP
Positive amount = debit to BSP

Regulation Imbalance Fee is applied in any case:

0,193 MWh × 1,15 €/MWh ≈ 0,22 €

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:

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

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.

New Invoicing Products

BRP

- BRP Bought Compensation
  - per Balancing Sub-Service
  - per type Production/Consumption
  - ➤ *E.g BRP Bought FRR-A Compensation, Production Imbalance*

- BRP Sold Compensation
  - per Balancing Sub-Service
  - per type Production/Consumption
  - ➤ *E.g. BRP Sold FRR-A Compensation, Consumption Imbalance*

BSP (and BRP if there is a combined invoice)

- BSP Bought Compensation
  - per Balancing Sub-Service
  - per type Production/Consumption
  - ➤ *E.g. BRP Bought FRR-A Compensation, Production Imbalance*

- BSP Sold Compensation
  - per Balancing Sub-Service
  - per type Production/Consumption
  - ➤ *E.g. BRP Sold FRR-A Compensation, Consumption Imbalance*

- BSP Bought Regulation Imbalance
  - Sum for all BSS

- BSP Sold Regulation Imbalance
  - Sum for all BSS

- BSP Regulation Imbalance Fee

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

Drill-down view of reserve data – example for BRP

*In Finland, BRP/RE is not authorized to see BSP or RO information regarding the independent aggregation

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 if there is independent aggregation included or BSP has contracts with multiple BRPs
- 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		• BRP/RE not authorized to see BSP or RO information on independent aggregations.		
Input data		• Misdelivered reserves		
Data exchange	• DERI reported by DataHub	• DERI reported by BSP or Fingrid (depending on type) • Misdelivered reserves in DERI	• No decision on DERI sender(s)	• No decision on DERI sender(s)
Calculations	• 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.		• Possibly compensation for all reserves, not only for independent aggregation	
Invoicing		• Regulation imbalance • Regulation imbalance fee		
Collaterals		• Collateral formula for BSPs with independent aggregation		
Online Service		• Visibility: see *Structures*		
Other			• No regulation in place yet • Model is subject to change	• Model is subject to change

Change Log

Date	Version	Change Log
12.09.2024	1.0	Initial version
28.3.2025	1.1	Updated timeline (slide 4) Summary of major changes (slide 7, new) Minor clarifications to settlement structures (slide 9) Input data clarified for delivered reserves and misdelivered quantity (slides 11-12, new) Data exchange clarified (slides 14-16, new) Output data (calculations) clarified (slides 18-22, new)
27.5.2025	1.2	Updated timeline (slide 4) Clarifications regarding cases in Finland where BSP has contract(s) with BRP(s) (slides 11-12, 18 & 27)

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