

# Commissioning Plan

15 min Imbalance Settlement Period

eSett Oy | 01.11.2021 (version 1.0)



# Commissioning Plan for 15 min Imbalance Settlement Period (ISP)

Purpose of this document is to describe on a high-level how the introduction of the 15 min ISP affects

- imbalance settlement
- the market participants' operations and
- eSett's interfaces

This document describes what will change when the 15 min ISP will be taken into use:

- starting points for 15 min ISP go-live
- the visible technical changes in the communication between market participants and eSett
- the changes on Online Service user interface
- the transition period from hourly to 15 min ISP

This document is an initial commissioning plan, and it will be updated based on the updated information on the project and input from the market participants.

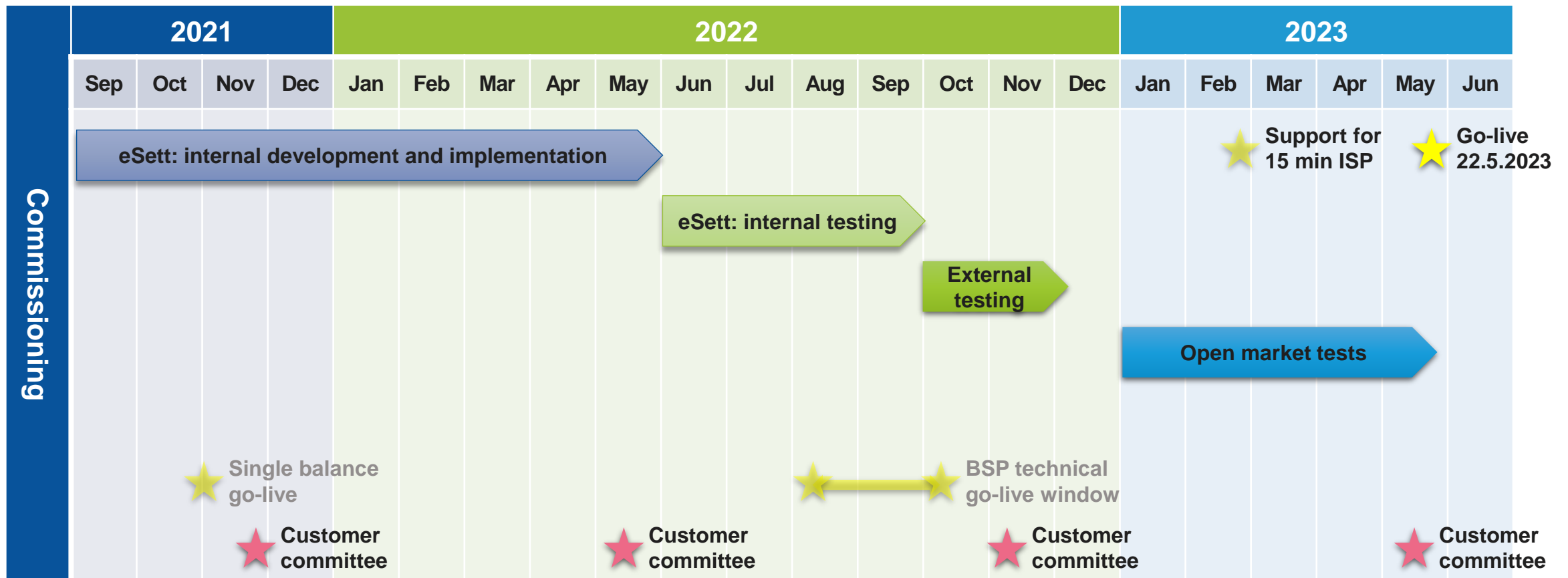
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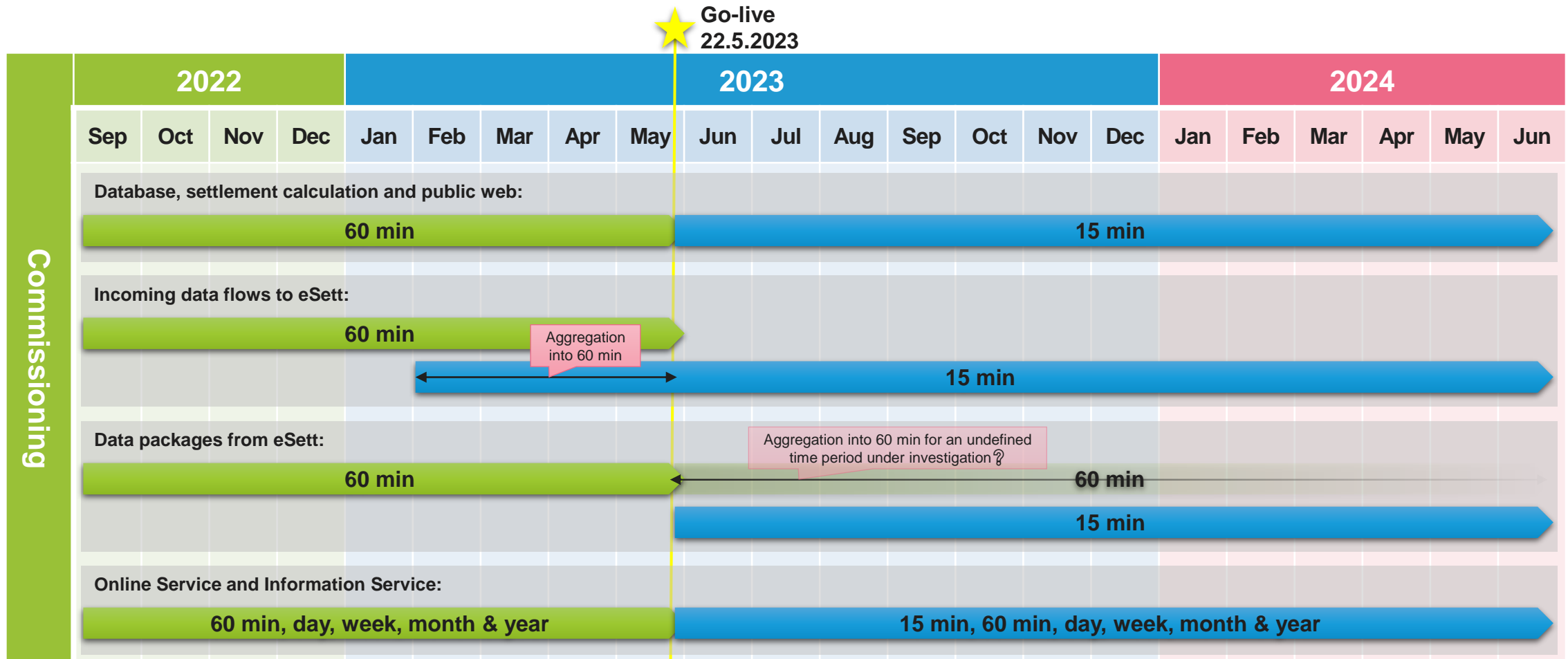
# Change Log

Date	Version	Change
1.11.2021	1.0	Initial version

# 15 min Commissioning Time Schedule

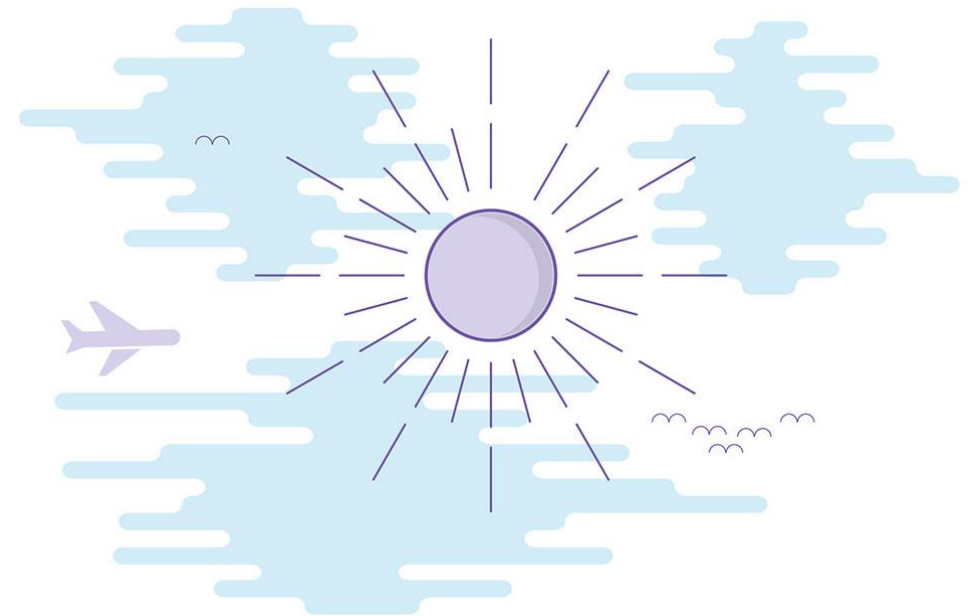


# 15 min Commissioning Time Schedule – Resolutions



# Starting Points for the Go-Live

1. Simultaneous change in all NBS countries on [22.05.2023 at 00:00 CET](#)
2. Imbalance settlement data and calculations follow
  - a) *hourly* resolution for delivery days before the go-live
  - b) *15 min* resolution for delivery days after the go-live
3. Data flows, both incoming and outgoing, **cannot** cover a time period that exceeds the go-live time
  - e.g. a data flow covering the period 21.-22.5.2023 (in CET) has to be split into two data flows:
    - 21.5.2021 00-24 CET – in *hourly* resolution
    - 22.5.2021 00-24 CET – in *15 min* resolution
4. Capacity Reserves will remain in hourly resolution





# The Effects of 15 Minutes Imbalance Settlement Period on Business and Market Processes



# Settlement Structures

Settlement structure information is information about the market participants and their relations to each other (e.g. the relationship between a BRP and an RE), market entities and market entity connections.

- Currently, settlement structures are managed on a daily level in the national time zone: EET, CET or SNT.
- 15 min ISP **will not** have any impact on settlement structure management.



# Data Metering and Reporting

- All imbalance settlement data for delivery days before go-live, needs to be metered on an hourly resolution **or** aggregated into an hourly resolution for reporting.
- The reporting resolution towards eSett for delivery days before go-live, is **hourly**.
- All imbalance settlement data for delivery days after go-live, needs to be metered on a 15 min resolution **or** divided into a 15 min resolution for reporting.
  - National rules for metering apply.
- The reporting resolution towards eSett for delivery days after go-live, is **15 min**.
- Bilateral Trade reporting window will close 45/20 min before each 15 minute ISP
  - Gate closure time (45/20 min) depends on the MBA of the bilateral trade.



# Data Metering and Reporting

- Currently used data flow formats will be used also for the reporting in 15 min resolution.
  - Nordic Market Expert Group (NMEG) is responsible for the development and maintenance of the Business Requirement Specifications (BRS), user guides and xml schemas for the NBS processes.
  - Documents can be found [here](#).
  - eSett also provides communication guidelines on the [website](#).
- New time series attribute for resolution has been introduced: 'PT15M'.
  - BRS documents are updated to include the new 15 min resolution attribute: 'PT15M'.
- In 15 min resolution, there will be 4 times more positions in the time series during the same period.
- The quantity within the 15 min resolution time series will be (about) one fourth of the hourly quantity, since the imbalance settlement data is in energy (MWh/kWh).

Hourly data	Split 15 min data	Metered 15 min data
<pos>1</pos> <qty>10.0</qty>	<pos>1</pos> <qty>2.5</qty>	<pos>1</pos> <qty>2.1</qty>
	<pos>2</pos> <qty>2.5</qty>	<pos>2</pos> <qty>2.3</qty>
	<pos>3</pos> <qty>2.5</qty>	<pos>3</pos> <qty>2.6</qty>
	<pos>4</pos> <qty>2.5</qty>	<pos>4</pos> <qty>3.0</qty>





# Updated Business Requirement Specification (BRS) documents

BRS/document	Previous resolution	New resolution
<b>NBS BRS</b>		
NEG (ebIX® based) Validated Data for Settlement for Aggregator (E66, E44)	PT1H or PT60M	PT1H, PT60M or PT15M
NEG (ebIX® based) Aggregated Data per MGA (E31, E44) – consumption	PT1H or PT60M	PT1H, PT60M or PT15M
NEG (ebIX® based) Aggregated Data per MGA (E31, E44) – production	PT1H or PT60M	PT1H, PT60M or PT15M
NEG (ebIX® based) Aggregated Data Per Neighboring Grid For Settlement Responsible (E31, E44)	PT1H or PT60M	PT1H, PT60M or PT15M
NEG Confirmation of Aggregated Data Per Neighboring Grid From Settlement Responsible (A07/A08, Z44)	PT1H or PT60M	PT1H, PT60M or PT15M
NEG ESP Energy Account Report Document (EAR)	PT1H or PT60M	PT1H, PT60M or PT15M
ENTSO-E ESS Schedule Document	PT1H or PT60M	PT1H, PT60M or PT15M
ENTSO-E ESS Confirmation Report	PT1H or PT60M	PT1H, PT60M or PT15M
<b>NBS BRS for TSO-MO</b>		
ENTSO-E ESS Schedule document	PT1H or PT60M	PT1H, PT60M or PT15M
ENTSO-E ERRP Planned resource schedule	PT1H or PT60M	PT1H, PT60M or PT15M
Ediel ERRP Reserve Allocation Result Document	PT1H or PT60M	PT1H, PT60M or PT15M
Ediel ECAN Publication Document	PT1H or PT60M	PT1H, PT60M or PT15M

# Example of Data Reporting Changes between Hourly and 15 min ISP

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</Header>
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</ProcessEnergyContext>
<PayloadEnergyTimeSeries>
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</PayloadEnergyTimeSeries>
```

Resolution: PT1H → PT15M

Number of positions for one day:  
24 → 96  
Quantity (MWh/kWh): 1 → ~1/4

```
<Header>
...
</Header>
<ProcessEnergyContext>
...
</ProcessEnergyContext>
<PayloadEnergyTimeSeries>
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    </ObservationDeorlEnergyObservation>
  </ObservationIntervalObservationPeriod>
</PayloadEnergyTimeSeries>
```

# Imbalance Settlement

- For the period after the go-live, imbalance settlement will be calculated for every 15 min ISP.
- There will not be changes in the calculation, used data, settlement schedules etc.





# Reporting of Results

- For the delivery days **before** the go-live, none of the data will be available in the 15 min resolution.
- For the delivery days **after** the go-live:
  - Data packages:
    - Support for 15 min (and 60 min at least for limited period)
    - Market parties **need to** change their subscriptions **independently** in Online Service
  - Information Service:
    - Support for all resolutions: 15 min, hour, day, week, month and year
    - The request determines the resolution
  - Online Service
    - New default resolution is 15 min
    - Resolutions hour, day, week, month and year also available
  - Public Data has only 15 min resolution.



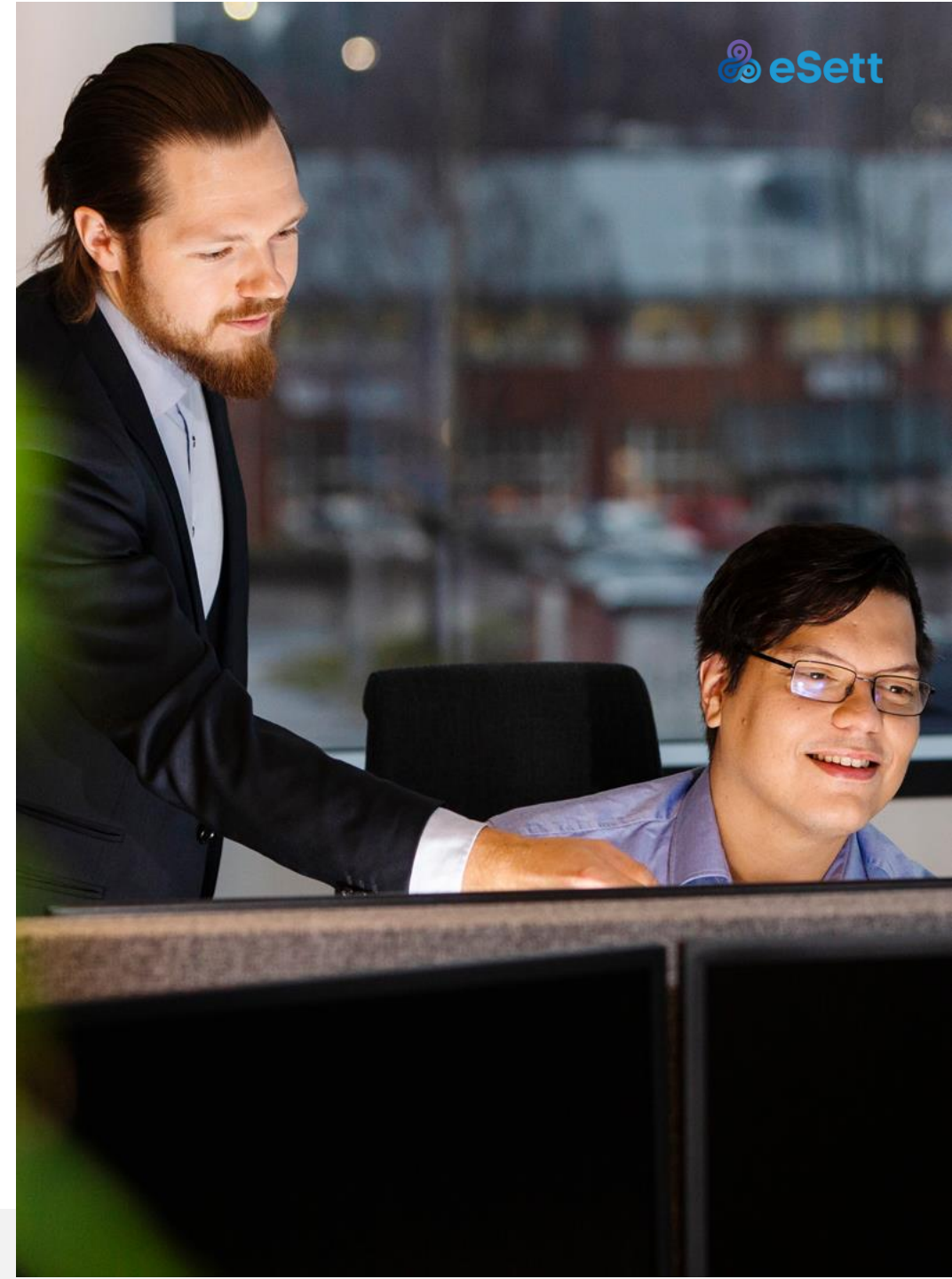
# Invoicing and Collaterals

- 15 min Imbalance Settlement Period brings no changes to Invoicing or Collaterals.



# Market Behaviour Monitoring

- At this point no changes are foreseen in Market Behaviour Monitoring due to 15 min Imbalance Settlement Period.





# Online Service

- New default time aggregation: 15 min
  - Limited to 7 days of data.
  - Exporting longer periods to Excel is still possible.
  - 15 min aggregation does not display anything before 22.05.2023.

## Time Aggregation

15 min Hour Day Week Month Year

- Input data is in 15 min resolution starting from delivery day 22.05.2023.
- Selecting a time interval that overlaps the go-live date is not possible for some views.
  - For example, the Input Data details can only display either period with hourly resolution or a period with 15 min resolution.

Hourly Status	Date	Interval	Own Quantity [MWh]	Counter Quantity [MWh]	Matched Quantity [MWh]	Matched Quantity Status
Load previous day						
Open	22.05.2023	00:00-00:15	4,150000	-4,200000	4,150000	Corrected
1 h 53 m to 3rd GC	22.05.2023	00:15-00:30	3,900000	-3,900000	3,900000	Matched
	22.05.2023	00:30-00:45	3,800000	-3,800000	3,800000	Matched
	22.05.2023	00:45-01:00	3,700000	-3,700000	3,700000	Matched
	22.05.2023	01:00-01:15	3,800000	-3,800000	3,800000	Matched
	22.05.2023	01:15-01:30	4,560000	-4,500000	4,500000	Corrected
	22.05.2023	01:30-01:45	5,000000	-5,000000	5,000000	Matched
	22.05.2023	01:45-02:00	5,300000	-5,300000	5,300000	Matched
	22.05.2023	02:00-02:15	5,300000	-5,300000	5,300000	Matched
	22.05.2023	02:15-02:30	5,500000	-5,500000	5,500000	Matched

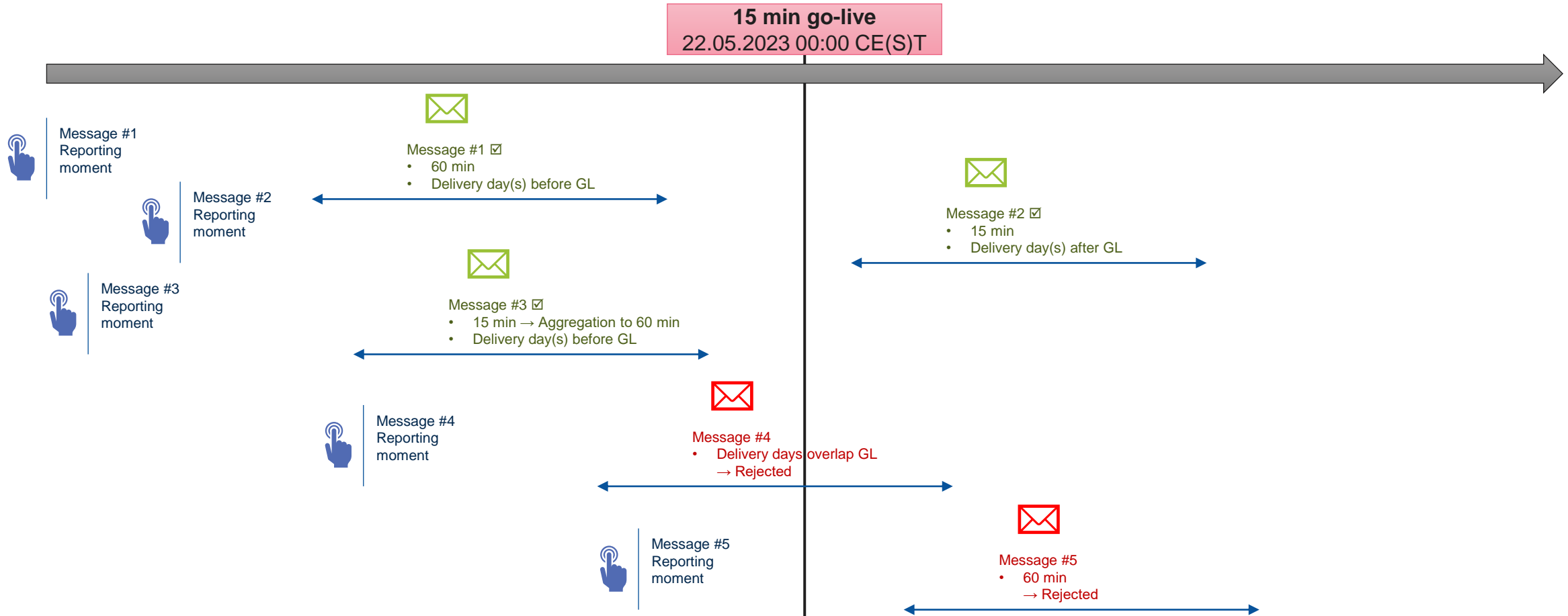
Input Data example in 15 min resolution.



# Reporting around the Go-Live

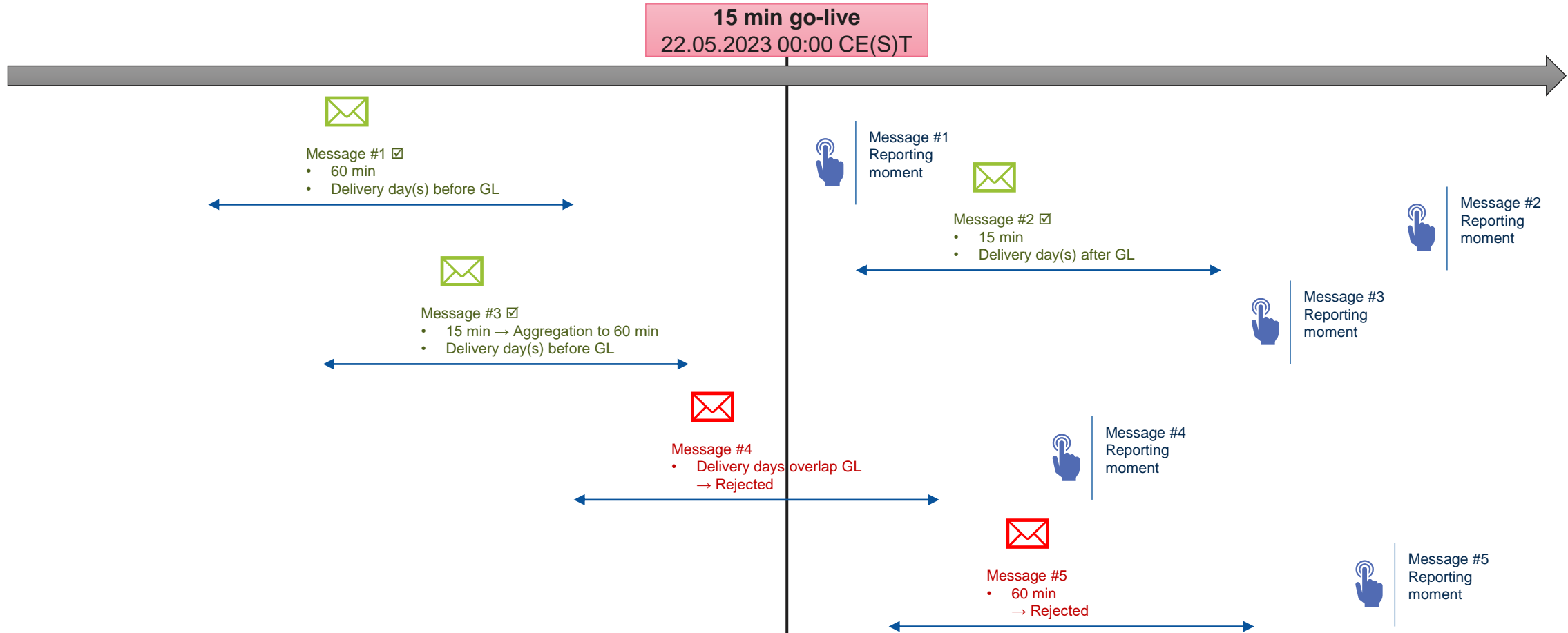


# Reporting to eSett before the GL – For example bilateral trades

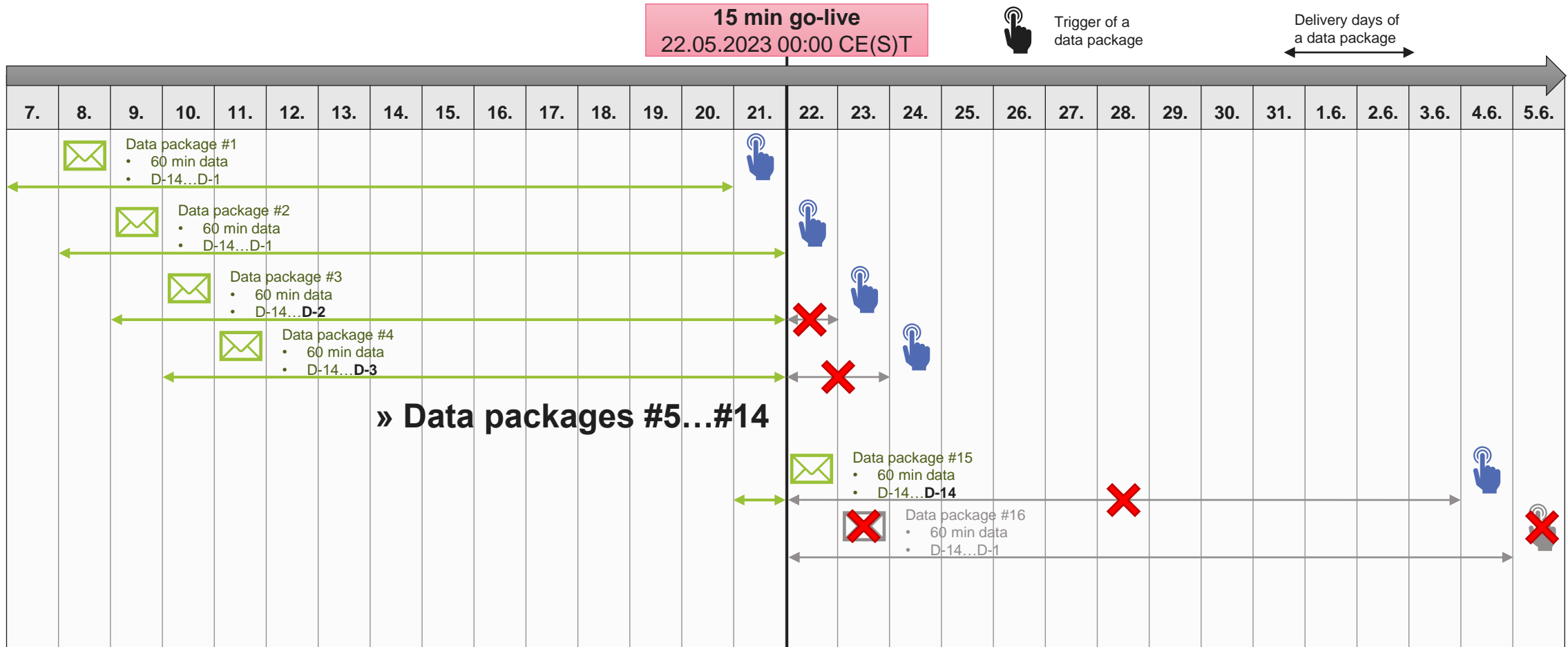




# Reporting to eSett after the GL – For example metered data



## Reporting from eSett around the GL – 60 min data packages (D-14 ... D-1 in CET)





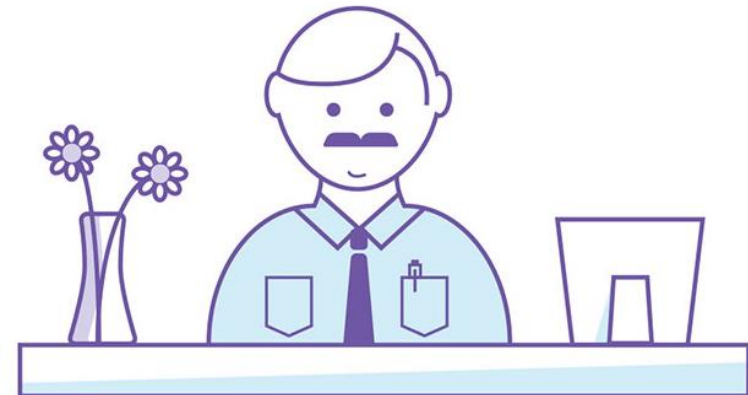


# Responsibilities and Obligations of the Parties



# Responsibilities and Obligations of the Parties – eSett

- Commissioning and operation of the Nordic imbalance settlement system and its interfaces.
- Providing guidance and testing support to stakeholders.



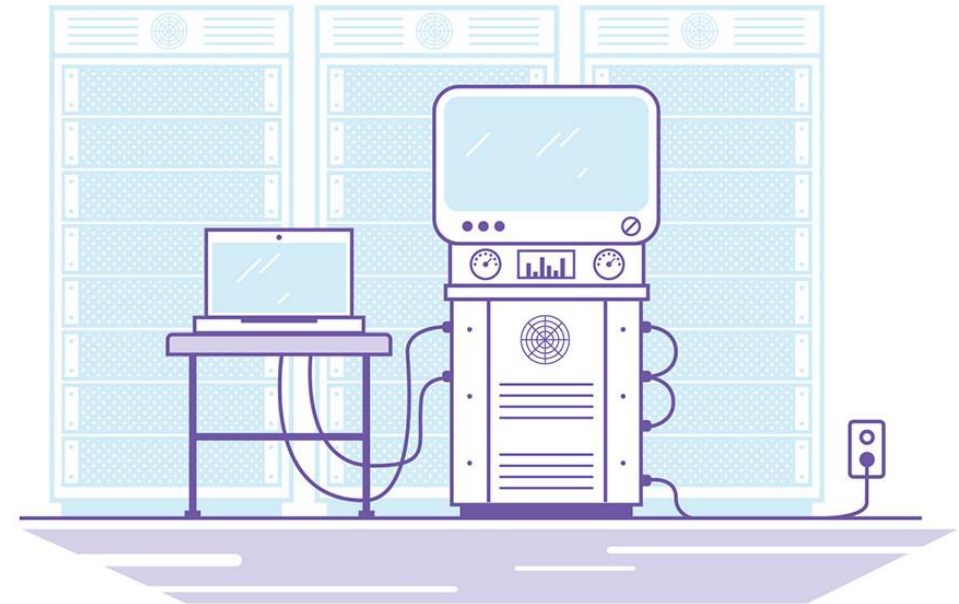
# Responsibilities and Obligations of the Parties – TSO

- Updating the TSO systems to support the 15 min ISP for relevant parts and interfaces.
- Calculating reserve volumes and amounts, and determining imbalance prices per imbalance settlement period.
- Submitting necessary information per BRP to eSett for the imbalance settlement of the BRPs; e.g. production plans and reserves per imbalance settlement period.



# Responsibilities and Obligations of the Parties – DSO/Datahub

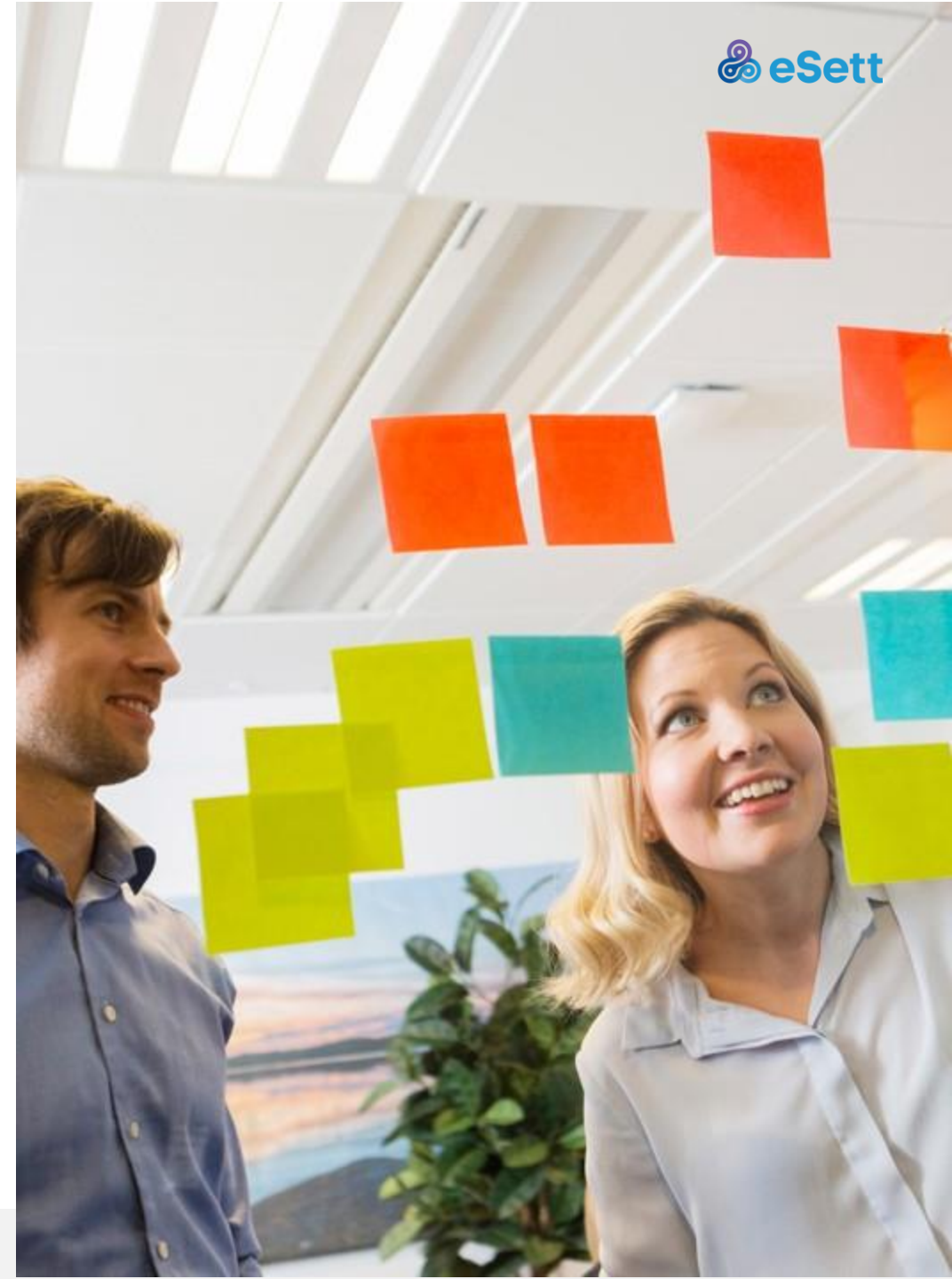
- Updating the DSO/Datahub systems to support the 15 min ISP for relevant parts and interfaces.
- Metering of production, consumption and exchange with adjacent grids as defined in the national regulations.
- Calculation of load profile shares according to national guidelines.
- Calculation and reporting of production, consumption and exchange data per imbalance settlement period to eSett.
- Successfully receive subscribed imbalance settlement data per ISP.





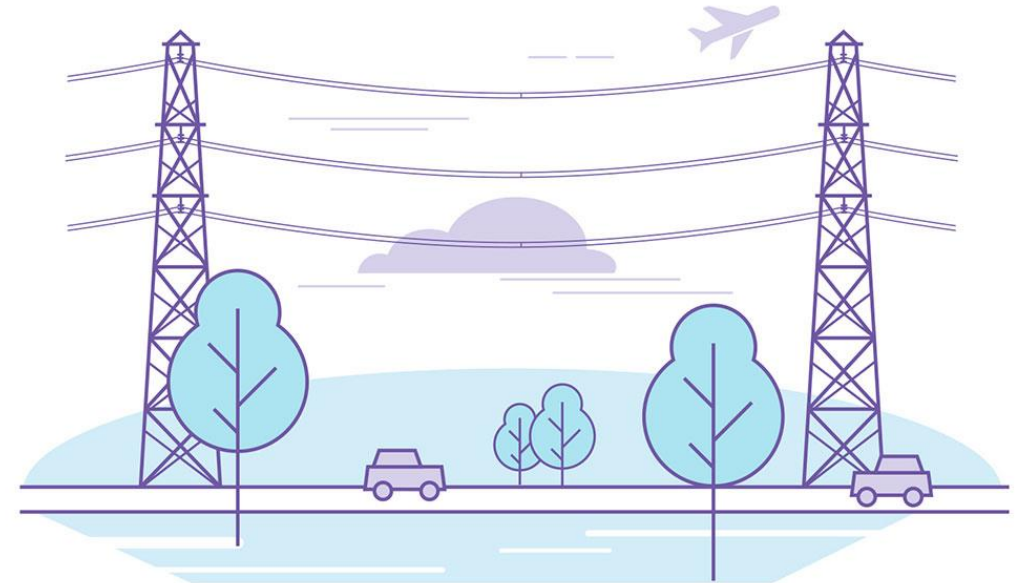
# Responsibilities and Obligations of the Parties – BRP

- Updating the BRP systems to support the 15 min ISP for relevant parts and interfaces.
- Submitting bilateral trade data to eSett per ISP.
- Successfully receive subscribed imbalance settlement data per ISP.



# Responsibilities and Obligations of the Parties – NEMO

- Updating the NEMO systems to support the 15 min ISP for relevant parts and interfaces.
- Submitting hub nominations (PX Trades), cross-border nominations (PX Flows) and inter-NEMO nominations (Bilateral Trade) data to eSett per ISP.
- Receive subscribed imbalance settlement results per ISP.



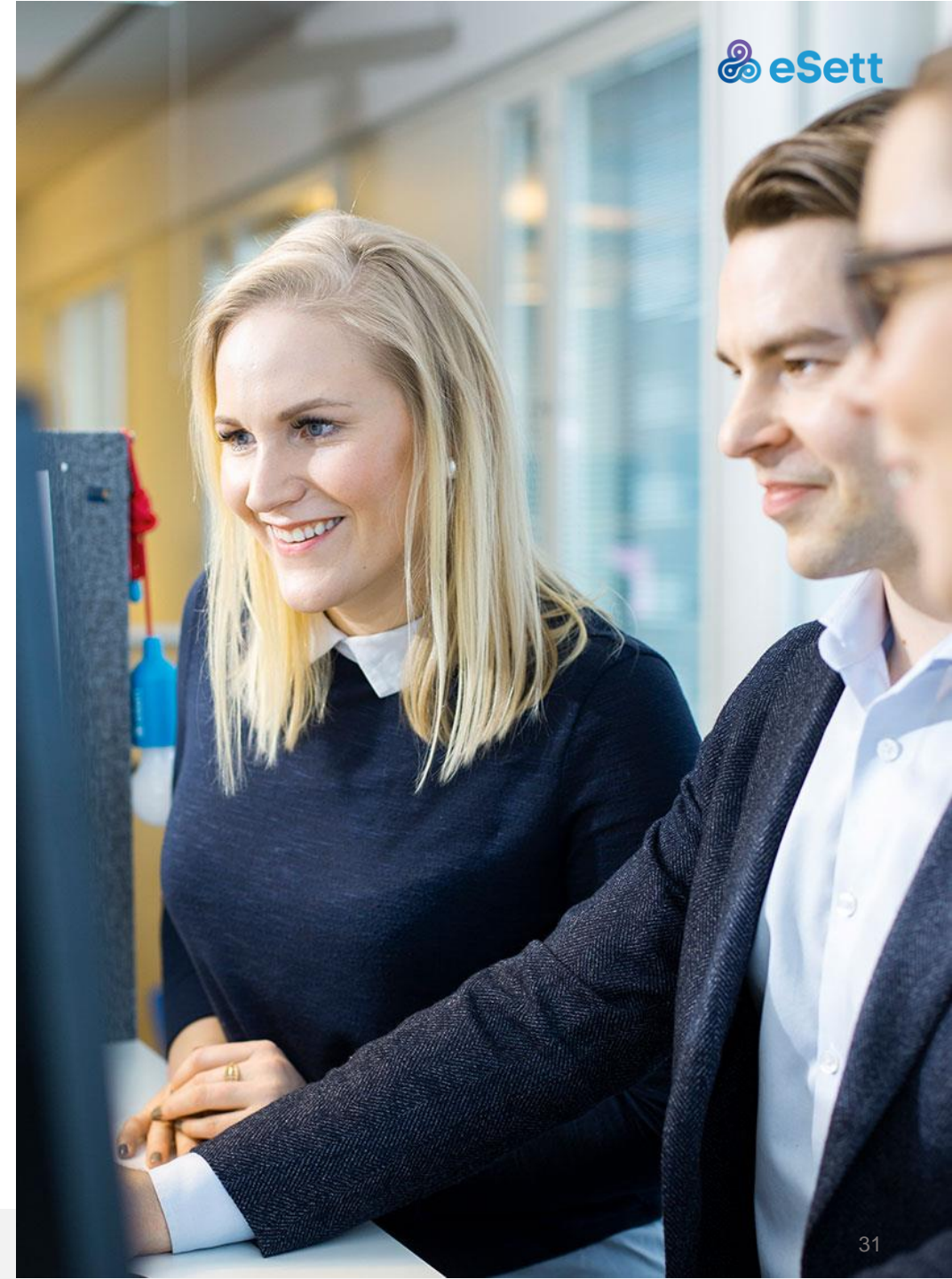


# Testing



# Internal Testing

- During internal testing phase, eSett will verify that the imbalance settlement system is behaving correctly.
- Any remaining issues will be fixed during this phase, so that eSett is able to provide a reliable test environment in later phases.





# External Testing

- eSett will test together with a limited number of stakeholders.
- Aim of the testing is to
  - ensure correct behaviour of external interfaces.
  - ensure ability to correctly process and calculate an increased amount of data.
  - test transition from 60 min to 15 min with an ongoing data exchange from/to external parties.
  - provide some of the stakeholders such as TSOs and datahubs an ability to test against eSett already during 2022.
  - fix any issues encountered in this phase before the next phase.
- The phase has been scheduled for 2022 from October to end of November.



# Open Market Tests

- In this phase, eSett aims to provide all stakeholders a possibility to test with production-like structures
  - transitioning from 60 min to 15 min.
  - use of 15 min ISP.
- The open market test phase will take place from January 2023 until the go-live.
- Participation requires contacting eSett to ensure access and connectivity with the test environment.
- The settlement results in this phase **will not be** comparable with the results in production, since a lot of the input data will likely be missing or incorrect.
- The details of this phase will be clarified closer to the test phase.



# Open Market Tests

## To do before participation

- eSett calls market participant's services from following addresses and access rights must be granted for those IPs:
  - 193.66.248.234
  - 193.66.248.235
- Provide necessary information to eSett (i.e. preferred channel, source IP addresses) for necessary openings for FTP, WebService and SMTP channels.
- eSett will provide needed credentials after you contact eSett's customer service.
- Verify access to Online Service in test environment.
- Fill in/verify details in Channel of Electronic Communication (Administration » Market Party Detail).
- Test messaging service connectivity (i.e. both sending and receiving files, including acknowledgements).

## eSett's test environment details:

**Online Service:** <https://testonline2.esett.com/ONLS.Private>

### Messaging Service – ECP/EDX Channel

- Endpoint: 44V000000000028C
- Message Type: NBS-ESETT

In order for market party to send messages towards eSett, firewall opening from Market Party's ECP Endpoint/EDX Toolbox is required to Fingrid's Broker:

- Host: ecp-test.fingrid.fi
- Ports: 8443, 5671
- Fingrid's ECP support: [ecp.support@fingrid.fi](mailto:ecp.support@fingrid.fi)

### Messaging Service – Web Service Channel

- URL: <https://testservice2.esett.com/MSGs/messagingServiceInputInterface>

### Messaging Service – FTP Channel

- Host: [sftp://testservice2.esett.com/](https://testservice2.esett.com/)
- Protocol: SFTP
- Port: 22

### Messaging Service – SMTP Channel

- Host: [testservice2.esett.com](https://testservice2.esett.com)
- Protocol: SMTP
- Port: 25
- Security: SSL/TLS
- E-mail: [inbox@testservice2.esett.com](mailto:inbox@testservice2.esett.com)

### Information Service – Web Service Channel

- URL: <https://testservice2.esett.com/INFS/InformationService.svc>



# Risk Management Plans



# Risk Management Plans (1/2)

#	Risk	Risk management	Party
#1	Market party (MP) is not able to report 15 min values to eSett	<ol style="list-style-type: none"> <li>1. Providing technical specification early enough</li> <li>2. Publishing commissioning plan early enough</li> <li>3. Ensuring the availability of sufficient resources for the planning and implementation of 15 min ISP</li> <li>4. Enabling testing against eSett for stakeholders</li> <li>5. Reporting the values manually through ONLS</li> <li>6. Counterparty reports the values in 15 min (only Bilateral Trades and MGA Exchanges)</li> </ol>	<ol style="list-style-type: none"> <li>1. eSett</li> <li>2. eSett</li> <li>3. MP</li> <li>4. eSett</li> <li>5. MP</li> <li>6. MP counterparty</li> </ol>
#2	Market party (MP) is not able to receive 15 min values from eSett	<ol style="list-style-type: none"> <li>1. Providing technical specification early enough</li> <li>2. Publishing commissioning plan early enough</li> <li>3. Ensuring the availability of sufficient resources for planning and implementation of 15 min ISP</li> <li>4. Enabling testing against eSett for stakeholders</li> <li>5. Viewing the data and results in ONLS</li> </ol>	<ol style="list-style-type: none"> <li>1. eSett</li> <li>2. eSett</li> <li>3. MP</li> <li>4. eSett</li> <li>5. MP</li> </ol>
#3	Market party (MP) would like to report in 15 min before the GL	<ol style="list-style-type: none"> <li>1. Aggregating 15 min values to hourly and calculate settlement in hourly resolution</li> </ol>	<ol style="list-style-type: none"> <li>1. eSett</li> </ol>
#4	Market party (MP) would like to receive in 15 min values before the GL	<ol style="list-style-type: none"> <li>1. Market party to convert hourly values to 15 min in their own system</li> </ol>	<ol style="list-style-type: none"> <li>1. MP</li> </ol>
#5	eSett is delayed with 15 min ISP implementation	<ol style="list-style-type: none"> <li>1. Period for external and open market tests will be shortened to ensure that eSett shall have sufficient time to implement the solution.</li> </ol>	<ol style="list-style-type: none"> <li>1. eSett</li> </ol>

# Risk Management Plans (2/2)

#	Risk	Risk management	Party
#6	Country is unable to transition to 15 min ISP in agreed time	1. Ensuring that local regulation and implementation are on track with the agreed timeline	1. TSOs
#7	15 minutes balancing energy price is not available due to mFRR delay (Nordic 15 min ID market is ready)	1. Ensuring the availability of sufficient resources for the planning and implementation of mFRR 2. eSett to calculate imbalance settlement using 60 min imbalance price for each quarter	1. TSOs 2. eSett
#8	Nordic 15 min ID market is delayed (15 min mFRR is ready)	1. Ensuring the availability of sufficient resources for the planning and implementation of 15' MTU on Nordic ID market	1. TSOs & NEMOs
#9	Nordic 15 min ID market and 15 min mFRR are both delayed	1. Ensuring the availability of sufficient resources for the planning and implementation of mFRR 2. Ensuring the availability of sufficient resources for the planning and implementation of 15' MTU on Nordic ID market	1. TSOs 2. TSOs & NEMOs
#10	15 min ISP is delayed in all NBS countries	1. Set a new go-live date in the imbalance settlement system 2. Roll-back to hourly resolution	1. eSett 2. MPs & TSOs

# Fallback Plans

eSett has following fallback plans in place around the go-live in case of a minor or major disturbance, such as imbalance settlement can't be carried out correctly or there is a system failure etc.

1. Communication via Online Service, eSett's website and other suitable ways for the circumstances.
2. Taking proper means together with TSO(s) and vendor(s) to recover normal operations as soon as possible.
3. Extending the support hours.
4. Postponing the invoicing.
  - This could lead to increased collateral demand requirements.





WE SETTLE, TOGETHER!

