DATA HUB

Guide for Using and Joining Data Hub

Version 2.5

08.2020

VERSION HISTORY

Date	Version	Description
01.09.2012	0.1	Document created
10.01.2013	0.2	Document amended
10.01.2013	1.0	Document published
03.04.2013	1.1	Document amended
03.07.2013	1.2	Document amended
14.08.2014	1.3.	Document amended
27.10.2016	2.0	Document amended (mediation of joint invoices and client's requests)
10.2017	2.1	Supplements related to the Data Hub customer portal (e-elering) have been amended
05.2018	2.2	Section 6: Technical data of a metering point – supplemented Section 6.2: Metering point data request. Rules for metering point data requests from natural persons and for the transmission of data have been supplemented. Section 9: a. Supplemented, so that in case of a new network agreement, an open supplier can enter an open supply agreement up to two days after the start date of the network agreement b. A possibility to retroactively enter open supply agreements to the Data Hub has been added; changes to the web application; new machine interface messages Section 11: descriptions of new reports have been added, in testing Section 12: Meter data request. Rules for metering point data requests from natural persons and for the transmission of data have been supplemented.
04.2019	2.3	Changes reflecting the grid code. Other minor changes.
09.2019	2.4	Corrections (reports' frequency, connection request XML time format)
08.2020	2.5	Changes regarding the network bill message functionality

Test environment: https://andmeladu-test.elering.ee/consumer/home

Live environment: https://andmeladu.elering.ee/consumer/home

Machine interface messages and descriptions are located on each user's main view in the test and live environments. https://andmeladu.elering.ee/documentation.html

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1 DATA EXCHANGE PLATFORM IN THE CONTEXT OF ELECTRICITY MARKET

According to the Electricity Market Act, the data exchange process in the open electricity market takes place via the data exchange platform (hereinafter referred to as the **Data Hub**).

Data Hub is a digital environment for data exchange in the electricity market for the purpose of changing open suppliers, forwarding and storage of meter data between market participants, performing the obligations imposed on market participants by the law and ensuring the rights granted to them.

The purpose of the Data Hub is to provide an efficient information exchange process in the open electricity market following the principle of equal treatment of market participants. Data Hub provides equal access to electric power meter data to all authorized market participants and enables a quick process of switching the supplier.

Elering is responsible for the development of the Data Hub and for further system maintenance. Grid operators are responsible for the quantity and quality of the data entered, the accuracy of meter data, hourly division and the correctness of the customer information entered. Open suppliers are responsible for the accuracy of the information found in the electricity sales agreements entered.

The Data Hub system consists of software and hardware solutions, which enable to manage the exchange of electric power meter data between market participants, support the process of switching electricity suppliers and provide meter data storage. The Data Hub contains definitions for all market participants operating in the Estonian electricity market, as well as all metering points tracking the transfer of electricity between market participants. All market participants and metering points are assigned a unique code (EIC code) by the Data Hub.

Unified data formats have been established for using the Data Hub.

Elering customer portal gives market participants access to their meter data and enables to download the data. The portal also provides the market participant with an overview of all information concerning them found on the Data Hub: agreement deadlines, open suppliers, hourly meter data, the market participant's EIC code, and the EIC codes of the metering points linked to the market participant. Each market participant can provide authorizations for accessing the meter data from previous periods via the customer portal; this is mainly to enable them to receive personalized offers from open suppliers. The market participant's data can be accessed by those market participants that have a statutory right to access the data or that have received an authorization from the market participant.

2 DATA HUB USER AGREEMENT

Users submitting data to the Data Hub are called operators. The roles and responsibilities of the operators are divided as follows:

Grid operator is an electricity undertaking, which provides network services via the network, and is responsible for the collection of meter data in his network area and for the transmission of it to the Data Hub. Each grid operator is a market participant with their own network losses. The law also states, that if a market participant does not have an open supply agreement, then their grid operator shall be their open supplier by default.

Line operator is an electricity undertaking using a direct line for the transmission of electricity.

Open supplier is an electricity seller or buyer who provides open supply services to clients, i.e. sells/buys either lacking/surplus quantities of electricity or sells/buys the whole quantity of metered electricity in accordance with the mutual agreement with the market participant. Open supplier enters the data on the open supply agreement with the market participant to the Data Hub.

A balance provider is an open supplier of a higher level who has signed a balance agreement with the system administrator.

In order to use the Data Hub, grid operators, line owners and open suppliers must sign a Data Hub User Agreement with the system administrator. The agreement includes the rights and obligations of the parties for entering and requesting data in accordance with the law.

The system administrator guarantees the use of the Data Hub for operators as follows:

a) guarantees the safety of data transmitted by electronic means;
b) informs the Operator about possible maintenance and development works, which affect the use of Data Hub via e-mail or the Data Hub at least 5 (five) business days in advance before the planned works start;
c) informs the Operator via e-mail or the Data Hub about planned maintenance works and interruptions in service at least 3 (three) business days in advance;
d) arranges necessary maintenance and development works for the smooth operation of the Data Hub, so that such works would not be scheduled for the period of 8.00–12.00;
e) informs the Operator about any interruptions in the functioning of the Data Hub as soon as possible, whereas informs the operators within 15 minutes in case of such interruptions occurring during a working day;
restores the use of Data Hub at the earliest opportunity (usually within 4 hours).

All the above-mentioned electronic notifications will be sent to the Administrator specified with a contract by the operator (Chapter 16). The operator has the option to delegate sending such notifications to some other e-mail address, by informing the system administrator's Data Hub administrator electronically of it.

3 FUNCTIONALITY OF THE DATA HUB

The Data Hub as a system covers the three main processes in the electricity market, and these are:

1. The process of switching suppliers and exchange of messages describing this process;
2. The process of submitting metering point data and meter data;
3. The process of encoding.

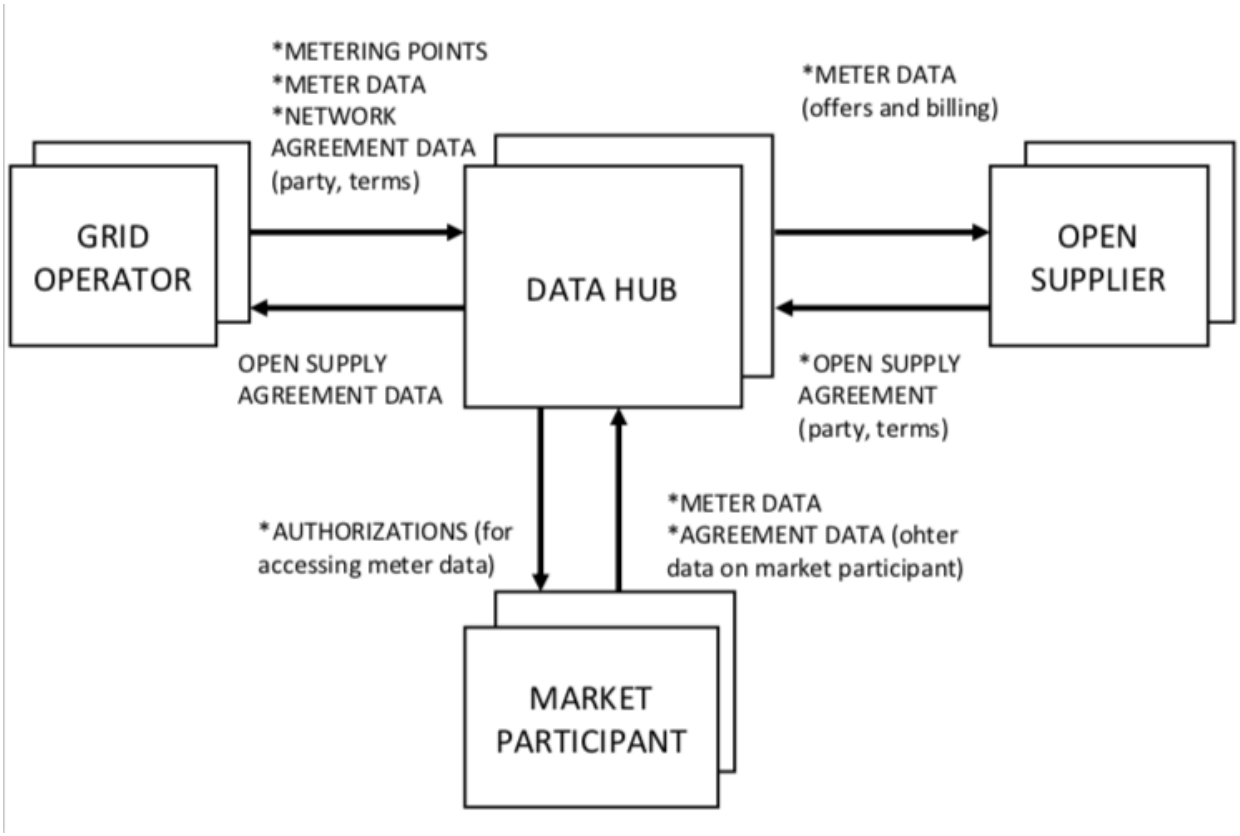

Figure 1: The main processes of the Data Hub

The actions of the Data Hub operators are as follows

1) The grid undertaking and line operator transmit:

- Market participant data (name, registry state, registry type, registry number) for getting the EIC code;
- The link of the EIC code of the market participant to new data (name, registry state, registry type, registry number);
- Metering point data (when a new one is added or an existing one is changed). Including the EIC code of the metering point, type (remotely read, virtual, etc.), address, the EIC code of the market participant who has signed the agreement, whether it's a small consumer or not, the start and end date of the network agreement;
- The status of the connection (connected/disconnected);
- Meter data (inbound and outbound volumes separately) from the metering point with hourly accuracy (these may also be amendments of data previously sent).

2) The open supplier transmits:

- Data about the open supply agreements on the basis of metering points, including the start and end dates of the agreement;
- Dates of cancellation/termination of the supply agreement;
- Queries for finding a market participant's metering points by their EIC code;
- Queries for finding a market participant's EIC code;
- Confirmation of having the market participant's authorization for accessing their 12 months' meter data;
- Queries for receiving a market participant's 12 months' meter data.

3) The Data Hub:

- Forwards the EIC code of a registered market participant to the grid operator upon the operator's request;
- Forwards the meter data received from the grid operator to the open supplier currently supplying the metering point and other market participants authorized to receive the data;
- Provides an open supplier with a market participant's 12 months' meter data, if the supplier has an authorization, or denies the request, if they do not have such authorization;
- Sends a confirmation of the registration of a signed agreement to the open supplier or of a failure of the registration due to invalid terms;
- Sends information about the addition or amendment of an open supply agreement at a metering point to the grid operator;
- Sends information about the addition or amendment of an open supply agreement at a metering point to the open supplier's balance provider;
- Encodes all market participants;
- Sends the EIC code of a market participant, EIC code of a metering point, and the contacts of a person who has given authorization for making offers based on their metering point's 12 months' meter data to the open supplier.

4) A market participant can use the customer portal for:

- Managing the authorizations given to open suppliers by them for receiving their offers, i.e. for requesting the market participant's last 12 months' meter data from the Data Hub;
- Managing their contacts for receiving offers from open suppliers based on their authorizations;
- Reviewing the meter data from their metering points;
- Reviewing the information on their open supply agreements found on the Data Hub;
- Represent a legal person (the right of representation is verified based on the list of the members of the management board submitted to the commercial register by the company).

5) The system operator and balance provider can use the Data Hub to access:

- The defined balance provider's balance area, which includes separate border metering points of the area;
- Meter data from the border metering points located in the balance provider's balance area.

6) The system administrator enters the following data to the Data Hub:

- The list of grid operators, line operators, and open suppliers along with their activity licenses;
- Cancellation of open supply agreements upon the termination of the activities of an open supplier.

4 GENERAL PRINCIPLES OF EXCHANGE OF INFORMATION

Automatic information exchange (machine interface) between the Data Hub and a client's information system takes place using the POST method of the HTTP protocol. Information exchange between the systems uses messages submitted in the XML format. All examples of messages can be found at: https://andmeladu.elering.ee/documentation.html.

The format of the messages used is described below.

All the described XML elements are required, i.e. they must always be added unless otherwise indicated. Missing elements will render the document unusable and it will not be accepted on the receiving side.

If an XML element is described as „optional" in the format description, it indicates that the element may be omitted.

UTF-8 encoding is used by default for transmitting XML messages.

4.1. Time submission rules

1. All time data is submitted in accordance with the ISO-8601 format[1];
2. The hour 24:00 is not used;
3. UTC (Universal Time Constant) aka GMT (Greenwich Mean Time) time must be used for submitting meter data.
4. Other time intervals that are submitted with an accuracy of at least one hour may be submitted using other time zones, but the time zone must be designated following the standard.
5. The start date of the agreement is submitted to the precision of a day; the agreement comes into force at 00:00 on the date submitted;
6. The end date of the agreement is submitted to the precision of a day; the agreement is terminated at midnight on the date submitted.

4.2. Rules for submitting addresses

1. The following fields are available for submitting an address:
   - County;
   - Municipality (city, rural municipality);
   - Locality (village, small town, town, city without municipal status) or city district;
   - Address (small place, name of land unit, street, address number, number of apartment or other part of building);
   - Postal code.
2. The data must be submitted in plain text.

4.3. Rules for submitting meter data:

1. The interval of the meter data must be expressed in UTC time;
2. Meter data must be expressed in kWh to the third decimal point;
3. The submitted meter data must be bidirectional: InQty and OutQty;
4. The direction of the meter data must be presented from the perspective of the metering grid operator: InQty – electricity entering the network (production); OutQty – electricity exiting the network (consumption).

[1] More details: http://en.wikipedia.org/wiki/ISO_8601

5 EIC CODES

The EIC code (*Energy Identification Code*) is a unique identifier assigned to a market participant or a metering point on the basis of a unified encoding system. It is used for the automation of information exchange regarding the market participants operating in the electricity market.

1) An EIC code of a measuring point is a unique combination of characters that uniquely identifies a measuring point. The system administrator allocates a code range to be used by a distribution grid operator or line operator.

2) An EIC code of a market participant is a unique combination of character unambiguously identifying a market participant, assigned by the system administrator. The EIC code of a natural person is based on their personal identification code, while the EIC code of a legal person is based on their commercial registry code. Legal persons lacking a commercial registry code must submit an EIC code application to the Elering energy markets department via e-mail (eic.office@elering.ee). For natural persons lacking an Estonian personal identification code, the identification number of the document provided is used instead; in case of foreign nationals, country code and personal identification code or, in the absence of the latter, the identification number of the document provided.

The EIC code registry is located in the Data Hub. EIC code is assigned to each market participant and metering point by the Data Hub or, in exceptional cases, by Elering based on the submitted application.

Each market participant must have an EIC code, which is linked to all their actions in the market.

An EIC code request and response *(RequestCustomerEIC)*

The descriptions of messages for requesting an EIC code are provided below. Examples and rules can be found here.

The client's EIC code is requested from the Data Hub. In case of a new client that has not been assigned an EIC code yet, the Data Hub creates a new code and transmits it to the author of the request.

Operator	Operations
Open supplier	Can only request a client's EIC code
Grid operator	Can register a client in the system
Data Hub	Provides the requested client's EIC code. If a code has not been assigned and the request is made by a grid operator, the Data Hub assigns a code to the client and returns it to the enquirer.

Message description

Document	Name
Xml Document:	RequestCustomerEIC
Xsd Document	RequestCustomerEIC.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters

SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
CustomerData	Section used for transmitting the data of a client whose EIC code is requested. At least 1 section must be submitted. The maximum number of sections is 32.	
OfficialIdentification	This element defines the type of registry, the codes of which are used for identifying the client.	
Registry	Registry, the ID of which is used	1..32 characters Possible values 1.“isikukood“ – personal identification code, for private customers; 2.“äriregister“ – commercial registry, for business clients; 3. “dok. number“ – document number, for clients who are not Estonian citizens.
Country	The country of the registry defined in the previous field	2 characters “EE” – Estonian registries „/Riigi tunnus/“ (country identifier) – if the person is a foreign national
GivenName	Private client: Given name(s) of the client Business client: Name of the business client	Optional If the client does not exist and no name was provided, the client will not be registered.
Surname	Private client: Surname of the client Business client: Not used	Optional

Response

Data returned

Section	Name
HTTP response:	
200 OK	Message received, response added.
Xml payload:	
Xml Document:	NotifyCustomerEIC
Xsd Document	NotifyCustomerEIC.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters
SenderIdentification	EIC code of the message sender (the Data Hub)	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS

OriginalDocumentIdentification	Request document ID	Max length: 50 characters
CustomerData	Section used for transmitting the data of the client whose EIC code is transmitted. The maximum number of sections is 32.	
OfficialIdentification	This element defines the type of registry, the codes of which are used for identifying the client.	
Registry	Registry, the ID of which is used	1..32 characters See the description of the message RequestCustomerEIC.
Country	The country of the registry defined in the previous field	2 characters See the description of the message RequestCustomerEIC.
GivenName	Private client: Given name(s) of the client Business client: Name of the business client	Always returns a name
Surname	Private client: Surname of the client Business client: Not used	Always returns a name
CustomerIdentification	The EIC code of a client	16 characters

6 SUBMITTING METERING POINTS TO THE DATA HUB

Grid operators guarantee the determination of the quantities of electricity entering and exiting their grid, as well as collecting and processing meter data.

Grid operators are responsible for updating metering point data found on the Data Hub for metering points located in their service area.

Grid operators and line operators must submit the following data for each metering point located in their service area to the Data Hub:

1. EIC code and address of the location of the metering point;
2. Commercial registry code or, in the case of a natural person, the personal identification code of the person who signed the network agreement or, in the case of a line operator, the network use agreement;
3. For network agreements and line operators, the start date of the network use agreement and the end date of the agreement, if defined;
4. If data is submitted for the first time, the EIC code of the open supplier;
5. Technical data;
6. Amendments to previously submitted data;
7. Hourly bidirectional meter data.

The technical data of a metering point include:

1. EIC code of the metering point;
2. Type of the metering point (real or virtual);
3. Data on the validity and parties of the network agreement or, in the case of a line operator, the network usage agreement associated with the metering point and an indication of whether the client is a small consumer;
4. Address of the location of the metering point;
5. Whether the metering point is a grid operator's border point;
6. Whether the grid connection is switched on or off.

T**he grid operator must update the technical data provided for a metering point at the earliest opportunity. When updating the data, the grid operator must keep in mind that changing the information retroactively is forbidden, if it jeopardizes the operations of an open supplier at the metering point.**

Grid operators and line operators can submit technical data for metering points to the Data Hub either via batch upload using the web interface or using automatic information exchange messages.

Batch upload of metering point data using the web interface

To submit metering point technical data via batch upload, the submitter of the data must prepare an MS Excel spreadsheet with the following columns (the order is important):

A. EIC code of the metering point
B. EIC W code of the production unit

C. Metering type – one of the following: REMOTE_READING, VIRTUAL, SINGLE_TARIFF_MANUAL, DUAL_TARIFF_MANUAL[2], ISOLATED
D. Consumption type in the metering point: CONSUMER – consumer, GRID_OPERATOR – grid operator, PRODUCER – producer, MICRO – micro producer, LINE_OPERATOR – line operator.
E. Consumption volume at a metering point: SMALL – small consumer, LARGE – large consumer.
F. Connection status at a metering point: CONNECTED – connected, DISCONNECTED – disconnected
G. Is it a border metering point? yes – border metering point, no – standard metering point
H. Is it an isolated metering point? yes– isolated metering point, no – standard metering point
I. Is electrical heating used in the metering point? yes – electrical heating in use, no – no electrical heating in use
J. County
K. Municipality (city, rural municipality)
L. Settlement unit (village, small town, town, city without municipal status)
M. Street address ((small place, name of land unit, street, address number, number of
N. Postal code
O. Is it a metering point with network loss? yes – metering point with network loss, no– standard metering point
P. Longitude of the metering point, up to the sixth decimal point
Q. Latitude of the metering point, up to the sixth decimal point
R. The code of a client under a network agreement: 11-digit Estonian personal identification code or 8-digit Estonian commercial registry code
S. For private persons, given name of the network agreement counterparty; for legal persons, business name of the client
T. For private persons, surname of the network agreement counterparty; for legal persons, left empty
U. Start date of the network agreement as YYYY-MM-DD (if not available, then 2011-01-01)
V. End date (last day of validity) of the network agreement as YYYY-MM-DD, left empty if has not been defined yet

The data are copied to the corresponding cell at https://andmeladu.elering.ee/provider/metering-points-import excluding the header:

Additional rules:

1) A border metering point is only a metering point between two grid operators (one grid operator is a client of the other operator).
2) A grid operator can only be a client at their border metering points and at the virtual point for network losses.
3) The longitude and latitude fields are optional;
    a. If XML contains this field then x and y attributes should be filled in;

[2] See the following table "Description of the message".

b. Attributes X and Y must be numbers that may contain radix points;
c. When received, the system checks, whether the coordinates belong to the area of an imaginary rectangle surrounding Estonia;
d. Values can be edited in the user interface similarly to other details of the metering point;

6.1. Submitting metering point data (I) *(NotifyMeteringPointData)*

The descriptions of messages for submitting technical data for metering points are presented below. Examples and rules can be found here.

Forwarding metering point data to the Data Hub:

Operator	Operations
Open supplier	-
Grid operator	Registers the metering point along with network agreement data
Data Hub	Notifies the open supplier of changes in meter data

Message description

Document	Name
Xml Document:	NotifyMeteringPointData
Xsd Document	NotifyMeteringPointData.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
MeteringPoint	Section used for transmitting metering point data	
Identification	EIC code of the metering point	16 characters
GridOperatorIdentification	EIC code of the grid operator	16 characters
MeteringType	Meter reading type	„REMOTE_READING“ – The meter is remotely read; „VIRTUAL“ – metering point is virtual, data is calculated; „SINGLE_TARIFF_MANUAL“ – manually read single-tariff meter; „DUAL_TARIFF_MANUAL“ – manually read dual-tariff meter;

ConsumptionScale	Consumption category of the client behind the metering point	„SMALL“ – household consumer, main circuit breaker up to 63A; „LARGE“ – business clients, main circuit breaker over 63A; „GRID OPERATOR“ – grid operator; „PRODUCER“ – producer; „MICRO“ – micro producer; „LINE OPERATOR“ – line operator;
ConnectionState	Is the metering point connected?	„CONNECTED“ – connected; „DISCONNECTED“ – connection is interrupted;
BorderPoint	Is the metering point between two grid operators?	„TRUE“ – metering point is between two grid operators; „FALSE“ – client's metering point;
Isolated	Is it an isolated metering point?	„TRUE“ – Is isolated; „FALSE“ – Not isolated;
ElHeating	Is the metering point used for electric heating?	„TRUE“ – is used for electric heating; „FALSE“ – is not used for electric heating;
NetworkLossesPoint	Is it a metering point for network losses?	„TRUE“ – is a metering point for network losses; „FALSE“ – is not a metering point for network losses;
DeviceIdentification	EIC W code of the device	16 characters; if no production takes place at metering point, left empty or undefined
Location	Section used for the address of the metering point	
County	County of the metering point	
Municipality	Municipality of the metering point	
Locality	Settlement unit of the metering point	
StreetAddress	Street address of the metering point	
Postcode	Postal code of the metering point	If not available, enter 00000
Coordinates	x=“longitude of the metering point “, y=“lantitude of the metering point	Up to 6 decimal places
Location	End of section	
Agreement	Section: beginning and end dates of a network agreement	
Counterparty	EIC code of the network agreement counterparty	16 characters
FirstDate	Beginning date of a network agreement	See the rules for submitting dates
LastDate	End date of a network agreement	Optional
Agreement	End of section	
MeteringPoint	End of section	

Response

Section	Name
HTTP response:	
204 NO CONTENT	Message is received, no additional information

Message rules

- The EIC code of the metering point must be within the grid operator's EIC code range;
- A single metering point can only have a single network agreement at any point in time;
- The end date of the agreement can be retroactively changed only if this does not affect an open supply agreement;
- The end date of the agreement cannot be earlier than the beginning date;
- A border metering point is a metering point where the grid operator is a grid service client.

6.2. Requesting metering point data *(RequestMeteringPointsData)*

Open suppliers have the right to use the Data Hub to request the following data on market participants who have signed an electricity supply agreement with the open supplier or who have authorized them, via the Data Hub, to receive such data:

1. Technical data of the market participant's metering point;
2. Data on the validity of the network agreement or, in the case of a line operator, the network usage agreement;
3. Data on the term of the open supply agreement associated with the market participant's metering point.

The descriptions of messages for requesting metering point data are presented below. Examples and rules can be found here.

Requesting for data on a client's metering points along with network agreement data:

Operator	Operations
Open supplier	Requests a client's metering point data
Grid operator	--
Data Hub	--

Message description

Document	Name
Xml Document:	RequestMeteringPointsData
Xsd Document	RequestMeteringPointsData.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SSZ
MeteringPointIdentification	EIC code of the metering point	16 characters. Optional.
CustomerIdentification	EIC code of the client whose metering point data is requested	16 characters
CustomerAuthorization	It is noted whether the client has given their authorization	True: Authorization has been given and is stored by the open supplier in a format which can be reproduced in writing; False: Authorization not stored by the open supplier. The Data Hub verifies whether the open supplier is authorized to request metering point data. Data are submitted if A) the client is part of their supply chain or B) the client has given their authorization using the Data Hub.

Response

Data submitted:

Section	Name
HTTP response:	
200 OK	Message received, response added.
Xml payload: **(see the appropriate message description)**	
Xml Document:	MeteringPointsData
Xsd Document	MeteringPointsData.xsd

Rules for metering point data request and submitting the data:

1) Requesting metering point data of natural persons (RequestMeteringPointsData)

1.1. Data Hub provides technical data of the metering point with its address only in following cases:

a) Metering point(s) that belong to the open supplier portfolio (direct agreement or via a portfolio tree of an open supply chain) – on the basis of a valid and/or entering into force (in future) open supply agreement;

b) Metering points to the grid operator in his area;

c) If a consumer has given authorization for accessing their data to the open supplier via the Data Hub client portal (e-elering)

1.2. The Data Hub provides metering point data without address concerning the following metering points:

a) if the open supplier is not the client's open supplier, e.g. the client does not have a valid electricity supply agreement or an electricity supply agreement coming into force in future signed with the request sender and the appropriate metering point is not in his open supply chain (so-called portfolio tree).
b) Consumer does not have an authorization to access the Data Hub via e-elering

2) Requesting metering point data of legal persons (RequestMeteringPointsData)

- An open supplier must have an authorization given by the market participant to receive his metering point data
- There must be a valid network agreement for the metering point
- The data may by requested by an open supplier

7 SUBMITTING AN AUTHORIZATION (NOTIFYCUSTOMERAUTHORIZATION)

The Data Hub sends a notification to the open supplier after having received an authorization from a client for accessing their meter data.

Description, examples and rules of messages for requesting metering point data can be found here.

The data of an authorization is submitted with contact details of the market participant (phone and e-mail).

Market participant	Operations
Open supplier	--
Grid operator	--
Data Hub	Sends the notification to an open supplier

Message description

Document	Name
Xml Document:	NotifyCustomerAuthorization
Xsd Document	NotifyCustomerAuthorization.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier.	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SSZ
CustomerAuthorization	Section with authorization details	
CustomerData	Section with details of the market participant who has given the authorization	
OfficialIdentification	This element defines the type of registry, the codes of which are used for identifying the client.	
Registry	Registry, the ID of which is used	1..32 characters Possible values 1.“isikukood“ – personal identification code, for private customers; 2.“äriregister“ – commercial registry, for business clients; 3. “dok. number“ – document number, for clients who are not Estonian citizens.
Country	The country of the registry defined in the previous field	2 characters “EE” – Estonian registries „/Riigi tunnus/“ (country identifier) – if the person is a foreign national

GivenName	Private client: Given name(s) of the client Business client: Name of the business client
Surname	Private client: Surname of the client Business client: Not used
CustomerIdentification	EIC code of the market participant
CustomerData	End of section
FirstDate	Start date of the authorization
LastDate	End date of the authorization
Phone	Phone number of the market participant
E-mail	E-mail address of the market participant
CustomerAuthorization	End of section

8 TRANSMITTING METER DATA TO THE DATA HUB

A grid operator forwards bidirectional hourly meter data on active energy quantities for each metering point to the Data Hub.

Grid operators and line operators transmit meter data for metering points on the following conditions:

1. For metering points where meter data is read remotely, the grid operator and/or line operator submit(s) preliminary meter data to the Data Hub by 10:00 on each business day;
2. For metering points where meter data is read remotely, final meter data for the calendar month is submitted to the Data Hub by the grid operator and/or line operator by the 5th day of the following month;
3. To submit hourly data on network or line losses to the Data Hub, the grid operator or line operator must create a virtual metering point.

The grid operator manages standard consumption schedules and is responsible for transmitting hourly quantities to the Data Hub.

Meter data can be corrected retroactively for up to 12 months.

Grid operators and line operators can submit meter data to the Data Hub either via batch upload using the web interface or using automatic information exchange messages.

NB! Data Hub transmits the meter data entered by grid operators in unchanged form. The Data Hub does not verify the content of meter data.

Transmission of meter data using the web interface

Meter data can also be submitted to the Data Hub in the form of an MS Excel spreadsheet via the web interface at https://andmeladu.elering.ee/provider/metering-data.

The following rules apply to the spreadsheets:

1. Meter data is hour-based and in kWh with the precision of maximum three decimal points;
2. IN and OUT are from the perspective of the grid operator – IN means electricity entering the power grid (produced) and OUT means electricity exiting the power grid (consumed);
3. In the spreadsheet downloaded from the Data Hub, metering points are ordered by EIC code and divided into worksheets by 100 metering points;
4. Metering points can be listed in any order for submitting meter data and there is no limit to the number of submitted metering points (e.g., 1, 5 or 120 metering points);
5. The first two columns of the base spreadsheet shall not be changed. Metering points can be rearranged, ensuring that the header of the worksheet located in the first two lines (EIC code of the metering point and the IN/OUT lines) is preserved;
6. The base spreadsheet contains data previously received by the Data Hub; these can be corrected and resubmitted.

Transmitting meter data (EnergyReport)

Used to submit meter data for a metering point. Description, examples and rules of messages for transmitting meter data can be found here.

Operator	Operations
Open supplier	----
Grid operator	Sends metering point data
Data Hub	Sends data to open supplier(s)

Message description

Document	Name
Xml Document:	EnergyReport
Xsd Document	EnergyReport.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
AccountTimeSeries	Section defining which metering point's data is transmitted	
MeasurementUnit	Units used for transmitting meter data	3 symbols: „KWH" – meter data is expressed in kWh to the third decimal point
AccountingPoint	EIC code of the metering point	16 characters
Period	Section for defining the period for which the data below is submitted	
TimeInterval	Time interval of the data submitted	NB! The start and end date of the time interval MUST be expressed in UTC time
BillingSequenceNo	Version number of the metering data	Number 1...X
Resolution	Time resolution of the data submitted	„PT1H" The resolution is 1 hour
AccountInterval	Section for submitting meter data for the interval	
Pos	Position in the interval	Number 1..X According to the number of periods in the submitted interval. The position may be absent, if there is no data on the position[3].

[3] The Data Hub sends an appropriate notice in the response, if there is no position.

OutQty	Quantity of electricity exiting the network	May contain an empty value.
OutType	Defines the source for metering data of energy obtained from the network	Optional. Determines whether the data are metered or estimated possible values: „METERED" – metered data „ESTIMATED" – estimated data
InQty	Quantity of electricity entering the network	May contain an empty value.
InType	Defines the source for metering data of energy inserted to the network	Optional. Determines whether the data are metered or estimated possible values: „METERED" – metered data „ESTIMATED" – estimated data
AccountInterval	End of section	
Period	End of section	
AccountTimeSeries	End of section	

Response

Data transmitted:

Section	Name
HTTP response:	
202 ACCEPTED	Response in a separate message
Xml payload:	
Xml document	EnergyReportResult
Xsd document	EnergyReportResult.xsd

Message rules

For grid operators:

- One message may contain the data of several metering points for the requested time interval. The interval of the meter data must be expressed in UTC time.
- Meter data must be expressed in kWh to the third decimal point.
- The submitted meter data must be bidirectional: InQty and OutQty.
- The direction of the meter data must be presented from the perspective of the measuring grid operator: InQty – electricity entering the network (production); OutQty – electricity exiting the network (consumption).
- InQty and OutQty cannot be submitted separately for the same hour. They must be submitted simultaneously in the same message. If this data is submitted separately, the other direction will be left empty and previous data will be overwritten.
- The submitted data does not have to cover the entire defined time interval.

For open suppliers:

- Open suppliers receive meter data from the metering points in their portfolio.
- Meter data is forwarded to the open supplier as soon as it has been transmitted to the Data Hub by the grid operator.
- Open suppliers receive meter data for a metering point only for the period, where they have an open supply agreement for this metering point.
- The Data Hub is not responsible for the quality of meter data. The grid operator is responsible for collecting meter data and submitting it to the Data Hub.
- When an open supplier requests meter data for previous periods, RequestMeteringDataHistory message is used based on the same EnergyReport format.

Response for meter data transmission

Used for the response of the meter data of a metering point.

Operator	Operations
Open supplier	----
Grid operator	----
Data Hub	Sends a response on the success of receiving meter data to the grid operator

Message description

Document	Name
Xml Document:	EnergyReportResult
Xsd Document	EnergyReportResult.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender (the Data Hub)	16 characters
ReceiverIdentification	EIC code of the message recipient (GO)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
OriginalDocumentIdentification	Reference to the ID of the document the response is related to	Max length: 50 characters
AccountTimeSeries	Section for defining which metering point's data is transmitted	
AccountingPoint	EIC code of the metering point	16 characters
Result	Notice on the success or failure of the loading of data.	
AccountTimeSeries	End of section	

CALCULATION OF GRID OPERATOR'S NETWORK LOSSES

A grid operator or a line operator creates a virtual metering point for transmitting hourly data on network or line losses to the Data Hub.

Grid operators' network losses are calculated as follows:

- Quantity of active energy entering the grid operator's network: $\mathbf{P}_{INbp}$ (electricity entering from the network of another grid operator via border metering points)
- Quantity of active energy exiting the grid operator's network: $\mathbf{P}_{OUTclients}$ (quantity of electricity transmitted to clients from the network of the grid operator's own service area)
- Grid operator's network losses: $\mathbf{P}_{LOSS\ GO} = \mathbf{P}_{INbp} - \mathbf{P}_{OUTclients}$
- Grid operator's balance = $\mathbf{P}_{INbp} - \mathbf{P}_{OUTclients} - \mathbf{P}_{LOSS\ GO} = 0$

Each grid operator must have one open supplier for their network losses. The open supplier enters an open supply agreement with the grid operator to the Data Hub as a portfolio agreement, whereby all the border metering points ($\mathbf{P}_{INbp}$) of this network operator form a part of this open supplier's balance area.

NB!

1) A grid operator's border metering points with another grid operator can only have a single open supplier. The balance of the grid operator's open supplier is calculated based on the border metering points (chapter 9).
2) The open supplier can enter the grid operator's virtual network losses from a metering point to the Data Hub based on an open supply agreement. The open supplier receives the meter data of network losses calculated by the grid operator on the basis of this agreement. A grid operator's virtual metering point for network losses is not a border metering point.

9 NETWORK BILL MESSAGE

The Network Bill message is used by the grid operator to indicate when and which meter data were used to invoice the customer for grid service. The information in this message enabled the open suppliers to invoice their client for the same amount of energy as the grid operator invoiced for the grid service. Data Hub forwards the message sent by the grid operator to the metering point's open supplier(s), the data within the message is not stored in the Data Hub.

Description, examples and rules of messages for transmitting meter data can be found here.

Used to forward network bill related data regarding metering points.

Operator	Operations
Open supplier	----
Grid operator	Sends network bill message
Data Hub	Sends a response on the success of receiving the network bill data to the grid operator. Forwards the network bill data to open supplier(s).

Message description

Document	Name
Xml Document:	NetworkBill
Xsd Document	NetworkBill.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender (grid operator)	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
Period	Section for defining the network bill details	
BillingSequenceNo	Version number of the metering data used to issue the network bill	Number 1..X
CalculationDateTime	Calculation time of the network bill energy quantities	YYYY-MM-DDTHH:MM:SS
AccountingPoint	Metering point EIC code	16 characters
BeginDateTime	Start date of the billing period	YYYY-MM-DDTHH:MM:SS
EndDateTime	End date of the billing period	YYYY-MM-DDTHH:MM:SS
ContainsCalculatedValues	Whether the network bill contains estimated meter data	Possible values: „TRUE" – network bill contained estimated meter data

		„FALSE“ – network bill did not contain estimated data
OutDayQty	Quantity of energy taken from the grid during night-time tariff validity periods	>=0
OutNightQty	Quantity of energy taken from the grid during day-time tariff validity periods	>=0
OutTotalQty	Total quantity of energy taken from the grid	>=0
InTotalQty	Total quantity of energy given to the grid	>=0
Period	End of section	

Response

Data transmitted:

Section	Name
HTTP tagasiside:	
202 ACCEPTED	Response in a separate message
Xml payload:	
Xml dokument	NetworkBillResponse
Xsd dokument	NetworkBillResponse.xsd

Rules:

Grid operator:

- A single message can contain billing details for several metering points.
- Calculation time and billing period start and end times are presented in UTC time.
- The billing period (range between BeginDateTime and EndDateTime) cannot exceed one month.

Open supplier:

- If the metering point has a supply agreement for the billing period then the message is sent to the open supplier. If the metering point has no supply agreement for the billing period then the message is sent to the grid operator's named supplier. If the grid operator has no named supplier for the billing period then sending is skipped.
- AVP sends network bills immediately (i.e. synchronously) after receiving them from the grid operator.
- AVP is not responsible for data quality.

10 TRANSMISSION OF OPEN SUPPLY AGREEMENTS TO THE DATA HUB

The rules for the procedure of switching open suppliers on the Data Hub are based on the requirements stipulated in the Electricity Market Act and the Network Code.

Each market participant must sign an agreement with one (and no more than one) open supplier to provide the market participant with open supply (*open supply agreement*) and balance their balance.

Open supply means selling the entire required quantity of electricity to a market participant, selling the market participant the electricity required to guarantee their balance for the trading period, or buying their surplus electricity of the trading period.

Balance responsibility is ensured through a continuous open supply chain in the following hierarchy:

1. The system administrator has an open supply agreement covering the entire Estonian power system. The system administrator ascertains the open supplies of the Estonian power system and balance providers. Elering acts as an open supplier for its own network losses.
2. An open supplier who has signed a balance agreement with the system administrator is called a balance provider. For balance settlement, the balance provider uses meter data from those border points of their balance area where they are responsible for the balance.
3. An open supplier (except for open suppliers acting as balance providers) has an open supply agreement with a balance provider. The open supplier provides balance settlement for the market participants in their service area who they are supplying under an open supply agreement.
4. A distribution grid operator has an open supply agreement with one open supplier for their service area (for compensation of network losses).
5. The consumer and the producer sign an open supply agreement with one open supplier, i.e. any metering point can only have one valid associated open supply agreement at any time period.

General principles for switching open suppliers

1. The procedure for switching open suppliers **does not cover fixed** deliveries agreed with the supplier. Fixed supply is the quantity of electricity sold/bought during a trading period that was agreed before the beginning of the trading period. Market participants can have several fixed supply agreements. The Data Hub does not hold information on fixed supply transactions.
2. The switch of open suppliers takes place at the change of the calendar month, provided that the procedure for switching suppliers and other relevant requirements are followed.
3. The prerequisite for signing an open supply agreement is a valid network agreement at the metering point. The network agreement is signed with the grid operator of the connection point. The open supply agreement can be registered to the same person that the network agreement is registered to.
4. Each metering point can have one associated network agreement – or a network use agreement in the case of a line operator – and one open supply agreement.
5. The start and end dates of the open supply agreement for the metering point are entered to the Data Hub by the open supplier.
6. If the open supplier cancels an open supply agreement or terminates the agreement in any other form, they must enter information on the termination of the agreement to the Data Hub.

7. A new open supplier must transmit a message on a new open supply agreement to the Data Hub by 7 days in advance.

General Principles for Signing an Open Supply Agreement

1. A market participant must sign a new open supply agreement for switching an open supplier, provided that their previous open supply agreement has been terminated properly.
2. When a market participant signs a new open supply agreement with a new open supplier, then the new open supplier must enter this data to the Data Hub by the statutory deadline. The submitted data must include the validity period of the open supply agreement and the EIC codes of the metering points covered by the agreement.
3. Before signing an open supply agreement, the open supplier must use the Data Hub to verify whether a market participant has the right to switch the supplier of that metering point.
4. An open supplier must transmit data to the Data Hub on the agreement validity periods of the market participant they are providing with an open supply service.
5. Open suppliers are switched at the change of the calendar month at 00:00.

Terminating an Open Supply Agreement

1. An open supply agreement can be terminated 7 days in advance. Open supply agreements can be terminated on other dates only if the network agreement of the market participant – or network use agreement in the case of a line operator – for this metering point is terminated.
2. If an open supplier cancels or otherwise terminates an open supply agreement, the open supplier must enter the data on the termination of the agreement to the Data Hub immediately after having made the decision to terminate the agreement.

General Service (last resort supply)

1. If an open supply agreement ends, the market participant using the open supply service must sign a new open supply agreement no later than by the end date of the previous agreement.
2. If the new supplier has not transmitted the data of a new open supply agreement with the market participant by the statutory date, then the new open supplier of this market participant will be the grid operator, whose network the electrical installation of the market participant is connected to, or a seller assigned by the grid operator (i.e last resort supply).

Signing an open supply agreement due to the switch of the consumer

1. If the market participant associated with a metering point changes, the new market participant must sign a new open supply agreement no later than by the end date of the previous agreement.
2. An open supply agreement can enter into force starting from the date of the network agreement taking force. In case of the termination of a network agreement, the open supply agreement ends at midnight on the date of the termination of the network agreement.
3. The open supplier may enter the open supply agreement within two days, i.e. during 48 hours after the network agreement enters into force (regardless of the entry date of the network agreement).
   Example:

Start time of a new network agreement	**22.04.2017 at 00:00**

The deadline for the grid operator for entering the new network agreement	21.04.2017 at 23:59
The deadline for the open supplier to enter the new open supply agreement	23.04.2017 at 23:59

Discontinuation of an open supply agreement

1. The discontinuation of an open supply agreement is the termination of the agreement due to circumstances outside the control of the market participant being the client under the agreement.
2. In case of the discontinuation of an open supply agreement, the open supplier is switched at 00:00 on the date of discontinuation of the agreement.
3. If a new open supply agreement is signed after the discontinuation of an open supply agreement, the open supplier is switched at 00:00 on the date after signing the new agreement.

Revocation of an open supply agreement

1. An open supplier can revoke an open supply agreement within 14 days after signing it, in case a private consumer has withdrawn from the agreement they have signed via a means of communication.

10.1. TRANSMISSION OF OPEN SUPPLY AGREEMENTS

Open suppliers can transmit open supply agreements to the Data Hub either via batch upload using the web interface or using an automatic data exchange message.

Address of the web interface: https://andmeladu.elering.ee/provider/supply-agreements

Transmission of open supply agreements (NotifySupplyAgreement)

The descriptions of messages for the transmission of open supply agreements are presented below. Examples and rules can be found here.

Used for submitting electricity supply agreement data.

Operator	Operations
Open supplier	Registers new or changed electricity supply agreement data
Grid operator	--
Data Hub	Notifies the grid operator of changes in electricity supply agreement data.

Message description

Document	Name
Xml Document:	NotifySupplyAgreement
Xsd Document	NotifySupplyAgreement.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
OpenSupplierIdentification	EIC code of the open supplier	16 characters
CustomerIdentification	The EIC code of a client	16 characters
FirstDate	Start date of the open supply agreement	See the rules for submitting dates
LastDate	End date of the open supply agreement	See the rules for submitting dates
Reason	Reason for the termination of the agreement	The field is used in case the message is automatically sent by the Data Hub, if the open supply agreement is terminated upon the termination of the network agreement or if the network agreement was terminated incorrectly and is restored. Possible values „GRID AGREEMENT ENDED“ – network agreement is terminated and open supply agreement is terminated or the date is changed based on the end of the network agreement; “GRID AGREEMENT RESTORED” – the termination of the network agreement is withdrawn and the open supply agreement is restored.
MeteringPointIdentification	EIC code of the metering point	16 characters (There can be more than 1 metering point)

Response

Data transmitted:

Section	Name
HTTP response:	

200 OK	Message received, response added[4]
Xml payload:	
Xml document	MeteringPointsData[5]
Xsd document	MeteringPointsData.xds

Message rules

1. An open supply agreement can be signed by the same person that signed the network agreement;
2. An open supply agreement cannot overlap another open supply agreement;
3. The start date of the agreement must be in the future;
4. The start date of the agreement can be:
   - The same as the start date of the network agreement;
   - At least 7 days before the next calendar month (applies for supply agreements starting from 1.08.2019, for earlier contracts at least 21 days before the next calendar month).
5. The end date of the agreement can be:
   - At least 7 days before the next calendar month (applies for supply agreements starting from 1.08.2019, for earlier contracts at least 21 days before the next calendar month).
   - Earlier than the start date; in this case, the agreement is revoked.

10.2. RETROSPECTIVE SUBMISSION OF OPEN SUPPLY AGREEMENTS (CHANGES IN START AND END DATES)

The approvals of the grid operator and the balance provider of the grid operator are necessary for the entry of retrospective changes in open supply agreements. Descriptions, examples and rules for approval circle messages are presented below.

a) Open supplier enters a request to change the start and end dates of an open supply agreement;
b) The request is communicated to the grid operator of the metering point or it's named seller to be approved;
c) After that, the application is forwarded to the balance provider of the grid operator to be approved;
d) Administrator of the Data Hub confirms the amendment, if all the above-mentioned approvals and other conditions of switching the supplier are met.

Sending open supply agreements for approval
Message description, examples and rules are available here.

Operator	Operations
Open supplier	Registers the new or amended open supply agreement's approval
Grid operator	-
Data Hub	Sends open supply agreements to the grid operator and open supplier of the grid operator for approval

[4] No return data is expected from the grid operator; in this case, the response is 204 – NO CONTENT.

[5] See the description of the message

Message description

Document	Name
Xml Document	RequestAgreementCoordination
Xsd Document	RequestAgreementCoordination.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
CustomerIdentification	The EIC code of a client	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
RequestDetails	Section for defining the details of customer inquiries	
RequestIdentification	Request identifier	Max length: 50 characters.
FirstDate	Start date of the electricity supply agreement	YYYY-MM-DD
LastDate	End date of the electricity supply agreement	YYYY-MM-DD
Comment	Reason for open supply agreement amendment/transmission	
RequestDetails	End of section	

Coordination of the amendment/insertion of open supply agreements
The description of messages, examples and rules can be found here.

Operator	Operations
Open supplier	Confirms or does not confirm the changes
Grid operator	Confirms or does not confirm the changes
Data Hub	-

Message description

Document	Name
Xml Document	ReplyAgreementCoordination
Xsd Document	ReplyAgreementCoordination.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
CustomerIdentification	The EIC code of a client	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
RequestDetails	Section for defining the details of clients' requests	
RequestIdentification	Request identifier	Max length: 50 characters.
Decision	Decision	Possible values „ACCEPT" – The amendment is confirmed „DENY" – The amendment is not confirmed
Comment	The comments field is mandatory, if the amendment of an open supply agreement is not confirmed	
RequestDetails	End of section	

Sending confirmations

The description of messages, examples and rules can be found here.

Operator	Operations
Open supplier	-
Grid operator	-
Data Hub	Sends the result of open supply agreement coordination to the grid operator and open supplier

Message description

Document	Name
Xml Document	ConfirmAgreementCoordination
Xsd Document	ConfirmAgreementCoordination.xsd

XML element	Description	Format
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters

DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
CustomerIdentification	The EIC code of a client	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
RequestDetails	Section for defining the details of customer inquiries	
RequestIdentification	Request identifier	Max length: 50 characters.
Result	The result of the request	Possible values „SUCCESSFUL“ – The amendment has been carried out „UNSUCCESSFUL“ – The amendment has not been carried out
Comment	The comments field is mandatory, if the amendment of an open supply agreement is not confirmed	
RequestDetails	End of section	

11 PORTFOLIO AGREEMENTS AND ADMINISTRATION OF BALANCE AREAS ON THE DATA HUB

Each grid operator and open supplier must have an open supply agreement for their portfolio with another open supplier. On the Data Hub, this agreement is called a portfolio agreement (consumers and producers have open supply agreements covering metering points, grid operators and open suppliers or sellers have open supply agreements covering legal persons).

A portfolio agreement can be submitted to the Data Hub only by the open supplier that signed the corresponding grid operator or seller as their client. A grid operator's portfolio agreement hereby contains open supply for their network losses and their general service portfolio

1. Portfolio agreement for a grid operator:
   Metering points between two grid operators are defined as the grid operator's border metering points in the metering point's technical data. When an open supplier submits a portfolio agreement associated with the grid operator, all the border metering points of this grid operator where the grid operator itself is the client (based on metering point metadata) are automatically added to their open supply area.
2. Portfolio agreement for another open supplier:
   When an open supplier submits a portfolio agreement associated with another open supplier, all the metering points forming a part of the added open supplier's supply chain are added to the first open supplier's supply chain. Metering points associated with the second open supplier's agreements will be balance settlement metering points to a balance provider only in case the metering point's grid operator is a part of another balance provider's area.

Portfolio agreement message (NotifyPortfolioAgreement)

Message for forwarding portfolio agreements using the machine interface. This message can only be forwarded by an open supplier. The message description, examples and rules can be found here.

Operator	Operations
Open supplier	Registers new or changed portfolio agreement data
Grid operator	--
Data Hub	Notifies the open supplier of changes in the portfolio agreement data.

Message description

Document	Name
Xml Document	NotifyPortfolioAgreement
Xsd Document	NotifyPortfolioAgreement.xsd

XML element	Description	Format
DocumentIdentification	unique message identifier	Max length: 50 characters.

DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
OpenSupplierIdentification	EIC code of the open supplier, to whom the sender of the message will begin to sell electricity to	16 characters
FirstDate	Start date of the open supply agreement	See the rules for entering dates
LastDate	End date of the open supply agreement	See the rules for entering dates

Named supplier agreement message (NotifyNamedSupplierAgreement)

Message for the transmission of a named supplier agreement using the machine interface. This message can only be forwarded by a grid operator. The message description, examples and rules can be found here.

Operator	Operations
Open supplier	--
Grid operator	Registers the data of a new or changed named supplier agreement
Data Hub	Notifies the open supplier of changes in the portfolio agreement data.

Message description

Document	Name
Xml Document	NotifyNamedSupplierAgreement
Xsd Document	NotifyNamedSupplierAgreement.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
OpenSupplierIdentification	EIC code of the open supplier, to whom the sender of the message will begin to sell electricity to	16 characters

FirstDate	Start date of the open supply agreement	See the rules for entering dates
LastDate	End date of the open supply agreement	See the rules for entering dates

BALANCE PROVIDER'S BALANCE AREA

The rule for the formation of balance areas is as follows: a balance provider's balance area is defined by the balance settlement metering points of the market participants located in the balance provider's balance area. Balance settlement points are metering points, where the market participant's balance provider and grid operator's balance provider do not coincide.

The rights and obligations of an open supplier apply to a balance provider in the Data Hub. The balance provider's supply chain consists of market participants that have signed an open supply agreement with the balance provider, as well as other open suppliers and/or grid operators added by the balance provider under portfolio agreements.

Balance providers can view their balance areas in the Data Hub in the following form:

1. EIC code of the metering point
2. The EIC code of a client
3. EIC code of the grid operator for the metering point;
4. EIC code of the grid operator's balance provider;
5. In case a metering point is part of the balance provider's supply chain: EIC code of the open supplier for the metering point and EIC code of the balance provider;
6. In case a metering point is not a part of the balance provider's supply chain: open supplier and balance provider for the metering point are not visible;
7. The period (the start and end time of an open supply agreement).

The balance provider will receive meter data from the Data Hub in the following form:

1) Meter data from metering points that form a part of the balance provider's open supply chain under electricity supply agreements (EnergyReport);
2) In case a grid operator's border metering points are also the border metering points of the balance provider's balance area, meter data will also be sent from those border metering points (EnergyReport);
3) Aggregated meter data from metering points located in the grid operator's service area that form a part of other balance providers' portfolios (AggregatedMeteringDataReport). A report containing data for the previous period (XML) is forwarded to the address indicated by the balance provider in the Data Hub at 10:30.

Balance area message (BalanceState)
Examples and rules can be found here.

Used for notifying the balance provider and the system administrator of changes in the balance provider's service area.

In the first hour of the day (at 00:05), the balance provider and the system administrator receive a message, if there have been changes in the balance provider's balance area compared to the previous day. The message contains new metering points in the balance area *(„Added block")* or metering points removed from the balance area (*"Removed block").* When there have been no changes in the balance area, the message is empty (only containing the header).

Operator	Operations
Open supplier	Registers new or changed electricity supply agreement data
Grid operator	--
Data Hub	Notifies the grid operator of changes in electricity supply agreement data.

Message description

Document	Name
Xml Document	BalanceState
Xsd Document	BalanceState.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
Added	Section for defining metering points added to the balance area	
BalancePoint	Section for defining the data of metering points added to the balance area	
MeteringPointIdentification	EIC code of the metering point	16 characters
GridOperatorIdentification	EIC code of the grid operator	16 characters
OpenSupplierBalanceProviderIdentification	EIC code of the open supplier's balance provider	16 characters
GridOperatorBalanceProviderIdentification	EIC code of the grid operator's balance provider	16 characters
BalancePoint	End of section	
Added	End of section	
Removed	Section for defining metering points removed from the balance area	
BalancePoint	Section for defining the data of metering points to be removed from the balance area.	

MeteringPointIdentification	EIC code of the metering point	16 characters
GridOperatorIdentification	EIC code of the grid operator	16 characters
OpenSupplierBalanceProviderIdentification	EIC code of the open supplier's balance provider	16 characters
GridOperatorBalanceProviderIdentification	EIC code of the grid operator's balance provider	16 characters
BalancePoint	End of section	
Removed	End of section	

Aggregated meter data message (AggregatedMeteringDataReport)
Examples and rules can be found here.

- Each day at 14.00, the balance provider for a grid operator receives aggregated meter data (Pin and Pout) for metering points located in the grid operator's service area that form part of the portfolios of other balance providers.
- The message contains meter data accounted from the beginning of the current calendar month, whereby aggregated totals of the data sent to the Data Hub for the previous day by the grid operator are added each day. In case corrected meter data is submitted to the Data Hub by the grid operator, the balance provider will receive a message with the corrected meter data.
- Grid operator updates daily the Data Hub with data on supplies
- The meter data message is similar to the EnergyReport message, with the following differences:
    - PortfolioCustomerIdentification contains the EIC code of the grid operator serving as the grid operator for the metering point;
    - InQty and OutQty are aggregated totals of data received from meters located in the grid operator's service area that belong to other balance providers' portfolios;
    - A "missing" value contains the number of metering points, the data for which has not been submitted to the Data Hub.

12 DATA HUB REPORTS

Aggregated reports are compiled by the Data Hub and forwarded to administrators as follows:

a) Grid operator's aggregated report: aggregated meter data by sellers and general services in their network area;
b) Open supplier's aggregated report: aggregated meter data by grid operator areas and by other open suppliers in their portfolio;
c) Balance provider's aggregated report: aggregated meter data by grid operator's areas and by other open suppliers in their portfolio calculated based on the balance settlement of the border metering points.

Aggregated reports are compiled by the Data Hub and forwarded to balance providers, containing the following information:

- Worksheet "OS_GO" = aggregated meter data based on the balance provider's electricity supply agreements;
- Worksheet "BH_OS_GO" = Aggregated meter data for electricity supplied based on electricity supply agreements by open suppliers in the balance provider's portfolio;
- Worksheet "BH_OS" = Aggregated balance settlement meter data for the balance provider + the open suppliers in their portfolio that form a part of the balance provider's balance settlement area (the so-called IN border metering points);
- Worksheet "BH_GO" = sales deducted from the grid operator's balance provider's balance settlement portfolio, electricity supply agreements in the portfolios of other balance providers (the so-called OUT border metering points).

Aggregated reports are calculated and forwarded according to the following schedule:

- Each day by 14:00, reports containing the previous day's meter data (incl. meter data from the beginning of the current calendar month);
- On the first day of the calendar month, meter data is retroactively calculated for the second and third month before the new month;
- On the 8th day of the calendar month (at 00.00-01.00 on the first balancing period), meter data for the previous month is calculated, which forms the basis of the preliminary balance report.

Exemplary dates for the calculation of aggregated meter data for balance reports:

	Aggregated meter data report for January	Aggregated meter data report for February	Aggregated meter data report for March
Preliminary balance report	8th of February	8th of March	8th of April
Final balance report	1st of April	1st of May	1st of June

12.1. New Data Hub reports

Requirements for the report generation process

- The reports for all the operators must be calculated at the same time.
- Reports are "run" by the administrator. Operators cannot run the reports by themselves.

Requirements related to the operator view

- Operator can use the settings to receive reports via e-mail, API or deny receiving reports through any of these channels.
- Operator can enter a separate e-mail address for reports, if they chose e-mail as the channel. In case of API, the reports are sent on the basis of existing settings.
- Operator has a separate view for already generated reports.
- In the operator's report view, the following details for each report are specified – the report type, period, generation time, buttons for downloading in XML or EXCEL formats, field of validity.
- Both valid and invalid reports appear in report view. The report becomes invalid, if the administrator manually generates a report of the same type for the same month again.
- Operator can filter reports by month and type.
- Operator can download each report in XML or EXCEL format.

Report descriptions (link)

12.1.1. Grid operator's report

Name	Grid operator's report
Recipients	**Grid operators**
Frequency	Once per day D+1 data aggregation at 11.00 (sending at 11.00). Once per month on the 8th M+1 data aggregation at 03.00 (sending at 10.00). Once per month on the 1st M+2 and M+3 data aggregation at 03.00 (sending at 07.00).
Description	Includes the reports for one calendar month by balance periods, Pin and Pout separately, only metering point data covered with network agreements are aggregated.
Data	1. Aggregated meter data of quantities that have entered the network through border metering points of the grid operator. (worksheet of the report „GO_IN_LOSSES_PORTFOLIO"); 2. The quantities exciting the grid operator's network with separate amounts for: 2.1. Final quantities by open suppliers – excluding the border metering points where the network agreement client is another grid operator + the metering point of the grid operator's network losses. The grid operator itself is shown as the open supplier, if they operate as a seller and have sales agreements with market participants(worksheet of the report „GO_OS_OUT"); 2.2. The total for the general service (these is a network agreement at a standard metering point, but no sales agreement) (worksheet of the report „GO_OS_OUT"); 2.3. The quantities by grid operators – the total of border metering points by grid operators (worksheet of the report „GO_GO_OUT"); 3. Calculation of grid operator's network losses: the quantities entering and exiting the network (worksheet of the report „GO_IN_LOSSES_PORTFOLIO"); 4. The aggregated total in the grid operator's portfolio = their sales portfolio + general service + network losses (worksheet of the report „GO_IN_LOSSES_PORTFOLIO").
Description of columns	**WORKSHEET GO GO OUT:** a) EIC of the sub grid operator – EIC code of the sub grid operator (gridOperatorEIC)

b) Sub grid operator – name of the sub grid operator (gridOperatorName)
c) EIC of the GO open supplier – EIC code of the sub grid operator's open supplier (gridOperatorBalanceProviderEIC)
d) GO open supplier – name of the sub grid operator's open supplier (gridOperatorBalanceProviderName)
e) EIC of the grid operator – EIC code of the grid operator (parentGridProviderCustomerEIC)
f) Grid operator – name of the grid operator (parentGridProviderCustomerName)
g) Balance period – the time defining the beginning of the balance period (date + time) (DateTime)
h) Quantities entering the network, kWh – the quantity that has entered the grid operator's network from a sub grid operator's network (inQuantity)
i) Quantities exiting the network, kWh – the quantity that has exited from the grid operator's network to a sub grid operator's network (outQuantity)
j) The number of border metering points (meteringPointsTotal)

WORKSHEET GO OS OUT:

a) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC)
b) Grid operator – name of the grid operator (gridOperatorName)
c) EIC of the open supplier – the EIC code of the open supplier in the metering point of the network agreement, in case of general service "TÜHI" (openSupplierEIC)
d) Open supplier – the name of the open supplier in the metering point of the network agreement, in case of general service "TÜHI" (openSupplierName)
e) Balance period – the time defining the beginning of the balance period (date + time) (DateTime)
f) The quantity entering the network, kWh – the quantity that entered the network of the grid operator from the metering points, where a valid network agreement is signed and is not a border point (Pin) (inQuantityPortfolio)
g) The quantity exiting the network, kWh – the quantity that exited from the network of the grid operator, where a valid network agreement is signed and is not a border point (Pout) (inQuantityPortfolio)
h) Number of metering points, pc. – the number of metering point covered by the network agreement (meteringPointsTotal)

WORKSHEET GO_IN_LOSSES_PORTFOLIO:

a) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC)
b) Grid operator – name of the grid operator (gridOperatorName)
c) Balance period – the time defining the beginning of the balance period (date + time) (DateTime)
d) GO network loss, kWh (qtyLosses)

Calculation: From the metering points of the chief grid operator (Pin-Pout) – GO metering points covered by a valid network agreement (Pout-Pin).

e) GO portfolio in total, kWh, Pin: Pin general service + Pin GO sales agreement (inQtyPortfolioGridOperator)

	f) GO portfolio in total kWh, Pout: Pout general service + Pout GO sales agreement + Pout network losses (outQtyPortfolioGridOperator)

12.1.2. Open supplier's report

Name	**Open supplier's report**
Recipients	Open suppliers
Frequency	Once per day D+1 data aggregation at 11.00 (sending at 11.00). Once per month on the 8th M+1 data aggregation at 03.00 (sending at 10.00). Once per month on the 1st M+2 and M+3 data aggregation at 03.00 (sending at 07.00).
Description	Includes the reports for one calendar month by balance periods, Pin and Pout separately, only metering point data covered with network agreements are aggregated.
Data	Aggregated quantities in the total of metering points aggregated by open suppliers and the network area in the open supply portfolio, covered by an open electricity supply agreement – border metering points where the network agreement client is another grid operator are not included.
Description of columns	**WORKSHEET OS_GO:** a) EIC of the open supplier: all the suppliers in the OS portfolio, including themselves (openSupplierEIC) b) Open supplier name – same as the above (openSupplierName) c) EIC of the grid operator – EIC of the grid operator of the metering point (gridOperatorEIC) d) Name of the grid operator – name of the grid operator at the metering point (gridOperatorName) e) Balance period – the time defining the beginning of the balance period (date + time) (DateTime) f) The quantity that entered the network from the final client, kWh – the quantity entering the network Pin (all the metering points that have a valid network agreement and are not GO-GO border points) (inQuantityPortfolio) g) The quantity that exited the network to the final client, kWh – the quantity Pout that exited from the network of the grid operator (all the metering points covered by a valid network agreement and that are not GO-GO border points) (outQuantityPortfolio) h) The quantity entering an isolated network from a final client, kWh – the quantity entering the isolated network Pin (all the isolated metering points covered by a valid network agreement and that are not GO-GO border points (inQuantityIsolated) i) The quantity exiting an isolated network to the final client, kWh – the quantity exiting the isolated network Pout (all the isolated metering points covered by valid network agreements and that are not GO-GO border points) (outQuantityIsolated) j) Number of the metering points, pc. (meteringPointsTotal)

12.1.3. Open supplier's aggregated report

Name	Open supplier's aggregated report

Recipients	Open suppliers
Frequency	The administrator sets the calculation time (date and time) – they calculate the previous month in the beginning of each month
Description	Of the whole open supply chain in each calendar month: o EIC of the client o EIC code of the metering point o The measured Pin and Pout quantities. o Open supplier o Start time and end time of the open supplier's agreement
Description of columns	About each metering point that is covered by network agreement, data in a calendar month: **WORKSHEET OS_CHAIN:** a) EIC metering point – EIC code of the final consumer's metering point (does not include GO–GO points) (meteringPointEIC) b) EIC of the open supplier – EIC code of the open supplier at the metering point (openSupplierEIC) c) Name of the open supplier – name of the open supplier at the metering point (openSupplierName) d) EIC of the grid operator – EIC code of the grid operator at the metering point (gridOperatorEIC) e) Name of the grid operator – name of the grid operator at the metering point (gridOperatorName) f) Beginning date of the open supply agreement – the beginning of the open supply agreement at the metering point (osAgreementStart) g) End date of the open supply agreement – the end of the open supply agreement at the metering point (osAgreementEnd) h) Calculation period – calendar month (period) i) The quantity that entered the network from the final client, kWh (inQuantity) j) The quantity that exited the network to the final client, kWh (outQuantity)

12.1.4. Report of the grid operator's open supplier

Name	Report of the grid operator's open supplier
Recipients	Open supplier of the grid operator
Frequency	Once per day D+1 data aggregation at 11.00 (sending at 11.00). Once per month on the 8th M+1 data aggregation at 03.00 (sending at 10.00). Once per month on the 1st M+2 and M+3 data aggregation at 03.00 (sending at 07.00).
Description	Includes the reports for one calendar month by balance periods, Pin and Pout separately, only metering point data covered with network agreements are aggregated.
Data	1. Aggregated data about the quantities that have entered the grid operator's network through border metering points; 2. The quantities exciting the grid operator's network with separate amounts for: a. Final quantities for the total of open suppliers in the total of metering points covered by an open electricity supply agreement – the border metering points are not included, if the client of the network agreement is another grid operator.

	b. General service (there is a network agreement for a standard metering point, but it is not covered by a sales agreement) c. The quantity in the total of clients of other grid operators – the total of border metering points for the grid operators (clients) 3. Grid operator's network loss
Description of columns	**WORKSHEET GO_IN_BORDER_OS** a) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC) b) Grid operator – name of the grid operator (gridOperatorName) c) EIC of the GO open supplier – EIC code of the grid operator's open supplier (gridOperatorBalanceProviderEIC) d) GO open supplier – name of the grid operator's open supplier (gridOperatorBalanceProviderName) e) EIC of the uper grid operator – EIC code of the uper grid operator (parentGridProviderCustomerEIC) f) Uper grid operator – name of the uper grid operator (parentGridProviderCustomerName) g) Balance period – the time defining the beginning of the balance period (date + time) (DateTime) h) The quantity having entered the network, kWh – the quantity that entered the grid operator's network from the uper grid operator (inQuantity) i) The quantity having exited the network, kWh – the quantity that exited from the grid operator's network to the uper grid operator (outQuantity) j) Amount of metering points, pc. (meteringPointsTotal) **WORKSHEET GO_OUT_BORDER_OS** k) EIC of the sub grid operator – EIC code of the sub grid operator (gridOperatorEIC) l) Sub grid operator – name of the sub grid operator (gridOperatorName) m) EIC of the GO open supplier – EIC code of the sub grid operator's open supplier (gridOperatorBalanceProviderEIC) n) GO open supplier – name of the sub grid operator's open supplier (gridOperatorBalanceProviderName) o) EIC of the grid operator – EIC code of the grid operator (parentGridProviderCustomerEIC) p) Grid operator – name of the grid operator (parentGridProviderCustomerName) q) Balance period – the time defining the beginning of the balance period (date + time) (DateTime) r) The quantity having entered the network, kWh – the quantity that entered the grid operator's network from a sub grid operator (inQuantity) s) Quantities exiting the network, kWh – the quantity that has exited from the grid operator's network to a sub grid operator's network (outQuantity) t) Amount of metering points, pc. (meteringPointsTotal) **WORKSHEET GO_OS_GO** a) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC) b) Grid operator – name of the grid operator (gridOperatorName) c) Balance period – the time defining the beginning of the balance period (date + time) (DateTime) d) The quantity that entered the network under the network agreement and the electricity supply agreement from the final client, kWh – the quantity that entered the network Pin (production) (inQtyWithAgr)

	e) The quantity that exited the network under the network agreement and the electricity supply agreement to the final client, kWh – the quantity that exited the network Pout (consumption) (outQtyWithAgr) f) The quantity that entered the network under the network agreement from a general service client, kWh – the quantity that entered the network Pin (production) (inQtyPortfolioLastResortSupply) g) The quantity that exited the network under the network agreement to a general service client, kWh – the quantity that exited the network Pout (consumption) (outQtyPortfolioLastResortSupply) h) The quantity that entered the network from the chief grid operator's network, kWh – the quantity that entered the grid operator's network at border metering points (inQuantityBorder) i) The quantity that exited to the chief grid operator's network, kWh – the quantity that exited the grid operator's network at border metering points (Pout) (outQuantityBorder) j) Grid operator's network loss, kWh (qtyLosses) k) Number of border metering points, pc. (meteringPointsTotalBorder) l) Number of metering points, pc. (meteringPointsTotal)

12.1.5. Balance provider reports

Name	Balance provider report #1
Recipients	**Balance providers**
Frequency	Once per day D+1 data aggregation at 11.00 (sending at 11.00). Once per month on the 8th M+1 data aggregation at 03.00 (sending at 10.00). Once per month on the 1st M+2 and M+3 data aggregation at 03.00 (sending at 07.00).
Description	Includes the reports for one month by the balance periods
Data	1. Balance provider + aggregated data about balance settlement metering points of the open suppliers in their portfolio that are considered as part of the balance provider's area of the balance settlement (so-called IN metering points); 2. The grid operator's sales that are deducted from the balance provider's balance settlement portfolio, gas supply agreements in other balance providers' portfolios (so-called OUT border metering points).
	• Worksheet „BP_OS" = the aggregated data of the balance settlement metering points of the balance provider and open suppliers in their portfolio that are considered as part of the balance provider's area of the balance settlement (so-called IN balance settlement metering points); • Worksheet „BP_GO" = the sales deducted from the balance settlement portfolio of the grid operator's balance provider, gas sales agreements in other balance providers' portfolios (so-called OUT balance settlement metering points).
Description of columns	**Worksheet BH_GO:** A) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC) B) Grid operator – name of the grid operator (gridOperatorName) C) EIC of the grid operator's balance provider – EIC code of the grid operator's balance provider (gridOperatorBalanceProviderEIC)

D) Name of the grid operator's balance provider – name of the grid operator's balance provider (gridOperatorBalanceProviderName)
E) Balance period – the time defining the beginning of the balance period (date + time) (DateTime)
F) The quantity in kWh that entered the network outside the portfolio. Production that should be deducted from the balance portfolio – production of the metering point of the market participant that does not belong to the balance provider's portfolio. All the metering points of the market participants, including border metering points of the grid operator, where the balance provider of the metering point is different from the grid operator's balance provider. (inQuantity)
G) Quantity exiting the network outside the portfolio, kWh – consumption that needs to be separated from the balance portfolio – consumption at the metering point of the market participant that does not belong to the balance provider's portfolio, Pout. All the market participants' metering points, including border metering points of the grid operator, where the balance provider of the market participant's metering point differs from the grid operator's balance provider. (outQuantity)
H) The quantity entering an isolated network outside the portfolio in kWh. All the market participants' isolated metering points, where the balance provider of the market participant's metering point differs from the grid operator's balance provider. (inQuantityIsolated)
I) The quantity exiting the isolated network outside the portfolio in kWh. All the market participants' isolated metering points, where the balance provider of the market participant's metering point differs from the grid operator's balance provider. (outQuantityIsolated)
J) Number of metering points, pc. (meteringPointsTotal)

Worksheet BH_OS:

A) EIC of the balance provider – the EIC code of the balance provider (openSupplierBalanceProviderEIC)
B) Balance provider – the name of the balance provider (openSupplierBalanceProviderName)
C) EIC of the open supplier – EIC code of the open supplier (openSupplierEIC)
D) Open supplier – the name of the open supplier (openSupplierName)
E) EIC of the grid operator – EIC code of the grid operator (gridOperatorEIC)
F) Grid operator – name of the grid operator (gridOperatorName)
G) Balance period – the time defining the beginning of the balance period (date + time) (DateTime)
H) The quantity entering the network, kWh –production of the market participant's metering point that belongs to the balance provider's portfolio, Pin. All the market participants' metering points, including the grid operator's border metering points that belong to the balance portfolio and the grid operator of which is not in the balance portfolio of the same balance provider. (inQuantity)
I) The quantity exiting the network, kWh – consumption at the market participant's metering point that belongs to the balance provider's portfolio, Pout. All the market participants' metering points, including grid operator's metering points that belong to the balance portfolio and the grid operator of which is not in the same balance provider's balance portfolio. (outQuantity)
J) The quantity entering an isolated network, kWh. All the market participants' isolated metering points that are in the balance portfolio and the grid

	operator of which is not in the same balance provider's balance portfolio. (inQuantityIsolated) K) The quantity exiting an isolated network, kWh. All the market participants' isolated metering points that are in the balance portfolio and the grid operator of which is not in the same balance provider's balance portfolio. (inQuantityIsolated) L) Amount of metering points (meteringPointsTotal)

12.1.6. Balance provider report #2

Name	**Balance provider report #2**
Recipients	**Balance providers**
Frequency	Once per day D+1 data aggregation at 11.00 (sending at 11.00). Once per month on the 8th M+1 data aggregation at 03.00 (sending at 10.00). Once per month on the 1st M+2 and M+3 data aggregation at 03.00 (sending at 07.00).
Description	Includes the reports for one calendar month by balance periods, Pin and Pout separately, only metering point data covered with network agreements are aggregated.
Description of columns	The aggregated meter data of the open suppliers in the balance portfolio with separately specified amounts: a. aggregated by the open suppliers in the portfolio (incl. balance provider themselves) and by the network area in the total of those metering points that are covered with open electricity supply agreements – those border metering points are not included where one grid operator is the client of the other grid operator. b. general service and network losses in the the grid operator's portfolio are presented separately;
Description of columns	**WORKSHEET BH_OS_GO** a) EIC of the open supplier – open suppliers in the portfolio of the balance administrator of each metering point (openSupplierEIC) b) Name of the open supplier: the same as previous, but the name (openSupplierName) c) EIC code of the grid operator – EIC code of the grid operator at the metering point (gridOperatorEIC) d) Grid operator – name of the grid operator at the metering point (gridOperatorName) e) Balance period – the time defining the beginning of the balance period (date + time) (DateTime) f) The quantity entering the network in balance provider's portfolio from the final client, kWh – the quantity entering the network Pin (all the metering points covered with network agreements and provided that it is not a border metering point of two grid operators) (inQuantity) g) The quantity exiting the network in the balance provider's portfolio to the final client, kWh – the quantity exiting from the grid operator's network Pout (all the metering points covered with network

	agreements and provided that it is not a border metering point of two grid operators) (outQuantity) h) The quantity entering an isolated network in the balance provider's portfolio from the final client, kWh – the quantity entering the network Pin (all the metering points covered with network agreements and provided that it is not a border metering point of two grid operators) (inQuantityIsolated) i) The quantity exiting an isolated network in the balance provider's portfolio to the final client, kWh – the quantity exiting the network Pout (all the metering points covered with valid network agreements and provided that it is not a border metering point of two grid operators) (outQuantity) j) Number of metering points, pc. (meteringPointsTotal) **WORKSHEET BH_GO_OS_GO** k) The quantity entering the grid operator's network in the balance provider portfolio from the final client of the general service with a network agreement, kWh – the quantity entering the network Pin (production) (inQtyPortfolioLastResortSupply) l) The quantity entering the grid operator's network in the balance provider's portfolio from the final client of the general service with a network agreement, kWh – the quantity entering the network Pin (production) (inQtyPortfolioLastResortSupply) m) Network losses of the grid operator in the balance provider's portfolio (qtyLosses) n) Number of metering points, pc. (meteringPointsTotal)

13 METER DATA REQUESTS

Open suppliers have the right to use the Data Hub for requesting the last 12 months' hourly meter data of market participants who have either signed an electricity supply agreement with the open s upplier or have authorized them to request such data on the Data Hub.

Meter data request (RequestMeteringDataHistory)

The descriptions of messages for submitting meter data requests are presented below. Examples and rules can be found here.

Used for requesting meter data for a metering point.

Operator	Operations
Open supplier	Requests meter data for a metering point
Grid operator	----
Data Hub	Submits the requested data to the open supplier

Message description

Document	Name
Xml Document	RequestMeteringDataHistory
Xsd Document	RequestMeteringDataHistory.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient (Data Hub)	16 characters
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
MeteringPointIdentification	EIC code of the metering point for which data is requested	16 characters
CustomerIdentification	EIC code of the client whose data is requested	16 characters
CustomerAuthorization	Whether the client has given their authorization[6]	TRUE FALSE

Response

Data returned

Section	Name
HTTP response:	
200 OK	Xml response in a message

[6] See the explanation of *RequestMeteringPointsData*.

Xml payload:	
Xml document	EnergyReport
Xsd document	EnergyReport.xsd

Message rules

1. Meter data can be requested by:
   - Grid operators servicing the metering points, their open suppliers and balance providers. This includes access for open suppliers during a limited time period, where there is no open supply agreement associated with the metering point;
   - Open suppliers and balance providers, based on a valid open supply agreement;
   - Open suppliers that have an authorization for requesting meter data (incl. period of verification);
   - System administrator
2. Meter data can be requested for the past 12 months + the data of the current month
   Example: On 22nd August 2012, the request would return meter data from 1st August 2011 to 21st August 2012.
3. Meter data is only available for the period, where the market participant has a valid network agreement.

13.1. RequestMeteringDataHistory additional rules about the meter data of private persons

1) The Data Hub issues meter data of the metering point about the following metering points that are related to the client's request:
   - Metering points in the open supplier portfolio – the basis is a valid open supply agreement. NB! The meter data is not issued on the basis of a portfolio tree, if the open supplier has submitted the "prohibition" (see in section 13.2)
   - To the grid operator the metering points in their service area;
   - A valid authorization to access data given to an open supplier by a consumer in the customer portal (e-elering)
2) Data Hub does not issue meter data of metering points about the following metering points:
   - Open supplier is not the open supplier of this private person in this metering point;
   - No consumer authorization provided through e-elering;
   - Open supplier has banned his balance provider (upper open supplier) access to metering data for its portfolio (see 13.2).

Additionally:

- All the open suppliers that are not open suppliers for a client at the time of the request must use the value "TRUE" for CustomerAuthorization element. Upon that the Data Hub checks (a) whether the client has given authorization to the open supplier for accessing their meter data (NotifyCustomerAuthorization message from the customer portal to the Data Hub) or (b) whether the open supplier has had an open supply agreement within the last 12 months;

- All the open suppliers that are the open supplier for the client at the time of the request must use the value "FALSE" for CustomerAuthorization element. Upon that the Data Hub checks whether the open supplier had a supply agreement that was valid within the last 12 months. The grid operator of the metering point and also the open supplier's balance provider always have the access to the data of their service area taking into account the ban on access to the meter data (section 13.2). The meter data is provided on the following terms:

    a) To the open supplier with a valid agreement – hourly meter data for previous 12 months;
    b) To the open supplier without a valid agreement, but with an agreement within the past 12 months – the hourly meter data within the agreement period, but not more than 12 months before;
    c) To the grid operator of the metering point – hourly meter data for the previous 12 months.

13.2 Submission of a new authorization to an open supplier on the web application

On the 'Portfolio agreements' page table "Portfolio supply agreements as customer", there is a field (checkbox) indicating whether the open supplier allows accessing all the meter data in his portfolio to their own open supplier and balance provider.

- If permission = YES (default setting) then their (upper) open supplier can access the data via RequestMeteringDataHistory query
- If permission = NO then their (upper) open supplier cannot access the metering data

14 MARKET PARTICIPANT'S AUTHORIZATION AND ACCESS TO THE DATA HUB

The client portal is located: https://e.elering.ee/.

An electricity consumer can use the client portal for viewing data related to their metering points – addresses of the metering points, as well as data on associated network service agreements and open supply agreements, and meter data. Consumption data can be viewed by persons with a valid network service agreement.

Electricity consumers can use the client portal e-elering to give authorizations to open suppliers for viewing their meter data from previous periods. The main purpose of this is to allow open suppliers to provide the consumer with personal offers. The market participant's data can be accessed by parties having a statutory right for accessing the data, or parties authorized by the market participant.

Consumers can receive the following information from the client portal:

- The parties and duration of network service agreements – in case of line operators, network use agreements – signed for metering points;
- The duration and parties of open supply agreements signed for metering points;
- Quantities of electricity registered at the metering points associated with the consumer;
- Open suppliers that are authorized to view the consumer's consumption data and that have requested the consumer's data.

Consumers can use the portal e-elering to give one or several open suppliers authorizations to access their metering point data; they can also provide their e-mail addresses and phone numbers, which the open supplier can use for contacting them. The consumer can also use the portal to check who and when has queried their data.

The customers can log into the client portal using an ID card, Mobile-ID, smart-ID, or online bank links.

Message rules:

1. The Data Hub notifies the open supplier immediately after having received an authorization from a client;
2. The Data Hub does not notify open suppliers of revoked authorizations;
3. Client's contact details (e-mail, phone) are not mandatory information;
4. Each authorization has a start and end date;
5. Client's authorizations to other open suppliers are not visible to an open supplier.

15 JOINT INVOICE WITH NETWORK INVOICE FORWARDING

The general process for network invoice forwarding is as follows:

1. Grid operator and seller sign a joint invoicing agreement;
2. The grid operator transmits the joint invoicing agreement to the Data Hub;
3. Messages associated with the joint invoice are only forwarded to the seller that signed the joint invoicing agreement;
4. Basic outline of invoice transmission: Grid operator > Data Hub > seller > client;
5. Requisite information for the forwarded network invoice is found in the E-invoice standard (Guidelines for Description of Estonian Electronic Invoice)
6. The grid operator's user portal provides a JOINT INVOICING AGREEMENT view:
    a. The grid operator submits a joint invoicing agreement associated with the seller they have signed an agreement with;
    b. The Data Hub only forwards messages associated with a joint invoice to the seller that signed the joint invoicing agreement with the grid operator.
7. The following messages are associated with joint invoice forwarding:
    a. Network invoice forwarding: ForwardInvoice;
    b. Disconnection/connection request: RequestConnectionState (seller > network operator);
    c. Disconnection/connection confirmation: ReplyConnectionStateRequest (network operator > seller).
8. The Data Hub allows using the messages listed in the previous item in the Data Hub machine interface, but also using the same data and fields to exchange information by uploading (the form for small grid operators) or downloading (for sellers) data via the web interface.
    a. Grid operators can use the web interface for forwarding network service invoices. For this purpose, the web interface contains a form, where the grid operator can choose the seller, client and client's metering points, and upload XMLs for the E-invoice.
    b. Grid operators can use the web interface for reviewing history of forwarded network service invoices.
    c. Electricity sellers can view and download network service invoices they have received.
    d. Electricity sellers have a separate view for metering point connection and disconnection (activation/deactivation) requests. In this view, the electricity seller can complete the corresponding form following the message specification. The described view allows the seller to view the responses to selected requests.
    e. The grid operator can review the received connection and disconnection requests, and respond to these using the corresponding form.
9. Technical information: the Data Hub sends all the messages listed above to the other party asynchronously. The Data Hub attempts submitting the message N times (at increasingly longer intervals). In case the submission of the message succeeds or fails (after N attempts), the original sender of the message receives the report below (in the form of a message).

Network invoice forwarding (ForwardInvoice)
Used for forwarding network invoices. The description of the message for forwarding network invoices i s presented below. Examples and rules can be found here.

Operator	Operations
Open supplier	
Grid operator	Submits a network invoice
Data Hub	Forwards the network invoice data to an open supplier

Message description

Document	Name
Xml Document	ForwardInvoice
Xsd Document	ForwardInvoice.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
CustomerIdentification	EIC code of the client whose data is requested	16 characters
MeteringPointIdentifications	Section for defining the metering points covered by the joint invoice	
MeteringPointIdentification	EIC code of the metering point	16 characters
MeteringPointIdentifications	End of section	
InvoiceDetails	Section for defining data associated with the invoice	
InvoiceData	E-invoice XML encoded in BASE64	BASE64 string
InvoiceDetails	End of section	

Joint invoice agreement submission (NotifyJointInvoiceAgreement)

Used for submitting joint invoicing agreements using the machine interface. This message can only be forwarded by a grid operator. Example and message rules can be found here.

Operator	Operations
Open supplier	--
Grid operator	Submits a joint invoice agreement with an open supplier
Data Hub	Sends data related to the joint invoice agreement (addition or change) to the open supplier

Message description

Document	Name
Xml Document	NotifyJointInvoiceAgreement
Xsd Document	NotifyJointInvoiceAgreement.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of sending the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
OpenSupplierIdentification	EIC code of the electricity seller that the grid operator is signing the agreement with	16 characters
FirstDate	Agreement start date	See the rules for entering dates
LastDate	Agreement end date	See the rules for entering dates

Disconnection/connection request

The description of the request for connecting or disconnecting a seller's metering point is presented below. Examples and rules can be found here.

Used for submitting network connection activation or deactivation requests to a grid operator.

Operator	Operations
Open supplier	Submits a request in relation to a metering point
Grid operator	--
Data Hub	Submits data related to the network connection activation or deactivation request to the grid operator

Message description

Document	Name
Xml Document	RequestConnectionState
Xsd Document	RequestConnectionState.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS

SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
CustomerIdentification	EIC code of the client whose data is requested	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
RequestDetails	Section for defining connection/disconnection request data	
RequestIdentification	Unique ID of the request; defined by the sender	
RequestedState	Desired state of the metering point	Possible values „DISCONNECT" – Disconnect the metering point; „CONNECT" – Connect the metering point in case the seller and client are in a valid contractual relationship; „ALLOWED" – The seller notifies the grid operator of the payment of the debt. The contractual relationship between the client and the seller has been terminated; „CANCELLED" – The seller revokes a previously submitted connection/disconnection request that has not yet been fulfilled.
Reason	Cause of the request	Possible values „DEBT" – Client has debts; „DEBT_PAID" – Debt has been paid; „NEW_AGREEMENT" – New agreement
PreferredDate	Desired date of disconnection or connection	YYYY-MM-DD
Comment	Free form text for additional information	
RequestDetails	End of section	

Disconnection/connection confirmation (ReplyRequestConnectionState)

The description of the confirmation message for connecting or disconnecting a grid operator's metering point is presented below. Examples and rules can be found here.

Used for notification of the disconnection or connection of a metering point, scheduling such operation, changes in the schedule or refusal of the request.

Operator	Operations
Open supplier	--
Grid operator	Submits a connection confirmation message
Data Hub	Submits data related to the network connection deactivation or activation request to the open supplier

Message description

Document	Name
Xml Document	ReplyRequestConnectionState
Xsd Document	ReplyRequestConnectionState.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
CustomerIdentification	EIC code of the client whose data is requested	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
ResponseDetails	Section for defining disconnection/connection confirmation details	
RequestIdentification	Unique ID of the request, defined by the sender	
Decision	Section for defining disconnection/connection decision details	
Status	Request status.	Possible values “PLANNED“ – Operation planned; “DISCONNECTED“ – Disconnection complete; “CONNECTED“ – Connection complete; “CANCELED“ – Request revoked
Reason	Reason used for revoking the request; otherwise left empty	Possible values “FAULT” – Error in the message. In case of other errors in receiving the message. E.g., no reason, no status, no unique ID, etc., or a unique ID is used but the client’s data in the message is different from that in a request preceding this request; “NO_AGREEMENT“ – The consumption point has no network agreement with this client at the time of the desired connection/disconnection; “AGREEMENT_END“ – The client’s network agreement at the consumption point is being terminated; “NO_SPR_MP“ – The consumption point has a valid electricity supply agreement with another seller;

		"GO_DISCONNECTED" – The consumption point has a disconnection request from another seller or Elektrilevi. The consumption point will be connected when the other seller or Elektrilevi submits a connection request; "CANCELLED_ORDER" – Revoked during the operation; "NO_CANCEL" – The request cannot be revoked. The disconnection request has been scheduled for the current date and if the revocation message is received on the same day, the request can no longer be revoked. E.g., seller submits a revocation request on the date of the disconnection works.
EstimatedDate	Scheduled date of disconnection or connection	YYYY-MM-DD
Decision	End of section	
Comment	Free form text for additional information	
ResponseDetails	End of section	

16 CLIENT REQUEST MEDIATION

The goal of the exchange process of client requests is the forwarding of client requests that are related to the network service from the electricity seller to the grid operator. Transmission of client requests is used only in a form of messages between the seller and the grid operator. Functionality of client requests contains information exchange between grid operators and sellers in a standardized form.

Client request (SendMessage)

Used for forwarding client requests. The description of messages, examples and rules can be found here.

Operator	Operations
Open supplier	Submits client request data
Grid operator	--
Data Hub	Submits the client request data to the grid operator

Message description

Document	Name
Xml Document	SendMessage
Xsd Document	SendMessage.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
CustomerIdentification	EIC code of the client whose data is requested	16 characters
MeteringPointIdentification	EIC code of the metering point	16 characters
MessageDetails	Section for defining the details of client requests	
RequestIdentification	Unique ID of the request, defined by the sender	
Topic	Subject of the request. One request can only contain one subject. A new message must be used for a new subject.	Possible values “DATA“ – Issues related to meter or client data; “INVOICE“ – Issues related to an invoice.
References	Section for defining reference to a specific invoice	
Reference	Reference to a third party/document.	Currently allowed type: INVOICE.
References	End of section	

RequestStatus	Request status.	Possible values "OPEN" – Request is not closed; "CLOSE" – Request is closed; "CANCEL" – Resolution of the request has been suspended.
Comment	Free form text for additional information.	
MessageDetails	End of section	

Client request response (MessageResult)

Client request messages are submitted to the other party asynchronously. The Data Hub attempts submitting the message N times (at increasingly longer intervals). In case the submission of the message succeeds or fails (after N attempts), the original sender of the message receives a client request response (in the form of a message).

Used for submitting responses to client requests. The description of the client request response message is presented below. Examples and rules can be found here.

Operator	Operations
Open supplier	-
Grid operator	-
Data Hub	Sends a client request response to the open supplier

Message description

Document	Name
Xml Document	MessageResult
Xsd Document	MessageResult.xsd

XML element	Description	Format
DocumentIdentification	Unique message identifier	Max length: 50 characters.
DocumentDateTime	Time of creation of the message	YYYY-MM-DDTHH:MM:SS
SenderIdentification	EIC code of the message sender	16 characters
ReceiverIdentification	EIC code of the message recipient	16 characters
OriginalDocumentIdentification	Reference to the original message associated with the response	
Status	Information on whether the Data Hub was able to forward the message within the defined time.	Possible values "OK" – Message communication succeeded; "FAILED" – Message communication failed.
DateTime	Time when the Data Hub was able to transmit the message. The field is left empty, if the message sending failed (FAILED).	

17 USER MANAGEMENT FOR OPERATORS

In order to use the Data Hub, operators (persons with data entry rights, including grid operators, line operators, and open suppliers) must sign a Data Hub user agreement with Elering.

Under this agreement, the user must notify the system administrator about their authorized user, i.e. their Administrator in a digitally signed form, along with the following data:

Role	Personal identification code	Given name	Surname	E-mail address
Administrator				

The User shall immediately notify the System Administrator of any changes related to the User's Administrator (addition of a new administrator, removal of an administrator, etc.) taking place after signing the agreement by submitting the relevant data in a digitally signed form.

The system administrator creates a personal user account for the user's administrator.

The administrator creates user accounts for other employees authorized by the user. In case of any shifts in the user's authorized employees (addition of a new employee, an employee leaving, etc.), the user's administrator shall immediately make changes in access rights, after changes in user's authorized persons have taken place.

In case the user wants the system administrator to manage the rights of authorized employees on the Data Hub, the user shall notify the system administrator of their list of authorized employees in a digitally signed form, along with the following data:

Role	Personal identification code	Given name	Surname	E-mail address
Authorized employee				