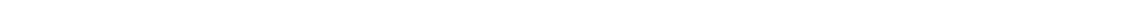




**Electronic Data Platform
Technical Description and API
Requirements**



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1. General Information

1.1 Prerequisites

1.1.1 Browser

- For public menu items, the latest versions of the following browsers :
 - Microsoft Edge
 - Google Chrome
- JavaScript must be enabled
- Cookies must be accepted

1.1.2 Authentication – User Management

- Contact details of SPOC users (i.e. an employee of the customer) must have been supplied to Balansys. This information will be used to perform the setup for each Business Party.
- The customer's SPOC will be able to define and manage users online in the **Fluxys Group CRM Platform**.
- In order to access our API and be able to use an URL for automatic downloads, the SPOC should create an **technical** contact in the Fluxys Group CRM Platform. Such a contact is best set up with the support of someone in the technical team : an application name will be required to identify the technical contact. During the setup, the technical contact should be granted an 'Api User' role linked to a Fluxys Division and a contract. The role should be linked to the affiliate and contract :
 - role 'Api User' should be linked to the 'Balancing Agreement' of Balansys.
- A welcome email is sent once this account is created by the SPOC, requesting to generate the credentials via the provided link. The generated credentials consists of two main components : the **client ID** and the **client secret**. Those are more or less equivalent to an username and a password to authenticate.

Note : Those credentials should be kept securely and cannot be retrieved once generated. SPOC can always generate new credentials, but be aware that they will replace the previous ones.

Note on transition to SSO: Existing user with 'Automated Download Agent' created on the legacy User administration system can still be used to authenticate and download reports during the transition phase. Their username and password will still be active but technical contact, created on the Fluxys Group CRM Platform, should be used in order to avoid any service breakdown.

1.1.3 Base URL's

The base URL for the Electronic Data Platform will be <https://gasdata.balansys.eu>.

A prominent link to the Electronic Data Platform is also placed on www.balansys.eu.

2. Connection for Standard Users

2.1.1 Accessing the Electronic Data Platform

Standard users access the Electronic Data Platform directly by entering the base URL <https://gasdata.balansys.eu> in a browser.

Initially only public content of the Electronic Data Platform will be displayed.

2.1.2 Logging in

As mentioned under *1.1 Prerequisites*, users must first be registered and assigned one or more roles by their company's SPOC: those are **physical** contacts to whom dedicated Extranet roles has been assigned on the '**Balansys**' Fluxys Division.

Registered users can login through the “Sign in” link in the top right corner of the screen.

After logging in, the user will return to the Electronic Data Platform home screen, but will see additional items under the various menus – according to the assigned user rights.

For example, any user that is assigned a ‘Reader’ role on <https://gasdata.balansys.eu> will be able to see a ‘Invoicing’ item with several sub-items like ‘Settlement prices’, ‘Preliminary Allocation Details’...

Unless the user performs an explicit logout, he will stay logged in as long as he does not close his browser, with a maximum of 12 hours.

For more information on how to login and set up physical contacts and assigning roles, please refer to the user manual on the [EDP homepage](#).

3. Connection for Client Systems

Each report has its dedicated API endpoint to use in order to download the reports. Parameters can be set in the endpoint URL to define requested periods, nodes,...

Downloading reports requires:

- first to get a authentication token using the technical contact’s credentials.
- then, use this token to call the endpoint of the report and download it.

3.1 Authentication

Authentication is done via OAuth2 protocol:

- Users created as technical contact on the Fluxys CRM Group Platform have a client ID and a client secret.
- Users created on the legacy User administration system an username and a password.

NB :

- URLs of endpoints (to authenticate and download report) differ depending on the type of users

3.2 Api Gateway (using client ID and client secret)

3.2.1 Procedure

The following is the procedure to follow to download reports from <https://apigateway.portalextranet.bsys.flbe.fluxys.com>

The implemented method is OAuth2 Client Credentials Grant. Using this standard, a download from <https://apigateway.portalextranet.bsys.flbe.fluxys.com> takes 2 distinct requests to our servers.

3.2.2 Authenticate and retrieve a bearer token

In order to retrieve a bearer token, with the client ID and client secret, a http request needs to be made to the OAuth 2.0 token endpoint at: <https://login.microsoftonline.com/4b81df1d-187a-47ef-a0b4-df7556124bc8/oauth2/v2.0/token>

Endpoint	Description	Method
https://login.microsoftonline.com/4b81df1d-187a-47ef-a0b4-df7556124bc8/oauth2/v2.0/token	This endpoint is the target of the initial request to exchange an authorization code for an access token.	HTTP-POST

The body is composed with the following parameters :

Parameter	Value	Required
grant_type	client_credentials	Yes
scope	https://fluxysidpextranet.onmicrosoft.com/68cd21ce-df2f-4bb3-9b9f-814ed63774cc/default	Yes
client_id	Client ID as given on technical contact setup	Yes
client_secret	Client secret as given on technical contact setup	Yes

After successfully validating the provided Authorization header, the server will return a response similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json;charset=UTF-8
Cache-Control: no-store
Pragma: no-cache

{
  "access_token":"2YotnFZFEjrlzCsicMWpAA",
  "expires_in":3600,
}
```

The value associated with the JSON key “access_token” will be used as a Bearer authorization header in the next step. It must be used as is without any transformation.

3.2.3 Download a report by providing the bearer token to the api gateway

To download the actual report, make a https GET request to the report url (eg. <https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/settlementprice/get>) making sure to include the bearer token retrieved in step 1 in an ‘Authorization: Bearer’ header

```
GET /TransmissionHandler/ Reports/WebTrack/settlementprice/get
HTTP/1.1
Host: apigateway.portalextranet.bsys.flbe.fluxys.com
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA
Accept: application/xml
```

After validating your access token, the report will be returned. The main accepted format reports are xml and csv to define in the “Accept” header.

3.2.4 Example

This example illustrates a way to authenticate and download a report using the API gateway by using an API testing tool (PostMan).

First create a new request. This request will handle the authentication in its request headers and will process the GET to download the report.

3.2.4.1 Authentication

1. Insert the authorization attributes (in the ‘Authorization’ tab) : fill in the form with the required parameters (as described here above [Authenticate and retrieve a bearer token](#)) :
 - *Type* : OAuth 2.0
 - *Header Prefix* : Bearer
 - *Access Token URL* should contain the endpoint : <https://login.microsoftonline.com/4b81df1d-187a-47ef-a0b4-df7556124bc8/oauth2/v2.0/token>
 - *Client ID* , *Client Secret*

- **Scope** : <https://fluxysidpextranet.onmicrosoft.com/68cd21ce-df2f-4bb3-9b9f-814ed63774cc/.default>
- **Client Authentication** : save client credentials in body

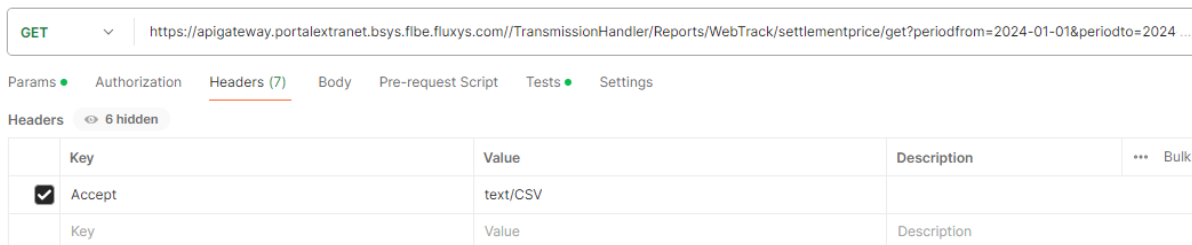
2. Click on 'Get New Access Token' to run the request

3. Retrieve token and store it in a variable

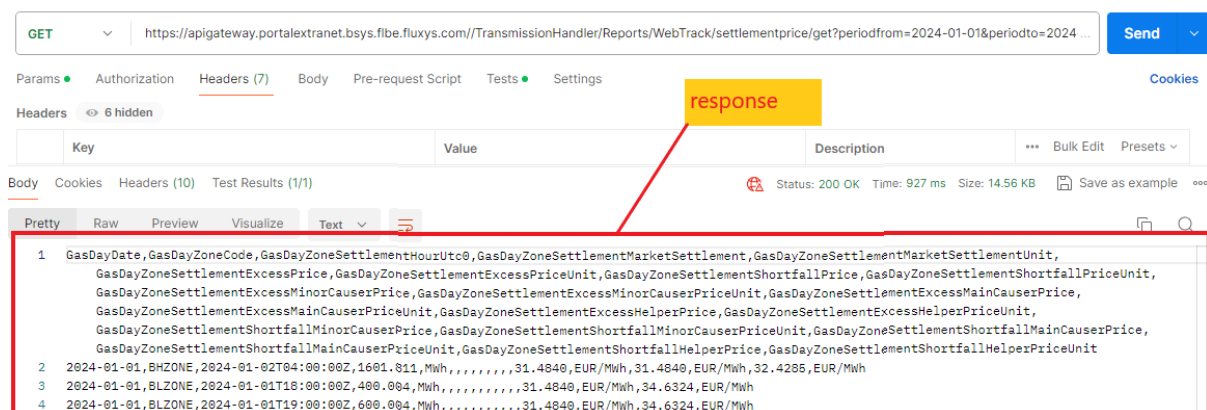
3.2.4.2 Download the report

1. Fill the GET request with the URL of the desired report. E.g : <https://apigateway.portalextranet.bsys.fluys.com//TransmissionHandler/Reports/WebTrack/settlementprice/get?periodfrom=2024-01-01&periodto=2024-01-31>

2. Insert headers attribute (in the Headers tab)
 • accept : application/xml or text/csv (depending of the desired output format : xml or csv)



3. Click on 'Send' and get the requested report in the response



3.3 Api Gateway (using username and password)

3.3.1 Procedure

The following is the procedure to follow to download reports from <https://api.gasdata.balansys.eu>. We have implemented the OAuth2 Client Credentials Grant. Using this standard, a download from <https://api.gasdata.balansys.eu/> takes 2 distinct requests to our servers.

3.3.1.1 Authenticate and retrieve a bearer token

In order to retrieve a bearer token, the following https request needs to be made to <https://xumais.balansys.eu/connect/token>.

```

POST /connect/token HTTP/1.1
Host: xumais.gasdata.balansys.eu
Authorization: Basic czZCaGRSa3F0MzpnWDFmQmF0M2JW
Content-Type: application/x-www-form-urlencoded

grant_type=client_credentials&scope=fluxys_api
    
```

As you can see above, the request is authenticated using an 'Authorization: Basic' header. The credentials are encoded in base64 in the format username:password.

After successfully validating the provided Authorization header, the server will return a response similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json;charset=UTF-8
Cache-Control: no-store
Pragma: no-cache

{
  "access_token": "2YotnFZFEjrlzCsicMWpAA",
  "expires_in": 3600,
}
```

The value associated with the JSON key “access_token” will be used as a bearer authorization header in the next step. It must be used as is without any transformation.

3.3.1.2 Download a report by providing the bearer token to the api gateway

To download the actual report, make a https GET request to the report URL (e.g. <https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/pinvanx/get>) making sure to include the bearer token retrieved in step 1 in an ‘Authorization: Bearer’ header

```
GET /TransmissionHandler/Reports/WebTrack/pinvanx/get HTTP/1.1
Host: api.gasdata.balansys.eu
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA
```

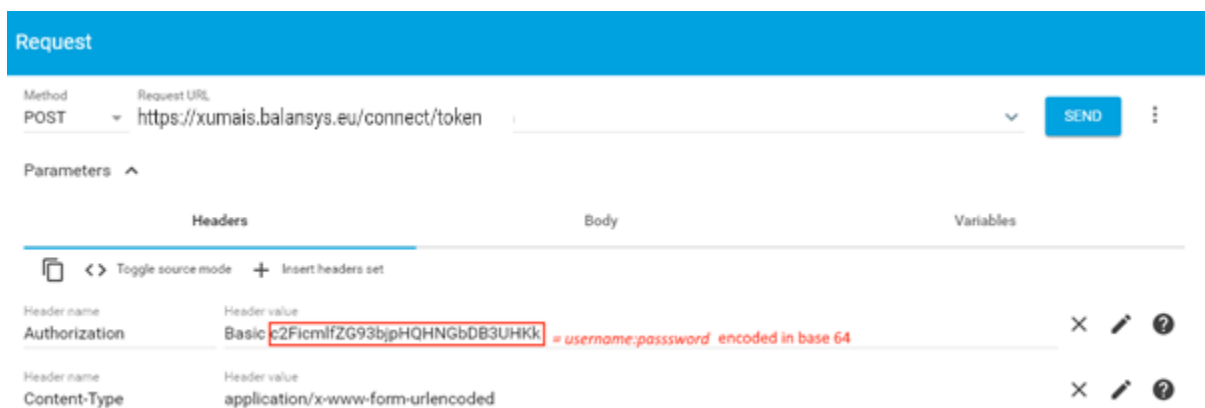
After validating your access token, the report will be returned.

3.3.2 Example

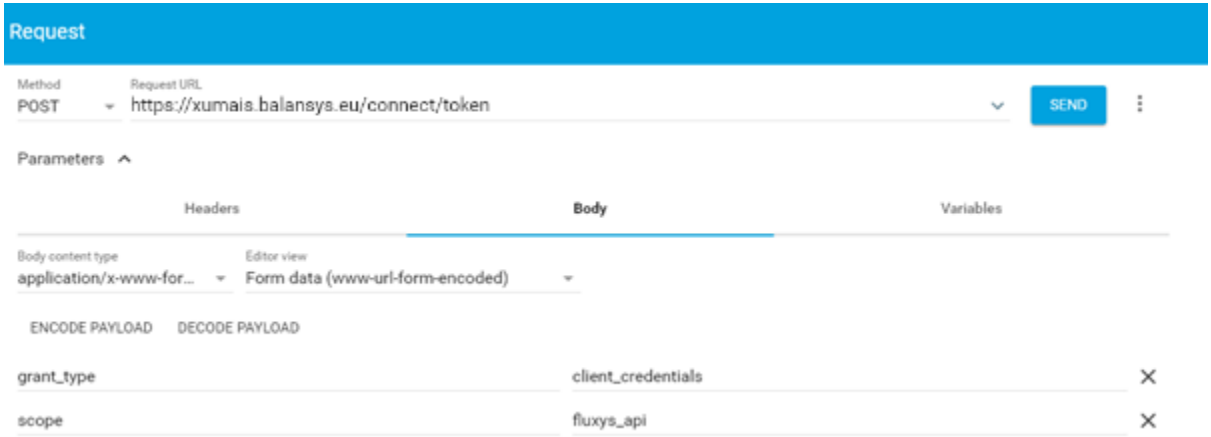
This example illustrates a way to authenticate and download a report using the API gateway by using an API testing tool (Chrome ARC).

3.3.2.1 Authentication

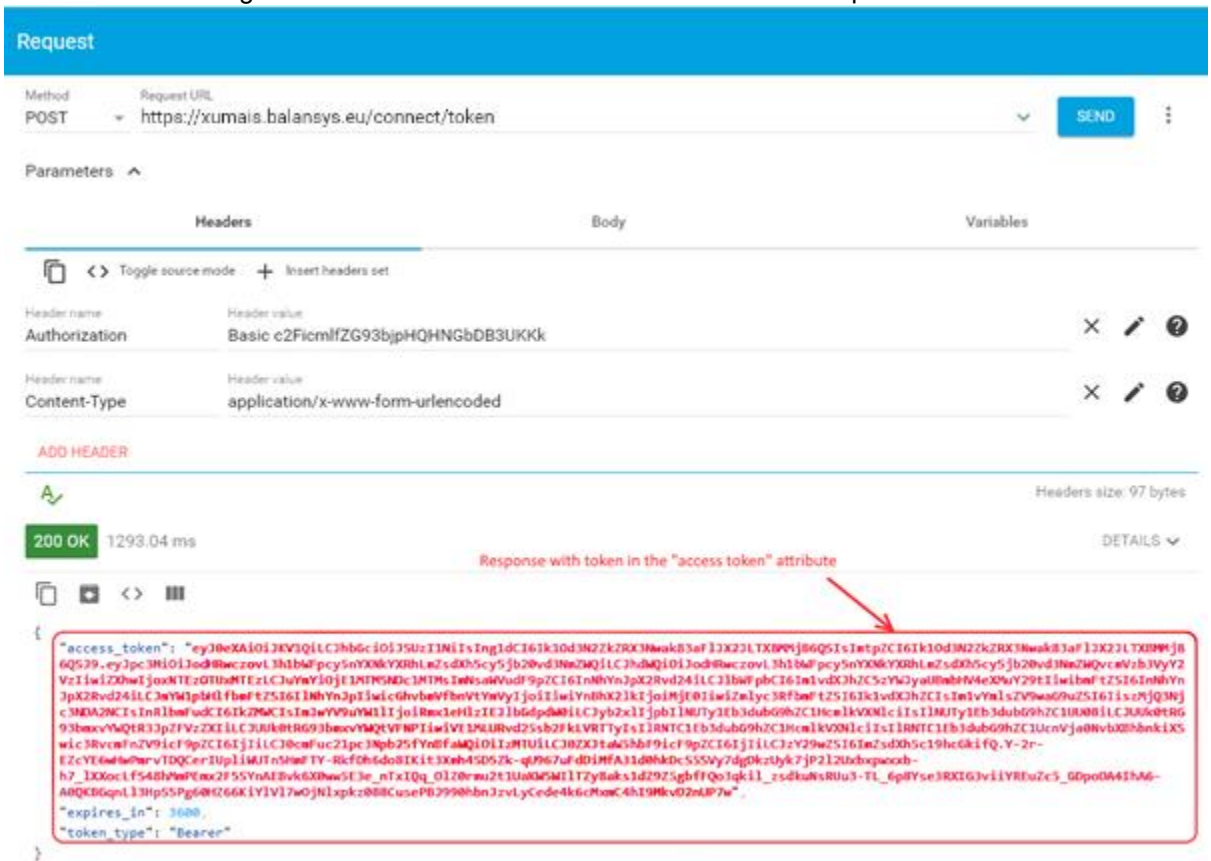
1. Fill the POST request with <https://xumais.balansys.eu/connect/token>
2. Insert header attributes
 - authorization: Basic *username:password* (base64 encoded) . The used credentials are the ones of the automated download agent user created on the EDP platform (legacy User Administration System)
 - content-Type: application/x-www-form-urlencoded



3. Insert body
 - grant_type : client_credentials
 - scope : fluxys_api



4. Click on 'Send' and get the token in the access token attribute of the response



3.3.2.2 Download the report

1. Fill the GET request with the URL of the desired report.
E.g
<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/settlementprice/get?periodfrom=2020-01-01&periodto=2020-01-31>
2. Insert header attributes
 - authorization : Bearer *token*
 - accept : application/xml or text/csv (depending of the desired output format : xml or csv)
3. Click on 'send' and get the requested report in the response

Request

Method: GET
Request URL: https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/settlementprice/get?periodfrom=2020-0-0

Parameters

Header name	Header value
Authorization	bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6ImJmSjR3bk5XU0E0UE5TTfJfZjh1dkpMWTZKUSIsIm
Accept	text/XML

200 OK 5045.26 ms

```
<SettlementPricePublication xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" GenerationDateTimeUtc="2020-05-13T12:50:40.7369668Z" xmlns="http://www.fluxys.com/edp/1.0"><GasDay Date="2020-01-01" SettlementPriceUnit="EUR/kWh" EnergyUnit="kWh"><Zone Code="BHZONE"><Settlement HourUtc="2020-01-02T04:00:00Z" HourNumber="24" ExcessPrice="0.0113335" ShortfallPrice="0.0116840" MarketSettlement="-5082881.54722055853609378590" /></Zone><Zone Code="BLZONE"><Settlement HourUtc="2020-01-02T04:00:00Z" HourNumber="24" ExcessPrice="0.0113335" ShortfallPrice="0.0116840" MarketSettlement="-942742.85108931095479709593" /></Zone></GasDay></SettlementPricePublication>
```

3.3.3 Server Certificate's Root Certification Authority must be trusted

As currently, the Root Certification Authority's Certificate (CA) of the Server Certificate must be trusted on the client for automatic downloads to work. Normally the Root CA will be GlobalSign.

4. Electronic Data Platform Automated Downloads

4.1 Report Overview

The following table provides an overview of all report downloads, with an indication for which type of user these reports are provided. (Y = yes; N = no; C = provided if customer has signed a specific contract).

Download Name	Grid User	End User
Grid User Account Position	Y	N
Settlement Prices	Y	N
Allocation details	Y	N
Grid User Financial Exposure Position	Y	N

4.2 General remarks

4.2.1 Base URL

Endpoint URLs are different depending on the type of users used to connect and authenticate.

4.2.1.1 Using the SSO technical contact : client ID and secret

Base URL :

<https://apigateway.portalextranet.bsyst.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/>

4.2.1.2 Using the user with 'Automated Download Agent' (legacy)

Base URL : <https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/>

NB: The access to the automatic downloads needs a valid token retrieved after a successful authentication to the authentication server (like describe in the [above](#) section) :

- <https://login.microsoftonline.com/4b81df1d-187a-47ef-a0b4-df7556124bc8/oauth2/v2.0/token> (SSO user)
- <https://xumais.balansys.eu/connect/token> (Legacy user)

4.2.2 File Formatting

The XML Schema Definition (XSD) and the full sample XML file and/or CSV file for each of the reports mentioned in this document is provided in the relevant folder on the Fluxys website.

4.2.3 Selecting a period

From/To dates entered for period selection are always included in that period. This means that by denoting DateFrom "2012-04-01" and DateTo "2012-04-02", a period of 2 days is selected.

A date refers to a GasDay, starting from 06:00AM and ending at 06:00AM, local time

4.3 Allocation Details

Note that allocation details only exist in CSV format.

The data available to download are the preliminary allocation details.

4.3.1 Description

The download URL could be used by a client application for automatically downloading a collection of allocation details linked to a given document date or related to a particular Monthly Details Version Number (formerly: SAPEXportVersionNumber).

It is also possible to automatically download a single allocation detail.

Remark: Allocation details were formerly known as invoice annexes. You will still find references to the old name in some occasions like report codes.

Relative URL : pinvanx/get?

4.3.2 Parameters

4.3.2.1 SAPversion

The “v” is the parameter name for *Monthly Details Version Number* (SAP Export Version Number)

The format for the version number is YYYYMMVVV with

- YYYYMM: supply year and month
- VVVV version number

E.g. v = 2016120000

Note: version number VVVV is always 0000 for Preliminary Allocation Details!

4.3.2.2 annextype

The “annextype” is the parameter name for *Annex Type Code* (Allocation Details Report Type Code)

The parameter is mandatory if an individual report is requested (and therefore using CSV format file). It should not be used if the allocation details in general are required.

The following table shows the different codes and whether or not a date (see 4.3.2.3) is necessary.

Code	Report title	Date required?
DP001BSYS	Grid User's Definitive Hourly Allocation Form	Y
DP002BSYS	Grid User's Definitive Daily Allocation Form	N
DP003BSYS	Grid User's Definitive Monthly Allocation Form	N
DP004BSYS	Grid User's Definitive BAP Hourly Allocation Form	N

4.3.2.3 annexdate

The “annexdate” is the parameter name for *Date of the Allocation Details to download*.

The format is YYYY-MM-DD

This parameter is only allowed for the individual download of the daily report DP001BSYS.

4.3.2.4 Format Types available

The format types are filled in the header of the http request

- CSV : “text/csv”
- CSVZIP : “application/octet-stream”

CSV: only to download individual report like DP001BYS, ... DP004BSYS

CSVVzip: in all other cases

This parameter is always mandatory.

4.3.3 CSV format

The full CSV *samples* can be found in the CSV folder on the Fluxys website.

Each of the following paragraphs contains a *snippet* that gives an impression of how the CSV file looks like.

4.3.3.1 Grid User's Definitive Hourly Allocation Form (DP001BSYS)

```
GRID_USER;GRID_USER_CODE;OPERATIONAL_REGIME;ZONE;GEL_NAME;DATE_TIME_FROM;DATE_TIME_TO;HOUR_NUMBER;EEAh;XEAh;IPTh;IPT_Counterparty
;;;;;kWh;kWh;kWh;
ABC;ABCUSERSHIPPERCODE;Unbalanced;BELUXHZONE;N/A;1/12/2017 06:00;1/12/2017 07:00;1;;;5.000 ;Other shipper 1
ShipperName1;SHIPPERCODE;Unbalanced;BELUXHZONE;N/A;1/12/2017 06:00;1/12/2017 07:00;1;;;9.000;Other shipper 2
ShipperName;SHIPPERCODE;Unbalanced;BELUXHZONE;N/A;1/12/2017 07:00;1/12/2017 08:00;2;;;5.000;Other shipper 2
```

“Zone” can have the following values

- BELUXHZONE
- BELUXLZONE

“Point type” can have the following values

- Interconnection Point
- Distribution Domestic Exit Point
- End User Domestic Exit Point

4.3.3.2 Grid User's Definitive Daily Allocation Form (DP002BSYS)

```
GRID_USER;GRID_USER_CODE;OPERATIONAL_REGIME;ZONE;GEL_NAME;GAS_DAY;EEAd;XEAd;IPTd;IPT_Counterparty;
;;;;;kwh;kwh;kwh;
Shipper Name;SHIPPERCODE;Unbalanced;BELUXHZONE;N/A;1/12/2017;;;4.750;other shipper 1;;
Shipper Name;SHIPPERCODE;Unbalanced;BELUXHZONE;N/A;1/12/2017;;;4.667;other shipper 2;;
Shipper Name;SHIPPERCODE;Unbalanced;BELUXHZONE;N/A;2/12/2017;;;5.000;other shipper 3;;
```

“Zone” can have the following values

- BELUXHZONE - BHZONE
- BELUXLZONE - BLZONE

“Point type” can have the following values

- Interconnection Point
- Distribution Domestic Exit Point
- End User Domestic Exit Point

4.3.3.3 Grid User's Definitive Monthly Allocation Form (DP003BSYS)

```
GRID_USER;GRID_USER_CODE;OPERATIONAL_REGIME;ZONE;GEL_NAME;GAS_MONTH;EEAm;XEAm;IPTm;IPT_Counterparty
;;;;;kWh;kWh;kWh;
Shipper Name;SHIPPERCODE;Unbalanced;BHZONE;N/A;Dec-17;;;9.250;other shipper 1
Shipper Name;SHIPPERCODE;Unbalanced;BHZONE;N/A;Dec-17;;;5.667;other shipper 2
Shipper Name;SHIPPERCODE;Unbalanced;BHZONE;N/A;Dec-17;;;10.000;other shipper 3
Shipper Name;SHIPPERCODE;Unbalanced;BHZONE;GEL A;Dec-17;0;-10.000;;N/A
```

“Zone” can have the following values

- BELUXHZONE - BHZONE
- BELUXLZONE - BLZONE

“Point type” can have the following values

- Interconnection Point
- Distribution Domestic Exit Point
- End User Domestic Exit Point

4.3.3.4 Grid User's Definitive BAP Hourly Allocation Form (DP004BSYS)

```
GRID_USER;ZONE;DATE_TIME_FROM;DATE_TIME_TO;HOUR_NUMBER;SUM(EEAh);SUM(XEAh);NCTTh;Ih;IPTH;GBP*h;GEh;GSh;GBPh;GEd;GSd;MBP*h;MEh;MSh;MEd;MSd;ECGh : SUM(GBP*h);SCGh : SUM(GBP*h);MT+h;MT-h
;;;;;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh;kWh
```

Shipper Name;BELUXHZONE;1/12/2017	06:00;1/12/2017	07:00;1;6.950.000;-5.121.016;-993.442;835.542;14.000
		;849.542;0;0;849.542;0;0;864.456;0;0;0;0;0;22.000.000;-22.000.000
Shipper Name;BELUXHZONE;1/12/2017	07:00;1/12/2017	08:00;2;6.950.000;-5.051.631;-993.442;904.927;5.000
		;1.759.469;0;0;1.759.469;0;0;2.330.818;0;0;0;0;0;22.000.000;-22.000.000
Shipper Name;BELUXHZONE;1/12/2017	08:00;1/12/2017	09:00;3;6.950.000;-5.297.668;-993.442;658.890;-3.578
		;2.414.781;0;0;2.414.781;0;0;2.759.176;0;0;0;0;0;22.000.000;-22.000.000
Shipper Name;BELUXHZONE;1/12/2017	09:00;1/12/2017	10:00;4;7.410.000;-5.638.904;-993.442;777.654;0
		;3.192.435;0;0;3.192.435;0;0;3.029.708;0;0;0;0;0;22.000.000;-22.000.000

4.3.4 Example URL

4.3.4.1 Zip file for preliminary allocation details in general

SSO User :

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000>

Legacy User :

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000>

4.3.4.2 Specific preliminary allocation details report

SSO User :

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000&annexdate=2017-01-20&annextype=DP001BSYS>

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000&a=DP002BSYS>

Legacy User :

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000&annexdate=2017-01-20&annextype=DP001BSYS>

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/pinvanx/get?sapversion=2017010000&a=DP002BSYS>

4.4 Grid User Account Position

4.4.1 Description

The Grid User Account Position publication holds Market Threshold with the Position and possible Settlement for the Market and the Grid User.

It also indicates whether the data is based on provisional or forecasted values.

Grid Users receive data about the BELUXH-zone and/or the BELUXL-zone, depending on their activities.

The Market Settlement could be either a Market Shortfall or a Market Excess, a direction is conventionally defined:

- A positive Market Settlement corresponds to a Market Shortfall, Balansys injects gas into Grid User Balancing Position of causing Grid Users, Balansys buys gas to compensate Market Shortfall
- A negative Market Settlement corresponds to a Market Excess, Balansys withdraws gas from Grid User Balancing Position of causing Grid Users, Balansys sells gas to compensate Market Excess

This publication is published every hour (H+30') with the latest actual and forecasted values.

All values are rounded to 1kWh.

Relative URL : [griduseraccountposition/get?](#)

4.4.2 Parameters

4.4.2.1 *periodfrom – periodto*

This is the period for which data is retrieved.
Dates are expressed in the YYYY-MM-DD format.

4.4.2.2 *Format types available*

The format types are filled in the header of the http request

- CSV : “text/csv”
- XML : “text/xml”

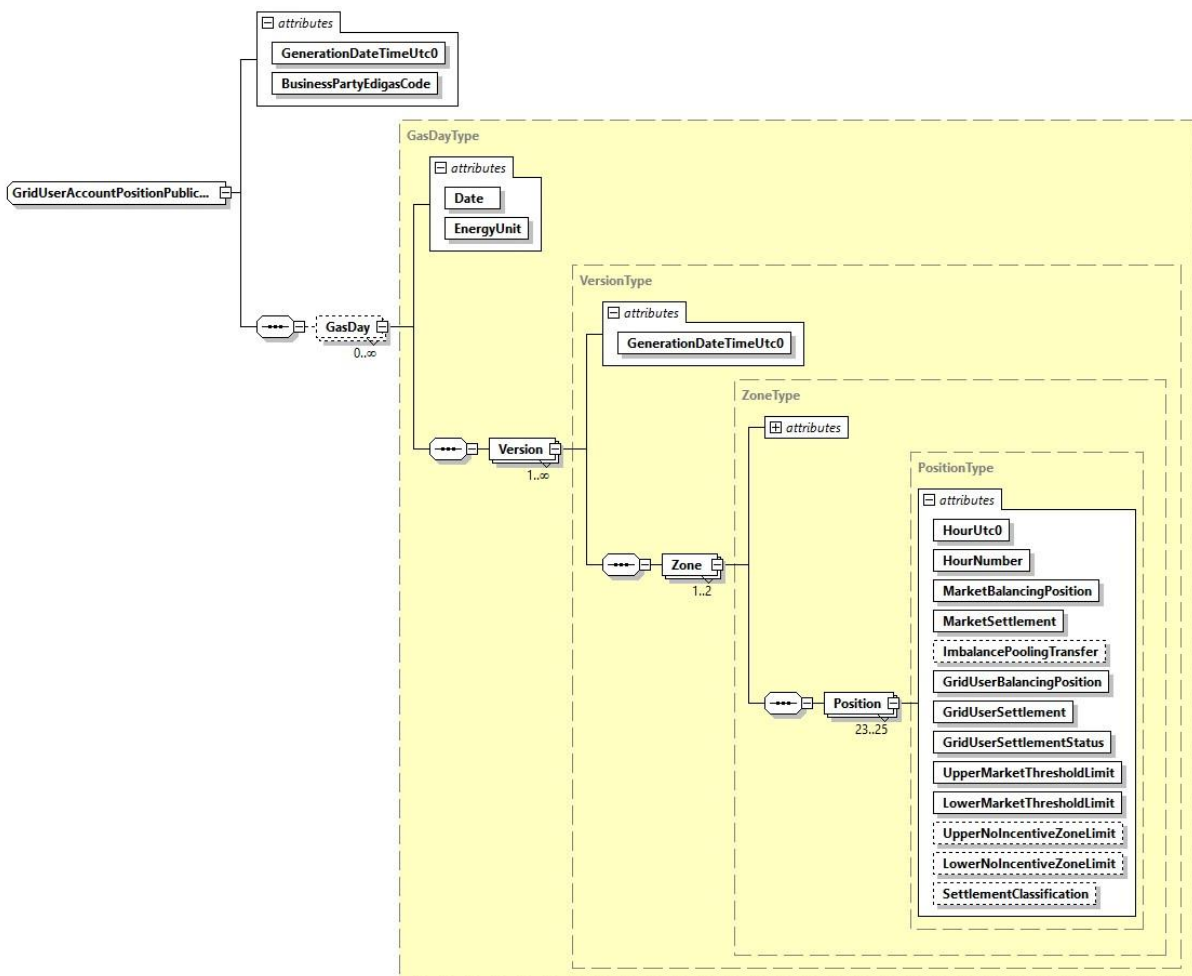
4.4.2.3 *IncludeAllVersions*

This input flag indicates whether or not the user also wants to download older versions (based on outdated and less accurate data) of the report.

4.4.3 XML

4.4.3.1 XSD

The following diagram shows the XML Schema for this publication.



4.4.3.2 *XML snippet*

The full XML sample, containing data for 2 gasdays, can be found in the XML folder on the Fluxys website.

The following *snippet* gives an impression of how the XML looks like:

```
<GridUserAccountPositionPublication
  GenerationDateTimeUtc0="2012-04-25T15:34:10.9070285Z"
  BusinessPartyEdigasCode="ABC"
  xmlns="http://www.fluxys.com/edp/1.0">
  <GasDay Date=" 2024-01-04" EnergyUnit="kWh">
    <Version GenerationDateTimeUtc0="2012-04-04T08:37:00">
      <Zone Code="BHZONE">
        <Position HourUtc0="2024-01-04T04:00:00" HourNumber="1"
          MarketBalancingPosition="2461330" ImbalancePoolingTransfer="0"
          MarketSettlement="0" GridUserBalancingPosition="1351582" GridUserSettlement="0"
          GridUserSettlementStatus="Provisional" UpperMarketThresholdLimit="2800000"
          LowerMarketThresholdLimit="-2800000" SettlementClassification="Neutral"/>
        ...
      </Zone>
      <Zone Code="BLZONE">
        <Position HourUtc0="2024-01-04T04:00:00" HourNumber="1"
          MarketBalancingPosition="-102940" ImbalancePoolingTransfer="0"
          MarketSettlement="0"
          GridUserBalancingPosition="-65962" GridUserSettlement="0"
          GridUserSettlementStatus="Provisional" UpperMarketThresholdLimit="5000000"
          LowerMarketThresholdLimit="-5000000" SettlementClassification="Neutral"/>
        ...
      </Zone>
    </Version>
    ...
  </GasDay>
  ...
</GridUserAccountPositionPublication>
```

4.4.4 CSV

The full CSV sample, containing data for 2 gasdays, can be found in the CSV folder on the Fluxys website.

The following *snippet* gives an impression of how the CSV file looks like:

```
GasDayDate, GasDayUnit, GasDayVersionGenerationDateTimeUTC0, GasDayVersionZoneCode, GasDayVersionZonePositionHourUtc0, GasDayVersionZonePositionHourNumber, GasDayVersionZonePositionMarketBalancingPosition, GasDayVersionZonePositionMarketSettlement, ImbalancePoolingTransfer, GasDayVersionZonePositionGriduserBalancingPosition, GasDayVersionZonePositionGridUserSettlement, GasDayVersionZonePositionGridUserSettlementStatus, GasDayVersionZonePositionUpperMarketThresholdLimit, GasDayVersionZonePositionLowerMarketThresholdLimit, GasDayVersionZoneSettlementClassification
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T04:00:00Z, 1, -7466, 0, 0, 267659, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T05:00:00Z, 2, 176904, 0, 0, 606996, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T06:00:00Z, 3, 579246, 0, 0, 1029983, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T07:00:00Z, 4, 412612, 0, 0, 1257071, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T08:00:00Z, 5, -50424, 0, 0, 1380188, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T09:00:00Z, 6, -745119, 0, 0, 1410921, 0, Provisional, 29000000, -29000000, Neutral
2024-01-04, kWh, 2024-01-04T20:32:00Z, BHZONE, 2023-01-04T10:00:00Z, 7, -1572021, 0, 0, 1372840, 0, Provisional, 29000000, -29000000, Neutral ....
```

4.4.5 Example URL

The following URL can be used to download the Grid User Account Positions for the month October 2016, including only the last available version. The returned file is in XML format.

SSO User:

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/griduseraccountposition/get?periodfrom=2016-10-01&periodto=2016-10-31&includeAllVersions=false>

Legacy User :

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/griduseraccountposition/get?periodfrom=2016-10-01&periodto=2016-10-31&includeAllVersions=false>

4.5 Settlement Price

4.5.1 Description

The Settlement Price publication holds prices for settlements that have occurred.

Grid Users receive data about the H-zone and/or the L-zone, depending on their activities.

The Market Settlement could be either a Market Shortfall or a Market Excess, a direction is conventionally defined:

- A positive Market Settlement corresponds to a Market Shortfall, Balansys injects gas into Grid User Balancing Position of causing Grid Users, Balansys buys gas to compensate Market Shortfall
- A negative Market Settlement corresponds to a Market Excess, Balansys withdraws gas from Grid User Balancing Position of causing Grid Users, Balansys sells gas to compensate Market Excess

This publication is refreshed whenever the price for a settlement becomes available.

It is possible to consult the SBSP Main Causer, SBSP Minor Causer, SBSP Helper (Shortfall Balancing Settlement Price) and EBSP Main Causer, EBSP Minor Causer, EBSP Helper (Excess Balancing Settlement Price) from both BeluxH & BeluxL-zone in the screen and XML & CSV downloads.

Relative URL : settlementprice/get?

4.5.2 Parameters

4.5.2.1 *periodfrom – periodto*

This is the period for which data is retrieved.
Dates are expressed in the YYYY-MM-DD format.

4.5.2.2 *Format types available*

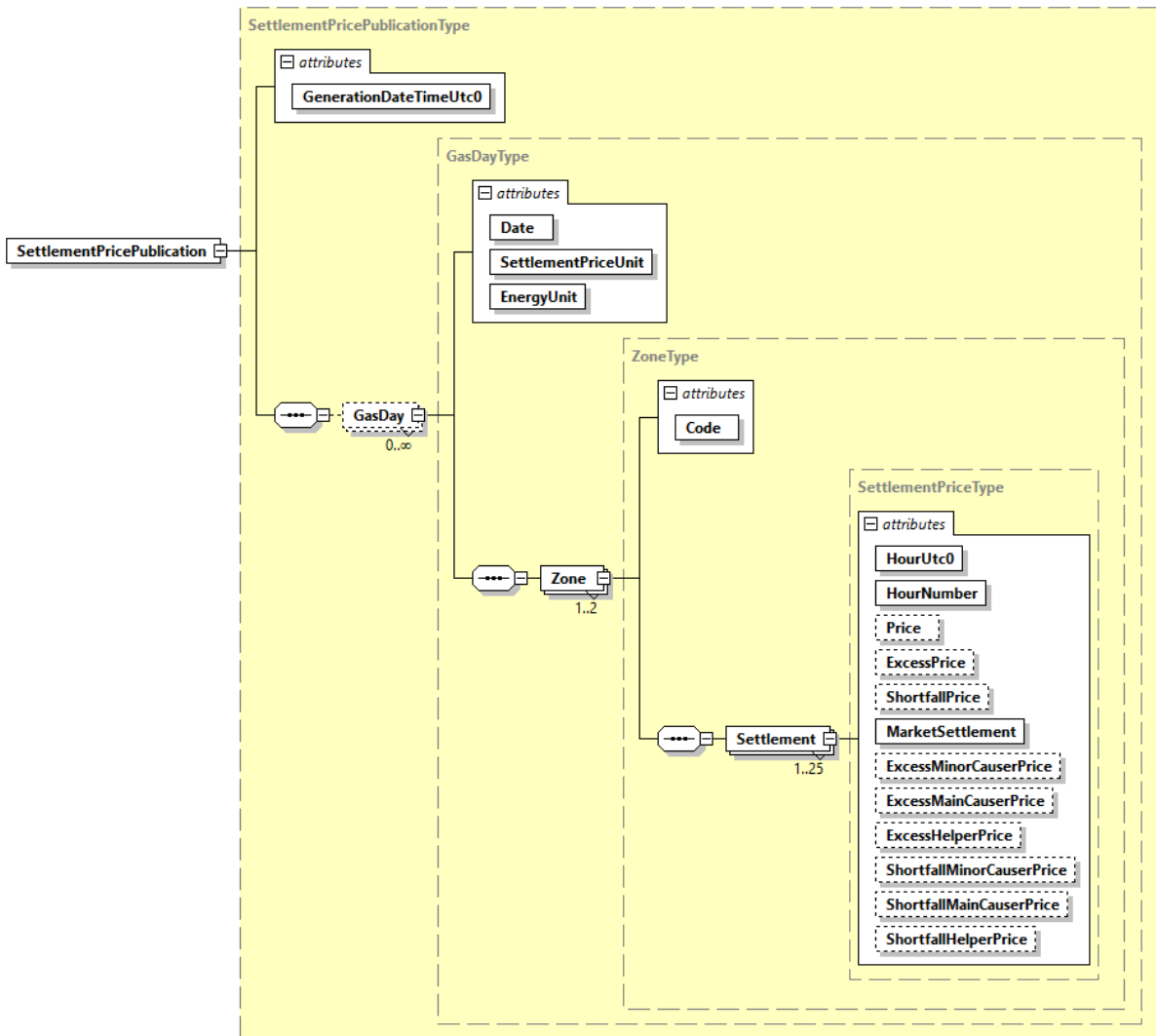
The format types are filled in the header of the http request

- CSV : “text/csv”
- XML : “text/xml”

4.5.3 XML

4.5.3.1 XSD

The following diagram shows the XML Schema for this publication.



4.5.3.2 XML snippet

The full XML *sample*, containing data for 2 gasdays, can be found in the XML folder on the Fluxys website.

Note: In the sample on the website, there is only a settlement price on the second gasday for one gashour in the BELUXHZone and on the third gasday there is only a settlement price for one gashour in the BELUXLZone. This is a theoretic example, as it will be highly unlikely that for a zone no settlement will occur during a gasday.

The following *snippet* gives an impression of how the XML looks like:

```
<SettlementPricePublication GenerationDateTimeUtc0="2001-12-17T09:30:47Z"
  xmlns="http://www.fluxys.com/edp/1.0" >
  <GasDay Date="2024-01-01" SettlementPriceUnit="EUR/kWh" EnergyUnit="kWh">
    <Zone Code="BELUXHZONE">
      <Settlement HourUtc0="2024-01-01T21:00:00Z" HourNumber="17"
        MarketSettlement="-200005.40" ExcessMinorCauserPrice="0.05805"
        ExcessMainCauserPrice="0.06005" />
      <Settlement HourUtc0="2024-01-01T04:00:00Z" HourNumber="24"
        MarketSettlement="-4076276.571571860" ExcessMinorCauserPrice="0.0642112"
        ExcessMainCauserPrice="0.0652112" ShortfallHelperPrice="0.067228" />
    </Zone>
    <Zone Code="BELUXLZONE">
      <Settlement HourUtc0="2024-01-02T16:00:00Z" HourNumber="12"
        MarketSettlement="300006" ShortfallMinorCauserPrice="0.0632112"
        ShortfallMainCauserPrice="0.0652112"/>
    </Zone>
  </GasDay>
</SettlementPricePublication>
```

```

                <Settlement HourUtc0="2024-01-01T04:00:00Z" HourNumber="24"
                MarketSettlement="5973502.751571860" ExcessHelperPrice ="0.067228"
                ShortfallMinorCauserPrice="0.0612112" ShortfallMainCauserPrice="0.0632112" />
            </Zone>
        </GasDay>
        ...
    </SettlementPricePublication>
    
```

4.5.4 CSV

The full CSV *sample*, containing data for 3 gasdays, can be found in the CSV folder on the Fluxys website.

Note: In the sample on the website, there is only a settlement price on the second gasday for one gashour in the BELUXHZone and on the third gasday there is only a settlement price for one gashour in the BELUXLZone. This is a theoretic example, as it will be highly unlikely that for a zone no settlement will occur during a gasday.

The following *snippet* gives an impression of how the CSV file looks like:

```

GasDayZoneSettlementExcessPrice, GasDayZoneSettlementExcessPriceUnit, GasDayZoneSettlementShortfallPrice, GasDayZoneSettlementShortfallPriceUnit, GasDayDate, GasDayZoneCode, GasDayZoneSettlementHourUtc0, GasDayZoneSettlementMarketSettlement, GasDayZoneSettlementMarketSettlementUnit, GasDayZoneSettlementExcessMinorCauserPrice, GasDayZoneSettlementExcessMinorCauserPriceUnit, GasDayZoneSettlementExcessMainCauserPrice, GasDayZoneSettlementExcessMainCauserPriceUnit, GasDayZoneSettlementExcessHelperPrice, GasDayZoneSettlementExcessHelperPriceUnit, GasDayZoneSettlementShortfallMinorCauserPrice, GasDayZoneSettlementShortfallMinorCauserPriceUnit, GasDayZoneSettlementShortfallMainCauserPrice, GasDayZoneSettlementShortfallMainCauserPriceUnit, GasDayZoneSettlementShortfallHelperPrice, GasDayZoneSettlementShortfallHelperPriceUnit
,,,,,2024-01-01,BHZONE,2024-01-02T16:00:00Z,300006,kWh,,,,,,0.0652112,EUR/kWh,0.0632112,EUR/kWh,,
,,,,,2024-01-01,BHZONE,2024-01-02T04:00:00Z,5973502.7516855386004166669,kWh,,,,,,0.0612112,EUR/kWh,0.0632112,EUR/kWh,0.067228,EUR/kWh
,,,,,2024-01-01,BLZONE,2024-01-01T21:00:00Z,-200005,kWh,0.06005,EUR/kWh,0.05805,EUR/kWh,,,,,,
,,,,,2024-01-01,BLZONE,2024-01-02T04:00:00Z,-4076276.5737766651944444444,kWh,0.0652112,EUR/kWh,0.0642112,EUR/kWh,,,,,,0.067228,EUR/kWh
    
```

4.5.5 Example URL

The following URL can be used to download the Settlement Prices for the month May 2016. The returned file is in CSV format.

SSO User :

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/WebTrack/settlementprice/get?periodfrom=2016-05-01&periodto=2016-05-31>

Legacy User :

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/WebTrack/settlementprice/get?periodfrom=2016-05-01&periodto=2016-05-31>

4.6 Grid User Financial Exposure Position

4.6.1 Description

This report gives an overview of the financial exposure position on an hourly basis.

Relative URL : GridUserFinancialExposurePosition/?

4.6.2 Parameters

4.6.2.1 *periodfrom – periodto*

This is the period for which data is retrieved.
Dates are expressed in the YYYY-MM-DD format.

4.6.2.2 *Format types available*

Only available in CSV format.
The format types are filled in the header of the http request

- CSV : “text/csv”

4.6.3 CSV

The following *snippet* gives an impression of how the CSV file looks like:

```
Shipper;From;To;StatusDate;Time;TotalCreditLimit;TotalExposure;UsedCreditPercentage;OpenInvoices;ToBeInvoiced;Rating;BankGuarantee;ExpiryDate;Deposit
ShipperName;01/12/2022;31/12/2022;05/12/2022 15:41;-;€ 2,384,724;-;€ 1,100,567;€ 1,284,157;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 14:40;-;€ 2,384,948;-;€ 1,100,567;€ 1,284,382;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 13:40;-;€ 2,385,171;-;€ 1,100,567;€ 1,284,604;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 12:41;-;€ 2,385,389;-;€ 1,100,567;€ 1,284,822;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 11:41;-;€ 2,385,595;-;€ 1,100,567;€ 1,285,029;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 10:41;-;€ 2,680,512;-;€ 1,100,567;€ 1,579,945;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 09:41;-;€ 2,680,724;-;€ 1,100,567;€ 1,580,158;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 08:41;-;€ 6,104,656;-;€ 3,524,293;€ 2,580,363;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 07:41;-;€ 6,104,867;-;€ 3,524,293;€ 2,580,574;X;-;-
ShipperName;01/12/2022;31/12/2022;05/12/2022 06:41;-;€ 6,105,074;-;€ 3,524,293;€ 2,580,781;X;-;-
....
```

4.6.3.1 *Example URL*

The following URL can be used to download the Grid User Financial Exposure Positions for the month December 2022

SSO User :

<https://apigateway.portalextranet.bsys.flbe.fluxys.com/TransmissionHandler/Reports/GridUserFinancialExposurePosition/?periodfrom=2022-12-01&periodto=2022-12-31>

Legacy User :

<https://api.gasdata.balansys.eu/TransmissionHandler/Reports/GridUserFinancialExposurePosition/?periodfrom=2022-12-01&periodto=2022-12-31>