API : PEB

Technical Documentation

22   Pages

Summary:

The API PEB allows the Balance Responsible Parties (BRP) to notify RTE about their energy block exchanges (referred as PEB for the rest of the document) and to retrieve the states of their PEB.

The API PEB allows also the network customers and holders of consumer-type public transmission network access contracts (CART) to retrieve their declared supply data by their suppliers (PEB BRP-Site).

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1. Introduction

The API PEB allows the Balance Responsible Parties (BRP) to notify RTE about their energy block exchanges (referred as PEB for the rest of the document) and to retrieve the states of their PEB.

The API PEB allows also the network customers and holders of consumer-type public transmission network access contracts (CART) to retrieve their declared supply data by their suppliers (PEB BRP-Site).

1.1 Localisation

URL PrePROD
https://secure-apps-dev.iservices.rte-france.com

URL PROD
https://secure-apps.iservices.rte-france.com

1.2 Category

Confidentiality	Open API
Format	Rest XML for the resources « status-request » and « schedule_document ». Rest JSON for the resource « supplier_data ».

1.3 Resources

Name	Method	URI
Send a status request.	**GET**	/peb/status-request
Send a schedule document.	**POST**	/peb/schedule_document
Retrieve their declared supply data by their suppliers	**GET**	/peb/supplier_data

2. API operations

2.1 General functioning system
The API works as following:
- User authentication with a PKI certificate
- Check if the customer's subscription exists in the application
- Then, the application sends the files depending on process

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2.2 Functional rules

Functional rules are all implemented in this API. Controls made are based on the customer's parameters.

The functional rules are detailed in the SI rules published in the site of RTE : https://www.services-rte.com/en/learn-more-about-our-services/becoming-a-balance-responsible-party/the-block-echange-service.html

The controls are made according to the parameters of the file sent.

2.3 Technical recommendations for the requesting of PEB's API

Actors should have the most reasonable way of requesting PEB's APIs, in order to minimize the number of request make to the application.

You will find below the maximum number of request that RTE accept. This limit is to be considered only for actor having a higly automized Information System.

It should not in any case be seen as an objective.

	Maximum APIs' requests per day
From J-30 to J-2	1 request « anomaly report » per day
Day Ahead	1 request « anomaly report » every 5 min
Day Ahead, from 14h15	1 request « confirmation report » every 5 min
Intraday	1 request « anomaly report » every 5 min
	1 request « confirmation report » every 5 min

If there is a need to automatize, RTE encourage to consider the following strategy :

	Maximum APIs' requests per day
From J-30 to J-2	1 request « anomaly report » per day
Day Ahead	1 request « anomaly report » every hour
Day Ahead, from 14h15	1 request « confirmation report » every hour
Intraday	1 request « anomaly report » every hour
	1 request « confirmation report » every hour

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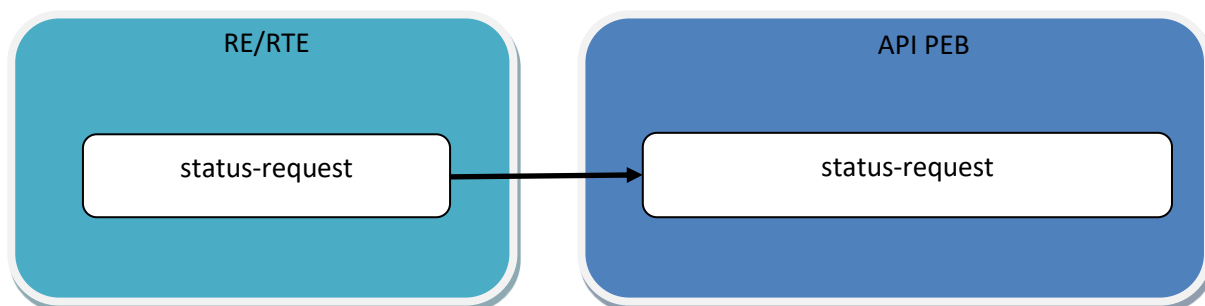
3. Resource: /status-request

3.1 GET /status-request

3.1.1 Description

This service allows to send a status request to retrieve one of the following XML files:
- Confirmation report
- Anomaly report
- Publication report

3.1.2 Calls

3.1.3 Parameters

NAME	CARD.	DESCRIPTION	TYPE	VALUES / FORMAT
request_type	1	Type of requested document	Text	{anomaly, confirmation or publication}
code_eic	1	BRP's code sending the request	Text	
period_time	1	Delivery date requested	Date	YYYYMMDD
process_type*	1	Process of requested document	Text	A01 for D-1 or A18 for ID
Resolution**	0..1	Resolution requested	Text	PT30M, PT15M or P1D
process_classification**	0..1	Type of requested document in return.	Text	A01 for the detail (one time Series with the sales and one with the purchases) or A02 for the summary (time series with the total = |Sales-Purchases|

| businessType ** | 0..* | Business type requested | Text | If it is absent, the application will return all business types.

Z39   SPOT EPEX
Z40   SPOT NORDPOOL
Z43   Futures
Z41   INFRA EPEX
Z42   INFRA NORDPOOL
A05   Interco
Z44   PEB
Z48   PEB PREV
A24   VEJ (financial security check)
Z49   VEJ PREV
A15   Pertes (losses)
Z45   ARENH
A20   Forecast declarative imbalance |

*this parameter concerns the confirmation and anomaly report
**these parameters concern the publication report

Examples:

Anomaly Report

```
GET
Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com
Endpoint Prod: https://secure-apps.iservices.rte-france.com
Resource: /peb/status-request/anomaly/10X012345/20170307/A01
HTTP/1.1
Headers:
Host: <url_serveur>
Body:
```

Confirmation Report:

```
GET
Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com
Endpoint Prod: https://secure-apps.iservices.rte-france.com
Resource: /peb/status-request/confirmation/10X012345/20170307/A01
HTTP/1.1
Headers:
Host: <url_serveur>
Body:
```

Publication Report:

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GET

Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com

Endpoint Prod: https://secure-apps.iservices.rte-france.com

Resource: /peb/status-request/publication/10X012345/20170307/P1D/A02?businessType=all

HTTP/1.1

Headers:

Host: <url_serveur>

Body:

GET

Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com

Endpoint Prod: https://secure-apps.iservices.rte-france.com

Resource:

/peb/status-request/publication/10X012345/20170307/PT30M/A01?businessType=Z44&businessType=Z48

HTTP/1.1

Headers:

Host: <url_serveur>

Body:

3.1.4 Responses

3.1.4.1 Http status codes

Http codes	Case
200	Successfully treated
403	Permission denied
500	Technical error
404	Resource not found
400	Invalid request parameters

3.1.4.2 Structures

The body contains only one of the following XML:
- Anomaly Report (cf. iec62325-451-2-anomaly_v5_1.xsd)
- Confirmation Report (cf. iec62325-451-2-confirmation_v5_0.xsd)
- Publication Report (cf. iec62325-451-2-schedule_v5_0.xsd)
- Acknowledgement (cf. iec62325-451-1-acknowledgement_v7_0.xsd)

3.1.4.3 Return codes

Actions to be performed depend on the http return code:
- HTTP 200: The parameters of the request are correct and the requested file can be downloaded.
- HTTP 400: The parameters of the request are incorrect and an acknowledgement can be downloaded to know the reason.
- HTTP 404: The resource was not found.
- HTTP 403: The customer is not allowed to send a request.
- HTTP 500: An error has occurred trying to process the request.

3.1.5 Examples

3.1.5.1 Example with valid parameters

The service will return the anomaly file in the body.

```
GET   /peb/status-request/anomaly/10X12123/20161203/A01
```

```
HTTP/1.1 200 OK
```

3.1.5.2 Example with invalid parameters

Send a request with an invalid date. The service will return an acknowledgement and a 400 http code.

```
GET   /peb/status-request/anomaly/10X12123/20163203/A01
```
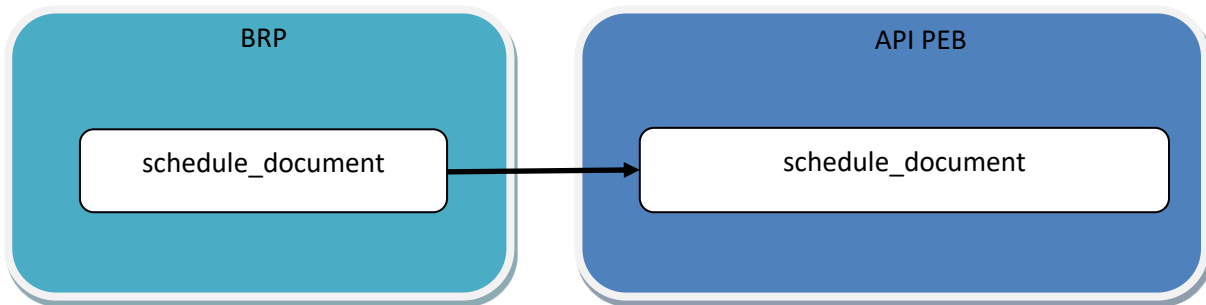
```
HTTP/1.1 400 BAD REQUEST
```

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4. Resource: /schedule_document

4.1 POST /schedule_document

4.1.1 Description

This service allows BRP to send RTE the declaration of energy block exchanges. It allows the BRP to send a schedule document in XML format.

4.1.2 Calls

4.1.3 Parameters

NAME	CARD.	DESCRIPTION	TYPE	VALUES / FORMAT
schedule_document	1	BRP 's Schedule document	XML	Cf. iec62325-451-2-schedule_v5_0.xsd

Example:

The body contains a valid schedule document.

```
POST
Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com
Endpoint Prod: https://secure-apps.iservices.rte-france.com
Resource: /peb/schedule_document
HTTP/1.1 201 CREATED
Headers:
Host: <url_serveur>
Content-Type : application/xml
Body:
Schedule document XML (Cf. iec62325-451-2-schedule_v5_0.xsd)
Encoding: "UTF-8"
Example:

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Schedule_MarketDocument xmlns="urn:iec62325.351:tc57wg16:451-2:scheduledocument:5:0">
```

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The body contains an invalid schedule document.

POST

Endpoint PreProd: https://secure-apps-dev.iservices.rte-france.com

Endpoint Prod: https://secure-apps.iservices.rte-france.com

Resource: /peb/schedule_document

HTTP/1.1 400 BAD REQUEST

Headers:

Host: <url_serveur>

Body:

Schedule document XML (Cf. iec62325-451-2-schedule_v5_0.xsd)

4.1.4 Responses

4.1.4.1 Http status code

http Codes	Case
201	Schedule document accepted
403	Forbidden
404	Resource was not found
500	A technical error has occurred
400	A functional error has occurred
407	Incorrectly formatted request

4.1.4.2 Structures

The body contains an acknowledgement XML (cf. iec62325-451-1-acknowledgement_v7_0.xsd). The acknowledgement notify if the schedule document is accepted or not.

4.1.4.3 Return codes

Actions to be performed on service's response, depends on its http return code:
- HTTP 201: The parameters of the request are correct and an acknowledgement can be downloaded.
- HTTP 400: The parameters of the request are incorrect and an acknowledgement can be downloaded to know the reason.
- HTTP 404: The resource was not found.
- HTTP 403: The customer is not allowed to send a request.
- HTTP 407 : The request is incorrectly formatted, check the contentType and encoding
- HTTP 500: An error has occurred trying to process the request.

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4.1.5 Examples

4.1.5.1 Example with a valid schedule document

The service will return an acknowledgement to notify the customer that the schedule document was accepted.

```
POST  /peb/schedule_document
```
```
HTTP/1.1 201 CREATED
```

Complete XML:

PEB_ACK_OK_10XCodeEIC-BRPX_20170509112630.xml

4.1.5.2 Example with an invalid schedule document

The schedule document contains an invalid EIC code. The service will return an acknowledgement to notify that the EIC code was not correct.

```
POST  /peb/schedule_document
```
```
HTTP/1.1 400 BAD REQUEST
```

Complete XML:

PEB_ACK_REJ_10XCodeEIC-BRPX_20170329181423.xml

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5. Resource : /supplier_data

5.1 GET /supplier_data
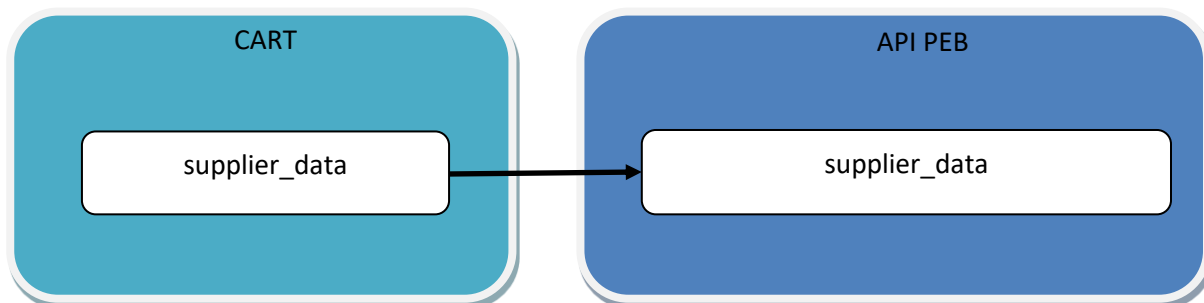
5.1.1 Description

This API can be used by the network customers and holders of consumer-type public transmission network access contracts (CART) to retrieve their supply data (PEB BRP-site) declared by their suppliers, starting at 4:30 PM on D-1 at half-hourly intervals (quarter hour intervals in resolution 15 minutes). Data is updated every half-hour until 11:30 PM on day D (until 11:45 PM on day D in resolution 15 minutes).

This data is available in UTC time over a maximum time window of 1 day, and an period not spanning two days.

The site is identified by a Physical Calculation Point (PPE).

This resource is only accesible in read-only, with GET method.

5.1.2 Calls

5.1.3 Parameters

NOM	CARD.	DESCRIPTION	Type de paramètre	TYPE	VALEURS / FORMAT
resolution[1]	1	Data retrieval interval	Path	string	PT30M / PT15M
start_date	1	Start date	Query	date	YYYY-MM-DDThh:mm:ssZ[2]
end_date	1	End date	Query	date	YYYY-MM-DDThh:mm:ssZ[2]

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market_evaluation_point_id	1	EIC code at the Z of the physical calculation point (PPE)	Query	string	EIC code at the Z
since_date[3]	0..1	Date from which a modification of the data is sought	Query	date	YYYY-MM-DDThh:mm:ssZ[2]

Notes :

[1] If the Data retrieval interval (resolution) does not correspond to the data interval, an error is generated.

[2] The input dates are expressed in UTC time.
To get the day of 15 June 2021, you should set :

      start_date : 2021-06-14T22:00:00Z
      end_date : 2021-06-15T22:00:00Z

The start time (start_date) is included and the end time (end_date) is excluded.

[3] since_date : This optional field allows the actor to specify that he only wishes to receive data that has been modified strictly after the date entered :
- If no data has been modified since since_date, no value is returned.
- If at least one data of the requested time interval has been modified since since_date, the entire requested time interval is returned, for curves modified since since_date.

Without this since_date parameter, the response contains the latest version of the requested time interval step set.

Call examples :
With the obligatory parameters :

```
GET
Endpoint PreProd : https://secure-apps-dev.iservices.rte-france.com
Endpoint Prod : https://secure-apps.iservices.rte-france.com
Resource: /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17X0001234567895
HTTP/1.1
Headers:
Host: <url_serveur>


Body:
```

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With all parameters :

```
GET
Endpoint PreProd : https://secure-apps-dev.iservices.rte-france.com
Endpoint Prod : https://secure-apps.iservices.rte-france.com
Resource: /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17X0001234567895&since_date=2022-07-04T21:00:00Z
HTTP/1.1
Headers:
Host: <url_serveur>


Body:
```

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5.1.4 Responses

5.1.4.1 Http status codes

Http codes	Case
200	Successfully treated
400	Invalid request parameters
403	Permission denied
404	Resource not found
500	Technical error

5.1.4.2 Structures

The body contains the following JSON :

supplier_data		Table of values {JSON} structured as shown below:			
	Field	**Card.**	**Description**	**Type**	**Values / Format**
1..n	**start_date**	1	Start date for data requested	Date	YYYY-MM-dd'T'HH:mm:ssZ[1]
	end_date	1	End date for data requested	Date	YYYY-MM-dd'T'HH:mm:ssZ[1]
	resolution	1	Data retrieval interval	Alphanumerical	PT30M / PT15M
	market_evaluation_point_id	1	EIC code at the Z of the physical calculation point	Alphanumerical	
	measure_unit_name	1	Valued in MW	Alphanumerical	
	RE	Table of values {JSON} structured as shown below:			
	1 **code_decompte_perimeterBRP**	1	The metering code for the Balance Responsible Entity's perimeter	Alphanumerical	
	code_EIC_perimeterBRP	0..1	The EIC code at the X of the Balance Responsible	Alphanumerical	

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		Entity's perimeter		
values	Table of values {JSON} structured as shown below:			

	Field	**Card.**	**Description**	**Type**	**Values / Format**
0..n	**Quantity**	1	Power value (MW)	Numerical	Number with a maximum of two digits after the decimal point
	Date	1	Date of point measured	Date	YYYY-MM-dd'T'HH:mm:ssZ[2]
	update_date	1	Date of last data update	Date	YYYY-MM-dd'T'HH:mm:ssZ

5.1.4.3 Return codes

Actions to be performed depend on the http return code:

- HTTP 200: The parameters of the request are correct and the JSON body contains datas.
- HTTP 400: The parameters of the request are incorrect and the JSON body contains the error description to know the error reason.
- HTTP 403: The customer is not allowed to send a request.
- HTTP 404: The resource was not found.
- HTTP 500: An error has occurred trying to process the request.

JSON return structure in case of error:

Name	Description	Type	cardinality
error	Error code	String	Mandatory (1)
error_description	Error description	String	Mandatory (1)

Example :
```
{
  "error": "SUPPLIER_DATA_DETAILED_F001",
  "error_description": "Bad Request. "
}
```

The table below lists the functional errors returned by the resource for an error in a request:

SUPPLIER_DATA_DETAILED_F001 (http 400 code)	
RG	This error is generated if one of the required fields has not been correctly filled in (=empty)
Message	Bad Request.

Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z
SUPPLIER_DATA_DETAILED_F002 (http 400 code)	
RG	This error is generated if the validity start date is incorrect
Message	Start date in the API input does not follow the format described in the user guide. Please verify compliance with the format for each field.
Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17Z000000001427E
SUPPLIER_DATA_DETAILED_F003 (http 400 code)	
RG	This error is generated if the validity end date is incorrect
Message	End date in the API input does not follow the format described in the user guide. Please verify compliance with the format for each field.
Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-05&market_evaluation_point_id=17Z000000001427E
SUPPLIER_DATA_DETAILED_F004 (http 400 code)	
RG	This error is generated if the request defined by [Start Date, End Date[covers a period greater than 1 day or a period spanning two days.
Message	Period selected must be inferior or equal to 1 day.
Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T23:00:00Z&market_evaluation_point_id=17Z000000001427E
SUPPLIER_DATA_DETAILED_F006 (http 400 code)	
RG	This error is generated if the physical calculation point ID (EIC code) does not exist.
Message	Unknown point service.
Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=123456789
SUPPLIER_DATA_DETAILED_F008 (http 400 code)	
RG	This error is generated if the Data retrieval interval (resolution) is not in the listed values
Message	Bad resolution step.
Example of a call	GET /peb/supplier_data/v1/detailed/PT25M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17Z000000001427E
SUPPLIER_DATA_DETAILED_F009 (http 400 code)	
RG	This error is generated if the since_date is not correct
Message	Bad since date.
Example of a call	GET /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17Z000000001427E&since_date=2022-07-05

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SUPPLIER_DATA_DETAILED_F010 (http 400 code)	
RG	This error is generated if the time step (resolution) requested in the API does not match the time step of the returned data
Message	Wrong resolution.
Example of a call	GET /peb/supplier_data/v1/detailed/PT15M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-06T22:00:00Z&market_evaluation_point_id=17Z000000001427E

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5.1.5 Examples

5.1.5.1 Example with valid parameters

The service returns a 200 http code and the requested data in the body in JSON format.

```
GET  /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-05T22:00:00Z&end_date=2022-07-
06T22:00:00Z&market_evaluation_point_id=17Z000000001427E
 HTTP/1.1 200 OK
```

5.1.5.2 Example with invalid parameters

Call with parameter passage where the end date is not present.
The service returns a 400 http code and an explanatory error body in JSON format.

```
GET  /peb/supplier_data/v1/detailed/PT30M?start_date=2022-07-
05T22:00:00Z&market_evaluation_point_id=17Z000000001427E
HTTP/1.1 400 BAD REQUEST
```

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6. Error structure

6.1 Functional rules, for the two resources status-request and schedule_document

If a functional rule is not respected during the processing, an error is identified.
In this case, an acknowledgement will be sent to the customer. The acknowledgement is an XML file which contains the reason codes. The reason codes identify the functional error.

6.2 Functional rules, for the resource supplier_data

If a functionnal rule is not respected during processing, a functional error is raised.
In these cases, an error body is returned to the caller.
This error body is in JSON format.

END OF THE DOCUMENT