USER GUIDE
GENERATION FORECAST API

Version 2.0

Effective date: November 01, 2018

CONTENTS

1 Introduction

This document describes version 2 of the Generation Forecast API that RTE provides for its Clients in order to obtain the following data:

- production forecasts in MW for the following terms: D+3 (calculation performed on D-3 for D), Two days later (calculation performed on D-2 for D), The next day (calculation performed on D-1 for D), Intra-daily (calculation performed on the same day); for various sectors (France aggregated, wind power, solar power, facilities covered by the Purchasing Obligation with EDF). (See GFO-RG08)

Please note that, for the "forecasts" resource, the MDSE data is only available from November 1st, 2018 (cf §4.1).

Reference documents

Short reference	Name of the document	Complete reference
[R1]	Terms of use for RTE's APIs	Link

1.1 Definitions

The terms used in this User Guide (the first letters of which are always capitalised) are defined below. Otherwise, their definitions are given in the General Conditions of Use **[R1]**:

API	Application Programming Interface
Authentification	Protection Mode for ensuring that the identity of the Sender or Receiver has been checked by RTE, and that they are authorised to access the IT system and use the Applications.
Sender	Party which sends a Message.
Message	Set of computer data used to transmit information, structured in accordance with a particular order that is specified in the User Guide. A Message can be sent by the User or by RTE.
Operation	An operation is the way in which the client interacts with the API's resource. An HTTP verb is always used (for example: GET for reading)
Party or Parties	Within the framework of the User Guide, these terms refer to either RTE or the User individually, or to both RTE and the User collectively.
Receiver	Party which receives the Sender's Message.
Resource	A resource is the data in relation to which the client application interacts.
URL	Uniform Resource Locator: character string based on a specific format used to locate a resource on a network and specify what protocol should be used on this resource.
User(s)	Legal entity which has agreed to RTE's General Terms and Conditions for Using APIs and which has been granted access to RTE's IT system for the purposes of using the APIs it has made available.

1.2 Technical support

In the event of difficulties accessing or using an API, Users can contact the telephone support services provided by RTE in accordance with the technical conditions detailed in the General Terms and Conditions of Use.

2 Functional description of the Generation Forecast API

2.1 General description

The services provided by this API can be used to obtain the following data:

- production forecasts in MW for the following terms: D+3 (calculation performed on D-3 for D), Two days later (calculation performed on D-2 for D), The next day (calculation performed on D-1 for D), Intra-daily (calculation performed on the same day); for various sectors (France aggregated, wind power, solar power, facilities covered by the Purchasing Obligation with EDF). (See GFO-RG08)

2.2 Prerequisites for using the APIs

The Generation Forecast API is for stakeholders operating on the electricity market and the general public. However, users of the API will need to create an account on RTE's digital portal. Once they have set up an account, they'll be able to get their Oauth 2.0 credentials. These credentials are then required whenever calls are made to the APIs.

2.2.1 Data confidentiality

The information contained in the Messages may not be used for any purpose other than the ones described in the General Terms and Conditions of Use **[R1]**.

2.2.2 Termination

A subscription to an API is automatically terminated when the user deletes their account on RTE's digital portal.

Should the user wish to cease using an API without terminating their subscription, they simply need to stop sending calls to it.

2.3 "Forecasts" resource

This service is for retrieving production forecasts for the following terms:

- D+3 (D-3)
- Two days later (D-2)
- The next day (D-1)
- Intradaily (ID)
- CURRENT

3 Accessing the API

The REST protocol is used to access the API described in this document.

As is the case for all of the APIs provided by RTE, accessing and using them are subject to the provisions of the General Terms and Conditions of Use **[R1]**.

The authorisation method for accessing the APIs is the OAuth framework, the applications of which are described in the FAQs.

4 Resource exposed by the "Generation Forecast" API

4.1 Forecasts resource

Particularity MDSE:

Following a decision by CRE, it was decided to merge MDSE Nord and MDSE Sud data into a new **MDSETRF** data (Mise à Disposition du Système Electrique Trading Region France).

This decision implies that from November 1st, 2018, only the new data **MDSETRF** is available.

Data "MDSE North" and "MDSE Sud" are no longer be transmitted, regardless of the call period.

4.1.1 GET / forecasts

4.1.1.1 Call methods

The resource is exposed in the following way:

Exposure	REST / JSON
Method	GET
Resource URL	https://digital.iservices.rte-france.com/open_api/generation_forecast/v2/forecasts?production_type=<valeur(s)>&type=<valeur(s)>&start_date=<valeur(s)>&end_date=<valeur(s)> Where the parameters type, start_date, end_date and production_type are the same as those sent to the resource by the caller.
URL sandbox (1)	https://digital.iservices.rte-france.com/open_api/generation_forecast/v2/sandbox/forecasts

(1) The sandbox does not take the input parameters into account

Call recommendations

The purpose of this operation is to be able to retrieve the production forecasts. For nominal use, the period's fields do not need to be filled in. The service automatically returns the most up-to-date forecasts available for each type and each sector. See GFO-RG01.

The search can:

- either focus on all types and/or all sectors if none of the input fields are filled in
- or a list of types and/or a list of sectors can be specified

It is advisable to make:

- one call per day towards 10 PM for aggregated forecasts linked to France.
- one call at 5 PM for solar and wind power forecasts for D-1, renewable at 6 PM if not available at 5 PM (6 PM = reglemantary instant).
- one call at 7 AM for solar and wind power forecasts for ID, renewable at 8 AM if not available at 7 AM (8 AM = reglemantary instant).

- the "current" solar and wind power forecasts are updated around 9:30 AM and 7:30 PM, as well as being updated at the same time as the D-1 and ID.
- two calls per day for aggregated D-3, D-2 and D-1 forecasts for facilities covered by purchase obligations with EDF.
- forecasts with ID0 and ID1 subtypes are considered updates of D-1 type forecasts.
- one call per day for aggregated ID forecasts for facilities covered by purchase obligations with EDF.
- one call per day for MDSE D-3, D-2 and D-1 forecasts.

It is not possible to retrieve forecasts for periods of more than 21 days per call.

This service provides all data available after the following dates.

- Purchase obligation aggregated: **03/11/2015**
- France aggregated: **15/11/2011**
- Wind power: **25/01/2011**
- Solar power: **16/12/2014**
- MDSE (MDSETRF / MDSESTS): **01/11/2018**

Data for periods before these dates is only available as archive files.

4.1.1.2 Inputs

NAME	DESCRIPTION	CARD	TYPE	VALUES / FORMAT	RULES
start_date	Forecast search start date	*0..1*	date (2)	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG01 GFO-RG04 GFO-RG05 GFO-RG07
end_date	Forecast search end date	*0..1*	date (1) (2)	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG01 GFO-RG04 GFO-RG05 GFO-RG07
production_type	Forecast sector	*0..5*	enum (3)	Possible values: AGGREGATED_FRANCE WIND SOLAR AGGREGATE_CPC MDSE	GFO-RG01 GFO-RG02 GFO-RG05 GFO-RG10
type	Forecast type, term for which the forecast is made	*0..4*	enum (3)	Possible values: CURRENT ID D-1 D-2 D-3	GFO-RG01 GFO-RG03 GFO-RG05 GFO-RG10

(1) By convention, the **end_date** data is excluded from the search, data from the Service's response.
(2) If the **start_date** has passed, then the **end_date** should be passed as a parameter.
(3) Several of these values can be passed as a parameter, separated by a comma: **. . .&field=VALUE1,VALUE2**

NB:
– The Service's field names are in English. Consult the paragraph in the appendices on "Language – Field name translations" at the bottom of the page.
– Consult the section on "Expected formats" for details of the parameters' expected formats.

Call examples:

Without parameters

```
URL:
GET /open_api/generation_forecast/v2/forecasts
HTTP/1.1
Headers:
Host: digital.iservices.rte-france.com
Authorization: Bearer CNAPbfmg7GjvtqTTlKqPm8ykP6R8YJFfJPnyjqW8p1v2PW2UX6bF8z
Body:
```

With all parameters

```
URL:
GET /generation_forecast/v2/forecasts?production_type=WIND&type=D-1&start_date=2015-06-
01T00:00:00%2B02:00&end_date=2015-06-03T00:00:00%2B02:00
HTTP/1.1
Headers:
Host: digital.iservices.rte-france.com
Authorization: Bearer CNAPbfmg7GjvtqTTlKqPm8ykP6R8YJFfJPnyjqW8p1v2PW2UX6bF8z
Body:
```

4.1.1.3 Outputs

	NAME	CARD	DESCRIPTION			
	forecasts	**1..1**	Table of values {JSON} containing 1 occurrence. It is structured as shown below:			
	NAME	**CARD**	**DESCRIPTION**	**TYPE**	**VALUES / FORMAT**	**RULES**
0..n	**type**	1..1	Forecast type for indicating when the forecast for this date was calculated	enum	"CURRENT" or "ID" or "D-1" or "D-2" or "D-3"	GFO-RG06

	sub_type	0..1	Forecast subtype for indicating for each type when the forecast was made. Used only with the production sectors: AGREGEE_PO; MDSETRF; MDSESTS	enum	One of the following values: DA01 DA02 ID00 or ID01 or ... or ID24	GFO-RG06
	production_type	1..1	Generating sector	enum	One of the following values: AGGREGATED_PROGRAMMABLE_FRANCE AGGREGATED_NON_PROGRAMMABLE_FRANCE WIND SOLAR AGGREGATE_CPC MDSETRF MDSESTS	GFO-RG06
	start_date	1..1	Start date for which the forecast is made	date	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG06 GFO-RG09
	end_date	1..1	End date for which the estimate is made	date (1)	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG09
	values	1..1	Table of values {JSON} structured as shown below. One value per time interval depending on production_type: AGGREGATED_FRANCE: 30 min, WIND: 60 min, SOLAR: 60 min, AGGREGATED_CPC: 30 min, MDSE: 30 min			

0..n	NAME	CARD	DESCRIPTION	TYPE	VALUES / FORMAT	RULES
	start_date	1..1	Start time interval	date	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG08
	end_date	1..1	End time interval	date	YYYY-MM-DDThh:mm:sszzzzzz	GFO-RG08
	updated_date	1..1	Forecast update date	date	YYYY-MM-DDThh:mm:sszzzzzz	–
	value	1..1	Forecast value	float	Floating point number	–
	load_factor	0..1	Load factor (expressed as a percentage). Only used with the WIND POWER sector	int	Integer	–

NB: This structure is duplicated and repeated for each forecast **type,** for each forecast **sub_type** and for each **production_type** requested.

JSON format of the return:

GET /open_api/generation_forecast/v2/forecasts


```
HTTP/1.1 200 OK

{"forecasts": [
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "D-1",
      "production_type": "AGGREGATED_PROGRAMMABLE_FRANCE",
      "values": [{ "start_date": "2018-11-12T00:00:00+01:00", "end_date": "2018-11-12T00:30:00+01:00",
"updated_date": "2018-11-11T00:00:00+01:00", "value": 58411 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "D-1",
      "production_type": "AGGREGATED_NON_PROGRAMMABLE_FRANCE",
      "values": [{ "start_date": "2018-11-12T00:00:00+01:00", "end_date": "2018-11-12T00:30:00+01:00",
"updated_date": "2018-11-11T00:00:00+01:00", "value": 5218 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-03T00:00:00+01:00",
      "end_date": "2018-11-04T00:00:00+01:00",
      "type": "D-3",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-03T00:00:00+01:00", "end_date": "2018-11-03T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-02T00:00:00+01:00",
      "end_date": "2018-11-03T00:00:00+01:00",
      "type": "D-2",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-02T00:00:00+01:00", "end_date": "2018-11-02T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-01T00:00:00+01:00",
      "end_date": "2018-11-02T00:00:00+01:00",
      "type": "D-1",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-01T00:00:00+01:00", "end_date": "2018-11-01T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-03T00:00:00+01:00",
      "end_date": "2018-11-04T00:00:00+01:00",
      "type": "D-3",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-03T00:00:00+01:00", "end_date": "2018-11-03T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-02T00:00:00+01:00",
      "end_date": "2018-11-03T00:00:00+01:00",
      "type": "D-2",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-02T00:00:00+01:00", "end_date": "2018-11-02T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-01T00:00:00+01:00",
      "end_date": "2018-11-02T00:00:00+01:00",
      "type": "D-1",
      "production_type": "MDSETRF",
      "sub_type": "DA01",
```

```
      "values": [{ "start_date": "2018-11-01T00:00:00+01:00", "end_date": "2018-11-01T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-03T00:00:00+01:00",
      "end_date": "2018-11-04T00:00:00+01:00",
      "type": "D-3",
      "production_type": "MDSESTS",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-03T00:00:00+01:00", "end_date": "2018-11-03T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-02T00:00:00+01:00",
      "end_date": "2018-11-03T00:00:00+01:00",
      "type": "D-2",
      "production_type": "MDSESTS",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-02T00:00:00+01:00", "end_date": "2018-11-02T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-01T00:00:00+01:00",
      "end_date": "2018-11-02T00:00:00+01:00",
      "type": "D-1",
      "production_type": "MDSESTS",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-01T00:00:00+01:00", "end_date": "2018-11-01T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-13T00:00:00+01:00",
      "end_date": "2018-11-14T00:00:00+01:00",
      "type": "D-1",
      "production_type": "WIND",
      "values": [{ "start_date": "2018-11-13T00:00:00+01:00", "end_date": "2018-11-13T01:00:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 6685, "load_factor": 66 }, { ... 24 valeurs ... }, ...
]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "ID",
      "production_type": "WIND",
      "values": [{ "start_date": "2018-11-12T00:00:00+01:00", "end_date": "2018-11-12T01:00:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 6916, "load_factor": 0 }, { ... 24 valeurs ... }, ...
]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "CURRENT",
      "production_type": "WIND",
      "values": [{ "start_date": "2018-11-12T00:00:00+01:00", "end_date": "2018-11-12T01:00:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 6916, "load_factor": 0 }, { ... 24 valeurs ... }, ...
]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "D-1",
      "production_type": "SOLAR",
      "values": [{ "start_date": "2018-11-12T00:00:00+01:00", "end_date": "2018-11-12T01:00:00+01:00",
"updated_date": "2018-11-11T00:00:00+01:00", "value": 0 }, { ... 24 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "ID",
      "production_type": "SOLAR",
      "values": [{ "start_date": "2018-11-12T07:00:00+01:00", "end_date": "2018-11-12T08:00:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 0 }, { ... 24 valeurs ... }, ... ]
    },
    {
```

```
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "CURRENT",
      "production_type": "SOLAR",
      "values": [{ "start_date": "2018-11-12T07:00:00+01:00", "end_date": "2018-11-12T08:00:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 0 }, { ... 24 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-03T00:00:00+01:00",
      "end_date": "2018-11-04T00:00:00+01:00",
      "type": "D-3",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-03T00:00:00+01:00", "end_date": "2018-11-03T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-03T00:00:00+01:00",
      "end_date": "2018-11-04T00:00:00+01:00",
      "type": "D-3",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA02",
      "values": [{ "start_date": "2018-11-03T00:00:00+01:00", "end_date": "2018-11-03T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-02T00:00:00+01:00",
      "end_date": "2018-11-03T00:00:00+01:00",
      "type": "D-2",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-02T00:00:00+01:00", "end_date": "2018-11-02T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 967 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-02T00:00:00+01:00",
      "end_date": "2018-11-03T00:00:00+01:00",
      "type": "D-2",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA02",
      "values": [{ "start_date": "2018-11-02T00:00:00+01:00", "end_date": "2018-11-02T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 967 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-01T00:00:00+01:00",
      "end_date": "2018-11-02T00:00:00+01:00",
      "type": "D-1",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA01",
      "values": [{ "start_date": "2018-11-01T00:00:00+01:00", "end_date": "2018-11-01T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 967 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-01T00:00:00+01:00",
      "end_date": "2018-11-02T00:00:00+01:00",
      "type": "D-1",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "DA02",
      "values": [{ "start_date": "2018-11-01T00:00:00+01:00", "end_date": "2018-11-01T00:30:00+01:00",
"updated_date": "2018-10-31T00:00:00+01:00", "value": 967 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-03-27T00:00:00+01:00",
      "end_date": "2018-03-28T00:00:00+02:00",
      "type": "D-1",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID00",
      "values": [{ "start_date": "2018-03-27T00:00:00+01:00", "end_date": "2018-03-27T00:30:00+01:00",
"updated_date": "2018-03-26T00:00:00+01:00", "value": 0 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-03-27T00:00:00+01:00",
      "end_date": "2018-03-28T00:00:00+02:00",
      "type": "D-1",
```

```
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID01",
      "values": [{ "start_date": "2018-03-27T00:00:00+01:00", "end_date": "2018-03-27T00:30:00+01:00",
"updated_date": "2018-03-26T00:00:00+01:00", "value": 2719 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-15T00:00:00+01:00",
      "end_date": "2018-11-16T00:00:00+01:00",
      "type": "D-1",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID02",
      "values": [{ "start_date": "2018-11-15T00:00:00+01:00", "end_date": "2018-11-15T00:30:00+01:00",
"updated_date": "2018-11-14T00:00:00+01:00", "value": 3446 }, { ... 48 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-03-27T00:00:00+01:00",
      "end_date": "2018-03-28T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID03",
      "values": [{ "start_date": "2018-03-27T01:00:00+01:00", "end_date": "2018-03-27T01:30:00+01:00",
"updated_date": "2018-03-27T00:00:00+01:00", "value": 2851 }, { ... 46 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-25T00:00:00+01:00",
      "end_date": "2017-11-26T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID04",
      "values": [{ "start_date": "2017-11-25T02:00:00+01:00", "end_date": "2017-11-25T02:30:00+01:00",
"updated_date": "2017-11-25T00:00:00+01:00", "value": 5589 }, { ... 44 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-03-27T00:00:00+01:00",
      "end_date": "2018-03-28T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID05",
      "values": [{ "start_date": "2018-03-27T04:00:00+02:00", "end_date": "2018-03-27T04:30:00+02:00",
"updated_date": "2018-03-27T00:00:00+01:00", "value": 0 }, { ... 42 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-03-27T00:00:00+01:00",
      "end_date": "2018-03-28T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID06",
      "values": [{ "start_date": "2018-03-27T05:00:00+02:00", "end_date": "2018-03-27T05:30:00+02:00",
"updated_date": "2018-03-27T00:00:00+01:00", "value": 2449 }, { ... 40 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-15T00:00:00+01:00",
      "end_date": "2018-11-16T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID07",
      "values": [{ "start_date": "2018-11-15T05:00:00+01:00", "end_date": "2018-11-15T05:30:00+01:00",
"updated_date": "2018-11-15T00:00:00+01:00", "value": 3453 }, { ... 38 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-15T00:00:00+01:00",
      "end_date": "2018-11-16T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID08",
      "values": [{ "start_date": "2018-11-15T06:00:00+01:00", "end_date": "2018-11-15T06:30:00+01:00",
"updated_date": "2018-11-15T00:00:00+01:00", "value": 3457 }, { ... 36 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-12-17T00:00:00+01:00",
      "end_date": "2017-12-18T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID09",
```

```
      "values": [{ "start_date": "2017-12-17T07:00:00+01:00", "end_date": "2017-12-17T07:30:00+01:00",
"updated_date": "2017-12-17T00:00:00+01:00", "value": 5378 }, { ... 34 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-09-18T00:00:00+02:00",
      "end_date": "2017-09-19T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID10",
      "values": [{ "start_date": "2017-09-18T08:00:00+02:00", "end_date": "2017-09-18T08:30:00+02:00",
"updated_date": "2017-09-18T00:00:00+02:00", "value": 4321 }, { ... 32 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-19T00:00:00+01:00",
      "end_date": "2017-11-20T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID11",
      "values": [{ "start_date": "2017-11-19T09:00:00+01:00", "end_date": "2017-11-19T09:30:00+01:00",
"updated_date": "2017-11-19T00:00:00+01:00", "value": 7431 }, { ... 30 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-19T00:00:00+01:00",
      "end_date": "2017-11-20T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID12",
      "values": [{ "start_date": "2017-11-19T10:00:00+01:00", "end_date": "2017-11-19T10:30:00+01:00",
"updated_date": "2017-11-19T00:00:00+01:00", "value": 7749 }, { ... 28 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-05T00:00:00+01:00",
      "end_date": "2018-11-06T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID13",
      "values": [{ "start_date": "2018-11-05T11:00:00+01:00", "end_date": "2018-11-05T11:30:00+01:00",
"updated_date": "2018-11-05T00:00:00+01:00", "value": 3664 }, { ... 26 valeurs ... }, ... ]
    },
    {
      "start_date": "2018-11-12T00:00:00+01:00",
      "end_date": "2018-11-13T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID14",
      "values": [{ "start_date": "2018-11-12T12:00:00+01:00", "end_date": "2018-11-12T12:30:00+01:00",
"updated_date": "2018-11-12T00:00:00+01:00", "value": 11768 }, { ... 24 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-19T00:00:00+01:00",
      "end_date": "2017-11-20T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID15",
      "values": [{ "start_date": "2017-11-19T13:00:00+01:00", "end_date": "2017-11-19T13:30:00+01:00",
"updated_date": "2017-11-19T00:00:00+01:00", "value": 8667 }, { ... 22 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-10-08T00:00:00+02:00",
      "end_date": "2017-10-09T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID16",
      "values": [{ "start_date": "2017-10-08T14:00:00+02:00", "end_date": "2017-10-08T14:30:00+02:00",
"updated_date": "2017-10-08T00:00:00+02:00", "value": 4092 }, { ... 20 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-26T00:00:00+01:00",
      "end_date": "2017-11-27T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID17",
      "values": [{ "start_date": "2017-11-26T15:00:00+01:00", "end_date": "2017-11-26T15:30:00+01:00",
"updated_date": "2017-11-26T00:00:00+01:00", "value": 4297 }, { ... 18 valeurs ... }, ... ]
```

```
    },
    {
      "start_date": "2017-11-26T00:00:00+01:00",
      "end_date": "2017-11-27T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID18",
      "values": [{ "start_date": "2017-11-26T16:00:00+01:00", "end_date": "2017-11-26T16:30:00+01:00",
"updated_date": "2017-11-26T00:00:00+01:00", "value": 3914 }, { ... 16 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-11-26T00:00:00+01:00",
      "end_date": "2017-11-27T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID19",
      "values": [{ "start_date": "2017-11-26T17:00:00+01:00", "end_date": "2017-11-26T17:30:00+01:00",
"updated_date": "2017-11-26T00:00:00+01:00", "value": 3612 }, { ... 14 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-12-09T00:00:00+01:00",
      "end_date": "2017-12-10T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID20",
      "values": [{ "start_date": "2017-12-09T18:00:00+01:00", "end_date": "2017-12-09T18:30:00+01:00",
"updated_date": "2017-12-09T00:00:00+01:00", "value": 4192 }, { ... 12 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-10-20T00:00:00+02:00",
      "end_date": "2017-10-21T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID21",
      "values": [{ "start_date": "2017-10-20T19:00:00+02:00", "end_date": "2017-10-20T19:30:00+02:00",
"updated_date": "2017-10-20T00:00:00+02:00", "value": 2469 }, { ... 10 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-12-08T00:00:00+01:00",
      "end_date": "2017-12-09T00:00:00+01:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID22",
      "values": [{ "start_date": "2017-12-08T20:00:00+01:00", "end_date": "2017-12-08T20:30:00+01:00",
"updated_date": "2017-12-08T00:00:00+01:00", "value": 4898 }, { ... 8 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-09-18T00:00:00+02:00",
      "end_date": "2017-09-19T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID23",
      "values": [{ "start_date": "2017-09-18T21:00:00+02:00", "end_date": "2017-09-18T21:30:00+02:00",
"updated_date": "2017-09-18T00:00:00+02:00", "value": 2974 }, { ... 6 valeurs ... }, ... ]
    },
    {
      "start_date": "2017-10-08T00:00:00+02:00",
      "end_date": "2017-10-09T00:00:00+02:00",
      "type": "ID",
      "production_type": "AGGREGATED_CPC",
      "sub_type": "ID24",
      "values": [{ "start_date": "2017-10-08T22:00:00+02:00", "end_date": "2017-10-08T22:30:00+02:00",
"updated_date": "2017-10-08T00:00:00+02:00", "value": 1692 }, { ... 4 valeurs ... }, ... ]
    }
  ]
}
```

4.1.1.4 Control rules

Control rules for different input parameters:

input parameter				Description	Number
type	start_date	end_date	production_type		
empty	**empty**	**empty**	**empty**	If no input parameters are entered, for each of the sectors and for each type, the Service will return the most up-to-date production forecast.	**GFO-RG01**
empty	**empty**	**empty**	**filled in**	If the **production_type** field is filled in, the Service's response only contains the sectors requested.	**GFO-RG02**
filled in	**empty**	**empty**	**empty**	If the **type** field is filled in, the Service's response only contains the forecast types requested.	**GFO-RG03**
empty	**filled in**	**filled in**	**empty**	If the **start_date** and **end_date** parameters are passed, the Service returns the production forecasts for all sectors for each type.	**GFO-RG04**
				If for one of the sectors and one forecast type, there is no data for the period requested, the operation returns the **start_date**, the **end_date**, the **sub_type** and the **production_type** without filling in the value fields. If data for D+1 is requested, **ID type** data is not returned.	**GFO-RG07**

				If data for D+2 is requested, **ID type** and **D-1** data is not returned. If data for D+3 is requested, **ID type, D-1** and **D-2** data is not returned.	
filled in	**filled in**	**filled in**	**filled in**	The **production_type** and **type** fields, as well as the **start_date**/**end_date** fields can all be filled in for the same query.	**GFO-RG05**
				If a value is duplicated in one of the listed parameters (**type** or **production_type**), the Service only returns this value once.	**GFO-RG10**

Output control rules applied:

Number	Description
GFO-RG06	The output data is ordered by start_date from the most recent to the oldest, and then by production type in the following order: • D-3 • D-2 • D-1 • ID • CURRENT Then by sub_type in the following order: • DA01 • DA02 • ID00 • ID01 • … • ID24 That is : • D-3 - DA01 : Day-3 - Day Ahead 01 = D-3 Forecast, 1st forecast (early morning) • D-3 - DA02 : Day-3 - Day Ahead 02 = D-3 Forecast, 2nd forecast (early afternoon) • D-2 - DA01 : Day-2 - Day Ahead 01 = D-2 Forecast, 1st forecast (late morning) • D-2 - DA02 : Day-2 - Day Ahead 02 = D-2 Forecast, 2nd forecast (early afternoon) • D-1 - DA01 : Day-1 - Day Ahead 01 = D-1 Forecast, 1st forecast (late morning) • D-1 - DA02 : Day-1 - Day Ahead 02 = D-1 Forecast, 2nd forecast (early afternoon) • D-1 - ID00 : Day-1 - IntraDay 00 = D-1 Forecast, 1st forecast (48 values) (8pm) • D-1 - ID01 : Day-1 - IntraDay 01 = D-1 Forecast, 2nd forecast (48 values) (10pm) • D-1 - ID02 : Day-1 - IntraDay 02 = D-1 Forecast, 3rd forecast (48 values) (12am) • ID - ID03 : IntraDay - IntraDay 03 = D Forecast, 4th forecast (46 values) (1am) • ID - ID04 : IntraDay - IntraDay 04 = D Forecast, 5th forecast (44 values) (2am)

	• … • ID - ID23 : IntraDay - IntraDay 23 = D Forecast, 24th forecast (6 values) (9pm) • ID - ID24 : IntraDay - IntraDay 24 = D Forecast, 25th forecast (4 values) (10pm) Note : for solar generation, the day D, D-1 data are fully available, and IntraDay data are available from 7am.
GFO-RG08	When switching from daylight saving time to summertime: • FRANCE_AGGREGATED: the 2 AM to 3 AM value (French time) is filled in. • WIND POWER: the 2 AM to 3 AM value (French time) is empty. • SOLAR POWER: the 2 AM to 3 AM value (French time) is empty. • PO_AGGREGATED: the 2 AM to 3 AM value (French time) is empty. • MDSE: the 2 AM to 3 AM value (French time) is empty. When switching from summertime to daylight saving time: • FRANCE_AGGREGATED: the 2 AM to 3 AM value (French time) only appears once. • WIND POWER: the 2 AM to 3 AM value (French time) only appears once. • SOLAR POWER: the 2 AM to 3 AM value (French time) appears twice. • PO_AGGREGATED: the 2 AM to 3 AM value (French time) only appears once. • MDSE: the 2 AM to 3 AM value (French time) only appears once.
GFO-RG09	As the service's output, the forecasts are returned as linked to calendar day.

4.1.1.5 Error codes

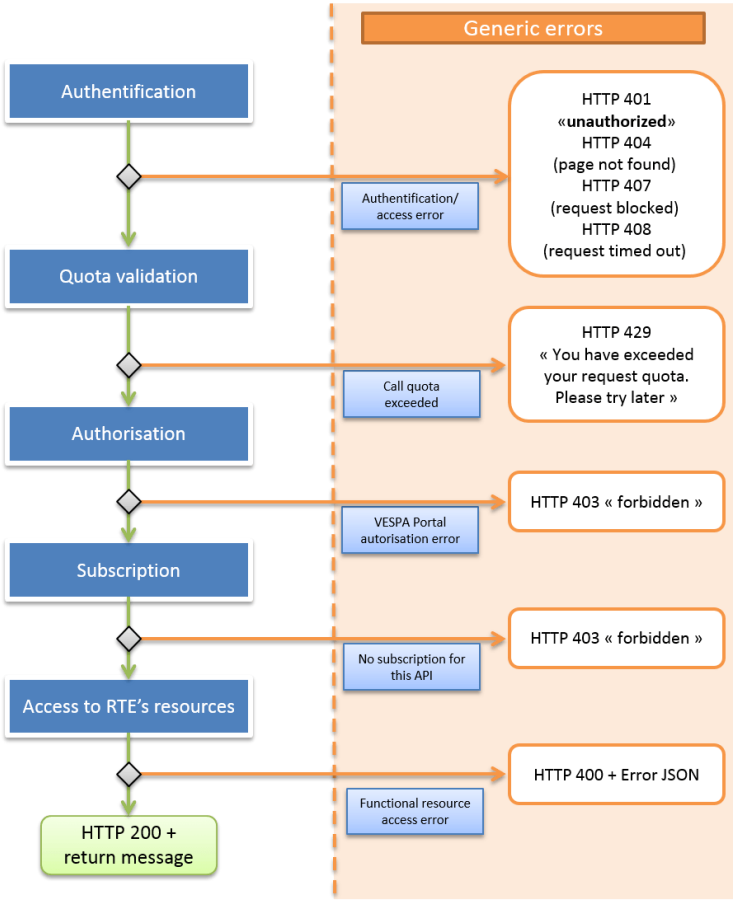
The following table lists the error codes which may be returned when the resource is called.
Details of these errors are described in chapter 5 Details of errors.

Type of error	Error code	Details
Functional	GENFORECAST_FORECASTS_F01	§5.1.1
Functional	GENFORECAST_FORECASTS_F02	§5.1.1
Functional	GENFORECAST_FORECASTS_F03	§5.1.1
Functional	GENFORECAST_FORECASTS_F04	§5.1.1
Functional	GENFORECAST_FORECASTS_F05	§5.1.1
Functional	GENFORECAST_FORECASTS_F06	§5.1.1
Functional	GENFORECAST_FORECASTS_F07	§5.1.1
Functional	GENFORECAST_FORECASTS_F08	§5.1.1
Technical	401	§5.2
Technical	403	§5.2
Technical	404	§5.2
Technical	408	§5.2
Technical	413	§5.2
Technical	414	§5.2
Technical	429	§5.2
Technical	500	§5.2
Technical	503	§5.2
Technical	509	§5.2

5 Details of errors

The diagram below shows the codes returned to the API's User depending on the sequencing of calls.

This paragraph details the errors that are common to all of the API's resources. As such, it does not describe the request errors (HTTP 400 code). These errors are described resource by resource in the corresponding paragraph.



In the event of an error encountered during the authentication phase (while validating the username and password), an HTTP 401 "unauthorised" code is returned to the caller.

The second stage involves checking that the User has not exceeded the maximum number of calls authorised for the operation. In the event of the maximum number being exceeded, the caller is informed by an HTTP 429 code. In such cases, the response from the server will contain a "Retry-After:" header giving the time (in seconds) that the client will need to wait before resubmitting their request.

The third stage involves checking that the application has been created/authorised to access the Portail Data's technical platform. Otherwise, the caller is informed by an HTTP 403 "forbidden" code.

The fourth stage involves checking that the application has actually subscribed to the API. Otherwise, the caller is informed by an HTTP 403 "forbidden" code.

The fifth stage involves accessing RTE's resources. Various functional errors may occur. These are communicated to the User as JSON errors by an HTTP 400 code.

In the event of a technical incident upon the request treatment the caller is informed by an HTTP 500 code.

JSON structure:

```
{
  "error": "short_name, error's explicit description",
  "error_description": “long name, readable by a user"
  "error_details": {
        "transaction_id": "unique call identifier, useful in the event of an incident"
}
}
```

- The short description ("error") is a code which enables the calling application to automatically process error messages. It is represented by a series of words separated by "_".
- The long description ("error description") is a description enabling users to understand the source of the error more precisely. This name needs to be approved by the business line so as to ascertain that it is explicit enough.
- The URI to the user guide is present so as to provide more explanations depending on the API called.
- The transaction_id field: provides a unique call identifier. This identifier can be communicated to RTE's support services if there is an incident.

5.1 Functional errors

5.1.1 forecasts

The table below lists the functional errors returned by the resource for an error in a request (HTTP 400 code):

GENFORECAST_FORECASTS_F01	
Message	If one of the fields "start_date" or "end_date" is used, the two fields are mandatory. Please used either fields or neither.
RG	If either of the **start_date** and **end_date** parameters are passed on their own, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?start_date=2015-06-01T00:00:00%2B02:00
GENFORECAST_FORECASTS _F02	
Message	The field "start_date" in the API input is more recently than the field "end_date". Please correct the values of these fields.
RG	If the **start_date** field is more recent than the **end_date** field, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?start_date=2015-06-02T00:00:00%2B02:00&end_date=2015-06-01T00:00:00%2B02:00
GENFORECAST_FORECASTS _F03	
Message	The API does not provide feedback on such a long period in one call. To retrieve all the data please make it with severals calls to the API.
RG	If the period is greater than 21 days, the Service generates this error.

Call example	GET /open_api/generation_forecast/v2/forecasts?start_date=2014-06-01T00:00:00%2B02:00&end_date=2015-07-01T00:00:00%2B02:00
GENFORECAST_FORECASTS _F04	
Message	The value of "end_date" field is incorrect. It is not possible to recover data to this term.
RG	If **end_date** is greater than D+2 compared with the system date, and the **production_type** structure is filled in with at least one of the "AGGREGATED_FRANCE" and/or "WIND" and/or "SOLAR" sectors, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?type=AGGREGATED_FRANCE&start_date=2015-11-30T00:00:00%2B02:00&end_date=2015-12-01T00:00:00%2B02:00
GENFORECAST_FORECASTS _F05	
Message	The period filled by fields "start_date" and "end_date" is too short to return values. Please check the user guide to verify the minimum period for this API.
RG	If the time interval between **start_date** and **end_date** is less than 1 calendar day, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?start_date=2015-06-01T00:00:00%2B02:00&end_date=2015-06-01T12:00:00%2B02:00
GENFORECAST_FORECASTS _F06	
Message	One of the dates in the API input does not follow the format described in the user guide. Please verify compliance with the format for each field.
RG	If the **start_date** or **end_date** are not in the expected format, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?start_date=2015-06-01&end_date=2015-06-01
GENFORECAST_FORECASTS _F07	
Message	One of the enumerated field does not match with the list of expected values. Please verify compliance with the format for each field.
RG	If the **production_type, type, start_date and end_date** fields are not the expected values, the Service generates this error.
Call example	GET /open_api/generation_forecast/v2/forecasts?type=D-5
GENFORECAST_FORECASTS _F08	
Message	A couple \"production_type\" and \"type\" in the service entry does not work.
RG	If the **type** and **production_type** fields are both explicitly filled in and are not in compliance with the table described in the input/output format.
Call example	GET /open_api/generation_forecast/v2/forecasts?type=D-3&production_type=SOLAR

5.2 Technical errors

401	
HTTP code	401

Message	Unauthorized
Description	Error generated when authentication has failed
403	
HTTP code	403
Message	Forbidden
Description	Error generated if the caller is not authorised to call the resource
404	
HTTP code	404
Message	Not Found
Description	The resource called does not exist or no page was found
408	
HTTP code	408
Message	Request Time-out
Description	Error generated when the service called does not reply or when the service called times out (HTTP 408).
413	
HTTP code	413
Message	Request Entity Too Large
Description	The size of the response to the request is greater than 7 MB
414	
HTTP code	414
Message	Request-URI Too Long
Description	The URI sent by the caller is longer than 2048 characters.
429	
HTTP code	429
Message	Too Many Requests
Description	The maximum number of calls has been made in a given period of time.
500	
HTTP code	500
Message	Internal Server Error
Description	All other technical errors. (This error is accompanied by a JSON message with an error_code and error_description field)
503	
HTTP code	503
Message	Service Unavailable

Description	Error generated during maintenance (HTTP 503).
509	
HTTP code	509
Message	Bandwidth Limit Exceeded.
Description	The total number of client requests has reached the maximum limit.

6 Appendices

6.1 Sample Files

Once the User is logged on the Data Portal, sample files (including API responses) are available online on the API description page.

6.2 Language – Translations of names

ENGLISH	FRENCH
type	type
sub_type	sous-type
production_type	filière
start_date	date_debut
end_date	date_fin
load_factor	taux de charge
value	valeur

END OF DOCUMENT