



WEMS REAL-TIME MARKET SUBMISSION SPECIFICATION

Version 1.1 - Draft

April 2023

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Important notice

PURPOSE

AEMO has prepared this document to provide information about the Wholesale Electricity Market System (WEMS) submission formats required to participate in the Wholesale Electricity Real-Time Markets.

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VERSION CONTROL

Version	Release date	Changes
0.1 - Draft	10/06/2021	
0.2 – Draft	30/07/2021	<ul style="list-style-type: none">• New submission codes included• Change of naming convention for facilityName• Added properties to few schema's elements• Clarification on WEEKDAY/WEEKEND day of week types• MIN/MAX codes included for price element• Clarification on submissionReason conditional constraints
0.3 - Draft	06/08/2021	<ul style="list-style-type: none">• First release of Chapter 4: Web Services Submissions (API)
0.4 – Draft	17/09/2021	<ul style="list-style-type: none">• Updates on Chapter 4: Web Services Submissions• First release of Chapter 5: Submissions processing• First release of Chapter 6: Schema validation rules and messages• Inclusion of JSON format and submission structure for DSP Withdrawal Profile• Added NOT APPLICABLE enum for fuelType field in JSON schema
0.5 - Draft	05/11/2021	<ul style="list-style-type: none">• Inclusion of DSP Submission API Endpoints on Chapter 4• Updates to API endpoints parameters and responses on Chapter 4
0.6 – Draft	18/01/2022	<ul style="list-style-type: none">• dsp.schema.json renamed to dsp.submission.schema.json• Updates to API endpoint formats and API submission/response examples in Chapter 4 (Web Services Submissions)• Updates to Chapter 5.1 (Submission Workflow).• Added new Chapter 5.5 (Cancelling Submissions)• Updates to non-DSP validation error codes and messages (Chapter 6.4.1)• First Release of DSP validation details (Chapter 6.4.2)
0.7 – Draft	29/08/2022	<ul style="list-style-type: none">• Updates to Submission Codes (Chapters 3.1 & 3.2)• Updates to validation error messages (Chapter 6.4)• Added new validations C053 and SC053• Removed validations C040, C030 and DS006

Version	Release date	Changes
		<ul style="list-style-type: none"> Added validations C048 and SC048 Moved API Request and Response examples from this Specification to the Swagger Documentation (Chapter 4) Updated list of time constraints on submissions (Chapter 5.2) Changed naming convention for “Non-DSP Submissions” to “RTM Submissions” Changed submission.schema.json name to rtm.submission.schema.json
0.8 – Draft	22/12/2022	<ul style="list-style-type: none"> Updates to trapezium validations ES011, SES011, ES012 and SES012 fuelType now an optional field in the rtm.submission.schema. Removed validations (C046,SC046), and updated validations (C053,SC053) to reflect this change. Two new variables, dspUnconstrainedWithdrawalQuantity and dspConstrainedWithdrawalQuantity added to, and required to be positive in the dsp.submission.schema. Removal of withdrawalQuantity. New GET consolidated endpoint /api/rtms/v1/consolidated. Two new variables, unconstrainedInjectionForecast and unconstrainedWithdrawalForecast, added to the RTM Schema for Market Service Energy. New validations added (EN043, EN044, SEN043, SEN044). Removed validations DS014, DS015, and SDS015 relating to DSP Gate Closure. Added validation SDS018. DSP Facilities are not returned when searching for Gate Closure violations via UI or API. Updated validations SEN040 and EN040 to only allow one tranche per interval for Non-Scheduled Facilities. Increasing the submission file size limit from 2MB to 4MB. Updated MaxContingencyReserveBlockSize to reflect value on the AEMO website (60MW).
0.9 – Draft	21/02/2023	<ul style="list-style-type: none"> RoCoF unit updated to MWs API endpoints updated from v1.0 to v1 to reflect correct address
1.0 – Draft	21/03/2023	<ul style="list-style-type: none"> API endpoints updated to reflect new APIM requirement
1.1 – Draft	03/04/2023	<ul style="list-style-type: none"> Updated 4.3 Endpoint Format to reflect new RFM environment for simulated Market Trial

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1. Introduction

This document describes the format and process for making Variation & Standing Real-Time Market Submissions (“RTM Submissions”) and Variation & Standing DSP Profile Submissions (“DSP Submissions”) through the Real-Time Market Submissions (RTMS) application, allowing Market Participants to participate in the Security-Constrained Economic Dispatch (SCED) Market. The Wholesale Electricity Market System (WEMS) Market Participant Interface (MPI) allows users to make Real-Time Market Submissions and access status, reports, and history of all their Real-Time Market Submissions. Market Participants can also make submissions through Web Services, as described in Chapter 4.

This document assumes the user is familiar with the Market Rules and the related terminology.

This specification is applicable to Release 3 of RTMS.

2. Submission Format Details

All submissions must be in JSON format and must conform to one of the following JSON schema files depending on the submission type:

- `rtm.submission.schema.json` for RTM Submissions, which relate to facilities other than Demand Side Programmes (DSPs).
- `dsp.submission.schema.json` for DSP Submissions, which relate to DSPs.

These schemas are available separately to this document. The JSON schema files describe the required structure of the submission data, methods of extracting information from it, and ways of interacting with it. This document describes the required JSON formats in a less formal, but more descriptive manner.

Each of the schema files provides the JSON specifications for both Variation and Standing submissions, however Standing and Variation submissions cannot be made within a single electronic submission. Separate electronic submissions must be made for these submissions.

The `rtm.submission.schema.json` covers all the Market Services under the SCED Market: Energy and the ESS Market Services (Regulation Raise, Regulation Lower, Contingency Raise, Contingency Lower, and Rate of Change of Frequency (RoCoF) Control Service). The `dsp.submission.schema.json` covers only the Energy Market Service, as this is the only Market Service in which DSP Facilities can participate in the SCED Market.

This document contains excerpts from the JSON schemas, example JSON submission files, and illustrations of the JSON schema structures: these are provided for illustrative purposes only and reference should be made to `rtm.submission.schema.json` and `dsp.submission.schema.json` for full details.

The following diagrams illustrate the JSON schema structure of Standing and Variation RTM Submissions and DSP Submissions, highlighting the nesting structure of properties and elements required in a submission.

Figure 1 Standing RTM Submission structure

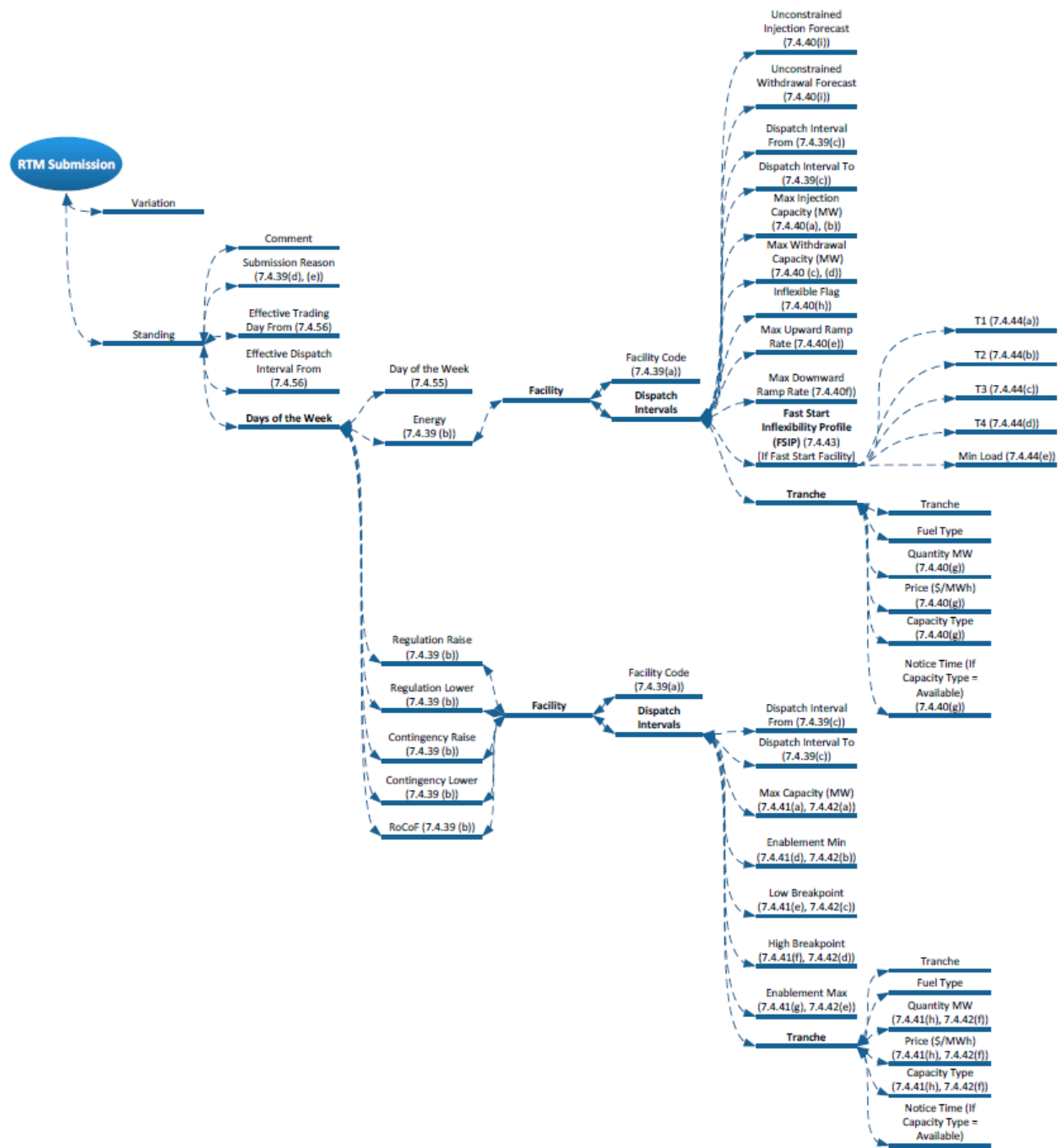


Figure 2 Variation RTM Submission structure

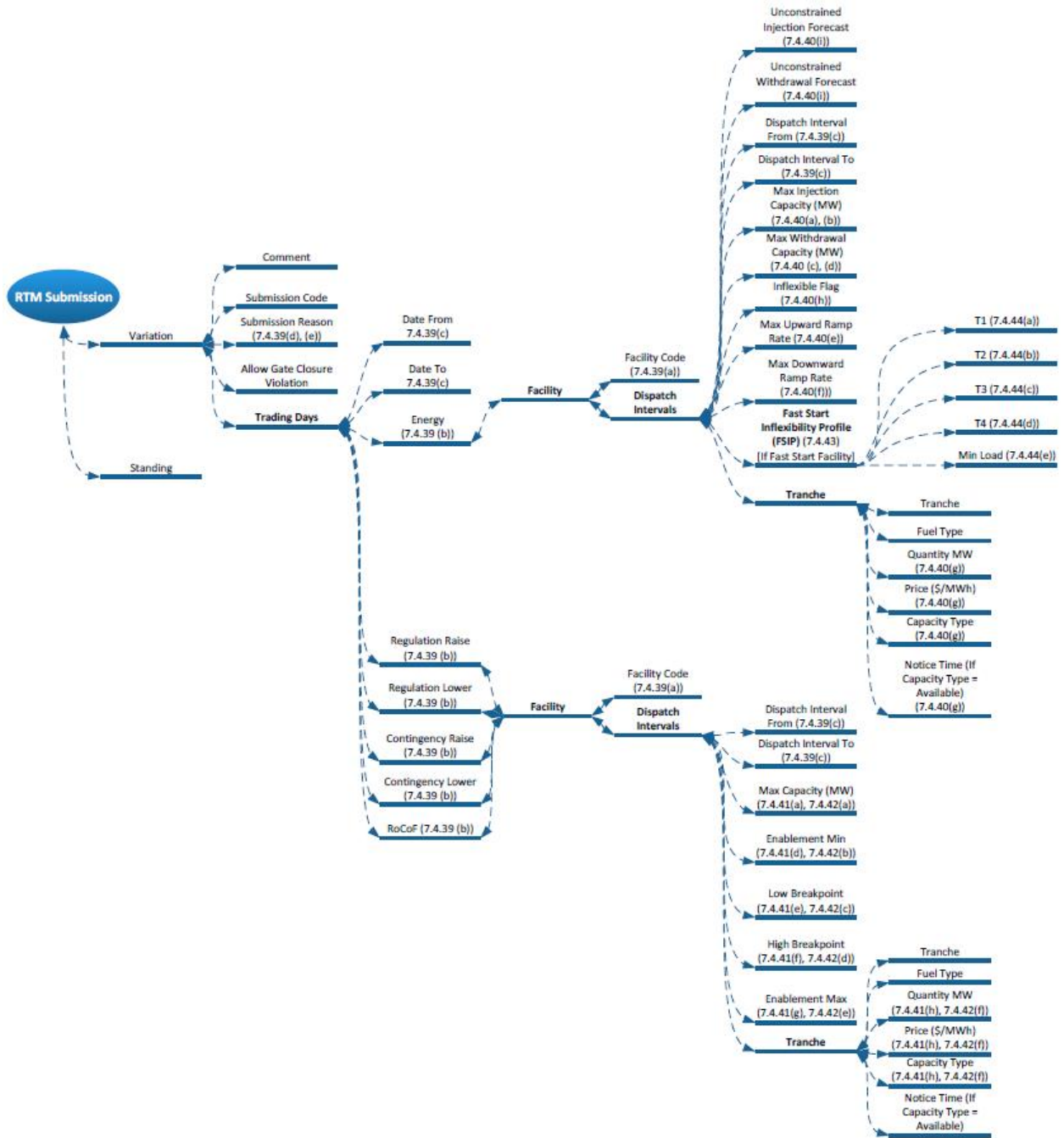
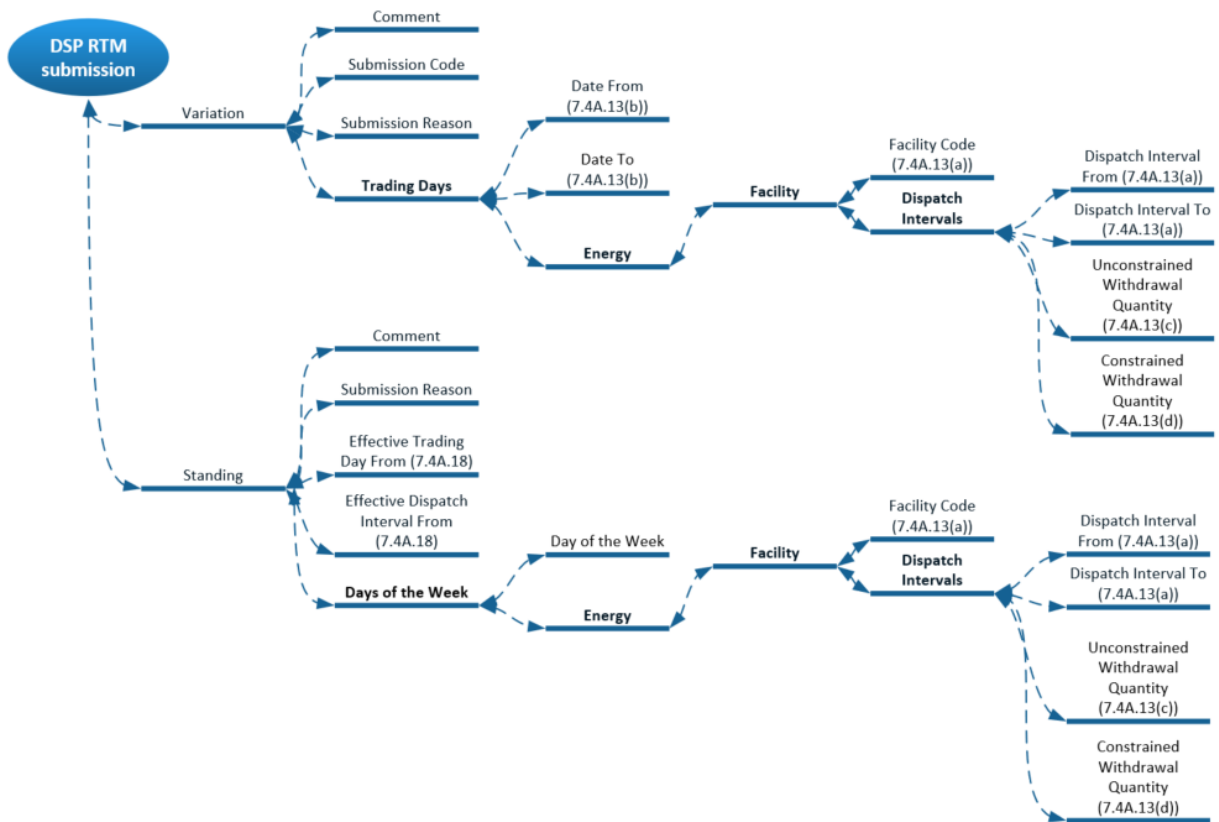


Figure 3 Standing and Variation DSP Submission structure



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3. Submission Format

RTM Submissions allow Market Participants to provide their Available and In-Service capacity for any of the Real-Time Market Services. DSP Submissions allow Market Participants to submit their expected Withdrawal quantities. Submissions can contain multiple Trading Days, multiple Registered Facilities and, for RTM Submissions only, multiple Market Services. Market Participants can override their bids/offers for any Market Service, Registered Facility, and Dispatch Interval through subsequent submissions.

This section describes the format of the submission schemas, including data types, constraints, and information about individual variables. This information is presented for explanatory purposes only. For full details, please refer to the current `rtm.submission.schema.json` and `dsp.submission.schema.json`.

3.1 Structure of RTM Submissions

The `rtm.submission.schema.json` covers the submission structure of Energy and ESS (Regulation Raise, Regulation Lower, Contingency Raise, Contingency Lower, and RoCoF Control Service) Market Services for both Variation and Standing submissions.

The type of submission (Standing or Variation) is implied by the top-level attribute:

```
"type": "object",
  "properties": {
    "standing": {"$ref": "#/definitions/standing"},
    "variation": {"$ref": "#/definitions/variation"}
  },
  "oneOf": [
    {
      "required": ["standing"]
    },
    {
      "required": ["variation"]
    }
  ]
```

The following table contains the nesting structure of elements comprising a Standing RTM Submission, and the number of times that each element can occur within the context of its parent element.

OBJECT	MIN	MAX
standing	1	1
daysOfTheWeek	All Day of Week types must be present*	
energy, or regulationRaise, or regulationLower, or contingencyRaise, or contingencyLower, or rocof	1 Market Service	All 6 Market Service (no duplicates allowed)
facilities	1	Up to the number of Registered Facilities owned by the Market Participant
dispatchIntervals	288	288
tranche	1	10

*Day of Week types are defined under daysOfTheWeek Object section below.

The following table contains the nesting structure of elements comprising a Variation RTM Submission and the number of times that each element can occur within the context of its parent element.

OBJECT				MIN	MAX
Variation				1	1
	tradingDays			1	Unlimited, but within the Acceptance Horizon
		energy, or regulationRaise, or regulationLower, or contingencyRaise, or contingencyLower, or rocof		1 Market Service	All 6 Market Services (no duplicates allowed)
			Facilities	1	Up to the number of Registered Facilities owned by the Market Participant
			dispatchIntervals	1	288
			Tranche	1	10

The following sections describe the structure of each element of an RTM Submission, including the type and constraints. Examples of both a Standing and Variation RTM submission are provided in sections 3.1.2 and 3.1.3. The `rtm.submission.schema.json` is available in a separate document.

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Standing object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
comment	string Max: 280 char	Optional	Participant provided comment or description for the submission.
submissionReason	string Max: 280 char	Conditional	Free text to provide more explanation on the reason of a subsequent submission. submissionReason is mandatory under certain conditions: refer to Section 6.4.1 for more details.
effectiveTradingDateFrom	Date ISO8601 format (YYYY-MM-DD)	Mandatory	The Trading Day from which the Standing Real-Time Market Submission will take effect.
effectiveDispatchIntervalFrom	Integer (1 to 288)	Mandatory	The Dispatch Interval within the defined effectiveTradingDateFrom from which the Standing Real-Time Market Submission will take effect.
daysOfTheWeek	Array of objects	Mandatory	Object element to define days of the week to which the Standing submission applies.

daysOfTheWeek object

This object applies to Standing submissions only.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dayOfWeek	string	Mandatory Input case-sensitive	Day of the week to which the Standing Real-Time Market Submission applies. dayOfWeek types accepted are: MON TUE WED THU FRI SAT SUN WEEKDAY WEEKEND ALL
energy, or regulationRaise, or regulationLower, or contingencyRaise, or contingencyLower, or rocof	object	Mandatory	Real-Time Market Service objects that can be used in a Real-Time Market Submission.

* WEEKDAY/WEEKEND codes do not differentiate for public holidays. A PUBLIC HOLIDAY code is not available. Ad-hoc Variations can be made to cover differences in bids/offers falling on a public holiday.

Variation object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
comment	string Max: 280 char	Optional	Participant provided comment or description for the submission.
submissionCode	string	Mandatory Input case sensitive	Code to define the reason of a submission. Accepted codes are: <ul style="list-style-type: none"> • PLANNED_OUTAGE • FORCED_OUTAGE • MARKET • UNCONSTRAINED_FORECAST • DIRECTION_FROM_AEMO • COMM_TEST • RC_TEST • NCESS • OTHER
submissionReason	string Max: 280 char	Conditional	Free text to provide more explanation on the reason of a subsequent submission. submissionReason is mandatory under certain conditions: refer to Section 6.4.1 for more details.
allowGateClosureViolation	string	Mandatory Input case sensitive	Indication of whether the submission contains Dispatch Intervals within Gate Closure. Accepted values are: <ul style="list-style-type: none"> • YES • NO
tradingDays	Array of objects	Mandatory	Object element to define the Trading Day or a range of Trading Days to which the submission applies.

The meaning of the above submission codes and when they should be used is described in the following table. If more than one Submission Reason is applicable, the most relevant one should be specified.

SUBMISSION CODE	DEFINITION AND USE
PLANNED_OUTAGE	A submission made to reflect: <ul style="list-style-type: none"> • a Planned Outage • modifications to a Planned Outage reflecting new information, including but not limited to changes to outage quantities, start time, or end time. Additional information can be part of the free text reason.
FORCED_OUTAGE	A subsequent submission is made to indicate: <ul style="list-style-type: none"> • a Forced Outage • modifications to a Forced Outage reflecting new information, including but not limited to changes to outage quantities, start time, or end time. Additional information can be part of the free text reason.
MARKET	A submission made to react to Market signals or to reflect a change mostly price-driven (e.g. change in fuel prices, changes to Bilateral contracts, changes in other markets, market-related commitment or decommitment decisions, etc).
UNCONSTRAINED FORECAST	A submission made by a Semi-Scheduled Facility or Non-Scheduled Facility to reflect an update in their forecast Unconstrained Injection Forecast or Unconstrained Withdrawal Forecast,.
DIRECTION_FROM_AEMO	A subsequent submission made to indicate that a Facility has been directed on/off by AEMO.

SUBMISSION CODE	DEFINITION AND USE
COMM_TEST	A submission made to reflect quantities for a Commissioning Test. This should not be used to indicate other type of testing, such as a reserve Capacity Test (covered by a specific code) or other self-scheduled tests (the OTHER code can be used for this scenario).
RC_TEST	A submission made to reflect quantities submitted for a Reserve Capacity Test. This should not be used to indicate other type of testing, such as Commissioning Test (covered by a specific code) or other self-scheduled tests (the OTHER code can be used for this scenario).
NCESS	A subsequent submission made to reflect an NCESS contract.
OTHER	A submission made for a reason not covered by another available submission code.

tradingDays object

This object applies to Variation submissions only.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dateFrom	Date ISO8601 format (YYYY-MM-DD)	Mandatory	Start Trading Day to which the following submission data applies.
dateTo	Date ISO8601 format (YYYY-MM-DD)	Mandatory	End Trading Day to which the following submission data applies.
energy, or regulationRaise, or regulationLower, or contingencyRaise, or contingencyLower, or rocof	object	Mandatory	Real-Time Market Service objects that can be used in a Real-Time Market Submission.

energy, regulationRaise, regulationLower, contingencyRaise, contingencyLower & rocof objects

Real-Time Market Submissions can contain up to 6 Real-Time Market Services (no repetitions allowed in a single submission):

- Energy
- Regulation Raise
- Regulation Lower
- Contingency Raise
- Contingency Lower
- RoCoF Control Service

Each of these Market Services is defined as an individual object in the schema. The *energy* object structure is described by the *energy* definition, while all the 5 Essential System Services (*regulationRaise*, *regulationLower*, *contingencyRaise*, *contingencyLower* & *rocof*) object structure is described by a common *ess* definition.

Both *energy* and *ess* definitions are structured as described below.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
facilities	Array of objects	Mandatory	Object element to define the Facility the submission is made for.

facilities property

facilities is a common property on both the *energy* and *ess* objects and the structure is the same, however two different definitions needed to be created for *energy* and *ess* objects for nesting reasons.

energyFacility object and essFacility object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
facilityCode	string	Mandatory	Registered Facility to which the following submission data applies.
dispatchIntervals	Array of objects	Mandatory	Object element to define the Dispatch Intervals for a given Trading Day, Market Service and Facility.

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dispatchIntervals property

dispatchIntervals is a common property on both the *energy* and *ess* objects, however the object structure is different and is described, respectively, by the *energyInterval* and *essInterval* objects.

energyInterval object

This definition is only applicable to the *energy* object.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dispatchIntervalFrom	Integer Min: 1 Max: 288	Mandatory	First Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).
dispatchIntervalTo	Integer Min: 1 Max: 288	Mandatory	Last Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).
unconstrainedInjectionForecast	Number multipleOf: 0.001 minimum: 0	Mandatory	The expected MW level of Injection at the end of a Dispatch Interval for a Semi-Scheduled Facility or Non-Scheduled Facility, assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Injection. This must be a positive number or zero. Scheduled Facilities must also provide a value, however this will not be used in the dispatch engine.
unconstrainedWithdrawalForecast	Number multipleOf: 0.001 maximum: 0	Mandatory	The expected MW level of Withdrawal at the end of a Dispatch Interval for a Semi-Scheduled Facility or Non-Scheduled Facility, assuming that the Facility will not be subject to a Dispatch Instruction or direction from AEMO that limits its Withdrawal. This must be a negative number or zero. Scheduled Facilities must also provide a value, however this will not be used in the dispatch engine.
maxInjectionCapacity	Number multipleOf: 0.001 minimum: 0	Mandatory	Maximum Capacity (in MW) the Facility can send to the Network in the Dispatch Intervals defined. This must be a positive number or zero.
maxWithdrawalCapacity	Number multipleOf: 0.001 maximum: 0	Mandatory	Maximum Capacity (in MW) the Facility can receive from the Network in the Dispatch Intervals defined. This must be a negative number or zero.
inflexibleFlag	String	Mandatory Input case sensitive	Indication of whether the Facility is only able to be dispatched for a fixed level of Injection/Withdrawal in the Dispatch Intervals defined. Allowed values: <ul style="list-style-type: none"> • YES • NO
maxUpwardRampRate	Number multipleOf: 0.001 minimum: 0	Mandatory	Maximum rate (in MW per minute) the Facility is able to increase its output from the commencement of the defined Dispatch Intervals.
maxDownwardRampRate	Number multipleOf: 0.001 minimum: 0	Mandatory	Maximum rate (in MW per minute) the Facility is able to decrease its output from the commencement of the defined Dispatch Intervals.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
fsip	Object	Optional *Note: While the fsip property is optional, if specified all properties on the type are required.	Parameters indicating a Facility's MW capacity and time related dispatch inflexibility for a Fast Start Facility. See FSIP for more details.
tranche	Array of objects	Mandatory	Price-Quantity pairs and other components submitted for the defined Dispatch Intervals.

FSIP object

Fast-Start Inflexibility Profile (FSIP) is an optional property for both Variation and Standing Energy submissions. This can only be included in submissions for Registered Facilities with Fast-Start capabilities.

The inclusion of this object is optional, but if included all elements are mandatory.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
minimumLoad	Number multipleOf: 0.001	Mandatory if FSIP is included in the submission	Quantity (in MW) of Injection or Withdrawal that the Facility must be operated at or beyond during the period T3.
t1	Integer minimum: 0	Mandatory if FSIP is included in the submission	Time (in minutes) that the Facility requires following the receipt of a Dispatch Instruction to start varying its level of Injection or Withdrawal from 0 MW in accordance with the Dispatch Instruction.
t2	Integer minimum: 0	Mandatory if FSIP is included in the submission	Time (in minutes) that the Facility requires after T1 to reach a specified minimum level of Injection or Withdrawal.
t3	Integer minimum: 0	Mandatory if FSIP is included in the submission	Time (in minutes) that the Facility requires to be operated at or beyond its minimum level of Injection or Withdrawal before the Facility can be safely and securely returned to Injection or Withdrawal of zero.
t4	Integer minimum: 0	Mandatory if FSIP is included in the submission	Time (in minutes) following the receipt of a Dispatch Instruction to return its Injection or Withdrawal from the minimum level specified to zero, that the Facility requires to fully comply with the Dispatch Instruction.

essInterval object

This definition is only applicable to *regulationRaise*, *regulationLower*, *contingencyRaise*, *contingencyLower* & *rocof* objects.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dispatchIntervalFrom	Integer Min: 1 Max: 288	Mandatory	First Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).
dispatchIntervalTo	Integer Min: 1 Max: 288	Mandatory	Last Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
maximumCapacity	Number multipleOf: 0.001 minimum: 0	Mandatory	Total quantity of Regulation (MW), Contingency Reserve (MW) or RoCoF Control Service (MWs) the Facility is able to deliver for the defined Dispatch Intervals.
enablementMinimum	Number multipleOf: 0.001	Mandatory	Level of Injection or Withdrawal (in MW) below which no response is specified as being available.
lowBreakpoint	Number multipleOf: 0.001	Mandatory	The MW energy dispatch level below which the Facility cannot provide the maximum quantity of that Frequency Co-optimised Essential System Service which it is capable of providing.
highBreakpoint	Number multipleOf: 0.001	Mandatory	The MW energy dispatch level above which the Facility cannot provide the maximum quantity of that Frequency Co-optimised Essential System Service which it is capable of providing.
enablementMaximum	Number multipleOf: 0.001	Mandatory	Level of Injection or Withdrawal (in MW) above which no response is specified as being available.
tranches	Array of objects	Mandatory	Price-Quantity pairs and other components submitted for the defined Dispatch Intervals.

tranche object

The *tranche* object is applicable to both Variation and Standing submission and to all Market Services.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
tranche	Integer Min: 1 Max: 10	Mandatory	Tranche number.
fuelType	String	Optional Input case sensitive	The Facility's Fuel Type for the Tranche. Accepted values are*: <ul style="list-style-type: none"> LIQUID NON-LIQUID NOT APPLICABLE Liquid - Means distillate, fuel oil, liquid petroleum gas, or liquefied natural gas. Non-Liquid - Means all fuels other than Liquid Fuel. Not Applicable - Interruptible Load.
quantity	Number multipleOf: 0.001	Mandatory	Quantity offered in the tranche. All in units of MW, with the exception of RoCoF (MWs).
price	String (MIN/MAX) or Number multipleOf: 0.01	Mandatory	Tranche price (in \$/MWh for Energy, \$/MW per hour for Regulation and Contingency Services, in \$/MWs per hour for RoCoF Control Service). Tranche price can be a number or MIN/MAX. Note that MIN/MAX are case-sensitive.
capacityType	string	Mandatory Input case sensitive	The Facility's Capacity Type for the Tranche. Accepted values are: <ul style="list-style-type: none"> AVAILABLE IN-SERVICE

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
noticeTime	Integer minimum: 0	Conditional (mandatory if capacityType = Available)	Time (in minutes) the Facility needs to deliver the Quantity offered as Available Capacity.

*Listed accepted values for Fuel Type may change in the future to be more descriptive, such as Coal, Gas, Wind, Solar, etc.

3.1.1 Constraints

Submission validations rules and constraints are described in Chapter 6.

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3.1.2 Sample (Standing)

This sample submission conforms to the JSON Schema version 0.11-DRAFT and is for illustrative purposes only.

```
{
  "standing": {
    "comment": "This is an example of JSON file standing submission for Energy and CR",
    "submissionReason": "Standing submission for facilities ALPHA_UNIT_001 and BRAVO_UNIT_001",
    "effectiveTradingDateFrom": "2021-07-01",
    "effectiveDispatchIntervalFrom": 1,
    "daysOfTheWeek": [
      {
        "dayOfWeek": "ALL",
        "energy": {
          "facilities": [
            {
              "facilityCode": "ALPHA_UNIT_001",
              "dispatchIntervals": [
                {
                  "dispatchIntervalFrom": 1,
                  "dispatchIntervalTo": 150,
                  "unconstrainedInjectionForecast": 0,
                  "unconstrainedWithdrawalForecast": 0,
                  "maxInjectionCapacity": 160,
                  "maxWithdrawalCapacity": 0,
                  "inflexibleFlag": "NO",
                  "maxUpwardRampRate": 8.255,
                  "maxDownwardRampRate": 8.255,
                  "fsip": {
                    "t1": 5,
                    "t2": 5,
                    "t3": 20,
                    "t4": 15,
                    "minimumLoad": 25
                  },
                  "tranches": [
                    {
                      "tranche": 1,
                      "fuelType": "LIQUID",
                      "quantity": 100,
                      "price": -50,
                      "capacityType": "IN-SERVICE"
                    },
                    {
                      "tranche": 2,
                      "fuelType": "LIQUID",
                      "quantity": 60,
                      "price": 100,
                      "capacityType": "AVAILABLE",
                      "noticeTime": 180
                    }
                  ]
                }
              ]
            },
            {
              "dispatchIntervalFrom": 151,
              "dispatchIntervalTo": 288,
              "unconstrainedInjectionForecast": 0,
              "unconstrainedWithdrawalForecast": 0,
              "maxInjectionCapacity": 100,
              "maxWithdrawalCapacity": 0,
              "inflexibleFlag": "NO",
              "maxUpwardRampRate": 8.255,
              "maxDownwardRampRate": 8.255,
              "tranches": [
                {
                  "tranche": 1,
                  "fuelType": "LIQUID",
                  "quantity": 100,
                  "price": 40,
                  "capacityType": "IN-SERVICE"
                }
              ]
            }
          ]
        }
      }
    ],
    "facilityCode": "BRAVO_UNIT_001",
  }
}
```

```

"dispatchIntervals": [
  {
    "dispatchIntervalFrom": 1,
    "dispatchIntervalTo": 288,
    "unconstrainedInjectionForecast": 0,
    "unconstrainedWithdrawalForecast": 0,
    "maxInjectionCapacity": 200,
    "maxWithdrawalCapacity": 0,
    "inflexibleFlag": "NO",
    "maxUpwardRampRate": 15,
    "maxDownwardRampRate": 15,
    "tranches": [
      {
        "tranche": 1,
        "fuelType": "LIQUID",
        "quantity": 50,
        "price": -100,
        "capacityType": "IN-SERVICE"
      },
      {
        "tranche": 2,
        "fuelType": "LIQUID",
        "quantity": 150,
        "price": 35,
        "capacityType": "IN-SERVICE"
      }
    ]
  }
],
"contingencyRaise": {
  "facilities": [
    {
      "facilityCode": "ALPHA_UNIT_001",
      "dispatchIntervals": [
        {
          "dispatchIntervalFrom": 1,
          "dispatchIntervalTo": 288,
          "maximumCapacity": 160,
          "enablementMinimum": 100,
          "lowBreakpoint": 120,
          "highBreakpoint": 145,
          "enablementMaximum": 160,
          "tranches": [
            {
              "tranche": 1,
              "fuelType": "LIQUID",
              "quantity": 100,
              "price": -100,
              "capacityType": "IN-SERVICE"
            },
            {
              "tranche": 2,
              "fuelType": "LIQUID",
              "quantity": 30,
              "price": 50,
              "capacityType": "AVAILABLE",
              "noticeTime": 5
            },
            {
              "tranche": 3,
              "fuelType": "LIQUID",
              "quantity": 30,
              "price": 100,
              "capacityType": "AVAILABLE",
              "noticeTime": 5
            }
          ]
        }
      ]
    }
  ]
}

```

```

    ]
  }
}

```

3.1.3 Sample (Variation)

This sample submission conforms to the JSON Schema version 0.11-DRAFT and is for illustrative purposes only.

```

{
  "variation": {
    "comment": "This is an example of JSON file variation submission for Energy, REGR and REGL.",
    "submissionCode": "PLANNED_OUTAGE",
    "submissionReason": "Changing data for dispatch intervals 80-150 to reflect capability",
    "allowGateClosureViolation": "NO",
    "tradingDays": [
      {
        "dateFrom": "2021-06-15",
        "dateTo": "2021-06-16",
        "energy": {
          "facilities": [
            {
              "facilityCode": "ALPHA_UNIT_001",
              "dispatchIntervals": [
                {
                  "dispatchIntervalFrom": 80,
                  "dispatchIntervalTo": 150,
                  "unconstrainedInjectionForecast": 0,
                  "unconstrainedWithdrawalForecast": 0,
                  "maxInjectionCapacity": 160,
                  "maxWithdrawalCapacity": 0,
                  "inflexibleFlag": "NO",
                  "maxUpwardRampRate": 8.255,
                  "maxDownwardRampRate": 8.255,
                  "tranches": [
                    {
                      "tranche": 1,
                      "fuelType": "LIQUID",
                      "quantity": 70,
                      "price": -100,
                      "capacityType": "IN-SERVICE"
                    },
                    {
                      "tranche": 2,
                      "fuelType": "LIQUID",
                      "quantity": 50,
                      "price": 35,
                      "capacityType": "IN-SERVICE"
                    },
                    {
                      "tranche": 3,
                      "fuelType": "LIQUID",
                      "quantity": 40,
                      "price": 70,
                      "capacityType": "IN-SERVICE"
                    }
                  ]
                }
              ]
            }
          ]
        }
      }
    ],
    "regulationRaise": {
      "facilities": [
        {
          "facilityCode": "ALPHA_UNIT_001",
          "dispatchIntervals": [
            {
              "dispatchIntervalFrom": 80,
              "dispatchIntervalTo": 150,
              "maximumCapacity": 160,
              "enablementMinimum": 100,
              "lowBreakpoint": 120,
              "highBreakpoint": 150,
              "enablementMaximum": 160,
              "tranches": [
                {

```


3.2 Structure of DSP Submissions

The dsp.submission.schema.json defines the required structure of Withdrawal Profile submissions for Demand Side Programmes (DSP), for both Standing and Variation submissions.

The type of submission (Standing or Variation) is implied by the top-level attribute:

```
"type": "object",
  "properties": {
    "standing": {"$ref": "#/definitions/standing"},
    "variation": {"$ref": "#/definitions/variation"}
  },
  "oneOf": [
    {
      "required": ["standing"]
    },
    {
      "required": ["variation"]
    }
  ]
```

The following table contains the nesting structure of elements comprising a Standing DSP Submission, and the number of times that each element can occur within the context of its parent element.

OBJECT				MIN	MAX
standing				1	1
	daysOfTheWeek			All Day of Week types must be present*	
		energy		1 Market Service	1 Market Service (no duplicates allowed)
			facilities	1	Up to the number of DSP Facilities owned by the Market Participant
			dispatchIntervals	288	288

*Day of Week types are defined under daysOfTheWeek Object section below.

The following table contains the nesting structure of elements comprising a Variation DSP Submission, and the number of times that each element can occur within the context of its parent element.

OBJECT				MIN	MAX
variation				1	1
	tradingDays			1	Unlimited, but within the Acceptance Horizon
		energy		1 Market Service	1 Market Service (no duplicates allowed)
			facilities	1	Up to the number of DSP Facilities owned by the Market Participant
			dispatchIntervals	1	288

The following sections describe the structure of each element of a DSP Submission, including the type and constraints. Examples of both a Standing and Variation DSP Submission are provided in Sections 3.2.2 and 3.2.3. The dsp.submission.schema.json is available in a separate document.

Standing object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
comment	string	Optional	Participant provided comment or description for the submission.
submissionReason	string	Optional	Free text to provide more explanation on the reason of a subsequent submission.
effectiveTradingDateFrom	Date ISO8601 format (YYYY-MM-DD)	Mandatory	The Trading Day from which the Standing Real-Time Market Submission will take effect.
effectiveDispatchIntervalFrom	Integer (1 to 288)	Mandatory	The Dispatch Interval within the defined effectiveTradingDateFrom from which the Standing Real-Time Market DSP Submission will take effect.
daysOfTheWeek	Array of objects	Mandatory	Object element to define days of the week to which the Standing submission applies.

daysOfTheWeek object

This object applies to Standing submissions only.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dayOfWeek	string	Mandatory Input case sensitive	Day of the week to which the Standing Real-Time Market DSP Submission applies. dayOfWeek types accepted are: <ul style="list-style-type: none"> • MON • TUE • WED • THU • FRI • SAT • SUN • WEEKDAY • WEEKEND • ALL
energy	object	Mandatory	Real-Time Market Service object that can be used in a Real-Time Market Submission.

* WEEKDAY/WEEKEND codes do not differentiate for public holidays. A PUBLIC HOLIDAY code is not available. Ad-hoc Variations can be made to cover differences in bids/offers falling on a public holiday.

Variation object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
comment	string	Optional	Participant provided comment or description for the submission.
submissionCode	string	Mandatory Input case sensitive	Code to define the reason of a submission. Accepted codes are: <ul style="list-style-type: none"> OUTAGE MARKET DIRECTION_FROM_AEMO RC_TEST OTHER
submissionReason	string	Conditional	Free text to provide more explanation on the reason of a subsequent submission. submissionReason is mandatory under certain conditions: refer to Section 6.4.2 for more details.
tradingDays	Array of objects	Mandatory	Object element to define the Trading Day or a range of Trading Days to which the submission applies.

The meaning of the above submission codes and when they should be used is described in the following table. If more than one Submission Reason is applicable, the most important one should be specified.

SUBMISSION CODE	DEFINITION AND USE
OUTAGE	A submission made to reflect a change in forecast Withdrawal Profile due to a planned or unplanned outage. This may include, but is not limited to, maintenance shutdowns, network outages, equipment failures, etc).
MARKET	A submission made to react to Market signals, including but not limited to submissions made in accordance with Market Rules 7.4.18(a), (b) or (c).
DIRECTION_FROM_AEMO	A subsequent submission is made to indicate that a Facility has been directed on/off by AEMO.
RC_TEST	A submission made to reflect quantities submitted for a Reserve Capacity Test or a Verification Test.
OTHER	A submission made for a reason not covered by another available submission code.

tradingDays object

This object applies to Variation submissions only.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dateFrom	Date ISO8601 format (YYYY-MM-DD)	Mandatory	Start Trading Day to which the following submission data applies.
dateTo	Date ISO8601 format (YYYY-MM-DD)	Mandatory	End Trading Day to which the following submission data applies.
energy	object	Mandatory	Real-Time Market Service object that can be used in a Real-Time Market DSP Submission.

Energy object

Real-Time Market DSP Submissions may only be made to the Energy Market Service. This Market Service is defined in the schema by the *energy* object, which is structured as described below.

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
facilities	Array of objects	Mandatory	Object element to define the DSP Facility the submission is made for.

facilities property

The *facilities* property of the *energy* object contains an array of *energyFacility* objects.

energyFacility object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
facilityCode	string	Mandatory	Registered DSP Facility to which the following submission data applies.
dispatchIntervals	Array of objects	Mandatory	Object element to define the Dispatch Intervals for a given Trading Day, Market Service and DSP Facility.

dispatchIntervals property

The *dispatchIntervals* property of the *energyFacility* object contains an array of *energyInterval* objects.

energyInterval object

PROPERTY NAME	TYPE	CONSTRAINTS	COMMENTS
dispatchIntervalFrom	Integer Min: 1 Max: 288	Mandatory	First Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).
dispatchIntervalTo	Integer Min: 1 Max: 288	Mandatory	Last Dispatch Interval to which the following price/quantity pairs apply (where 1 is the Dispatch Interval 08:00-08:05 and 288 is the Dispatch Interval 07:55-08:00).
dspUnconstrainedWithdrawalQuantity	Number multipleOf: 0.001 minimum: 0	Mandatory	A Market Participant's estimate of the absolute value of the average unconstrained MW Withdrawal of its Demand Side Programme in a Dispatch Interval. This must be a positive number or zero.
dspConstrainedWithdrawalQuantity	Number multipleOf: 0.001 minimum: 0	Mandatory	A Market Participant's estimate of the absolute value of the average constrained MW Withdrawal of its Demand Side Programme in a Dispatch Interval. This must be a positive number or zero.

3.2.1 Constraints

Submission validations rules and constraints are provided in Chapter 6.

3.2.2 Sample (Standing)

This sample submission conforms to the DSP JSON Schema version 0.11-DRAFT and is for illustrative purposes only.

```
{
  "standing": {
    "comment": "This is an example of JSON file for a DSP standing submission",
    "submissionReason": "Standing submission for facility ALPHA_UNIT_DSP",
    "effectiveTradingDateFrom": "2021-07-01",
    "effectiveDispatchIntervalFrom": 1,
    "daysOfTheWeek": [
      {
        "dayOfWeek": "ALL",
        "energy": {
          "facilities": [
            {

```

```

    "facilityCode": "ALPHA_UNIT_DSP",
    "dispatchIntervals": [
      {
        "dispatchIntervalFrom": 1,
        "dispatchIntervalTo": 150,
        "dspUnconstrainedWithdrawalQuantity": 30,
        "dspConstrainedWithdrawalQuantity": 30
      },
      {
        "dispatchIntervalFrom": 151,
        "dispatchIntervalTo": 288,
        "dspUnconstrainedWithdrawalQuantity": 50,
        "dspConstrainedWithdrawalQuantity": 50
      }
    ]
  }
}
]]
}
}

```

3.2.3 Sample (Variation)

This sample submission conforms to the DSP JSON Schema version 0.11-DRAFT and is for illustrative purposes only.

```

{
  "variation": {
    "comment": "This is an example of JSON file for a DSP variation submission",
    "submissionCode": " OUTAGE",
    "submissionReason": "Changing data for dispatch intervals 80-150 to reflect capability",
    "tradingDays": [
      {
        "dateFrom": "2021-08-01",
        "dateTo": "2021-08-03",
        "energy": {
          "facilities": [
            {
              "facilityCode": "ALPHA_UNIT_DSP",
              "dispatchIntervals": [
                {
                  "dispatchIntervalFrom": 80,
                  "dispatchIntervalTo": 150,
                  "dspUnconstrainedWithdrawalQuantity": 10,
                  "dspConstrainedWithdrawalQuantity": 10
                }
              ]
            }
          ]
        }
      }
    ]
  }
}

```

4. Web Services Submissions

The RTMS application APIs allow Market Participants to submit and query RTM and DSP Submissions for all Market Services. The APIs provide the same functionalities available from the RTMS UI in WEMS MPI.

4.1 Authentication Methods

The authentication scheme used by the API uses the standard authentication mechanism wherein it employs X.509 certificate authentication to authenticate Market Participants & clients. SSL certificates issued to Market Participants by AEMO need to be included in the HTTP call to establish a mutual-TLS (mTLS) communication. The method for attaching a certificate depends on the tooling or programming framework that is used. For information only, please refer to below example references:

- Attaching Certificates in Postman: <https://learning.postman.com/docs/sending-requests/certificates/>
- Attaching Certificates in .NET Core: <https://docs.microsoft.com/en-us/aspnet/core/security/authentication/certauth?view=aspnetcore-6.0#implement-an-httpclient-using-a-certificate-and-ihttpclientfactory>

Please contact WA Market Operations if you require a certificate.

4.2 Response Codes

The following table lists and describes all possible responses which may be returned when an API request is initiated from the RTMS API.

ERROR CODE	DESCRIPTION	EXPLANATION
200	Ok	The submission conforms to the required standards.
400	Bad Request	The request is not understood or invalid due to syntactical errors.
401	Authentication Failure	The user/password is incorrect, or the user does not exist.
403	Forbidden	The user is not enabled for Real-Time Market Submissions in MPI.
404	Not Found	The requested resource is not found or the URL is invalid. No response payload will be given.
415	Unsupported Media Type	The media type in the request body is not supported
500	Server Error	The system encountered unforeseen errors.

4.3 Endpoint Format

The endpoint format for RTMS is as follow:

<Base URL>/<Endpoint>?querystring parameters

PARAMETER	DESCRIPTION
<Base URL>*	Server hosting the service or an external proxy. The base URLs for RTMS are: MPT: https://apis.mpt.aemo.com.au:9319/WEM/v1/realTimeMarketSubmission Market Trial: https://apis.rfm.aemo.com.au:9319/WEM/v1/realTimeMarketSubmission Pre-prod: https://apis.preprod.aemo.com.au:9319/WEM/v1/realTimeMarketSubmission Production: https://apis.prod.aemo.com.au:9319/WEM/v1/realTimeMarketSubmission
<Endpoint>	Entities of a Business Function
?querystring parameters	Query string parameters for the relevant method

*The RTMS Base URL can be viewed on The Reformer [here](#).

4.4 RTMS API endpoints

This section describes the RTMS API and its endpoints, request structure and response structure. This information is provided for explanatory purposes only. For full details, including sample requests and responses, refer to the Swagger API documentation.

The below table lists all the API endpoints available for RTMS.

PARAMETER	ENDPOINT	DESCRIPTION
POST	submissions	Submits one RTM Submission asynchronously.
POST	submissions/waitForResult	Submits one RTM Submission synchronously.
POST	submissions/dsp	Submits one DSP Submission asynchronously.
POST	submissions/dsp/waitForResult	Submits one DSP Submission synchronously.
GET	submissions	Retrieves a list of summary details of historical RTM and DSP Submissions based on filter parameters.
GET	submissions/{submissionId}	Retrieves a specific RTM or DSP Submission based on submissionId. The response includes summary details, processing results, and the original submission.
GET	submissions/{submissionId}/status	Retrieves the submission status for a given RTM or DSP Submission. If the status is REJECTED or FAILED, a list of error messages and warnings is included in the response. Warnings, if any, are also included in the response when the submission status is VALID
GET	submissions/{submissionId}/raw	Retrieves the original RTM or DSP Submission sent by the Market Participant.
GET	consolidated/energy	Retrieves the consolidated view of RTM Submissions for a specific Trading and Facility, for Market Service Energy.
GET	consolidated/ess	Retrieves the consolidated view of RTM Submissions for a specific Trading Day and Facility, for a selected ESS Market Service.
GET	consolidated	Retrieves the consolidated view of RTM Submissions for up to 10 Trading Days, for all 6 Market Services, and all (or specified) Facilities.

PARAMETER	ENDPOINT	DESCRIPTION
GET	consolidated/dsp	Retrieves the consolidated view of DSP Submissions for a specific Trading Day and Facility.
GET	gateClosureViolations	Retrieves a list of Dispatch Intervals submitted within Gate Closure.

4.4.1 submissions

When used with the POST method, the *submissions* resource provides Market Participants with the ability to make an RTM Submission conforming to the JSON schema.

The same endpoint can be also used with the GET method to query a list of RTM or DSP Submissions based on specified parameters.

RTMS has a submission file size limit of 4MB. It is possible to compact the JSON (not compress) by removing whitespace, to reduce the file size.

POST

submission request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions
Request	The request body is an application/JSON object with properties as described in the example request in the Swagger API documentation. referenceld in request is optional, but if given it must not exceed 100 characters. The submission property must conform to the rtm.submission.schema.json.

submissions response

ITEM	DESCRIPTION
Response Codes	<ul style="list-style-type: none"> • 200 • 400 • 401 • 415 • 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

GET

submissions request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions
Request	See example of submissions request in the Swagger API documentation

submissions parameters

NAME	REQUIRED	DATA TYPE	DESCRIPTION
submittedFrom	Yes if submittedTo is specified	string "YYYY-MM-DD"	Returns submissions made after the specified datetimeoffset. If submittedFrom is not specified the default range of the previous 24 hours is applied.
submittedTo	Yes if submittedFrom is specified	string "YYYY-MM-DD"	Returns submissions made before the specified datetimeoffset. If submittedTo is not specified the default range of the previous 24 hours is applied. If specified, submittedTo date must be equal to or greater than submittedFrom date (limited to 30 days from submittedFrom date).
submissionType	No	string	Returns submissions based on the specified type: <ul style="list-style-type: none"> • 'standing', or • 'variation', or • 'invalid' Note that submission type = Invalid only occurs when structural errors are detected in the submission. In this case the content of the submission cannot be unpacked, hence the system cannot determine the submission type.
status	No	string	Returns submissions based on the specified status: <ul style="list-style-type: none"> • 'submitted', • 'rejected', or • 'valid', or • 'failed'
statusUpdatedSince	No	String ISO8601 with time component	Returns existing submissions whose status has changed after the specified datetime.
facility	No	string	Returns RTM or DSP Submissions, as relevant, containing the specified Facility. Note that the facility parameter may only be specified if the parameter status = valid is also specified.
marketService	No	string	Returns submissions containing the specified Market Service: <ul style="list-style-type: none"> • 'energy', • 'regulationRaise', • 'regulationLower', • 'contingencyRaise', • 'contingencyLower', or • 'rocof' Note that the marketService parameter may only be specified if the parameter status = valid is also specified.
tradingDay	No	string "YYYY-MM-DD"	Returns submissions containing the specified Trading Day. Note that the tradingDay parameter may only be specified if the parameter status = valid is also specified.
hasGateClosureViolation	No	Boolean (true/false)	Returns submissions which contain one or more Dispatch Intervals within Gate Closure. Note that the hasGateClosureViolation parameter may only be specified if the parameter status = valid is also specified.
referenceId	No	string	Returns submissions based on the specified referenceId. It must not exceed 100 characters.
uploadedBy	No	String	Returns submissions made by the specified user.

submissions response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none">• 200• 400• 401• 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.2 submissions/waitForResult

This resource provides Market Participants with the ability to make a synchronous API RTM Submission conforming to the JSON schema and wait for the validation response. The response, containing the submission ID and the validation results, is provided after the validation process is completed.

The current timeout for this API call is set to 30 seconds. If the call times out, a response including submission ID and submission status will be returned regardless whether the validation process has completed or not. If the validation process is not complete when the API call times out, a submission status of SUBMITTED is returned.

POST

submissions/waitForResult request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/waitForResult
Request	The request body is an application/json object with the following properties as described in the example request in the Swagger API documentation. referenceld in request is optional, but if given it must not exceed 100 characters. The submission property must conform to the RTMS JSON schema for RTM Submissions.

submissions/waitForResult response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none">• 200• 400• 401• 415• 500
Success Response	See example of a successful submission response in the Swagger API documentation. As this endpoint triggers all validations in <i>synchronous</i> mode, technical errors (e.g. services are down) are returned as HTTP 5xx, while API validation errors are returned as HTTP 4xx.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.3 submissions/dsp

This resource provides Market Participants with the ability to make a DSP Submission conforming to the JSON schema.

POST

submission request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/dsp
Request	The request body is an application/JSON object with properties as described in the example request in the Swagger API documentation. referenceld in request is optional, but if given it must not exceed 100 characters. The submission property must conform to the RTMS JSON schema for DSP Facilities.

submissions response

ITEM	DESCRIPTION
Response Codes	<ul style="list-style-type: none">• 200• 400• 401• 415• 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.4 submissions/dsp/waitForResult

This resource provides Market Participants with the ability to make a synchronous API DSP Submission conforming to the JSON schema and wait for the validation response. The response, containing the submission ID and the validation results, is provided after the validation process is completed.

The current timeout for this API call is set to approx. 30 seconds. If the call is timed out a response including submission ID and submission status will be returned regardless whether the validation process has completed or not. If the validation process is not complete when the API call times out, a submission status of SUBMITTED is returned.

POST

submissions/dsp/waitForResult request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/dsp/waitForResult

ITEM	DESCRIPTION
Request	The request body is an application/json object with the following properties as described in the example request in the Swagger API documentation. referenceld in request is optional, but if given it must not exceed 100 characters. The submission property must conform to the RTMS JSON schema for DSP Facilities.

submissions/waitForResult response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> • 200 • 400 • 401 • 415 • 500
Success Response	See example of a successful submission response in the Swagger API documentation. As this endpoint triggers all validations in <i>synchronous</i> mode, technical errors (e.g. services are down) are returned as HTTP 5xx, while API validation errors are returned as HTTP 4xx.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.5 submissions/{submissionId}

This resource returns details of a specified submission. The submission is identified by the submissionId provided.

GET

submissions/{submissionId} request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/{submissionId}
Request	See example of submissions/{submissionId} request in the Swagger API documentation.

submissions/{submissionId} response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> • 200 • 401 • 404 • 500
Success Response	See example of a successful submission response in the Swagger API documentation. The 200 response includes details of the original submission as saved in RTMS database along with other parameters.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.6 submissions/{submissionId}/status

This resource returns the status of a specified RTM or DSP Submission. The submission is identified by the submissionId provided. The response includes the submission status and the validation results.

This endpoint can be used along with the *POST submissions* resource when a Market Participant makes a submission asynchronously.

GET

submissions/{submissionId}/status request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/{submissionId}/status
Request	See example of submissions/{submissionId}/status request in the Swagger API documentation.

submissions/{submissionId}/status response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none">• 200• 401• 404• 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.7 submissions/{submissionId}/raw

This resource returns the original RTM or DSP Submission made by the Market Participants.

GET

submissions/{submissionId}/raw request

ITEM	DESCRIPTION
URL	<BaseURL>/submissions/{submissionId}/raw
Request	See example of submissions/{submissionId}/raw request in the Swagger API documentation.

submissions/{submissionId}/raw response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none">• 200• 401• 404• 500
Success Response	Returns a file object with a Content-Disposition header which can be used to save the original submission.

ITEM	DESCRIPTION
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.8 consolidated/energy

This resource allows Market Participants to query the consolidated view of their RTM Submissions made for the Energy Market Service for a specified Trading Day and Facility. DSP Facilities are not accepted when using this resource.

GET

consolidated request

ITEM	DESCRIPTION
URL	<BaseURL>/consolidated/energy?<querystring parameters>
Request	See the details about the request parameters in the table below.

consolidated parameters

All 3 parameters are required to correctly return the consolidated view.

NAME	REQUIRED	DATA TYPE	DESCRIPTION
tradingDay	Yes	String "YYYY-MM-DD"	Returns the consolidated view of submissions made for the specified Trading Day. The Trading Day can be in the past or in the future. Future dates are limited to the Acceptance Horizon window.
facility	Yes	string	Returns the consolidated view of RTM Submissions made for the specified Facility.
marketService	Yes	string	This parameter must be set to "Energy". Returns the consolidated view of submissions made for the Energy Market Service.

consolidated response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> 200 400 401 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.9 consolidated/ess

This resource allows Market Participants to query the consolidated view of their RTM Submissions made for an ESS Market Service (Regulation Raise/Lower, Contingency Raise/Lower, RoCoF Control Service) for a specified Trading Day and Facility. DSP Facilities are not accepted when using this resource.

GET

consolidated request

ITEM	DESCRIPTION
URL	<BaseURL>/consolidated/ess?<querystring parameters>
Request	See the details about the request parameters in the table below.

consolidated parameters

All 3 parameters are required to correctly return the consolidated view.

NAME	REQUIRED	DATA TYPE	DESCRIPTION
tradingDay	Yes	String "YYYY-MM-DD"	Returns the consolidated view of submissions made for the specified Trading Day. The Trading Day can be in the past or in the future. Future dates are limited to the Acceptance Horizon window.
facility	Yes	string	Returns the consolidated view of RTM Submissions made for the specified Facility.
marketService	Yes	string	Returns the consolidated view of submissions made for the specified Market Service. Only ESS Market Services are accepted: <ul style="list-style-type: none">• 'regulationRaise', or• 'regulationLower', or• 'contingencyRaise', or• 'contingencyLower', or• 'rocof'

consolidated response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none">• 200• 400• 401• 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.10 consolidated/dsp

This resource allows Market Participants to query the consolidated view of their DSP Submissions made for a specified Trading Day and Facility. Only DSP Facilities are accepted when using this resource.

GET

consolidated request

ITEM	DESCRIPTION
URL	<BaseURL>/consolidated/ess?<querystring parameters>
Request	See the details about the request parameters in the table below.

consolidated parameters

All 3 parameters are required to correctly return the consolidated view.

NAME	REQUIRED	DATA TYPE	DESCRIPTION
tradingDay	Yes	String "YYYY-MM-DD"	Returns the consolidated view of submissions made for the specified Trading Day. The Trading Day can be in the past or in the future. Future dates are limited to the Acceptance Horizon window.
facility	Yes	string	Returns the consolidated view of submissions made for the specified Facility. Facility must be a DSP Facility
marketService	Yes	string	This parameter must be set to 'Energy'. Returns the consolidated view of submissions made for the Energy Market Service.

consolidated response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> • 200 • 400 • 401 • 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.11 consolidated

This resource allows Market Participants to (batch) query the consolidated view of their RTM Submissions made for all 6 Market Services, all (or specified) Facilities, for up to 10 Trading Days.

GET

consolidated request

ITEM	DESCRIPTION
URL	<BaseURL>/consolidated?<querystring parameters>
Request	See the details about the request parameters in the table below.

consolidated parameters

tradingDayFrom and *tradingDayTo* parameters are required to correctly return the consolidated view.

NAME	REQUIRED	DATA TYPE	DESCRIPTION
tradingDayFrom	Yes	string "YYYY-MM-DD"	Returns the consolidated view of submissions made for the specified Trading Day range (maximum 10 days). The Trading Day can be in the past or in the future. Future dates are limited to the Acceptance Horizon window.
tradingDayTo	Yes	String "YYYY-MM-DD"	Returns the consolidated view of submissions made for the specified Trading Day range (maximum 10 days). The Trading Day can be in the past or in the future. Future dates are limited to the Acceptance Horizon window.
Facilities	No	string	Optional parameter. Will default to all Facilities if not selected. Individual Facilities can be selected as comma-separated values.

consolidated response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> • 200 • 400 • 401 • 500
Success Response	See example of a successful submission response in the Swagger API documentation.
Invalid Response	In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload. See example of an invalid submission response in the Swagger API documentation.

4.4.12 gateClosureViolations

This resource lists all the Dispatch Intervals submitted within Gate Closure. The data returned can be queried based on criteria specified by one or more query parameters. The applicable query parameters are listed below.

GET

gate-closure-violations request

ITEM	DESCRIPTION
URL	<BaseURL>/gateClosureViolation
Request	Request query parameters are documented below.

gate-closure-violations parameters

NAME	REQUIRED	DATA TYPE	DESCRIPTION
dateTimeFrom	Yes if dateTimeTo is specified	String ISO8601 with time component	Filter the Dispatch Intervals after the datetime selected submitted within Gate Closure. If dateTimeFrom is not specified the default range of the previous 24 hours is applied.
dateTimeTo	Yes if dateTimeFrom is specified	String ISO8601 with time component	Filter the Dispatch Intervals up until the datetime selected submitted within Gate Closure. If submittedTo is not specified the default range of the previous 24 hours is applied. If specified, dateTimeTo must be greater than dateTimeFrom (date component limited to 30 days from dateTimeFrom).

NAME	REQUIRED	DATA TYPE	DESCRIPTION
facility	No	string	Filters Gate Closure Violations for the specified Registered Facility.
marketService	No	string	Filters Gate Closure Violations for the specified Market Service: <ul style="list-style-type: none"> • 'energy', • 'regulationRaise', • 'regulationLower', • 'contingencyRaise', • 'contingencyLower', or • 'rocof'

gate-closure-violations response

ITEM	DESCRIPTION
Response Code	<ul style="list-style-type: none"> • 200 • 400 • 401 • 500
Success Response	<p>Returns a list of all Dispatch Intervals submitted within Gate Closure related to the date and time, Facility and Market Service selected. If no dateTimeFrom and dateTimeTo are given, the response defaults to the Dispatch Intervals submitted within Gate Closure in the past 24 hours.</p> <p>See example of a successful submission response in the Swagger API documentation</p>
Invalid Response	<p>In case of error, the response object returned will be a standard AEMO error object that is based on the Australian Government Consumer Data Standards for response payload.</p> <p>See example of an invalid submission response in the Swagger API documentation.</p>

5. Submission processing

5.1 Submission workflow

The figure on the next page shows the workflow an RTM or DSP Submission undergoes once sent by a Market Participant to AEMO, via WEMS MPI or API.

A submission can have four different statuses (the coloured boxes in the figure):

- SUBMITTED: the submission has been received by AEMO and is awaiting validation to be completed.
- VALID: the submission has undergone the validation process and no errors were found.
- REJECTED: the submission has undergone the validation process and errors were found (either structural or content errors).
- FAILED: a system error has occurred, and the submission processing has been interrupted. A new submission should be sent by the Market Participant to be processed again.

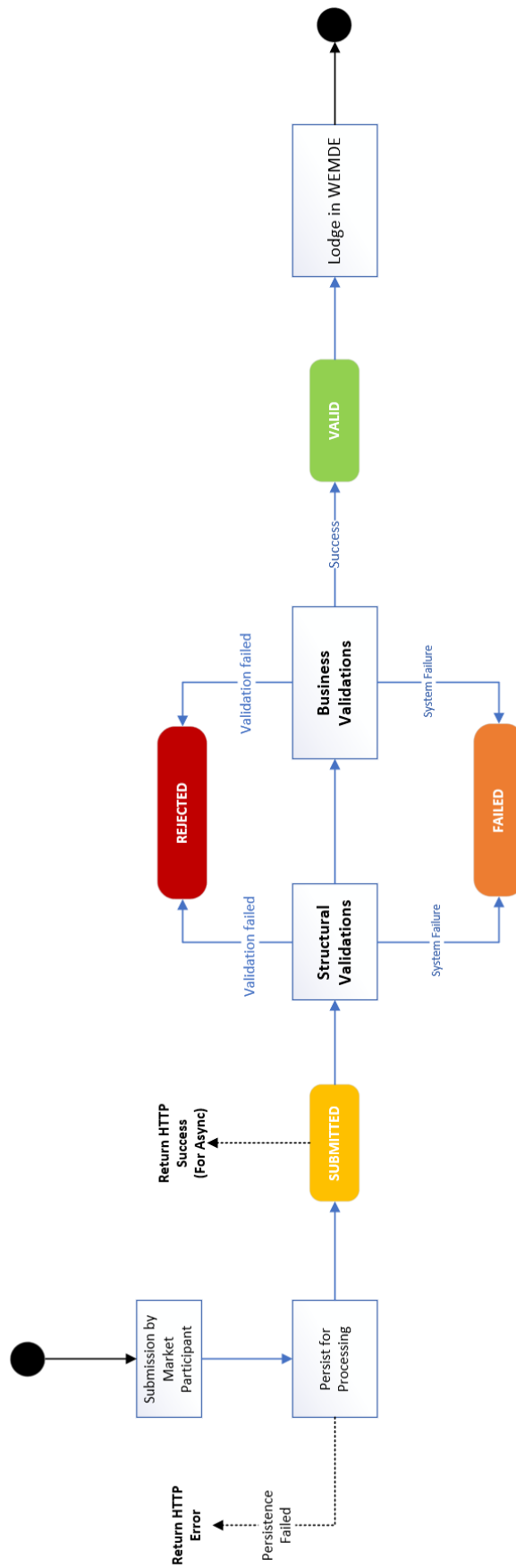
When a submission is received by AEMO, it is stored in a document service and a record is created on AEMO's database documenting the *submissionId* and the *timestamp* of when the submission was received. This timestamp is used as the basis for time-based validations (such as Gate Closure validations) and in determining precedence for the generation of the consolidated view. The submission status then becomes SUBMITTED and validation is commenced.

If the persistence to the document service and/or the database fails, the submission cannot be stored (so it does not receive a status) and an HTTP error is sent to the user. No further processing can happen at this stage and the submission should be sent again.

Validation is then carried out in a 2-step process (refer to Chapter 6 for details). If no errors are found the submission is returned with the VALID status and it is submitted to the WEM Dispatch Engine. Otherwise, the submission is returned with status REJECTED and it will not proceed further.

Note that when a submission is made via Web Services some additional validations are performed on the API request contents as part of the API submission process, prior to the validation steps described in Chapter 6. If errors are found at this stage, the submission is not saved in the document service and database and an HTTP 400 error ("Bad Request") with information about the error. No further processing can happen at this stage and a new request with valid body should be sent.

Figure 4 RTMS submissions processing workflow



5.2 Time constraints on submissions

This section describes all time-based constraints applicable to RTM and DSP Submissions.

Dispatch Intervals in the future

All DSP and RTM Submissions, both Variation and Standing, must only contain Dispatch Intervals commencing after the submission time. A validation is performed against this requirement and the submission will be rejected if not met.

Gate Closure

A Variation RTM Submission can be made for Dispatch Intervals within Gate Closure solely for the purposes specified in clause 7.4.35 of the WEM Rules. If a Variation RTM Submission contains Dispatch Intervals within Gate Closure, the submission is only accepted if the field *allowGateClosureViolation* is set as YES.

The Gate Closure window is determined with reference to the *timestamp* generated when the submission was received by AEMO.

Standing RTM Submissions may not contain Dispatch Intervals within Gate Closure.

Gate Closure restrictions do not apply to DSP Submissions.

The following example assumes Gate Closure to be 15 minutes before the start of a Dispatch Interval. Refer to the WEM Website for the current Gate Closure.

Example:

- Inputs:
 - o Variation submission received on 2021-09-20 at 10:36.
 - o Submission contains Trading Day 2021-09-20, Dispatch Intervals 33-50 (10:40 – 12:30).
 - o The value for *allowGateClosureViolation* is YES.
 - o The submission is made for the purpose of modifying the Max Injection Capacity of a Facility to reflect a Forced Outage.
- Result:
 - o Gate Closure for Dispatch Interval 33 (10:40) is 10:25. The submission was sent at 10:36, hence the Dispatch Interval is within Gate Closure.
 - o Because the value of *allowGateClosureViolation* is YES, the submission is valid. A warning is produced to notify the user that the submission contains intervals within Gate Closure.
 - o If *allowGateClosureViolation* had been NO, or if the submission had been a Standing submission, the submission would have been rejected.

Please note that RTMS does not, and cannot, determine whether a submission is compliant with clause 7.4.35 of the WEM Rules. Market Participants should consult the rules to understand their obligations before making a submission within Gate Closure.

Acceptance Horizon

The Acceptance Horizon is the point in time before a Dispatch Interval after which a Market Participant may submit RTM or DSP Submissions for a Registered Facility for that Dispatch Interval. The Acceptance Horizon is only applied to Variation submissions.

When a Variation submission contains Dispatch Intervals beyond the Acceptance Horizon, the submission is rejected.

The Acceptance Horizon window is determined with reference to the *timestamp* generated when the submission was received by AEMO.

The following example assumes an Acceptance Horizon of 28 days. Refer to the RTMS WEM Procedure for the current Acceptance Horizon.

Example:

- Inputs
 - o Variation submission received on 2021-09-20 at 10:36
 - o Submission contains Trading Day 2021-10-22, Dispatch Intervals 1-13 (8:00 – 9:00)
- Result
 - o The Acceptance Horizon for Dispatch Interval 1 (08:00) on 2021-10-22 is 2021-09-24 8:00
 - o The submission was received before the Acceptance Horizon for at least 1 of the Dispatch Intervals. The submission is rejected.

Figure 5 Application of Gate Closure & Acceptance Horizon restrictions for Variation RTM Submissions

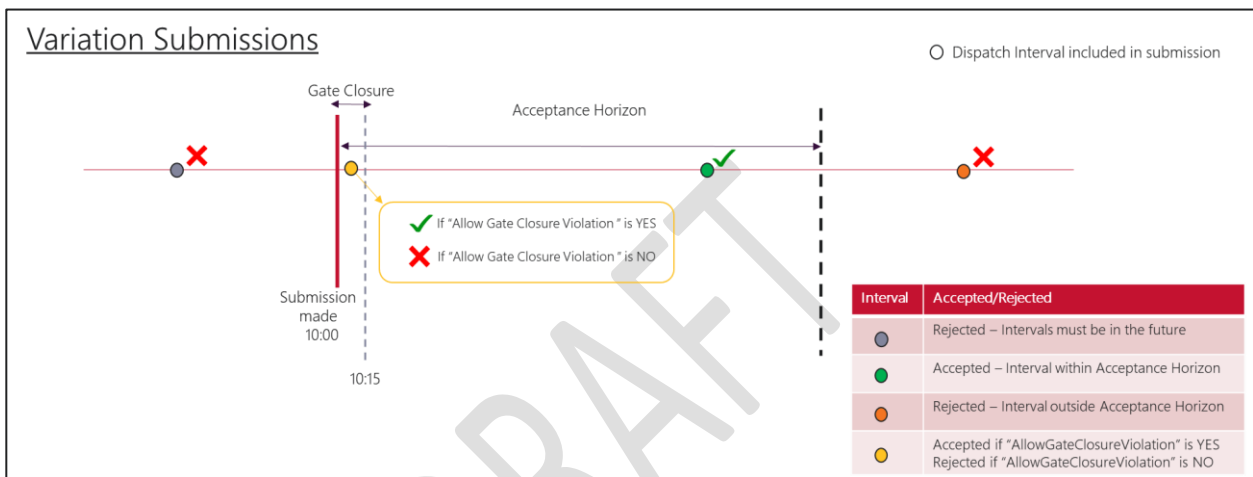
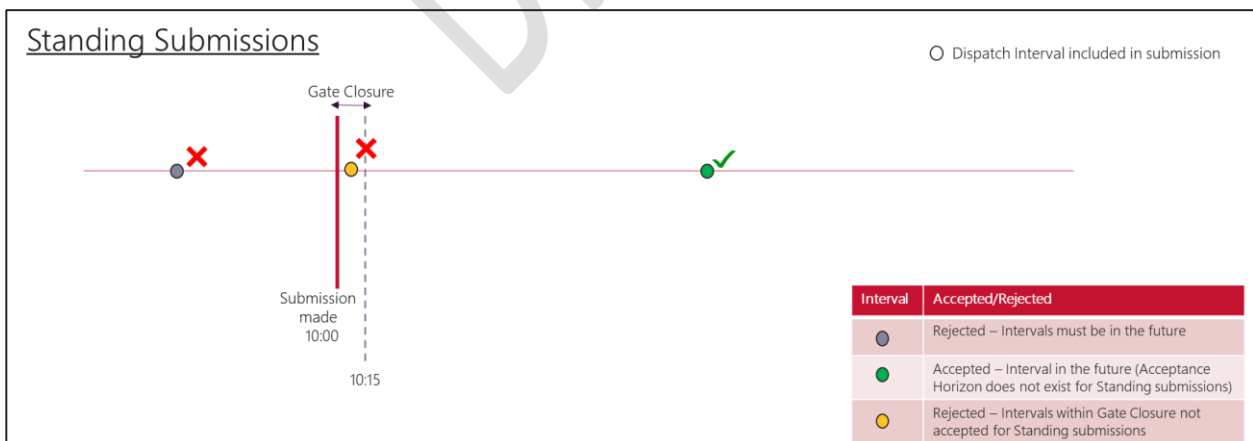


Figure 6 Application of Gate Closure & Acceptance Horizon restrictions for RTM Standing Submissions



Pre-Dispatch Schedule Horizon

RTM Submissions are required to include a Submission Reason if they include any Dispatch Intervals within the Pre-Dispatch Schedule Horizon.

The Pre-Dispatch Schedule Horizon refers to the next 96 Pre-Dispatch Intervals after the current Pre-Dispatch Interval. Note that a Pre-Dispatch Interval is a period of 30 minutes commencing on the half hour or the hour during a Trading Day (and therefore a Pre-Dispatch Interval includes six 5-minute Dispatch Intervals).

Example:

- Inputs
 - o Standing or Variation RTM Submission received on 2021-09-20 at 10:36
 - o The earliest Dispatch Interval in the submission is Trading Day 2021-09-22, Dispatch Interval 30 (10:25-10:30).
 - o The submission does not include a Submission Reason.
- Result
 - o The current Pre-Dispatch Interval is 2021-09-20, 10:30-11:00.
 - o Therefore, the current Pre-Dispatch Schedule Horizon commences at 2021-09-20 10:30 and concludes at 2021-09-22 10:30.
 - o Therefore, there are one or more Dispatch Intervals in the submission, within the Pre-Dispatch Schedule Horizon, but no Submission reason has been provided. The submission is rejected

Standing DSP Withdrawal Profile Submission Deadline

Standing DSP Submissions may only be submitted up to two hours before the first Dispatch Interval to which the submission applies.

Example:

- Inputs
 - o Standing DSP Submission received on 2021-09-20 at 10:36
 - o The submission is effective from Trading Day 2021-09-20, Dispatch Interval 56 (10:35-10:40).
- Result
 - o The first interval in the submission commences less than 2 hours after the submission time. The submission is rejected.

5.3 Layering of subsequent submissions and consolidated view

When AEMO receives subsequent RTM or DSP Submissions, they are processed and layered. As a result, a *consolidated* view is created for each Trading Day and is sent to the WEM Dispatch Engine. The consolidated view of submissions can be viewed in WEMS MPI or queried via an API.

The following examples apply to both RTM and DSP Submissions

Subsequent variation submissions

When a subsequent variation submission is made in respect of the same Trading Day, Market Service, Facility and Dispatch Interval as an earlier submission (either standing or variation), the new submission data replaces data from earlier submissions for the Trading Day, Market Service, Facility and Dispatch Interval.

Example (simplified)

- Standing submission received on 2021-09-20 8:05, with the following data:
 - o Effective Trading Day From: 2021-09-21
 - o Effective Dispatch Interval From 1 (8:00).
 - o Day of Week: ALL
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 1-288
 - o Max Injection Capacity: 100 MW
- Variation submission received on 2021-09-21 7:30, with the following data:
 - o Trading Day From: 2021-09-21
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 1-10 (8:00-8:45)
 - o Max Injection Capacity: 80 MW
- Variation submission received on 2021-09-21 7:35, with the following data:
 - o Trading Day From: 2021-09-21
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 9-10 (8:40-8:45)
 - o Max Injection Capacity: 50 MW

Consolidated view for Trading Day 2021-09-21, Market Service: Energy, Facility: ALPHA_UNIT_001

Dispatch Intervals	Max Injection Capacity (MW)	Relevant submission
1-8	80	Variation at 2021-09-21 7:30
9-10	50	Variation at 2021-09-21 7:35
11-288	100	Standing at 2021-09-20 8:05

Subsequent standing submissions

When a subsequent standing submission is made in respect of the same Day of Week type, Market Service, Facility and Dispatch Interval as an earlier standing submission, the new standing submission data ONLY replaces data from earlier standing submissions for the Day of Week type, Market Service, Facility and Dispatch Interval. Earlier variation submissions are not affected by the new standing submission.

Example (simplified)

- Standing submission received on 2021-09-20 8:05, with the following data:
 - o Effective Trading Day From: 2021-09-20
 - o Effective Dispatch Interval From 1 (8:00).
 - o Day of Week: ALL
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 1-288
 - o Max Injection Capacity: 100 MW
- Variation submission received on 2021-09-21 7:30, with the following data:
 - o Trading Day From: 2021-09-22
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 145-169 (20:00-22:00)
 - o Max Injection Capacity: 80 MW
- Standing submission received on 2021-09-21 10:00, with the following data:
 - o Effective Trading Day From: 2021-09-22
 - o Effective Dispatch Interval From 13 (9:00).
 - o Day of Week: ALL
 - o Market Service: Energy
 - o Facility: ALPHA_UNIT_001
 - o Dispatch Intervals: 1-288
 - o Max Injection Capacity: 120 MW

Consolidated view for Trading Day 2021-09-22, Market Service: Energy, Facility: ALPHA_UNIT_001

Dispatch Intervals	Max Injection Capacity (MW)	Relevant submission
1-12	100	Standing at 2021-09-20 8:05
13-144	120	Standing at 2021-09-21 10:00
145-169	80	Variation at 2021-09-21 7:30
170-288	120	Standing at 2021-09-21 10:00

5.4 Cancelling Submissions

The RTMS system does not allow Market Participants to cancel their RTM or DSP Submissions. Subsequent submissions made in respect of the same Market Service, the same Registered Facilities, and covering the same Dispatch Intervals as earlier submissions will replace the earlier submissions following the logic described in Chapter 5.3.

DRAFT

6. Schema validation rules and messages

Standing and Variation RTM and DSP Submissions are subject to validation checks to ensure compliance with the submission schema and other physical, business, or rule-related limitations.

6.1 Validation Process Overview

All RTM and DSP Submissions are subject to two sets of validations: structural validations and business validations.

Structural validations are used to confirm that the submission received by WEMS conforms to the relevant submission schema as described in Chapter 3.

Business validations are used to confirm that the submission conforms with other physical, business, or rule-related limitations, for example Standing Data related to the Participant or Facility, time-related constraints, and field interdependencies within the submission.

If any validation carried out on a submission results in a “rejection” outcome, then the entire electronic submission will be rejected. Under no circumstances will an electronic submission be accepted in part.

Structural validations are carried out first. Business validations are carried out subsequently only if structural validations are successful. Therefore, if a submission is rejected due to a structural validation failure, this also indicates that no business validations have been carried out on the submission, and therefore errors related to business validations may still exist in the submission.

6.2 Successful Submission

If all structural and business validations are completed without any submission rejection errors, the submission’s status is changed to VALID and a success code is returned as per the following table. This table covers both RTM and DSP Submissions, and both Variation and Standing submissions.

Validation Success Codes

OBJECT	VALIDATION	CONSEQUENCE	CODE	MESSAGE
All	No errors from validations as per Sections 5.3 and 5.4.	Accept Submission	SUC001	Submission Processing is Completed Successfully.

6.3 Structural Validations and error messages

Structural validations are carried out to ensure that the submission is compliant with the submission schema and all associated constraints, as defined in `rtm.submission.schema.json` and `dsp.submission.schema.json` which are described in detail in Sections 3.1 and 3.2.

All structural validation failures will return the same error code, however the error message will vary depending on the reason for rejection.

The following table covers all Facility types and both variation and standing submissions.

Structural Validation Error Codes

OBJECT	VALIDATION	CONSEQUENCE	CODE	MESSAGE
All	Various – refer to Section 3.	Reject Submission	ST001	Various, depending on the reason for the rejection.

The error messages for structural validations are the default output of the schema validator and they contain the reason of rejection and a path indicating where the structural error was found in the submission. The following are examples of typical error messages for structural validations.

Figure 7 Examples of structural validations and related error messages

Submission

```

1
2 "variation": {
3   "comment": "",
4   "submissionCode": "I",
5   "submissionReason": "Test",
6   "allowGateClosureViolation": "NO",
7   "tradingDays": [
8     {
9       "dateFrom": "2021-30-08",
10      "dateTo": "2021-06-31",
11      "energy": {
12        "facilities": [
13          {
14            "facilityName": "ALPHA_UNIT_001",
15            "dispatchIntervals": [
16              {
17                "dispatchIntervalFrom": 80,
18                "dispatchIntervalTo": 150,
19                "maxInjectionCapacity": 160,
20                "maxWithdrawalCapacity": 0,
21                "inflexibleFlag": "YES",
22                "maxUpwardRampRate": 8.255,
23                "maxDownwardRampRate": 8.255,
24                "tranches": [

```

Schema

```

"tradingDay": {
  "type": "object",
  "description": "Object element to contain array of days of the week.",
  "properties": {
    "dateFrom": {
      "type": "string",
      "format": "date",
      "description": "Start Trading Day to which the following submission data applies."
    },
    "dateTo": {
      "type": "string",
      "format": "date",
      "description": "End Trading Day to which the following submission data applies."
    }
  }
}

```

ST001: String '2021-30-08' does not validate against format 'date'. Path 'variation.tradingDays[0].dateFrom', line 9, position 32

Submission

```

369
370 "dispatchIntervalFrom": 151,
371 "dispatchIntervalTo": 288,
372 "maxInjectionCapacity": -0.00125,
373 "maxWithdrawalCapacity": 0,
374 "inflexibleFlag": "NO",
375 "maxUpwardRampRate": 8.255,
376 "maxDownwardRampRate": 8.255,
377 "tranches": [
378   {
379     "tranche": 1,
380     "fuelType": "LIQUID",
381     "quantity": 50,
382     "price": 30.33,
383     "capacityType": "IN-SERVICE"
384   },
385   {
386     "tranche": 2,
387     "fuelType": "LIQUID",
388     "quantity": 50,
389     "price": 45.33,
390     "capacityType": "IN-SERVICE"

```

Schema

```

"energyInterval": {
  "type": "array",
  "items": {
    "type": "object",
    "properties": {
      "dispatchIntervalFrom": {
        "type": "integer",
        "description": "First Dispatch Interval to which the following price/quantity pairs applies.",
        "minimum": 1,
        "maximum": 288
      },
      "dispatchIntervalTo": {
        "type": "integer",
        "description": "Last Dispatch Interval to which the following price/quantity pairs applies.",
        "minimum": 1,
        "maximum": 288
      },
      "maxInjectionCapacity": {
        "type": "number",
        "multipleOf": 0.001,
        "minimum": 0,
        "description": "Maximum Capacity (in MW) the Facility can send to the Network in the Dispatch I

```

*ST001: Float -0.00125 is less than minimum value of 0.
Path 'variation.tradingDays[0].energy.facilities[2].dispatchIntervals[1].maxInjectionCapacity', line 371, position 50*

*ST001: Float -0.00125 is not a multiple of 0.001.
Path 'variation.tradingDays[0].energy.facilities[2].dispatchIntervals[1].maxInjectionCapacity', line 371, position 50.*

6.4 Business Validations and error messages

Business validations are used to confirm that the submission conforms with other physical, business, or rule-related limitations, for example Standing Data related to the Participant or Facility, time-related constraints, and field interdependencies within the submission.

Business validations are defined differently for RTM and DSP submissions. Section 6.4.1 contains details of business validations and error messages for RTM submissions, while section 6.4.2 is related to DSP submissions.

Business validations are performed on the entire submission, but they can be conceptually divided into:

- Validations on schema elements that are common for both energy and ESS submissions, e.g. initial information at the start of submissions, Trading Days, tranche elements
- Validations on schema elements specific to energy submissions, e.g. all elements within the *energy* object
- Validations on schema elements specific to ESS submissions, e.g. all elements within the *ess* object

Also, some business validations differ for standing and variation submission, therefore a complete set of validation rules and messages is provided for both submission types.

Error codes are designed to help the user differentiating errors between:

- Variation and standing submissions:
 - o Prefix S: standing
 - o No prefix: variation
- RTM and DSP submissions:
 - o Prefix DS: DSP Submission
 - o No prefix: RTM Submission
- Type of element validated and errored (not applicable to DSP Submissions as they can only include Market Service energy)
 - o C: common
 - o EN: energy
 - o ES: ESS

Examples of error codes:

- C001: error on a common element of a Variation RTM Submission
- SES001: error on an ESS element of a Standing RTM Submission
- DS001: error on a Variation DSP Submission
- SDS001: error on a Standing DSP Submission

6.4.1 RTM Submissions validations

Variation RTM Submission Validations

Variation RTM Submissions – Common Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
Trading Day/Dispatch Interval combinations	All combinations of Trading Days and Dispatch Intervals must be within the Acceptance Horizon window.	Reject Submission	C019	There are Dispatch Intervals beyond Acceptance Horizon. All Dispatch Intervals must be within YYYY-MM-DDTHH:MM:SS+08:00
tradingDateFrom	Trading Date From must not be before RTM start.	Reject Submission	C020	Trading Date From must not be before RTM start date.
Trading Date range	Trading Date To must be greater than or equal to the Trading Date From.	Reject Submission	C021	Trading Date To must be greater than or equal to the Trading Date From
Dispatch Interval range	Dispatch Interval To must be greater than or equal to the Dispatch Interval From.	Reject Submission	C022	Dispatch Interval To cannot be lower than Dispatch Interval From in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility Code.
Trading Date range Dispatch Interval range	Submissions are only allowed for Trading Day/Dispatch Interval combinations which are in the future.	Reject Submission	C023	Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i> contains Dispatch intervals in the past. This is not allowed.
Trading Date range Market Service object	Submissions must contain at least 1 Trading Day and 1 Market Service.	Reject Submission	C024	Submissions must contain at least 1 Trading Day, 1 Market Service.
Trading Date object Market Service object	For any Trading Day object, at least one Market Service must be present.	Reject Submission	C026	A Market Service must be specified for Trading Days YYYY-MM-DD - YYYY-MM-DD.
facilityCode Dispatch Interval object Market Service object	For any Market Service object at least one Facility and Dispatch Interval object must be present.	Reject Submission	C027	Facility is missing for Trading Days YYYY-MM-DD - YYYY-MM-DD and Market <i>Market Service</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
Dispatch Interval range Tranche object	There must be at least 1 Tranche object per any Dispatch Interval range.	Reject Submission	C028	Insufficient price/quantity pairs for Trading Days: <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market= <i>Market Service</i> , Facility: <i>Facility Code</i> , Dispatch Intervals: <i>Start Interval - End Interval</i> . At least 1 price/quantity pair is expected.
Trading Date range	No Trading Day ranges can overlap within a file submission.	Reject Submission	C031	There are overlapping Trading Day ranges in submission. This is not allowed.
facilityCode Trading Date range Market Service object	No Facility can be repeated for the same Trading Day range/Market Service combination.	Reject Submission	C033	No Facility can be repeated for the same Trading Day/Market combination. Facility <i>Facility Code</i> , Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service <i>Market Service</i>
Trading Date range Dispatch Interval range Market Service object	No Dispatch Interval ranges can overlap within a file submission for a given Trading Day range/Market Service/Facility combination.	Reject Submission	C034	There are overlapping Dispatch Intervals for Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> . This is not allowed.
Tranche object	Tranche prices must increase monotonically.	Reject Submission	C036	Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> contain tranches with prices not monotonically increasing or with duplicate price values. This is not allowed.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
noticeTime capacityType	Notice Time must not be null if Capacity Type for that tranche is defined as Available.	Reject Submission	C038	Notice Time must be specified for any Tranche with Capacity Type=Available in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
facilityCode Market Service object	When submitting for a Market Service, the Facility must be registered/accredited for that Market Service specified in the Registration Standing Data.	Reject Submission	C041	Facility <i>Facility Code</i> is not Accredited for Market Service= <i>Market Service</i> , for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> .
facilityCode	Facility must match a name of a Registered Facility in the Registration Standing Data.	Reject Submission	C042	Facility <i>Facility Code</i> is invalid / not found.
facilityCode Trading Date range	Facility must exist and be registered for the Trading Date(s) specified in the Submission.	Reject Submission	C043	Facility <i>Facility Code</i> is not in Registered status for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD.
facilityCode	The Facility must be registered to the Market Participant which the user has logged in on behalf of.	Reject Submission	C044	Market Participant is not authorized to submit for Facility <i>Facility Code</i> for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD.
Tranche object	"MIN" and "MAX" can only be placed in the first and last tranche, respectively.	Reject Submission	C047	'MIN' and 'MAX' must only be specified in the first and last tranche respectively in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason	Submissions with Dispatch Intervals inside the Pre-Dispatch Schedule Horizon must include a Submission Reason, for Schedule Facilities, Semi-Scheduled Facilities and Interruptible Loads.		C048	A Submission Reason must be provided when a submission includes Dispatch Intervals within the Pre-Dispatch Schedule Horizon for a Scheduled Facility, Semi-Scheduled Facility, or Interruptible Load.
allowGateClosureViolation	Submissions that include Dispatch Intervals that are within the relevant Gate Closure window will be accepted if allowGateClosureViolation is 'YES'.	Warning	C050	There are Gate Closure violations within the submission.
allowGateClosureViolation	Submissions that include Dispatch Intervals that are within the relevant Gate Closure window will be rejected if allowGateClosureViolation is 'NO'.	Reject Submission	C051	Dispatch <i>Start Interval - End Interval</i> in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> are within Gate Closure. This is not allowed when Allow Gate Closure Violation=NO.
Tranche object	Tranche numbers must be in ascending order starting at 1 with no numbers skipped or duplicated	Reject Submission	C052	Invalid sequential order of Tranche numbers in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service <i>Market Service</i> , Facility <i>Facility</i> and Dispatch Interval <i>Start Interval - End Interval</i> .
Trading Date range	The Facility must have current standing data for all submitted Market Services.	Reject Submission	C053	There is missing Facility or ESS standing data for Facility <i>Facility Code</i> for one or more Dispatch Intervals in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> .

Variation RTM Submissions– Energy Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason inflexibleFlag	submissionReason cannot be blank if inflexibleFlag is Yes	Reject Submission	EN020	A Submission Reason must be provided when there are Dispatch Intervals with Inflexibility Flag=YES.
inflexibleFlag Tranche object	if inflexibleFlag is YES, a single offer tranche is expected specifying the fixed level of injection/withdrawal.	Reject Submission	EN022	A single price/quantity pair is expected for Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service=Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> when Inflexible Flag is Yes
maxInjectionCapacity Dispatch Interval range Tranche object	The sum of all positive quantities in all tranches must be equal to the Max Injection Capacity value for the related Dispatch Interval.	Reject Submission	EN023	Quantity submitted for Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service=Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> does not equal the Max Injection Capacity specified for the Interval(s).
maxWithdrawalCapacity Dispatch Interval range Tranche object	The sum of all negative quantities in all tranches in absolute value must be equal to the Max Withdrawal Capacity value for the related Dispatch Interval.	Reject Submission	EN024	Quantity submitted for Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service=Energy, Facility: <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> does not equal the Max Withdrawal Capacity specified for the Interval(s).
Tranche object	Prices for withdrawal (negative quantities) must be lower than prices for injection (positive quantities).	Reject Submission	EN025	Prices for Withdrawal must be lower than prices for Injection in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
t1, t2	The sum of T1+T2 in FSIP object must be less than or equal to 30 minutes.	Reject Submission	EN026	The sum of T1+T2 in FSIP Object must be less than or equal to 30 minutes in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
t1, t2, t3, t4	The sum of t1+t2+t3+t4 in FSIP object must be less than 60 minutes.	Reject Submission	EN027	The sum of T1+T2+T3+T4 in FSIP Object must be less than 60 minutes in Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
submissionReason maxUpwardRampRate	submissionReason cannot be blank if the maxUpwardRampRate is different to the Normal Maximum Ramp Up Rate in the Registration Standing Data.	Reject Submission	EN028	A Submission Reason must be provided when there is Maximum Upward Ramp Rate violation.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason maxDownwardRampRate	submissionReason cannot be blank if the maxDownwardRampRate is different to the Normal Maximum Ramp Down Rate in the Registration Standing Data.	Reject Submission	EN029	A Submission Reason must be provided when there is Maximum Downward Ramp Rate violation.
maxInjectionCapacity	maxInjectionCapacity should not be greater than the Injection Capacity of the Facility in the Registration Standing Data.	Warning	EN030	Maximum Injection Capacity exceeds the Standing Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> .
maxInjectionCapacity	maxInjectionCapacity must not be greater than Overload Injection Capacity of the Facility in the Registration Standing Data.	Reject Submission	EN031	Maximum Injection Capacity exceeds the Standing Overload Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
maxWithdrawalCapacity	The absolute value of maxWithdrawalCapacity should not be greater than the absolute value of Withdrawal Capacity of the Facility in the Registration Standing Data.	Warning	EN032	Maximum Withdrawal Capacity exceeds the Standing Withdrawal Capacity for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> .
maxWithdrawalCapacity	The absolute value of maxWithdrawalCapacity must not be greater than the absolute value of the Overload Withdrawal Capacity of the Facility in the Registration Standing Data.	Reject Submission	EN033	Maximum Withdrawal Capacity exceeds the Standing Overload Withdrawal Capacity for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
maxUpwardRampRate	maxUpwardRampRate should not be greater than the Normal Maximum Ramp Up Rate specified for the Facility in the Registration Standing Data.	Warning	EN034	Maximum Upward Ramp-Rate exceeds the Standing Normal Ramp Up Rate for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
maxUpwardRampRate	maxUpwardRampRate must not be greater than the Emergency Ramp Up Rate specified for the Facility in the Registration Standing Data.	Reject Submission	EN035	Maximum Upward Ramp-Rate exceeds the Standing Emergency Ramp Up Rate for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> , Dispatch Interval range {1-2}. This is not allowed.
maxDownwardRampRate	maxDownwardRampRate should not be greater than the Normal Maximum Ramp Down Rate specified for the Facility in the Registration Standing Data.	Warning	EN036	Maximum Downwards Ramp-Rate exceeds the Standing Normal Ramp Down Rate for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> .
maxDownwardRampRate	maxDownwardRampRate must not be greater than the Emergency Ramp Down rate specified for the Facility in the Registration Standing Data.	Reject Submission	EN037	Maximum Downwards Ramp-Rate exceeds the Standing Emergency Ramp Down Rate for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
minimumLoad	minimumLoad must not be greater than the Injection Capacity specified for the Facility in the Registration Standing Data.	Reject Submission	EN038	Minimum Load for FSIP exceeds the Standing Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
facilityCode	To include a Fast Start Inflexibility Profile, the Facility must be registered as a Fast Start Facility.	Reject Submission	EN039	Facility <i>Facility Code</i> is not a Fast Start Facility
facilityCode Tranche object	Non-Scheduled Facilities must only submit maximum 1 tranche per interval.	Reject Submission	EN040	There is more than 1 tranche for Facility <i>Facility Code</i> in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service Energy, Dispatch Intervals <i>Start Interval - End Interval</i> . This is not allowed for Non-Scheduled Facilities.
facilityCode	Facility must be of facility type Scheduled Facility, Non-Scheduled Facility, or Semi-Scheduled Facility.	Reject Submission	EN041	Facility <i>Facility Code</i> is not of type Scheduled, Semi-Scheduled or Non-Scheduled for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD, Market Service =Energy. This is not allowed

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
facilityCode Tranche object	If Facility is a Non-Scheduled Facility they must only submit a price of MIN or MAX.	Reject Submission	EN042	Facility <i>Facility Code</i> must only submit "MIN" or "MAX"
unconstrainedInjectionForecast maxInjectionCapacity	unconstrainedInjectionForecast must not be greater than maxInjectionCapacity.	Reject Submission	EN043	unconstrainedInjectionCapacity exceeds maxInjectionCapacity for Trading Days {YYYY-MM-DD} - {YYYY-MM-DD}, Market Service Energy, Facility {Facility}, Dispatch Intervals {Start Interval} - {End Interval}.
unconstrainedWithdrawalForecast maxWithdrawalCapacity	unconstrainedWithdrawalForecast must not be less than maxWithdrawalCapacity	Reject Submission	EN044	unconstrainedWithdrawalCapacity exceeds maxWithdrawalCapacity for Trading Days {YYYY-MM-DD} - {YYYY-MM-DD}, Market Service Energy, Facility {Facility}, Dispatch Intervals {Start Interval} - {End Interval}.

Variation RTM Submissions – ESS Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
maximumCapacity essInterval Tranche object	The sum of all quantities in tranches under an essInterval object (both with AVAILABLE and IN-SERVICE capacityType) must be equal to maximumCapacity of the related essInterval object.	Reject Submission	ES001	Quantity submitted for Trading Days: YYYY-MM-DD - YYYY-MM-DD, Market Service = <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> does not equal the Maximum Capacity specified for the Interval(s)
essInterval Tranche object	Quantities of tranches under essInterval object be positive (or zero).	Reject Submission	ES002	Quantity submitted for Trading Days: YYYY-MM-DD - YYYY-MM-DD Market Service = <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be negative
Dispatch Interval range	In essInterval object, Dispatch Interval To must be greater than or equal to the Dispatch Interval From.	Reject Submission	ES003	Dispatch Interval To cannot be lower than Dispatch Interval From in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i> .
enablementMinimum lowBreakpoint	enablementMinimum must be less than or equal to lowBreakpoint.	Reject Submission	ES004	Enablement Minimum value defined for Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service = <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than Low Breakpoint.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
lowBreakpoint highBreakpoint	lowBreakpoint must be less than or equal to highBreakpoint.	Reject Submission	ES005	Low Breakpoint value defined for Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service = <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than High Breakpoint.
highBreakpoint enablementMaximum	highBreakpoint must be less than or equal to enablementMaximum.	Reject Submission	ES006	High Breakpoint value defined for Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service = <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than Enablement Maximum.
facilityCode	Facility under essFacility object must be of type Scheduled, Semi-Scheduled or Interruptible Load for Contingency Raise object.	Reject Submission	ES007	Facility <i>Facility Code</i> is not of type Scheduled, Semi-Scheduled, or Interruptible Load for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD, Market Service= <i>Contingency Raise</i> . This is not allowed
facilityCode	Facility under essFacility object must be of type Scheduled or Semi-Scheduled for RegR, RegL, CL, RoCoF objects.	Reject Submission	ES008	Facility <i>Facility Code</i> is not of type Scheduled or Semi-Scheduled for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD, Market Service= <i>Market Service</i> . This is not allowed
enablementMinimum	enablementMinimum must be greater or equal than Standing Enablement Minimum for the related Facility and ESS Market.	Reject Submission	ES009	Enablement Minimum is lower than the Standing Enablement Minimum for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
enablementMaximum	enablementMaximum must be less than or equal than Standing Enablement Maximum for the related Facility and ESS Market.	Reject Submission	ES010	Enablement Maximum is greater than the Standing Enablement Maximum for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period YYYY-MM-DD - YYYY-MM-DD, Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
maximumCapacity lowBreakpoint enablementMinimum	$(\text{maximumCapacity}/(\text{lowBreakpoint} - \text{Standing Enablement Minimum})) \leq (\text{Standing Max Capacity}/(\text{Standing Low Breakpoint} - \text{Standing Enablement Minimum}))$ where Standing values must be taken for the related Facility and ESS market.	Reject Submission	ES011	The combination of lowBreakpoint and maximumCapacity falls outside of the Standing ESS Trapezium for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
maximumCapacity highBreakpoint enablementMaximum	$(\text{maximumCapacity}/(\text{Standing Enablement Maximum} - \text{high breakpoint})) \leq (\text{Standing Maximum Capacity}/(\text{Standing Enablement Maximum} - \text{Standing High Breakpoint}))$ where Standing values must be taken for the related Facility and ESS market.	Reject Submission	ES012	The combination of highBreakpoint and maximumCapacity falls outside of the Standing ESS Trapezium for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
submissionReason enablementMinimum	submissionReason cannot be blank if enablementMinimum is different to the Standing Enablement Minimum.	Reject Submission	ES013	Reason missing for Enablement Minimum different from the Standing Enablement Minimum for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> .
submissionReason enablementMaximum	submissionReason cannot be blank if enablementMaximum is different to the Standing Enablement Maximum.	Reject Submission	ES014	Reason missing for Enablement Maximum different from the Standing Enablement Maximum for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> .
submissionReason highBreakpoint	submissionReason cannot be blank if highBreakpoint is different to the Standing High Breakpoint.	Reject Submission	ES015	Reason missing for High Breakpoint different from the Standing High Breakpoint for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason lowBreakpoint	submissionReason cannot be blank if lowBreakpoint is different to the Standing Low Breakpoint.	Reject Submission	ES016	Reason missing for Low Breakpoint different from the Standing Low Breakpoint for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> .
maximumCapacity	maximumCapacity must be lower than or equal to the Standing Max Capacity the Facility has been accredited for that ESS Market Service.	Reject Submission	ES017	Maximum Capacity is greater than the Standing Maximum Capacity for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , for one or more intervals in the period <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval range <i>Start Interval - End Interval</i> . This is not allowed.
Tranche object	For Contingency Raise Market, if the Facility Standing Data in Registration indicates that the Facility is subject to a Max Contingency Reserve Block Size, the Quantities in each Tranche must not exceed the Max Contingency Reserve Block Size.	Reject Submission	ES018	Quantity in Tranche <i>Tranche Number</i> for Dispatch Intervals <i>Start Interval - End Interval</i> , Facility <i>Facility Code</i> , Contingency Raise Market, Trading Days <i>YYYY-MM-DD - YYYY-MM-DD</i> exceeds the Maximum Contingency Reserve Block Size

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Standing RTM Submission Validations

Standing RTM Submissions – Common Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
effectiveTradingDateFrom effectiveDispatchIntervalFrom	Combination of effectiveTradingDateFrom and effectiveDispatchIntervalFrom must not be before RTM start	Reject Submission	SC020	Effective Trading Date From and Effective Dispatch Interval From must not be before RTM start date.
effectiveTradingDateFrom effectiveDispatchIntervalFrom	Combination of effectiveTradingDateFrom and effectiveDispatchIntervalFrom must not be within Gate Closure	Reject Submission	SC021	Effective Trading Date From and Effective Dispatch Interval From cannot be within Gate Closure.
dispatchIntervalTo dispatchIntervalFrom	dispatchIntervalTo must be greater than or equal to the dispatchIntervalFrom.	Reject Submission	SC022	Dispatch Interval To cannot be lower than Dispatch Interval From in Day of Week <i>Day of Week</i> , Market Service Energy, Facility <i>Facility Code</i> .
Dispatch Interval dayOfWeek facilityCode Market Service object	All 288 Dispatch Intervals must be present for each dayOfWeek/Market Service/Facility combination.	Reject Submission	SC023	Missing Dispatch Interval for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> . Standing submissions must include all Dispatch Intervals for all Days of the Week.
effectiveTradingDateFrom effectiveDispatchIntervalFrom	Combination of effectiveTradingDateFrom and Effective effectiveDispatchIntervalFrom must be in the future.	Reject Submission	SC025	Effective Trading Date From and Effective Dispatch Interval From must be in the future.
dayOfWeek Market Service object	For any daysOfWeek object, at least one Market must be present.	Reject Submission	SC026	A Market Service must be specified for Day of Week <i>Day of Week</i>
facilityCode Dispatch Interval object Market Service object	For any Market object at least one Facility and Dispatch Interval object must be present.	Reject Submission	SC027	Facility is missing for Day of Week <i>Day of Week</i> and Market Service <i>Market Service</i> .
Tranche object Dispatch Interval range	There must be at least 1 Tranche object per any Dispatch Interval range.	Reject Submission	SC028	Insufficient price/quantity pairs for Day of Week <i>Day of Week Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals: <i>Start Interval - End Interval</i> . At least 1 price/quantity pair is expected.
dayOfWeek	No dayOfWeek can overlap within a file submission.	Reject Submission	SC030	There are overlapping Day of Weeks in submission. This is not allowed.
dayOfWeek facilityCode Market Service object	For each Facility/Market combinations included in a standing submission, all Days of Week must be present. The only combination allowed are ((MON-SUN), (WEEKDAY and WEEKEND), (MON-FRI and WEEKEND), (WEEKDAY and SAT-SUN), or ALL).	Reject Submission	SC031	Missing Day of Week. For each Facility/Market Service combination, Standing submissions must include all Days of Week.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
facilityCode dayOfWeek Market Service object	No Facility can be repeated for the same dayOfWeek/Market combination.	Reject Submission	SC033	Facility <i>Facility Code</i> is repeated for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> . This is not allowed.
Dispatch Interval range Day of Week Market Service facilityCode	No Dispatch Interval ranges can overlap within a file submission for a given dayOfWeek/Market/Facility combination.	Reject Submission	SC034	There are overlapping Dispatch Intervals for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> . This is not allowed.
noticeTime capacityType	noticeTime must not be null if capacityType for that tranche is defined as Available.	Reject Submission	SC038	Notice Time must be specified for Tranche with Capacity Type=Available, in Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
facilityCode Market Service object	When submitting for a Market Service, the Facility must be registered/accredited for that Market Service specified in the Registration Standing Data	Reject Submission	SC041	Facility <i>Facility Code</i> is not Accredited for Market Service <i>Market Service</i> , Trading Day <i>YYYY-MM-DD - YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval - End Interval</i> .
facilityCode	facilityCode must match a name of a Registered Facility in the Registration Standing Data	Reject Submission	SC042	Facility <i>Facility Code</i> is invalid / not found.
facilityCode EffectiveTradingDateFrom	The Facility must exist and be registered for the trading date(s) specified in the submission.	Reject Submission	SC043	Facility <i>Facility Code</i> is not in Registered status for Trading Day <i>YYYY-MM-DD</i> .
facilityCode	The Facility must be registered to the Market Participant which the user has logged in on behalf of.	Reject Submission	SC044	Market Participant is not authorized to submit for Facility <i>Facility Code</i> .
Tranche object	"MIN" and "MAX" can only be placed in the first and last tranche, respectively.	Reject Submission	SC047	'MIN' and 'MAX' must only be specified in the first and last tranche respectively in Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
submissionReason	Submissions with Dispatch Intervals inside the Pre-Dispatch Schedule Horizon must include a Submission Reason, for Schedule Facilities, Semi-Scheduled Facilities and Interruptible Loads.		SC048	A Submission Reason must be provided when a submission includes Dispatch Intervals within the Pre-Dispatch Schedule Horizon for a Scheduled Facility, Semi-Scheduled Facility, or Interruptible Load.
EffectiveTradingDayFrom	The Facility must have current standing data for all submitted Market Services.	Reject Submission	SC053	There is missing Facility or ESS standing data for Facility <i>Facility Code</i> for EffectiveTradingDayFrom <i>YYYY-MM-DD</i> .

Standing RTM Submissions – Energy Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason inflexibleFlag	submissionReason cannot be blank if inflexibleFlag is 'YES'.	Reject Submission	SEN020	A Submission Reason must be provided when there are Dispatch Intervals with Inflexibility Flag=YES.
inflexibilityFlag Tranche object	if inflexibilityFlag is 'YES', a single offer tranche is expected specifying the fixed level of injection/withdrawal.	Reject Submission	SEN022	A single price/quantity pair is expected for Day of Week <i>Day of Week</i> , Market Service=Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> when Inflexible Flag is Yes.
maxInjectionCapacity Tranche object Dispatch Interval range	The sum of all positive quantities in all tranches must be equal to the maxInjectionCapacity value for the related Dispatch Interval.	Reject Submission	SEN023	Quantity submitted for Day of Week <i>Day of Week</i> Market Service=Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> does not equal the Max Injection Capacity specified for the Interval(s).
maxWithdrawalCapacity Tranche object Dispatch Interval range	The sum of all negative quantities in all tranches in absolute value must be equal to the maxWithdrawalCapacity value for the related Dispatch Interval.	Reject Submission	SEN024	Quantity submitted for Day of Week <i>Day of Week</i> Market Service=Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> does not equal the Max Withdrawal Capacity specified for the Interval(s).
Tranche object	Individual Prices for withdrawal (negative quantities) must be lower than individual prices for injection (positive quantities).	Reject Submission	SEN025	Prices for Withdrawal must be lower than prices for Injection in Day of Week <i>Day of Week</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
t1, t2	The sum of t1+t2 in FSIP object must be less than or equal to 30 minutes.	Reject Submission	SEN026	The sum of T1+T2 in FSIP Object must be less than or equal to 30 minutes in Day of Week <i>Day of Week</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .
t1, t2, t3, t4	The sum of t1+t2+t3+t4 in FSIP object must be less than 60 minutes.	Reject Submission	SEN027	The sum of T1+T2+T3+T4 in FSIP Object must be less than 60 minutes in Day of Week <i>Day of Week</i> , Market Service Energy, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason maxUpwardRampRate	submissionReason cannot be blank if the maxUpwardRampRate is different to the Normal Ramp Up Rate in the Registration Standing Data.	Reject Submission	SEN028	A Submission Reason must be provided when there is Maximum Upward Ramp Rate violation.
submissionReason maxDownwardRampRate	submissionReason cannot be blank if the maxDownwardRampRate is different to the Normal Ramp Down Rate in the Registration Standing Data.	Reject Submission	SEN029	A Submission Reason must be provided when there is Maximum Downward Ramp Rate violation.
maxInjectionCapacity	maxInjectionCapacity should not be greater than the Injection Capacity of the Facility in the Registration Standing Data.	Warning	SEN030	Maximum Injection Capacity exceeds the Standing Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day YYYY-MM-DD, Dispatch Interval <i>Start Interval - End Interval</i> .
maxInjectionCapacity	maxInjectionCapacity must not be greater than Overload Injection Capacity of the Facility in the Registration Standing Data.	Reject Submission	SEN031	Maximum Injection Capacity exceeds the Standing Overload Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day YYYY-MM-DD, Dispatch Interval <i>Start Interval - End Interval</i> . This is not allowed.
maxWithdrawalCapacity	The absolute value of maxWithdrawalCapacity should not be greater than the absolute value of Withdrawal Capacity of the Facility in the Registration Standing Data	Warning	SEN032	Maximum Withdrawal Capacity exceeds the Standing Withdrawal Capacity for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day YYYY-MM-DD, Dispatch Interval <i>Start Interval - End Interval</i> .
maxWithdrawalCapacity	The absolute value of maxWithdrawalCapacity must not be greater than the absolute value of the Overload Withdrawal Capacity of the Facility in the Registration Standing Data.	Reject Submission	SEN033	Maximum Withdrawal Capacity exceeds the Standing Overload Withdrawal Capacity for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day YYYY-MM-DD, Dispatch Interval <i>Start Interval - End Interval</i> . This is not allowed.
maxUpwardRampRate	maxUpwardRampRate should not be greater than the Normal Ramp Up Rate specified for the Facility in the Registration Standing Data.	Warning	SEN034	Maximum Upward Ramp-Rate exceeds the Standing Normal Ramp Up Rate for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day YYYY-MM-DD, Dispatch Interval <i>Start Interval - End Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
maxUpwardRampRate	maxUpwardRampRate must not be greater than the Emergency Ramp Up Rate specified for the Facility in the Registration Standing Data.	Reject Submission	SEN035	Maximum Upward Ramp-Rate exceeds the Standing Emergency Ramp Up Rate for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval - End Interval</i> . This is not allowed.
maxDownwardRampRate	maxDownwardRampRate should not be greater than the Normal Ramp Down Rate specified for the Facility in the Registration Standing Data.	Warning	SEN036	Maximum Downward Ramp-Rate exceeds the Standing Normal Ramp Down Rate for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval - End Interval</i> .
maxDownwardRampRate	maxDownwardRampRate must not be greater than the Emergency Ramp Down rate specified for the Facility in the Registration Standing Data.	Reject Submission	SEN037	Maximum Downward Ramp-Rate exceeds the Standing Emergency Ramp Down Rate for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval - End Interval</i> . This is not allowed.
minimumLoad	minimumLoad must not be greater than the Injection Capacity specified for the Facility in the Registration Standing Data.	Reject Submission	SEN038	Minimum Load for FSIP exceeds the Standing Injection Capacity for Facility <i>Facility Code</i> , Market Service=Energy, Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval - End Interval</i> . This is not allowed.
facilityCode	To include a Fast Start Inflexibility Profile, the Facility must be registered as a Fast Start Facility.	Reject Submission	SEN039	Facility <i>Facility Code</i> is not a Fast Start Facility
facilityCode Tranche object	Non-Scheduled Facilities must only submit maximum 1 tranche per interval.	Reject Submission	SEN040	There is more than 1 tranche for Facility <i>Facility Code</i> in Day of Week <i>Day of Week</i> , Market Service Energy, Dispatch Intervals <i>Start Interval - End Interval</i> . This is not allowed for Non-Scheduled Facilities.
facilityCode	Facility must be of facility type Scheduled Facility, Non-Scheduled Facility, or Semi-Scheduled Facility.	Reject Submission	SEN041	Facility <i>Facility Code</i> must be of type Scheduled, Semi-Scheduled, or Non-Scheduled on Effective Trading Date From <i>YYYY-MM-DD</i> for Market Service-Energy.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
facilityCode Tranche object	If Facility is a Non-Scheduled Facility they must only submit a price of 'MIN' or 'MAX'.	Reject Submission	SEN042	Facility <i>Facility Code</i> must only submit 'MIN' or 'MAX' prices in Day of Week <i>Day of Week</i> , Market Service=Energy, Dispatch Intervals <i>Start Interval - End Interval</i> .
unconstrainedInjectionForecast maxInjectionCapacity	unconstrainedInjectionForecast must not be greater than maxInjectionCapacity.	Reject Submission	SEN043	unconstrainedInjectionCapacity exceeds maxInjectionCapacity for Day of Week (<i>Day of Week</i>), Market Service Energy, Facility (<i>Facility</i>), Dispatch Intervals (<i>Start Interval - End Interval</i>)
unconstrainedWithdrawalForecast maxWithdrawalCapacity	unconstrainedWithdrawalForecast must not be less than maxWithdrawalCapacity	Reject Submission	SEN044	unconstrainedWithdrawalCapacity exceeds maxWithdrawalCapacity for Day of Week (<i>Day of Week</i>), Market Service Energy, Facility (<i>Facility</i>), Dispatch Intervals (<i>Start Interval - End Interval</i>)

Standing RTM Submissions – ESS Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
Maximum Capacity Tranche quantities	The sum of all quantities in tranches under an essInterval object (both with available and in service Capacity Type) must be equal to Maximum Capacity of the related essInterval object.	Reject Submission	SES001	Quantity submitted for Day of Week <i>Day of Week</i> , Market Service, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> is not equal to the Maximum Capacity specified for the Interval(s)
essInterval Tranches quantity	Quantities of tranches under essInterval object be positive (or zero).	Reject Submission	SES002	Quantity submitted for Day of Week <i>Day of Week</i> , Market Service, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be negative
Dispatch Interval range	In essInterval object, Dispatch Interval To must be greater than or equal to the Dispatch Interval From.	Reject Submission	SES003	Dispatch Interval To cannot be lower than Dispatch Interval From in Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> .
enablementMinimum lowBreakpoint	enablementMinimum must be less than or equal to lowBreakpoint.	Reject Submission	SES004	Enablement Minimum value defined for Day of Week <i>Day of Week</i> , Market Service, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than Low Breakpoint.
lowBreakpoint highBreakpoint	lowBreakpoint must less than or equal to highBreakpoint.	Reject Submission	SES005	Low Breakpoint value defined for Day of Week <i>Day of Week</i> , Market Service, Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than High Breakpoint.

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
highBreakpoint enablementMaximum	highBreakpoint must be less than or equal to enablementMaximum.	Reject Submission	SES006	High Breakpoint value defined for Day of Week <i>Market Service</i> , <i>Market Service</i> , Facility <i>Facility Code</i> , Dispatch Intervals <i>Start Interval - End Interval</i> cannot be greater than Enablement Maximum.
facilityCode	Facility under <i>essFacility</i> object must be of type Scheduled, Semi-Scheduled or Interruptible Load for Contingency Raise object.	Reject Submission	SES007	Facility <i>Facility Code</i> must be of type Scheduled, Semi-Scheduled, or Interruptible Load on Effective Trading Date From <i>YYYY-MM-DD</i> for <i>Market Service=Contingency Raise</i> .
facilityCode	Facility under <i>essFacility</i> object must be of type Scheduled or Semi-Scheduled for <i>RegR</i> , <i>RegL</i> , <i>CL</i> , <i>RoCoF</i> objects.	Reject Submission	SES008	Facility <i>Facility Code</i> must be of type Scheduled or Semi-Scheduled on Effective Trading Date From <i>YYYY-MM-DD</i> for <i>Market Service=Market Service</i> .
enablementMinimum	enablementMinimum must be greater or equal than Standing Enablement Minimum for the related Facility and ESS Market.	Reject Submission	SES009	Enablement Minimum is lower than the Standing Enablement Minimum for Facility <i>Facility Code</i> , <i>Market Service Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> . This is not allowed.
enablementMaximum	enablementMaximum must be less than or equal than Standing Enablement Maximum for the related Facility and ESS Market.	Reject Submission	SES010	Enablement Maximum is greater than the Standing Enablement Maximum for Facility <i>Facility Code</i> , <i>Market Service Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> . This is not allowed.
maximumCapacity lowBreakpoint enablementMinimum	$(\text{maximumCapacity}/(\text{lowBreakpoint} - \text{Standing Enablement Minimum})) \leq (\text{Standing Max Capacity}/(\text{Standing Low Breakpoint} - \text{Standing Enablement Minimum}))$ where Standing values must be taken for the related Facility and ESS market.	Reject Submission	SES011	The combination of lowBreakpoint and maximumCapacity falls outside of the Standing ESS Trapezium for Facility <i>Facility Code</i> , <i>Market Service Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> . This is not allowed.
maximumCapacity highBreakpoint enablementMaximum	$(\text{maximumCapacity}/(\text{Standing Enablement Maximum} - \text{highBreakpoint})) \leq (\text{Standing Maximum Capacity}/(\text{Standing Enablement Maximum} - \text{Standing High Breakpoint}))$ where Standing values must be taken for the related Facility and ESS market.	Reject Submission	SES012	The combination of highBreakpoint and maximumCapacity falls outside of the Standing ESS Trapezium for Facility <i>Facility Code</i> , <i>Market Service Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> . This is not allowed.
submissionReason enablementMinimum	submissionReason cannot be blank if enablementMinimum is different to the Standing Enablement Minimum.	Reject Submission	SES013	Reason missing for Enablement Minimum different from the Standing Enablement Minimum for Facility <i>Facility Code</i> , <i>Market Service Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
submissionReason enablementMaximum	submissionReason cannot be blank if enablementMaximum is different to the Standing Enablement Maximum.	Reject Submission	SES014	Reason missing for Enablement Maximum different from the Standing Enablement Maximum for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> .
submissionReason highBreakpoint	submissionReason cannot be blank if highBreakpoint is different to the Standing High Breakpoint	Reject Submission	SES015	Reason missing for High Breakpoint different from the Standing High Breakpoint for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> .
submissionReason lowBreakpoint	submissionReason cannot be blank if Low Breakpoint is different to the Standing Low Breakpoint.	Reject Submission	SES016	Reason missing for Low Breakpoint different from the Standing Low Breakpoint for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> .
maximumCapacity	maximumCapacity must be lower than or equal to the Standing Max Capacity the Facility has been accredited for that ESS Market Service.	Reject Submission	SES017	Maximum Capacity is greater than the Standing Maximum Capacity for Facility <i>Facility Code</i> , Market Service <i>Market Service</i> , Trading Day <i>YYYY-MM-DD</i> , Dispatch Interval <i>Start Interval</i> .
Tranche object	For Contingency Raise Market, if the Facility Standing Data in Registration indicate that the Facility is subject to a Max Contingency Reserve Block Size, the Quantities in each Tranche must not exceed the Max Contingency Reserve Block Size.	Reject Submission	SES018	Quantity in Tranche <i>Tranche Number</i> for Dispatch Intervals <i>Start Interval – End Interval</i> , Facility <i>Facility Code</i> , Contingency Raise Market, <i>Period</i> exceeds the Maximum Contingency Reserve Block Size

6.4.2 DSP submissions validations

Variation DSP Submission Validations

Variation DSP Submissions Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
trading DateTo tradingDateFrom	trading DateTo must be greater than or equal to the tradingDateFrom	Reject Submission	DS001	Trading Date To must be greater than or equal to the Trading Date From
dispatchIntervalTo dispatchIntervalFrom	dispatchIntervalTo must be greater than or equal to the dispatchIntervalFrom	Reject Submission	DS002	Dispatch Interval To cannot be lower than Dispatch Interval From in Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i>
Trading Date range Dispatch Intervals	Submissions are only allowed for Trading Day/Dispatch Intervals combinations which are in the future	Reject Submission	DS003	Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , Facility <i>Facility Code</i> contains Dispatch Intervals in the past. This is not allowed
Trading Date range	No Trading Day ranges can overlap within a file submission	Reject Submission	DS007	There are overlapping Trading Day ranges in submission. This is not permitted
Trading Date Range facilityCode	No facilityCode can be repeated for the same Trading Day range	Reject Submission	DS008	No Facility can be repeated for the same Trading Day/Market combination. Facility <i>Facility Code</i> , Trading Days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i>
facilityCode Dispatch Interval range Trading Date range	No Dispatch Interval ranges can overlap within a file submission for a given Trading Day range/Facility combination	Reject Submission	DS009	There are overlapping Dispatch Intervals for Trading days YYYY-MM-DD - YYYY-MM-DD, Market Service <i>Market Service</i> , facility <i>Facility Code</i> . This is not permitted
facilityCode	Facility must be of facility type Demand Side Programme.	Reject Submission	DS010	Facility <i>Facility Code</i> must be of type Demand Side Programme
facilityCode	Facility must match a name of a Registered Facility in the Registration Standing Data.	Reject Submission	DS011	Facility <i>Facility Code</i> is invalid / not found
facilityCode	Facility must exist and be registered for the trading date(s) specified in the submission.	Reject Submission	DS012	Facility <i>Facility Code</i> is not in Registered status for one or more Trading Days in range YYYY-MM-DD - YYYY-MM-DD.
facilityCode	The Facility must be registered to the market participant which the user has logged in on behalf of.	Reject Submission	DS013	Market Participant is not authorized to submit for Facility <i>Facility Code</i> for one or more Trading Days in range YYYY-MM-DD – YYYY-MM-DD.
Trading Day Dispatch Intervals	All combinations of Trading Days and Dispatch Intervals must be within the Acceptance Horizon window.	Reject Submission	DS016	There are Dispatch Intervals beyond Acceptance Horizon. All Dispatch Intervals must be within YYYY-MM-DDTHH:MM:SS+08:00
tradingDateFrom	tradingDateFrom must not be before RTM start.	Reject Submission	DS017	Trading Date From must not be before RTM start date.

Standing DSP Submission Validations

Standing DSP Submission Validations

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
dayOfWeek facilityCode Dispatch Intervals	All 288 Dispatch Intervals must be present for each Day of week/Facility combination	Reject Submission	SDS001	Missing Dispatch Interval for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i> . Standing submissions must include all Dispatch Intervals for all Days of the Week.
dispatch IntervalTo dispatchIntervalFrom	dispatch IntervalTo must be greater than or equal to the dispatchIntervalFrom	Reject Submission	SDS002	Dispatch Interval To cannot be lower than Dispatch Interval From in Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , Facility <i>Facility Code</i>
effectiveTradingDateFrom effectiveDispatchIntervalFrom	effectiveTradingDateFrom and effectiveDispatchIntervalFrom must be in the future	Reject Submission	SDS003	Effective Trading Date From and Effective Dispatch Interval From must be in the future.
dayOfWeek facilityCode	For each Facility included in a Standing Submission, all days of the week must be present. The only combination allowed are ((MON-SUN), (WEEKDAY and WEEKEND), (MON-FRI and WEEKEND), (WEEKDAY and SAT-SUN), or ALL).	Reject Submission	SDS004	Missing Day of Week. For each Facility/Market Service combination, Standing submissions must include all Days of Week.
dayOfWeek	No dayOfWeek can overlap within a file submission	Reject Submission	SDS007	There are overlapping Day of Weeks in submission. This is not permitted
facilityCode daysOfWeek	No Facility can be repeated for the same Day of Week	Reject Submission	SDS008	Facility <i>Facility Code</i> is repeated for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> . This is not allowed
dayOfWeek facilityCode Dispatch Intervals	No Dispatch Interval ranges can overlap within a file submission for a given dayOfWeek/Facility combination	Reject Submission	SDS009	There are overlapping Dispatch Intervals for Day of Week <i>Day of Week</i> , Market Service <i>Market Service</i> , facility <i>Facility Code</i> . This is not permitted
facilityCode	Facility Code must be of facility type Demand Side Programme	Reject Submission	SDS010	Facility <i>Facility Code</i> must be of type Demand Side Programme
facilityCode	Facility Code must match a name of a Registered Facility in the Registration Standing Data	Reject Submission	SDS011	Facility <i>Facility Code</i> is invalid / not found
facilityCode	The facility must exist and be registered for the trading date(s) specified in the submission	Reject Submission	SDS012	Facility <i>Facility Code</i> is not in Registered status for Trading Day <i>YYYY-MM-DD</i> .
facilityCode	The facility must be registered to the market participant which the user has logged in on behalf of	Reject Submission	SDS013	Market Participant is not authorized to submit for Facility <i>Facility Code</i> .

FIELDS VALIDATED	VALIDATION	CONSEQUENCE	CODE	ERROR MESSAGE
effectiveTradingDateFrom effectiveDispatchIntervalFrom	Combination of effectiveTradingDateFrom and effectiveDispatchIntervalFrom must not be before RTM start	Reject Submission	SDS017	Effective Trading Date From and Effective Dispatch Interval From must not be before RTM start date.
effectiveTradingDateFrom effectiveDispatchIntervalFrom	Combination of effectiveTradingDateFrom and effectiveDispatchIntervalFrom must not be within two hours of the submission time.	Reject Submission	SDS018	There are Dispatch Intervals within two hours of the submission time. This is not allowed for Standing Withdrawal Profile Submissions.

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