
Guide to NEM Prudential APIs

0.01 Draft
November 2020

Provides details for the Prudential APIs

Important Notice

PURPOSE

This Guide to NEM Prudential APIs (Guide), prepared by AEMO, provides guidance for NEM Prudentials under the National NER (Rules).

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DOCUMENTS MADE OBSOLETE

The release of this document changes any previous versions of Guide to NEM Prudential APIs.

FEEDBACK

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's Support Hub.

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Introduction

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Purpose

This guide provides instructions for Registered Participants to use the Prudential APIs in the Energy Market Systems.

Audience

AEMO provides this information as a service targeting business analysts and IT staff in participant organisations.

What's in this guide

Chapter 1 Need to know on page 7 explains what you need to know before you start using NEM Prudentials.

Chapter 2 About NEM Prudentials on page 8 explains the NEM Prudentials web application, who it is for, and how to access it, and how to use the common interface features such as selecting a unit ID, date and so on.

Chapter 3 Prudential Systems API Design on page 15 explains the new Reallocations APIs, validation rules, error messages, request and response structure along with examples for the APIs.

Appendix Prudential API JSON Schema on page 1 provides the JSON schema for the Reallocation APIs.

Needing Help on page 39 provides information to assist participants with IT related issues, requesting assistance from AEMO, and using the Set Participant option.

References on page 40 contains a list of resources mentioned throughout this guide.

Glossary on page 42 explains the terms and abbreviations used throughout this guide.

How to use this guide

- This guide is written in plain language for easy reading.
- Where there is a discrepancy between the National Electricity Rules, and information or a term in this document, the National Electricity Rules takes precedence.
- Where there is a discrepancy between the Procedures, and information or a term in this document, the Procedures take precedence.
- **Text in this format** indicates there is a resource on AEMO's website, for details, see [References](#).
- **Text in this format** indicates a link to a related resource.
- Actions to complete in the web portal interface are **bold and dark grey**.
- Rules terms used throughout this guide are listed on page 1 and defined in the National Electricity Rules.
- Glossary terms are capitalised and have the meanings listed against them ([see page 1](#)).
- References to time are Australian Eastern Standard Time (AEST).

Chapter 1 Need to know

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Assumed Knowledge

This guide assumes you have knowledge of:

- JSON basics
- REST API standards
- Web-based technologies
- The operating system you are using
- **Connecting to AEMO's Electricity IT Systems**

Rules and procedure

Type	Details
<u>Credit</u> <u>Limit</u> <u>Procedures</u>	Provides details on how AEMO determines the prudential settings for each Market Participant so that the Prudential standard is met for the National Electricity Market (NEM)

Chapter 2 About NEM Prudentials

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The Settlements system is part of the Electricity Market Management System (EMMS) that depends on information from Registration and Dispatch systems and calculates amounts owing to or owed by each party including AEMO.

Prudential system

The NEM Prudential systems provides participants information on the money they are owed. An essential element of the prudential systems is the concept of Outstandings, which is the total amount owing but not yet paid or settled. The NEM Prudential system consist of the following:

- NEM Prudential Dashboard interface which displays the latest prudential information. The dashboard is updated throughout the settlement day, including weekends and public holidays.
- NEM Prudential Forecast interface which provides participants with a forecast of their expected prudential position for the next NEM business day, allowing participants to better manage their prudential obligations.

The NEM Prudential systems provides the participants a web-based dashboard for users to:

- View the current prudential position with AEMO
- View a forecast of their prudential position as of the next business day
- Calculate the future credit support based on the input variables provided by the user.

Credentials, paths, schemas, validation, and examples

- For individual schemas and API paths, see [Appendix Prudential API JSON Schema on page 1](#).
- For details about AEMO’s API standards, SSL certificates, response codes, security, and authentication details, see [Guide to AEMO’s APIs](#).

Submission and throttling

Payload size	Object
Submission frequency	250 messages per minute. For any messages sent beyond the limit, there is a denial of service until that one minute is complete.
Throttling limit	Allowed
Throttling limit	1 per submission

API e-Hub addresses

API details, including Swagger files, are available via AEMO’s API Portal. For more information about e-Hub APIs, see [Guide to AEMO’s e-Hub APIs](#).

The following AEMO API Gateways are available:

Table 1 API Gateway Addresses

Environment	Internet Address	MarketNet Address
5MS Staging	https://apis.5msstaging.aemo.com.au:9319	https://apis.5msstaging.marketnet.net.au:9319

Environment	Internet Address	MarketNet Address
5MS Staging API portal	https://dev.preprod.aemo.com.au You need to register and sign in to access the 5MS APIs in this portal.	Unavailable until further notice
Pre-production	https://apis.preprod.aemo.com.au:9319	https://apis.preprod.marketnet.net.au:9319
Pre-production API portal	https://dev.preprod.aemo.com.au You need to register and sign in to access the 5MS APIs in this portal.	Unavailable until further notice
Production	https://apis.prod.aemo.com.au:9319	https://apis.prod.marketnet.net.au:9319
Production API portal	https://dev.aemo.com.au	Unavailable until further notice

API format

API URLs are in the following format:

```
https://<host>/ws/<business_
function>/<APIversion>/<resource>?querystring parameters
```

For example:

```
https://apis.prod.aemo.com.au:9319/NEMWholesale/prudentials/v1/getPrudentialCompanySummary
```

Table 2 API Definition

Parameter	Description
<protocol>	HTTPS
<host>	Names the server hosting the service or an external proxy Internet web service host: apis.prod.aemo.com.au:9319 MarketNet web service host: apis.prod.marketnet.net.au:9319
<Business_function>	API Name - The AEMO system providing the services e.g. GeneratorRecall
<verb> <resource>	Entities of a Business Function e.g. /submitReallocation
?querystring parameters	Query string parameters for GET method

User rights access

The user rights access used in the Prudential APIs, and Prudential web screens use a new URM entity:

- **EMMS - Settlements - View Prudentials - PRUDENTIAL_DASHBOARD**

API account passwords are reset every 90 days.

The steps to set up URM rights for API access are:

1. If required, the Participant Administrator (PA) creates a new Participant User in MSATS.
2. The PA assigns the URM entity to the Participant User.

For help with user rights access, see [Guide to User Rights Management](#).

Common header parameters

Parameter	Required	Format
Content-type	Yes	Text/xml or application/zip
Accept	Yes	Text/xml or application/zip
Authorization	Yes	Two-way SSL and basic auth - participant user URM username and password
X-initiatingParticipantID	Yes	Participant ID
X-market	Yes	NEM

Example error response

The title and detail changes based on which validation fails.

Common response

Error Code	Description
200	OK
400	Mandatory HTTP header <Header_Name> missing. No response payload.
401	Unauthorised. No response payload.
404	Resources for the endpoint URI not found. Endpoint URI: {requested URI path suffix}. No response payload.

Error Code	Description
405	Method not allowed. Input request HTTP method {requested verb} is not allowed for this resource. No response payload.
422	Unprocessable entity
429	Too many requests. Number of inbound requests exceed the throttling limits; try again later. No response payload.
500	Internal Server Error. Exception from backend system. No response payload.

API design summary

API Name	Description
getPrudentialCompanySummary	Retrieve the company details for the given participant ID.
getCumulativePrice	Retrieve the cumulative price per region.
getPrudentialCalendar	Retrieve the details for a Billing calendar.
getPrudentialRunVersion	Retrieve the latest prudential run details.
getForecastCompanySummary	Retrieve the company details for the given participant ID, forecast run number and date.
getForecastRegionalPrice	Retrieve the regional price details for the given forecast run number and date.
getForecastRevenue	Retrieve the regional revenue details for the given forecast run number and date.
getForecastRunVersion	Retrieve the latest forecast prudential run details.

API Name	Description
getBankGuarantees	Retrieve all bank guarantees for a company based on the from and to dates.
getPrudentialCompanyAttributes	Retrieve a list of prudential attributes (MCL, Typical Accural, Prudential Margin) for all effective dates for a company based on the from and to dates in the query parameters.

Chapter 3 Prudential Systems

API Design

The following chapter lists the new Prudential APIs, the validation rules, and the request and response structure for the Prudential APIs.

For all information on accessing and using the APIs, see [Guide to AEMO's APIs](#).

getPrudentialCompanySummary API

The getPrudentialCompanySummary API retrieves a single company's prudential details along with its associated properties including Historic Days, Security Deposit, Outstandings, Pay Amount, Pay Nomination, SDA Interest Rates, and Reallocations data. The participantId request parameter is used to get the company prudential details matching the given ID.

The request is validated by checking if the given participantId parameter is a registered participant with a valid parent company detail to view company prudential data. If request validations fail, a response with an error message is returned to the client.

API name	getPrudentialCompanySummary
URL path	/NEMWholesale/Prudentials/getPrudentialCompanySummary
Method	GET
Authorisation mode	Participant specific
Request content	Query parameters: <ul style="list-style-type: none">• prudentialDate: [Mandatory] Date of the prudential run• prudentialRunNo: [Mandatory] Run number of the prudential run

API name	getPrudentialCompanySummary
Success response	Content Body:

API name	getPrudentialCompanySummary
----------	-----------------------------

```

{
  "data":
  {
    "prudentialDate": [datetime],
    "prudentialRunNo": [integer],
    "lastChanged": [datetime],
    "companySummary": {
      "companyId": [string],
      "todayOutstandingsPercent": [decimal],
      "maximumCreditLimit": [decimal],
      "prudentialMargin": [decimal],
      "tradingLimit": [decimal],
      "tradingMargin": [decimal],
      "outstandings": [decimal],
      "typicalAccrual": [decimal],
      "creditSupport": [decimal],
      "expostReallocBalance": [decimal],
      "securityDepositProvision": [decimal],
      "securityDepositOffset": [decimal],
      "securityDepositBalance": [decimal],
      "outstandingsReallocations": [decimal],
      "prudentialException": [bool],
      "historicDays": [
        {
          "calendarDate": [datetime],
          "runDateTime": [datetime],
          "historicOutstandings": [decimal],
          "historicCreditSupport": [decimal],
          "historicTradingLimit": [decimal]
        }
      ],
      "securityDeposits": [
        {
          "securityDepositId": [string],
          "participantId": [string],
          "lodgeDate": [datetime],
          "maturityDate": [datetime],
          "interestRate": [decimal],
          "interestAcctId": [string],
          "interestCalcType": [string],
          "amount": [decimal]
        }
      ],
      "reallocations": [
        {
          "reallocationId": [string],
          "participantId": [string],
          "counterPartyId": [string],
          "startDate": [datetime],
          "endDate": [datetime],
          "reportStartDate": [datetime],
          "reportEndDate": [datetime],
          "amount": [decimal]
        }
      ],
      "outstandingsWeeks": [
        "contractYear": [integer],
        "weekNo": [integer]
      ]
    }
  }
}

```

API name	getPrudentialCompanySummary
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getPrudentialCompanySummary?participantId=PARTICIPANTID&prudentialDate=2018-12-19T00:00:00&prudentialRunNo=5
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "d2d48577-9235-4e0f-a52f-a34515d3b8ea",
  "data": {
    "prudentialDate": "2020-01-13T00:00:00",
    "prudentialRunNo": 4,
    "lastChanged": "2020-01-13T10:10:05",
    "companySummary": {
      "companyId": "COMPANYID",
      "todayOutstandingsPercent": 0.80000000,
      "maximumCreditLimit": 2000000.00000000,
      "prudentialMargin": 1000.00000000,
      "tradingLimit": 2000000.00000000,
      "tradingMargin": 7000000.00000000,
      "outstandings": -5000000.00000000,
      "typicalAccrual": 900000.00000000,
      "creditSupport": 4000000.00000000,
      "expostReallocBalance": 0.00000000,
      "securityDepositProvision": 10000000.00000000,

```

```

"securityDepositOffset": -4000000.00000000,
"securityDepositBalance": 8000000.00000000,
"outstandingsReallocations": 5000000.00000000,
"prudentialException": false,
"historicDays": [
  {
    "calendarDate": "2019-12-09T00:00:00",
    "runDateTime": "2019-12-09T15:55:45",
    "historicOutstandings": -2000000.0,
    "historicCreditSupport": 5000000.0,
    "historicTradingLimit": 3000000.00000000
  }
],
"securityDeposits": [
  {
    "securityDepositId": "SECURITY_DEPOSIT_ID",
    "participantId": "COMPANYID",
    "lodgeDate": "2019-12-30T00:00:00",
    "maturityDate": "2020-01-28T00:00:00",
    "interestRate": 0.0,
    "interestAcctId": "ACC_ID",
    "interestCalcType": "FLOATING",
    "amount": -5000000.00000000
  }
],
"reallocations": [
  {
    "reallocationId": "REALLOCATIONID",
    "participantId": "COMPANYID",
    "counterPartyId": "COMPANYID1",
    "startDate": "2019-12-08T00:00:00",
    "endDate": "2020-01-12T00:00:00",
    "reportStartDate": "2019-12-01T00:00:00",
    "reportEndDate": "2020-12-31T00:00:00",
    "amount": 900000.00000000
  }
],
"outstandingsWeeks": [
  {
    "contractYear": 2019,
    "weekNo": 50,
    "billRunNo": "12",
    "runType": "FINAL",
    "companyOutstandingsAmount": -500000.000000,
    "participants": [
      {
        "participantId": "COMPANYID",
        "participantOutstandingsAmount": -500000.000000
      }
    ]
  }
],
"earlyPaymentNominations": [],
"earlyPaymentAmount": [],
"sdaFloatingInterestRates": [

```

```

{
  {
    "participantId": "COMPANYID",
    "interestAcctId": "ACC_ID",
    "effectiveDate": "2019-12-03T00:00:00",
    "interestRate": 0.90000000
  },
  {
    "participantId": "COMPANYID",
    "interestAcctId": "ACC_ID",
    "effectiveDate": "2020-01-07T00:00:00",
    "interestRate": 0.90000000
  }
]
},
"errors": [],
"warnings": []
}

```

getCumulativePrice API

The getCumulativePrice API retrieves cumulative and average price for each region.

API name	getCumulativePrice
URL path	/NEMWholesale/Prudentials/getCumulativePrice
Method	GET
Authorisation mode	Authenticated user
Request content	No input necessary

API name	getCumulativePrice
Success response	<p>Content Body:</p> <pre>{ "data": { "cumulativePrices": [{ "regionId": [string], "cumulativePrice": [decimal], "averagePrice": [decimal] }] } }</pre>
Notes	

Example request

```
GET /NEMWholesale/Prudentials/v1/getCumulativePrice
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>
```

Example response

```

HTTP/1.1 200 OK
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "03886027-b00f-4f23-bcff-00000d415e0d",
  "data": {
    "cumulativePrices": [
      {
        "regionId": "NSW1",
        "cumulativePrice": 30000.00000,
        "averagePrice": 0.0
      },
      {
        "regionId": "QLD1",
        "cumulativePrice": 30000.00000,
        "averagePrice": 0.0
      },
      {
        "regionId": "SA1",
        "cumulativePrice": 30000.00000,
        "averagePrice": 0.0
      },
      {
        "regionId": "TAS1",
        "cumulativePrice": 20000.00000,
        "averagePrice": 0.0
      },
      {
        "regionId": "VIC1",
        "cumulativePrice": 30000.00000,
        "averagePrice": 0.0
      }
    ]
  },
  "errors": [],
  "warnings": []
}

```

getPrudentialCalendar API

The getPrudentialCalendar API retrieves the Billing calendar entries for each Billing run contributing to the prudential outstandings.

API name	getPrudentialCalendar
URL path	/NEMWholesale/Prudentials/getPrudentialCalendar
Method	GET
Authorisation mode	Authenticated user
Request content	<p>Query parameters:</p> <ul style="list-style-type: none"> • prudentialDate: [Mandatory] Date of the prudential run • prudentialRunNo: [Mandatory] Run number of the prudential run
Success response	<p>Content Body:</p> <pre> { "data": { "calendarEntries": [{ "billingDateId": [string], "contractYear": [integer], "weekNo": [integer], "nextDate": [datetime] }] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getPrudentialCalendar?participantId=PARTICIPANTID&
prudentialDate=2019-12-19T00:00:00&prudentialRunNo=5
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data": {
    "calendarEntries": [
      {
        "billingDateId": "FINAL",
        "contractYear": 2019,
        "weekNo": 52,
        "nextDate": "2020-01-23T00:00:00"
      },
      {
        "billingDateId": "PRELIMINARY",
        "contractYear": 2020,
        "weekNo": 3,
        "nextDate": "2020-01-24T00:00:00"
      },
      {
        "billingDateId": "SETTLEMENT",
        "contractYear": 2019,
        "weekNo": 51,
        "nextDate": "2020-01-22T00:00:00"
      }
    ]
  },
  "errors": [],
  "warnings": []
}

```

getPrudentialRunVersion API

The getPrudentialRunVersion API retrieves the latest prudential run number and date.

API name	getPrudentialRunVersion
URL path	/NEMWholesale/Prudentials/getPrudentialRunVersion
Method	GET

API name	getPrudentialRunVersion
Authorisation mode	Authenticated user
Request content	No input necessary
Success response	<p>Content Body:</p> <pre> { "data": { "prudentialDate": [datetime], "prudentialRunNo": [integer], "latestTradingInterval": [datetime], "lastChanged": [datetime] } } </pre>
Notes	

Example request

```

GET /NEMWholesale/Prudentials/v1/getPrudentialRunVersion
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data": {
    "prudentialDate": "2018-12-19T00:00:00",
    "prudentialRunNo": 5,
    "latestTradingInterval": "2018-12-20T11:00:00",

```

```

    "lastChanged": "2018-12-19T10:25:05"
  },
  "errors": [],
  "warnings": []
}

```

getForecastCompanySummary API

The getForecastCompanySummary API retrieves the forecast prudential details for a single company, along with the associated properties including Trading Margin, Outstandings, POE data. The participantId request parameter is used to retrieve the company prudential matching the given ID for the forecastRun and forecastDate parameters.

The request is validated by checking if the given participantId parameter is a registered participant with a valid parent company detail. If request validations fail, a response with an error message is returned to the client.

API name	getForecastCompanySummary
URL path	/NEMWholesale/Prudentials/getForecastCompanySummary
Method	GET
Authorisation mode	Participant specific
Request content	Query parameters: <ul style="list-style-type: none"> • forecastDate: [Mandatory] Forecast date for the forecast run • forecastRunNo: [Mandatory] Forecast run number

API name	getForecastCompanySummary
Success response	<p>Content Body:</p> <pre> { "data": { "companyId": [string], "companyName": [string], "currentTradingMargin": [decimal], "currentOutstandings": [decimal], "poe10TradingMargin": [decimal], "poe10Outstandings": [decimal], "poe50TradingMargin": [decimal], "poe50Outstandings": [decimal], "poe90TradingMargin": [decimal], "poe90Outstandings": [decimal] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getForecastCompanySummary?participantId=PARTICIPAN
TID&forecastDate=2019-12-19T00:00:00&forecastRunNo=5
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e000000-b000-000c-00b7-fd8a9575e84b",
  "data": {

```

```

"companyId": "COMPANYID",
"companyName": "COMPANYNAME",
"currentTradingMargin": 10000000.000000,
"currentOutstandings": -3000000.000000,
"poE10TradingMargin": 0.0,
"poE10Outstandings": 0.0,
"poE50TradingMargin": 0.0,
"poE50Outstandings": 0.0,
"poE90TradingMargin": 0.0,
"poE90Outstandings": 0.0
},
"errors": [],
"warnings": []
}

```

getForecastRegionalPrice API

The getForecastRegionalPrice API retrieves regional price data for each PoE forecast type with the highest prices calculated for POE50 type and regional reference prices calculated for POE50 forecast type for each region. The forecastRun and forecastDate request parameters are used to retrieve the regional price data.

API name	getForecastRegionalPrice
URL path	/NEMWholesale/Prudentials/getForecastRegionalPrice
Method	GET
Authorisation mode	Authenticated user
Request content	Query parameters: <ul style="list-style-type: none"> • forecastDate: [Mandatory] Forecast date for the forecast run. • forecastRunNo: [Mandatory] Forecast run number.

API name	getForecastRegionalPrice
Success response	<p>Content Body:</p> <pre> { "data": { "regions": [{ "highestPriceInterval": [datetime], "highestRRP": [decimal], "cumulativeRRP": [decimal], "totalCurrentCumulativeDemand": [decimal], "totalPOE10ForecastDemand": [decimal], "totalPOE50ForecastDemand": [decimal], "totalPOE90ForecastDemand": [decimal], "regionId": [string], "intervals": [{ "intervalDateTime": [datetime], "forecastDemand": [decimal], "forecastRRP": [decimal] }] }] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getForecastRegionalPrice?participantId=PARTICIPANT
ID&forecastDate=2018-12-19T00:00:00&forecastRunNo=5
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK

```

```

Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data": {
    "regions": [
      {
        "highestPriceInterval": "2018-12-19T15:00:00",
        "highestRRP": 200.00000000,
        "cumulativeRRP": 30000.00000,
        "totalCurrentCumulativeDemand": 200000.00000000,
        "totalPOE10ForecastDemand": 400000.00000000,
        "totalPOE50ForecastDemand": 300000.00000000,
        "totalPOE90ForecastDemand": 300000.00000000,
        "regionId": "NSW1",
        "intervals": [
          {
            "intervalDateTime": "2018-12-19T00:30:00",
            "forecastDemand": 7000.00000000,
            "forecastRRP": 60.00000000
          },
          {
            "intervalDateTime": "2018-12-19T01:00:00",
            "forecastDemand": 7000.00000000,
            "forecastRRP": 60.00000000
          },
          {
            "intervalDateTime": "2018-12-19T01:30:00",
            "forecastDemand": 6000.00000000,
            "forecastRRP": 50.00000000
          }
        ]
      }
    ],
    "errors": [],
    "warnings": []
  }
}

```

getForecastRevenue API

The getForecastRevenue API retrieves revenue data for the supplied forecastRunNo and forecastDate request parameters.

API name	getForecastRevenue
URL path	/NEMWholesale/Prudentials/getForecastRevenue
Method	GET
Authorisation mode	Authenticated user
Request content	<p>Query parameters:</p> <ul style="list-style-type: none"> • forecastDate: [Mandatory] Forecast date for the forecast run. • forecastRunNo: [Mandatory] Forecast run number.
Success response	<p>Content Body:</p> <pre> { "data": { "revenueSinceMidnight": [decimal], "revenueLastHour": [decimal], "revenueForecastForToday": [decimal] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getForecastRevenue?participantId=PARTICIPANTID&for
ecastDate=2018-12-19T00:00:00&forecastRunNo=5
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data": {
    "revenueSinceMidnight": -30000000.00000000,
    "revenueLastHour": -4000000.00000000,
    "revenueForecastForToday": -50000000.00000000
  },
  "errors": [],
  "warnings": []
}

```

getForecastRunVersion API

The getForecastRunVersion API retrieves the latest forecast prudential run number and date.

API name	getForecastRunVersion
URL path	/NEMWholesale/Prudentials/getForecastRunVersion
Method	GET
Authorisation mode	Authenticated user
Request content	No input necessary

API name	getForecastRunVersion
Success response	<p>Content Body:</p> <pre> { "data": { "forecastDate": [datetime], "forecastRunNo": [integer], "prudentialDate": [datetime], "forecastRunDateTime": [datetime], "prudentialRunDateTime": [datetime], "forecastTradingStartInterval": [datetime], "forecastTradingEndInterval": [datetime], "forecastDispatchInterval": [datetime], "forecastP5MinStartInterval": [datetime], "forecastP5MinEndInterval": [datetime], "forecastPDStartInterval": [datetime], "forecastPDEndInterval": [datetime], "forecastPDSensStartInterval": [datetime], "forecastPDSensEndInterval": [datetime], "nextStatementDate": [datetime] } } </pre>
Notes	

Example request

```

GET /NEMWholesale/Prudentials/v1/getForecastRunVersion
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip

```

```

{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data": {
    "forecastDate": "2018-12-20T00:00:00",
    "forecastRunNo": 196,
    "prudentialDate": "0001-01-01T00:00:00",
    "forecastRunDateTime": "2018-12-19T16:10:15",
    "prudentialRunDateTime": "0001-01-01T00:00:00",
    "forecastTradingStartInterval": "2018-12-19T00:30:00",
    "forecastTradingEndInterval": "2018-12-19T16:00:00",
    "forecastDispatchInterval": "0001-01-01T00:00:00",
    "forecastP5MinStartInterval": "2018-12-19T16:10:00",
    "forecastP5MinEndInterval": "2018-12-19T17:05:00",
    "forecastPDStartInterval": "2018-12-19T16:30:00",
    "forecastPDEndInterval": "2018-12-21T04:00:00",
    "forecastPDSensStartInterval": "2018-12-19T16:30:00",
    "forecastPDSensEndInterval": "2018-12-21T04:00:00",
    "nextStatementDate": "2018-12-21T00:00:00"
  },
  "errors": [],
  "warnings": []
}

```

getBankGuarantees API

API name	getBankGuarantees
URL path	/NEMWholesale/Prudentials/getBankGuarantees
Method	GET
Authorisation mode	Participant specific
Request content	<p>Query parameters:</p> <ul style="list-style-type: none"> • fromDate: [Mandatory] The 'from' date of the request. • toDate: [Optional] The 'to' date of the request. Equal to 31-12-9999 if not supplied.

API name	getBankGuarantees
Success response	<p>Content Body:</p> <pre> { "data": { "bankGuarantees": [{ "guaranteeld": [string], "creditProviderId": [string], "creditProviderName": [string], "companyId": [string], "commencementDate": [datetime], "terminationDate": [datetime], "returnDate": [datetime], "lastChanged": [datetime], "guaranteeAmount": [decimal] }] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getBankGuarantee?participantId=PARTICIPANTID&fromDate=2020-06-10T00:00:00
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip
Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID: <PARTICIPANTID>

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn

```

```

Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data":
  {
    "companyId": "COMPANYID",
    "companyName": "COMPANY_NAME",
    "bankGuarantees": [
      {
        "guaranteeld": "GUARANTEEID1",
        "creditProviderId": "CREDITPROVIDERID1",
        "creditProviderName": "CREDITPROVIDER_NAME1",
        "commencementDate": "2020-06-14T00:00:00",
        "terminationDate": "2020-07-14T00:00:00",
        "returnDate": "2020-08-15T00:00:00",
        "lastChanged": "2020-06-14T00:00:00",
        "guaranteeAmount": 30000000
      },
      {
        "guaranteeld": "GUARANTEEID2",
        "creditProviderId": "CREDITPROVIDERID2",
        "creditProviderName": "CREDITPROVIDER_NAME2",
        "commencementDate": "2020-08-18T00:00:00",
        "terminationDate": "2020-09-18T00:00:00",
        "returnDate": "2020-10-18T00:00:00",
        "lastChanged": "2020-06-14T00:00:00",
        "guaranteeAmount": 400000
      }
    ]
  }
}

```

getPrudentialCompanyAttributes API

API name	getPrudentialCompanyAttributes
URL path	/NEMWholesale/Prudentials/getPrudentialCompanyAttributes
Method	GET

API name	getPrudentialCompanyAttributes
Authorisation mode	Participant specific
Request content	<p>Query parameters:</p> <ul style="list-style-type: none"> • fromDate: [Mandatory] The 'from' date of the request. • toDate: [Optional] The 'to' date of the request. Equal to 31-12-9999 if not supplied.
Success response	<p>Content Body:</p> <pre> { "data": { "companyId": [string], "effectiveDates": [{ "effectiveDate": [datetime], "calculatedMcl": [decimal], "dailyTypicalAccrual": [decimal], "prudentialMargin": [decimal], "lastChanged": [datetime] }] } } </pre>
Notes	

Example request

```

GET
/NEMWholesale/Prudentials/v1/getPrudentialCompanyAttributes?participantId=PARTICIPANTID&fr
omDate=2020-06-10T00:00:00&toDate=2020-12-10T00:00:00
Content-Type: application/json
Accept: application/json
Accept-Encoding: gzip
Content-Length: nnn
Content-Encoding: gzip

```

```

Authorisation: Basic dGVzdG1hbnVhbSpOZK1tY28wMw==
X-market: NEM
X-initiatingParticipantID:

```

Example response

```

HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnn
Content-Encoding: gzip
{
  "transactionId": "e0000000-b000-000c-00b7-fd8a9575e84b",
  "data":
  {
    "companyId": "COMPANYID",
    "effectiveDates": [
      {
        "effectiveDate": "2020-06-14T00:00:00",
        "calculatedMcl": 500000,
        "dailyTypicalAccrual": 100.00,
        "prudentialMargin": 200000,
        "lastChanged": "2020-06-12T00:00:00"
      },
      {
        "effectiveDate": "2020-06-17T00:00:00",
        "calculatedMcl": 9000000,
        "dailyTypicalAccrual": 80000.00,
        "prudentialMargin": 0,
        "lastChanged": "2020-06-12T00:00:00"
      }
    ]
  }
}

```

Needing Help

Feedback **39**

Information to provide

Please provide the following information when requesting assistance from AEMO:

- Your contact details
- Company name
- Company ID
- System or application name
- Environment: production or pre-production
- Problem description
- Screenshots

For AEMO software-related issues please also provide:

- Participant ID (if Data Interchange (DI) problem)
- Version of software
- Properties or log files
- PDR Monitor support dump and DI instance name (if DI problem)

Feedback

To suggest improvements to this document, please contact the [AEMO's Support Hub](#).

References

You can find the following resources on AEMO's website:

Data Interchange Framework and Glossary: provides important information about upgrading your Data Interchange (DI) environment, explains DI terms, and DI related resources. Please read this guide in conjunction with this technical specification.

Guide to AEMO's e-Hub APIs: Provides details about using AEMO's e-Hub as an interface to communicate information with AEMO. It assists Wholesale electricity and gas participants developing their own APIs.

Guide to Electricity Information Systems: Provides guidance for Registered Participants and interested parties about AEMO's participant electricity market systems.

Guide to User Rights Management: Assists participant administrators (PAs) to use the user rights management functions in the MSATS Web Portal.

Rules Terms

You can find the following terms defined in the [National Electricity Rules \(NER\)](#):

Term
AEMC
AEMO
AEMO Markets Portal
AEMO Website
Confidential Information
Market
Market Participant
NEM
Outstandings
Participants
Product
Prudential Approved Participant
Prudential Exposure
Reallocation
Region
Regional reference prices
Registered Participant
Trading Margin
Trading Position
Unit Category
Units

Glossary

AEMO API Gateway

The gateway on AEMO's side providing participant communication options, accessible over the internet or MarketNet. It uses resources and methods to push messages to Participants' API Gateways .

AEST

Australian Eastern Standard Time

API

Application Programming Interface. A set of clearly defined methods of communication between various software components.

API Portal

Where you can view available APIs, manage your API Keys, and obtain OAS files.

API Protocol

An e-Hub delivery method.

CSR

Certificate Signing Request is a block of encoded text given to a Certificate Authority when applying for an SSL Certificate. It also contains the Public Key to include in the certificate. Usually, a Private Key is created at the same time, making a Key Pair.

csv

Comma-separated values; a file format for exchanging data.

Curl

A command line utility used to interact with REST API endpoints.

e-Hub

Consists of the API Portal and the API Gateway for both electricity and gas.

EMMS

Wholesale Electricity Market Management System; software, hardware, network and related processes to implement the energy market.

Endpoint

Where the API request is sent and where the response comes from.

FTP

File transfer protocol; a standard network protocol used for the transfer of computer files between a client and server on a computer network.

Header Parameters

Parameters included in the request header.

JSON

Java Standard Object Notation. An agreed format for text files and data exchange. This is now used by AEMO to receive Bids and Offers and provide responses

Key Pair

SSL uses a technique called public-key cryptography, based on the concept of a Key Pair. The Key Pair consists of encrypted Public and Private Key data. It is only possible to decrypt the Public Key with the corresponding Private Key.

LinkID

Identifies the MNSP interconnector link in AEMO's systems. A property in the MNSPBidLink object in the JSON bidding schema

MarketNet

AEMO's private network available to participants having a participant ID

Markets Portal

Web portal for access to AEMO's wholesale web-based applications.

Method

The allowed operation for a resource, e.g. GET, POST, PUT, DELETE, and so on. These operations determine whether you're reading information, creating new information, updating existing information, or deleting information.

MSATS

Retail Market Settlement and Transfer Solution

MSATS Web Portal

MSATS web-based interactive interface

MW

Megawatt

NER

National Electricity Rules

OAS

OpenAPI specification

OpenAPI specification document

The file, either in YAML or JSON, describing your REST API. Follows the OpenAPI specification format.

PA

Participant Administrator who manages participant company's user access and security. The initial PA is set up by the AEMO system administrator as part of the registration process.

Parameters

Parameters are options you pass with the endpoint (such as specifying the response format or the amount returned). There are four types of parameters: header parameters, path parameters, query string parameters, and request body parameters. The different types of parameters are often documented in separate groups on the same page. Not all endpoints contain each type of parameter. See Parameters for more details.

Participant API Gateway

The interface implemented by participants where AEMO pushes messages.

Participant File Server

The publishing point from AEMO systems to participant systems. Each participant is allocated an account and access to private and public areas. Participants are responsible for interfacing with the Participant File Server. If uncollected, files are moved to the archive folder after a couple of days. If your Data Interchange environment is configured properly it automatically retrieves the missing files from the archive. Files are kept in the archive for approximately six months. AEMO's production and pre-production environments are independently operated, so each environment has its own IP address for its Participant File Server. For help, see Connection to AEMO's IT Systems.

Participant ID

Registered participant identifier

Participant User ID

The user ID you used to login to the system.

Participant Users

Set up by the company's Participant Administrator.

Path parameters

Parameters in the path of the endpoint, before the query string (?). Path parameters are usually set off within curly braces.

Payload

The data sent by a POST request. The Payload section sits after the header.

PID

Participant ID

Pre-production

AEMO's test system available to participants

Private Key

The secret Private Key is a text file used initially to generate a Certificate Signing Request (CSR), and later to secure and verify connections.

Production

AEMO's live system

Public Key

The Public Key is included as part of your SSL certificate, and works together with your Private Key to make sure your data is encrypted. The Public Key (i.e. the certificate) can verify the digital signature is authentic without having to know the secret Private Key.

Query String Parameters

Parameters in the query string of the endpoint, after the ?.

Request

The way information is returned from an API. In a request, the client provides a resource URL with the proper authorization to an API server. The API returns a response with the information requested.

Request Body Parameters

Parameters in the request body. Usually submitted as JSON.

Response

The information returned by an API after a request is made. Responses are usually in JSON or XML format.

Response Example

The response example shows a sample response from the request example; the response schema defines all possible elements in the response. The response example is not comprehensive of all parameter configurations or operations, but it should correspond with the parameters passed in the request example. The response lets developers know if the resource contains the information they want, the format, and how that information is structured and labeled. The description of the response is known as the response schema. The response schema documents the response in a more comprehensive, general way, listing each property that could possibly be returned, what each property contains, the data format of the values, the structure, and other details.

REST

The Representational State Transfer API architecture

SSL

Secure Sockets Layer, cryptographic protocol providing API communication security

Swagger file

Refers to the OpenAPI specification

TLS

Transport Layer Security, cryptographic protocol providing API communication security

URM

User Rights Management; see the Guide to URM on AEMO's website

zip

The file compression format used for exchanging data with AEMO.

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