AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Guide to NEM Prudential Forecast

2.01 Draft

May 2020

Provides an understanding of the NEM Prudentail Forecast interface

Important Notice

PURPOSE
This Guide to NEM Prudential Forecast (guide), prepared by the Australian Energy Market Operator (AEMO), provides guidance for NEM Prudential Forecast under the National Electricity Rules (NER)(Rules).

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DOCUMENTS MADE OBSOLETE
The release of this document changes any previous versions of Guide to NEM Prudential Forecast and EMMS Prudential Forecast User Interface Guide.

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

Contents

Introduction

Purpose

This document provides an understanding of the NEM Prudential Forecast interface in the EMMS web portal.

Audience

This document is relevant to market participants in the NEM who require an understanding of the NEM Prudential Forecast web interface in the EMMS web portal.

What's in this guide

Introduction above explains what you need to know before you start using NEM Prudential Forecast.

Chapter 1 Need to know on page 3 lists the prerequisites and provides the entity required for Participant User access.

Chapter 2 About NEM Prudential Forecast on page 5 provides an overview of the NEM Prudential Forecast, who it is for, and how to use it.

Chapter 3 View Prudential Forecast on page 7 explains the interface and provides an understanding of how the Prudential Forecast is calculated.

Needing Help on page 15 provides information to assist participants with IT related issues, requesting assistance from AEMO, and using the Set Participant option.

Rules Terms on page 16 provides a list of National Electricity Rules (NER) terms used throughout this guide.

Glossary on page 17 explains the terms and abbreviations used throughout this guide.

References on page 20 contains a list of references mentioned throughout this guide and where to find them.

Index on page 21 provides and easy way to find what you are looking for.

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 (NER), and information or a term in this document, the National Electricity Rules (NER) takes precedence.
- Where there is a discrepancy between the , and information or a term in this document, the take precedence.
- **Text in this format** indicates there is a resource on AEMO's website, for details, see References on page 20
- **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 16 and defined in the National Electricity Rules (NER).
- Glossary terms are capitalised and have the meanings listed against them (see page 17).
- References to time are Australian Eastern Standard Time (AEST).

Chapter 1 Need to know

System requirements

You access the web application using a web browser. You require:

The web application runs on both Windows and Unix-like operating systems.

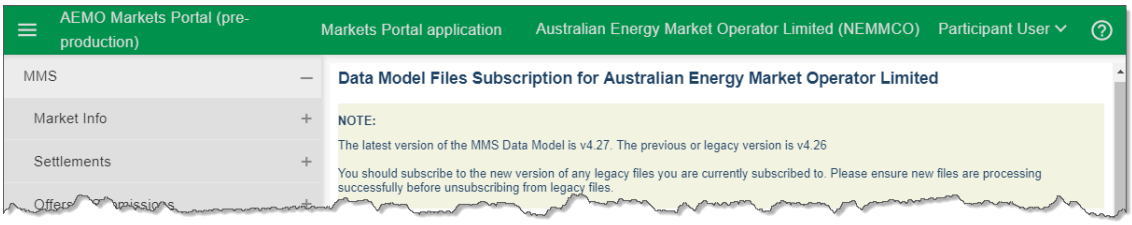
- The website address where the application is located on AEMO's network:
    - Pre-production: https://portal.preprod.nemnet.net.au
    - Production: https://portal.prod.nemnet.net.au
    - Markets Portal help: https://portal.preprod.nemnet.net.au/help
- A compatible web browser. For help, see **Supported web browsers**.
- Access to MarketNet. If your company is a registered participant, you probably already have access because it is set up during the registration process. For more details, see **Guide to Electricity Information Systems**.
- A monitor capable of 1024 x 768 screen resolution.
- A user ID and password provided by your company's participant administrator (PA) who controls access to AEMO's market systems. For more details see **Guide to User Rights Management**.

  PAs are set up during the registration process, if you don't know who your company's PA is, contact AEMO's support hub.

Environment access

The Markets Portal gives you a clear indication of the environment you are working in by providing a different background colour for the menu:

- The pre-production environment has a green menu background
- The production environment has a blue menu background.



User rights access

To access NEM Credit Support, Participant Users must have the appropriate user rights access. The access right determines the functionalities and transactions you can use to access the web portal, batch interfaces, FTP, and API services.

Participant Administrators (PAs) authorise Participant User access in MSATS. The initial PA is set up by the AEMO system administrator as part of the registration process.

Your company's participant administrator (PA) grants you permission to use NEM Credit Support.

The entity required for access is:

- PRUDENTIAL_DASHBOARD: EMMS - Settlements - View Prudentials

For more details about participant administration and user rights access, see Guide to User Rights Management.

Set participant

Where a Participant User has user rights assigned by more than one Participant ID, the Participant User selects the Participant ID they want to represent using the Set Participant option. For help, see Setting a participant on page 1.

Chapter 2 About NEM Prudential Forecast

What is NEM Prudential Forecast for

The NEM Prudential Forecast provides participants with a forecast of their expected prudential position for the next NEM business day, enabling participants to better manage their Prudential Requirements.

Who can use NEM Prudential Forecast

Registered Market Participants, and AEMO have access to the information in the system in accordance with the National Electricity Rules (NER).

Your company's participant administrator grants you permission to use the Prudential Forecast using the MSATS User Administration interface. For further information about user administration, see the Guide to User Rights Management.

The entity required for access to View Prudentials is:

- EMMS - Settlements - View Prudentials
- Where a participant user has user rights assigned by more than one participant, they interactively choose the participant they represent, using the Set Participant option from the Administration menu.

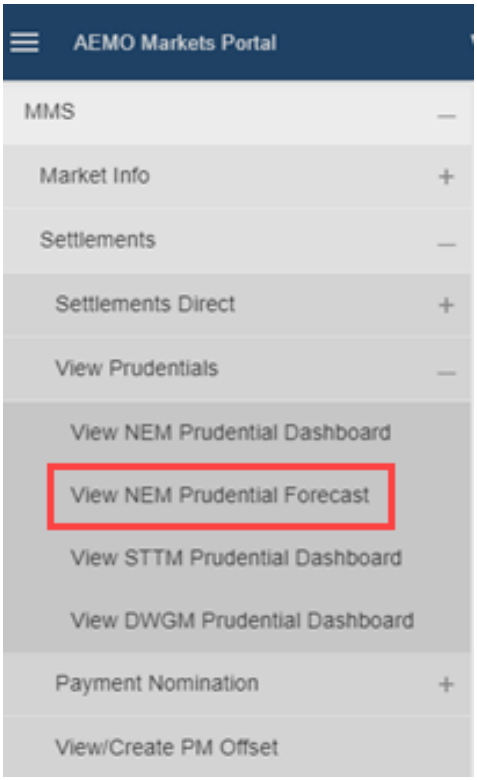
How to use NEM Prudential Forecast

The NEM Prudential Forecast is part of AEMO's Electricity Market Management System (EMMS) web portal. It is a web-based application accessed using MarketNet and a web browser (for system requirements, see System requirements on page 1).

Accessing NEM Prudential Forecast

To access NEM Prudential Forecast:

1. Using your web browser, access the web portal, either:
    - 5MS Staging: https://portal.5ms.staging.test.marketnet.net.au/#/menu
    - Pre-production: https://portal.preprod.nemnet.net.au/
    - Production: https://portal.prod.nemnet.net.au/
2. Click Energy Market Systems and sign in using the user ID and password provided by your company's Participant Administrator (PA).
3. On the Markets Portal, go to MMS > Settlements > View Prudentials > NEM Prudential Forecast.



Chapter 3 View Prudential Forecast

To access the Prudential Forecast, see Accessing NEM Prudential Forecast on page 6:

The Prudential Forecast displays, similar to the screenshot below:

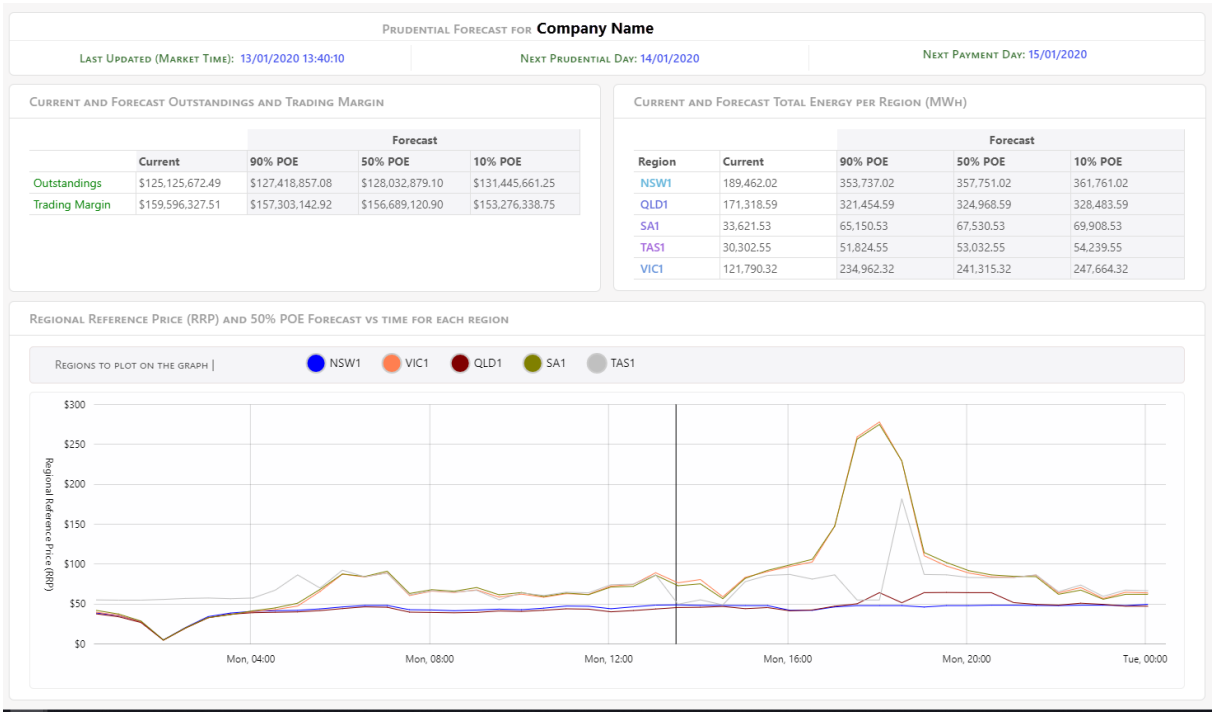
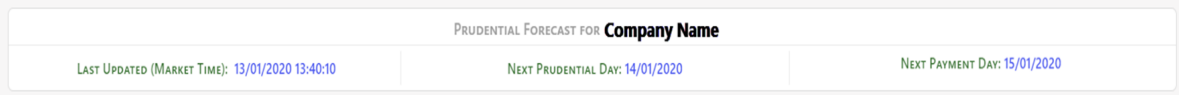


Figure 1 Figure 1: Prudential Forecast

The page displays date and times for the Last Updated (Market Time), Next Prudential Day and the Next Payment Day.



New prudential forecast information is available every five minutes; click Refresh in your Internet browser to update the information.

Current and forecast outstandings and trading margin

The Current and Forecast Outstandings and Trading Margin matrix displays the three forecast outstandings and trading margins for the requested participant with 10%, 50%, and 90% POE.

The POE is the probability of the actual price exceeding the forecast price.

CURRENT AND FORECAST OUTSTANDINGS AND TRADING MARGIN

		Forecast		
	Current	90% POE	50% POE	10% POE
Outstandings	$125,125,672.49	$127,418,857.08	$128,032,879.10	$131,445,661.25
Trading Margin	$159,596,327.51	$157,303,142.92	$156,689,120.90	$153,276,338.75

Current and forecast total energy per region (MWh)

The Current and Forecast Total Energy per Region (MWh) matrix displays the total energy demand for the current day for each region, in MWh. The 10%, 50%, and 90% POE are to the beginning of the next business day.

The POE is the probability of the actual energy exceeding the forecast energy.

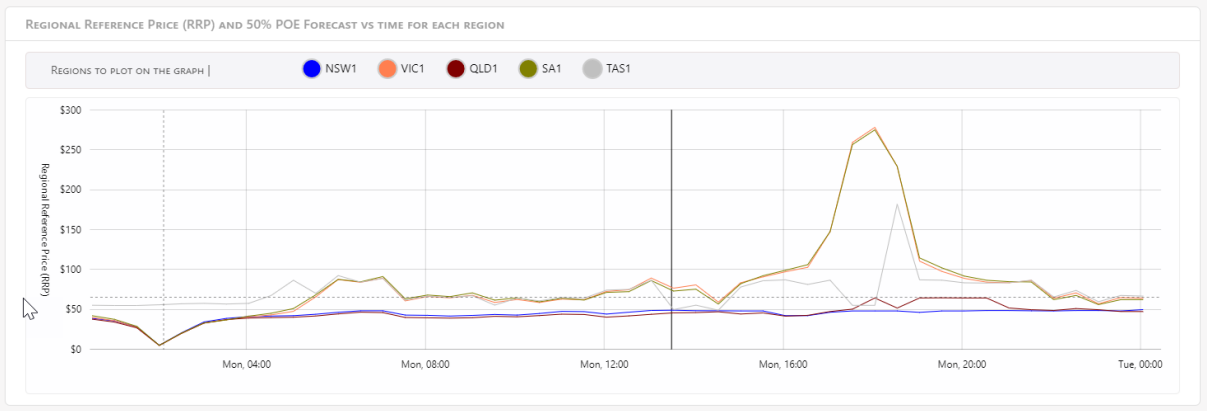
CURRENT AND FORECAST TOTAL ENERGY PER REGION (MWH)

		Forecast		
Region	Current	90% POE	50% POE	10% POE
NSW1	189,462.02	353,737.02	357,751.02	361,761.02
QLD1	171,318.59	321,454.59	324,968.59	328,483.59
SA1	33,621.53	65,150.53	67,530.53	69,908.53
TAS1	30,302.55	51,824.55	53,032.55	54,239.55
VIC1	121,790.32	234,962.32	241,315.32	247,664.32

Regional Reference Price (RRP) and 50% POE Forecast vs time for each region

The Regional Reference Price (RRP) and 50% POE Forecast vs time for each region chart displays the actual and forecast price of 50% POE for each region.

To plot the chart for a specific region. tick the regions to plot.



Prudential Forecast Calculation

The forecast prudential position of a company is determined using a forecast price curve (see Forecast price curve) and a forecast energy curve (see Forecast energy curve), that includes both generation and consumption. The forecast position includes security deposits, reallocations, credit support, early payments, and GST, and does not take into account any ancillary service prices.

Forecast price curve

Where available the known regional reference price (RRP) is used. For the forecast price curve, three scenarios are used to provide the required forecast price curves.

Table 1 Forecast price bands

POE	Description	Stage 1	Stage 2	Stage 3
10%	High forecast price curve	Actual RRP where available.	Pre-dispatch sensitivity 27	1.1 x maximum of the last 5 like-periods
50%	Mid forecast price curve	Actual RRP where available.	P5 then Pre-dispatch	Median price of the last 3 like-periods
90%	Low forecast price curve	Actual RRP where available.	Pre-dispatch Sensitivity 28	0.7 x Median price of the last 3 like-periods

Notes:

- POE is the probability of the actual price exceeding the forecast price.
- Stage 1 refers to periods where an RRP is available.
- Stage 2 refers to periods where an RRP is not available, but a pre-dispatch solution exists.
- Stage 3 refers to periods where neither an RRP or pre-dispatch price is available.

Forecast energy curve

- The 50 and 90 percent POE calculations use generation data (known or pre-dispatch) when these values are available.
- The 10 percent POE scenario assumes zero generation.
- Zero generation is assumed when no generation data is available.
- Energy consumption data is determined using like-days and regional demand forecasts. A participant's energy consumption is scaled by a regional scaling factor (RSF). The regional scaling factor is a period-by-period comparison of known regional energy demand from a like day and a forecast period.

Figure 2 Sample calculation of RSF

$$RSF = RE_t / RE_l$$

$RSF = Regional\ Scaling\ Factor$

$RE_t = Regional\ Energy\ Today\ or\ Future\ Date$

$RE_l = Like\ Day\ Regional\ Energy$

	Like day, like period			Forecast		
Region	Date	Period	Demand	Date	Period	Demand	RSF
VIC	15/09/2010	23	6217	22/09/2010	23	6366	1.023967
VIC	15/09/2010	24	6205	22/09/2010	24	6345	1.022562
VIC	15/09/2010	25	6258	22/09/2010	25	6349	1.014541
VIC	15/09/2010	26	6298	22/09/2010	26	6388	1.01429

Figure 3 Forecast price bands

$$E_f = E_l \times RSF$$

Where:

E_f = *Energy Forecast*

E_l = *Like Day Energy*

RSF = *Regional Scaling Factor*

	Like day, like period				Forecast	
Company	Date	Period	Demand	RSF	Date	Period	Demand
COMP_1	15/09/2010	23	12	1.023967	22/09/2010	23	12.2876
COMP_1	15/09/2010	24	12.7	1.022562	22/09/2010	24	12.98654
COMP_1	15/09/2010	25	11.6	1.014541	22/09/2010	25	11.76868
COMP_1	15/09/2010	26	9.5	1.01429	22/09/2010	26	9.635757

Chapter 4 NEM Alert Notifications

This chapter provides details on the notifications you can subscribe to in the Settlements Direct web portal. You can subscribe to each notification separately. The notifications for NEM Prudential Forecastare as follows:

- Daily Forecasted Prudential Position (Afternoon): a notification is sent to subscribed NEM participants on schedule and includes the following information:
  - Company Name
  - Company ID
  - Outstandings
  - Trading Limit
  - Trading Margin
  - Prudential breach (or not)

Setting up notification messages

To configure Reallocations notification messages, you must make sure you are subscribed to the Data Subscription web application.

Participants are subscribed to the Data Subscription as a part of the registration process. For more information, see Guide to Data Subscription

Add Participant Users as Participant Contacts

1. On the MSATS web portal, click Participants and then Participant Contacts.
2. On the Participants Contacts - List page, click New about the Actions column.
3. Enter the information for the participant you want to add.
4. Under the Contact Type dropdown, select S.
5. Click Save.

For more details, see Creating a new contact section in the Guide to MSATS Web Portal.

Subscribe to notifications of Settlement Direct

For more details, see Creating a new contact section in the Guide to MSATS Web Portal.

1. In the EMMS Markets Portal, click MMS > Settlements Direct > Subscriptions.
2. In Category, select NEM Alerts, Reminders and Notifications.
3. In the Type dropdown options, select from the following notification types:
    - For a daily update on your prudential position, choose the Daily Forecasted Prudential Position Actual (Afternoon).
4. Select Email or Notify by SMS.
5. Click Submit.

Prudential forecast notifications

The prudential forecast notifications are sent to the subscribed NEM participants on schedule (business days at 1 pm) each afternoon on a day that preceeds the business day. The notification includes the following information:

- Company Name
- Company ID
- Outstandings
- Trading limit
- Trading margin
- Prudential breach (or not)

Sample email

Subject: NEM Prudential Forecast <YYYY-MMM-DD>

Body:
<COMPANY_NAME> (<COMPANY_ID>) NEM Prudential Forecast for <YYYY-MMM-DD>

Outstandings: -999,999,999.00
Trading Limit: -999,999,999.00
Trading Margin: -999,999,999.00
Prudential breach (or not)

Questions? contact AEMO prudential team at prudentials@aemo.com.au

Sample SMS

NEM Forecast <YYYY-MMM-DD>,<COMPANY_NAME>: <Outstanding:-999,999,999.00> <Limit:-999,999,999.00> <Margin:-999,999,999.00> <In breach (or not)>

Needing Help

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

Feedback

To suggest improvements to this document, please contact the AEMO's support hub.

Rules Terms

Glossary

AEMO Communication
An email from AEMO to a distribution list of Registered Participant contacts broadcasting NEM-related information.

AEST
Australian Eastern Standard Time

Data Interchange
A set of cooperating applications used to replicate data between AEMO's energy market systems and a participant's DBMS conforming to the MMS Data Model.

Data Model
The definition of the interface to participants of data published by AEMO for gas or electricity. A database conforming to the Data Model can contain a local copy of all current participant-specific data recorded in the main database. The Data Model includes database tables, indexes, and primary keys.

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

FTP
File transfer protocol

FTP Gateway
Uses FTP protocol to deliver communications.

FTP Protocol
A B2B e-Hub and EMMS delivery method.

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

MCL
Maximum Credit Limit

MW
Megawatt

MWh
Megawatt hour

NEMDE
National Electricity Market Dispatch Engine

NEMweb
Public market data in csv file format: http://www.nemweb.com.au/

PA
participant administrator

Participant Administrator
Your company's PA set up by AEMO during registration

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.

Participant ID
Registered participant identifier; A company can have more than one Participant ID.

Participant User
An end-user, using AEMO's participant energy market systems to view and retrieve information on behalf of a participant ID. The participant users access rights are created and maintained by the participant ID's Participant Administrator.

Participant User ID
The user ID you used to login to the system.

PCO
Participant Current Outstandings

POE
Probability of Exceedence

Pre-production
AEMO’s test system available to participants

Production
AEMO's live system

RRP
Region Reference Price

RSF
Regional Scaling Factor

Set Participant
Where a Participant User has user rights assigned by more than one participant ID, the Participant User can select the participant ID they want to represent using the Set Participant option in the web portals.

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

VPN
Virtual Private Network

XML
eXtensible Mark-up Language.

Zip
A file containing business data with filename extensions of .zip, are compressed, and contain one file with a filename extension of .XML. The XML file contains the XML coded message data.

References

Guide to User Rights Management, assists Participant Administrators to manage their Participant User's access to AEMO's systems. It also explains how to set up single user IDs for use with the Set Participant function in AEMO's web portals.

Guide to Electricity Information Systems, comprehensive guide providing an overview of AEMO's market systems used by participants. It is relevant to IT decision making during participant onboarding and provides an understanding of the IT systems requiring set up.

Guide to MSATS Web Portal, provides details on how Participant Administrators can authorise Participant Users to access the Markets Portal.

It is important to ensure that you are reading the current version of any document.

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