

ELECTRICITY MARKET MANAGEMENT SYSTEMS (EMMS) WEB PORTAL APPLICATIONS

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1 Introduction

1.1 Purpose

The Electricity Market Management Systems (EMMS) Web Portal is part of AEMO's market software solution. The EMMS Web Portal is the initial access point for the EMMS web product suite. It provides a secure interface for authorised users to interact with AEMO's systems, including MSATS and EMMS.

This guide provides a summary of the web applications available in the EMMS Web Portal. Its intention is to assist participants in making decisions about AEMO's IT systems.

1.2 Audience

The intended audience for this guide is:

- Participants requiring an understanding of the web applications AEMO provides, and whether they are suitable for use by their organisation.
- Participants transitioning from using the NetBIOS protocol to access the EMMS file interface, who are deciding to transition to using the EMMS Web Portal applications.

1.3 Why use the EMMS Web Portal

The EMMS Web Portal can cut participant's cost and client side footprint by:

- Reducing the requirement for participants to maintain an IT infrastructure at their site.
- Allowing participant business user access 24 hours a day, 7 days per week for 365 days per year—wherever a connection to MarketNet is available.
- Being fully maintained and supported by AEMO.
- Being available to all participants at no additional cost.
- Providing a secure web interface with access rights managed by participants.
- Allowing the use of multiple participant IDs.
- Being easy to learn with user interface guides available for each web application—requiring less staff training.
- Providing a consistent look and feel across each web application.

1.4 What's in this guide

This document provides:

- A checklist for access to the EMMS Web Portal, see "Checklist for EMMS Web Portal access", on page 2.
- A summary of each EMMS Web Portal application, see "EMMS Applications Summary", on page 4.
- A glossary of useful abbreviations and terms, see "Glossary" on page 13.
- Useful related information, see "References" on page 14.

Below is a list of the web applications available in the EMMS Web Portal.



Figure 1: EMMS Web Portal home page

Administration

- Set Participant
- Change Password

Market Info

- View Market
- View Market Notices
- View Constraints

Settlements

- Prudentials
- Reallocations
- Credit Support
- Payment Nomination
- Settlements Direct

Offers & Submissions

- Energy and FCAS Offers
- MT PASA Offers
- NMAS Offers
- GELF Declarations (Energy Adequacy Assessment Projection)

Settlement Residue Auction (SRA)

- View Calendar
- View Quarter
- View Auction
- View Bids
- Enter Bids
- View Public Bids

Wind Farms

- Wind Availability
- Wind Forecasts

Data Interchange

- Data Subscription
- Data Delivery
- Performance Monitor

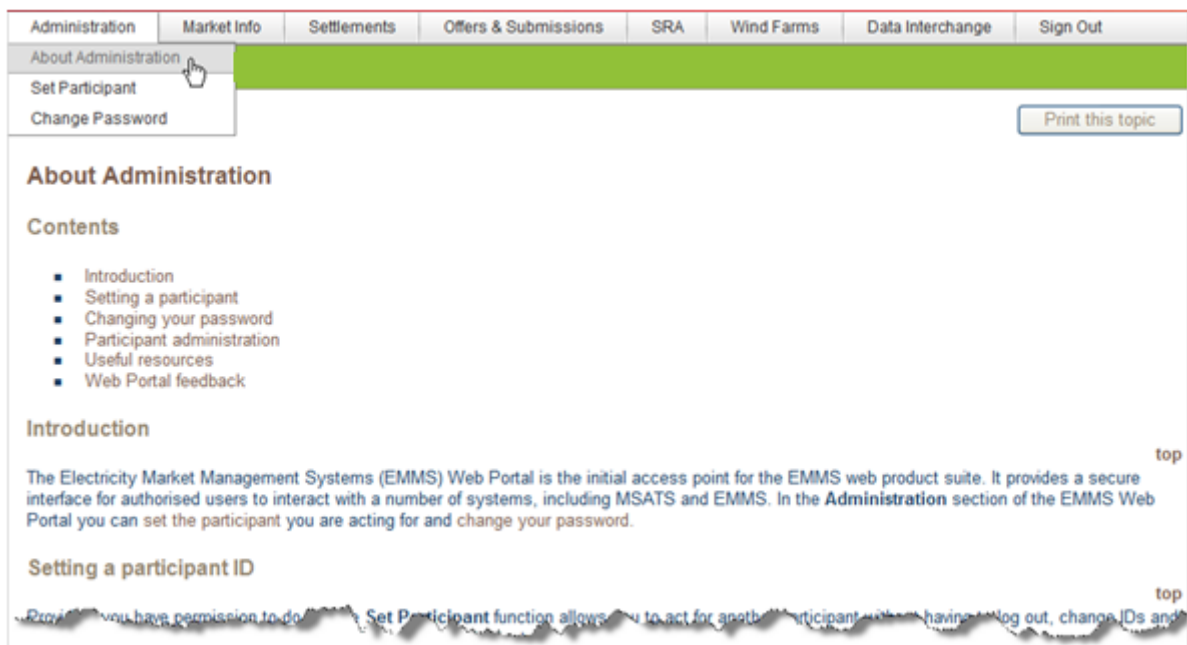
2 EMMS Web Portal Access



Note: to assign the correct access rights to your participant users for each EMMS Web Portal application, see the “User Rights” section of each application summary.

2.1 Checklist for EMMS Web Portal access

1. Prepare the “System requirements” listed below.
2. Decide on the EMMS Web Portal applications suitable for your organisation, by reading the “EMMS Applications Summary” on page 4, or logging into the EMMS Web Portal and reading the available “About” pages. Each EMMS Web Portal application’s “About” page:
 - Explains what the application does.
 - Explains how to use it.
 - Has links to download user interface guides.
 - Contains references to other related material.



3. Some EMMS Web Portal applications require the set-up of user rights to gain access. Contact your participant administrator or the AEMO Help Desk to organise access to any required EMMS Web Portal applications, see “References” on page 14.
4. Download the user interface guides and test the use of the web applications in pre-production before moving to production.

2.2 System requirements

The EMMS Web Portal runs on both Windows and UNIX-like operating systems and is accessed by using a web browser. It requires:

- Microsoft Internet Explorer 7 is the recommended version. Participants using Microsoft Internet Explorer 8 can enable Compatibility View.
- A monitor capable of 1024 x 768 screen resolution.
- Access to MarketNet, see “Guide to Market Systems – Gaining Access” (see “References” on page 14).

- The URL of the pre-production (for testing) and production EMMS Web Portals, see “AEMO’s IP Addresses for Participants” (see “References” on page 14).
- A user ID and password, provided by your system administrator, set-up with access to each required EMMS Web Portal application see “Participant Rights Administration User Interface Guide” (see “References” on page 14).

3 EMMS Applications Summary

3.1 Administration

In the **Administration** web interface, you can:

- Set the participant you are acting for (providing you are authorised).
- Change your password, for the EMMS and MSATS Web Portals.
- Find the credentials to access the secure “EITS Publications” area on AEMO’s website. Documents in “EITS Publications” are available to registered participants only.

3.2 Market Info

3.2.1 View Market

The **View Market** web interface contains a summary of the market in each of the regions for defined forecast types such as dispatch and pre-dispatch. Available market summaries are:

- **View Market Summary** displays a summary of price, operational demand, dispatchable load, dispatchable generation, net interchange, available generation, 10% demand, LRC reserve surplus, and LOR reserve, for trading intervals in each region.
- **View Dispatch** displays a region dispatch summary of price, operational demand, dispatchable Load, dispatchable generation, net interchange, available generation, 10% demand, LRC reserve surplus, LOR reserve, interconnector flows, and unit targets.
- **View Dispatch AS** displays a region dispatch ancillary service summary of price, availability, local dispatch, and unit targets.
- **View Pre-dispatch** displays a region pre-dispatch summary of price, operational demand, dispatchable load, dispatchable generation, net interchange, available generation, 10% demand, LRC reserve surplus, LOR reserve, interconnector flows, and unit targets.
- **View Pre-dispatch AS** displays a region pre-dispatch ancillary service summary of price, availability, local dispatch, and unit targets.
- **View Constraint Summary** displays constraint equation results for dispatch, pre-dispatch, and ST PASA. The constraint ID is linked to the constraint definition, which includes the plain English description, see “View Constraints” on page 5. Displayed are the confidential constraints of the logged in participant, and non-confidential constraints.
- **View Interconnector Summary** displays, for dispatch and pre-dispatch, the total cleared, initial MW, MW losses, import limit, import constraint ID, export limit, and export constraint interconnector results.

For ST PASA, the interconnector summary displays the total cleared, import limit, import constraint ID, export limit, and export constraint interconnector results.



Note: clicking the LowerReg, Lower5Min, Lower60Sec, Lower6Sec, RaiseReg, Raise5Min, Raise60Sec, Raise6Sec links drills down to specific information. In the dispatch and pre-dispatch web interfaces, participants can click on the various region links to see the data specific to each region. Also displayed are any units participants have in the region.

3.2.1.1 User Rights

The MSATS entities required for access to View Market are:

- EMMS - Market Info - View Market – View Private Data
- EMMS - Market Info - View Market – View Public Data

3.2.2 View Market Notices

The **View Market Notices** web interface contains public and private market notices. Market notices are updated in real-time and are used to notify market participants of events that impact on the market such as:

- Advance notice of low reserve conditions
- Status of market systems
- Over constrained dispatch
- Price adjustments
- Constraints
- Market directions
- Market interventions
- Market suspensions



Note: only the intended recipient can view their own private notices.

Public Market Notices are also obtained from AEMO's website,
http://www.aemo.com.au/data/market_notices/MARKETNOTICEINDEX.shtm.

3.2.2.1 User Rights

The MSATS entities required for access to Market Notices are:

- EMMS - Market Info - View Market Notices - Public and Private
- EMMS - Market Info - View Market Notices - Public

3.2.3 View Constraints

The **View Constraints** web interface is used to convert a constraint equation formulation stored in the MMS database, into a human readable or "plain English" format. The Reverse Polish Notation (RPN) calculations are converted into conventional algebraic form. IDs used on the left and right-hand sides of the constraint equation are converted to a description for example:

Constraints - Plain English for Australian Energy Market Operator

Constraint Set

Constraint Id

Constraint: F_I+ML_L5_0400

Constraint type: LHS>=RHS
 Effective date: 01/01/2009
 Author: RAMITHAW
 Version No: 1
 Weight: 3
 Constraint active in: Dispatch and DS PASA, Predispatch and PD PASA
 5 Min Predispatch RHS:

Constraint description: Out = Nil, Lower 5 min requirement for a NEM Load Event, ML = 400

Impact: Other
 Source: NEMMCO
 Limit type: FCAS
 Reason: NEM Load Event
 Modifications: Regulation and Delayed Co-optimisation
 Additional Notes: Limits advice 22/10/2008

LHS=

LOWER5MIN NSW region
 + LOWERREG NSW region
 + LOWER5MIN Queensland region
 + LOWERREG Queensland region

Plain English constraint description.

3.2.3.1 User Rights

The MSATS entity required for access to Constraints is:

- EMMS - Market Info - View Constraints.

3.3 Settlements

3.3.1 Prudentials

The **View Prudentials** web interface is used by registered participants to view the **Prudential Dashboard**, which provides the latest prudential information. The dashboard shows exactly the same information that AEMO uses in its prudential assessments and provides participants with useful information about their accrued financial position with AEMO.

3.3.1.1 User Rights

The MSATS entity required for access to Prudentials is:

- EMMS – Settlements - View Prudentials

3.3.2 Reallocations

The **Reallocations** web interface allows registered participants to create, submit, authorise and view reallocation requests in accordance with the settlements “Reallocation procedures”. At each settlement run, reallocation details are copied from the Reallocations system to the Settlements system. The Settlements system then includes this data in settlements calculations and incorporates the results in participants’ weekly settlement statements. The Reallocations system has several benefits:

- It is easy to use.
- It operates in real time, so your reallocation details are accepted immediately.
- It provides status and reconciliation information to assist in tracking and auditing.
- It incorporates reallocations into the daily settlements process.
- It streamlines AEMO's settlement processes and significantly reduces the risk of processing errors.
- It reduces AEMO's prudential requirements of participants, leading to financial savings.
- It promotes the use of reallocations to reduce market settlement volumes and prudential requirements.

3.3.2.1 User Rights

The MSATS entity required for access to Reallocations is:

- EMMS – Settlements - Reallocations

3.3.3 Credit Support

The **Credit Support** web interface provides registered participants with a:

- Numerical and graphical view of their credit support status.
- Scenario builder where participants can analyse their bank guarantee structure without saving the changes to the Credit Support system.

3.3.3.1 User Rights

The MSATS entity required for access to Credit Support is:

- EMMS – Settlements - Credit Support

3.3.4 Payment Nomination

The **Payment Nomination** web interface provides participants with their current and historical payment nomination details for the payment of settlements. Registered participants can nominate via the web interface:

- A new payment to take effect in a future settlement.
- Change an existing payment nomination and the billing week it takes effect.
- Change between normal and early payments.

3.3.4.1 User Rights

The MSATS entities required for access to Payment Nominations are:

- EMMS – Settlements - Payment Nominations - Maintain Data
- EMMS – Settlements - Payment Nominations - View Data

3.3.5 Settlements Direct

Settlements Direct provides participants with access to information, including settlement statements, published by AEMO.



Note: the primary delivery for your NEM and SRA statements is the EMMS file server—retrieving information from Settlements Direct is an additional resource for your convenience.



Important Note: Settlements Direct subscriptions are set-up to receive Settlement Direct related information only, they differ from the .CSV reports you subscribe to in the Data Subscription interface, relating to Data Interchange. For further information, see “Data Interchange” on page 11.

Using the Settlements Direct menus, registered participants can:

- Access key information published by AEMO.
- Replace already subscribed to "Data Subscription" reports, relating to Data Interchange, on the EMMS file server. For further information, see "Data Interchange" on page 11.
- Subscribe to automatically receive information.
- Automatically notify subscribed contacts when information is available.
- View a history of previously delivered information.
- Access settlement calendars and timetables on AEMO's website.

3.3.5.1 User Rights

The MSATS entity required for access to Settlements Direct is:

- EMMS – Settlements - Settlements Direct

3.4 Offers and Submissions

3.4.1 Energy and FCAS Offers

The **Energy & FCAS Offers** web interface allows participants to submit and maintain energy and frequency control ancillary service (FCAS) bids. Using the **Energy & FCAS Offers** web interface registered participants can:

- View effective offers.
- View offer history.
- Enter and submit offers for individual units.
- Copy existing offers to create new offers.
- Create new offers from scratch.

3.4.1.1 User Rights

The MSATS entities required for access to Energy and FCAS Offers are:

- EMMS - Offers and Submissions - Energy and FCAS Offers - Enter Offer - physical plant
- EMMS - Offers and Submissions - Energy and FCAS Offers - Enter Offer - bid prices and band availabilities
- EMMS - Offers and Submissions - Energy and FCAS Offers - View Data

3.4.2 MT PASA Offers

The **MT PASA Offers** web interface allows participants to submit and maintain MT PASA offers. Using the **MT PASA Offers** web interface registered participants can:

- View effective offers.
- Update offers.
- Copy existing offers to create new offers.
- Create new offers from scratch.

3.4.2.1 User Rights

The MSATS entities required for access to MT PASA Offers are:

- EMMS - Offers and Submissions - MTPASA Offers - Create
- EMMS - Offers and Submissions - MTPASA Offers – View Data

3.4.3 NMAS Offers

The **NMAS Offers** web interface is used to submit non-market ancillary service (NMAS) offers against registered NMAS contracts. The **NMAS Offers** web interface handles Load Shed, Reactive Power, and System Restart contracts. Using the **NMAS Offers** web interface registered participants can:

- View effective re-offers.
- Update re-offers.
- Copy existing re-offers to create new re-offers.
- Create new re-offers from scratch.

3.4.3.1 User Rights

The MSATS entities required for access to NMAS Offers are:

- EMMS - Offers and Submissions - NMAS Offers - Create
- EMMS - Offers and Submissions - NMAS Offers - View Data

3.4.4 GELF Declarations (Energy Adequacy Assessment Projection)

The purpose of the Energy Adequacy Assessment Projection (EAAP) is to make available to market participants and other interested persons an analysis that quantifies the impact of energy constraints on energy availability over a 24 month period under a range of scenarios. All scheduled generators are required to submit GELF (Generator Energy Limitation Framework) declarations for each quarter; the GELF declarations are used in the business scenarios to produce the “EAAP Report”.

The EAAP GELF Quarterly Submission (GELF Declarations) web interface is available four times per year to registered participants; GELF declarations are submitted via the web interface anytime during the submission start date to the submission deadline. Trying to access the GELF Declarations web interface outside of submission dates displays an error.

Using the **GELF Declarations** web interface registered participants can:

- View the current GELF declaration submission dates.
- View their GELF declarations.
- Submit GELF declarations.
- Copy existing GELF declarations to create new declarations.
- Upload and download GELF declarations in CSV format.

3.4.4.1 User Rights

The MSATS entity required for access to GELF Declarations is:

- EMMS - Offers and Submissions - GELF Declarations

3.5 Settlement Residue Auction (SRA)

The Settlement Residue Auction (SRA) system sells entitlements to settlement residue attributable to inter-regional interconnectors up to 3 years in advance; with the units auctioned over twelve quarters. The SRA intention is to improve the efficiency of the NEM by promoting inter-regional trade. The risk of trading between regions is better managed by making the settlements residue available to the market place. Using the SRA web interface, registered participants can:

- View the SRA calendar.
- View current, pending and historical auction and quarter information.
- View their own confidential bid information.
- Enter and submit up to 2000 different bids in one bid file.

- Upload and download bids in CSV format.
- View public bid details.



Note: The **Enter Bid** menu is only accessible while an auction is open. Attempting to access it when bidding is closed, produces an error.

3.5.1.1 User Rights

The MSATS entity required for access to Settlement Residue Auction (SRA) is:

- EMMS – SRA (Settlement Residue Auction)

3.6 Wind Farms

3.6.1 Wind Availability

The wind availability data is used by the Australian Wind Energy Forecasting System (AWEFS) to facilitate forecast accuracy improvements. Using the **Wind Availability** web interface for **Energy** or **MT PASA**, registered wind farm participants can:

- View availability information.
- Enter **Upper MW Limit** availability submissions for up to 14 days into the future.
- Copy a previously created availability submission.
- Upload a prepared file in CSV format from their computer, with up to 2 years worth of availability submissions.
- Download existing availability submissions.

3.6.1.1 User Rights

The MSATS entity required for access to Wind Availability is:

- EMMS - Wind Farms - Wind Availability

3.6.2 Wind Forecasts

The **Wind Forecasts** web interface provides access to wind forecast information in the Australian Wind Energy Forecasting System (AWEFS). Using the **Wind Forecasts** web interface registered participants can:

- View wind forecasts produced by AWEFS for each defined forecast type, being 5-minute dispatch, 5-minute pre-dispatch, pre-dispatch, Short-Term PASA, and Medium-Term PASA. Wind forecasts are displayed in tabular and graphical format.

Visibility of forecasts is limited for example; only owners, their authorised agents, and their TNSP can see all periods for a single wind farm.

- Download wind forecast information.
- Override wind forecasts by inputting forecasts for their own wind farms covering all NEM forecast types, except dispatch (that is, 5-minute pre-dispatch, Pre-dispatch, ST PASA and MT PASA).

3.6.2.1 User Rights

The MSATS entities required for access to Wind Forecasts are:

- EMMS - Wind Farms - Wind Forecasts
- EMMS - Wind Farms - Wind Forecasts - Override Wind Forecasts

3.7 Data Interchange

Data Interchange (DI) is a set of cooperating applications used to replicate, manage, and monitor data between EMMS and a participant's RDBMS conforming to the MMS Data Model. AEMO provides the applications to participants to assist with the replication of data to their systems. Successfully implementing and managing DI requires good IT skills, including planning, networking, database management, batch file management, and disaster recovery.

AEMO recommends participant use of the Data Interchange products, supplied by AEMO, to automate receiving and storage of the data from their **Data Subscription** files. For further information, see the "MMS Data Interchange Guide", available from the secure EITS Publications area on AEMO's website (see "EITS Publications" on page 14).

Use the **Data Interchange** menu, to access:

- Data Subscription.
- Data Delivery information.
- Data Interchange Performance Monitor.

3.7.1.1 User Rights

The MSATS entity required for access to Data Interchange is:

- EMMS - Data Interchange

3.7.2 Data Subscription

AEMO generates files continually, based on changes and five-minute dispatch runs, etc. These files (also known as "reports") are typically comma-separated values (CSV) files. The files contain public data and participant's private data.

The Data Subscription web interface allows Data Interchange registered participants to:

- See the latest and previous versions of the MMS Data Model.
- Download the latest data model scripts and documentation .ZIP files to keep your existing participant RDBMS current or create and populate a new RDBMS.
- Subscribe to the report files made available in the EMMS file server.
- Unsubscribe from any files that are no longer required.
- View the entire list of available files and their details, whether or not your organisation is currently subscribed to them.

3.7.2.1 User Rights

The MSATS entities required for access to Data Subscription are:

- EMMS - Data Interchange - Data Subscription - Maintain and View Data
- EMMS - Data Interchange - Data Subscription - View Data

3.7.3 Data Delivery

Use the **Data Delivery** menu to access:

- The Data Interchange **Status Dashboard**. The status dashboard displays:
 - The status of the Data Interchange components within the participant organisation.
 - A list of filenames, delivery dates and a file re-request count (where a file has been sent to the participant's system more than once). Multiple file deliveries can indicate a problem at the participant's end.
- Make a **File Delivery** query and re-request files. The file delivery web interface allows participants to query all the files delivered within a date range, and request selected files delivered again to the EMMS file server.

- View your organisation's **Data Sharing** arrangements. The data sharing interface displays the current data sharing agreements in place with other market participants for the displayed participant ID. Participants can share their data with another participant, subject to an authorised request. Implementing data sharing means the full Data Interchange data set (including private data) for the requesting participant ID is made available to another participant's sets of folders in the EMMS file server, as nominated in the request. The sharing of data is for both pre-production and production. A data sharing requirement may emerge, for example, due to a merger with, takeover of, or sale of another NEM registered participant. The requirement may be to use one company's IT system to manage access and process the data for two or more participant IDs using just one participant's set of folders in the EMMS file server. For further information on data sharing, see the "EMMS Data Interchange Guide" (see "EITS Publications" on page 14).

3.7.3.1 User Rights

The MSATS entity required for access to Data Delivery is:

- EMMS - Data Interchange

3.7.4 Performance Monitor

The performance monitor web interface is a graphical view of the current EMMS Data Interchange Performance Monitor environment run and managed by AEMO. Participants not receiving data, or experiencing data delays can contrast the data delivery performance of their Data Interchange environment to the EMMS Data Interchange performance environment.

3.7.4.1 User Rights

The MSATS entity required for access to Performance Monitor is:

- EMMS - Data Interchange - Performance Monitor

4 Glossary

4.1 Abbreviations

Abbreviation	Abbreviation Explanation
AEMC	Australian Energy Market Commission
AS	Ancillary services
CSV	Comma-separated values; a file format for exchanging data using commas as delimiters. For help with the CSV format, see the "AEMO CSV Data Format Standard" (see "References" on page 14).
EMMS	Electricity Market Management System; software, hardware, network and related processes to implement the NEM (formerly MMS).
LOR	Lack of reserve level
LRC	Low reserve condition
MSATS	Market Settlement and Transfer Solution.
MT PASA	Medium Term Projected Assessment of System Adequacy; 2 years worth of data
NEM	National Electricity Market
NER	National Electricity Rules
RDBMS	Relational Database Management System (e.g. Oracle or SQL Server)

Table 1: Abbreviations

4.2 Special terms

Term	Definition
MMS Data Model	The definition of the interface to participants of data published by AEMO from EMMS.
Rules	National Electricity Rules

Table 2: Special terms

5 References

The resources listed in this section contain additional related information that may assist you.



Note: it is important to ensure that you are reading the current version of any document.

- About Administration: for information about using Set Participant (e.g. for agents), see the “About Administration” menu, when logged into the EMMS Web Portal.
- AEMO Help Desk: phone: 1300 300 295, option 2; e-mail: helpdesk@aemo.com.au.
- National Electricity Rules: see the AEMC website <http://www.aemc.gov.au>.

5.1 AEMO’s website

The following documents are found on AEMO’s website:

- “Guide to Market Systems – Gaining Access”, for information on access to the Electricity Market Management Systems (EMMS) Web Portal. Participants wishing to use the EMMS Web Portal are required to have access to the AEMO Market Systems via the MarketNet Private Network. MarketNet provides information via web interfaces to participants, available from <http://www.aemo.com.au/registration/nemnet.html>.
- Participant Administration: For information about managing a Web Portal account (accounts are created in MSATS), see the “Participant Rights Administration User Interface Guide”, available from <http://www.aemo.com.au/electricityops/userguide.html>.

5.2 EITS Publications

Participant users with the credentials can find the following documents in the secure [EITS Publications](#) area on AEMO’s website (application to AEMO’s Help Desk or see “About Administration” in the EMMS Web Portal). Documents in “EITS Publications” are available to registered participants only.

- “AEMO CSV Data Format Standard”, describes the CSV standard used within flat files provided to participants. Its primary function is to provide sufficient information to allow participants to understand the AEMO CSV data format standard.
- “AEMO’s IP Addresses for Participants”, provides information about URLs for accessing AEMO’s IT systems.
- “Guide to Market Systems – Maintaining and extending Access”, provides high-level, summary information about AEMO’s IT systems, to assist participants with decisions about usage of the data interfaces to AEMO’s systems.
- “Web Portal Login User Guide”: for information on how to log on to the EMMS Web Portal.

5.3 Information centre

The AEMO Information Centre provides an information service for all interested parties, from NEM participants to the general public, providing information regarding AEMO NEM operations and the electricity industry generally.

- Telephone: 1300 361 011. E-mail: infocentre@aemo.com.au.