Connecting to AEMO's Systems

Version 3.01

April 2021

Explains the IT interfaces available for participants and how to connect to them

Important Notice

PURPOSE

This Connecting to AEMO's Systems (Guide), prepared by AEMO, provides guidance for Market Systems under the National Gas and Electricity (Rules).

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The release of this document changes any previous versions of Connecting to AEMO's Systems, .

Contents

Introduction

Purpose

Provides instructions for using the Settlements Residue Auction (SRA) interface in the Markets Portal.

Audience

For participants registering with AEMO, to help you understand your requirements, please read this guide before and while completing your registration application.

This document is relevant to:

- Interested parties considering registration with AEMO.
- Interested parties requiring an overview of AEMO's participant IT systems.
- New registrants applying for registration with AEMO.
- New registrants and existing participants setting up interfaces to AEMO's IT systems.
- Participants requiring an understanding of the applications AEMO provides.
- Implementers and maintainers of interfaces to AEMO's systems.

How to use this guide

- This help is written in plain language for easy reading.

- Where there is a discrepancy between the Rules and information or a term in this document, the Rules take precedence.

- Where there is a discrepancy between the relevant Procedures and information or a term in this document, the Procedures take precedence.

- The references listed throughout this document are primary resources and take precedence over this document.

- Text in this format indicates a resource on AEMO's website.

- Text in this format indicates a hyperlink.

- Text in this format is an action to complete in the Markets Portal interface.

- Glossary and Rules terms are capitalised and have the meanings listed against them in the Rules and Procedure Terms on page 20 and Industry terminology on page 21.

- The numbers on the example screenshots throughout this guide refer to the numbered explanations in the topic.

- Diagrams and screenshots are provided as examples. In case of ambiguity between a diagram and the text, the text prevails.

- References to time are Australian Eastern Standard time (AEST) unless otherwise specified.

- References to currency are to Australian dollars.

What's in this guide

Web Portals on page 4 explains AEMO's secure data network connection and answers questions such as: network options, participant entitlements, and how to change your existing MarketNet connection.

Participant File Servers on page 10 explains how to share wholesale data with another participant ID and where to obtain market data.

API Interfaces on page 15 explains Registered Participants user rights management (URM) for participants, security, and password requirements.

Needing Help on page 1 provides information about AEMO communications, how to request assistance for IT related issues, and a list of references mentioned throughout this guide.

Rules Terms on page 1 explains the capitalised Rules terms used throughout this guide.

API Interfaces on page 15 explains Registered Participants user rights management (URM) for participants, security, and password requirements.

Web Portals

About the web portals

The web portals are the access point for AEMO's retail and wholesale web-based applications, providing a secure interface for authorised users to interact. The web portals are the most cost effective option, suitable for use by small operators, in place of setting up Data Interchange (DI) or MSATS Participant Batcher software.

The web portals gives you a clear indication of the environment you are working in by providing a different background colour for the pre-production banner.
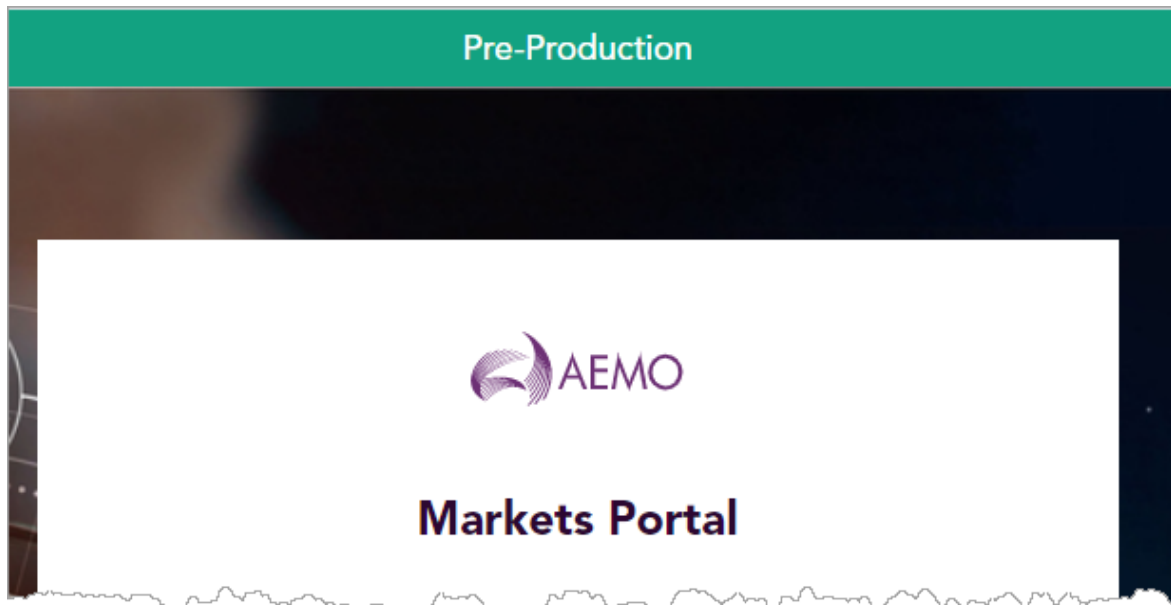
Why use the web portals

The web portals cut participants' 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 user access rights managed by participants.

- Allowing the use of multiple participant IDs using the set participant function, see User Rights Management (URM).

- Being easy to learn with guides available for each web application–requiring less staff training.

- Providing a consistent look and feel across each web application.

Who can use the web portals

A MarketNet connection is required to access the web portals. If your company is a registered participant, you probably already have access.

Your company's participant administrator (PA) can advise what access you have. An initial PA is set up by AEMO as part of participant onboarding, if you don't know who it is, AEMO's support hub can advise you.

Your company's PA also provides your company's participant users with their access rights to AEMO's IT systems.

Web portal requirements

> For more information, see Setting up your IT Systems and Security chapters in the Guide to Electricity Information Systems.

The web portals are accessed using a web browser and require:

- The website address where the application is located on AEMO's network. See Web-based interface URLs on page 8.

-

To access the Markets Portal, AEMO recommends the following web browsers:

> The capacity auction runs on both Windows and Unix-like operating systems.

Browser	Platform	Current	More information
Microsoft Internet Explorer	Windows	IE11	https://www.whatismybrowser.com/guides/the-latest-version/internet-explorer
Microsoft Edge (Microsoft recommended)	Windows 10	Edge	https://www.microsoft.com/en-au/windows/microsoft-edge
Google Chrome	All platforms	Latest version	https://www.whatismybrowser.com/guides/the-latest-version/chrome

- Access to MarketNet; if your company is a registered participant, you probably already have access because it is set up during participant onboarding. For more details, see Data network connection (MarketNet) in the Guide to Electricity Information Systems.

- A user ID and password provided by your company's participant administrator (PA) who controls access to AEMO's web portals. For more details, see User Rights Management (URM) in the Guide to Electricity Information Systems.

Web-based interface URLs

AEMO's web portals run on Windows and Unix-like operating systems.

Table 1 below lists the URLs for electricity market IT systems.

Table 1 AEMO web-based URLs

Name	URL
Web portal menu (links to all participant web portals)	https://menu.prod.marketnet.net.au/ https://menu.preprod.marketnet.net.au/
EMMS Markets Portal (wholesale)	https://portal.prod.marketnet.net.au/ https://portal.preprod.marketnet.net.au/ https://portal.5ms.staging.test.marketnet.net.au/#/menu
EMMS Markets Portal Help	https://portal.prod.marketnet.net.au/help/ https://portal.preprod.marketnet.net.au/help/
MSATS and B2B e-Hub (retail)	https://msats.prod.nemnet.net.au/ https://msats.preprod.nemnet.net.au/
NOS pre-production	https://nos.prod.nemnet.net.au/ https://nos.preprod.nemnet.net.au/nos/
Domain account password change	http://146.178.211.25 For help, see Changing your password
Market Data	https://www.nemweb.com.au/

Name	URL
API Portal	https://dev.preprod.aemo.com.au/
	https://dev.aemo.com.au/
API e-Hub Gateway	https://apis.prod.marketnet.net.au
	https://apis.preprod.marketnet.net.au

Participant File Servers

About file servers

AEMO's MarketNet provides access to folders for batch file transfer between AEMO and participant IDs.

Each energy market system has a file server, and each has production (live data) and pre-production (test data) folders. Each participant ID has secure read-write access to their own set of folders, plus read-only access to commonly-shared folders that contain public data.

The private folders are for secure transfer of data between the participant ID systems and AEMO (such as bidding and settlement invoices). For the IP addresses, see File-based interface URLs on page 13.

Participants require the file interface for:

- Receiving dispatch data.
- Participants needing an on-going data feed of 5-minute public data, such as, traders.

Participant file server folders (FTP Gateway)
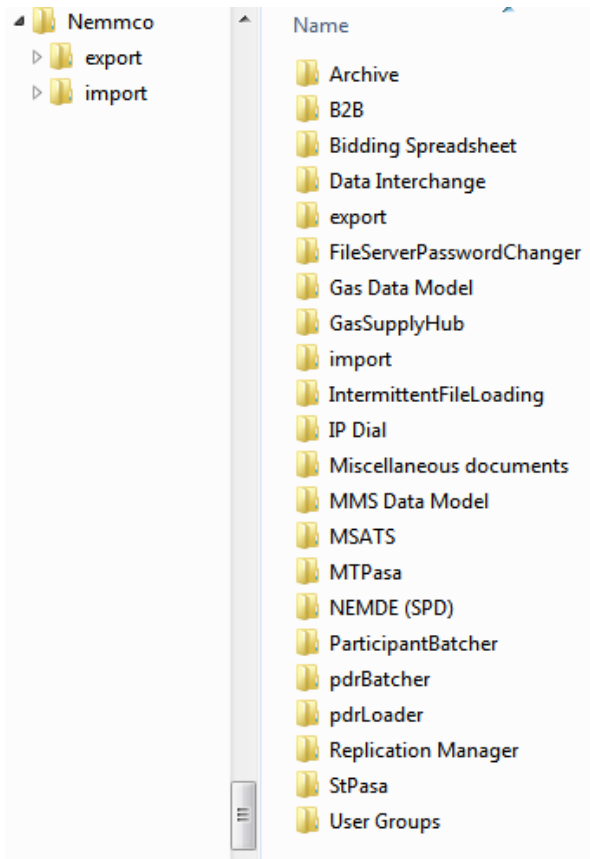
Each participant ID set of folders has at least two subfolders, **\import** and **\export**, with naming relative to the participant ID. Further subfolders are for specific subsystems.

Simplest access method

The simplest method to access participant ID folders is to use an FTP client capable of using passive FTP to put and get files. This is only practical for small amounts of files and requires the participant ID user to know the login and password for direct access to the participant file server.

For small operators AEMO recommends using the web portal interfaces to retrieve and upload files. See Web Portals on page 4.

Recommended method for large amounts of data

The recommended method for accessing the secure folders and replicating large amounts of data between AEMO's systems and a participant's DBMS conforming to the Electricity or Gas Data Models is to use a batcher program such as Data Interchange (DI). See Figure 1 on the next page.

Setting up Data Interchange requires planning and good IT skills, including: networking, database management, batch file management, and disaster recovery. For more details, see Guide to Data Interchange.

Figure 1 Standard DI setup
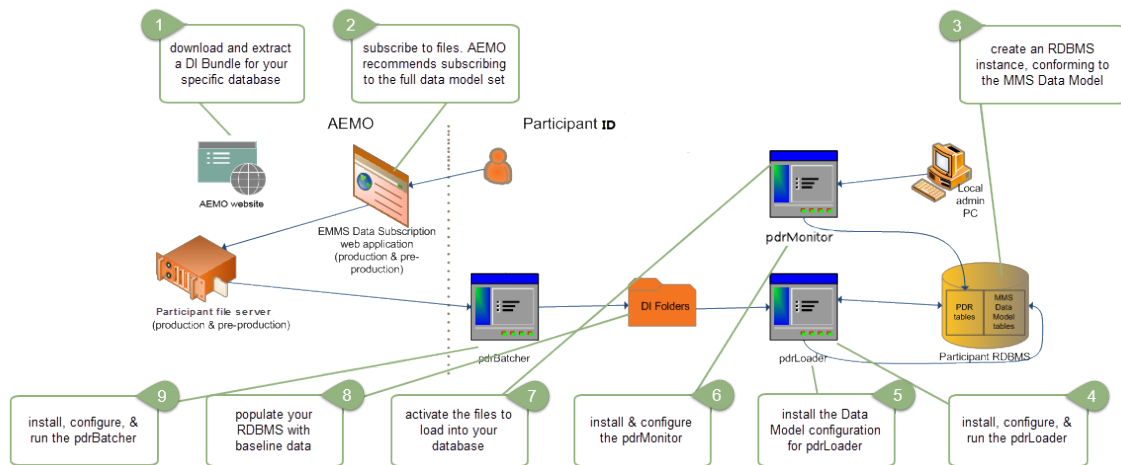
File-based interface URLs

Table 2 File-based interface addresses

EMMS (wholesale)	Production: ftp://146.178.211.63 Pre-production: ftp://146.178.211.25 5MS Staging: ftp://146.178.211.26
MSATS (retail)	Production: ftp://146.178.211.205 Pre-production: ftp://146.178.211.225 5MS Staging: ftp://146.178.211.226

Table 3 below describes specific mappings, with <participant ID> being your company's Participant ID.

Table 3 Specific mapping addresses

Private participant data	<production or pre-production URL>/<participant ID>
Market data	<production or pre-production URL>/MarketData
Data to initially populate an RDBMS conforming to the Data Model	<production or pre-production URL>/MarketData/Baseline
MSATS data	<production or pre-production URL>/<participant ID>

API Interfaces

The e-Hub is AEMO's communication platform supporting exchange of information between participants and AEMO. The e-Hub is accessible over MarketNet and internet and includes:

- An **API Web Portal** for registration and as a resource for downloading Swagger files, see Figure 1 AEMO's e-Hub and Participant API Gateway.

- An **API Gateway**, see Figure 2 API Gateway.

For more information, see Guide to e-Hub APIs.

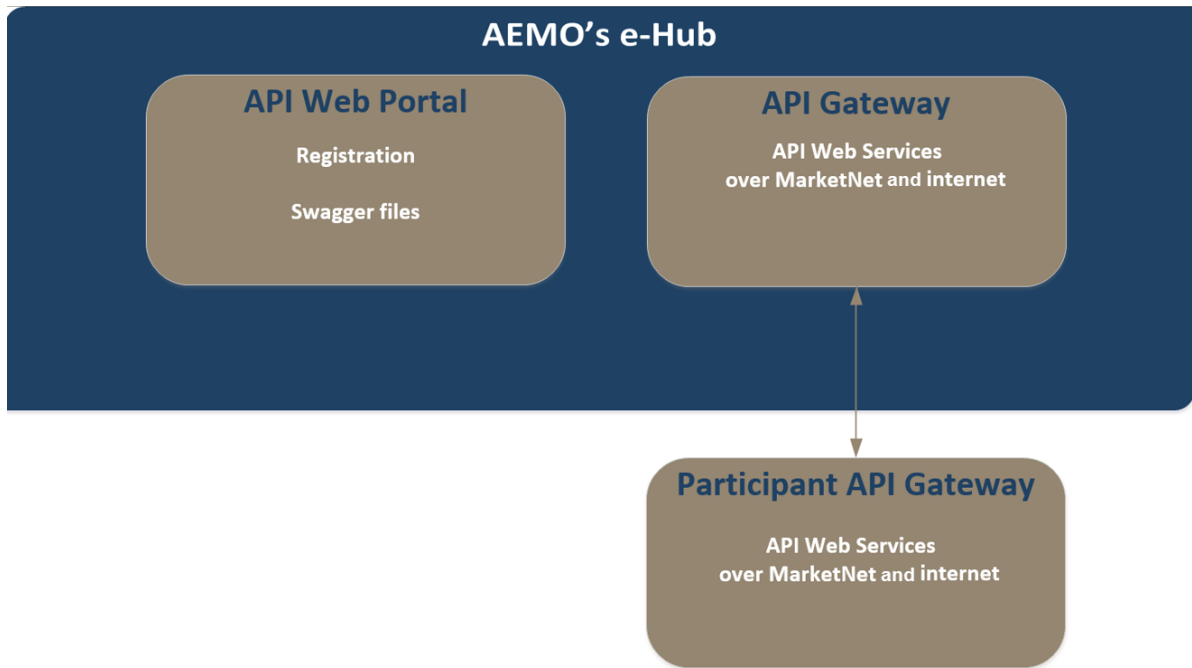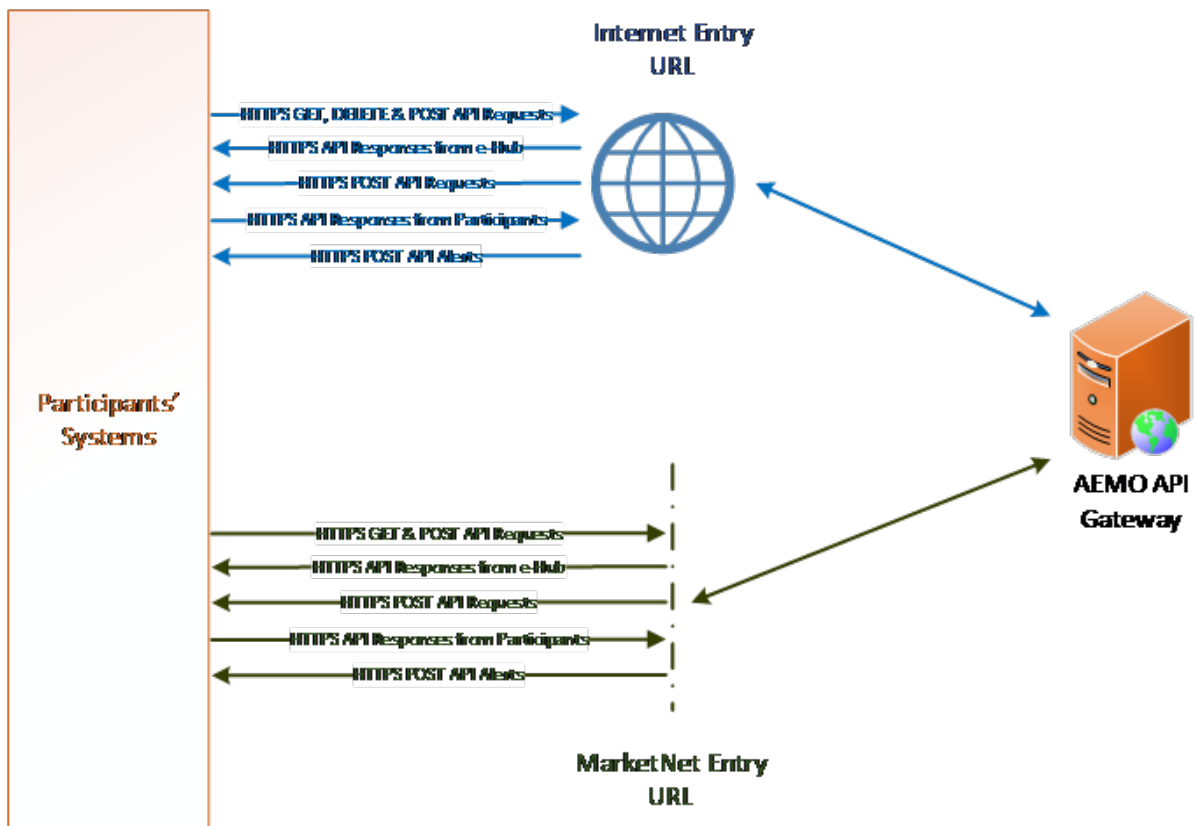Figure 1 AEMO's e-Hub and Participant API Gateway

Figure 2 API Gateway

Network connectivity requirements

This section describes the connectivity requirements for public IP addresses for AEMO whitelisting. For details about API URLs and Endpoints, see API Web Portal.

Participants can use this information to provide the relevant IP address, URLs and ports to AEMO for whitelisting.

Source	Destination (provide to AEMO)	Protocol and Port (participants specify the port from the range below)
202.44.78.204	Participant to provide URL	TCP, 9318-9330
202.44.76.204	Example: https://<url>:93xx/destinationURI **Note**: This must translate to a publicly routable IP address.	

Needing Help

AEMO's support hub

IT assistance is requested through one of the following methods:

- Phone: 1300 AEMO 00 (1300 236 600)

For non-urgent issues, normal coverage is 8:00 AM to 6:00 PM on weekdays, Australian Eastern Standard Time (AEST).

- The Contact Us form on AEMO's website.

> AEMO recommends participants call AEMO's support hub for all urgent issues, whether or not you have logged a call using the contact us form.

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

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

Rules and Procedure Terms

You can find the following terms defined in the relevant Energy rules and procedures.

Industry terminology

This glossary lists common terms, acronyms, abbreviations, and measurements used in Australia's energy industry. For rules terms, see the relevant industry rules on the AEMC website > Energy rules.

A

AEMC
Australian Energy Market Commission

AEMO
Australian Energy Market Operator

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

AES
Advanced Encryption Standard

AEST
Australian Eastern Standard Time

API
Application Programming Interface; a set of clearly defined methods of communication between various software components.

API Gateway
Used to push or pull messages from the B2B e-Hub queue using RESTful APIs.

API Protocol
A B2B e-Hub delivery method.

B

BB

Bulletin Board

C

csv

Comma Separated Values; a file format for data using commas as delimiters.

D

DUID

Intermittent Generation Unit ID

DWGM

Declared Wholesale Gas Market (Victoria)

E

EMMS

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

F

FTP

File transfer protocol

FTP Gateway

Uses the MSATS Hokey-Pokey protocol to deliver B2B communications.

FTP Protocol

A B2B e-Hub and EMMS delivery method.

G

GBB

Gas Bulletin Board

GSH

Gas Supply Hub

H

HTTPS

Hypertext Transfer Protocol Secure, adds the security capabilities of SSL to standard HTTP communications.

I

Implementation date

Usually one business day before the effective registration date of a registration change. Upon special request, AEMO may agree to implementation two business days before the effective registration date, given sufficient notice time to comply with the Rules and Change Management Procedures.

IPWAN

Internet protocol wide area network

L

LAN

Local area network

M

MarketNet

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

MCL

Maximum Credit Limit

MSATS

Retail Market Settlement and Transfer Solution

MSUG

Market Systems User Group

MTPASA

Medium-term Projected Assessment of System Adequacy; 2 years worth of data.

MW

Megawatt

MyTerm

N

NEL

National Electricity Law

NEM

National Electricity Market

NER

National Electricity Rules

NGERAC

National Gas Emergency Response Advisory Committee

NGR

National Gas Rules

NMI

[electricity] National Metering Identifier

P

PA

participant administrator

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

Pending

One of the status points of a Change Request.

Pending Validation

One of the status points of a Change Request.

Physical Inventory

A physical count of Unmetered Devices.

PM

Prudential Margin

POE

Probability of exceedence

POP

Point of presence (in network)

Pre-production

AEMO's test system available to participants

Production

AEMO's live system

R

Registrable capacities

Registered participant categories, such as customer, generator, network service provider, trader, reallocator, special participants, market participant, and intending participants.

RRP

Region reference price

RSF

Regional scaling factor

Rules

National Electricity or Gas Rules (NER or NGR)

S

SCADA

Supervisory Control and Data Acquisition

SGA

Small Generation Aggregator

SSL

Secure Socket Layer, a protocol for encrypting information over the internet.

STTM

Gas short term trading market

T

T & Cs

Terms and conditions

TI

Trading Interval

U

URM

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

V

VPN

Virtual Private Network

Z

ZIP

The file compression format used for exchanging data with AEMO.

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