



APPLICATION GUIDE

Application Guide for Registration as a Generator in the NEM

This guide is to be used in conjunction with the Application for Registration as a Generator in the NEM form and is not to be altered without the prior consent of AEMO.

Disclaimer

This Application Guide (**Guide**) is made available to you on the following basis:

Purpose	This Guide has been produced by the Australian Energy Market Operator Limited (AEMO) to provide information about the process for becoming a <i>Application Guide for Registration as a Generator in the NEM</i> in the National Electricity Market (NEM) as at the date of this publication.
No substitute	This Guide is not a substitute for, and should not be read in lieu of, the <i>National Electricity Law (NEL)</i> , the National Electricity Rules (NER or Rules) or any other relevant laws, codes, rules, procedures or policies. Further, the contents of this Guide do not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the NEL, NER, or any other relevant laws, codes, rules, procedures or policies, or any aspect of the NEM or the electricity industry.
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Rules terms

Terms defined in the *Rules* have the same meaning in this Guide unless otherwise specified. These terms are intended to be identified in this Guide by italicising them, but failure to italicise such a term does not affect its meaning.

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1. Introduction

This application guide (**Guide**) is used to help those completing an Application for Registration – NEM – Application Guide for Registration as a Generator in the NEM form (**the Form**).

Before commencing your application, please also read AEMO's '[Guide to Generator Exemptions and Classification of Generating Units](#)' and the '[Exemption from Registering as a Generator Based on Appointment of an Intermediary](#)' fact sheet'. These explain when you may be entitled to an exemption from the requirement to register as a *Generator* for a particular *generating system*. If you do need to register, they also explain the available classifications for *generating units*. Your registration application must specify an appropriate classification category.

1.1 Purpose of this guide

This Guide is used to help applicants applying to AEMO for registration as a *Application Guide for Registration as a Generator in the NEM* using the Form available from the AEMO website.

This Guide summarise the processes and information required by the Form but will not cover all circumstances. The National Electricity Law (NEL) and the NER prevail over this Guide to the extent of any inconsistency.

1.2 Requirement to register as a *Application Guide for Registration as a Generator in the NEM*

Part 2, Div. 1, Section 11 of the NEL states that:

- (1) "A person must not engage in the activity of owning, controlling or operating, in this jurisdiction, a generating system connected to the interconnected national electricity system unless;
 - (a) the person is a Registered participant in relation to that activity; or
 - (b) the person is the subject of a derogation that exempts the person, or is otherwise exempted by AEMO, from the requirement to be a Registered participant in relation to that activity under this Law and the Rules."

If a person is required to register, penalties apply for failing to do so. See NEL Part 2, Div. 1, Section 11.

1.3 Exemptions and Special Approvals

1.3.1 Small Generator and intermediary exemptions

Please refer to AEMO's '[Guide to Generator Exemptions and Classification of Generating Units](#)' and the '[Exemption from Registering as a Generator Based on Appointment of an Intermediary](#)' fact sheet' to determine:

- whether you may be entitled to an exemption from the requirement to register (typically where your generating system is small) or where an intermediary is registering as a *Generator* on your behalf, and
- what you need to do (if anything) to obtain that exemption.

1.4 Registration as an Intending Participant

Clause 2.7 of the *Rules* allows a person to register with AEMO as an *Intending Participant* if it can reasonably satisfy AEMO that it intends to carry out an activity in respect of which it must or may be registered as a *Registered Participant*. A person who intends to act as a *Generator* may elect to register with AEMO as an *Intending Participant* if that person can satisfy AEMO that the relevant requirements have been met.

Please see the [NEM General Application Guide](#) if you would like to register as an *Intending Participant*.

1.5 Registration as a Project Developer

Clause 3.13.3AA (b) allows a person to apply to AEMO to be a *project developer*, if the person is not already a *Registered Participant*, and intends to develop plant to be connected to the transmission or distribution system in respect of which another person (other than an Intermediary) must or may be registered as a *Registered Participant*.

Please see the [NEM General Application Guide](#) if you would like to register as a *project developer*.

1.6 Fees

1.6.1 Registration Fee

All applicants for registration must pay a registration fee in accordance with AEMO's currently published fee schedule.

After the initial receipt and processing of the Form, AEMO will send a tax invoice to the applicant for payment. The registration fee can be paid by cheque (payable to AEMO Limited) or by direct deposit. You should provide a remittance advice from your bank if you have paid by direct deposit.

Please note that assessment of an Application will not be completed without confirmed payment of the registration fee.

1.6.2 Participant Fees

Clause 2.11.1(b)(2) of the *Rules* provides that *participant fees* should recover the budgeted revenue requirements for AEMO. Clause 2.11.1(b)(3) provides that the components of *participant fees* charged to each *registered participant* should be reflective of the extent to which the budgeted revenue requirements for AEMO involve that *registered participant*.

You should refer to the AEMO website for a summary of the [AEMO budget and fees](#) that are currently applicable to a *Application Guide for Registration as a Generator in the NEM*.

1.7 Other Documents to be submitted with the Registration application

All prospective *Application Guide for Registration as a Generator in the NEMs* who will be required to make or receive payments to or from AEMO in the *spot market* must submit the following items with their registration application:

1.7.1 Bid and Offer Validation Data

If you are applying to classify a *scheduled generating unit* or a *semi-scheduled generating unit*, you must provide AEMO with the *bid and offer validation data* and related information as specified in Schedule 3.1 of the *Rules* at least six weeks before you commence participation in the market.

1.7.2 Settlement Revision Liability Deed

Under clause 3.15.19 of the *Rules*, AEMO may revise or adjust a *settlement amount*. If you are to be *financially responsible* for an existing *market generating unit*, you may also accept responsibility for these revisions. You will need to provide AEMO with a [NEM Settlements Revision Liability Deed](#).

1.8 Application Submission

Please submit the completed Application by email, together with all the required attachments, to AEMO at: onboarding@aemo.com.au

Ensure any attachment clearly identifies the section it belongs to and is numbered sequentially (for example "Section D – Attachment 003").

For assistance. Contact AEMO:

Phone 1300 236 600 (International callers dial +61 3 9609 8000)

Email: onboarding@aemo.com.au

2. Registration Procedure

Chapter 2 of the *NER* deals with registration. Each prospective applicant must apply to AEMO for registration by using the relevant application form.

The registration process consists of the following steps:

- Step 1 You submit the application form along with all attachments required by the Form to the address shown in Section 1.8 above.
- Step 2 On receipt of your application, AEMO will send an invoice for payment by EFT.
For information regarding participant registration fees, see [AEMO budget and fees](#) on the AEMO website.
- Step 3 AEMO will review the application and respond to you within 5 *business days* of receipt of the application (Clause 2.9.1(b) of the *NER*).
- Step 4 AEMO may request additional information or clarification of the information contained in the application. If such a request is made, you must supply the additional information or clarification within 15 *business days* of AEMO's request (Clause 2.9.1(c) of the *NER*).
- Step 5 Within 15 *business days* of receiving the application, or within 15 *business days* of receiving the requested additional information or clarification, AEMO will notify you of AEMO's determination and, if AEMO rejects your application, the reasons for rejecting it (Clause 2.9.2(a) of the *Rules*).

AEMO's notification will include:

- any conditions of registration, if applicable, that AEMO considers reasonably necessary, and
- an effective date of registration. This date will be determined considering AEMO's software change management process.

Note: Regardless of outcome, application processing activities and timeframes are the same and carry the same overheads, so fees and charges are non-refundable.

3. Explanation of the Application for Registration Form

Information required by the Form is divided into the following sections:

- Section A. Participant Category
- Section B. Application Details
- Section C. Contact Details
- Section D. Required Information
- Section E. Generating System
- Section F. Classification as a Market Generating Unit
- Section G. Compliance with Technical Requirements
- Section H. Local Black System Procedures
- Section I. Metering
- Section J. Ancillary Services Generating Units
- Section K. IT Systems
- Appendix 1 – Generators Registering as Customers
- Appendix 2 – Fuel Source and Technology Type

Below is an explanation of how to complete Sections A to K, including a description of the attachments to the sections that are required and the two appendices.

3.1 Section A. Participant Category

In the Form, select the type of registration required by checking the appropriate checkbox. Options are:

- *New Generator*
- *Existing Generator* applying to classify a *generating unit*
- *Existing Market Generator* applying to classify an *ancillary services generating unit*

3.2 Section B. Application Details

3.2.1 B.1. Applicant details

You must formally apply for registration and provide your entity details.

3.2.1.1. Participant ID

You can suggest a Participant ID for your organisation. AEMO will advise you of the suitability of this suggestion prior to the establishment of the registration record in AEMO's systems. Please take care in nominating the ID as AEMO's systems do not support changes once IDs have been allocated.

You will be charged an additional fee if you already have an existing Participant ID but have requested an additional Participant ID.

3.2.2 B.2. Applicant association

To be eligible for registration as a *Generator*, you must either:

- own, operate or control; or
- otherwise source electricity from (e.g. as the buyer under a power purchase agreement) in relation to the *generating unit(s)* you are applying to classify as part of this registration.

3.2.3 B.3. Consent to act as an intermediary

These eligibility criteria apply equally to applicants intending to act in an *intermediary* capacity. If you are applying as an *intermediary*, you must also tick one or more of the preceding boxes to confirm your eligibility. You must also identify the parties who have nominated you as their *intermediary* on behalf of other parties, you must identify those parties and provide their consent to your appointment.

Please note that any parties for which you are acting as *intermediary* must submit applications for exemption from registration as a generator. They each must identify you as their *intermediary* in their application.

3.2.4 B.4. Applicant declaration

The form must be signed by an authorised representative of the Applicant as a declaration that the application and supporting documents are true and correct.

You must also authorise AEMO to contact other parties to verify the information you have provided.

3.3 Section C. Contact Details

In Section C you must provide contact details for your head office, control room, trading room and relevant personnel. It is important that AEMO can communicate with the correct person within your organisation, especially during operational emergencies. Please note only Australian phone numbers are acceptable and all personnel must be based in Australia. A description of each of the contact categories is provided below.

After registration, *Registered Participants* must maintain up-to-date contact details of all nominated operational personnel with AEMO on a regular basis. To update your operational contacts after registration, please contact AEMO's Support Hub at Support.Hub@aemo.com.au or call 1300 236 600.

Compulsory Contacts for all <i>Generators</i>	
Control Room	Group contact details of control room, for physical plant operations. Control room must be contactable 24/7. Control room phone number should not be a mobile number or desk number of an individual. It is the Applicant's responsibility to ensure the control room phone is physically staffed at all times or transfers incoming calls to rostered individuals who can receive calls at all times.
Trading Room	Group contact details of trading room or trading desk, for bidding operations. Trading room must be contactable 24/7. Trading room phone numbers should not be a mobile number or desk number of an individual. It is the Applicant's responsibility to ensure the trading room phone is physically staffed at all times or transfers incoming calls to rostered individuals who can receive calls at all times.
Emergency Messaging System	Contact who receives Whispir emergency messages. In the event of failure of the normal Market Notice message system, AEMO will communicate with registered participants using the AEMO Emergency Messaging System (Whispir). You may provide up to 5 contacts of this type.

Compulsory Contacts for all <i>Generators</i>	
Head of Organisation	The Managing Director or Chief Executive Officer of the Applicant organisation.
Company Secretary	Secretary or assistant to the Head of Organisation.
Local Black System Procedures	Point of contact for Local Black System Procedures
Dispute Management	First point of contact for the notification of disputes under NER Clause 8.2.
Registration	AEMO Onboarding's primary point of contact with the Applicant in regard to their registration. Able to liaise extensively within their organisation and with the different teams in AEMO.
SCADA	Responsible for the remote monitoring and control signals exchanged with AEMO in respect of the generating system. For semi-scheduled generators, this includes signals required under the Energy Conversion Model.
Corporate Relations Manager	Responsible for issues relating to external communication.
IT notifications email address	<p>Note: See 'Section K2 IT Notifications email address' of the Form as these details are added there.</p> <p>Distribution list email setup on the participant side (it is not an AEMO email address). The IT notifications email address allows the participant to manage recipients of any changes or business impact communications. Examples of messages sent to the generic email address include the AEMO Help Desk Bulletin and Change Notices.</p>

Compulsory Contacts for <i>Market Generators</i>	
Metering Responsible Person	Contact representing the Applicant who is responsible for the revenue metering installation.
Metering Coordinator	Contact representing the <i>Metering Coordinator</i> who has been appointed for the revenue metering installation. Metering Coordinator is as defined in clause 7.3.1 of the <i>Rules</i> .
Clearing – Primary	Responsible for Austraclear trades.
Clearing – Secondary	Secondary to above.
Prudentials – Primary	Responsible for trading limit breaches and bank guarantees.
Prudentials - Secondary	Secondary to above.
Settlements - Manager	Senior person within organisation with extensive knowledge of Settlement processes. Nominated 'Registration' contact in Settlements Direct. Receives formal correspondence such as Maximum Credit Limit (MCL) Letters, and is contacted if there are Settlements queries.
Senior to Settlements Mgr.	For example, Chief Financial Officer or General Manager.

Compulsory Contacts for *Market Generators*

IT Security – Primary	Primary IT contact for participant security and systems access. Will receive the MarketNet credentials needed for access to AEMOs market systems (MMS and MSATS) from AEMO’s Information and Support Hub. This will occur after AEMO implements the participant in pre-production. They become the initial MSATS participant administrator.
IT Security – Secondary	Secondary to above. Must be available 24/7.
IT Technical Network	To setup your MarketNet connection (if requested). Provision and maintenance of the network connection to MarketNet requires a suitably qualified network specialist who is ready for contact from AEMO’s network specialists. This is particularly important for the security-sensitive and time-critical nature of installation and maintenance of network connections.

Compulsory Contacts for *Semi-scheduled Generators or Non-scheduled Generators requiring an Energy Conversion Model*

Intermittent Generator Availability	Person responsible for updating the intermittent generation availability in the MMS portal for semi and non-scheduled generators
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Compulsory Contacts for *Scheduled or Semi-scheduled Generators*

Operations – Trading Manager	Senior person within organisation with extensive knowledge of spot market operations.
Operations – Bidding	First point of contact for clarification of bids and offers in the spot market. Must be available 24/7.

Compulsory Contacts for *Generators >5MW*

Operations – Manager	Person responsible for day-to-day operations at the power station. First point of contact for physical operation of plant.
Operations – Shift Supervisor	Senior on shift who manages power station controllers.

Compulsory Contacts for *Generators in an Embedded Network*

Embedded Network Manager	Contact representing the <i>Embedded Network Manager</i> .
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 Please clearly mark all attachments as '*Attachment to Section C*' and number each page consecutively

3.4 Section D. Required Information

Additional material must be attached in relation to the following:

3.4.1 D.1. Partnership Status

If you are applying for registration on behalf of a partnership, you must provide evidence of the legitimacy of the partnership, such as a partnership agreement.

3.4.2 D.2. Trust Status

Where the Applicant is acting in a trustee capacity, the Applicant must provide a copy of the Trust Deed establishing the Applicant Trust. It must also execute and return a [Trustee Deed Poll](#) in the form specified by AEMO. No changes are to be made to the form of Deed other than the completion of details where highlighted.

AEMO must be satisfied that an applicant for registration will be able to meet its obligations under the *Rules*. (The same applies to exemption applicants who appoint an intermediary, because they remain liable for the intermediary's acts and omissions.) Trustees, however, are generally not personally liable for obligations they incur on behalf of the trust. The purpose of the Trustee Deed Poll, therefore, is to assure AEMO that the trustee's right of recourse to the property and assets of the trust remains in place for the purpose of meeting its *Rules* obligations, on an ongoing basis.

3.4.3 D.3. Organisational Capability

You must show that you are in a position to control the design, construction, maintenance, operation, business and administrative processes applicable to your generating activities and that responsible officers within your organisation are in a position to establish, or have already established, resources, processes and procedures to ensure compliance with the *Rules* applicable to your participation as a *Generator*.

To confirm this, you need to enclose the documents stated in this section then check the appropriate checkboxes to confirm each document is attached or provide reasons why not.

3.4.4 D.4. Financial Viability

You must be able to meet your financial obligations to AEMO and satisfy the prudential requirements as set out in clause 3.3 of the *Rules*. You must include:

- copies of your most recent audited financial statements; and
- explanation of any financial links with parent or other organisations.

You might be required to provide credit support to cover the value of commissioning supplies and auxiliary supplies during plant outages or periods of infrequent generation. Further information regarding the amount of credit support is available from the document "Credit Limit Procedures" which is on the AEMO website.

Credit support instruments must conform strictly to the format for financial guarantees available on the AEMO website.

Credit support providers must meet the criteria of clause 3.3.3 of the *Rules*. Guarantees from parent or affiliated companies are unlikely to satisfy the criteria.

Check the appropriate checkboxes to confirm the documents are attached.

3.4.5 D.5. Regulatory compliance

You must show that you comply with requirements currently imposed by the *Jurisdictional Regulator* who has jurisdiction over your activities. You must confirm that you have either met your jurisdictional requirements, you are exempt from jurisdictional requirements, or that no jurisdictional requirements apply in your case. You should enclose the following:

- a copy of your current electricity licence or approval applicable in one or more *NEM* jurisdiction(s), or copies of relevant exemptions or derogations; and
- details of any non-compliance with jurisdictional regulatory obligations.

Please check the appropriate checkboxes to confirm the documents are attached.

3.4.6 D.6. Credit support

If you do not meet the acceptable credit criteria as detailed in clause 3.3.3 of the *Rules*, you will need to provide a financial institution guarantee using the [AEMO Guarantee Pro-Forma](#).

It is recommended that guarantees are checked by AEMO prior to execution by emailing a draft copy to prudentials@aemo.com.au. The guarantee is required at the time of registration.

3.4.7 D.7. Recipient Created Tax Invoice Agreement

You must submit your application with a completed Agreement for AEMO to Issue Recipient Created Tax Invoices, available on the [AEMO website](#). Provide two original signed copies of this agreement.

3.4.8 D.8. Austraclear

Please provide your Austraclear Membership Number. AEMO uses an external electronic funds transfer system provided by Austraclear. You will have to apply directly to Austraclear for membership. Membership approvals can take up to five weeks to process and charges are payable direct to Austraclear.

If you do not have an Austraclear membership number at the time of submitting the application, AEMO will record that as an outstanding item.

If the Austraclear account holder is not the Applicant entity, the Applicant will need to provide with their application a formal letter on behalf of the account holder declaring that the Applicant has permission to use this Austraclear account.

3.5 Section E. Generating System

3.5.1 E.1. System details

You must specify the *nameplate rating* and *maximum capacity* of the *generating system* and each dispatchable unit. *Nameplate rating* is the maximum continuous output or consumption as defined or modified by the manufacturer. *Maximum capacity* is the maximum generation to which *scheduled* or *semi-scheduled generating units* or systems (or maximum load for *scheduled loads*) may be dispatched. For *Non-Scheduled Generators*, *maximum capacity* is the maximum *sent out generation* at the *connection point*.

3.5.1.1. Dispatchable Units

You must nominate one or more dispatchable units for your *generating system* (use a new form for each dispatchable unit and attach to this Form). Each dispatchable unit will be sent its own *dispatch instructions*. Please note that you must also assign any *non-scheduled generating units* to a dispatchable unit. This is for AEMO system configuration only. *Non-Scheduled Generators* will not be sent *dispatch Instructions*.

3.5.1.2. Generating Unit Sets

You must nominate one or more generating unit sets for each dispatchable unit you have nominated. A generating unit set is an individually metered section of a *generating system* which contains one or more

physical units (e.g. wind turbines or PV inverters). Each physical unit within a generating unit set must be of common:

- NMI
- Connection point
- Classification
- Technology

You must identify the number of physical units in each generating unit set. Please note that for solar and battery systems, this is defined by the number of inverters.

You must classify each generating unit set as either:

- scheduled, semi-scheduled or non-scheduled
- market or non-market

An explanation and examples of *generating unit* classifications are provided in AEMO's Guide to Generator Exemptions and Classification of Generating Units.

Information to support exemption from *central dispatch* (that is, classification as a *non-scheduled generating unit*) is to be submitted as an attachment to this section. You must provide information on each *generating unit*, together with the evidence of the eligibility of each *generating unit* to be classified in the selected category.

3.5.1.3. Start-Type

You must specify whether scheduled generating unit sets are of 'Fast' or 'Slow' start-type.

Fast start generating units can synchronise and increase generation within 30 minutes of receiving an instruction from AEMO. *Slow start generating units* cannot do this.

3.5.1.4. Ramp Rate Targets

The registered *ramp rate* (MW/minute) sets an upper limit on the *ramp rate* that will be accepted in a generator offer. Generator offers with *ramp rates* that exceed the registered *ramp rate* will be rejected.

The targeted change in a dispatchable unit's output sent via *dispatch instruction* will never exceed the maximum capacity of that unit divided by five. Hence the registered ramp rate should not exceed the higher of 20% of the unit's maximum capacity (expressed as MW/min), or the sum of the minimum ramp rate requirements for each individual *generating unit* if the unit is aggregated, even if the plant is physically capable of a higher ramp rate. The minimum ramp rate for an individual *generating unit* is the lower of 3 MW/min, or 3% of that unit's maximum capacity, expressed as MW/min, rounded down to the nearest whole number greater than zero.

Semi-scheduled generators may classify multiple *generating units* as a single *generating unit* under clause 2.2.7(i) of the *Rules* or aggregate their *generating units* under clause 3.8.3(a) of the *Rules*.

3.5.1.5. Identifiers

When you first submit your application form, you must suggest Station IDs, Dispatchable Unit IDs and Generating Unit Set IDs. AEMO will advise you of the suitability of these suggestions prior to registration approval and request you to update them on the application form if necessary. Please take care in nominating these IDs as changes once IDs have been allocated are not supported. The following guidelines also apply to both *generation* and *market load* IDs:

- All IDs are a maximum of 8 characters.
- IDs containing only alphanumeric characters are preferred. Underscores are not acceptable.

- Station IDs, DUIDs and Generating Unit Set IDs must intuitively represent the full power station name or load name.
- Station ID or DUID must not contain any reference to the owner of the power station or load.
- For the DUID the final character must be a unique number which identifies the unit or load number. Even if only a single (or aggregated) unit is planned the DUID should still end in 1. For any additional units the number should increase sequentially.
- For consistency new units at an existing station should follow the existing DUIDs.
- Where there is a single Generating Unit Set under a Dispatchable Unit, it is acceptable for the Generating Unit Set ID to be the same as the Dispatchable Unit ID.
- Where there are multiple Generating Unit Sets under a Dispatchable Unit, please order the Generating Unit Sets.
- Example IDs for 'Blue Sky Power Station':
 - Suppose this power station has 2 dispatchable units. Each dispatchable unit contains a single generating unit set.
 - Station ID: 'BLUESKY'
 - DUIDs: 'BLUESKY1' and 'BLUESKY2'
 - Generating Unit Set IDs: 'BLUESKY1' and 'BLUESKY2'
 - Suppose this power station has two dispatchable units. The first dispatchable unit contains one generating unit set and the second dispatchable unit contains two.
 - Station ID: 'BLUSKY'
 - DUIDs: 'BLUSKY1' and 'BLUSKY2'
 - Generating Unit Set IDs: 'BLUSKY1', 'BLUSKY2A' and 'BLUSKY2B'

3.5.2 E.2. Scheduled generating units

Where the dispatchable units you nominate contain multiple *scheduled generating units*, you are indicating to AEMO that you wish to aggregate these units for the purposes of *central dispatch* in accordance with clause 3.8.3(a) of the *Rules*.

Please check the appropriate checkboxes to confirm the documents are attached.

3.5.3 E.3. Semi-scheduled generating units

Where the dispatchable units you nominate contain multiple *semi-scheduled generating units* (e.g. multiple wind turbines or PV inverters), you are indicating to AEMO that you wish to classify all *generating units* in the dispatchable unit as one *generating unit* in accordance with clause 2.2.7(i) of the *Rules*. Please contact AEMO if you wish to aggregate *semi-scheduled generating units* under clause 3.8.3(a) of the *Rules* or if any of your *semi-scheduled generating units* (e.g. wind turbines or PV inverters), exceed a capacity of 6MW.

Please note that due to a system limitation, wind and solar *generating units* cannot be formally aggregated into a single dispatchable unit. Please contact AEMO to discuss this matter further if this was your intention.

Please check the appropriate checkboxes to confirm the documents are attached.

3.5.3.1. Energy Conversion Model

It is recommended that you provide AEMO with the *energy conversion model* for *semi-scheduled generating units* at least three months before you plan to commence participating in the market as a *Semi-Scheduled Generator*. This is to allow AEMO time to prepare the model for use in AEMO's wind or solar forecasting system. Guidelines for *energy conversion models* are available on the AEMO website

3.5.4 E.4. Non-scheduled generating units

If you intend to classify units as *non-scheduled generating units*, please confirm their *nameplate rating* is between 5 MW and 30 MW if they are connected to a battery system.

Please provide the basis and accompanying documentation on which your application is supported.

3.5.5 E.5. Status and duration

Confirm if the *generating system* has previously commissioned or not and provide energisation and registration target dates.

3.5.5.1. Expected Closure Year

All *Scheduled Generators* and *Semi-Scheduled Generators* are required to provide the *expected closure year* which you expect the generating system (or units within the system) to cease supplying electricity to the grid.

The *expected closure year* should be provided via AEMO's Supply Forecasting Generator Survey application, which has been created to replace the IMAGE portal and associated data collected via email.

The Generator Survey application can be accessed via AEMO's Electricity Market Management System (EMMS) portal, and will be used to:

- gather crucial information needed for AEMO's planning and forecasting publications such as the ESOO and the ISP, and
- accept standing data, including the generator *expected closure year*.

For instructions and assistance on how to log in to the portal, please contact AEMO's Support Hub at Support.Hub@aemo.com.au or call 1300 236 600.

Further, if a *Scheduled Generator* or *Semi-Scheduled Generator* is planning to terminate any of its classifications of *generating units*, it must officially notify AEMO in writing, giving details of the *closure date*, which must be no earlier than three years from the date of the notice (subject to any exemption the AER may grant).

Generators are required to comply with these provisions from 1 September 2019.

These formal notices should be sent to onboarding@aemo.com.au and will be published on the NEM Registration and Exemption list.

Once registered, you will need to update AEMO if your closure plans change. Please refer to the requirements in clauses 2.2.1(e)(2A) and 2.10.1 of the *Rules* for details of these requirements.

- 📌 Please clearly mark all attachments as 'Attachment to Section C' and number each page consecutively.

3.5.6 E.6. Operational and System Readiness

The operation of the *power system* requires participants to have robust communication mechanisms and 24-hour operational capabilities in place prior to registration and commissioning. Among many other things, operational obligations outlined within the NER require *Generators* to:

- nominate personnel who will receive and act on operational communications;

- maintain up-to-date contact details of nominated operational personnel with AEMO;
- provide two independent telephone system numbers for each nominated operational personnel and control centre (mobile phone numbers only are not acceptable);
- maintain both independent telephone systems in good repair and investigate communication faults within 4 hours;
- establish and maintain a form of electronic mail facility as approved by AEMO;
- notify AEMO of settings or model updates, and circumstances affecting plant operation that could affect AEMO's management of power system security;
- ensure that appropriate personnel are available at all times to receive and immediately act upon instructions from AEMO (24/7 operational coverage)¹; and
- for *Semi-Scheduled Generators*, ensure that every *semi-scheduled generating unit* is at all times able to comply with its latest *dispatch offer*².

Prior to registration, *Generators*³, must provide AEMO evidence of their operational and system readiness, and demonstrate they are able to:

- participate in bidding and *central dispatch* processes; and
- ensure appropriate personnel are always available to receive and immediately act upon *dispatch instructions* and operational communications on a 24/7 basis.⁴

To demonstrate your operational readiness, you must attach to your application form:

- a diagram which shows the roles of the individuals responsible for daily bidding and physical control of your *generating system*, including details of their expertise;
- a description of how 24/7 operational coverage⁵ will be maintained, to ensure appropriate personnel are available at all times to receive and immediately act upon instructions issued by AEMO. This should include, but is not limited to:
 - details on how you intend to receive and immediately act upon *dispatch instructions* and other operational instructions for physical plant operation on a 24/7 basis;⁶
 - details on who will and how you intend to submit bids, including rebids, and comply with the latest generation offer; and
 - details of the systems in place for 24-hour access to AEMO systems, in particular AEMO's MMS portal;
- details of the two independent voice communications systems established for the generating system, to give or receive operational communications. Applicants must provide for each nominated operational person and control centre two independent telephone communication system numbers (mobile phone numbers are not acceptable); and⁷

¹ Example 1: operational personnel are available to adjust voltage set-points on a power station – either locally or remotely – regardless of the day of the week, or the time of the day,

Example 2: appropriate systems are in-place to receive and follow dispatch instructions via bidding systems and backup by AEMO's MMS portal,

² Note that any change in the commercial availability of *semi-scheduled generating units* must be communicated to AEMO by rebidding.

³ Please note that *Non-Scheduled Generators* may also be required to provide information relating to *dispatch*. AEMO will advise if you are required to provide associated supporting information.

⁴ For both market dispatch and physical operations of plant

⁵ Please note 24/7 bidding operations is not considered the same as 24/7 physical generation operations (who can physical adjust plant).

⁶ For example: details on how operational personnel are available to adjust voltage set-points on a power station – either locally or remotely – regardless of the day of the week, or the time of the day,

⁷ Registered Participants are required to maintain both telephone communication systems in good repair and investigate communication faults within 4 hours.

- details of the data communication systems established for the generating system to connect to AEMO systems.
- a completed and signed Application Capability Declaration.

To demonstrate your system readiness, you will be asked to submit evidence you can use AEMO's pre-production systems once you have been configured to do so. You will be required to submit screenshots of;

- the first energy offer that you are likely to submit post commissioning, and acknowledgment of successful submission [for scheduled and semi-scheduled generating units],
- an MT PASA availability profile and acknowledgment of successful submission [for scheduled generating units],
- an intermittent generator availability profile (upper MW limit and turbine/inverters unavailable) and acknowledgment of successful submission, for both energy availability (HH) and MTPASA availability (daily) [for semi-scheduled generating units and other intermittent generating units required to submit an energy conversion model],
- receipt of dispatch target (MW) [for scheduled generating units], and
- receipt of semi-dispatch cap (MW and flag) [for semi-scheduled generating units].

 Please clearly mark all attachments as '**Attachment to Section E**' and number each page consecutively.

3.5.7 E.7. Energy dispatch instructions

AEMO's primary interface for dispatch instructions is either AEMO's *automatic generation control system* (AGC) (for energy and regulation services only) or the Electricity Market Management System (MMS) Data Interchange.

Market Participants may choose to receive 5-minute *dispatch instructions* via SCADA but must be aware that AEMO considers this a secondary system and cannot monitor successful transmission of SCADA signals.

AEMO seeks to provide *Market Participants* with *dispatch* (energy and FCAS) targets and *semi-dispatch* caps in a reliable and robust way. The MMS Data Interchange system has been designed for this.

Although AEMO's SCADA can be used to provide dispatch targets, AEMO cannot ensure that the target is sent to and received by a *Market Participant*. Any interruptions to the SCADA signal could be in AEMO's systems or NSP systems and may not be visible to AEMO. As such, a participant could be using an old or incorrect target and might be declared non-conforming as a result.

The AGC, which uses the SCADA communication paths, does not have this issue as the AGC recalculates the setpoints and sends the signals every 4 seconds.

 Please clearly mark all attachments as '**Attachment to Section E**' and number each page consecutively.

3.6 Section F. Classification as a Market Generating Unit

Clause 2.2.4(d) of the *Rules* provides:

"A *Market Generator* must purchase all electricity *supplied* through the *national grid* to the *Market Generator* at that *connection point* from the *spot market* and make payments to AEMO for such electricity supplied at the *connection point* as determined for each *trading interval* in accordance with the provisions of Chapter 3."

Appendix 1 of this Guide explains when *Market Generators* can be taken to purchase electricity under this provision.

Market Generator applicants who may need to draw electricity from the *network* (i.e. purchase through the *spot market*) must include supporting documentation to demonstrate that:

- the electricity will be used for the purpose of generating electricity; and
- all power station *connection points* are part of the overall *connection* of the *generating system* to the *network*.

If the Applicant cannot demonstrate both requirements, then those purchases must be made through a *Market Customer*. You can either register as a *Market Customer* yourself or purchase the electricity from a third party who is a *Market Customer*. Please identify the *Market Customer* who will be *financially responsible* for *load* that does not meet both requirements.

 Please clearly mark all attachments as '*Attachment to Section F*' and number each page consecutively.

3.7 Section G. Compliance with Technical Requirements

In Section G you must confirm that your *generating system* is exempt from the technical requirements of Chapter 5 of the *Rules* or will be able to meet or exceed its *performance standards*.

The conditions for *connection* of *Generators* do not apply to your *generating system* if you are eligible for exemption from registration in respect of the *generating system* and the *generating system* is *connected* or intended for use in a manner the *Network Service Provider* considers is unlikely to cause a material degradation in the quality of *supply* to other *Network Users*. The application form lists the information required if you are claiming exemption from these requirements.

If you are registering in respect of a *generating system* that has already been classified in the *NEM*, you may use existing information to support your application. The application form lists the information that must be provided.

If you are registering in respect of a new *generating system* or adding new *generating units* to an existing *generating system* that has already been classified (*modified generating system*), then you must provide the following:

- Generator Performance Standards

You must attach the *performance standards* for your *generating system*.

- Technical information submission

You must submit the R1 technical information for your *generating system* to your *Network Service Provider* and AEMO to assess and confirm *plant* performance for the purposes of assessing your application for registration and for ongoing *power system security* assessment. You must confirm if the R1 technical information has been submitted and when it was sent. If the R1 technical information has not been submitted yet, you must send it to your *Network Service Provider* and copy NEM.connections@aemo.com.au.

Please refer to AEMO website for relevant templates, checklists and guidelines.

 Please clearly mark all attachments as '*Attachment to Section G*' and number each page consecutively.

3.8 Section H. Local Black System Procedures

Clause 4.8.12 of the *Rules* requires *Generators* to develop *local black system procedures* for each of their *power stations* and submit them to AEMO for approval. Guidelines for preparing *local black system procedures* are available on the AEMO website.

This information is required to allow AEMO to understand the likely condition of *generating systems* following a *black system* event and any constraints or conditions of operation that would apply during the restoration process. AEMO needs to confirm there are no inconsistencies between your *local black*

system procedures and AEMO's own system restart plan. Accordingly, you must provide AEMO with any relevant technical information that may affect the capabilities or performance of your *generating unit(s)* in a system restart scenario.

 Please clearly mark all attachments as 'Attachment to Section H' and number each page consecutively.

3.9 Section I. Metering

3.9.1 Rules Requirements

In Section I you must confirm that the proposed *metering installation* will be able to meet the requirements of Chapter 7 of the *Rules*.

Under clause 5.3.7(g) of the *Rules*, a *Network Service Provider* and the *Registered Participant* must jointly notify AEMO that a *connection agreement* has been entered and forward the relevant technical details of the proposed *plant* and *connection* which includes the *metering installation* information.

Clause 7.2.1(a) of the *Rules* requires *metering* to be installed and operational prior to participation in the *market* in respect of the relevant *connection point*.

Clause 7.2.1(b) of the *Rules* provides that AEMO may refuse to permit a *Registered Participant* to participate in the *market* if clause 7.2.1(a) has not been complied with.

3.9.2 I.1. Connection point checklist

The Connection Point Checklist is to be completed to satisfy the minimum requirements for the registration of Metering Connection Points as required under Chapters 5 and 7 of the *Rules*.

All fields must be supplied for AEMO to be able to conduct a full technical assessment (except where indicated below). Clarification of the information required for the Connection Point Checklist are provided below:

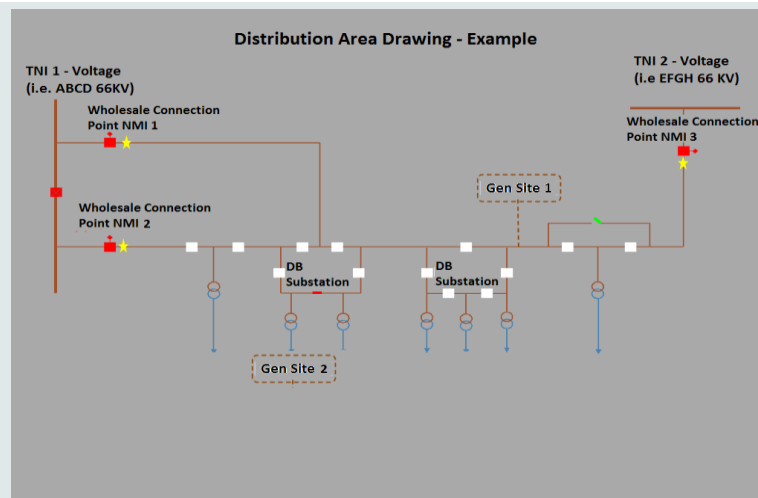
3.9.2.1. General and technical details

Metering Coordinator	
Detail:	<p><i>Metering Coordinator (MC) for connection point</i></p> <p>For <i>connection points</i> that are connected to a <i>transmission network</i>, only the TNSP or the FRMP may be appointed as the MC. This party must be registered with AEMO as an MC.</p> <p>For <i>connection points</i> that are connected to a <i>distribution network</i>, only a registered contestable MC may be appointed.</p> <p>Review NER Chapter 7 Part C for all requirements relating to the appointment of an MC.</p>
Connection point details	
Connection Point NMI(s):	<p><i>National Metering Identifier (NMI) as advised by the Network Service Provider.</i></p> <p>If the NMI is not already registered in MSATS, provide confirmation of the NMI from the <i>Network Service Provider</i> as an attachment to Section I.</p>

Metering Coordinator	
	If <i>generating system</i> is within an <i>embedded network</i> (EN), provide the <i>parent connection point</i> NMI(s).
If Generator is within an Embedded Network, child Connection Point NMI(s):	If the <i>generating system</i> is within an EN, provide the <i>child connection point</i> NMI(s) as advised by the appointed <i>Embedded Network Manager</i> (ENM).
If Generator is within an Embedded Network, Embedded Network Code:	If the generating system is within an EN, provide the Embedded Network code determined by the <i>Local Network Service Provider</i> at the request of the embedded network owner (ENO) or the ENM acting on the ENO's behalf.
Logical NMI – Algorithm	<p>Refer to <i>Rules 7.8.12 - Special Site or Technology Related Conditions</i>.</p> <p>If there is an existing algorithm for the <i>connection point(s)</i>, provide a copy of the algorithm as an attachment.</p> <p>All new algorithms require AEMO approval.</p> <p>Algorithms are not an acceptable substitute for actual metering installations that meet NER requirements. As such, a detailed explanation why an algorithm is required and why compliance with other NER metering installations clauses are not able to be achieved, is to be provided with the request for consideration.</p>
Transmission Node Id (TNI):	This code identifies the transmission loss factor assigned by the <i>Network Service Provider</i> .
If connected to the Distribution Network, Transmission NMI(s):	<p>If the <i>generating system</i> will be <i>connected</i> to a <i>distribution network</i>, provide the associated Transmission (Wholesale) NMI(s) of the distribution area in which it will be <i>connected</i>, for validation of metering connection arrangements.</p> <p>This information should be obtainable from the DNSP or TNSP associated with the installation.</p>
Physical Site Address:	Physical address at which the <i>generating system connection point</i> is situated including street, suburb/town and postcode.
Physical Location:	<p>A specific statement that clearly details the physical locality of the <i>connection point</i> is situated as per the Applicant's <i>connection agreement</i>.</p> <p>AEMO needs to understand where the <i>connection point</i> is in relation to the <i>metering installations</i>.</p> <p>(E.g. At 66KV Circuit Breaker 12345 on the low voltage side of Transformer 1 at Substation XYZ).</p>
Single Line (Schematic) diagram showing Connection Point and revenue Metering Installation:	<p>Single Line diagram (SLD) of the <i>connection point</i> highlighting:</p> <ul style="list-style-type: none"> Revenue <i>metering installation</i> location details, CT/VT location details,

Metering Coordinator	
	<ul style="list-style-type: none"> • relevant switching system/s that control import/export to the <i>national grid</i> • asset boundaries and asset owners • other assets and asset owners that could potentially be impacted by the installation. <p>Identify the drawing number and provide the drawing as an attachment to Section I. (Drawings need to be re-sized with clarity and accuracy).</p>
Additional notes:	Add any additional information.
The distance between the Connection Point and the revenue Metering Installation:	<p>Rule 7.8.7 requires the metering point to be as close as practicable to the <i>connection point</i>.</p> <p>Provide the distance (in metres) between the <i>connection point</i> and the <i>metering installation</i>.</p>
Detailed Wiring diagram of the Metering Installation:	<p>Detailed Wiring diagram of the <i>metering installation</i> which must clearly identify:</p> <ul style="list-style-type: none"> • Revenue Metering • Check Metering (when installed and required) • Meter Class Accuracy • Meter Make and Type • CT Class • VT Class • CT Ratio • VT Ratio • CT (Burden Rating) • VT (Burden Rated) <p>Identify the drawing number and provide the drawing as an attachment to Section I. (Drawings need to be re-sized with clarity and accuracy).</p>
Distribution or transmission area diagram showing the generation system's relativity to TNI:	<p>Drawing showing the proposed <i>connection point</i> relative to the associated wholesale <i>connection point</i> and/or the TNI.</p> <p>Identify the drawing number and provide the drawing as an attachment to Section I. (Drawings need to be re-sized with clarity and accuracy).</p> <p>These drawings should be obtainable from the DNSP or TNSP associated with the installation.</p> <p>See example below:</p>

Metering Coordinator



Distribution Loss Factor

If Generation >10MW, and connected to the Distribution Network, approval for site specific Distribution Loss Factor from the Australian Energy Regulator (AER).

If the *generating system* will be connected to a *distribution network*, and proposed generation is greater than 10MW, Rule 3.6.3 requires a site specific DLF to be created.

Rules 3.6.3(b)(2)(i)(A) and 3.6.3(i) require a site specific DLF to be derived from a methodology determined by the DNSP and approved by the AER.

Where the *generating system* is connected to an EN, the ENO must determine the loss factor between the *child connection point* and the *parent connection point*. The DNSP is responsible for determining the loss factor between the *parent connection point* and the TNI. The site specific DLF for the *child connection point* is the product of these two loss factors.

Provide, as an attachment, the document detailing the methodology and approval letter from the AER.

DLF Code: DLF Code provided by the DNSP.

DLF Value: DLF value as determined in accordance with approved methodology.

Generation capacity

Feeder Capacity: Capacity of the feeder in MVA or Amps

Transformer Capacity: Capacity of the transformer in MVA

Generator Capacity: Capacity of the *generating system*. Provide MVA, MW and *power factor*

Annual Energy Generation: Forecast energy generated in MWh per annum.

Revenue metering installation details

Metering installation

Metering Installation Type (S7.2.3):	Clause S7.4.3 of the NER defines the Meter Type requirements. The <i>metering installation</i> must meet the accuracy requirements stated.
--------------------------------------	--

Meter Details

Meter Serial No:	Serial Number which identifies the meter installed. (add additional rows if required).
Meter Make & Model:	Name of the manufacturer of the meter and the model of the meter installed.
Pattern Approval Cert No:	The National Measurement Institute of Australia issues a certificate of approval when an electricity meter is pattern approved. Provide the Pattern Approval Cert No.
Meter Class Accuracy:	Meter class accuracy must meet the minimum acceptable class or standard of components as outlined in S7.4.3 of the <i>Rules</i> .
Is Meter Bi-Directional:	A <i>metering installation</i> must be capable of separately recording energy data for energy flows in each direction where bi-directional active energy flows occur or could occur.
Current Rating:	The operating range of the meter in Amps.
Meter Test Results:	<p>Copies of the most recent <i>meter</i> test results conducted in accordance with S7.6.2 of the <i>Rules</i>.</p> <p>These results must show compliance with the relevant Australian Standard or <i>International Standard</i> as identified in Metrology Procedure Part A and must come from either a:</p> <ul style="list-style-type: none"> • <i>NATA</i> laboratory or a body recognised by <i>NATA</i> under the International Laboratory Accreditation Corporation (ILAC); or • An accredited <i>metering provider</i> that has used <i>NATA/ILAC</i> traceable reference/calibration equipment as per S7.2.3(b)(6) of the <i>Rules</i>. <p>The test results must meet the minimum allowable uncertainties (\pm) as per Table S7.6.1.1 of the <i>Rules</i>.</p> <p>Provide the <i>Meter Test Results</i> as an attachment to Section I.</p>

Current transformer (CT) details

CT Serial No:	Serial Number which identifies the <i>current transformer</i> installed. (add additional rows if required).
CT Ratio's Available:	Provide the range of <i>current transformer</i> tap ratios available.
CT Connected Ratio:	Provide the connected ratio of the <i>current transformer</i> .
CT Burden (rated):	Provide the name plate burden rating of the <i>current transformer</i> in VA.

Revenue metering installation details

CT Class:	Provide the class of the CT's installed. <i>Current Transformer</i> class accuracy must meet the minimum acceptable class of components as outlined in S7.4.3 of the <i>Rules</i> .
CT Test Results	<p>Copies of the most recent <i>Current Transformer</i> test results conducted in accordance with S7.6.2 of the <i>Rules</i>.</p> <p>These results must show compliance with the relevant Australian Standard or <i>International Standard</i> as identified in Metrology Procedure Part A and must come from either a:</p> <ul style="list-style-type: none"> • <i>NATA</i> laboratory or a body recognised by <i>NATA</i> under the International Laboratory Accreditation Corporation (ILAC); or • An accredited <i>metering provider</i> that has used <i>NATA/ILAC</i> traceable reference/calibration equipment as per S7.2.3(b)(5) of the <i>Rules</i>. <p>The test results must be within the maximum allowable uncertainty (\pm) as per Table S7.6.1.1 of the <i>Rules</i>.</p> <p>Provide the <i>Current Transformer</i> Test Results as an attachment to Section I.</p>

Voltage Transformer (VT) Details

VT Arrangement:	Advise if the <i>voltage transformer</i> is a 3 x Single Phase <i>voltage transformer</i> or a Three Phase <i>voltage transformer</i> .
VT Serial No.	Serial Number/s which identifies the <i>voltage transformer</i> installed. (add additional rows if required).
VT Ratio:	Provide the ratio that the <i>voltage transformer</i> is connected at.
VT Burden (Rated):	Provide the name plate burden rating of the <i>voltage transformer</i> .
VT Class:	Provide the class of the VT's installed. <i>Voltage Transformer</i> class accuracy must meet the minimum acceptable class of components as outlined in S7.4.3 of the <i>Rules</i> .
VT Test Results	<p>Copies of the most recent VT test results conducted in accordance with S7.6.2 of the <i>Rules</i>.</p> <p>These results must show compliance with the relevant <i>Australian Standard</i> or <i>International Standard</i> as identified in Metrology Procedure Part A and must come from either a:</p> <ul style="list-style-type: none"> • <i>NATA</i> laboratory or a body recognised by <i>NATA</i> under the International Laboratory Accreditation Corporation (ILAC); or • An accredited <i>metering provider</i> that has used <i>NATA/ILAC</i> traceable reference/calibration equipment as per S7.2.3(b)(5) of the <i>Rules</i>.

Revenue metering installation details

The test results must be within the maximum allowable uncertainties (\pm) as per Table S7.6.1.1 of the *Rules*.
Provide the VT Test Results as an attachment to Section I.

Check metering installation details

The requirements for *check metering installations* is outlined in S7.4.4 of the *Rules*. Also refer to Chapter 10 Glossary definitions relating to *check meter*, *check metering data* and *check metering installation* to assist with determining check metering requirements.

Any proposal for partial check metering will need to be approved by AEMO.

Participant Relationships In MSATS

Role ID	Description
FRMP:	The <i>financially responsible Market Participant</i>
LNSP:	The <i>Local Network Service Provider</i> – either the <i>Transmission Network Service Provider</i> or the <i>Distribution Network Service Provider</i> if the <i>generating system</i> is connected to a <i>distribution network</i> .
LR:	<i>Local Retailer</i>
MDP / MPC:	<i>Accredited Metering Data Provider</i> .
MPB:	<i>Accredited Metering Provider</i>
MC:	<i>Metering Coordinator</i> (previously known as Responsible Person).
ENM (if applicable):	<i>Embedded Network Manager</i> if the <i>generating system</i> is connected to an <i>embedded network</i> .
ROLR:	<i>Retailer of Last Resort</i> .

3.9.3 1.2 Attachments

Provide (where required) the following attachments to Section I:

- Logical NMI – Algorithm
- Single Line (Schematic)
- Detailed Wiring diagram of the Metering Installation
- Distribution or transmission area drawing
- Distribution Loss Factor from the Australian Energy Regulator (AER).
- Meter Test Result
- Current Transformer Test Results
- Voltage Transformer Test Results

Clearly mark attachments with 'Attachment to Section I' and number each page consecutively.

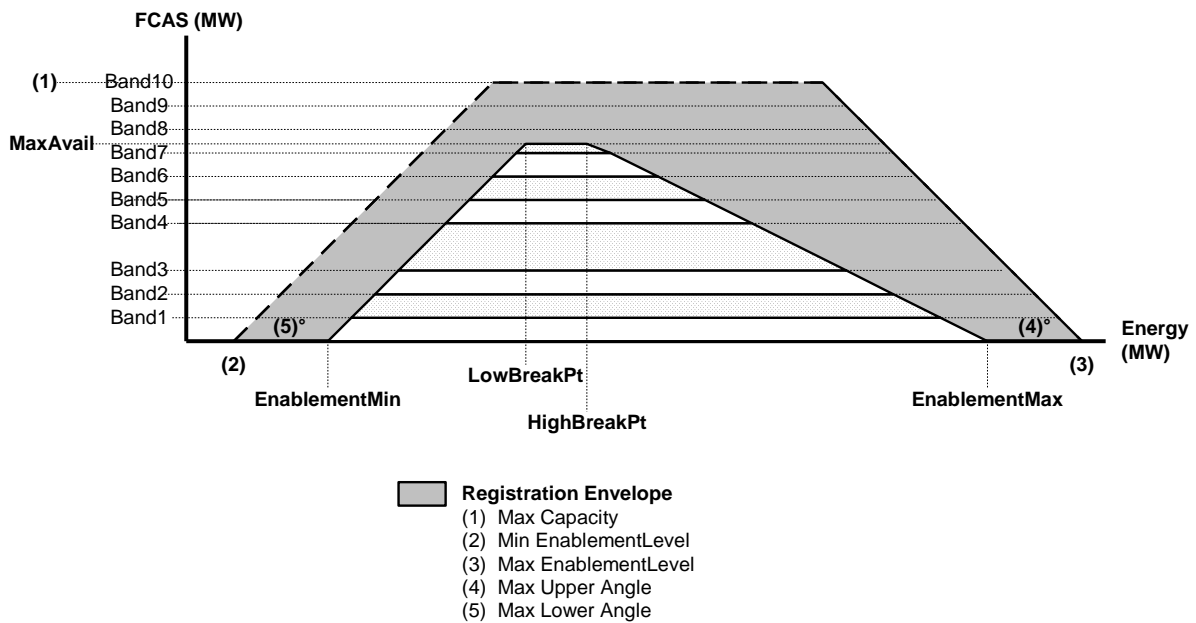
3.10 Section J. Ancillary Services Generating Units

If you are a *Market Generator* and you want to participate in one of the eight *ancillary services* markets you must indicate that you want to have your *market generating units* classified as *ancillary service generating units*.

In Section J, you must provide information for each *market generating unit* that you wish to classify as an *ancillary service generating unit*.

In Section J.2, you must identify which DUIDs contain the *market generating units* to be classified as *ancillary services generating units*.

In Section J.3, you need to indicate which of the eight Frequency Control Ancillary Services the *generating unit* can provide, and the applicable parameters for each service. AEMO will review this information to confirm whether the *generating unit* can provide the nominated *ancillary services* in accordance with the *market ancillary service specification*. The parameters that you specify, once registered in AEMO's MMS, will be used to validate your *market ancillary service offers*. The diagram below depicts how a *market ancillary service offer* can be made within the registered parameters.



Please note that for *non-scheduled generating units* providing *ancillary services* the following values are prescribed:

Field	Value
Minimum Enablement Level (MW)	0
Maximum Enablement Level (MW)	0
Maximum Lower Angle (Deg)	90
Maximum Upper Angle (Deg)	90

In Section J.4, you must describe how you determined that your *generating unit(s)* can provide the *ancillary services* you wish to offer.

In Section J.5, you must describe the *facilities* you have installed to receive *dispatch instructions* for the *enablement* of each *ancillary service*, as well as the control and monitoring facilities installed for each *ancillary service* in accordance with the *market ancillary service specification*.

Section J should be duplicated and completed as required for each *ancillary service generating unit*.

- 📌 Please clearly mark all attachments as 'Attachment to Section H' and number each page consecutively.

3.11 Section K. IT Systems

When appropriate, Applicants need to provide AEMO with IT system information.

3.11.1 MarketNet connection

All participants requiring access to AEMO's IT market systems must have access to AEMO's private network called MarketNet. As part of processing an application, AEMO's network specialist will liaise with your IT Technical Network Contact (or third party as organised by you) to setup a primary and secondary connection according to your request.

In this section, you need to select 'Yes' if you require a new MarketNet connection and provide the information requested or select 'No' if you have access to an existing connection or do not require one.

For details regarding MarketNet options and entitlements, see the [Guide to Information Systems](#) on the AEMO website.

3.11.2 IT Notifications email address

It is important to receive AEMO notifications regarding IT changes or outages that may impact your business, including gas FRC Hub notifications (if applicable).

Please have your IT staff set up and maintain a group email address with an appropriate distribution list for this to occur (individual email addresses are not accepted).

Once established, enter your organisation's email address in the space provided.

3.11.3 e-Hub access

AEMO has a private communication platform called e-Hub which supports the exchange of information between participants and AEMO using APIs. The e-Hub is accessible over MarketNet or the internet.

The e-Hub includes:

- An API Developer portal
- An API Gateway

Not all applicants require e-Hub access and access may be optional or mandatory. If you require e-Hub access, select 'Yes' then fill in the appropriate fields, or select 'No' if you do not.

Your IT Security Contact will need to provide or obtain an AEMO certificate. e-Hub access cannot be finalised until an AEMO certificate is provided.

To obtain an AEMO certificate, you will be required to submit a Certificate Signing Request (CSR) to apiportal@aemo.com.au, refer to Section 4.2 'Obtain a new certificate' in the [Guide to AEMO's e-Hub APIs](#).

Note: When attaching a CSR file, please change the '.csr' filename extension to '.txt' to avoid email rejection of the attached file.

AEMO's IT specialist will liaise with your IT Security Contact to obtain this and to set up e-Hub access.

A1. Appendix 1 – Generators Registering as Customers

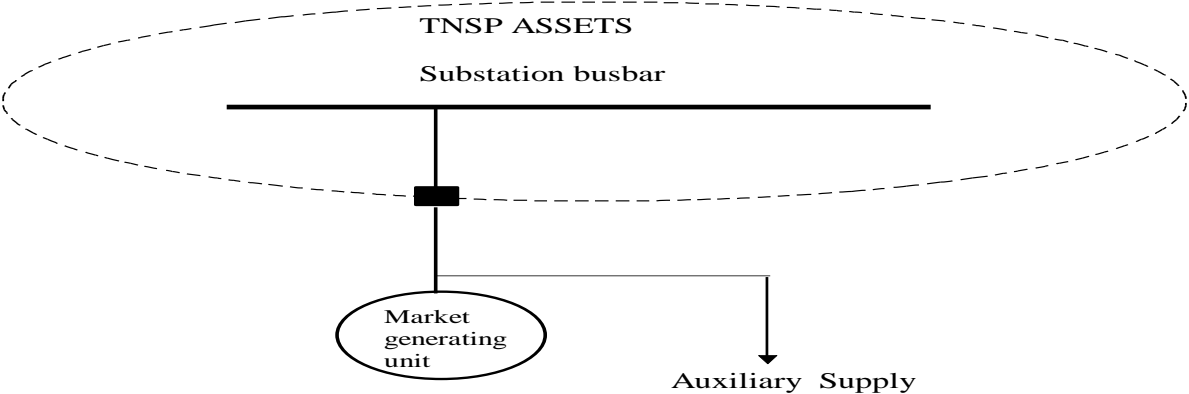
A1.1 Policy

AEMO’s policy is:
Based on clause 2.2.4(b) and (d) of the Rules, a *Market Generator* may only purchase electricity through the spot market if that electricity is supplied at the *connection point* for a market generating system and used for the purpose of operating that system. If the *generator* purchases electricity from the spot market in any other circumstances, it must also register as a *Market Customer*.

A1.2 Examples of the application of the Policy

There is a range of situations in which a *generator* may consume electricity. These are outlined in the following diagrams and cover the following situations:

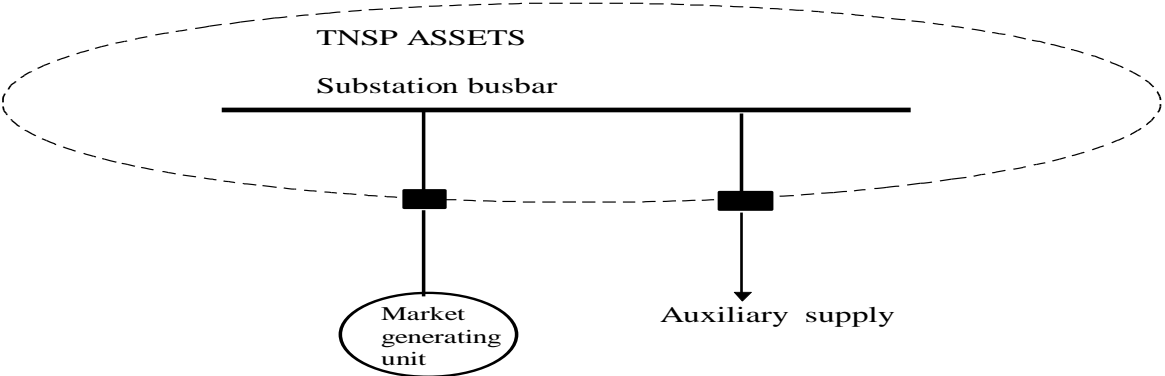
A1.2.1 Single point of connection to the network



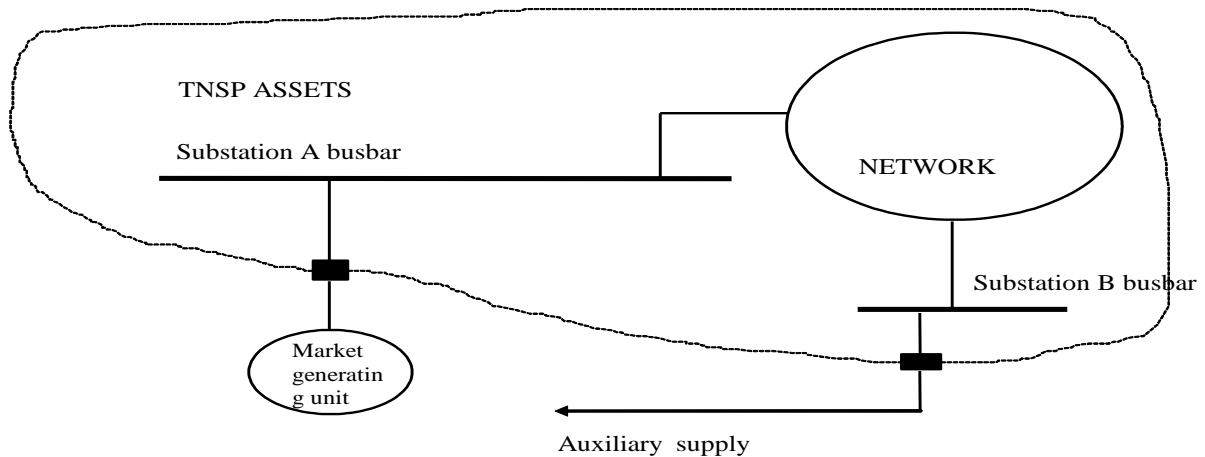
In this situation, the *Generator* is taking its auxiliary supply before the *transmission system*. Net consumption through this *connection point* would only be likely when the *generating system* is out of service, and only used to power the *generating system* at those times. In this case, the *Generator* is not required to register as a *Customer*. All purchases under this situation would be covered by clause 2.2.4(d) of the *Rules*.

A1.2.2 Multiple points of connection to the network

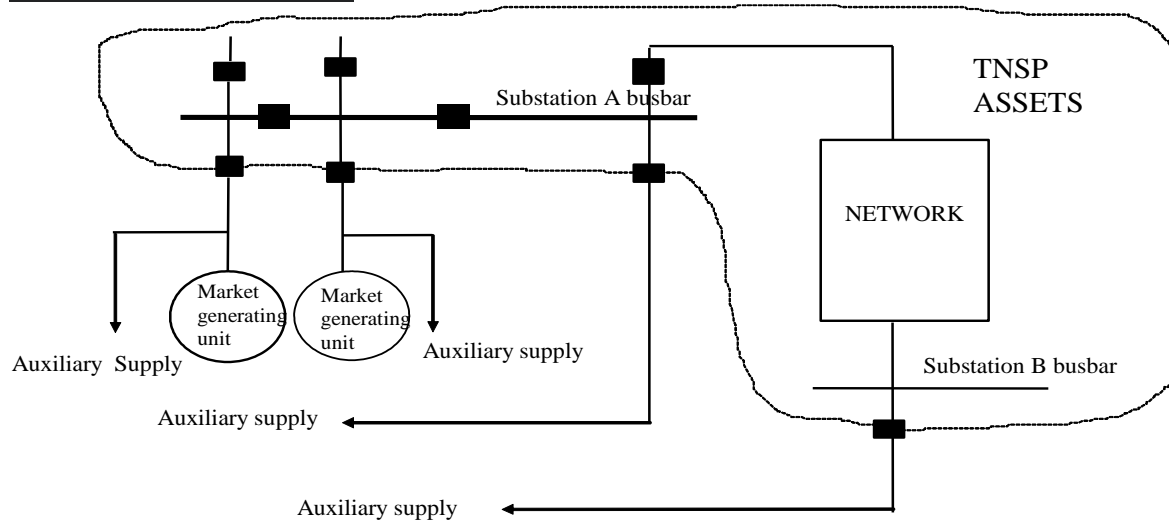
Local Connection



Remote Connection



Local and Remote Connection



In all cases above, auxiliary supply for the *market generating unit* is taken from physically separated *connection points*, either at the same substation, or another point in the *network*, or a combination of local and remote points.

As referred to in the *Rules*, a *connection point* can refer to multiple physical points. The *connection point* is defined in Chapter 10 of the *Rules* as:

“The agreed point of supply established between Network Service Provider(s) and another Registered Participant, Non-Registered Customer or franchise customer”.

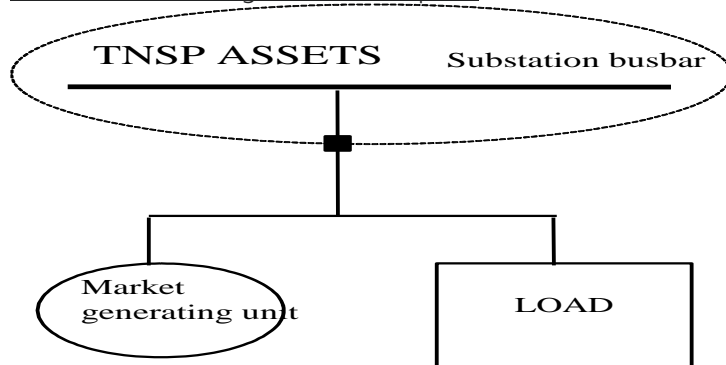
In all cases, AEMO will require the *Generator* to register as a *Customer* and classify the *connection points* that consume electricity as a *market load* unless:

- the *Generator* and the relevant *Network Service Provider* confirm that all relevant points of physical connection form the agreed *connection point* (*point of supply*) for the *market generating system*; and
- the electricity consumed through all those points is used for the activity of operating the relevant *generating system*.

The consumption of electricity in relation to operating a *generating system* would be expected to cover such facilities as on-site offices, mines owned by the *Generator*, water pumping, conveyor belts and power station auxiliaries.

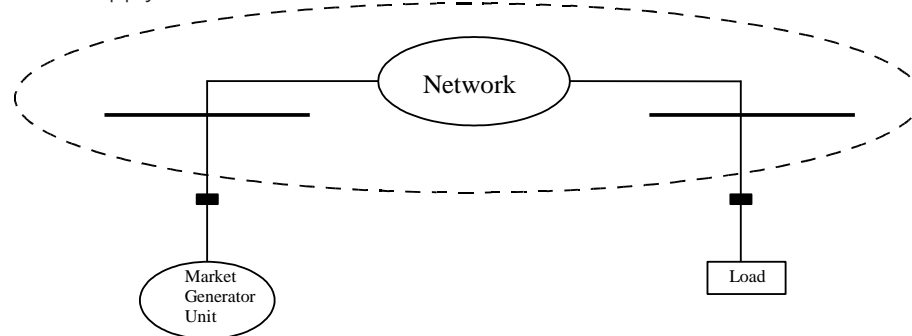
A1.2.3 Load not used for operation of the generating system

Customer Load - single connection point



Where a *market generating unit* is connected at a single connection point together with *load* that is not related to the operation of that unit, it is likely that the *Market Generator* will also be required to register as a *Market Customer*. There is a range of possible registration scenarios from this configuration. Please discuss with AEMO Registration.

Retail Supply



Where a *Generator* also has an associated retail activity, it will be required to register as a *Customer* and classify all *connection points* related to its retail activities as *market loads*.

A1.3 Impact of Classification

Classification of a *market load* or *market generating unit* directly impacts:

- prudential requirements;
- *participant fees*;
- jurisdictional charges;
- *Market and non-market ancillary service recovery*;
- *Transmission Use of System Charges (TUOS)*;
- jurisdiction contestability levels;
- intervention arrangements; and
- *administered price cap* compensation.

A *Customer* is taken to be a *Market Customer* only in so far as its activities relate to any *market load* and a *Generator* is taken to be a *Market Generator* only in so far as its activities relate to any *market generating unit*.

A1.3.1 Prudential Requirements

AEMO's prudential policies only examine the net position of a *Market Participant* and thus the classification of *market load* to a *Generator* whose predominant activity is *generation* may not require the *Generator* to provide a prudential guarantee.

If a *Generator* records a net import in a billing period, there may be a review of its prudential requirements.

Only those *Market Generators* with an expected net settlement liability to AEMO will attract a positive *Maximum Credit Limit*. This is completely independent of the classification of the Registered Participant's *generating units* or *loads*.

A1.3.2 Participant Fees

If you need to register as a *Market Customer* you will be charged relevant *Participant fees*.

A1.3.3 Jurisdictional Charges

Any jurisdictional charge for a *market load* (which is settled by AEMO) will not be applied to *market generating units*. Any jurisdictional charges that apply to *Market Customers* would be expected to be levied in relation to *market loads*.

A1.3.4 Market and Non-market Ancillary Service recovery

AEMO's Settlements Guide to Ancillary Services Payment and Recovery document explains how classifications impact ancillary service recovery calculations.

A1.3.5 TUOS

Charges for prescribed TUOS are recovered from *Customers* rather than *Generators*.

A1.3.6 Jurisdictional Contestability Levels

Clause 2.3.1(e) of the *Rules* requires that a person must satisfy the relevant *participating jurisdiction's* requirements for purchasing electricity in the *spot market* before it can classify a *load*. AEMO therefore requires any *Generator* that is also required to register as a *Customer* to provide evidence that any applicable jurisdictional requirements have been met.

A1.3.7 Intervention Arrangements

Under some circumstances *Market Participants* are entitled to compensation arising from altered *dispatch* outcomes when AEMO intervenes in the market (e.g. by issuing a *direction*). Compensation payable is recovered differently from different categories of *Market Participants* in accordance with the *Rules*.

A1.3.8 Administered Price Cap Compensation (clause 3.14 of the Rules)

Administered price cap compensation is funded by all *Market Customers* in proportion to the amount of their *metered market load*. These amounts are not recovered from *Market Generators*.

A2. Appendix 2 – Fuel Source and Technology Type

The fuel source and technology of all registered *generating units* must be submitted in Section F of the Application Form; this information will be published. A list of common fuel source and technology types is provided below:

FUEL SOURCE	
Primary Fuel Source	Descriptor
Renewable/ Biomass / Waste	Bagasse
	Biodiesel
	Biofuel - other
	Biogas - other (captured for combustion (not methane))
	Biogas - Sludge (captured for combustion (methane only))
	Biomass recycled municipal and industrial materials
	Dry wood
	Ethanol
	Green and air-dried wood
	Landfill methane / Landfill gas
Fossil	Black coal
	Blast furnace gas
	Brown coal
	Brown coal briquettes
	Charcoal
	Coal seam methane
	Coal tailings
	Coke oven coke
	Coke oven gas
	Crude oil and condensates
	Diesel
	Ethane
	Fuel Oil
	Gaseous fossil fuels - other
	Gasoline (aviation fuel used for stationary energy) - avgas
	Gasoline (non-aviation fuel)
	Heating oil
	Kerosene (aviation fuel used for stationary energy) – avtur
	Kerosene (non-aviation fuel)

FUEL SOURCE	
	Liquefied aromatic hydrocarbons Liquefied petroleum gas Naphtha Natural gas – compressed Natural gas – liquefied Natural gas – unprocessed Natural gas (pipeline) Natural gas / diesel Natural gas / fuel oil Natural gas liquids – other Petroleum based greases Petroleum based oils and lubricants Petroleum based products – other Petroleum coke Recycled fossil fuel derived industrial and municipal materials Refinery coke Refinery gas and liquids Solid fossil fuels – other Solvents if mineral turpentine or white spirits Sulphites Lyes Tar Town gas Waste coal mine gas
Hydro	Water
Geothermal	Geological heat
Solar	Solar
Wave	Water
Wind	Wind
Tidal	Water
Battery storage	Wind Solar Grid

TECHNOLOGY	
Primary Technology	Descriptor
Renewable	Hydro - Gravity
	Run of River
	Pump Storage
	Tidal Wave
	Wind - Offshore
	Wind - Onshore
	Photovoltaic Flat panel
	Photovoltaic Concentrator
	Photovoltaic Tracking Flat panel
	Photovoltaic Tracking Concentrator
	Solar Thermal
	Boosted Solar Thermal
	Solar Thermal with Storage
	Boosted Solar Thermal with storage
	Enhanced Geothermal Systems (Hot Dry Rock) / Binary cycle
	Enhanced Geothermal Systems (Hot Dry Rock) / Flash
Enhanced Geothermal Systems (Hot Saturated Aquifer) / Binary cycle	
Enhanced Geothermal Systems (Hot Saturated Aquifer) / Flash	
Combustion	Compression Reciprocating Engine
	Spark Ignition Reciprocating Engine
	Combined Cycle Gas Turbine (CCGT)
	Open Cycle Gas turbines (OCGT)
	IDGCC (Integrated Drying and Gasification Combined Cycle)
	IGCC (Integrated Gasification Combined Cycle)
	Integrated CTL (Coal to Liquid)
	Steam Sub Critical
	Steam Super Critical
Storage	Battery and Inverter
	Battery