



# APPLICATION GUIDE

## Application Guide for Registration as a Generator or Integrated Resource Provider in the NEM

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

## Disclaimer

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

- Purpose** This Guide has been produced by the Australian Energy Market Operator Limited (AEMO) for the purposes of clause 2.1.3 of the National Electricity Rules (NER or Rules) to provide information about the process for becoming registered as a Participant in the National Electricity Market (NEM) as at the date of this publication.
- Disclaimer** The information in this Guide is provided for explanatory purposes and may be subsequently updated or amended.
- This Guide does not constitute legal, investment, business, engineering or technical advice. It should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law (NEL), the NER, any other applicable laws, procedures or policies, or any other aspect of the NEM or the electricity industry.
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## Rules terms

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# 1. Introduction

This application guide (**Guide**) is used to help those completing an [Application for Registration as a Generator or Integrated Resource Provider in the NEM](#) form (**the Form**).

Before commencing your application, please also read AEMO's '[Guide to Registration Exemptions and Production Unit Classification](#)' and the '[Exemption from Registering 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* or *Integrated Resource Provider* for a particular *generating system*. If you do need to register, they also explain the available classifications for *generating units* and participant categories. Your registration application must specify an appropriate classification and participant category. The [Integrated Resource Providers](#) and [Hybrid Systems](#) fact sheets may also assist in your understanding.

For the avoidance of doubt, any reference in this guide to *Scheduled Generator*, *Semi-scheduled Generator*, *Non-scheduled Generator*, *Market Generator* and *Non-market Generator* applies equally to an *Integrated Resource Provider* acting in that capacity.

## 1.1 Purpose of this guide

This Guide is used to help applicants applying to AEMO for registration as a *Generator* or *Integrated Resource Provider* and seeking approval to classify *generating units* using the Form available from the AEMO website. If your system has consumption at the *connection point*, other than *auxiliary load*, you cannot use this Form and must apply to register as an *Integrated Resource Provider* using the [Application for Registration as an Integrated Resource Provider in the NEM Form](#).

This Guide summarises 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 Generator or Integrated Resource Provider 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 generating unit and intermediary exemptions

Please refer to AEMO's '[Guide to Generator Exemptions and Classification of Generating Units](#)' and the '[Exemption from Registering 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* or *Integrated Resource Provider* 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* or an *Integrated Resource Provider* 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 EFT. You should provide a remittance advice from your bank once payment has been lodged.

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 *Generators* and *Integrated Resource Providers*.

## 1.7 Other Documents to be submitted with the Registration application

All prospective *Generators* and *Integrated Resource Providers* in the NEM will be required to make or receive payments to or from AEMO in the *spot market* and 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](mailto: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](mailto: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

This section of 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. Usually, the authorised representative is a Chief Executive Officer / Head of Organisation, Company Secretary or holds a management position.

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

AEMO will not proceed without the declaration as it allows us to speak to all necessary parties required to make a considered decision about your application.

Please read this declaration carefully and ensure you are aware of its meaning.

Note: If a digital signature is used then the signatory must be copied into the email submission of the application to AEMO.

- 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.
- Section J. IT Systems

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

#### 3.1 Section A. Participant Category

In the Form, select the type of registration required and the purpose of the application by checking the appropriate checkbox. Options identify if you are already registered as a *Generator* or an *Integrated Resource Provider* and if you are amending an existing facility (for example, classifying a new *generating unit*) or establishing a new facility. Information provided in various sections of the Form will reflect the choice identified in this section.

The choice of *Integrated Resource Provider* or *Market Generator* depends on how the Applicant wishes to identify itself in the market and what other activities it wishes to undertake. For further information see [Integrated Resource Providers fact sheet](#).

The Form can only be used to classify one or more *generating units* in a *generating system*. If the system has *consumption* at the *connection point* that is not *auxiliary load*, including a system with a *bi-directional unit* that is not capable of transitioning linearly from *consuming* to *producing* electricity and is to be classified as a *generating unit* and a *scheduled load*, then the system is an *integrated resource system*. You must use the [Application for Registration as an Integrated Resource Provider in the NEM form](#) to register as an *Integrated Resource Provider* with respects to an *integrated resource system*.

## 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. The Participant ID must be a maximum of 8 characters (letters only). If the proposed ID is already taken or no suggestion is made by the Applicant AEMO will allocate one for you.

You will be charged an additional fee per the [AEMO budget and fees](#) 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* or *Integrated Resource Provider*, 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* or *Integrated Resource Provider*. They each must identify you as their *intermediary* in their application.

### 3.2.4 B.4. Applicant declaration

This section of 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. Usually, the authorised representative is a Chief Executive Officer / Head of Organisation, Company Secretary or holds a management position.

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

AEMO will not proceed without the declaration as it allows us to speak to all necessary parties required to make a considered decision about your application.

Please read this declaration carefully and ensure you are aware of its meaning.

Note: If a digital signature is used then the signatory must be copied into the email submission of the application to AEMO.

## 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.

To ensure all information is up to date AEMO requests this information even if you are currently registered in the capacity to which your application relates.

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.

<b>Compulsory Contacts for all <i>Generating Units</i></b>	
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.
CEO / Head of Organisation	The Managing Director or Chief Executive Officer of the Applicant organisation.
Company Secretary	Secretary or assistant to the Head of Organisation.
Corporate Relations Manager	Responsible for issues relating to external communication.
Dispute Management	First point of contact for the notification of disputes under NER Clause 8.2.
Local Black System Procedures	Point of contact for Local Black System Procedures
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 <i>generating system</i> . For <i>semi-scheduled generators</i> , this includes signals required under the Energy Conversion Model.
IT notifications email address	<b>Note:</b> See 'Section J2 IT Notifications email address' of the Form as these details are added there.  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.

<b>Compulsory Contacts for Market Generating Units</b>	
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. <i>Metering Coordinator</i> 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.
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.

<b>Compulsory Contacts for Semi-scheduled and Non-scheduled Generating Units requiring an Energy Conversion Model</b>	
Intermittent Generating Unit Availability	Person responsible for updating the intermittent generation availability in the MMS portal for semi and non-scheduled generators

<b>Compulsory Contacts for Scheduled and Semi-scheduled Generating Units</b>	
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 <i>Generating Systems &gt;5MW</i>	
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.

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

### 3.3.1 Section C: Operational Contact Details Requirements

The following points below summarise the requirements associated with the 24/7 control room and trading operational contacts:

- Primary operational contacts should be established via direct connections through a Public Switched Telephone Network (PSTN).
- The use of mobiles as a primary contact may only be considered for Participants that are not covered by the requirements of the system restart communications protocol and where there is a dedicated 1300/1800 number which automatically connects to a prioritised list of recipients. If so, caller IDs must be correctly relayed such that correct call-back details are maintained. This requirement also ensures that caller authentication can be maintained. The call connectivity must also be robust.
- Backup operational contacts should also be established via direct connections through a PSTN but can include mobile phones if the phone is located in an area of reliable coverage to more than one carrier cell tower and is on a different network to the primary number.
- Call menu options are not appropriate for operational communication and points of operational contact should be established via a direct number to the relevant operator or controller.
- Operators or controllers of facilities in the NEM must be fluent in the English language.
- The physical voice communications channel must have low distortion and noise, such that the communication is intelligible.
- Operators or controllers must comply with the agreed electrical and switching terminology used within the NEM.
- The objective is to answer any incoming call within 30 seconds. All incoming calls must be answered within no more than 5 minutes. The recipient of a call should also initiate a response in the network within 15 minutes for any system security related requests, instructions or directions, in accordance with Clause 4.2.6.
- Call system annunciators are commonly used to advise callers that the call is being recorded, as per Clause 4.11.4(c). When used, the length and complexity of these annunciator messages should be minimised. For example, the following annunciator message is deemed appropriate: "This call is being recorded".

## 3.4 Section D. Required Information

Additional material must be attached in relation to the following unless the participant is already registered in which case confirmation that no change has occurred since this information was last provided, or updated information, is required:

### 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 or Integrated Resource Provider*.

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.

Please 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. Market Participant Criteria

Check the appropriate checkboxes.

### 3.4.7 D.7. 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](#). AEMO's prudential team will contact you following submission of your application to confirm your credit support requirements.

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

For further assistance with financial guarantees, see the [Credit Support Management Guide](#) on the AEMO website.

### 3.4.8 D.8. Recipient Created Tax Invoice Agreement

If your company (having the same ABN as this application) has signed a current version of the Recipient Created Tax Invoice Agreement (RCTI), you do not need to complete a new one. To see if your previously signed agreement is still current, check the **Last Updated** date in the latest Agreement's "notes for completion". If you have previously submitted an RCTI in the most current format you can identify that fact as a reason for not attaching a signed agreement.

An [RCTI](#) form is available from the AEMO website. To fulfill the requirements for an RCTI, please ensure that all essential fields are filled in and signed, including the accompanying cover letter. AEMO accepts both electronic and physical copies of RCTIs. In the case of physical copies, since the Agreement involves two parties, it is necessary to execute and send back two original copies to AEMO. This ensures that each party possesses a fully executed copy. AEMO will then proceed to sign each original and return one copy to you. Insert the date the authorised signatory signs the agreements underneath his/her signature. The date of the Agreement will be the date on which AEMO executes it.

### 3.4.9 D.9. 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. See [Austraclear website](#).

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 as defined or modified by the manufacturer. *Maximum capacity* is the maximum *generation* to which *scheduled* or *semi-scheduled generating units* or systems may be dispatched. For *Non-Scheduled Generating Unit*, *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 unit(s) for your *generating system* (use Appendix A in the Form if you need to provide further generating system information). Each dispatchable unit, represented by a *dispatchable unit identifier* or DUID in AEMO's system, 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 generating units* 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* and provide information about the nameplate rating and maximum capacity of each of the physical units as well as the aggregate nameplate rating and maximum capacity of the generating unit set. Please note that for solar systems, the number of physical units is defined by the number of inverters.

As an example, a wind farm with 50 turbines that are of three different sizes might be represented as:

Number of physical units:	[10, 10, 30]
<i>nameplate rating</i> (MW)	[5.0, 6.0, 6.6]
<i>maximum capacity</i> (MW)	[4.9, 5.9, 6.7]

with the first ten units having a nameplate rating of 5.0 MW and a maximum capacity of 4.9 MW.

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 Registration Exemptions and Production Unit Classification'](#) The scheduled, semi-scheduled or non-scheduled classification is requested under DUID as each DUID must only contain *generating units* of identical classification.

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. This information is requested under DUID as each DUID must only contain generating units of the same start-type.

Fast start scheduled generating units (and scheduled loads) can provide dispatch inflexibility profile data to AEMO in accordance with NER clause 3.8.19 to specify dispatch inflexibility.

## Ramp Rate

The *maximum ramp rate* (MW/minute) sets the upper limit on the *ramp rate* that will be accepted in a *bid*. *Bids* with *ramp rates* that exceed the *maximum ramp rate* will be rejected.

The targeted change in a dispatchable unit's output sent via *dispatch instruction* will never exceed the maximum *generation* of that unit divided by five.

Hence the *maximum ramp rate* should not exceed the higher of:

- 20% of the unit's maximum *generation* (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 requirement* for an individual *generating unit* is the lower of 3 MW/min, or 3% of that unit's maximum *generation*, expressed as MW/min, rounded down to the nearest whole number greater than zero.

### 3.5.1.4. 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.

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 and semi-scheduled generating units

Where the dispatchable units you nominate contain multiple *scheduled generating units* or multiple *semi-scheduled generating units* (e.g. multiple wind turbines or PV inverters) 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 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.

#### 3.5.2.1. 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.

### 3.5.3 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.

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

### 3.5.4 E.5. Status and duration

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

#### 3.5.4.1. Expected Closure Year

All *Scheduled Generators*, *Semi-Scheduled Generators* and *Integrated Resource Providers* acting as such 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.

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*, *Semi-Scheduled Generator* or *Integrated Resource Provider* 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).

These formal notices should be sent to [onboarding@aemo.com.au](mailto: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 2.1B.3 of the *Rules* for details of these requirements.

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

### 3.5.5 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 and Integrated Resource Providers* 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)<sup>1</sup>; and
- for Semi-Scheduled Generators, ensure that every semi-scheduled generating unit is at all times able to comply with its latest dispatch offer<sup>2</sup>.

Prior to registration, *Generators and Integrated Resource Providers*<sup>3</sup>, 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.<sup>4</sup>

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;

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<sup>1</sup> 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,

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

<sup>3</sup> Please note that *Non-Scheduled Generators* and *Integrated Resource Provider* may also be required to provide information relating to *dispatch*. AEMO will advise if you are required to provide associated supporting information.

<sup>4</sup> For both market dispatch and physical operations of plant

- a description of how 24/7 operational coverage<sup>5</sup> 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;<sup>6</sup>
  - 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); and<sup>7</sup>
- 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].

If the *generating unit* classification being sought is with respect to an existing *generating system* with the same *generating unit* classification the applicant will not be required to provide operational readiness documentation. However, they may still be asked to provide system readiness information and a capability declaration will be needed for any Applicant that has not previously provided one.



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

### 3.5.6 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.

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

<sup>6</sup> 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,

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

*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.

The SCADA signals that form part of a dispatch instruction are:

- For all units, the MW dispatch target;
- In addition, for *semi-scheduled generating units*, the semi-dispatch cap flag;
- In addition, for units within an aggregate dispatch group, the conformance mode flag.

As part of their request for receiving dispatch instructions via SCADA, the *Market Participant* should consider extending this request to all the units in an aggregate dispatch group (except for those units receiving AGC setpoints via SCADA).

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 instructions*, AEMO cannot ensure that the *dispatch instruction* 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 *dispatch instructions* 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.

### 3.5.7 E.8. Aggregated dispatch conformance

In accordance with [AEMO's SO OP 3705 Dispatch Procedure](#) and NER clause 4.9.2A, a *Generator or Integrated Resource Provider* with a *generating system*, or part of a *generating system*, that comprises two or more of the following scheduled resources - *scheduled generating unit*, *semi-scheduled generating unit*, *scheduled load* - is permitted to register two or more DUIDs within the *generating system* or the relevant part of the *generating system* as an Aggregate System, to conform in aggregate to *dispatch instructions* for those scheduled resources (aggregated dispatch conformance, or ADC), excluding any scheduled resource for which AEMO requires individual dispatch conformance.

An aggregate dispatch group (ADG) is a group of two or more scheduled resources (DUIDs) from the same Aggregate System which can achieve ADC. A *generating system* may comprise of one or more ADGs.

If you wish to register the *generating system* as an Aggregate System, complete section E.8, and where relevant appendix A3.

- Record your ADGID, as your Station ID appended by the \_ADG1. For each additional ADG, the associated ADGID must follow the same format and the appended number should increase sequentially. AEMO will request you update this field if necessary.
- Record the details of the DUIDs which constitute the ADG:
  - DUID Name
  - DUID
  - DUID classification.

The DUID details should match the information provided in section E.1.1 DUID of the Form

 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 *connection point* for each of its *market generating units* from the *spot market* and make payments to AEMO for such electricity 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. 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 as *auxiliary load* for the purpose of operating the *market generating units* in its *generating system*; 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:

the units are *bidirectional units* in an *integrated resource system* and the Applicant must apply to register as an *Integrated Resource Provider* using the [Application for Registration as an Integrated Resource Provider in the NEM](#) form; or

- the additional *connection point(s)* is for auxiliary supply and may require a *Market Customer* or an *Integrated Resource Provider* (see Appendix 1 for examples of this scenario).

 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* and *Integrated Resource Providers* do not apply to your *generating system* if you are eligible for the standing 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](mailto: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* and *Integrated Resource Providers* 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. Connection point, Metering and Network Connection

### 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.

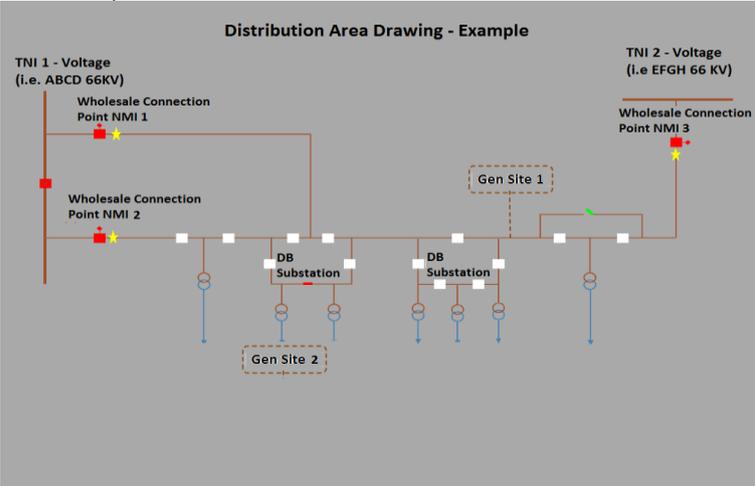
### 3.9.2 I.1. Connection point Details

The Connection Point Details is to be completed to satisfy the minimum requirements for the registration of *metering installations* at the *connection point* 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 Details are provided below:

Connection Point NMI(s):	<i>National Metering Identifier</i> (NMI) as advised by the <i>Network Service Provider</i> . 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.
Special site or Technology Related Conditions	Refer to <i>Rules</i> 7.8.12 - Special Site or Technology Related Conditions.

	<p>If there is an existing algorithm for the <i>connection point(s)</i>, provide a copy of the algorithm as an attachment. All new algorithms require AEMO approval. 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>
Physical Address of <i>connection point</i> :	Physical address at which the <i>generating system connection point</i> is situated including street, suburb/town and postcode.
Physical Location of <i>connection point</i> :	<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>. AEMO needs to understand where the <i>connection point</i> is in relation to the <i>metering installations</i>. (E.g. At 66KV Circuit Breaker 12345 on the low voltage side of Transformer 1 at Substation XYZ).</p>
Single line (schematic) diagram of the installation showing the <i>connection point</i> and revenue metering installation:	<p>Single Line diagram (SLD) of the <i>connection point</i> highlighting:</p> <ul style="list-style-type: none"> <li>• Revenue <i>metering installation</i> location details,</li> <li>• CT/VT location details,</li> <li>• relevant switching system/s that control import/export to the <i>national grid</i></li> <li>• asset boundaries and asset owners</li> <li>• other assets and asset owners that could potentially be impacted by the installation.</li> </ul> <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>
The distance between the Connection Point and the revenue <i>metering installation</i> :	<p>Rule 7.8.7 requires the <i>metering point</i> to be as close as practicable to the <i>connection point</i>. Provide the distance (in metres) between the <i>connection point</i> and the <i>metering installation</i>. A value must be entered.</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"> <li>• Revenue Metering</li> <li>• Check Metering (when installed and required)</li> <li>• Meter Class Accuracy</li> <li>• Meter Make and Type</li> <li>• CT Class</li> <li>• VT Class</li> <li>• CT Ratio</li> <li>• VT Ratio</li> <li>• CT (Burden Rating)</li> <li>• VT (Burden Rated)</li> </ul> <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>Distribution or transmission area diagram showing the generation system's relativity to TNI:</p>	<p>Drawing showing the proposed <i>connection point</i> relative to the associated wholesale <i>connection point</i> and/or the TNI.  Identify the drawing number and provide the drawing as an attachment to Section I. (Drawings need to be re-sized with clarity and accuracy).  These drawings should be obtainable from the DNSP or TNSP associated with the installation.  See example below:</p>  <p>The diagram, titled "Distribution Area Drawing - Example", illustrates a power distribution network. On the left, "TNI 1 - Voltage (i.e. ABCD 66KV)" is connected to "Wholesale Connection Point NMI 1" and "Wholesale Connection Point NMI 2". On the right, "TNI 2 - Voltage (i.e. EFGH 66 KV)" is connected to "Wholesale Connection Point NMI 3". The network includes two "DB Substation"s and two "Gen Site"s (Gen Site 1 and Gen Site 2). Lines connect the TNIs to the substations and sites, with various connection points marked by red and yellow symbols.</p>
<p><b>Distribution Loss Factor</b></p>	
<p>DLF Code:</p>	<p>DLF Code provided by the DNSP.</p>
<p>DLF Value:</p>	<p>DLF value as determined in accordance with approved methodology.</p>
<p>If <i>active rated power</i> &gt;10MW or <i>forecast annual production</i> &gt; 40 GWh, and connected to the Distribution Network, approval for site specific Distribution Loss Factor from the Australian Energy Regulator (AER).</p>	<p>If the <i>generating system</i> will be <i>connected to a distribution network</i>, and proposed <i>active rated power</i> is greater than 10MW or <i>forecast annual production</i> is &gt; 40 GWh, Rule 3.6.3 requires a site specific DLF to be created.  <i>Rules 3.6.3(b)(2)(i)(A) and 3.6.3(i)</i> require a site specific DLF to be derived from a methodology determined by the DNSP and approved by the AER.  Where the <i>generating system</i> is connected to an <i>embedded network</i> (EN), the <i>Embedded Network Operator</i> (ENO) must determine the loss factor between the <i>child connection point</i> and the <i>parent connection point</i>. The DNSP is responsible for determining the loss factor between the <i>parent connection point</i> and the TNI. The site specific DLF for the <i>child connection point</i> is the product of these two loss factors.  Provide, as an attachment, the document detailing the methodology and approval letter from the AER.</p>
<p><b>Generation capacity</b></p>	
<p>Feeder Capacity:</p>	<p>Capacity of the feeder in MVA or Amps</p>
<p>Transformer Capacity:</p>	<p>Capacity of the transformer in MVA</p>

Generator Capacity:	Capacity of the <i>generating system</i> . Provide MVA, MW and <i>power factor</i>
Annual Energy Generation:	Forecast energy generated in MWh per annum.

### 3.9.3 1.2. Network Connection Details

Is the Connection Point connected to a Network other than a Registered Transmission or Distribution Network?	Provide details of the type of <i>network</i> the <i>connection point</i> is connected to if it is not connecting to a registered <i>transmission</i> or <i>distribution network</i> , i.e., a private network or other registered network.
Is this <i>generating system</i> connected to a <i>Dedicated Connection Asset</i> (DCA)?	Provide confirmation as to whether the <i>generating system</i> will be connected to a DCA.
Is this <i>generating system</i> connected to an existing <i>Dedicated Connection Asset</i> ?	Provide confirmation as to whether the <i>generating system</i> will be connected to an existing DCA. An existing DCA relates to unregulated transmission connection assets where the <i>connection application</i> was submitted prior to the introduction of the DCA framework (1 July 2018). If the <i>generating system</i> is to connect to an existing DCA, advise whether the location of the <i>connection point</i> is at the point of connection to the regulated <i>transmission network</i> or a negotiated location within the existing DCA. If negotiated, detail the location of the negotiated <i>connection point</i> .
Is this <i>generating system</i> connected to a Designated Network Asset (DNA)?	Provide confirmation as to whether the <i>generating system</i> will be connected to a DNA. If the <i>generating system</i> is to connect to a DNA, provide a single line diagram clearly indicating the locations of both the <i>connection point</i> of the <i>generating system</i> and the boundary point (where DNA connects to regulated <i>transmission network</i> ).
Regulated <i>transmission node</i> location name and voltage level	This is the location where the installation or <i>distribution network</i> connects to the regulated <i>transmission network</i> . At what voltage is this connection. If there is an existing TNI code at this location it can be provided. A new code may be established and a unique MLF calculated.
If <i>generating system</i> is connected to a <i>distribution network</i> or non-transmission Network type, provide the NMI(s) located at the <i>transmission node</i>	If the <i>generating system</i> will be connected to a <i>distribution network</i> or another non-transmission Network type, provide the <u>bulk</u> classified NMI's located at the <i>transmission node</i> to validate the installations connectivity to the <i>transmission network</i> . This information is obtainable from the DNSP or TNSP associated with the installation.

### 3.9.4 1.3. Metering Details

Revenue metering installation details	
<b>Metering Coordinator</b>	
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>
<b>Metering installation</b>	
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.
<b>Meter Details</b>	
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 international standard as identified in Metrology Procedure Part A and must come from either a:</p> <p><i>NATA</i> laboratory or a body recognised by <i>NATA</i> under the International Laboratory Accreditation Corporation (ILAC); or</p>

	<p>An accredited <i>metering provider</i> that has used NATA/ILAC traceable reference/calibration equipment as per S72.3(b)(6) of the <i>Rules</i>.</p> <p>The test results must meet the minimum allowable uncertainties (<math>\pm</math>) as per Table S7.6.1.1 of the <i>Rules</i>.</p> <p>Provide the <i>meter</i> test results as an attachment to Section I.</p>
<b>Current transformer (CT) details</b>	
CT Serial No:	Serial number which identifies the <i>current transformer</i> installed. (add additional rows if required).
CT Ratios 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 <i>nameplate</i> burden rating of the <i>current transformer</i> in VA.
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> <p>NATA laboratory or a body recognised by NATA under the International Laboratory Accreditation Corporation (ILAC); or</p> <p>An accredited <i>metering provider</i> that has used NATA/ILAC traceable reference/calibration equipment as per S7.2.3(b)(5) of the <i>Rules</i>.</p> <p>The test results must be within the maximum allowable uncertainty (<math>\pm</math>) 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>
<b>Voltage Transformer (VT) Details</b>	
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 <i>nameplate</i> 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> <p><i>NATA</i> laboratory or a body recognised by <i>NATA</i> under the International Laboratory Accreditation Corporation (ILAC); or</p> <p>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> <p>The test results must be within the maximum allowable uncertainties (<math>\pm</math>) as per Table S7.6.1.1 of the <i>Rules</i>.</p> <p>Provide the VT test results as an attachment to Section I.</p>

#### 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).
ROLR:	Retailer of Last Resort.

### 3.9.5 1.4 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. IT Systems

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

### 3.10.1 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.

### 3.10.2 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.

### 3.10.3 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. If you require e-Hub access, select 'Yes' then fill in the appropriate fields, or select 'No' if you do not.

To access, an AEMO-signed TLS certificate is required, please see the [TLS Certificate Management](#) guide.

# A1. Appendix 1 – Generators with auxiliary supply at a second connection point.

## A1.1 Regulatory requirements

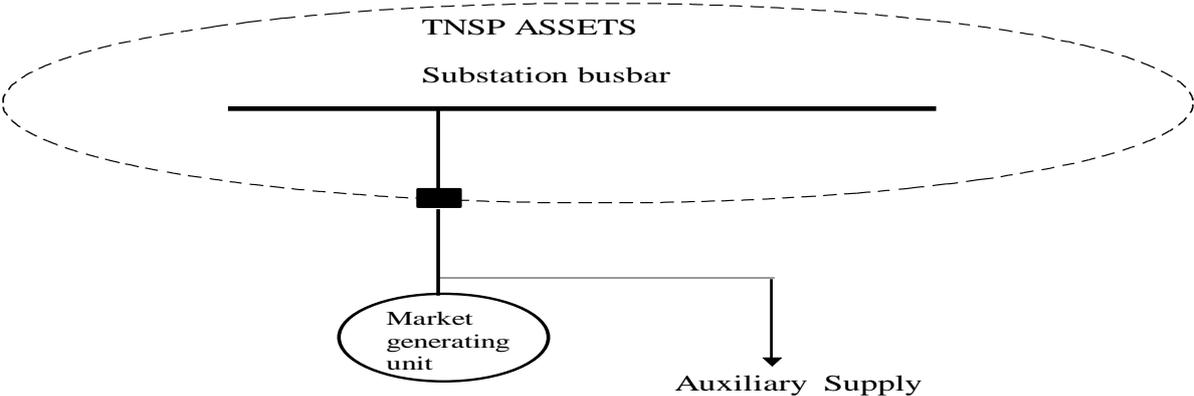
Based on clause 2.2.4, clause 2.3.4 and Chapter 10 of the Rules:

- A *Market Generator* may only purchase electricity through the *spot market* if that electricity is supplied at the *connection point* for the *market generating units* in a *generating system* and used as *auxiliary load* for the purpose of operating that system.
- A *Market Generator* may not purchase electricity from the *spot market* in any other circumstances.
- In such other circumstances, a *secondary connection point* that supplies the *generating system* must be classified as a *market connection point* by a *Market Customer* or an *Integrated Resource Provider*.

## A1.2 Examples of the application of the regulatory requirements

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

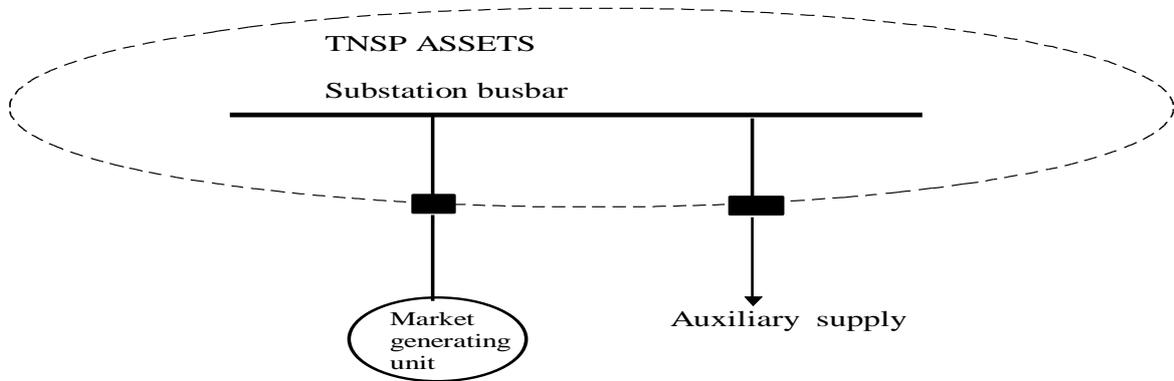
### A1.2.1 Single point of connection to the network



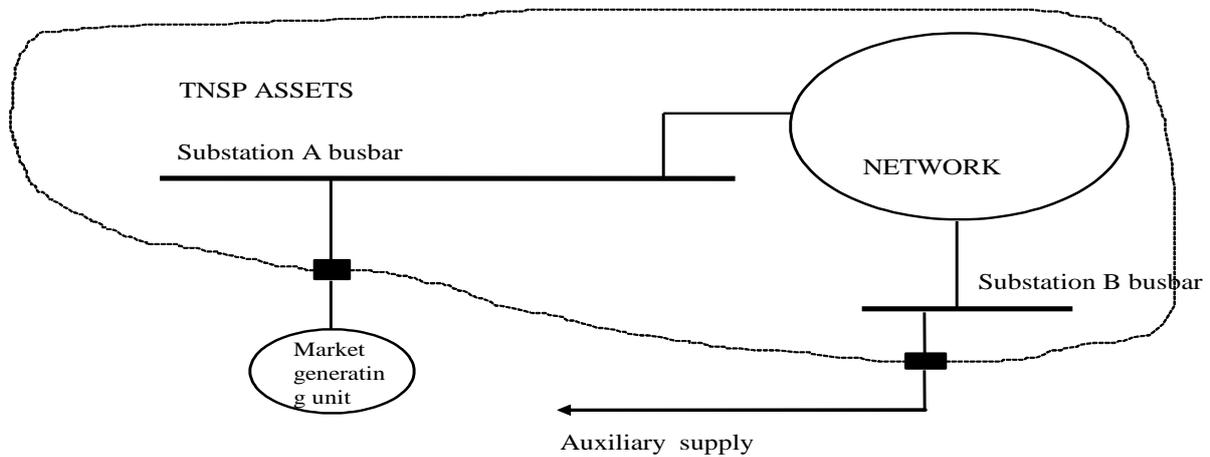
In this situation, the *Generator* is taking its auxiliary supply before the *transmission system*. Net consumption through this *connection point* would only be likely when the *generating system* is out of service, and only used to power the *generating system* at those times. In this case, all purchases would be covered by clause 2.2.4(d) of the *Rules*.

## A1.2.2 Multiple points of connection to the network

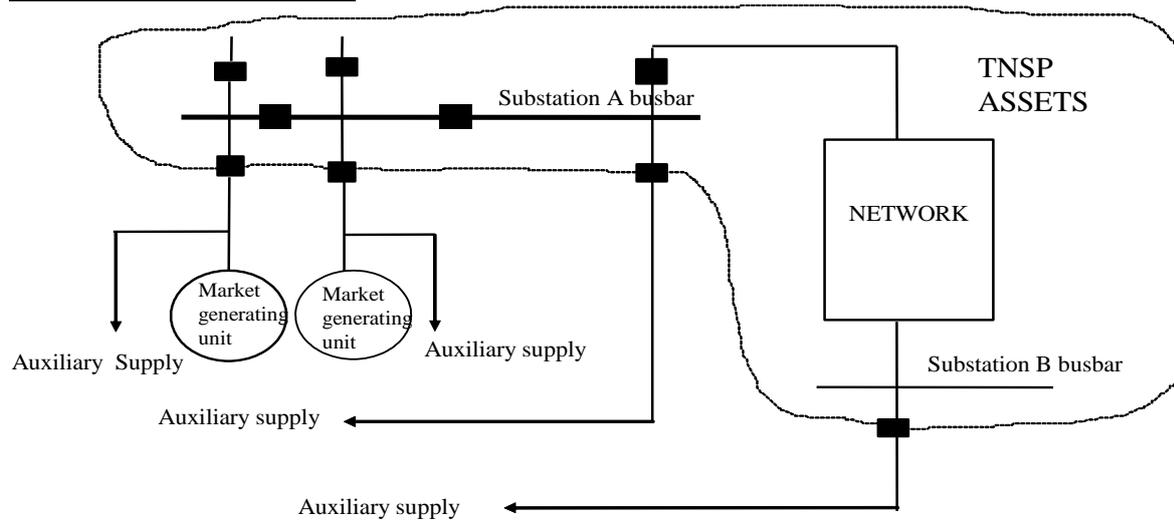
### Local Connection



### 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:

“In relation to a *declared shared network* and a *distribution network* (other than an *embedded network*), the agreed point of supply established between *Network Service Provider(s)* and another *Registered Participant, Non-Registered Customer* or *franchise customer* and includes a *parent connection point*.

In relation to other *transmission networks*, the point at which power flows to or from a person *connected* to the *transmission network* can be isolated from the *transmission network*. If there is more than one such point, the *Network Service Provider* and that person will agree which point is the *connection point* in their *connection agreement*.

In relation to an *embedded network*, the *child connection point*, unless otherwise specified”.

In all cases, AEMO will require a *Market Customer* or *Integrated Resource Provider* to classify the *connection points* that consume electricity as a *market connection point* 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 generating system; and
- the electricity consumed through all those points is used for the activity of operating the generating system.

The consumption of electricity in relation to operating a *generating system* would be expected to cover such facilities as on-site offices and power station auxiliaries.



## A2. Appendix 2 – Fuel Source and Technology Type

The fuel source and technology of all registered *generating units* must be submitted in Section E of the 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	<ul style="list-style-type: none"> <li>Bagasse</li> <li>Biodiesel</li> <li>Biofuel - other</li> <li>Biogas - other (captured for combustion (not methane))</li> <li>Biogas - Sludge (captured for combustion (methane only))</li> <li>Biomass recycled municipal and industrial materials</li> <li>Dry wood</li> <li>Ethanol</li> <li>Green and air-dried wood</li> <li>Landfill methane / Landfill gas</li> </ul>
Fossil	<ul style="list-style-type: none"> <li>Black coal</li> <li>Blast furnace gas</li> <li>Brown coal</li> <li>Brown coal briquettes</li> <li>Charcoal</li> <li>Coal seam methane</li> <li>Coal tailings</li> <li>Coke oven coke</li> <li>Coke oven gas</li> <li>Crude oil and condensates</li> <li>Diesel</li> <li>Ethane</li> <li>Fuel Oil</li> <li>Gaseous fossil fuels - other</li> <li>Gasoline (aviation fuel used for stationary energy) - avgas</li> <li>Gasoline (non-aviation fuel)</li> <li>Heating oil</li> <li>Kerosene (aviation fuel used for stationary energy) – avtur</li> <li>Kerosene (non-aviation fuel)</li> <li>Liquefied aromatic hydrocarbons</li> </ul>

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

Technology	
Primary Technology	Descriptor
Renewable	<ul style="list-style-type: none"> <li>Hydro - Gravity</li> <li>Run of River</li> <li>Pump Storage</li> <li>Tidal Wave</li> <li>Wind - Offshore</li> <li>Wind - Onshore</li> <li>Photovoltaic Flat panel</li> <li>Photovoltaic Concentrator</li> <li>Photovoltaic Tracking Flat panel</li> <li>Photovoltaic Tracking Concentrator</li> <li>Solar Thermal</li> <li>Boosted Solar Thermal</li> <li>Solar Thermal with Storage</li> <li>Boosted Solar Thermal with storage</li> <li>Enhanced Geothermal Systems (Hot Dry Rock) / Binary cycle</li> <li>Enhanced Geothermal Systems (Hot Dry Rock) / Flash</li> <li>Enhanced Geothermal Systems (Hot Saturated Aquifer) / Binary cycle</li> <li>Enhanced Geothermal Systems (Hot Saturated Aquifer) / Flash</li> </ul>
Combustion	<ul style="list-style-type: none"> <li>Compression Reciprocating Engine</li> <li>Spark Ignition Reciprocating Engine</li> <li>Combined Cycle Gas Turbine (CCGT)</li> <li>Open Cycle Gas turbines (OCGT)</li> <li>IDGCC (Integrated Drying and Gasification Combined Cycle)</li> <li>IGCC (Integrated Gasification Combined Cycle)</li> <li>Integrated CTL (Coal to Liquid)</li> <li>Steam Sub Critical</li> <li>Steam Super Critical</li> </ul>
Storage	<ul style="list-style-type: none"> <li>Battery and Inverter</li> <li>Battery</li> </ul>