

# APPLICATION GUIDE

## Guide to Registering as a Network Service Provider in the NEM

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

## Important Notice

This guide to Registering as a Network Service Provider in the NEM is made available to the Applicant on the following basis:

Purpose	This Guide has been produced by the Australian Energy Market Operator Limited ( <i>AEMO</i> ) to provide information about the process of applying to be registered as a <i>Network Service Provider</i> in the <i>National Electricity Market (NEM)</i> as at the date of this publication.
Disclaimer	<p>The information in this document is provided for explanatory purposes and may be subsequently updated or amended. This document does not constitute legal, business, engineering, or technical advice, and should not be relied on as a substitute for obtaining detailed advice about the National Electricity Law, the National Electricity Rules (<i>Rules</i>), or any other applicable laws, procedures, or policies. <i>AEMO</i> has made reasonable efforts to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.</p> <p>Accordingly, to the maximum extent permitted by law, <i>AEMO</i> and its officers, employees and consultants involved in the preparation of this document.</p> <ul style="list-style-type: none"><li>• Make no representation or warranty, express or implied, as to the currency, accuracy, reliability, or completeness of the information in this document, and</li><li>• Are not liable (whether by reason of negligence or otherwise) for any statements or representations in this document, or any omissions from it, or for any use or reliance on the information in it.</li></ul>
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## 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.

## Application Submission

To apply for Registration as a Network Service Provider in the NEM:

- Complete the Application Form for *AEMO*. Please ensure all required sections are complete and any prerequisites are met.
- Sign the form. If using a digital signature, please ensure the signatory is copied into the submission email.
- Ensure any required letter of authority is in place. For more information and a template letter of authority please see [AEMO's website](#).
- Email a copy of the completed, signed form including all attachments to the *AEMO* Market Registration Team via email to [onboarding@aemo.com.au](mailto:onboarding@aemo.com.au).

Note: *AEMO's* Market Registration team is unable to access external file share links. Please attach all documentation along with the form, and if files are over 10MB please use a zip file. Multiple emails are acceptable. If sending multiple emails, please number each email.

# Contents

<b>Contents .....</b>	<b>iii</b>
<b>1. Introduction .....</b>	<b>1</b>
1.1 Requirement to register as a Network Service Provider .....	1
1.2 Exemptions .....	1
1.3 Registration as an Intending Participant .....	2
1.4 Fees .....	2
1.5 Application Submission .....	3
<b>2. Explanation of the Application for Registration Form .....</b>	<b>4</b>
2.1 Section A. Participant Category .....	4
2.2 Section B. Application Details .....	4
2.3 Section C. Contact Details .....	5
2.4 Section D. Required Information .....	6
2.5 Section E. System Details .....	8
2.6 Section F. Local Black System Procedures .....	8
2.7 Section G. Register as a <i>Market Network Service Provider</i> .....	9
2.8 Section H. Register as a Network Service Provider .....	9
2.9 Section I. Metering Requirements .....	12
2.10 Section J. IT Systems .....	16



# 1. Introduction

This Guide is used to assist in the registration as a *Network Service Provider* in the *NEM* using the Application Form available from the *AEMO* website.

This Application Guide summarises the processes and information required to fill out the Application Form.

## 1.1 Requirement to register as a Network Service Provider

*Under clause 2.5.1 of the NER*, and subject to its sub-clauses, a person must not engage in the activity of owning, controlling, or operating a *transmission or distribution system* unless that person is registered by *AEMO* as a *Network Service Provider*.

Chapter 2 of the *NER* provides the steps for registration in the *NEM*. 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 The Applicant will submit the Application form along with all information and attachments required to the email address shown in Section 1.5 above.
- Step 2 On receipt of the application, *AEMO* will send an invoice for payment via Electronic Funds Transfer (EFT).
- Step 3 *AEMO* will review the application and respond to the Applicant within *5 business days* of receipt (*Clause 2.9.1(b) of the NER*).
- Step 3 *AEMO* may request additional information or clarification of the information contained in the application. If such a request is made, the Applicant must respond within *15 business days* of *AEMO*'s request (*Clause 2.9.2(b) of the NER*).
- Step 4 Once supplementary information is received from the Applicant, *AEMO* will review and notify the Applicant of determination within *15 business days*. If the application is rejected, the reasons for rejection will be outlined by *AEMO* (*Clause 2.9.2 of the Rules*).

Note: Processing activities and timeframes described above may vary depending on the completeness of the application. Although the above timeline appears short, this is a best-case scenario and in reality, an applicant may need more time for example, during step 3 to respond with additional information. In all cases *AEMO* will work with the applicant to progress the application avoiding the need to resubmit a new one.

## 1.2 Exemptions

### 1.2.1 Applications for Exemption

Under clause 2.5.1(d) of the *Rules*, the Australian Energy Regulator (AER) may exempt any person or class of persons from the requirement to register as a *Network Service Provider* where an exemption is not inconsistent with the *National Electricity Objective*. The AER publishes the 'Electricity NSP registration exemption guideline'<sup>1</sup> (Network Exemptions Guideline). The Network Exemptions Guideline contains the principles that the AER will apply to assess applications for exemption. The Exemption Guidelines and General Exemptions are available from the [AER website](#). Applicants seeking an exemption from registration as a *Network Service Provider* should contact the AER.

### 1.2.2 Intermediary Exemption

*Clause 2.9.3 of the Rules* provides that a person ordinarily required to register as a *Network Service Provider* may apply to *AEMO* or the AER for an *exemption* from the requirement to register if *AEMO* or the AER have approved

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<sup>1</sup> <https://www.aer.gov.au/industry/registers/resources/guidelines/network-service-provider-registration-exemption-guideline-march-2018>

an *intermediary*. If AEMO or the AER grants an exemption on the basis that it has approved an *intermediary*, the *intermediary* is the party that must apply for registration and satisfy AEMO that it meets all relevant requirements for registration in that category.

Please supply information to support the application for *exemption*:

- Notification of an intermediary and supporting information to seek AEMO approval of the *intermediary*,
- Application for exemption from requirement to register because an *intermediary* has been approved, and
- The registration application form to be completed by an approved *intermediary*.

AEMO or the AER must allow the exemption where:

- The *intermediary* consents to act as *intermediary*, in a form reasonably acceptable to AEMO or the AER, and
- AEMO is satisfied that, from a technical perspective, the *intermediary* can be treated for NER purposes as the Applicant with respect to the relevant *distribution system* or *transmission system*.

If AEMO or the AER grants an exemption on the basis that it has approved an *intermediary*, the *intermediary* is the party that must apply for registration as an NSP and satisfy AEMO that it meets all relevant requirements for registration in that category. Evidence that the *intermediary* can be treated as the Applicant should establish the *intermediary's* role in relation to the *transmission* or *distribution system*, and its appointment by all other parties who would otherwise need to register.

## 1.3 Registration as an Intending Participant

Clause 2.7 of the NER allows any Applicant who intends to act as a *Network Service Provider* in the future the option to register first as an *Intending Participant*. By registering in this category, successful Applicants can gain access to certain network and power systems data.

Please see the [AEMO website](#) if the Applicant would like to register as an *Intending Participant*.

## 1.4 Fees

### 1.4.1 Registration Fee

All Applicants for registration must pay a fee in accordance with AEMO's [Fees and Charges](#).

After the initial receipt and processing of an Application Form, AEMO will send a tax invoice to the Applicant for payment. The registration fee can be paid by cheque (payable to Australian Energy Market Operator Limited) or by direct deposit. The Applicant should provide a remittance advice from the bank if paid by direct deposit.

Please note that assessment of an application will not be completed without confirmed payment of the registration fee. Registration fees regardless of outcome carry overhead, and as such are non-refundable.

### 1.4.2 Participant Fees

Clause 2.11.1(b)(2) of the Rules provides that additional *Participant fees* may incur for the Applicant once registered. Clause 2.11.1(b)(3) provides that the components of *Participant fees* charged to each *Registered Participant* must be reflective of the extent to which the budgeted revenue requirements for AEMO involve that *Registered Participant*.

All prospective *Network Service Providers* who will be required to make or receive payments to or from AEMO in the *spot market* must submit the following additional items with their registration application:

### 1.4.3 Recipient Created Tax Invoice Agreement

See Section 2.4.8 for details.

#### 1.4.4 Austraclear

See Section 2.4.9 for details.

#### 1.4.5 Other Documents

Applicants will need to submit other documents as evidence of their eligibility for registration. These are highlighted in the application form and may vary depending on the registration category and Applicant circumstances.

### 1.5 Application Submission

Please return the completed Application together with all required attachments by email to: [onboarding@aemo.com.au](mailto:onboarding@aemo.com.au)

## 2. 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. System Details
- Section F. Local Black System Procedures
- Section G. Register as a Market Network Service Provider
- Section H. Register as a Network Service Provider
- Section I. Metering
- Section J. IT Systems

### 2.1 Section A. Participant Category

In Section A, please classify each of the Applicant network systems as either a *transmission system* or *distribution system*. Please provide details of the location and assets that make up the system where applicable.

- *Transmission System* - A *transmission network*, together with the connection assets associated with the transmission network, which is connected to another transmission or distribution system, or
- *Distribution System* - A *distribution network*, together with the connection assets associated with the distribution network, which is connected to another transmission or distribution system.

Please note under *clause 2.5.1(d) of the NER*, the Australian Energy Regulator (AER) may exempt any person or class of persons from the requirement to register as a *Network Service Provider* where, in the AER's opinion, an exemption is not inconsistent with the national electricity objective.

The national electricity objective is defined in the *NER* and more information about the Participant Categories in the NEM is available on the *AEMO* website.

### 2.2 Section B. Application Details

#### 2.2.1 Section B.1. Applicant details

Please provide Applicant details in the fields provided.

**Note:** The Applicant may choose their own Participant ID which can contain a maximum of 8 characters. *AEMO* will advise the Applicant of the suitability of this suggestion prior to the establishment of the registration record in *AEMO's* systems. *AEMO's* systems do not currently support changes once Participant IDs have been allocated.

#### 2.2.2 Section B.2. Applicant association

Please confirm all relationships between the Applicant and the transmission or distribution system by checking the appropriate boxes to indicate if the Applicant is an Owner, Controller and/or Operator, or *intermediary* in relation to the network system.

#### 2.2.3 Section B.3. Intermediary

Eligibility criteria applies equally to Applicants intending to act in an intermediary capacity. If the Applicant applies as an *intermediary*, the Applicant must also tick one or more of the preceding boxes to confirm eligibility.



The Applicant must also identify any other parties who have nominated them as an intermediary and provide their consent.

Please note that any parties for which the Applicant is acting as *intermediary* must submit separate applications nominating the Applicant as their intermediary and apply for exemption from registration as a *Network Service Provider*. This [application form](#) is available on the AEMO website.

#### 2.2.4 Section B.4. Evidence of AER exemption

Please include details of any AER exemption applied for (or granted) for each nominating owner, controller or operator of the relevant *transmission system* or *distribution system*.

Appropriate evidence arrangements will need to be provided to AEMO as per 2.9.3 of the Rules confirming the intermediary and related parties assuming their roles for the *transmission* or *distribution network*. For any approved exemptions confirmed by the AER, please provide copies of these documents as evidence to support the application.

#### 2.2.5 Section B.5. Declaration

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

The Applicants completion of the declaration authorises AEMO to contact other parties, if necessary, to verify the information that the Applicant has provided within the application.

### 2.3 Section C. Contact Details

#### 2.3.1 Section C.1. Primary Registration contact

In this section, please provide details of the primary registration contact point in the organisation in relation to this application. Please note only Australian phone numbers are acceptable and all personnel must be based in Australia.

#### 2.3.2 Section C.2. Head office and branch contact details

In this section, please provide contact details for the Applicants head office and any branch offices along with the details of all relevant personnel.

#### 2.3.3 Section C.3. Personnel contacts

In this section, please provide operational contact information.

Additional contacts are required if the Applicant are making changes to a currently registered contact or are not applying to classify a *market network service*. For additional information please contact the [AEMO registration team](#).

Please provide any additional pages to include all contact details. Please clearly mark these as 'Attachment to Section C' and number each page consecutively.

Please note the following points below summarise the requirements associated with the 24/7 control room 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,
- Caller IDs must be correctly relayed such that correct call-back details are maintained,

- Backup operational contacts should also be established via direct connections through a PSTN but can include mobile phones if the phone is 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 can be used to advise that the call is being recorded, when used, the length and complexity of these annunciator messages should be minimised, and
- After registration, *Registered Participants* must maintain up-to-date contact details of all nominated operational personnel with *AEMO* on a regular basis.

To update operational contacts after registration, please contact *AEMO*'s Support Hub at [Support.Hub@aemo.com.au](mailto:Support.Hub@aemo.com.au) or call 1300 236 600.

## 2.4 Section D. Required Information

Please supply additional material in relation to the following if relevant:

### 2.4.1 Section D.1. Partnership status

Please indicate if the Applicant is applying for registration on behalf of a partnership. If so, the Applicant must provide evidence of the legitimacy of the partnership, such as a signed and dated partnership agreement.

### 2.4.2 Section D.2. Trust status

Please note where the Applicant is acting in a trustee capacity, the Applicant must provide a copy of the Trust Deed establishing the Applicant Trust. The Application must also include a [Trustee Deed Poll](#). No changes are to be made to the form of Deed other than the completion of details where highlighted.

*AEMO* must be satisfied that the Applicant 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 acts and omissions.) Trustees, however, are 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.

### 2.4.3 Section D.3. Organisation capability

The Applicant must show they are in a position to control the design, construction, maintenance, operation, business, and administrative processes applicable to the service activities and that responsible officers within the organisation are able to establish, or have already established, resources, processes and procedures to ensure compliance with the *Rules* applicable to participation as a *Network Service Provider*. To confirm this, the Applicant needs to enclose the documents stated in this section and check the appropriate boxes to confirm each document is attached or provide reasons if they are not.

Please enclose:

- A copy of the Applicant current organisation chart or other evidence of access to necessary expertise to carry out electricity industry operations, including operations management, settlements, and risk management,
- A copy of the Applicant corporate structure chart explaining arrangements with parent or other organisations that impact on, or improve, the Applicant ability to comply with the *Rules*,
- Copies of brief résumés of key managers and information about their responsibilities,
- Documentation to demonstrate that *NEM*-related policies and procedures are in place or under development (do not submit the documents to *AEMO*, simply advise that they exist or are being developed),
- Evidence that the Applicant has IT systems to support intended *NEM* activities, and
- If the Applicant has not participated in the *NEM* before, please provide evidence of expertise and understanding of the ability of the organization to meet obligations under the *Rules*.

### 2.4.4 Section D.4. Financial viability

**Note:** This section is for *Market Network Service Provider* Applicants only.

To meet the Applicants financial obligations to *AEMO* and satisfy the prudential requirements in *clause 3.3* of the *Rules* please include:

- Copies of the organizations most recent audited financial statements, and
- Explanation of any financial links with parent or other organisations.

Please provide copies of recently audited financial statements and provide the details of any links to parent or other organisations that may improve financial viability as an Applicant. Check the appropriate boxes to confirm the documents are attached.

Any supplied credit support instruments will be required to conform to the [Guarantee Pro Forma](#) for financial guarantees available on the *AEMO* website. Credit support providers must meet the criteria of *clause 3.3.3* of the *Rules*. Bank guarantees from parent or affiliated companies are unlikely to satisfy the criteria.

### 2.4.5 Section D.5. Regulatory compliance

Please provide evidence that the Applicant can comply with all applicable requirements currently imposed by the jurisdictional body or agency responsible for licensing or regulating electricity supply activity of a *Network Service Provider* in the region(s) in which the Applicants network assets are located.

Please confirm to *AEMO* that the Applicant has either met the Applicant jurisdictional requirements, are exempt from jurisdictional requirements, or that no requirements apply. The Applicant should provide:

- a copy of the Applicants current electricity licence or authorisation in each relevant jurisdiction(s), or a copy of the instrument of exemption or derogation, and
- details of any outstanding non-compliance with regulatory obligations.

### 2.4.6 Section D.6. Participant Criteria

Please provide a declaration that the Applicant complies with each of the criteria in *clause 3.3.1 for Market Participants* by completing the boxes acknowledging the obligations as a *Network Service Provider* under the *Rules*.

### 2.4.7 Section D.7. Credit support

Please note that any *Market Network Service Provider* Applicant that does not meet the criteria stated in *NER clause 3.3.3* must provide a financial guarantee using the [AEMO Guarantee Pro Forma](#) form.

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

### 2.4.8 Section D.8. Recipient Created Tax Invoice

Please note if the Applicant (having the same ABN as this application) has signed a current version of the Recipient Created Tax Invoice Agreement (RCTI), the Applicant does not need to complete a new one.

If the Applicant do not have a current RCTI, please submit the application with a completed RCTI available on the [AEMO website](#).

### 2.4.9 Section D.9. Austraclear

An active Austraclear account is required for market settlements. An Austraclear account is generally only required for *Market Network Service Providers* or *interconnectors*.

*AEMO* uses an external electronic funds transfer system provided by Austraclear. The Applicant will have to apply directly to Austraclear for membership. Please note that membership approvals can take up to five weeks to process and charges are payable direct to Austraclear.

If the Applicant does not have an active Austraclear membership number at the time of submitting the registration 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 a formal letter on behalf of the account holder declaring that the Applicant has permission to use this Austraclear account.

## 2.5 Section E. System Details

Please provide all relevant details of the *transmission* or *distribution network* such as system name, description of that system, transmission line length, and voltage.

Please supply attachments of all Single Line Diagrams and consecutively number for *AEMO* to assess.

Please note where seeking registration as a *Network Service Provider* before the construction of physical network assets has commenced or are in place, proceed to Section H of the application form.

## 2.6 Section F. Local Black System Procedures

Under *NER clause 4.8.12*, all *Network Service Providers* must develop *local black system procedures* in accordance with guidelines published by *AEMO*. Each *Network Service Provider* must submit its *local black system procedures* for assessment and approval.

This information allows *AEMO* to confirm there are no inconsistencies between the Applicants *local black system procedure* and *AEMO's* own system restart procedure. Accordingly, please provide *AEMO* with any relevant technical information that may affect the system restart capability of the Applicants *network elements* to enable *AEMO* to manage a system restart condition. Please refer to the Guidelines for Preparing *Local Black System Procedures* available on the [AEMO website](#) for further information.

If the procedures are not developed at the time of submitting the application for registration, please provide a timeframe of when the information on the key elements of the procedures will be available. As procedures are

required to be submitted to AEMO for approval prior to commencing commissioning activities for the Applicants network, also include details of an appropriate person to contact about the *local black system procedure* completion.

## 2.7 Section G. Register as a Market Network Service Provider

### 2.7.1 Section G.1. Register as a Market Network Service Provider

Please indicate whether the Applicant is seeking to classify any *network services* as *market network service* to earn revenue from the *spot market* rather than receive a regulated income.

If so, complete the remainder of Section G.

**If not, please continue to Section H.**

### 2.7.2 Section G.2. Market network service

Please indicate that the Applicants service satisfies and will continue to satisfy each of the conditions in *clause 2.5.2(a)* of the *NER*. All conditions must be satisfied, or a *Network Service Provider* must have a *participant derogation* from the AEMC for the application to be approved. The evidence that conditions have been satisfied should include relevant documentation from government authorities and the *Network Service Providers* whose *network services* are connected to the *two-terminal link* on the *market network service*.

Please also note that the Applicant might be required to provide *credit support* to cover the value of electricity consumed during construction and commissioning of the Applicants *network* (see Section 3.4.7).

Further information about this area is available from the AEMO website under [Prudentials and Payments](#).

### 2.7.3 Section G.3. Market network service information

If the Applicant is applying to be a *Market Network Service Provider*, please provide details of the *market network service*. The *NER* requires that a *market network service* must also be classified as a *scheduled network service* and participate in *central dispatch*. In addition, please also provide the information required in 2.5.3 of the *NER*, *Scheduled Network Service Data*, in this Section.

### 2.7.4 Section G.4. Conditions for Connection of Market network services

Please complete the table confirming compliance and supplying appropriate evidence that the Applicants *network elements* comply with the technical requirements of *Schedule 5.3a* of the *NER*. To do this, please indicate YES in the Compliance column and include any evidence with respect to the relevant *Rules*.

If compliance was left blank, for example, if the clause is not relevant to the Applicants circumstances, please explain why in the Comment column. A reference to a specific supporting attachment is also to be noted in the Comments column.

Please note that shaded areas in the table do not require completion and are included for ease of reference.

## 2.8 Section H. Register as a Network Service Provider

### 2.8.1 Conditions for Registration as a Network Service Provider

Please complete the table confirming compliance and supplying appropriate evidence that the Applicants technical and operational capability can satisfy all conditions for registration as a *Network Service Provider*. To do this, please indicate YES in the Compliance column and include any evidence with respect to the relevant *Rules*.

If compliance was left blank, for example, if the clause is not relevant to the Applicants circumstances, please explain why in the Comment column. A reference to a specific supporting attachment is also to be noted in the Comments column.

Please note that if the application form is being submitted before any physical network assets are in place, AEMO will require evidence that:

- Outlines the scope of the preliminary or detailed design information required at the time of registration, to assess the expected technical performance of the network being connected and the capability of the Applicant to fulfil the responsibilities of a *Network Service Provider* under the *Rules*, and
- Defines a process for reviewing the expected technical performance of the network once the assets have been built and before they are electrically connected to the existing network.

The following sections go through each capability requirement in further detail.

## 2.8.2 Power System Security and Operation

The obligation for a *Network Service Provider* is to exercise its rights and obligations in relation to its networks to assist AEMO in the proper discharge of AEMO power system security responsibilities under Chapter 4. A *Network Service Provider* will fulfill this obligation through any one or more of the following:

- Carry out power system security functions as AEMO's agent or delegate, if appointed by AEMO under *NER 4.3.3* and registered as a System Operator,
- Maintain situational awareness of the status and performance of its network, including connections from the network to other parties, and advise AEMO of any circumstances that pose a threat to power system security (*NER 4.8.1*),
- Plan and operate the *transmission system* or *distribution system* in accordance with the power system stability guidelines (*NER 4.3.4(g)*),
- Develop *local black system procedures* and communications protocols to assist AEMO in managing and co-ordinating system restoration activities during any major supply disruption (*NER 4.8.12(d)*),
- Provide primary (and where nominated by AEMO, also backup) communications for control and monitoring of the network in accordance with the Standard for Power System Data Communications (*NER 4.11.2*), and
- Provide information to AEMO to assist investigation of power system operating incidents (*NER 4.8.15*).

Where possible please provide evidence of existing capability to perform these functions. If the Applicant is unable to demonstrate an existing capability in these areas, the Applicant will need to present plans as to how they intend to develop and/or acquire these capabilities in sufficient time to be ready to commence commissioning and operation of assets. In addition, please set out the steps already taken (in the form of conceptual plans, approved budgets, equipment selection, etc.) and the key milestones towards developing the required capabilities.

Some specific items which the Applicant should address as part of the application for registration:

- detailed arrangements of a 24/7 control room function physically located within Australia, including appropriate backup control room or disaster recovery arrangements, and
- details of any plans the Applicant may have for third parties to provide capability and/or perform functions on the Applicants behalf. This should include both equipment and human resources, as well as facilities such as communications networks that the Applicant will rely on. In addition, please indicate whether any such third parties are already registered with AEMO.

## 2.8.3 Network Connection

*Network Service Providers* are responsible for receiving and processing *connection enquiries or applications to connect* (*NER 5.2.3(d)*). *Network Service Providers* are required to guide *connection applicants* through the *Rules* connection process and enter in a *connection agreement* with any *Registered Participant* and any other person to which it has provided a *connection* in accordance with the *Rules*. This guideline does not provide an exhaustive view of the connection process; therefore, a *Network Service Provider* must be aware of its obligations under the *Rules*.

Please provide evidence to demonstrate an ability to comply with the *Rules* regarding the following:

- Procedures or process documentation for the management of connection enquiries, *applications to connect*, registrations and commissioning. This should cover:
  - managing the required information from *connection applicants* (*generators, storage, loads, Market Network Service Providers, etc.*),
  - assessing compliance against the relevant technical requirements, and
  - methodology for undertaking *connection applicants* commissioning activities.
- Framework and competency to conduct power system analysis used to demonstrate plant compliance with relevant *Access Standards* at a connection point as well as aggregate power system performance,
- Demonstrated modelling capability including access to Small-signal, Root Mean Square (RMS) and Electromagnetic Transient (EMT) tools which are nominated by the Power System Model Guidelines (PSMG),
- Demonstrated technical capability to perform power systems analysis to reflect wider network interactions and power system stability and security,
- Procedures or process documentation covering:
  - *Transmission Network Service Provider* endorsement requirements to enable registration of a generator,
  - Endorsing Generator Performance Standards (GPS) for registration purposes,
  - Supplying validated models for assessments by AEMO for operational needs (including catering for assessment timelines by AEMO), and
  - Technical requirements beyond connections assessments (SCADA, protection, metering, limit advice provisions etc).
- Procedures or process documentation for AEMO Commissioning interface requirements, including provisions of
  - Test plans,
  - Test schedule requests with AEMO Operations Planning,
  - Coordination of site testing, and
  - Managing multiple generators commissioning concurrently across the network.
- Policies or procedures defining:
  - Approach to managing confidentiality of data provisions from generators, AEMO, NSPs and Original Equipment Manufacturers (OEM's),
  - Approach to managing generator alterations or modifications, and
  - Approach to managing generator non-compliances.
- Guidelines to assist *connection applicants*, including (but not limited to):
  - Modelling guidelines,
  - Connection process guidelines (Consideration of any committed generators beyond Renewable Economic Zone (REZ) network & vice-versa),
  - Registration guidelines,
  - Commissioning guidelines, and
  - Generator alteration guidelines.

## 2.8.4 Network Planning and Performance

The commissioning of substantial new network assets can have a significant impact on the performance and stability of the existing power system. Please provide documentation outlining the Applicants own role as a new party connecting to an existing network, providing a high-level plan for how the new network will be commissioned, including:

- Steps to demonstrate end-to-end performance of emergency frequency control systems,
- Commissioning and validation of the performance of remote monitoring systems, and
- Demonstrating the proper operation of voltage control equipment, including validation of dynamic performance of active plant (such as SVCs, STATCOMs and synchronous condensers).
- Please provide design documents, equipment specifications, procurement plans or similar relating to how the Applicant network is to be designed and operated to meet the network performance criteria in *Schedule 5.1*. In addition, please describe how the Applicant will ensure performance requirements continue to be met beyond the initial development of the network. Items of relevance under *Schedule 5.1 of the Rules* include:
  - S5.1.8 (Stability) - design and installation of emergency control schemes to mitigate the impact of non-credible contingency events which could potentially endanger the stability of the power system,
  - S5.1.8 (Stability) – evidence of consideration of non-credible contingency events impacting the Network Service Provider’s network (and controls if applicable),
  - S5.1.9 (Protection systems and fault clearance times) – evidence of co-ordination and cooperation design of protection systems across connection point boundaries and that installed protection will meet *NER* requirements, and
  - S5.1.10 (Load, generation, and network control facilities) – provision and/or co-ordination and the testing of facilities such as under-frequency load shedding schemes and emergency frequency control schemes.

## 2.9 Section I. Metering Requirements

Please confirm that the proposed *metering installation* will be able to meet the requirements of Chapter 7 of the *NER*.

Under *NER* clause 5.3.7(g), a *Network Service Provider* and the *Registered Participant* must jointly notify *AEMO* that they have entered a *connection agreement* and forward to *AEMO* relevant technical details of the proposed *plant* and *connection*, including the proposed *metering installation*. *Clause 7.2.1(a) of the NER* 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.



## 2.9.1 Section I.1. Connection point checklist

Please complete the connection point checklist to demonstrate the Applicant satisfy the minimum requirements for the registration of Metering Connection Points as required under Chapters 5 and 7 of the *Rules*.

- Ensure Metering – Technical contact details have been completed and attached, and
- Ensure all fields in the following table are completed for AEMO to be able to conduct a full technical assessment (except when indicated below). Clarification of the information required on the connection point checklist is shown in the table below.

Connection point checklist field	Details
Connection Point Registration Type	Confirm whether the registration is for a new <i>connection point</i> or for changes to an existing <i>connection point</i>
Expected Commissioning Date	Expected date for commissioning of the <i>connection point</i>
Connection Point NMI(s)	<i>National Metering Identifier (NMI)</i> that will be or is assigned to the <i>connection point</i>
Logical NMI – Algorithm	Refer to <i>NER</i> clause 7.3.2(h) - Special Site or Technology Related Conditions. If the registration relates to a site where an algorithm is required or already exists, then provide a copy of the algorithm as an attachment to the checklist
Transmission Node ID (TNI)	The <i>Transmission Node Identity Code</i> , which identifies the Transmission Loss Factor assigned by the <i>Network Service Provider</i>
Single Line (Schematic) drawing	Single Line (Schematic) drawing of the <i>Connection Point</i> showing <i>metering installation</i> location details. Please identify the drawing number and provide the drawing as an attachment. (Drawings need to re-size with clarity and accuracy)
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)</li> <li>• Meter Class Accuracy</li> <li>• Meter Make and Type</li> <li>• CT Class</li> <li>• CT Ratio</li> <li>• VT Class</li> <li>• VT Ratio</li> <li>• CT (Burden Rating)</li> <li>• VT (Burden Rated)</li> </ul> <p>Please identify the drawing number and provide the drawing as an attachment. (Drawings need to re-size with clarity and accuracy).</p>
Transmission area drawing	Drawing showing the <i>network connection point</i> relativity. Please identify the drawing number and provide the drawing as an attachment. (Drawings need to re-size with clarity and accuracy).
Person Responsible for Connection Point	The contact details for the person taking on the role of the Metering Coordinator for the purposes of clause 7.6.2 of the <i>NER</i> .

Connection point checklist field	Details
Physical Address of Connection Point	Physical address of where the <i>connection point</i> is situated including street, suburb/town and postcode.
Physical Location of Connection Point	A specific statement that clearly details the physical locality of where the <i>connection point</i> is situated as per the participant connection agreement. (e.g., At 66KV Circuit Breaker 12345 on the low voltage side of Transformer 1 at Substation XYZ). <i>AEMO</i> needs to understand where the <i>connection point</i> is in relation to the metering.
Feeder Capacity	Capacity of the feeder in MVA or Amps
Transformer Capacity	Capacity of the transformer in MVA
Generator Capacity	Capacity of the Generator. Please provide MVA, MW and power factor
Energy Pattern	Data required to calculate <i>Marginal Loss Factor</i> (MLF): <i>AEMO</i> requires a year of data on a half hour resolution for the expected active and reactive power generated or consumed at the new <i>connection point</i> . In the cases of load <i>connection points</i> , <i>AEMO</i> also requires clarification if the load supplied by the new <i>connection point</i> is an existing load transferred from an existing <i>connection point</i> , or if it is a new load.
Participant Relationships In MSATS	Participant ID and Participant Names are to be provided for each of the roles to be assigned in <i>MSATS</i> . <b>Note:</b> This is not mandatory for <i>Retailer of Last Resort</i> (RoLR).

## 2.9.2 Section I.2. Meter Installation Checklist

Please see the following notes on the information required in the Meter Installation checklist:

Meter Installation checklist field	Details
Meter Serial No.	Serial Number which identifies the meter installed. (Please add additional rows if required).
Meter Make & Model	Name of company who make 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 of components as outlined in Schedule 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 Installation checklist field	Details
Meter Test Results	<p>Copies of the most recent meter test results conducted in accordance with Schedule S7.6.2 of the <i>Rules</i>. 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:</p> <ul style="list-style-type: none"> <li>• A NATA laboratory or a body recognised by NATA under the International Laboratory Accreditation Corporation (ILAC); or</li> <li>• An accredited metering provider that has used NATA/ILAC traceable reference/calibration equipment as per S7.2.3(b)(6) of the <i>Rules</i>. The test results must meet the minimum allowable uncertainties (<math>\pm</math>) as per Table S7.6.1.1 in Schedule S7.6.1 of the <i>Rules</i>.</li> </ul> <p>Provide the Meter Test Results as an attachment to Section I.</p>
CT Serial No.	<p>Serial Number which identifies the <i>current transformer</i> installed. (Please add additional rows if required).</p>
CT Ratio's Available	<p>Please provide the range of <i>current transformer</i> tap ratios available.</p>
CT Connected Ratio	<p>Please provide the connected ratio of the <i>current transformer</i>.</p>
CT Burden (Rated)	<p>Please provide the name plate burden rating of the current transformer in VA.</p>
CT Class	<p>Provide the class of the CTs installed. Current Transformer class accuracy must meet the minimum acceptable class of components as outlined in Schedule S7.4.3 of the <i>Rules</i>.</p>
CT Test Results:	<p>Copies of the most recent <i>current transformer</i> test results conducted in accordance with Schedule 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:</p> <ul style="list-style-type: none"> <li>• A NATA laboratory or a body recognised by NATA under the International Laboratory Accreditation Corporation (ILAC); or</li> <li>• An accredited metering provider that has used NATA/ILAC traceable reference/calibration equipment as per S7.2.3(b)(5) of the <i>Rules</i>. The test results must be within the maximum allowable uncertainty (<math>\pm</math>) as per Table S7.6.1.1 in Schedule S7.6.1 of the <i>Rules</i>.</li> </ul> <p>Provide the Current Transformer Test Results as an attachment to Section I.</p>
VT Arrangement	<p>Please advise if the <i>voltage transformer</i> is a 3 x Single Phase voltage transformer or a Three Phase <i>voltage transformer</i>.</p>
VT Serial No.:	<p>Serial Number which identifies the <i>voltage transformer</i> installed. (Please add additional rows if required).</p>
VT Ratio:	<p>Please provide the ratio that the <i>voltage transformer</i> is connected at.</p>
VT Burden (Rated)	<p>Please provide the name plate burden rating of the <i>voltage transformer</i>.</p>
VT Class Accuracy:	<p><i>Voltage Transformer</i> class accuracy must meet the minimum acceptable class of components as outlined in S7.2.3 of the <i>Rules</i>.</p>
VT Test Results:	<p>Copies of the most recent VT test results conducted in accordance with Schedule S7.6.2 of the <i>Rules</i>. These results must show compliance with the relevant Australian Standard or</p>

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**Meter Installation checklist field****Details**

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International Standard as identified in Metrology Procedure Part A and must come from either:

- A NATA laboratory or a body recognised by NATA under the International Laboratory Accreditation Corporation (ILAC); or
- An accredited metering provider that has used NATA/ILAC traceable reference/calibration equipment as per S7.2.3(b)(5) of the Rules. The test results must be within the maximum allowable uncertainties ( $\pm$ ) as per Table S7.6.1.1 in Schedule 7.6.1 of the *Rules*.

Provide the VT Test Results as an attachment to Section I.

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### 2.9.3 Section I.3. Network Service Provider without network assets

*Network Service Providers* registering without physical network assets at the time of applying will need to provide the following items for Metering assessment:

- A timeline in the form of a Gantt Chart for proposed and/or actual sites the Applicant intends to be responsible for,
- Single Line (Schematic) Diagram(s) and/or network diagram(s) illustrating any *connection* points, if available at the time of registration, and
- Evidence that key personnel are competent in Market Settlement and Transfer Systems (MSATS).

Metering Installation details and updated single line diagrams will need to be provided to *AEMO* prior to first energisation of the network.

For further information please reference - [AEMO | Metering procedures, guidelines and processes](#)

## 2.10 Section J. IT Systems

### 2.10.1 MarketNet connection

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

In this section, please select 'Yes' if the Applicant requires a new MarketNet connection and provide the information requested or select 'No' if the Applicant has access to an existing one.

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

### 2.10.2 IT Notifications email address

It is important to receive *AEMO* notifications regarding IT changes or outages that may impact the Applicants business.

Please have the Applicants 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 the Applicants organisation's email address in the space provided.

### 2.10.3 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, and
- An API Gateway.

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

To access, an *AEMO* Transport Layer Security (TLS) certificate is required, please see the [TLS Certificate Management](#) guide.