GUIDE TO GENERATOR EXEMPTIONS AND CLASSIFICATION OF GENERATING UNITS

National Electricity Market

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IMPORTANT NOTICE

Purpose

AEMO has prepared this document to provide information about the classification and exemption of generators in the National Electricity Market, as at the date of publication. It forms part of the registration information resources and guidelines that AEMO maintains consistent with clause 2.1.3(a) of the National Electricity Rules.

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1. INTRODUCTION

1.1. Purpose and scope

This Guide to Generator Exemptions and Classification of Generating Units (Guide) is *published* for the assistance of potential applicants for registration as a *Generator* in the National Electricity Market (NEM) and forms part of the *registration information resources and guidelines* AEMO maintains consistent with clause 2.1.3(a) of the National Electricity Rules (NER).

It also details how AEMO will assess applications for classification of *generating units*, where an exemption does not apply.

The NER and the *National Electricity Law* (NEL) prevail over this Guide to the extent of any inconsistency.

1.2. Definitions and interpretation

1.2.1. Glossary

The words, phrases and abbreviations set out below have the meanings set out opposite them when used in this Guide.

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

Term	Definition
AC	Alternating Current
LNSP	*Local Network Service Provider*
MT PASA	*Medium term PASA*
MVA	Megavolt ampere
MW	Megawatt
NEL	*National Electricity Law*
NEM	*National Electricity Market*
NER	*National Electricity Rules*
NSP	*Network Service Provider*
RERT	*Reliability and Emergency Reserve Trader*
ST PASA	*Short term PASA*

1.2.2. Interpretation

This Guide is subject to the principles of interpretation set out in Schedule 2 of the NEL.

1.3. Related documents

Title	Location
Application for Exemption from Registration as a Generator	Application for Exemption from Registration as a Generator
Application for Registration as a Generator in the NEM	Application for Registration as a Generator in the NEM
Energy Conversion Model Guidelines (Solar)	Guidance Document Solar Energy Conversion Model
Energy Conversion Model Guidelines (Wind)	Guidance Document Wind Energy Conversion Model
NEM Generator Registration Guide	NEM Generator Registration Guide

1.4. Inquiries

All inquiries about this Guide should be directed to AEMO's Information and Support Hub at supporthub@aemo.com.au, or phone 1300 236 600.

2. OVERVIEW OF EXEMPTIONS FROM REGISTRATION AS A GENERATOR

2.1. Authority to exempt

Section 11(1)(a) of the NEL requires any person engaging in the activity of owning, controlling or operating a *generating system* in the NEM to register as a *Generator*. This requirement applies irrespective of whether that activity is carried out jointly with others, on the person's own behalf or on behalf of someone else.

An exemption from this requirement can be obtained under section 11(1)(b) if a person:

(a) is the subject of a derogation that exempts that person from the requirement to be registered as a Generator;

(b) is exempted by AEMO from the requirement to be registered as a Generator for that generating system, as provided for in clause 2.2.1(c) of the NER; or

(c) appoints an intermediary that is registered as the Generator for that generating system, in accordance with clause 2.9.3 of the NER.

2.2. What exemption means

A person exempted on the basis of the characteristics of the *generating system* is not permitted to participate in the *market* or have its *generating units dispatched* by AEMO, but may be required to comply with certain technical requirements in relation to their *generating units* and any conditions placed on the exemption by AEMO.

Exempted persons do not pay *Participant fees*.

Any person who is eligible for exemption but wishes to participate directly in the *wholesale market* must apply to AEMO for registration as a *Market Generator*.

2.3. Exemption categories

Exemptions from the requirement to register as a *Generator* may be granted based either on the characteristics of the *generating system* (nature, size, type and operation), or on the registration of an *intermediary* as the *Generator*, as follows:

(a) Standing exemptions are available to persons who own, operate or control a *generating system* with a *nameplate rating* of less than 5MW when fully connected to a transmission or distribution system.

(b) Applications for exemption may be made by persons who own, operate or control *generating systems* (other than those that include battery systems) with a *nameplate rating* of less than 30MW and which are not eligible for the standing exemption.

(c) Applications for exemption may be made by persons who own, operate or control *generating systems* with a *nameplate rating* over 30MW:

   i. if the purpose for which exemption is sought is the provision of *unscheduled reserve* in accordance with an *unscheduled reserve contract*; or

   ii. for existing *generating systems* in exceptional circumstances at AEMO's absolute discretion.

(d) Temporary notifiable exemptions may be available to persons who own, operate or control *generating systems* to which no other exemptions apply, during initial testing and commissioning where the aggregate *nameplate rating* of the *connected generating units* is less than 5MW at any time.

(e) Applications for exemption must be made by persons who own, operate or control a *generating system*, but have proposed an eligible person (an *intermediary*) to be registered as a *Generator* for that *generating system* on their behalf.

2.4. Exemption application process

If a person is not eligible for a standing exemption and wishes to apply to AEMO for an exemption from the requirement to register as a Generator under this Guide, the following process applies.

1. The applicant must apply to AEMO for approval for an exemption from the requirement to register as a *Generator* in the form prescribed by AEMO.
2. AEMO will advise the applicant of any further information or clarification which is required in support of its application if, in AEMO's reasonable opinion, the application:
   - is incomplete; or
   - contains information upon which AEMO requires clarification.
3. If the further information or clarification required pursuant to paragraph 2 is not provided to AEMO's satisfaction within 15 business days of AEMO advising the applicant, AEMO may, on notice to the applicant at any time after expiry of that period, elect to treat the application as withdrawn and the applicant will be taken to have withdrawn the application.
4. After AEMO is satisfied that all required information and clarifications have been provided, AEMO will determine whether the applicant is to be exempt from the requirement to register as a Generator.
5. If AEMO is not satisfied that an applicant meets the eligibility requirements set out in this guideline it will provide a reason for that determination.

3. EXEMPTIONS BASED ON GENERATING SYSTEM CHARACTERISTICS

3.1. Determining nameplate rating

For the purpose of this section 3 of the guide, where the rating of an item of *plant* is specified by the manufacturer in MVA and not MW, the *nameplate rating* is determined by converting the manufacturer's rating in MVA to the rating in MW by applying a conversion factor of 1.

The *nameplate rating* of a *generating unit* is not considered to be reduced due to applicable power factor, high ambient temperature, or by the application of any *control system* settings or other means of limiting the *active power* output of the *generating unit*.

In circumstances where a *generating unit* includes separate *plant* for the production of electricity, each of a different *plant* type and capable of separate operation but that share equipment (such as an inverter) essential to the functioning of each, the *nameplate rating* of the *generating unit* is determined by the *nameplate rating* of the shared equipment.

The *nameplate rating* of the *generating system* is the aggregate of the combined *nameplate ratings* of the *generating units* comprising the *generating system*.

3.2. No exemption for battery systems 5MW or more

AEMO treats battery systems differently to other types of *generating systems*. Battery systems are unique in that:

(a) they have extremely fast ramp rates;

(b) they can switch from maximum charge to maximum discharge within one cycle (Hz) (for example, a battery system with a nameplate rating of 5MW can switch from 5MW discharge to 5MW charge, resulting in an instantaneous change of generation of 10MW); and

(c) their operation cannot be readily forecast.

AEMO therefore requires all persons who own, operate or control battery systems with a *nameplate rating* of 5MW or more to be registered as *Generators*. This applies to persons with standalone battery systems as well as those that are proposed to be installed as part of a larger *generating system* with non-battery units.

3.3. Exemption at the connection point

(a) Subject to paragraph (b), an application for exemption from registration as a *Generator* must be made with reference to the *generating system*'s *connecton point*.

(b) Where the *generating system* is *connected* to a *distribution system* or *transmission system* through an *embedded network* at a *parent connection point* and the *generating system* has a *child connection point*, an exemption application is made with reference to the *generating system's child connection point.*

(c) In circumstances where a *generating system* is connected to a *distribution system* or *transmission system* through an *embedded network* at a *parent connection point* but does not have a *child connection point,* the *generating system*'s connection point is considered to be the *embedded network parent connection point*.

3.4. Standing exemptions

3.4.1. Automatic exemptions

Most *generating systems* with a total *nameplate rating* of less than 5MW when fully connected to a *transmission or distribution system* are unlikely to cause a material degradation in the quality of *supply* to other *Network Users*.

Subject to section 3.4.2, any person who engages in the activity of owning, controlling, or operating a *generating system* with a total *nameplate rating* of less than 5MW will be automatically exempt from the requirement to register as a *Generator* in relation to that activity, where both of conditions (a) and (b) apply:

(a) either:

(i) the *generating system* is not capable of exporting to a *transmission system* or *distribution system* in excess of 5MW; or

(ii) the *generating system* has no capability to *synchronise* to a *distribution system* or *transmission system*; and

(b) where there is any potential for the *generating system* to export *energy*, either:

(i) the *sent out generation* is purchased in its entirety by a *Market Participant* who is *financially responsible* for all electricity generated or consumed at the same *connection point*; or

(ii) each of the *generating units* comprising the *generating system* is classified as a *market generating unit* by a *Market Small Generation Aggregator*.

3.4.2. Automatic Exemption in Embedded Networks

Where the *generating systems* that are *connected* to a *distribution system* or *transmission system* through an *embedded network* at a *parent connection point*, have a combined total *nameplate rating* of less than 5MW, each person who owns, operates or controls those *generating systems* will be automatically exempt from the requirement to register as a *Generator*. The exemption of each *generating system* is subject to the conditions set out in section 3.4.1 (a) and (b) above.

3.4.3. No application for exemption required

AEMO does not require any person who is eligible for exemption in accordance with the criteria detailed in section 3.4.1 or 3.4.2 to submit an Application for Exemption from Registration as a Generator to AEMO. Any person in doubt as to whether their *generating system* can meet the criteria detailed in section 3.4.1 or 3.4.2 should submit such an Application.

3.5. Applications for Exemption - generating systems less than 30MW that are not eligible for the standing exemption

3.5.1. Generally

There is no standing exemption for persons who own, operate, or control any *generating system* with a total *nameplate rating* of 5MW or more.

3.5.2. Generating systems without significant battery systems

An application for exemption can be made by a person who owns, controls, or operates a *generating system* with a total *nameplate rating* of less than 30MW where:

A. the person is not eligible for a standing exemption, and

B. the *generating system* does not comprise or include a battery system with a *nameplate rating* of 5MW or more.

A person wishing to be exempt from the requirement to register as a *Generator* on this basis, must apply to AEMO by submitting an Application for Exemption from Registration as a *Generator*.

AEMO may grant an exemption in the circumstances described below and subject to conditions described in section 3.5.4 below.

In general terms, AEMO will consider granting an application if both of conditions (a) and (b) apply:

(a) either:

(i) the *generating system* is expected to export less than 20GWh in any 12-month period and is not part of an *embedded network*; or

(ii) Where the *generating system is connected* to a *distribution system* or *transmission system* through an *embedded network, the* expected combined export at the *parent connection point* of all *generating systems in the embedded network* is less than 20GWh in any 12-month period; or

(iii) extenuating circumstances apply, and the applicant cannot reasonably register as a *Generator* for the *generating system*,

and the operation of the *generating system* will not adversely impact *power system security*; and

(b) where there is any potential for the *generating system* to export *energy*, either:

(i) the *sent out generation* is purchased in its entirety by a *Market Participant* who is *financially responsible* for all electricity generated or consumed at the same *connection point*; or

(ii) each of the *generating units* comprising the *generating system* is classified as a market generating unit by a Market Small Generation Aggregator.

3.5.3. Compliance with technical requirements

Persons eligible to apply for exemption from the requirement to register as a *Generator* under section 3.5.2 are not automatically exempt from the requirement to comply with the technical requirements in Schedule 5.2 of the NER. Hence, when applying for an exemption, applicants will also need to provide to AEMO:

(a) a copy of the *performance standards* agreed with their connecting NSP; or

(b) a letter from their connecting NSP, dated within 12 months of the application's submission date, stating that their *generating system* is intended for use in a manner the NSP considers is unlikely to cause a material degradation in the quality of *supply* to other *Network Users.* If the NSP letter does not include details of the criteria the NSP used to assess the generating system and results from the assessment conducted, AEMO may seek this information from the NSP directly. This information may be set out in a separate planning report.

3.5.4. Exemption Conditions

In accordance with clause 2.2.1(c) of the NER and the *registration information resource and guidelines*, AEMO may exempt a person that applies for an exemption under section 3.5.2, subject to such conditions as AEMO deems appropriate. AEMO will impose conditions where AEMO

considers it reasonably necessary to do so, including where it is required for the purposes of operational forecasting, situational awareness or power system security.
Depending on the relevant circumstances, such conditions may include:

- Time limits on the exemption
- Provision of SCADA
- Generator Performance Standards
- That no sent out generation occurs
- That any sent out generation is purchased in its entirety by a *Local Retailer* or *Customer* at the same connection point or each of the *generating units* comprising the *generating system* is classified as a *market generating unit* by a *Market Small Generation Aggregator*
- Where the exemption is given for the purposes of online testing:
    - notification of testing activities to AEMO
    - limits on testing activities, including duration and units connected
    - compliance with AEMO *Power System Security* guidelines
- No increases in *nameplate rating* and no additional *generating units* at the *facility*
- No material change in operation that increases sent out generation
- The annual provision of information regarding sent out generation

3.6. Applications for exemption - generating systems 30MW or above

3.6.1. Generally

There is no standing exemption for persons who own, operate, or control any *generating system* with a *nameplate rating* of 30MW or more.

3.6.2. Generating systems other than battery systems providing unscheduled reserve

Any person who owns, controls, or operates a *generating system*, other than a battery system, with a total *nameplate rating* of 30MW or above may apply to AEMO for an exemption by submitting an Application for Exemption from Registration as a Generator if the sole purpose of *connecting* the *generating system* to a *network* is for the provision of *unscheduled reserve* in accordance with a *reserve contract*.

AEMO will not grant an exemption for new *generating systems* with a total *nameplate rating* of 30MW or more other than for *unscheduled reserve* purposes.

AEMO may consider an application for an existing *generating system* of this size in exceptional circumstances, at AEMO's absolute discretion. Such circumstances are expected to arise very rarely and commercial considerations will not be taken into account.

AEMO will not grant an exemption where the *generating systems* that are *connected* to a *distribution system* or *transmission system* through an *embedded network* at a *parent connection point*, have a combined total *nameplate rating* of over 30MW. Subject to the NER, AEMO may grant an exemption in this category in its absolute discretion or subject to conditions it considers appropriate, as outlined in section 3.6.4 below.

3.6.3. Compliance with technical requirements

Persons eligible for exemption from the requirement to register as a *Generator* under section 3.6.2 are not automatically exempt from the requirement to comply with the technical requirements in Schedule 5.2 of the NER. Hence, when applying for an exemption, applicants will also need to provide to AEMO:

(a) a copy of the *performance standards* agreed with their connecting NSP; or

(b) a letter from their connecting NSP, dated within 12 months of the application's submission date, stating that their *generating system* is intended for use in a manner the NSP considers is unlikely to cause a material degradation in the quality of *supply* to other *Network Users.* If the NSP letter does not include details of the criteria used to assess the *generating system* and results from the assessment conducted, AEMO may seek this information from the NSP directly. This information may be set out in a separate planning report.

3.6.4. Exemption Conditions

In accordance with clause 2.2.1(c) of the NER and the *registration information resource and guidelines*, AEMO may exempt a person that applies for an exemption under section 3.6.2, subject to such conditions as AEMO deems appropriate. AEMO will impose conditions where AEMO considers it reasonably necessary to do so, including where it is required for the purposes of operational forecasting, situational awareness or power system security.

Depending on the relevant circumstances, such conditions may include:

- Time limits on the exemption
- Provision of SCADA
- Generator Performance Standards
- That no sent out generation occurs
- That any sent out generation is purchased in its entirety by a Local Retailer or Customer at the same connection point
- Where the exemption is given for the purposes of online testing:
    - notification of testing activities to AEMO
    - limits on testing activities, including duration and units connected
    - compliance with AEMO *Power system Security* guidelines
- No increases in *nameplate rating* and no additional *generating units* at the *facility*
- No material change in operation that increases sent out generation
- The annual provision of information regarding sent out generation

3.7. Notifiable exemptions for pre-commissioning work

This is a temporary exemption category. It may be available to persons who own, operate, or control a *generating system* for which they are required, and have applied, to register as a *Generator*, but wish to perform pre-commissioning work before their registration is complete. A notifiable exemption does not permit hold-point testing of a *Generator*.

3.7.1. Generally – less than 5MW connected

A notifiable exemption for these purposes is available if, and only for as long as, the combined *nameplate rating* of all *generating units* simultaneously *connected* to a *transmission or distribution system* for testing purposes is less than 5MW, subject to:

(a) provision of the information and documents set out in the notifiable exemption application form as updated from time to time;

(b) confirmation by AEMO of the exemption;

(c) compliance with the conditions of the exemption set out in section 3.7.3; and

(d) commencement and expiry of the exemption in accordance with section 3.7.4.

3.7.2. Exceptional circumstances – 5MW or over connected

In circumstances where a single generating unit meets or exceeds the 5MW nameplate rating, AEMO may, in its absolute discretion, consider granting a notifiable exemption where it is considered there is no risk to power system security. This kind of notifiable exemption will be considered on a case-by-case basis and is subject to:

(a) provision of the information and documents set out in the notifiable exemption application form as updated from time to time;

(b) confirmation by AEMO of the exemption;

(c) compliance with the conditions of the exemption set out in section 3.7.3; and

(d) commencement and expiry of the exemption in accordance with section 3.7.4.

3.7.3. Notifiable exemption conditions

Notifiable exemptions confirmed by AEMO remain valid only for the relevant period specified in accordance with section 3.7.4, and only for so long as the following conditions continue to be met:

(a) An agreed set of *performance standards* for the *generating system* must be in place;

(b) AEMO must be notified at least one *business day* prior to the commencement of pre-commissioning work;

(c) a supervisory control and data acquisition (SCADA) system that continuously monitors the output of the *connected* part of the *generating system* must be installed and operational at all times when any part of the *generating system* is being tested;

(d) the maximum combined *nameplate rating* of all *generating units* simultaneously *connected* at the *connection point* must be less than 5MW;

(e) an operating protocol between the Applicant (or its EPC contractor) and the connecting NSP must be in place and observed at all times and all instructions from AEMO or the NSP must be followed. The operating protocol must include:

  (i) operating procedures to ensure the highest combined nameplate rating of the generating units simultaneously connected at any time is limited to less than 5MW;

  (ii) identification of personnel responsible for work approvals and compliance with the operating protocol;

  (iii) a plan for communication of the generation restrictions and consequences of any breach to all on site and control room personnel;

(iv) procedures for the management of locks and keys used to secure generating units, including storage and removal of keys from tagged out lockboxes, with no unauthorised access to generating units;

(v) a communication plan to ensure notification of NSP and AEMO prior to any switching or changes in generating unit status.

(f) AEMO and the connecting NSP must be notified prior to the *connection* or *disconnection* of any *generating unit*; and

(g) the notified arrangements for the purchase of *sent out generation* must remain in effect.

Non-compliance with any of these conditions, or operation of any part of the *connected generating system* outside the period in section 3.7.4, immediately invalidates the exemption. As a result, you may have contravened section 11 of the National Electricity Law.

3.7.4. Duration of notifiable exemption

A notifiable exemption commences on the date specified by AEMO in its confirmation of the notifiable exemption, and expires on the first of the following to occur:

(a) the end date of the notifiable exemption as specified in AEMO's confirmation, to be no more than 90 days after the commencement date; or

(b) the effective date of registration of the exempted person as a *Generator* in respect of the *generating system*.

4. INTERMEDIARY EXEMPTIONS

4.1. Applications

As noted in section 2.1, clause 2.9.3 of the NER enables a person that would ordinarily be required to register as a *Generator* to apply for an exemption if an *intermediary* is to be registered in their stead.

Where a person proposes to appoint an *intermediary*:

(a) that person must submit an Application for Exemption from Registration as a Generator; and

(b) the proposed *intermediary* must submit an Application for Registration as a Generator to AEMO.

Both applications must be received by AEMO before AEMO can consider the matter.

4.2. Criteria

AEMO must allow the exemption and approve the *intermediary* where the following requirements are met:

(a) the *intermediary* consents in writing to act as intermediary, in a form reasonably acceptable to AEMO; and

(b) the applicant establishes to AEMO's reasonable satisfaction that, from a technical perspective, the *intermediary* can be treated, for the purposes of the NER, as the applicant with respect to the relevant *generating system* by providing relevant evidence, such as a *connection agreement*, joint venture agreement or the like.

(See clause 2.9.3(b) and (c) of the NER).

If more than one person owns, operates or controls a *generating system*, they must appoint one of them (or another person who is entitled to register as a *Generator*) as the *intermediary* and the rest must apply for exemption.

A person appointed as an *intermediary* must meet the requirements for registration as a *Generator* in its own right. The *intermediary* must either own, operate or control the relevant *generating system*, or must otherwise source electricity from it.

Where the ownership of *generating units* in a *generating system* is split, that is, different persons own, control, or operate different *generating units*, each person must apply separately for registration in respect of the activities they carry out, or seek an exemption, as appropriate.

4.3. Revocations

An exempted person (owner, operator, or controller) may revoke the appointment of an *intermediary* by giving notice of revocation to AEMO. The revocation must take effect at 4.30am, two *business days* after AEMO receives the notice, as required by clause 2.9.3 of the NER.

Hence, before revoking the appointment of an *intermediary*, the exempted person(s) should ensure that either:

(a) a replacement *intermediary* is nominated and the *intermediary's* Application for Registration as a Generator has been submitted to AEMO; or

(b) the exempted person(s) has submitted an Application for Registration as a Generator, to take effect at the same time as the revocation takes effect.

5. CLASSIFICATION OF GENERATING UNITS

5.1. Generally

An applicant for registration as a *Generator* must classify each of its *generating units* in the categories contemplated by clause 2.2 of the NER. Classifications require AEMO's prior approval.

Classification of *generating units* is by reference to whether a *generating unit* will participate in *central dispatch*, and whether the *Generator* will be selling its electricity through the *spot market*.

Generating units are always classified by reference to these two dimensions.

For examples of typical classifications, see Appendix A.

5.1.1. Participating in central dispatch

A *generating unit* will be classified as a *scheduled generating unit*, *non-scheduled generating unit* or *semi-scheduled generating unit* depending on the extent to which it will be participating in *central dispatch*. There are three types of classification on this dimension:

(a) Scheduled – The *generating unit* participates in *central dispatch*.

(b) Non-Scheduled – The *generating unit* does not participate in *central dispatch*.

(c) Semi-Scheduled – The *generating unit* will participate in *central dispatch* in specified circumstances.

There are rules about the classification of *generating units* in Chapter 2 of the NER but, in each case, classification is subject to AEMO's approval.

5.1.2. Market participation

A *Generator* will be classified as a *Market Generator* or *Non-Market Generator* depending on whether the electricity it produces will be sold through the *spot market*. There are two types of classification on this dimension:

(a) Market – All electricity produced by the *Generator* is sold through the *spot market* at the applicable *spot prices*.

(b) Non-Market – All electricity produced by the *Generator* is consumed by a *market load* at the *generating unit's connection point*.

5.2. Classification as a scheduled generating unit

Clause 2.2.2 of the NER requires a *generating unit* with a *nameplate rating* of 30MW or more, or if part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of 30MW or more to be classified as a *scheduled generating unit* unless AEMO approves a different classification.

AEMO is required by clause 2.2.2(b) of the NER to approve the classification of a *generating unit* with a *nameplate rating* of 30MW or more, or is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of 30MW or more, as a *scheduled generating unit* if AEMO is satisfied that the applicant has:

(1) submitted data in accordance with schedule 3.1 of the NER; and

(2) adequate communications and/or telemetry to support the issuing of *dispatch instructions* and the audit of responses.

AEMO has discretion under clause 2.2.2(b1) of the NER to approve classification as a *scheduled generating unit* for a *generating unit* with a *nameplate rating* of less than 30MW, or that is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of less than 30MW, on such terms and conditions as AEMO considers appropriate. If *generation* of more than 5MW but less than 30MW is to be connected in a *network* area with existing or forecast congestion, consider applying to classify the *generating units* as *scheduled*. If classified as *non-scheduled generating units*, it is likely that system conditions will require the imposition of conditions under clauses 2.2.3(c) and 3.8.2(e) of the NER.

5.3. Classification as a non-scheduled generating unit

Clause 2.2.3(a) of the NER requires a *generating unit* with a *nameplate rating* of less than 30MW (not being part of a group of generating units connected at a common connection point with a combined nameplate rating of 30MW or greater) to be classified as a *non-scheduled generating unit* unless AEMO approves a different classification.

AEMO is required by clause 2.2.3(b) of the NER to approve the classification of a *generating unit*, with a *nameplate rating* of greater than 30MW or a *generating unit* that is part of a group of *generating units* connected through a common *connection point* with a combined *nameplate rating* of 30MW or greater, as a *non-scheduled generating unit* if AEMO is satisfied that the physical and technical attributes of the *generating unit* are such that it is not practicable for it to participate in *central dispatch*.

5.3.1. Physical and technical attributes

AEMO considers each application based on the 'physical and technical attributes' of the *generating unit* on its merits. For example, this requirement would typically be met where:

(a) the *generating unit's* fuel or energy source is dependent on an industrial process not related to the production of electricity; or

(b) the *generating unit* is unable to vary its output in response to a *dispatch instruction* for some technical reason (other than fuel supply constraints).

5.3.2. Battery systems

The operating characteristics of battery systems referred to in section 3 are relevant in determining their appropriate classification as *generating units*.

If a battery system has a *nameplate rating* of at least 5MW but less than 30MW, consider applying to AEMO to classify the *generating units* as *scheduled*. If it is proposed that they be classified as *non-scheduled generating units*, their operating characteristics will require the imposition of conditions under clauses 2.2.3(c) and 3.8.2(e) of the NER.

5.3.3. Conditional classification

If AEMO considers it is necessary for any reason, (including *power system security*) for a *Generator* to comply with some of the obligations of a *Scheduled Generator* or *Semi-Scheduled Generator* in respect of a *non-scheduled generating unit*, AEMO is empowered by clauses 2.2.3(c) and 3.8.2(e) of the NER to approve the classification on such terms and conditions as AEMO considers reasonably necessary.

Terms and conditions applicable to a *Scheduled Generator* that AEMO may impose in relevant circumstances include, without limitation:

- Provision of ST PASA information (such as expected *plant availability* and *PASA availability*) similar to that contemplated in clause 3.7.3(e) of the NER.
- Provision of MT PASA information (such as expected *plant availability*) similar to that contemplated in clause 3.7.2(d) of the NER.
- Submission of *dispatch* information (such as expected MW capability) similar to that contemplated in clause 3.8.2 of the NER.
- Compliance with *dispatch instructions* similar to that contemplated in clauses 4.9.2(b), 4.9.2(c) and 4.9.4(b) of the NER on *reactive power dispatch*.
- Provision of SCADA
- Provision of predispatch and PASA information
- Provision of information for the pruposes of an AEMO intervention event similar to that contemplated by clause 4.8.5A of the NER

Terms and conditions applicable to a *Semi-Scheduled Generator* that AEMO may impose in relevant circumstances include, without limitation:

- Provision of an *energy conversion model* as contemplated in clause 2.2.7(c)(2) of the NER.

5.4. Classification as a semi-scheduled generating unit

Clause 2.2.7 of the NER requires a *generating unit* with a *nameplate rating* of 30MW or more, or one of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of 30MW or more, to be classified as a *semi-scheduled generating unit* where its output is *intermittent*, unless AEMO approves a different classification.

AEMO will approve classification as a *semi-scheduled generating unit* if AEMO is satisfied that the applicant has:

(a) submitted data in accordance with Schedule 3.1 of the NER;

(b) submitted an *energy conversion model* containing the information described in the Energy Conversion Model Guidelines; and

(c) adequate communications and telemetry to support the issuing of *dispatch instructions* and the audit of responses.

AEMO has discretion under clause 2.2.7(e) of the NER to approve classification as a *semi-scheduled generating* for a *generating unit* with a *nameplate rating* of less than 30MW, or that is part of a group of *generating units connected* at a common *connection point* with a combined *nameplate rating* of less than 30MW, on such terms and conditions as AEMO considers appropriate. If *intermittent generation* of at least 5MW but less than 30MW is to be connected in a *network* area with existing or forecast congestion, consider applying to classify the *generating units* as *semi-scheduled*. If classified as *non-scheduled generating units*, it is likely that system conditions will require the imposition of conditions under clauses 2.2.3(c) and 3.8.2(e) of the NER.

Clause 2.2.7(i) of the NER requires AEMO to approve the classification of one or more *generating units* as one *semi-scheduled generating unit* provided:

(1) they are *connected* at a single site with:

  (i) the same intra-regional loss factor; or

  (ii) if two *intra-regional loss factors* are determined for the site under clause 3.6.2(b)(2), the same two *intra-regional loss factors*;

(2) each has a capacity of not more than 6MW; and

(3) they have similar energy conversion models,

unless AEMO considers that the classification could adversely impact on *power system security*. Under clause 2.2.7(j), AEMO may approve a classification under clause 2.2.7(i) even if one or more of the above conditions are not met, provided the single *semi-scheduled generating unit* would not materially distort *central dispatch* or adversely affect *power system security*.

5.5. Classification as a market generating unit

Clause 2.2.4(a) of the NER requires that a *generating unit* must be classified as a *market generating unit* unless AEMO approves its classification as a *non-market generating unit* under clause 2.2.5(a).

5.6. Classification as a non-market generating unit

Clause 2.2.5(a) of the NER requires that a *generating unit* whose entire output is consumed by a *market load* at the same *connection point*, at which there is not expected to be any *sent out generation*, must be classified as a *non-market generating unit*.

5.6.1. Consumed by a market load

AEMO will be satisfied that the entire output of a *generating unit* is 'consumed by a *market load*' if the *Market Customer* who is *financially responsible* for the *connection point* (whether or not that person is also the applicant) demonstrates to AEMO that, at all times under normal conditions, there is no export of electricity from the relevant *connection point.* That is, there must be a net consumption by the *Market Customer* at the *connection point* at all times under normal conditions.

For the purposes of this requirement, 'normal conditions' means periods of operation without *load shedding* or other abnormal events that would cause a reduction in the expected demand. This is intended to cover an unexpected event that causes the *market load* to fall below the output of the

relevant *generating unit*. Flows of electricity to the *network* under these infrequent and unusual circumstances can be tolerated without requiring the *Generator* to be a *Market Generator*.

5.6.2. At the same connection point

The expression 'at the same *connection point*' means that the *market load* and the *generating unit* effectively need to be *connected* in such a way that the *metering installation* for the common *connection point* registers the net energy flow of the *market load* and the non-market *generation*. *Transmission network* or *distribution network* equipment cannot be used to *connect* the *generating unit* to the *market load*.

6. MARKET GENERATORS REGISTERING AS MARKET CUSTOMERS

6.1. Auxiliary load

Clause 2.2.4(d) of the NER states that a *Market Generator* must purchase all electricity supplied through the *national grid* to the *Market Generator* at its *connection point* from the *spot market* and pay AEMO for electricity supplied at that *connection point* in accordance with Chapter 3 of the NER.

When read in conjunction with clause 2.2.4(b), AEMO interprets this to mean that a *Market Generator* need not be registered as a *Market Customer* where:

(a) its purchases of electricity from the *spot market* are made through the same *connection point* through which it exports electricity; and

(b) the electricity is consumed primarily as auxiliary *load*, being electricity consumed by equipment such as exciters, conveyors, mills or cooling pumps, and by buildings adjacent to a *power station* that service the *power station*.

This may be illustrated by way of example:

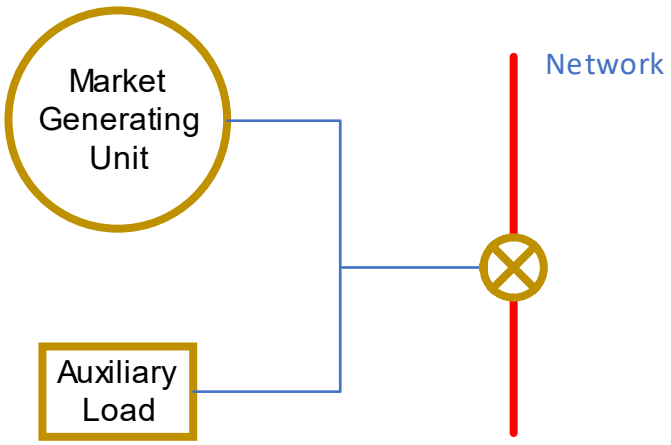

Figure 1 Single point of connection

In Figure 1, there would be no requirement for the *Market Generator* to be registered as a *Market Customer*.

6.2. Legacy classifications

There currently exist a number of classifications that AEMO no longer considers to be appropriate.

In the future, the only type of situation where a *Market Generator* can purchase electricity from the *national grid* without also being required to register as a *Market Customer*, is that described in section 6.1.

6.3. Battery systems

The electricity consumed to charge a battery system intended for subsequent energy production is a primary input and ordinarily treated as a *market load*. However, where a battery system has a *nameplate rating* of less than 5MW, AEMO will consider the electricity consumed to charge the battery system as auxiliary *load*. In these circumstances, separate 'market load' classification is not required for the battery system.[1]

To support AEMO's ability to maintain or restore *power system security*, the electricity *generated* or consumed by a battery system of 5MW or more will need to be capable of being *dispatched* by AEMO. To do this, AEMO will require a *Market Generator* to be registered as a *Market Customer* as well, and the *load* represented by the battery system's consumption will need to be classified as a *scheduled load*.

Exceptions may be considered for a battery system that is part of a *generating system* comprising another type of generation, in circumstances where the battery will never be charging from the grid. AEMO will consider a proposal that does not require registration as a Market Customer, provided that appropriate arrangements are put in place for the charging activity to be dispatched through central dispatch for reasons of power system security and adequate operation.

[1] Unless a *Market Customer* is *financially responsible* for the small battery system's connection point, in which case the *Market Customer* would classify it as *market load* rather than a *generating unit*.

APPENDIX A. EXAMPLES OF CLASSIFICATIONS

Description	Classification
500kW solar panel and AC inverter	Exempt
1MW backup diesel *generating unit* in a high rise building	Exempt
4MW battery storage facility	Exempt
8MW battery storage facility	*Scheduled Generator & Market Generator*
10MW thermal *power station* or wind farm whose entire output is consumed by a *market load* at the same *connection point*	*Non-Scheduled Generator & Non-Market Generator*
10MW thermal *power station* supply for an electrically isolated country town	Exempt
20MW battery storage facility within a *power station*	*Scheduled Generator & Market Generator*
20MW solar farm connecting in *network* location with existing/forecast congestion *connected* directly to a *transmission system*	*Semi-Scheduled Generator & Market Generator*
45MW *generating unit* using 10MW locally within its own site	*Scheduled Generator & Market Generator*
50MW co-generation plant or run of river hydro station	*Scheduled Generator & Market Generator*
150MW wind farm with all output sold to the market	*Semi-Scheduled Generator & Market Generator*
200MW brown coal *generating unit* with a 60% minimum load capability	*Scheduled Generator & Market Generator*
200MW power station connected to a transmission system	*Scheduled Generator & Market Generator*