



Australian Energy Market Commission

DRAFT RULE DETERMINATION

NATIONAL ELECTRICITY AMENDMENT (GENERATOR REGISTRATIONS AND CONNECTIONS) RULE

Australian Energy Council
Mr Damien Vermeer

24 JUNE 2021

DETERMINATION

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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SUMMARY

- 1 On 15 December 2018, the Australian Energy Council (AEC) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) which sought to increase the participation of smaller generators in central dispatch to enable improved management of the power system and the efficient operation of the market. It also proposed changes to the Australian Energy Market Operator's (AEMO's) process for granting exemptions from being registered as a scheduled or non-scheduled generator. It intended to:
 - Reduce the threshold for classifying generators as non-scheduled from 30MW nameplate capacity to 5MW, making the default classifications for generators above 5MW scheduled (or semi-scheduled).
 - Narrow the grounds upon which generating units can be classified as non-scheduled.
 - Require AEMO to publish its reasons for exempting a person from the requirement to register as a generator, or for classifying a generating unit as non-scheduled.
- 2 On 2 September 2020, Mr Damien Vermeer submitted a rule change request to minimise uncertainty in the registration and connection process for embedded generators sized between 5MW and 30MW. Mr Vermeer proposed amendments that would grant a conditional exemption from registration to enable connection of these embedded generators under the Chapter 5A connection process. Chapter 5A is designed primarily for residential solar PV generators and is generally a more streamlined and a shorter connection process than the Chapter 5 process, which applies to larger generators. Chapter 5 specifies generator technical performance standards (performance standards), Chapter 5A does not. When connecting under Chapter 5A, Mr Vermeer considered that connection applicants can opt to negotiate performance standards with the Network Service Provider (NSP) in 'good faith'.
- 3 In response to the rule change proposals, stakeholder feedback and its own analysis, the Commission has made a more preferable draft rule. The Commission's draft determination is to:
 - Retain the current threshold for classifying generators as non-scheduled.
 - Narrow the grounds upon which a generator can be exempt from scheduling obligations.
 - Improve the transparency of AEMO's exemption and classification processes.
 - Clarify the connection process and application of performance standards.

The Commission's reasons for not lowering the scheduling threshold

The key reasons for the Commission's decision follow.

The impact of non-scheduled generation on the scheduling and forecasting process is not material and costs outweigh the benefits

- 4 While the Commission agrees that the changing generation mix is creating challenges for AEMO's efficient management of the power system, and that these challenges may increase in the future, the Commission's draft determination is to make no rule regarding the

scheduling threshold. The key reasons are:

- There is insufficient evidence that non-scheduled generators between 5MW and 30MW are contributing to inaccuracies in scheduling and forecasting.
- AEMO has powers to impose central dispatch obligations, if necessary.
- The costs of scheduling these smaller generators between 5MW and 30MW are material and therefore likely outweigh the benefits.

The Commission considers the ESB’s reform agenda is an appropriate first step for addressing the issues raised by the AEC

5 The Commission recognises that market trends might lead to smaller scale assets causing operational issues in the dispatch and forecasting process in the future. However, it is of the view that the ESB’s Post 2025 market design ‘scheduled lite’ work program is a potential way to provide AEMO with greater visibility of non-scheduled resources, including generators between 5MW and 30MW nameplate capacity.

6 The purpose of the scheduled lite work program is to develop a voluntary mechanism which incentivises currently unscheduled demand and supply side participants to provide more operational information to the market operator. The intended effect of this work program is to improve the accuracy of AEMO’s dispatch and forecasting process by increasing the range of resources on the demand and supply side of the market which are used as direct inputs into it.¹

The Commission is making a more preferable draft rule to address the transparency of AEMO’s classification and exemption processes, and to clarify the connection process and application of performance standards

The details of the more preferable draft rule are detailed below.

Narrowing the conditions for non-scheduled generating unit classifications

7 The Rules currently allow AEMO to classify a generator above 30MW as non-scheduled if one of two conditions are met:

1. The primary purpose for which the relevant generating unit operates is local use and the aggregate sent out generation at its connection point rarely, if ever, exceeds 30 MW.
2. The physical and technical attributes of the relevant generating unit are such that it is not practicable for it to participate in central dispatch.

8 The AEC’s rule change request considered that these conditions for generators being classified as non-scheduled were too broad, and that this was leading to too many being exempt from central dispatch obligations. To address this, the AEC’s rule change request sought to remove the first condition and amend the second condition to refer to a generating system rather than units. This is to avoid a situation where a large generating system with

1 ESB, Post 2025 market design, options paper, part B, April 2021, p. 62, available [here](#).

many small units could attain non-scheduled classifications by virtue of being below the existing thresholds in the rules.

- 9 The Commission agrees with the AEC and considers using aggregate sent out generation as a condition for non-scheduled generator classifications is inappropriate. An unexpected level of sent out generation can have material impacts on system security, especially in circumstances when the sent out generation materially exceeds 30MW. The more preferable draft rule deletes this first condition. However, the Commission has decided not to use the AEC's proposed drafting for the second condition. The Commission considers the more preferable draft rule clarifies and reflects AEMO's existing practice that groups of generating units behind a common connection point must be less than 30MW to be classified as non-scheduled.

Improving the transparency of AEMO's exemption and classification processes

- 10 To address the AEC's transparency concerns, the Commission's draft determination is to make a more preferable draft rule rather than amend the Rules to require AEMO to publish its reasons for generator registration, exemption and classification decisions.
- 11 While it remains appropriate for AEMO to have broad responsibility and discretion for registration, classification and exemption decisions, the Commission considers it is necessary to formalise what AEMO currently does in practice, which is to maintain and publish guidelines to assist stakeholders to understand AEMO's registration, classification and exemption processes. This is important because these guidelines specify the standing exemption from registration as a generator, which determines both the applicable connection process and performance standards.
- 12 The Commission's more preferable draft rule requires AEMO to develop, maintain and publish guidelines on registration, classification and exemptions under Chapter 2 of the Rules (Registration guidelines) but extends this requirement for all registered participant categories i.e not just generators.
- 13 AEMO can amend the Registration guidelines from time to time in accordance with the Rules consultation procedures, however, this requirement only applies to amendments to the Registration guidelines after they are first published and where they are not administrative or minor amendments. AEMO will not be required to follow the Rules consultation procedures when developing and publishing the initial Registration guidelines. The Commission considers it is appropriate for AEMO to consult on amendments to the Registration guidelines after they are first published given the Commission is delegating part of its rule making power to AEMO to determine the contents of these guidelines.
- 14 The Commission considers market participants should be able to provide input on AEMO's registration, exemption and classification processes. This is important where these processes may impact on current or potential market participants' rights and obligations. This need outweighs any additional administrative requirement on AEMO.

Clarify the connection process and application of performance standards

15

To address Mr Vermeer’s issue, the Commission’s draft determination is to make a more preferable draft rule that makes minor amendments to the Rules to clarify the connection process and application of performance standards. The Commission considers Mr Vermeer’s proposed conditional exemption rule amendments would not facilitate more efficient connections or provide more certainty on performance standards. It risks creating an inefficient two stage registration process and cannot provide certainty for connection applicants as information relied upon for a conditional exemption is likely to change during the connection process.

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1 PROPONENTS' RULE CHANGE REQUESTS

1.1 The rule change requests

The Australian Energy Market Commission (AEMC or Commission) received two rule changes relating to the treatment of smaller generation in the national electricity market (NEM), and the transparency and certainty of the generator registration and exemption process.²

1. On 15 December 2018, the Australian Energy Council (AEC) submitted a rule change request to amend the National Electricity Rules (NER or Rules) to increase the participation of smaller generators in central dispatch by changing the current thresholds for being scheduled from 30MW nameplate capacity to 5MW. The AEC also proposed changes to the Australian Energy Market Operator's (AEMO's) process for granting exemptions from being registered as a scheduled or semi-scheduled generator.
2. On 2 September 2020, Mr Damien Vermeer submitted a rule change request that would minimise uncertainty in the registration and connection process for embedded generators, those connected to the distribution system rather than the transmission system.

Both rule changes seek to amend the Rules to address concerns about generator registration and classification. To streamline the consultation process, the Commission released a consultation paper on 8 October 2020 that addressed both rule changes. On 11 February 2021, the Commission formally consolidated the two requests into the *Generator registrations and connections rule change* (ERC0256).

1.2 Current arrangements

1.2.1 Non-scheduled classification

The AEC sought to change the threshold in the Rules for classifying generators as non-scheduled from 30MW nameplate capacity to 5MW.³

Clause 2.2.2(a) of the Rules require generating units with a nameplate rating of 30 MW or greater, or is 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 scheduled generating units, unless AEMO approves their classification as semi-scheduled or non-scheduled generating units.

The AEC sought to remove the link in the Rules between scheduling status and sent-out generation at the connection point. The AEC also argued that it is no longer appropriate to provide an exemption to a generator from being scheduled or semi-scheduled based on the physical attributes of the individual generating units. Rather exemptions should be based on the total size of the generating system and its potential impact on broader power system security.⁴

² Project page available [here](#).

³ AEC rule change request, pp 1-2.

⁴ Ibid, pp 2-3, 7.

Clauses 2.2.3(a) and 2.2.3(b) of the Rules set out the conditions for classifying a generating unit as non-scheduled. Clause 2.2.3(a) requires a generating unit with a nameplate rating of less than 30 MW to be classified as a non-scheduled generating unit unless AEMO approves their classification as semi-scheduled or scheduled generating units.

Clause 2.2.3(b) allows AEMO to classify a generator larger than 30MW as non-scheduled if one of two conditions are met:

1. the primary purpose for which the relevant generating unit operates is local use and the aggregate sent out generation at its connection point rarely, if ever, exceeds 30 MW; or
2. the physical and technical attributes of the relevant generating unit are such that it is not practicable for it to participate in central dispatch.

1.2.2

Connection process and application of generator technical performance standards

The rules provide for two connection processes for different sized generators. Chapter 5A is designed primarily for residential solar PV generators and is generally a more streamlined and shorter connection process than the Chapter 5 process, which applies to larger generators above AEMO's standing exemption from registration. Chapter 5 specifies and requires compliance with the generator technical performance standards (performance standards). Chapter 5A does not specify or require compliance with the performance standards.

Mr Vermeer sought to amend the Rules to reclassify embedded generators with a nameplate capacity between 5-30 MW as eligible to connect under Chapter 5A. This would mean the generator could connect under the more streamlined connection process and not comply with performance standards but rather negotiate standards with the NSP in 'good faith'.⁵

The Rules do not include a generator size to determine whether a connection applicant should use the Chapter 5 or 5A connection process.

Rather, the relevant connection process is determined by whether an applicant is required to apply to AEMO for an exemption from registration or automatically exempt, based on AEMO's standing exemption.

These thresholds are set out in the *Guide to generator exemptions and classification of generating units* (AEMO guide), which AEMO may issue under clause 2.2.1(c).

Under clause S5.2.1(b), Chapter 5 connection applicants must comply with the performance standards in schedule 5.2, unless:

- They are either subject to, or eligible for, an exemption from registration under the AEMO guide; and
- the Network Service Provider (NSP) considers the generator will not cause a material degradation in the quality of supply to other users.

1.3

Rationale for the rule change request and solutions proposed

In its rule change request, the AEC sought to address the following issues:

⁵ Mr Vermeer rule change request pp 1,11.

- The ability for AEMO to efficiently manage the power system in the context of an increasing proportion of the generation mix being classified as non-scheduled (5-30MW).
- The Rules that determine whether a generating unit can be classified as non-scheduled are too broad.
- Lack of transparency in AEMO's generator registration, exemptions and classification process.⁶

To address concerns about the efficiency of the power system and transparency of the exemption process, the AEC proposed rule is to:

- Reduce the threshold for classifying new generators as scheduled (or semi-scheduled) from 30MW, down to 5MW nameplate capacity (amendments to Rule clauses 2.2.2 and 2.2.7)
- Narrow the grounds upon which new generators can be exempt from scheduling obligations (amendment to NER clause 2.2.3)
- Require AEMO to publish its reasons for providing new registration exemptions or non-scheduled classifications (new NER clauses 2.2.1(c1) and 2.2.3(b1)).⁷

The AEC considered that the costs of becoming scheduled are not material, relative to the benefits of increasing the extent of scheduled generation in the NEM.⁸

Mr Vermeer sought to address the uncertainty in the registration, technical standards and connection process for intending exempt embedded generators which he says is discouraging efficient investment in embedded generation. Mr Vermeer is concerned that, under the Rules, applications by 5-30MW embedded generators to be exempt from the requirement to register as a generator are determined too late in the process.⁹

Mr Vermeer's proposed rule is to clarify the connection pathway through a 'conditional exemption' from registration for intending exempt embedded generators with a nameplate capacity 5-30MW in size. This is before it is officially granted by AEMO so that they may connect under the more streamlined Chapter 5A process rather than Chapter 5 which is more detailed, contains performance standards requirements and applies to larger generators.¹⁰

1.4

1.4.1

Background

Non-scheduled generation in central dispatch rule change 2017

The Commission considered a similar rule change in 2017 on the consequences and inefficiencies that arise from inaccurate demand and price forecasting. One of the Rule proponents, ENGIE, sought to require non-intermittent non-scheduled generators greater than 5MW to be scheduled.¹¹ The Commission considered the proposal would not likely contribute to the NEO.¹²

⁶ AEC rule change request, p 2.

⁷ Ibid.

⁸ Ibid.

⁹ Mr Vermeer rule change request, p 1, 10.

¹⁰ Ibid.

¹¹ AEMC, Non-scheduled generation and load in central dispatch, final determination, p iii.

1.4.2 ESB scheduled lite

The AEC rule change request to require a greater number of generators to become scheduled (or semi-scheduled) is intended to result in more active participation in central dispatch and more consistent obligations applied to a greater number of NEM participants.

The ESB is considering introducing a new, voluntary scheduling mechanism to enable responsive generators to opt into the market and receive incentives for doing so - 'scheduled lite'.¹³ Incentives could include lighter telemetry requirements, reduced frequency control ancillary services (FCAS) causer pay allocations and civil penalties, avoided reliability and emergency reserve transfer (RERT) costs (for load).

If scheduled lite is developed and agreed by the ESB, it would apply to generators, aggregators and load, and is therefore broader than the group of generators this rule change is focused on. See appendix A.4.3 for further information.

1.5 The rule making process

On 8 October 2020, the Commission published a notice advising of its commencement of the rule making process and consultation in respect of the rule change request.¹⁴ A consultation paper identifying specific issues for consultation was also published. Submissions closed on 17 December 2020.

The Commission received 23 submissions as part of the first round of consultation. The Commission considered all issues raised by stakeholders in submissions. Issues raised in submissions are discussed and responded to throughout this draft rule determination. A summary of the issues raised in submissions and the Commission's response to each issue is contained in each Appendix.

1.6 Consultation on draft rule determination

The Commission invites submissions on this draft rule determination by 19 August 2021.

Any person or body may request that the Commission hold a hearing in relation to the draft rule determination. Any request for a hearing must be made in writing and must be received by the Commission no later than 1 July 2021.

Submissions and requests for a hearing should quote project number ERC0256 and may be lodged online at www.aemc.gov.au.

¹² Ibid, p 27.

¹³ Post 2025 Electricity Market Design page available <https://esb-post2025-market-design.aemc.gov.au/here>.

¹⁴ This notice was published under s.95 of the National Electricity Law (NEL).

2 DRAFT RULE DETERMINATION

2.1 The Commission's draft rule determination

The Commission's draft determination is to make a more preferable draft rule, which is attached to and published with this draft determination. The more preferable draft rule requires AEMO to develop, maintain and publish guidelines on registration, classification and exemptions and clarifies in the Rules the connection process and application of generator technical performance standards.

The key features of the more preferable draft rule are:

- **Registration, classification and exemption guideline:** the rule requires AEMO to develop, maintain and publish guidelines for registration, classification and exemption processes conducted by AEMO under Chapter 2 of the Rules (Registration guidelines), which include a description of:
 - The process for applications for registration, classification and exemption under this Chapter and, where relevant, the matters AEMO will or may take into account in assessing such applications.
 - The process for aggregation under clause 3.8.3.
 - The information to be contained in energy conversion models.
 - The information that AEMO may require applicants to provide and information that AEMO may make available at each stage of an application process.

AEMO can amend the Registration guidelines from time to time in accordance with the Rules consultation procedures. However, it won't be required to comply with these procedures when making minor or administrative amendments to the Registration guidelines.

- **Non-scheduled generator registration:** the rule:
 - Amends clause 2.2.3(a) of the Rules to clarify that groups of generating units behind a common connection point with a combined nameplate capacity of 30 MW or greater will not be eligible to classify as non-scheduled, unless they meet the requirements in clause 2.2.3(b) of the Rules.¹⁵
 - Removes clause 2.2.3(b)(1) of the Rules. This clause currently requires AEMO to approve a generating unit's classification as non-scheduled if it is satisfied that the primary purpose of the generating unit is local use and the aggregate sent out generation rarely, if ever, exceeds 30 MW. AEMO will no longer be required to approve a generator as non-scheduled based on this condition.
- **Connection process:** the rule clarifies that a:
 - Non-registered embedded generator i.e. a generator who would normally connect under the more streamlined Chapter 5A connection process who elects to connect to the distribution network under Chapter 5 must also comply with the same access

¹⁵ The physical and technical attributes of the relevant *generating unit* are such that it is not practicable for it to participate in *central dispatch*.

arrangements (rule 5.3AA) as other embedded generators - in other words, it must fully comply with the Chapter 5 process.

- A person seeking to connect an embedded generating unit that is required to apply to AEMO for an exemption under the Registration guidelines must connect under rule 5.3 and 5.3A (as applicable) of the Rules. In other words, if the connection applicant is not automatically exempt from registration by AEMO, it must connect under the more detailed Chapter 5 connection process.
- **Performance standards:** applicants who connect under Chapter 5 must comply with the generator technical performance standards. However, the current Rules provide an exception from this requirement based on eligibility for exemption.¹⁶ The more preferable draft rule clarifies that schedule 5.2 of the Rules does not apply to a person, in respect of a generating unit that they own, operate or control, that:
 - has received an exemption from, or is eligible for an automatic exemption from, the requirement to register as a generator under the Registration guidelines, subject to any conditions imposed by AEMO as part of that exemption; and
 - the NSP is satisfied is unlikely to cause a material degradation in the quality of supply to other network users.
- **Transitional arrangements:** the rule includes transitional arrangements that specify that a person already exempt or that is registered with AEMO as a non-scheduled generator under *AEMO's guide to generator exemptions and classification of generating units* will remain so under the Registration guidelines on the same conditions.

The Commission's reasons for making this draft determination are set out in section 2.4 below, and in more detail in the relevant appendices.

This chapter outlines the:

- Rule making test for changes to the Rules and the more preferable rule test.
- Commission's assessment framework for considering whether the rule change request will contribute to the NEO.
- Commission's assessment of both the proposed rule and the more preferable draft rule against the assessment criteria.
- Commission's consideration in deciding whether to make a uniform or differential rule in accordance with the Northern Territory legislation adopting the NEL.¹⁷

Further information on the legal requirements for making this draft Rule determination is set out in appendix E.

¹⁶ AEMO Guide to generator exemptions and classification of generating units p 8.

¹⁷ National Electricity (Northern Territory)(National Uniform Legislation) Act 2015.

2.2 Rule making test

2.2.1 Achieving the NEO

Under the NEL, the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO.¹⁸ This is the decision making framework that the Commission must apply.

The NEO is:¹⁹

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

2.2.2 Making a more preferable rule

Under s. 91A of the NEL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NEO.

In this instance, the Commission has made a more preferable draft rule. The reasons are summarised below. More detailed reasons for making this more preferable draft rule, including analysis of the issues raised and responses to them are set out the appendices.

2.2.3 Making a differential Rule

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:
 - the national electricity system, and
 - one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

¹⁸ Section 88 of the NEL.

¹⁹ Section 7 of the NEL.

As the more preferable draft rule relates to parts of the NER that apply in the Northern Territory, the Commission has assessed the more preferable draft rule against additional elements required by the Northern Territory legislation.²⁰

The Commission has determined not to make a differential rule. However, as chapters of the NER apply in the Northern Territory, the amendments made by this more preferable draft rule will have some application in the Northern Territory. The Northern Territory modification regulations modify the application of these chapters in the Northern Territory, and therefore, further changes may be required to those regulations as a result of this rule change. The Commission will engage with the Northern Territory government in this regard.

2.3 Assessment framework

In assessing the rule change request against the NEO, the Commission has considered the following principles:

Enhance security and reliability: To what extent would the proposed changes deliver improvements to AEMO's market scheduling and forecasting process and in turn improve security and reliability in the NEM?

Promote transparency: To what extent could limiting AEMO's discretionary powers in the registration process reduce information asymmetry, promote a more level playing field, and improve the decision-making of participants?

Promote efficient investment: To what extent might the proposed changes facilitate improved decision-making by participants regarding the registration and exemption process and thereby increase efficient investment in generation assets?

Minimises administrative and regulatory burden: Would the changes proposed increase or decrease the administrative/ regulatory burden on affected entities?

The assessment framework is consistent with that set out in the consultation paper for this rule change process.

2.3.1 Commission response to feedback on the assessment framework

Most stakeholders who commented on the assessment framework agreed with the criteria.²¹ While no stakeholders disagreed, some noted the following criteria should be considered:

- Future reforms and changes to the generation mix.²²
- Chapter 5 connection process changes should harmonise distribution and transmission obligations as much as possible.²³

20 From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL. Under those regulations, only certain parts of the NER have been adopted in the NT. (See the AEMC website for the NER that applies in the NT.) National Electricity(Northern Territory) (National Uniform Legislation) Act2015.

21 Submissions to the consultation paper: AGL p 5, PIAC p 1, Stanwell p 2, Sun Metals p 1, Wind Projects Australia p 3.

22 Submissions to the consultation paper: Australian Sugar Milling Council p 1, Energy Queensland p 2.

23 Submissions to the consultation paper: Energy Queensland, p 2.

- Promote efficient utilisation of existing generation assets.²⁴
- Impact on value adding regional activity and employment.²⁵

The Commission considers the assessment criteria includes consideration of the issues raised by stakeholders, in particular:

- Clarifying the Chapter 5 connection process and the application of generator technical performance standards in the Commission's more preferable draft rule.
- Discussion on how market bodies can address future potential issues with the diversity and changes of the generation mix.
- Addressing unintended consequences of the Commission's more preferable draft rule on regional businesses who generate electricity as an incidental part of their core business.

2.4

Summary of reasons

2.4.1

The Commission's rationale for the more preferable draft rule

Having regard to the issues raised in the rule change requests and during initial consultation, the Commission is satisfied that the more preferable draft rule is likely to better contribute to the achievement of the NEO than the proponents' rule changes.

- **The AEC proposal to lower the scheduling threshold** does not contribute to the NEO. This is because the Commission does not consider non-scheduled generators between 5MW and 30MW nameplate capacity are having a material impact on the forecasting and dispatch process.
- **The AEC's proposal to narrow the circumstances of non-scheduled generator classifications** does not contribute to the NEO. Although the more preferable draft rule incorporates the AEC's proposal to remove the link between sent-out generation and scheduling status, it considers AEC's proposed rule drafting to address large generating systems with many small units attaining non-scheduled classifications could lead to unwanted situations where classification tests considers units across different connection points.
- **The AEC proposal to require AEMO to publish its registration, classification and exemption decisions** does not contribute to the NEO. This is because as AEMO is likely to receive confidential information as part of the registration, classification and exemption process, it is best placed to determine how this information should be publicly released to ensure it does not undermine commercial arrangements in the market.
- **Mr Vermeer's conditional exemption proposal** does not contribute to the NEO. It risks creating an inefficient two stage registration process. It cannot provide certainty for connection applicants as information relied upon for a conditional exemption is likely to change during the connection process.

The more preferable draft rule is more likely to achieve the NEO because it:

²⁴ Submissions to the consultation paper: Enel X, p 2.

²⁵ Submissions to the consultation paper: Australian Sugar Milling Council, p2.

- increases the certainty and efficiency in the connection process and application of generator technical performance standards by clarifying the connection process for different participants and also the persons that are exempt from schedule 5.2 of the Rules
- makes the AEMO registration, exemption and classification process more transparent and certain for stakeholders by requiring AEMO to develop, maintain and publish the Registration guidelines and also requiring AEMO to follow the Rules consultation procedures when amending the Registration guidelines. This will give current and potential market participants a voice in this process for matters which may impact on their rights and obligations. However, AEMO will not be required to follow the Rules consultation procedures when developing and publishing the initial Registration guidelines or when it makes minor or administrative amendments.
- enhances security and reliability by narrowing the circumstances under which AEMO must approve an application to classify a generating unit as non-scheduled and clarifying that the combined nameplate capacity of generating units behind a common connection point will be counted when approving non-scheduled status.

2.4.2 Implementation

The Commission considers that as the more preferable draft rule largely formalises what happens in practice, the rule (if made) will commence on 30 March 2022, which is six months after the day the final rule is made, currently scheduled for 30 September 2021. This will allow AEMO time to publish Registration guidelines.

2.5 Strategic priority

As discussed in appendix A.4.3, although the Commission does not consider it appropriate to lower the scheduling threshold, it does recognise that market trends might see smaller-scale assets causing inaccuracies or inefficiencies in the dispatch and forecasting process in the future. The Commission is of the view that the ESB's scheduled lite work program is a promising first step for providing AEMO with greater visibility over non-scheduled resources, including generators between 5MW and 30MW nameplate capacity.

ABBREVIATIONS

AEC	Australian Energy Council
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
EPC	Engineering, Procurement and Construction
ESB	Energy Security Board
FCAS	Frequency Control Ancillary Services
MCE	Ministerial Council on Energy
MW	Megawatt
MWh	Megawatt-hour
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NGL	National Gas Law
NGO	National Gas Objective
PFR	Primary Frequency Response
RERT	Reliability and Emergency Reserve Trader
VRE	Variable Renewable Energy

A SCHEDULING THRESHOLD

A.1 Overview

In its rule change request, the AEC outlined its concern about the impact that non-scheduled generation is having on AEMO's ability to efficiently manage the power system. The AEC's proposed solution included reducing the threshold for classifying generators as non-scheduled from 30MW nameplate capacity to 5MW, making the default classifications for generators above 5MW scheduled or semi-scheduled.

In the consultation paper, the Commission asked stakeholders:

- For their views on the impact non-scheduled generation may be having on the scheduling and forecasting process.
- Whether lowering the scheduling schedule would help to address concerns with the market operator's ability to efficiently manage the power system.
- If they agreed that the costs for participants in being scheduled would be manageable, including whether the AEC's suggestion that the costs of operating in central dispatch have fallen in recent years.

While the Commission agrees that the changing generation mix is creating challenges for AEMO's efficient management of the power system, and that these challenges will increase in the future, the Commission's draft determination is to make no new Rules regarding lowering the scheduling threshold. This is because there is insufficient evidence that non-scheduled generation is contributing to issues in scheduling and forecasting, and that the costs of scheduling new generators between 5MW and 30MW would outweigh the benefits.

Although the Commission's draft rule reflects that these generators are currently not causing any material issues in the forecasting and dispatch process, it does acknowledge the importance for AEMO to have greater visibility over non-scheduled resources as the NEM transitions. This issue is being actively considered by the ESB's Post 2025 reforms, including specific reforms looking at introducing 'opt in' lighter or lower-cost scheduling arrangements.

This appendix outlines:

- the proponent's views and proposed solutions
- stakeholder views
- the Commission's analysis and conclusions.

A.2 Proponent's views

In its rule change request, the AEC sets out its concern that AEMO's ability to efficiently manage the power system is being compromised by the growing proportion of non-scheduled generation in the NEM.²⁶

The AEC is concerned about AEMO's ability to manage the power system in the context of it becoming increasingly 'characterised by progressively smaller units sizes, and also more

²⁶ AEC Generator registrations and connections — rule change request, p 3.

greatly affected by variations in supply and demand'.²⁷ In light of these trends, the AEC suggests the existing thresholds for requiring generating units to participate in central dispatch may no longer be appropriate. The AEC explains that, when the NEM began in 1998, 30MW was set as the default threshold for assigning scheduling obligations because, at that time, generators smaller than this had only a minor role in the power system.²⁸ The threshold of 30MW was considered a reasonable trade-off between the value to the market of exposing a generator to scheduling, against the compliance costs which would be imposed should they be scheduled.²⁹ Over time, there has been an increasing number of generators falling below the 30MW threshold.³⁰ This results in an increasing proportion of generation that is classified as non-scheduled in the NEM today.

The AEC expressed concern that if non-scheduled units continue to account for a growing share of the market, combined with increasing variations in supply and demand, it will be increasingly difficult for AEMO to efficiently manage the power system and market. This is because this trend has a negative impact on AEMO's overall visibility of the power system, making it more difficult to efficiently forecast and schedule market activity in the NEM.³¹

It also argued that developments in controls and communications technologies have greatly reduced the costs of operating as a scheduled participant to the point where these private costs are not material compared with the benefit of increasing the quantum of generation scheduled.³²

A.3 Stakeholder views

The consultation paper sought stakeholder feedback on whether the scheduling threshold should be lowered, as well as other issues which relate to this decision. This section summarises stakeholder feedback on the following:

- The impact of non-scheduled generation on the scheduling and forecasting process.
- If the costs of operating in central dispatch have fallen in recent years.
- Lowering the scheduling threshold.

The impact of non-scheduled generation on the scheduling and forecasting process

Most stakeholders commented on this issue in submissions to the consultation paper, where the majority of respondents considered that non-scheduled generators are contributing negatively to forecasting and dispatch outcomes.

27 Ibid, p 2.

28 Ibid.

29 Ibid.

30 Ibid, p 1.

31 Ibid, p 3.

32 Ibid, p 1.

Overall, seven stakeholders agreed with the AEC about the impact of these generators on the forecasting and dispatch process.³³ Some of these stakeholders also noted that the:

- Activity of non-scheduled generators is intensifying the uncertainty currently being faced by market participants.³⁴
- Associated impacts of non-scheduled generation capacity will worsen as penetration increases.³⁵

Four stakeholders did not consider that non-scheduled generators are having negative impacts on forecasting and dispatch outcomes. This is because:

- The generators which are the target of this rule change only make up 1.9% of total registered generation in the NEM.
- Non-scheduled generation is very commonly linked to industrial processes, meaning that inclusion would not add any value to forecasting because generation is independent of market dynamics.³⁶
- The bidding behaviours of large scheduled and semi-scheduled plants can have a much bigger impact on forecasting errors than non-scheduled generation.³⁷

Two stakeholders also requested the Commission work with AEMO and provide further analysis to demonstrate if these generators are definitively having an impact on this process.³⁸

Have the costs of operating central dispatch fallen in recent years

Approximately half of all stakeholders commented on this issue in submissions to the consultation paper where most respondents did not consider the costs of participating in central dispatch have fallen in recent years.

Overall, nine stakeholders disagreed with the AEC's assertion about the recent trajectory of scheduling costs. Their reasons for doing so included:

- There is no clear evidence that the costs of participating in central dispatch have fallen since 2017.³⁹
- The AEC's rule change request does not capture all costs associated with operating as a scheduled participant and these total aggregate costs are very significant.⁴⁰
- It would be uneconomic to require smaller generators to participate in central dispatch.⁴¹

33 Submissions to the consultation paper: Energy Queensland p 3, EnergyAustralia p 1, Tilt Renewables p 1, Snow Hydro p 1, ERM Power p 2, AGL pp 1-2, Clean Energy Council p 1.

34 Submissions to the consultation paper: EnergyAustralia, p 2.

35 Submissions to the consultation paper: Clean Energy Council, p 1.

36 Submissions to the consultation paper: Wind Projects Australia p 3, EDL p. 2.

37 Submissions to the consultation paper: Sun Metals, p 3.

38 Submissions to the consultation paper: Origin Energy p 1, Enel X p 2.

39 Submissions to the consultation paper: AGL p 8, Wind Project Australia p 4.

40 Submissions to the consultation paper: AER p 3, Enel X p 5, Climate Capital p 3, Sun Metals p 4.

41 Submissions to the consultation paper: Sun Metals p 4, EDL p 2, Australian Sugar Milling Council, p 8.

Stanwell suggested that the costs of scheduling could be reduced by AEMO delivering training, compliance templates and open communication with participants.⁴²

Two stakeholders considered that scheduling costs have fallen in recent years. However, EnergyAustralia requested the Commission obtain updated independent figures to quantify cost impacts.⁴³

Lowering the scheduling threshold

All stakeholders provided feedback on this issue, where many stakeholders disagreed with lowering the threshold as proposed by the AEC. The stakeholders that disagreed with the proposal to lower the scheduling threshold did so for a variety of reasons:

- The cost impacts this change would have on participants are far greater than any benefit it would have on AEMO's ability to efficiently manage the power system.⁴⁴
- Smaller participants would incur significant new capital and operating costs which would make many projects uneconomic.⁴⁵
- It would result in job losses and reduce economic activity in regional areas.⁴⁶
- The AEC's rule change request does not clearly state the problem it seeks to address and is unlikely to have the result expected.⁴⁷
- Lowering the threshold might improve the efficiency of dispatch outcomes, but it might also create issues for system security simultaneously.⁴⁸
- AEMO already has the power to apply any scheduling conditions when approving non-scheduled generator classifications and therefore, AEMO can resolve this issue unilaterally.⁴⁹
- It would have unintended consequences on end users who are also generators, where the primary purpose of their generator output is not for selling it into the electricity market.⁵⁰

Similarly, those stakeholders who agreed with the AEC's proposal to lower the scheduling threshold did so for a variety of reasons. These reasons included:

- Lowering the threshold will improve the operation of the spot market by improving the efficiency of central dispatch outcomes and the price discovery process.⁵¹
- The NEM is moving to a generation mix which is becoming increasingly characterised by a greater number of smaller generators.⁵²

42 Submissions to the consultation paper: Stanwell, p 8.

43 Submissions to the consultation paper: EnergyAustralia p 2, ERM Power p 3.

44 Submissions to the consultation paper: Sun Metals, p 3.

45 Submissions to the consultation paper: Public Interest Advocacy Centre p 1, Climate Capital p 2, Australian Sugar Milling Council pp 4-5, EDL Energy p 1.

46 Submissions to the consultation paper: Australian Sugar Milling Council p 3, EDL Energy p 1.

47 Submissions to the consultation paper: Enel X, pp 2-3.

48 Submissions to the consultation paper: AGL p 3.

49 Submissions to the consultation paper: Wind Projects Australia, p 3.

50 Submissions to the consultation paper: Major Energy Users, p 2.

51 Submissions to the consultation paper: EnergyAustralia p 1, Snowy Hydro p 1, ERM Power p 1, Tilt Renewables p 1.

52 Submissions to the consultation paper: Stanwell pp 1-2, Clean Energy Council p 1, ERM Power p 2.

- Generators with a nameplate capacity greater than 5MW are already required to operate as scheduled generators in certain networks because of the constraints which are currently active for the relevant connection applicants.⁵³
- It will reduce the need for regulation Frequency Control Ancillary Services (FCAS).⁵⁴

There were also some stakeholders who would only support lowering the threshold under certain circumstances. These stakeholders would only support the AEC's proposal if the Commission could:

- Clearly demonstrate the benefits of doing so through quantitative analysis.⁵⁵
- Technically assess how much generation is required to participate in central dispatch for it to function effectively.⁵⁶
- Conduct analysis to determine if a different threshold other than 5MW is appropriate.⁵⁷
- Could get confirmation from AEMO that moving away from the current thresholds is merited.⁵⁸

A.4 Commission's analysis and conclusions

BOX 1: MORE PREFERABLE DRAFT RULE — SCHEDULING THRESHOLD

The Commission's draft determination on this issue is not to make a draft rule to lower the threshold for classifying generating units as scheduled or semi-scheduled from 30MW to 5MW.

Benefits of not making a draft rule

The Commission's determination not to make a draft rule will:

- Promote more competition in generation by not requiring them to participate in central dispatch, where they are not currently having a material impact on the dispatch and forecasting process.
- Minimise administrative and regulatory burden for smaller-scale generation by not requiring their owners to invest in the resources required to operate and participate in central dispatch.

The Commission acknowledges the AEC's concerns about the penetration of non-scheduled generation in the NEM and the impacts this could have on AEMO's capacity to efficiently manage the power system. However, it does not consider that market conditions have changed sufficiently to lower the scheduling threshold and overturn the decision made on the same issue in 2017. It also notes that the Post 2025 reform agenda of the ESB is looking to

53 Submissions to the consultation paper: Energy Queensland p 2, TasNetworks p 1.

54 Submissions to the consultation paper: EnergyAustralia, p 1.

55 Submissions to the consultation paper: AEMO p 4, Origin p 1.

56 Submissions to the consultation paper: AEMO, p 4.

57 Submissions to the consultation paper: ACCIONA p 3, AGL p 4, CEC p 2.

58 Submissions to the consultation paper: AER p 3, CEC p 2.

address the concerns raised by the AEC in its rule change request regarding AEMO's ability to efficiently forecast and schedule resources in a transitioning NEM. In particular, the Commission considers the 'scheduled lite' work program is likely to be a more appropriate response to the issues that non-scheduled resources (including small generators) may cause in the future.

The following subsections provide further context and explanation for the Commission's draft determination. They cover:

- The reasons why the Commission did not lower the scheduling threshold in 2017.
- Why the Commission considers that current market conditions have not changed sufficiently to merit overturning this previous decision.
- How the ESB's Post 2025 reform agenda is seeking to address the issues described by the AEC in the future.

A.4.1

Lowering the scheduling threshold has been previously considered by the Commission

The decision to lower the scheduling threshold for generators from 30MW to 5MW was previously considered by the *Non-scheduled generation and load in central dispatch rule change 2017*.⁵⁹ The two proponents of this rule change, ENGIE and Snowy Hydro, were also concerned with the penetration of non-scheduled generation (and load) into the NEM given the potential for this to negatively impact the efficiency of market outcomes by disrupting the effectiveness of the forecasting and scheduling process. In this instance, the Commission did not make a rule to lower the threshold for the following reasons:⁶⁰

- The proposed changes would only apply to a limited number of generators and loads, and would have limited impact on forecasting accuracy.
- AEMO's demand forecasts are generally accurate at dispatch, and its price forecasts provide signals to the market to enable participants to plan and adjust their generation or consumption.
- The proposed change would place considerable costs and obligations on parties that are not justified by the limited benefits that may accrue.
- AEMO has a range of powers to address forecasting issues and maintain system security, including security issues arising from market participation.

In this rule change, the Commission analysed the general accuracy of AEMO's demand and price forecast to try to substantiate the proponents' concerns that issues were being caused by non-scheduled resources. This evaluation covered the time period of 2009 to 2017 and made the following conclusions:⁶¹

- The divergence between pre-dispatch and dispatch demand outcomes ranged between 0.8 and 1.5 per cent across the different NEM jurisdictions.

⁵⁹ AEMC project page available [here](#).

⁶⁰ AEMC, *Non-scheduled generation and load in central dispatch, final determination*, pp. 27.

⁶¹ *Ibid*, pp. 103 – 117.

- The divergence between pre-dispatch and dispatch price outcomes ranged between 4.4 and 7.3 per cent across the different NEM jurisdictions.
- Forecast prices of less than \$300/MWh almost always occurred, whereas higher price forecasts had a lower accuracy and tended to not eventuate. The Commission noted that \$300/MWh is a common market contract price for caps which limits a consumer's exposure to high price events, and is therefore an indication that the market was responding as intended to high price forecasts by reducing load and increasing generation.
- The divergence between pre-dispatch and dispatch price outcomes materially increased between 2014 and 2017.

A.4.2

The Commission does not consider market conditions have changed sufficiently since 2017 to merit lowering the threshold

The Commission does not consider there is sufficient evidence for overturning the decision it made in 2017. This conclusion has been derived from the following:

- Although there has been some deterioration in the performance of AEMO's forecasting and dispatch process since 2017, the Commission is unable to attribute this to the activity of 5-30MW non-scheduled generators.
- The independent costings of participating in central dispatch obtained from GHD Advisory indicates to the Commission that the collective private costs associated with lowering the scheduling threshold for participants are greater than the potential benefits that might accrue from this change.
- Advice from AEMO that it does not consider that 5-30MW non-scheduled generators are currently causing issues in central dispatch.

Evaluating AEMO's demand and price forecast accuracy

The Commission has updated the evaluation of AEMO's demand and price forecast accuracy for the period since 2017. It has concluded that while there has been some deterioration in the performance of AEMO's forecasting and dispatch process, AEMO is still able to consistently dispatch an efficient amount of generation into the market and the Commission is unable to explicitly attribute any issues to the activity of 5-30MW generators. AEMO has achieved this as NEM participants have become increasingly price responsive.

The strong performance of AEMO's demand forecast accuracy can be noted in Figure A.1. It summarises the accuracy of the thirty minute pre-dispatch forecasts (P30) and the five minute pre-dispatch forecasts (P5) compared to dispatch. In the P30 part of the analysis the percentage error is calculated at one, four and ten hours. For the P5 part of this analysis, the T-12 time shows results one hour before dispatch, and T-2 shows results ten minutes before dispatch. This figure shows the results between the 10th and 90th percentiles, meaning it covers the 80 per cent of results that are closest to the median.

Figure A.1: Demand forecast accuracy over observation period – 01/04/2017 to 31/12/2020

	P5 versus T – 1				PDP30 versus T – 1					
	T – 2 (10 th , 90 th) percentiles		T – 12 (10 th , 90 th) percentiles		1 hour (10 th , 90 th) percentiles		4 hours (10 th , 90 th) percentiles		10 hours (10 th , 90 th) percentiles	
NSW	-0.9%	0.8%	-2.0%	2.2%	-1.6%	1.3%	-2.8%	2.7%	-2.9%	3.2%
QLD	-1.0%	1.0%	-1.9%	2.0%	-1.4%	1.6%	-2.3%	2.4%	-2.5%	2.8%
SA	-2.1%	2.0%	-5.7%	5.7%	-4.5%	4.4%	-6.5%	7.2%	-7.2%	8.1%
TAS	-1.2%	1.2%	-3.1%	3.1%	-2.2%	3.9%	-3.8%	5.4%	-4.9%	6.1%
VIC	-1.1%	1.1%	-2.7%	2.8%	-2.3%	1.9%	-3.9%	3.7%	-4.4%	4.2%

Source: AEMC analysis of MMS database.

Figure A.1 shows that AEMO’s demand forecasts improve in accuracy as dispatch nears. Notably, the final P5 forecast (T-1) is consistently close to the dispatch forecast. In most regions, the P5 forecast of demand at T-1 is within approximately one per cent of the dispatch forecast. South Australia has slightly lower accuracy with an error rate of 2.1 per cent. This is broadly consistent with what the Commission observed in 2017.⁶²

This poorer performance by South Australia is potentially attributable to its significant penetration of intermittent generation, which is far greater than any other NEM jurisdiction. Approximately 35 per cent of all generation capacity is semi-scheduled in South Australia, while 9.5 per cent of generation capacity is non-scheduled. Victoria and Tasmania both have penetrations of non-scheduled generation greater than South Australia — 12.4 per cent and 19.6 per cent respectively.⁶³

The forecast error rates may be caused more by difficulties of forecasting intermittency than non-scheduled generation. In any case, the efficient level of generation is consistently being dispatched into the NEM and the Commission is unable to discern if these relatively minor issues in South Australia are being caused by non-scheduled generators with a nameplate capacity between 5MW and 30MW.

Figure A.2 below is an updated assessment of AEMO’s price forecast accuracy, which indicates price forecast accuracy has deteriorated since last considered by the Commission. Figure A.2 summarises the accuracy of 5-minute pre-dispatch price forecasts, where the results are disaggregated across the entire observation period as well as exclusively for the year 2020.

62 AEMC, Non-scheduled generation and load in central dispatch, final determination, p. 110.

63 AEMO, NEM Registration and exemption list, May 2021, available [here](#).

Figure A.2: Accuracy of 5-minute pre-dispatch price forecasts - 01/04/2017 to 31/12/2020

	1 Apr. 2017 – 31 Dec. 2020				1 Jan. 2020 – 31 Dec. 2020			
	T – 2 (10 th , 90 th) percentiles		T – 12 (10 th , 90 th) percentiles		T – 2 (10 th , 90 th) percentiles		T – 12 (10 th , 90 th) percentiles	
	NSW	-9.2%	10.7%	-20.9%	18.3%	-9.9%	12.1%	-26.3%
QLD	-10.1%	12.4%	-22.9%	21.4%	-12.4%	18.5%	-33.3%	32.3%
SA	-12.7%	15.8%	-37.7%	30.3%	-14.5%	27.7%	-50.5%	63.0%
TAS	-10.9%	13.0%	-54.6%	31.8%	-16.4%	22.7%	-110.4%	58.9%
VIC	-12.0%	13.9%	-34.8%	26.1%	-13.4%	22.1%	-43.7%	45.9%

Source: AEMC analysis of MMS database.

Figure A.2 demonstrates that even though accuracy improves as dispatch approaches, pricing error rates range from 9.2 per cent to 12.7 per cent across the different NEM regions up to five minutes before dispatch. This is notably worse than what was observed in 2017, which saw pricing error rates ranging between 4.4 per cent to 7.3 per cent in the last trading interval before dispatch.⁶⁴ Whilst this might seem like a negative outcome, it is important to note that pre-dispatch shows participants deterministic price outcomes for a future interval given the current set of available inputs. It does not attempt to account for any feedback between participant behaviour and market dynamics, forecast uncertainty or pre-dispatch outcomes themselves. That is, pre-dispatch does not have the explicit objective of accurately forecasting price (or volume) and only seeks to determine what the appropriate values are for a given dispatch interval, for a given set of inputs.

Therefore, the growing disparity between forecast and dispatch price outcomes should be considered an indicator of increasing price responsiveness in the NEM as opposed to any issues being caused exclusively by non-scheduled generators between 5MW and 30MW nameplate capacity. In this case, pre-dispatch is working as intended by giving market participants sufficient information at each dispatch interval to make informed business decisions — which is the broad objective of AEMO’s pre-dispatch service.⁶⁵

This point is substantiated by Figure A.3, which indicates the relative frequency of forecast versus actual prices, using Queensland as an example. The diagonal along each observation period (indicated by the coloured circles) represents how likely it is for a forecast price to eventuate. We can see that forecast prices greater than \$300/MWh have become increasingly

⁶⁴ AEMC, Non-scheduled generation and load in central dispatch, final determination, p. 113.

⁶⁵ AEMO, Pre-dispatch process description, p. 6, available [here](#).

unlikely to occur in Queensland over time. Forecast prices \$300-1000/MWh happened less than 50 per cent of the time up until 2017, whereas they have only occurred 33 per cent of the time since then up until 2021. Although prices \$1000-3000/MWh have been slightly more likely to occur in Queensland since 2017, this is discounted by the fact that forecast prices between \$6000/MWh and the market price cap have overwhelmingly eventuated in prices less than \$300/MWh occurring 43 per cent of the time.

Figure A.3: Relative frequency of P5 forecast versus actual prices – T-1, QLD

Forecast Price (\$/MWh)	Observation period: 2009-2017					Observation period: 2017-2020				
	Actual Price Outcome (\$/MWh)									
	<300	300 to 1000	1000 to 3000	3000 to 6000	6000 to MPC	<300	300 to 1000	1000 to 3000	3000 to 6000	6000 to MPC
<300	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%
300 to 1000	48%	46%	4%		3%	65%	33%	2%	0%	
1000 to 3000	67%	14%	7%	2%	10%	64%	9%	18%		9%
3000 to 6000	100%					67%				33%
6000 to MPC	49%	6%	1%	1%	43%	92%	8%			

Source: AEMC analysis of MMS database.

Importantly, the first price band, up to \$300, was chosen as it is a common price point for market cap contracts. These contracts provide customers with certainty that they will not pay a higher price for the contracted quantity of generation. The fact that spot prices are lower than the forecast in most instances indicates market participants are responding efficiently to market signals by adjusting their generation or consumption decisions to suit their commercial interests.

The difference in forecast price outcomes between these two periods indicates that market participants are becoming more price responsive. However, the continued strong performance of the demand forecasts infers that this has not come at the cost of dispatching inefficient quantities of generation into the NEM. In particular, there is no indication that any issues are being driven by the activity of non-scheduled generators between 5MW and 30MW nameplate capacity in dispatch.

Obtaining independent figures on the costs of becoming a scheduled participant

The Commission sought to verify the AEC's suggestion that the costs of scheduling participants have fallen in recent years. The Commission engaged GHD Advisory in partnership with HARD Software to assess the scheduling costs for the different generator classifications. The purpose of this report is to outline the additional costs that would be incurred by small generators if they were required to participate in central dispatch as semi-scheduled or scheduled generator rather than being classified as a non-scheduled generator.

The broad conclusions of this report are:

- Variations in total project costs for Variable Renewable Energy (VRE) plants between 5MW and 30MW capacity range between \$15 million and \$100 million, which is dependent on generation technology, manufacturer, and Engineering, Procurement and Construction (EPC) choice, location, complexity and size of the project.
- The total increase in upfront project costs for connecting and registering a scheduled or semi-scheduled plant compared to a non-scheduled plant is between \$1.3 million and \$1.8 million (for the same plant).
- The total increase in ongoing costs for operating as a scheduled or semi-scheduled plant compared to a non-scheduled plant is between \$150,000 to \$555,000 per annum, where these costs include:
 - operational support 24/7 and additional compliance resourcing
 - ongoing system costs, for example, hosting, support and software maintenance costs paid to vendors
 - ongoing changes to Rules requirements that result in operational or soft/hardware changes, including resourcing to monitor and keep them up to date as well as costs associated with implementing changes when needed.
- There are indirect costs associated with being a scheduled participant, which although not quantifiable, should be considered significant barriers for participants becoming a scheduled or semi-scheduled participant. These costs include:
 - constraint/curtailment
 - causer pays for regulation FCAS
 - mandatory Primary Frequency Response (PFR) delivery costs.
- While there have been some reductions in scheduling costs since the NEM's commencement, there have not been any material reduction in these costs since last considered by the Commission since 2017. If anything, the increasing complexity of the NEM's regulatory arrangements are causing these costs to increase in aggregate.

The conclusions of this report indicate that:

- The private costs of operating in central dispatch are considerable.
- These costs have not fallen in recent years as proposed by the AEC in its rule change request.

It is important to point out that although the Commission notes the indirect costs associated with becoming a scheduled participant, the impact of these issues on the decision to lower the scheduling threshold or not is more nuanced. Although issues such as curtailment, causer pays for regulation FCAS and mandatory PFR delivery costs represent significant private costs for market participants, these factors also contribute significantly to the public good of an efficiently functioning wholesale electricity market. In this instance, the Commission does not consider that the public benefits which would be derived from lowering the scheduled threshold are greater than that private costs it would incur onto participants.

Therefore, by noting this conclusion in conjunction with those found in the previous subsection, the Commission is minded to maintain the scheduling threshold at 30MW nameplate capacity for the same reason given in 2017: the proposed change would place considerable costs and obligations on parties that are not justified by the limited and uncertain benefits that may accrue.

AEMO's advice on whether 5-30MW generators are causing issues in central dispatch

In addition to the above analysis, AEMO has also indicated to the Commission that it does not consider non-scheduled generators with a nameplate capacity between 5MW and 30MW are currently causing any operational issues in the NEM. It considers this because:

- There is only approximately 600MW of non-scheduled generation currently registered across the NEM in this generator size bracket.
- It considers the Commission has taken steps to limit the impact of price responsive intermittent generation (large non-scheduled and semi-scheduled generation) on system security and notes the semi-scheduled generator dispatch obligations rule change as a recent example of this.⁶⁶
- Where system security concerns are an issue for any particular generator installation of this size bracket, AEMO is able to apply any relevant central dispatch obligation it sees fit via powers given to it in the Rules.⁶⁷
- The activity of non-scheduled generators is currently accounted for in AEMO's demand forecasts, where non-scheduled generation is subtracted off gross demand for each dispatch interval. AEMO considers that at the current volumes of non-scheduled generation in the NEM this forecast is adequate.

However, AEMO does consider that the following trends may lead to generation in this size bracket contributing to operational issues in the future:

- Growth in the volume of generation in this size bracket.
- Growth in, and variation between, hybrid installations that need to be supported in a way that supports power system operation through consistent treatment of all types of plant.
- A trend towards greater price responsiveness by NEM market participants.

This commentary from AEMO affirms the Commission's view that non-scheduled generators between 5MW and 30MW nameplate capacity are not causing material inaccuracies in central dispatch. Although AEMO considers market trends may lead these to generators contributing to operational issues in the future, the Commission does not consider this sufficient evidence for imposing the costs of operating as a scheduled participant onto smaller prospective generators. This is particularly the case given AEMO does not consider these generators are currently causing operational issues.

If it does eventuate that these generators begin to cause material operational issues, the Commission considers that alternative policies which are currently being explored by the ESB

⁶⁶ AEMC project page available [here](#).

⁶⁷ Clause 3.8.2(e) of the NER.

will be a more effective response to the issues described in the AEC's rule change request relative to lowering the scheduling threshold for all new generators. The details of these alternative policies will be addressed in the following section.

A.4.3

Scheduled lite as a solution to the AEC's issues once they become material

While the Commission does not consider non-scheduled generators between 5MW and 30MW nameplate capacity are causing material operational issues, there is a possibility that this could change in the future. If this were to occur, it is of the view that the ESB's scheduled lite work program is a promising first step for providing AEMO with greater visibility over non-scheduled resources, including generators between 5MW and 30MW nameplate capacity.

What is scheduled lite?

The scheduled lite work program currently being explored through the ESB's Post 2025 market design initiative that seeks to improve the efficiency of the wholesale electricity market through incentivising unscheduled resources (including demand and generation) to provide AEMO with information about their future intentions in the market.⁶⁸

Scheduled lite's problem statement covers the issues raised by the AEC in its rule change request, and seeks to amend the scheduling framework to optimise AEMO's visibility of power system resources and their future intentions.⁶⁹ It acknowledges that AEMO relies heavily on the real-time visibility and future intentions of market participants to adequately forecast demand as well as the output of variable renewable generation. This is becoming progressively difficult in the context of greater proportions of variable and non-scheduled generation entering the market and responding to wholesale prices.⁷⁰

The purpose of scheduled lite is to develop, in the first instance, a voluntary mechanism which incentivises unscheduled demand and supply side participants to provide more operational information to the market operator.⁷¹ The benefit is dispatch being informed on price and quantity from supply and demand sides and therefore more efficient, with less likelihood for interventions required.⁷²

How would scheduled lite resolve the issues discussed in the AEC's rule change request?

The ESB consulted stakeholders about introducing scheduled lite as a voluntary mechanism for participants which currently do not engage directly with dispatch or other market processes. It sought feedback on two different design approaches which might be used to implement the scheduled lite work program.⁷³ Either of these design approaches, which are not mutually exclusive, could be applied to non-scheduled generators between 5MW and 30MW nameplate capacity.

68 ESB, Post 2025 market design, options paper, part B, April 2021, p. 62, available [here](#).

69 Ibid.

70 Ibid.

71 Ibid.

72 Ibid.

73 Ibid, p. 65.

These two design approaches are referred to as the Visibility model and the Dispatchability model. The purpose of the Visibility model is to provide additional information on the future behaviour and intentions of resources without requiring participation in dispatch or full responsiveness.⁷⁴ To incentivise the provision of this information, the ESB has proposed to reduce the FCAS causer pay allocation and reduced operating reserve cost allocations (if introduced).⁷⁵ The purpose of the Dispatchability model is to encourage additional resources to participate directly in scheduling and potentially setting the market prices. It does this through reducing some of the barriers to participation and providing greater incentives which include.⁷⁶

- reduced FCAS causer pay allocation
- avoided RERT cost allocation (for load)
- reduced civil penalties
- reduced firmness factors for RRO obligations (for load)
- reduced operating reserve cost allocation (if introduced).⁷⁷

The Commission considers that implementing either of these models would present a more appropriate first step for resolving the issues identified by the AEC in its rule change request for the following three reasons:

1. As scheduled lite is focused on efficiently integrating small and medium resources into AEMO's forecasting and dispatch functions, the solutions developed will present more accessible and feasible frameworks for smaller-scale non-scheduled generators to participate in.
2. Scheduled lite is not mandatory and is therefore more proportionate to the magnitude of the problem which has been identified by the Commission. This will enable an economically efficient uptake of scheduling obligations by participants, while not requiring this where it would be uneconomic.
3. By seeking to implement a voluntary mechanism now before these issues begin having a material impact on the forecasting and scheduling process the ESB is developing a future focused market solution which will allow AEMO, and participants and their systems to be better prepared for the challenges which may emerge.

As just one example, the application of the Visibility model to a non-scheduled VRE generator presents a clear use case for the implementation of scheduled lite. As the technological sophistication of market participants increases, it is not unreasonable to expect a rising proportion of VRE generator operators will begin to adopt self-forecasting capabilities to manage the output of their fleets — particularly as ARENA's short-term forecasting trial comes to a close in mid 2021.⁷⁸ In a market where participants are already collecting this information themselves outside of regulatory requirements, scheduled lite promotes a low

74 Ibid.

75 Ibid.

76 Ibid, p. 66.

77 Ibid, p. 67.

78 More information on this trial is available [here](#).

cost and efficient solution to uncertainty in the market by incentivising them to provide this information to the market operator. In this instance, AEMO would gain the visibility of this asset without incurring the significant ongoing operational costs associated with participating in central dispatch via the current framework.

Although scheduled lite's voluntary implementation may result in fewer participants engaging with it relative to a mandatory implementation, the broad scope of this reform to include resources on both the demand and supply side of the market increases the scope of resources which AEMO could have visibility over. Importantly, this visibility will be provided without imposing additional, uneconomic costs onto those participants engaging in the existing scheduling framework, which they would be exposed to if the Commission sought to lower the threshold.

B NON-SCHEDULED CLASSIFICATION CONDITIONS

B.1 Overview

The AEC's rule change request proposed to narrow the conditions under which generating units can be classified as non-scheduled. It proposed these changes because it considered the current conditions to be too broad, and that this negatively impacts AEMO's ability to efficiently manage the power system. The Commission sought stakeholder feedback in the consultation paper on whether the AEC's proposed changes are appropriate.

The Commission's draft determination is to make a more preferable draft rule which addresses the AEC's concerns about the conditions for non-scheduled generating units classifications. The more preferable draft rule:

- Deletes clause 2.2.3(b)(1) of the Rules as proposed by the AEC which removes the local use of generation behind a connection as a condition for attaining a non-scheduled generating unit classification.
- Amends clause 2.2.3(a) of the Rules to address the AEC's concerns about large generating systems with many small units attaining non-scheduled classifications.

This appendix outlines:

- the proponent's views and proposed solutions
- stakeholder views
- the Commission's analysis and conclusions.

B.2 Proponent's views

B.2.1 The AEC's issue

Currently, the Rules require AEMO to approve a generating unit's classification as non-scheduled where the:

1. Primary purpose of the generating unit is local use and it would rarely, if ever, send out electricity above the 30 MW threshold.⁷⁹
2. Physical attributes of the relevant generating unit means it would not be practicable for it to participate in central dispatch.⁸⁰

In relation to the first test, the AEC considers the potential for a generator to impact scheduling and dispatch should be a more important consideration, as opposed to how regularly a generator may send out electricity above 30 MW. The AEC points out that some large generators have avoided being scheduled simply because they have unusual connection point configurations and this is not a relevant consideration when assessing a generator's importance in the dispatch and scheduling process.⁸¹ To illustrate its point, the AEC refers to the, now closed, 150 MW Anglesea coal power station in Victoria, which was classified as non-scheduled because it shared its connection point with the Point Henry aluminium smelter

⁷⁹ Clause 2.2.3(b)(1) of the Rules.

⁸⁰ Clause 2.2.3(b)(2) of the Rules.

⁸¹ AEC Generator registration thresholds — rule change request, p 3.

40 km away.⁸² The AEC believes this power station was wrongly classified as non-scheduled as it impacted the NEM's supply-demand balance to the same extent as other scheduled generators of similar size, despite its unusual connection circumstances.⁸³

The AEC is also concerned that a generator's ability to participate in central dispatch should be assessed on the basis of the physical attributes of the generating system as a whole and not on individual units. The AEC notes the proliferation of small units aggregated to form large generating systems and considers it problematic that such large generating systems are granted exemptions from being scheduled. It raises concern about the consequences for the power system if AEMO does not factor the output of large non-scheduled generating systems into its forecasting and dispatch processes, contributing to inaccuracies and inefficiencies in these processes.⁸⁴

B.2.2 The AEC's proposed solution

The AEC's rule change request sought to remove the link in the Rules between scheduling status and sent-out generation at the connection point.⁸⁵ This is because the AEC considered the presence of load between a generator's terminals and its network connection point is relevant only to market settlement, and is irrelevant to the generator's importance in the dispatch and scheduling process.⁸⁶

The AEC also argued that it is no longer appropriate to provide an exemption to a generator from being scheduled or semi-scheduled based on the physical attributes of the individual generating units. Consequently, the AEC proposed that clause 2.2.3(b)(2) of the Rules be amended so that it requires AEMO to consider whether the physical attributes of the generating system would make it impracticable for it to participate in central dispatch, rather than linking it to specific attributes of the individual units.⁸⁷

The effect of these changes would likely mean that fewer generators would meet the criteria for being exempt from scheduling obligations, which would increase the number of generators contributing to AEMO's forecasting and dispatch process.

B.3 Stakeholder views

Feedback on this issue in submissions to the consultation paper was limited to seven stakeholders. Stanwell and AEMO supported the AEC's proposed changes to clause 2.2.3(b) of the Rules for the same reasons given in the rule change request.⁸⁸

However, the remaining stakeholders who commented on this issue disagreed with the AEC's proposed changes. They did so because they supported 'the original principles of the Rules to be permissive and allow various options' and the 'future should encourage that philosophy of

82 Ibid.

83 Ibid.

84 Ibid, pp. 2-3.

85 Ibid, p. 7.

86 Ibid, p. 2.

87 Ibid, p. 7.

88 Submissions to the consultation paper: Stanwell, p 6, AEMO, p 10.

different requirements for different circumstances.⁸⁹ Wind Projects Australia and Climate Capital disagreed with the proposed changes because they do not consider they will deliver material market benefits and it would remove AEMO discretion when considering an application.⁹⁰

B.4 Commission's analysis and conclusions

BOX 2: MORE PREFERABLE DRAFT RULE — NON-SCHEDULED GENERATOR CLASSIFICATION CONDITIONS

The Commission's draft determination on this issue is to make a more preferable draft rule to address the AEC's concerns about the conditions of non-scheduled generator classifications. The more preferable draft rule deletes clause 2.2.3(b)(1) of the Rules, as proposed by the AEC. However, the Commission has decided not to use the AEC's proposed drafting for clause 2.2.3(b)(2) of the Rules. Instead, it has addressed concerns about large generating systems with many small generating units attaining non-scheduled classification by amending clause 2.2.3(a) to clarify the Rules to reflect AEMO's existing practice that groups of generating units behind a common connection point must be less than 30MW to be classified as non-scheduled.

Benefits of the more preferable draft rule

The more preferable draft rule will enhance security and reliability by:

- Narrowing the circumstances under which AEMO must approve an application to classify a generating unit as non-scheduled.
- Clarifying that the combined nameplate capacity of generating units behind a common connection point will be counted when approving non-scheduled status.

The Commission has made its draft determination for this issue as it agrees with the AEC's rationale for change. This is because:

- It considers deleting clause 2.2.3(b)(1) of the Rules will contribute to security and reliability and notes this change will impact very few generator proponents.
- AEMO already accounts for the AEC's issues with clause 2.2.3(b)(1) in its registration process, where the more preferable draft rule only seeks to codify this practice in the Rules.

B.4.1 Implementing the AEC's proposed deletion of clause 2.2.3(b)(1) of the Rules

Why the Commission agrees with the AEC's rationale for deleting clause 2.2.3(b)(1) of the Rules

⁸⁹ Submissions to the consultation paper: Sun Metals p 9, Australian Sugar Milling Council p 11.

⁹⁰ Submissions to the consultation paper: Wind Projects Australia p 9, Climate Capital p 1.

The Commission agrees with the AEC's proposed rationale for deleting clause 2.2.3(b)(1) of the Rules as it considers generating units being granted non-scheduled classifications by virtue of unusual connection point configurations could have adverse impacts on system security. It notes the example given by the AEC in its rule change request regarding the now closed Anglesea coal power station and agrees with its conclusion to delete the relevant clause which permitted this arrangement.

The Commission considers using usual sent-out generation as a threshold for non-scheduled generator classifications can have material impacts on system security when the usual conditions do not apply. For example, a connection point featuring a customer with a load of 100MW and a generator of 99MW. To the system, this appears as a 1MW load in most circumstances, and the current Rules would permit this generator to avoid central dispatch obligations and be classified as non-scheduled.

If the 99MW generator were to trip or respond to a price signal, or the load were to turn off allowing export of 99MW, this could radically change the flow at the connection point. If generating at full capacity, a trip would cause system demand to increase by approximately 100MW, instantaneously. Similarly, if the generator were to power up very quickly to respond to a price event this activity could not be accounted for in AEMO's pre-dispatch or dispatch schedules.

Both examples could incur negative impacts on both the NEM's supply-demand balance and system security. Therefore, the Commission considers parties generating electricity for the explicit purposes of participating in the NEM should not be permitted to avoid scheduling obligations by virtue of unusual connection point configurations or because its sent out generation may only rarely exceed 30MW.

Why the Commission considers the unintended consequences of this change to be limited

The Commission recognises that a potential unintended consequence of removing this provision may be that it would require businesses who generate electricity as an incidental part of their core business activity to participate in central dispatch. However, it does not consider this as a material risk for three reasons:

1. Sugar millers, or other entities whose generating units' fuel or energy source is dependent on an industrial process not related to the production of electricity, would not be required to participate in central dispatch. This is because, according to AEMO's *Guide to generator exemptions and classification of generating units* (AEMO guide), it would not be practicable for these units to participate in central dispatch under clause 2.2.3(b)(2) of the Rules.⁹¹
2. AEMO's exemption framework already protects businesses for the explicit purposes of participating in the NEM if the nameplate capacity of the generator is below 30MW. In the AEMO guide, it clearly sets out the criteria for exempting generators from registration where their nameplate capacity is between 5MW and 30MW.⁹²

⁹¹ AEMO, *Guide to generator exemptions and classification of generating units*, p. 13, available [here](#).

⁹² *Ibid*, pp. 8-9.

3. Very few generating units have used this clause to gain a non-scheduled classification. According to AEMO's NEM registration and exemption list, only three active market participants have used this specific clause of the Rules to attain their classification out of the 147 total non-scheduled generating units in the NEM.⁹³

The more preferable draft rule also contains grandfathering arrangements for those participants which have already used clause 2.2.3(b)(1) of the Rules to classify their generating units as non-scheduled generating units. This will ensure that this classification will continue once the more preferable draft rule, if made, commences.

B.4.2

Clarifying the Rules to address the AEC's concerns regarding clause 2.2.3(b)(2) of the Rules

The Commission agrees with the AEC's concerns about the need to prevent situations where a large generating system with many small generating units could be granted non-scheduled classifications if each unit falls below the 30MW threshold. However, it does not consider it appropriate to implement the AEC's proposed drafting.

Why the Commission does not consider it appropriate to implement the proposed drafting

The Commission does not consider it appropriate to implement the AEC's proposed drafting to resolve this issue for two reasons:

- AEMO has informed the Commission that its internal registration processes already consider groups of generating units behind a single connection point when assessing applications for non-scheduled generating units. It would not approve them as non-scheduled if their aggregate capacity exceeded 30MW. It also noted that it does this due to the wording of clause 2.2.3(a) of the Rules, but also acknowledged that the drafting of that particular clause does not make it very clear that this is what occurs in practice.
- It is unclear if the AEC's proposed drafting would lead to the consideration of generating systems which exist behind separate connection points. Currently, the term *generating system* in Chapter 10 of the Rules is only defined with regard to the application of performance standards and it is unclear how this definition would apply in the registration process. The Commission considers it would be inappropriate for classification tests to take into consideration the characteristics of other generating units behind separate connection points.

How the more preferable draft rule resolve the AEC's concerns

As AEMO has informed the Commission that it already accounts for the AEC's concerns regarding groups of generating units being classified as non-scheduled in its registration process, the more preferable draft rule seeks to increase clarity in clause 2.2.3(a) of the Rules. It does this by making it consistent with other similar clauses that already apply to scheduled and semi-scheduled generating units (clauses 2.2.2(a) and 2.2.7(a) of the Rules respectively).

⁹³ AEMO, NEM registration and exemption list, May 2021, available [here](#).

The current drafting of clauses 2.2.2(a) and 2.2.7(a) of the Rules make it clear AEMO considers the nameplate capacity of groups of generating units behind a single connection point when assigning classifications under those clauses. The more preferable draft rule makes clause 2.2.3(a) of the Rules consistent with the two clauses mentioned above to ensure consistency between them.

The Commission considers the effect of this rule change will be to clarify the Rules, codify what AEMO already does in practice and resolve the AEC's concerns regarding large generating systems with many small units attaining non-scheduled classifications.

C CONDITIONAL EXEMPTIONS

C.1 Overview

The Rules provide for two connection processes for different sized generators. Chapter 5A is designed primarily for residential solar PV generators and is generally a more streamlined and shorter connection process than the Chapter 5 process which applies to larger generators above AEMO's standing exemption from registration (currently 5MW).

Under the Chapter 5 connection process, generators must comply with generator technical performance standards (performance standards). They either accept the automatic access standard or negotiate an access standard with the NSP between the automatic and minimum access standard specified in schedule 5.2. Chapter 5A does not specify performance standards.

Mr Vermeer's rule change request sought to address uncertainty in the registration, performance standards, and connection process for persons with 5-30MW embedded generators who intend to apply to AEMO for an exemption from the requirement to register as a generator. He proposed to clarify the connection pathway through a 'conditional exemption' from registration to enable these generators to connect under chapter 5A.

The Commission's draft determination is to make a more preferable draft rule that makes minor amendments to the Rules to clarify the connection process and application of performance standards to address Mr Vermeer's issue. The Commission considers that the proposed conditional exemption rule amendments would not facilitate more efficient connections or provide more certainty.

This appendix outlines:

- the proponent's views and proposed solutions
- stakeholder views
- the Commission's analysis and conclusions.

C.2 Proponent's views and proposed solution

Mr Vermeer considered the Rules are unclear on which connection process and performance standards apply to 5-30MW embedded generators who may be eligible for an AEMO exemption from registration.⁹⁴

He considered the approval of an exemption arrives too late in the connection process which means a generator still has to connect under Chapter 5 and comply with the performance standards until the exemption is received.⁹⁵

This causes uncertainty on the applicable performance standards at the time of application which can add to development costs. He claimed it prevents efficient investment in generation co-located with large, distribution connected load.⁹⁶

⁹⁴ Mr Vermeer rule change request, p 1.

⁹⁵ Ibid, p 1.

⁹⁶ Ibid, p 1.

Mr Vermeer proposed that AEMO should grant a two year conditional exemption from the requirement to register as a generator for generators eligible for an exemption.⁹⁷ This would allow a connection applicant to have confidence that their project will be exempt from registration earlier in the process. Mr Vermeer considered that it would enable connection under the Chapter 5A process and allow the applicant to negotiate performance standards with the NSP in 'good faith' rather than assume it must comply upfront.⁹⁸

C.3 Stakeholder views

Approximately half of stakeholder submissions responded to the conditional exemption proposal. Some stakeholders supported a conditional exemption to provide project developers with clearer transparency on generator exemption registration requirements, and to make connection and performance standards negotiations with NSPs easier.⁹⁹

Others stated it should only apply to generating systems that share a single connection point, and that the size of the load should be no larger than the co-connected generation or be subject to meeting criteria before energisation and commissioning takes place.¹⁰⁰ One stakeholder supported a closer examination of the registration exemption framework to make sure it is transparent, reasonable and fit for purpose for new business models.¹⁰¹

Energy Queensland and AEMO disagreed with a conditional exemption. NSPs need to understand how the generator will operate and impact on the network.¹⁰² To do this, connections studies and performance standards must have been agreed, which would then inform whether the NSP could support an exemption from registration.¹⁰³

AEMO did not support the proposal as it cannot assess the potential system security impacts of a new generation facility, and therefore whether ongoing visibility of the plant's output is necessary, until it knows precisely what assets are being connected. Further, it cannot have the required level of certainty until the specific plant has been procured, which will always be after the developer has made an investment decision.¹⁰⁴ It considered a conditional exemption would only provide certainty to the developer up until AEMO conducts an assessment of the equipment and AEMO can provide no certainty about the outcome of that assessment. The new exemption would instead create a two-step registration process, with developers required to pay twice.¹⁰⁵

97 Ibid, p 10.

98 Ibid, p 11.

99 Submissions to the consultation paper: CEC p 1, EDL p 2, ERM Power p 5, Wind Projects Australia p 10.

100 Submissions to the consultation paper: ERM Power p 5, Stanwell p 7.

101 Submissions to the consultation paper: Enel X, p 10.

102 Submissions to the consultation paper: Energy Queensland, p 7.

103 Ibid, p 7.

104 Submissions to the consultation paper: AEMO, p 11.

105 Ibid, p 12.

C.4

Commission's analysis and conclusions

C.4.1

Current connection process and performance standards

Connection process

Under the Rules, the generator connection process and application of performance standards are linked to *AEMO's Generator exemptions and classifications of generating units guide* (AEMO guide).

The Rules do not include a generator size to determine whether a connection applicant should use the Chapter 5 or 5A connection process. Rather, the relevant connection process is determined by whether an applicant is automatically exempt from registration. This based is on the standing exemption in AEMO's guide which is provided for under clause 2.2.1(c) of the Rules. The current standing exemption threshold is for generators below 5MW.

AEMO requires connection applicants with generators above the standing exemption to seek registration and allows these applicants to apply for exemption from registration in circumstances set out in the AEMO guide. However, importantly, even when these connection applicants apply for, or receive, an exemption from registration they must still follow the Chapter 5 connection process rather than the Chapter 5A connection process.

Clause 5.3.1 of the Rules states that a registered participant or person intending to become a registered participant who wishes to establish a connection to a network must follow the procedures in rule 5.3. Furthermore, clause 5.3A.1 states that for the purpose of rule 5.3A a reference to a 'Connection Applicant' is to a person who is required to apply to AEMO for an exemption from the requirement to register as a generator in respect of a embedded generating unit.

The Rules also allow a non-registered embedded generator who makes an election to connect under rule 5.3A to follow the Chapter 5 connection process.¹⁰⁶

Performance standards

Schedule 5.2 of the Rules sets out details of additional requirements and conditions that generators must satisfy as a condition of connecting a generating system. Chapter 5 connection applicants must comply with the performance standards in schedule 5.2. Connection applicants are able to negotiate with an NSP, who is advised on some matters by AEMO, on the level of performance for the equipment they are seeking to connect to the power system. For each technical requirement, the negotiation occurs within a range provided by an automatic access standard, where a connection cannot be denied access on the basis of that technical requirement, and a minimum access standard, below which a connection must be denied access.

Schedule 5.2.1(b) of the Rules states that the performance standards in schedule 5.2 do not apply to generating systems that:

- are subject to, or are eligible for, an exemption from the requirement to register as a generator under clause 2.2.1(c), and

¹⁰⁶ Clause 5A.A.2(c) of the NER.

- where the NSP considers the generator will not cause a material degradation in the quality of supply to other users.

However, the AEMO guide states that generators between 5MW and 30MW that are eligible for exemption are not automatically exempt from the requirement to comply with the performance standards in schedule 5.2.¹⁰⁷ It states that, when applying for an exemption, the generator is required to provide a copy of the performance standards agreed with the NSP or a letter from the NSP confirming the generating system is unlikely to cause a material degradation to other users.

However, an NSP's judgement on these matters cannot be provided until after the pre and post commissioning network/system impact modelling has been completed and the performance standards agreed and specified in the connection agreement. This is discussed in the following sections.

C.4.2

Clarifying the connection process and application of performance standards

Mr Vermeer considered that the Rules should be clarified to allow generators between 5MW and 30MW who may receive an exemption from registration to connect under Chapter 5A. However, even for those who eventually receive an exemption, the Commission is satisfied that the Rules should continue to require all generators above the standing exemption to use the Chapter 5 connection process.

This is because as NEM conditions change, AEMO can, subject to the Rules consultation procedures outlined in the Commission's more preferable draft rule in chapter 2, amend the threshold as it deems appropriate having regard to the NEO. As part of AEMO's consideration, it would consider the application of performance standards, and how they are applied by NSPs to maintain the safety and reliability of the network. As discussed below, NSPs are likely to adopt a conservative approach and require performance standards for most generators.

The Rules allow connection applicants to apply for an exemption from generator registration and performance standards late in the connection process. In relation to performance standards, the contrast between schedule 5.2.1(b) in the Rules and the AEMO guide regarding the applicability of performance standards is causing some confusion in the market.

Without reference to the AEMO guide, some connection applicants may consider eligibility for an exemption means they do not have to comply with performance standards at *the commencement of the connection process* and may even base their early investment decisions on this presumption. This could impact the efficiency of the connection process and the overall business case of the project.

A conditional exemption would create more uncertainty

The Commission considers a conditional exemption cannot provide this certainty for connection applicants. This is because the connection process involves several stages, which include an iterative exchange of information between the applicant, the NSP and AEMO. Information relied upon for a conditional exemption is likely to change during the connection

¹⁰⁷ AEMO Guide to generator exemptions and classification of generating units, p 9.

process, which can take more than 24 months. An overview of the connection process is below:¹⁰⁸

BOX 3: CONNECTION PROCESS

Pre-feasibility stage

Connection applicants consider the feasibility of their project and begin discussions with the connecting NSP. Applicants may draw on information in the NSP's annual planning report and AEMO's Integrated System plan and for complex connections, the NSP or applicant may consult AEMO.

Preliminary enquiry stage

The applicant submits a connection enquiry and the NSP undertakes a preliminary impact assessment and consults with AEMO. The NSP engages with other asset owners or affected parties. The NSP provides a preliminary enquiry response to the applicant.

Application stage

The applicant submits a connection application to the NSP, inclusive of information stipulated in the enquiry response. During this stage, the NSP establishes performance standards and grid integration requirements and consults AEMO in relation to any negotiated standards which are AEMO advisory matters. These advisory matters relate to AEMO's functions under the NEL and a matter in which AEMO has role under clause 5.3.4B or in schedules 5.1a, 5.1, 5.2, 5.3 and 5.3a and include advice on the acceptability of negotiated access standards i.e. performance standards. During this phase, and at least 3 months prior to planned commissioning, the applicant commences the market registration process.

After provision of updated information from detailed design, the NSP confirms the ability to meet performance standards for registration purposes. However, a revised assessment may be required following detailed design if there are changes to proposed plant, performance standards, Rules requirements or other adjacent generators upon reaching committed stage. This may mean a connection applicant's modelling and technical assessment may need to be redone if a previously unknown adjacent generator reaches committed stage. Following completion of this stage, the NSP finalises the connection agreement and notifies AEMO.

Completion stage

This stage involves finalisation of market registration and commissioning of the facility, involving both AEMO and the NSP. The purpose of the commissioning phase is to confirm the ability to meet the proposed performance standards and validate model information used for planning and operational performance. This involves the NSP and AEMO reviewing commissioning test results at successive points to confirm alignment between modelled and tested performance and successful commissioning of the facility.

¹⁰⁸ AEMO NSP connection process diagram accessed 20 May 2021, https://www.aemo.com.au/-/media/Files/Electricity/NEM/Network_Connections/NSP-connection-process-diagram-v20.pdf

Furthermore, in practice, connection applicants must still comply with performance standards until they receive AEMO's exemption, following the NSP's assessment. The Commission notes that even with an exemption, NSPs may require generators who are greater than 5MW to meet some performance standards in schedule 5.2 of the Rules, as specified in the connection agreement. Further, some NSPs are requiring generators less than 5MW to comply with some of these performance standards.¹⁰⁹

C.4.3

The Commission will amend the Rules to provide greater clarity

BOX 4: MORE PREFERABLE DRAFT RULE

The Commission's draft determination is to make a more preferable draft rule. The key features are:

- **Connection process:** the rule clarifies that:
 - a non-registered embedded generator who makes an election for rule 5.3A of the rules to apply instead of Chapter 5A and who is applying for distribution network user access must also comply with rule 5.3AA of the Rules;
 - a person seeking to connect an embedded generating unit that is required to apply to AEMO for an exemption under the Registration guidelines must connect under rule 5.3 and 5.3A (as applicable) of the Rules.
- **Performance standards:** the rule clarifies that schedule 5.2 of the Rules does not apply to a person, in respect of a generating unit that they own, operate or control, that:
 - has received an exemption from, or is eligible for an automatic exemption from, the requirement to register as a generator under the Registration guidelines, subject to any conditions imposed by AEMO as part of that exemption; and
 - is connected, or is intending to connect, and is or intended for use in a manner the relevant NSP considers is unlikely to cause a material degradation in the quality of supply to other network users.

The benefits of the more preferable draft rule

The Commission considers that the more preferable draft rule will improve the quality of the Rules in terms of accuracy, clarity and consistency and is likely to contribute to the achievement of the NEO.

The Commission considers it remains appropriate for AEMO to have broad responsibility and discretion for registration, classification and exemption decisions, including the standing exemption. However, as outlined in appendix D.4, the Commission's draft determination is to formalise the AEMO guide in the Rules, and extend it to all registered participant categories (referred to in the more preferable draft rule as Registration guidelines). AEMO will be

¹⁰⁹ See for example: Energex and Ergon Network *STNW1175 Standard for high voltage embedded generator connections* p 30, Ausgrid *Non-Registered embedded generators guideline* p 5, SA Power Networks *TS131 Inverter Energy Systems (IES) Above 200kW or Any Size Rotating System*, p 15.

required consult with stakeholders in accordance with the Rules consultation procedures when amending the Registration guidelines, unless these amendments are minor or administrative. However, AEMO will not be required to following the Rules consultation procedures when developing and publishing the initial Registration Guidelines.

The Commission is not proposing to remove or alter the ability for connection applicants to seek an exemption from registration. However, the Commission's draft determination is to make a more preferable draft rule to clarify that the connection process in Chapter 5 applies to a person that is required to apply to AEMO for an exemption from the requirement to register as a generator (currently >5MW) under the Registration guidelines. Unless AEMO changes its standing exemption, generators with a nameplate capacity of <5MW will continue to use the Chapter 5A connection process. All other generators will use the connection process in Chapter 5.

Consistent with the current Rules, a non-registered embedded generator who makes an election to connect under rule 5.3A can follow the Chapter 5 connection process. However, the Commission considers it should follow the same requirements as embedded generators who need to comply with rule 5.3AA which governs access arrangements relating to distribution networks. The more preferable draft rule makes this amendment.

The Commission's more preferable draft rule also clarifies that exempt 5-30MW generators may still need to comply with any performance standards that AEMO or the NSP deem appropriate, as part of their exemption conditions in AEMO's Registration guidelines. This is currently specified in the AEMO guide and would align the Rules with what happens in practice.

The Commission considers that the more preferable draft rule will improve the quality of the Rules in terms of accuracy, clarity and consistency and is likely to contribute to the achievement of the NEO. This is important as the Rules informs stakeholders of their rights and obligations for participating in the NEM. The Commission considers these amendments will provide the certainty Mr Vermeer considered is lacking in the Rules. This in turn should promote efficient generator investment, as connection applicants will be able to make investment decisions with better understanding of both the connection process and application of performance standards.

D TRANSPARENCY OF AEMO'S REGISTRATION, EXEMPTION AND CLASSIFICATION PROCESSES

D.1 Overview

The AEC's rule change request sought to increase the transparency of AEMO's generator registration, exemption and classification decisions by requiring AEMO to publish its reasons for providing new registration exemptions or non-scheduled classifications.

The Commission's draft determination is to make a more preferable draft rule to require AEMO to develop, maintain and publish guidelines on registration, classification and exemptions under Chapter 2 of the Rules for all registered participant categories and to consult with stakeholders on amendments to the guidelines that are not minor or administrative in nature. The Commission considers this will better address the AEC's issue than requiring AEMO to publish its reasons for generator registration, exemption and classification decisions.

This appendix outlines:

- the proponent's views and proposed solutions
- stakeholder views
- the Commission's analysis and conclusions.

D.2 Proponents' views and proposed solutions

Both the AEC and Mr Vermeer were concerned with the lack of transparency of AEMO's discretionary powers in the registration, classification and exemption process but for different reasons.

Mr Vermeer considered generator registration exemptions are provided too late in the connection process and proposed a conditional exemption from registration as a potential solution.¹¹⁰

Appendix C discusses Mr Vermeer's conditional exemption proposal. The remainder of this Appendix discusses the AEC's proposal.

The AEC considered that AEMO does not provide sufficient transparency on its registration, classification and exemption decisions, including when it changes a generating unit's classification from scheduled to non-scheduled.¹¹¹ AEC noted that nine 30.8MW temporary generators were 're-classified' by AEMO from scheduled to non-scheduled without explanation. It considered large generating systems should remain scheduled to ensure their output can be considered by AEMO in its forecasting and dispatch processes.¹¹²

The AEC proposed that AEMO must publish its reasons for granting a generator above AEMO's standing exemption from registration and any conditions attached to such exemption,

¹¹⁰ Mr Vermeer rule change request, p 1.

¹¹¹ AEC rule change request, p 2.

¹¹² AEC rule change request, p 3.

within ten business days of making its decision. It also proposed AEMO publish its reasons why it has classified a generator that is greater than 5MW as non-scheduled.¹¹³

D.3 Stakeholder views

Approximately half of the stakeholders who responded on this issue agreed with the AEC's proposal. Stakeholders considered that because AEMO has discretion in providing exemptions to generators, the process should be as transparent as possible to promote certainty and confidence in the framework.¹¹⁴

Some stakeholders suggested AEMO should have an exemption assessment framework so publishing it should be straightforward.¹¹⁵ Other stakeholders noted that AEMO publishes details of approved variations for generators providing primary frequency response (PFR), alternatively it could adopt a similar public disclosure process for registrations and exemptions to that undertaken by the AER during retail exemption and authorisation.¹¹⁶ One stakeholder suggested AEMO publish reasons when they are not obvious, for example when the aggregated generating capacity at the connection point exceeds 30MW.¹¹⁷

The AER suggested the AEMC consider how the transparency of AEMO's decisions may be improved while retaining AEMO's discretion and operational judgement.¹¹⁸

Other stakeholders considered that, as the system operator, AEMO should be empowered with sufficient discretion to make judgements about the appropriate classification of generating units on a case by case basis without an added burden to publish unnecessary detail surrounding its decisions. Further, ensuring there is adequate privacy and confidentiality provisions in place for generator registration processes will encourage participants to work openly and effectively with AEMO in their application processes.¹¹⁹

Enel X noted AEMO publishes a registration and exemptions list which sets out the generators that have been granted an exemption from registration, and from central dispatch, and a brief explanation of AEMO's reasoning for those decisions.¹²⁰

AEMO considered this list provides an appropriate level of transparency to stakeholders, while protecting commercially sensitive information. AEMO considered that, if the Commission made the rule, there should be no time frame specified in the Rules, noting it generally updates the list within two business days of AEMO's Participant Registration Committee making a decision.¹²¹

113 AEC rule change request, p 2.

114 Submissions to the consultation paper: Origin Energy p 2, CEC p 2.

115 Submissions to the consultation paper: ERM Power p 5, AGL p 9.

116 Submissions to the consultation paper: AGL p 9, Stanwell p 4.

117 Submissions to the consultation paper: Wind Projects Australia, p 10.

118 Submissions to the consultation paper: AER, p 4.

119 Submissions to the consultation paper: Australian Sugar Milling Council p 11, Energy Queensland p 7, Sun Metals p 8.

120 Submissions to the consultation paper: Enel X, p 11.

121 Submissions to the consultation paper: AEMO, p 11.

D.4

Commission's analysis and conclusions

D.4.1

AEMO publishes a voluntary guide on generator exemptions and classifications

AEMO has the power under the Rules to determine whether to register or exempt a generator. Clause 2.2.1(c) of the Rules states that AEMO may exempt a person from the requirement to register as a generator in accordance with guidelines it issues from time to time. AEMO publishes a *Generator exemptions and classifications of generating units guide* (AEMO guide).¹²² As explained in Appendix C, the AEMO guide is the gateway to the NEM because it determines the connection process and the application of performance standards. AEMO also publishes the outcome of its decisions via its NEM registration and exemption list.¹²³ This includes the basis for application for exemption from registration and the basis for classification as non-scheduled.

In terms of the AEC's reclassification issue, the Commission understands AEMO may require a new registration application and re-assessment of a generating system, including the generator technical performance standards, when there is a significant change to the existing system. This is treated as a new registration not a re-classification. Moreover, any conditions it attaches to an exemption from registration are those outlined in the AEMO guide. The Commission understands AEMO may re-consider an exemption if the nameplate rating changes or if there is a material change in operation.

The AEC's concern about the transparency of AEMO's decisions is already addressed in the AEMO NEM registration and exemption list

AEMO is likely to receive commercially sensitive information as part of the registration, classification and exemption process. The Commission considers AEMO is best placed to determine how this information should be presented to the public in its NEM registration and exemption list to ensure it does not undermine commercial arrangements in the market. The Commission notes that some stakeholders suggested AEMO publishing approved variations for generators providing PFR could be a model for greater transparency. However, the *Mandatory primary frequency response* Rule 2020 specified that information provided to AEMO as part of an application for PFR variation or exemption is confidential information.¹²⁴

The Commission considers stakeholder suggestions that AEMO adopt a similar public disclosure process to the AER's retail exemption decisions would not be a proportionate response. The public disclosure of retail exemptions, and conditions attached to the exemption, demonstrates that the exempt retailer has in place appropriate residential customer protections as near as possible to the authorised retailer requirements under the retail law.¹²⁵ As AEMO's registration, classification and exemption decisions are not related to customer protections but rather the commercial interests of market participants, AEC's proposal to require AEMO to publish its decisions does not contribute to the NEO. The Commission has therefore decided to make a more preferable draft rule discussed below.

¹²² Link [here](#).

¹²³ AEMO NEM registration and exemption list available [here](#)

¹²⁴ AEMC, *Mandatory primary frequency response* Rule 2020, p 102.

¹²⁵ AER (Retail) exempt selling guideline version 5, March 2018, p 9.

D.4.2

AEMO's guide should be required under the Rules

BOX 5: MORE PREFERABLE DRAFT RULE

The Commission's draft determination is to make a more preferable draft rule:

- **Registration, classification and exemption guideline:** the rule requires AEMO to develop, maintain and publish guidelines for registration, classification and exemption processes under Chapter 2 of the rules (Registration guidelines), which include a description of:
 - The process for applications for registration, classification and exemption under this Chapter and, where relevant, the matters AEMO will or may take into account in assessing such applications.
 - The process for aggregation under clause 3.8.3.
 - The information to be contained in energy conversion models.
 - The information that AEMO may require applicants to provide and information that AEMO may make available at each stage of an application process.
 - AEMO can amend the Registration guidelines from time to time in accordance with the Rules consultation procedures, however, it won't be required to comply with these procedures when making minor or administrative amendments to the Registration guidelines.

The Rules consultation procedures provide for:

- Notice of the matter under consultation (i.e. amendments to the Registration guidelines that affects a potential or current market participant's rights and obligations) would be published on AEMO's website, inviting written submissions within a period of not less than 25 business days.
- Stakeholders may request a meeting with AEMO, but must give reasons why a meeting is necessary or desirable.
- AEMO must consider all valid submissions within 20 business days, with a further 25 business days allowed for requested meetings.
- Following its consideration of submissions and any meetings, AEMO publishes its draft Registration guidelines on its website for consultation with submissions due within a period of not less than 10 business days.
- AEMO must consider all valid submissions within 30 business days and publish the final updated Registration guidelines.

Benefits of the more preferable draft rule

The Commission considers the need for the market to be able to contribute to the processes participants need to follow to participate in the NEM outweigh any additional administrative burden on AEMO.

Stakeholders, including the AEC, are concerned about the lack of transparency on how AEMO makes registration, classification and exemption decisions. Mr Vermeer considered there is a lack of clarity in the connection process and performance standards because it is linked to AEMO's registration and exemptions.

In the interests of transparency and certainty, the Commission considers it is necessary to formalise what AEMO currently does in practice which is to maintain and publish 'Registration guidelines' to assist stakeholders to understand AEMO's registration, classification and exemption processes and decisions but to extend it to all registered participant categories under Chapter 2.

The Registration guidelines established under the Commission's more preferable draft rule will assist participants wanting to register, classify and participate in the NEM by outlining the different application processes but also the information that is required to be submitted to AEMO, and that AEMO may provide to the applicant.

In making rules, the Commission is required to consult with stakeholders, including in accordance with the National Cabinet's guidelines as administered by the Office of Best Practice Regulation.¹²⁶ In providing AEMO with an ability to make Registration guidelines, the AEMC is in effect delegating part of its rule making power. Given this, the Commission's expectation is that similar consultation standards should apply.

The more preferable draft rule requires AEMO to consult with stakeholders using the Rules consultation procedures on amendments to the Registration guidelines, other than those that are minor or administrative. This includes how AEMO *makes* its decisions and the supporting information it requires from stakeholders. In terms of amendments that are minor or administrative, the Commission considers that amendments to fact sheets, application forms and templates which fall out of the Registration guidelines would be minor or administrative, unless there were being updated in a way that would impact a current or potential participants' rights and obligations.

The Commission considers the need for the market to be able to contribute to the processes participants need to follow to participate in the NEM outweigh any additional administrative burden on AEMO. Their contribution should improve the quality of the Registration guidelines, increase their understanding of the process, and help all participants make better investment decisions.

In making this draft determination, the Commission is not reducing AEMO's registration, classification and exemption powers but rather requiring it to consult on how it makes decisions, given the potential impact on each registered participant category. The Commission expects that in the interests of transparency, AEMO will continue to publish the outcome of its decisions in its NEM registration and exemption list. However, the more preferable draft rule does not require this.

¹²⁶ Regulatory Impact analysis guide for Ministers' meetings and national standard setting bodies p 7.

The Commission notes AEMO has lodged a rule change request with the Commission on the Rules consultation procedures 'to increase the efficiency of consultation by providing an adaptable, fit-for-purpose consultation framework'.¹²⁷ The Commission has not commenced formal consultation on this rule change but should a rule be made, it will cover the Registration guidelines.

¹²⁷ AEMO rule change request - Electricity rules consultation procedures and Gas extended consultation procedure, p 11.

E LEGAL REQUIREMENTS UNDER THE NEL

This appendix sets out the relevant legal requirements under the NEL for the AEMC to make this draft rule determination.

E.1 Draft rule determination

In accordance with s. 99 of the NEL the Commission has made this draft rule determination in relation to the rule proposed by the proponents.

The Commission's reasons for making this draft rule determination are set out in section 2.4.

A copy of the more preferable draft rule is attached to and published with this draft rule determination. Its key features are described in section 2.1.

E.2 Power to make the rule

The Commission is satisfied that the more preferable draft rule falls within the subject matter about which the Commission may make rules. The more preferable draft rule falls within s. 34 of the NEL as it relates to the operation of the national electricity market¹²⁸ and the activities of persons (including Registered participants) participating in the national electricity market or involved in the operation of the national electricity system¹²⁹.

E.3 Commission's considerations

In assessing the rule change request the Commission considered:

- its powers under the NEL to make the more preferable draft rule
- the rule change requests
- submissions received during first round consultation
- the Commission's analysis as to the ways in which the more preferable draft rule will or is likely to, contribute to the NEO.

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.¹³⁰

The Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of Australian Energy Market Operator (AEMO)'s declared network functions.¹³¹ The more preferable draft rule is compatible with AEMO's declared network functions because it does not amend or affect those.

¹²⁸ NEL, section 34(1)(a)(i)

¹²⁹ NEL, section 34(1)(a)(iii)

¹³⁰ Under s. 33 of the NEL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for energy. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated council is now called the Energy Ministers Meeting.

¹³¹ Section 91(8) of the NEL.

E.4 Civil penalties

The Commission cannot create new civil penalty provisions. However, it may recommend to the Energy Ministers Meeting that new or existing provisions of the NER be classified as civil penalty provisions.

The more preferable draft rule does not amend any clauses that are currently classified as civil penalty provisions under the NEL or National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the Energy Ministers Meeting that any of the proposed amendments made by the more preferable draft rule be classified as civil penalty provisions.

E.5 Conduct provisions

The Commission cannot create new conduct provisions. However, it may recommend to the Energy Ministers Meeting that new or existing provisions of the NER be classified as conduct provisions.

The more preferable draft rule does not amend any rules that are currently classified as conduct provisions under the NEL or National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the Energy Ministers Meeting that any of the proposed amendments made by the more preferable draft rule be classified as conduct provisions.