Australian Energy Market Commission

RULE CHANGE

# RULE DETERMINATION

# National Electricity Amendment (Small Generation Aggregator Framework) Rule 2012

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**About the AEMC**

The Council of Australian Governments (COAG), through its then Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. In June 2011, COAG established the Standing Council on Energy and Resources (SCER) to replace the MCE. The AEMC has two principal functions. We make and amend the national electricity, gas and energy retail rules, and we conduct independent reviews of the energy markets for the SCER.

# Summary

The Australian Energy Market Commission (AEMC or Commission) has determined to make a rule on the Small Generation Aggregator Framework rule change request proposed by the Australian Energy Market Operator (AEMO). This rule change seeks to reduce the barriers to entry faced by the owners of small generators in actively participating in the National Electricity Market (NEM).

The rule as made creates a new category of Market Participant which will be able to sell the output of multiple small generating units without the expense of individually registering every generating unit. This change should lead to small generating units having a more direct exposure to market prices, and therefore create a more efficient wholesale market. This in turn should lead to long term benefits to consumers through lower prices paid for electricity, especially in peak times.

*Issue*

Most generators must register with AEMO when they connect to the network. This process is identical regardless of the size of the generator and hence more information is collected on smaller applicants than is necessary for the secure running of the network. This represents a cost to both AEMO and the applicant.

Generators with a nameplate capacity of less than 5MW have an automatic exemption from the requirement to register. Generators with a nameplate capacity between 5-30MW but generation below 20 GWh a year may be granted an exemption from registration at AEMO's discretion. Exempt generating units directly sell their energy to a Market Customer, such as a retailer. However these contracts generally specify a fixed price for the generation and therefore the owner of the generating unit does not receive or react to the pool price. This largely precludes small generators from acting as peaking plant.

Currently the only way generators of this size can receive the pool price is if they register with AEMO as a Generator and become classified as a Market Generator. However this process can be administratively difficult and expensive, especially compared to the likely returns. Therefore the registration system acts as a barrier to small generators fully participating in the market.

*AEMO's proposed rule*

To resolve this issue AEMO submitted the Small Generation Aggregator Framework rule change request on 22 December 2011. This rule change proposed that a new category of Participant, called a Small Generation Aggregator (SGA), would be created. Generating units that are exempt from registration due to their size would then have the option of selling their generation through an SGA instead of a Market Customer. These SGAs would be financially responsible for selling at the spot price in the NEM the output of the generating units in their portfolios.

*Rule as made*

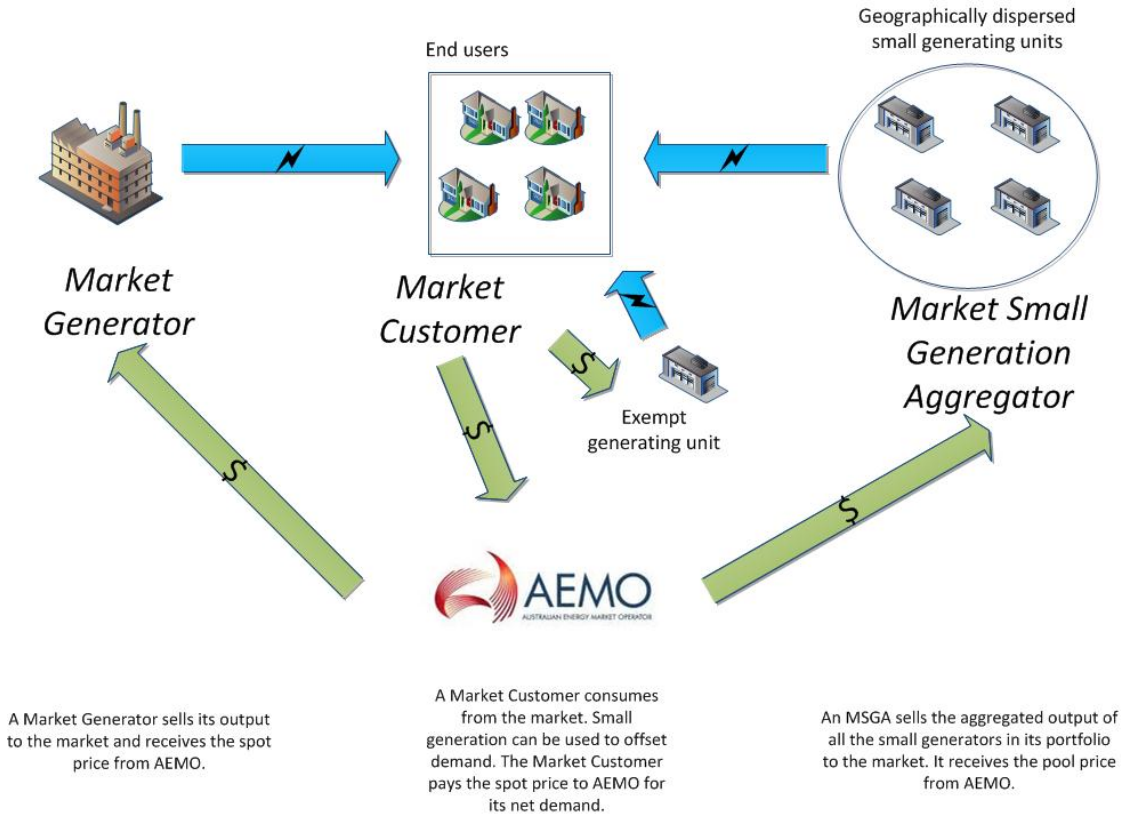
The Commission's final rule determination is to make a rule which largely reflects that proposed by AEMO. However, the final rule incorporates a number of amendments to the original proposal and the draft rule.

Currently participants must become a Registered Participant and then be classified as a Market Participant before being allowed to undertake trading in the NEM. The maintenance of this division represents the key difference between the proposed rule and the final rule. The rule as made therefore establishes two participant categories in the National Electricity Rules: the SGA will be a new category of Registered Participant; and the Market Small Generation Aggregator (MSGA) will be the new category of Market Participant. This distinction has been made to bring the framework into line with the existing rules for other participants in the NEM.[1]

Furthermore, the AEMC has determined that small generating units which sell their generation through an MSGA will be required to use remote read, interval meters (ie type 1-4) for their market functions. It has also determined that MSGAs should be liable for ancillary service fees in the same manner as Market Generators. These amendments clarify the responsibilities of small generating units and the associated MSGAs.

The Commission considers that the rule as made should increase the likelihood that exempt generators will receive more market based prices for their output. This should lead to a more efficient wholesale market and therefore lower long term prices for consumers. The below diagram compares the operation of the new category of Market Participant to Market Customers and Market Generators.

1 Any individual or company that registers with AEMO becomes a Registered Participant. This includes non market categories of participants such as Network Service Providers. On the other hand, Market Participants either sell or purchase electricity through the spot market. All Market Participants are also Registered Participants.




The Small Generation Aggregator Framework rule will commence on 1 January 2013. The rule also contains a number of transitional provisions to allow AEMO to modify its processes and systems in the period following its commencement.

*Jurisdictional Issues*

This rule addresses a number of issues associated with the registration of small generators in the NEM. The Commission notes that there are also a number of licensing requirements which generators must comply with. These are governed by jurisdictional legislation and other instruments, and therefore vary between jurisdictions.

In some cases it appears that these requirements might impact differently on exempt generators depending on whether they are registered with a Market Customer or with a MSGA. Although beyond the AEMC's remit, the Commission considers it important that all parties are aware of these requirements and their implications. A brief summary is therefore provided as Appendix A to this document.

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# 1 AEMO's rule change request

## 1.1 The rule change request

On 22 December 2011, the Australian Energy Market Operator (AEMO) (the proponent) made a request to the Australian Energy Market Commission (AEMC or Commission) for a rule change to create a new category of Market Participant called a "Small Generation Aggregator" (SGA).[2] These Market Participants would be financially responsible for the participation of one or more small generating units in the National Electricity Market (NEM), without having to register each individual unit as a Generator. The purpose of the proposed rule change was to encourage small generators to participate in the market by reducing financial barriers to entry.

## 1.2 Rationale for the rule change request

In the rule change request AEMO stated that small generators face a financial barrier to entering the market because of the costs associated with classifying each unit as a market generating unit. Currently all generators that wish to sell electricity through the NEM pool must first be registered, then classified as Market Generators. The registration process for market generators is identical regardless of the size of the generator. However, much of the information collected from smaller generators is not required to maintain secure operation of the system due to their limited impact. This registration process therefore acts as an unnecessary barrier to small generators as the costs of applying can be high relative to potential returns.

AEMO stated that the proposed rule change:

- should result in a reduction in costs for the owners of small generators that are participate in the market;
- could lead to lower peak prices due to more small generators operating at peak times;
- could lead to a reduction in infrastructure requirements for Distribution Network Service Providers (DNSPs) as more generation may be connected to the network near loads; and
- might provide a revenue stream for businesses that currently own small generators but do not use these to export to the grid (for example back-up generators). This could result in lower prices for the consumers of the primary product of these businesses.

AEMO estimated that removing the barriers related to classification may lead to fifty extra small generators entering the market over the next three years. AEMO further

2 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011.

estimated a combined monetary value of the savings from reduced infrastructure spending and a lower pool price at $5 million dollars over the next three years.[3]

## 1.3 Solution proposed in the rule change request

AEMO proposed introducing a new category of Market Participant to reduce barriers to entry for small generators.

The specific changes that AEMO proposed were to:

- create a new category of Market Participant called a "Small Generation Aggregator";
- define an SGA as anyone who has market responsibility for a generating unit that is exempt from registering as a Market Participant or who demonstrates to AEMO that they plan to operate a generating unit which meets this requirement;
- allow an SGA to have market responsibility for multiple separate "small generating units" throughout the NEM without the need to individually register each generating unit. Instead, these units would be added to an SGA's portfolio through Market Settlement and Transfer Solution (MSATS), similar to how Market Customers can change their market loads;
- require SGAs to buy and sell all electricity that flows through their registered connection points to the market. This requirement mirrors existing rules for Market Generators. AEMO proposed that these clauses be civil penalty provisions under the National Electricity Law (NEL);
- require that any connection point created meets the requirements of the jurisdiction in which it is located;
- introduce transitional arrangements to allow AEMO to begin changes to their procedures and systems prior to the AEMC's final determination so as to allow the rule to begin operation as rapidly as possible;
- exempt SGAs from the Carbon Dioxide Equivalent Intensity Index (CDEII);
- add SGAs to lists of Market Participants; and
- add the terms "Small Generation Aggregator" and "small generating unit" as defined terms in Chapter 10 of the rules.

Currently there is an option for a small generator that qualifies for exemption from registration to not participate in the NEM and instead contract directly with a retailer or Market Customer at the same connection point. The rule change request does not affect or remove this option.

3 Ibid p10.

## 1.4 Relevant background

In the *Review of Energy Market Frameworks in light of Climate Change Policies* the Commission examined a number of potential barriers to the efficient utilisation of small generators, particularly in the context of embedded generation.[4] The final report recommended that further work be undertaken on methods to remove these barriers to entry. Following this review, AEMO formed a working group that included representatives from governments and industry bodies to develop ways to encourage efficient entry by small generators.

In 2010 the AEMO working group published a report detailing eleven principles that could potentially improve the participation of small generation in the NEM.[5] A number of these principles formed the basis of the rule change proposed by AEMO.

There have been other investigations by government and industry bodies on how to increase the market penetration of small and embedded generation. This includes work by the AEMC as part of the Power of Choice review.[6] The AEMC is also presently consulting on another rule change that focuses on reducing barriers to entry for embedded generators relating to the connection regime.[7] Furthermore there are ongoing investigations by a variety of government entities on ways to encourage the efficient use of small generation capacity.[8]

## 1.5 Commencement of rule making process

On 15 March 2012, the Commission published a notice under section 95 of the NEL advising of its intention to commence the rule making process and the first round of consultation in respect of the rule change request. An AEMC staff consultation paper was also published that identified specific issues and questions for consultation. Submissions closed on 12 April 2012.

The Commission received thirteen submissions on the rule change request as part of the first round of consultation. They are available on the AEMC website.[9] A summary of the issues raised in these submissions and the Commission's response to each issue is contained in Appendix B.1.

4 Australian Energy Market Commission, *Review of Energy Market Frameworks in light of Climate Change Policies*, Final Report, AEMC 2009, Sydney, p75.

5 AEMO, *Small Generation Framework Design*, 2010.

6 See http://www.aemc.gov.au/market-reviews/open/power-of-choice-update-page.html.

7 Australian Energy Market Commission, *Connecting embedded generators*, Consultation paper, AEMC 2012, Sydney.

8 For example the recently completed *Inquiry into Feed-in Tariffs & Barriers to Distributed Generation* by the Victorian Competition and Efficiency Commission.

9 www.aemc.gov.au

## 1.6 Publication of draft rule determination and draft rule

On 5 July 2012, the Commission published a notice under section 99 of the NEL and a draft rule determination in relation to the rule change request (draft rule determination).The draft rule determination included a draft rule.

Submissions on the draft rule determination closed on 16 August 2012. The Commission received nine submissions on the draft rule determination. They are available on the AEMC website.[10] A summary of the issues raised in these submissions, and the Commission's response to each issue, is contained in Appendix B.2.

## 1.7 Extensions of time

On 21 June 2012, the Commission published a notice under section 107 of the NEL extending the period of time for the draft rule determination by two weeks. The reason for this extension was that the draft rule raised issues of complexity and difficulty relating to how the proposed framework for a new type of Market Participant may fit within the structure of the National Electricity Rules (NER). Consequently, an extension of time was required.

On 27 September 2012, the Commission published a notice under section 107 of the NEL extending the period of time for the final rule determination by six weeks. This extension was due to issues of complexity being raised in submissions to the draft determination.

On 8 November 2012, the Commission published a notice under section 107 of the NEL extending the period of time for the final rule determination by a further three weeks. This extension was due to issues of complexity in drafting the final rule.

10 www.aemc.gov.au

# 2 Final rule determination

## 2.1 Commission's determination

In accordance with section 102 of the NEL the Commission has made this final rule determination in relation to the rule proposed by AEMO. In accordance with section 103 of the NEL the Commission has determined to make, with amendments, the rule proposed by the rule proponent.[11]

The Commission's reasons for making this final rule determination are set out in section 3.1.

The *National Electricity Amendment (Small Generation Aggregator Framework) Rule 2012 No 8* (rule as made) is published with this final rule determination. The rule as made commences on 1 January 2013. The rule as made is different from the rule proposed by the proponent. Its key features are described in section 3.2.

## 2.2 Commission's considerations

In assessing the rule change request the Commission considered:

- the Commission's powers under the NEL to make the rule;
- the rule change request;
- the fact that there is no relevant Ministerial Council on Energy (MCE) Statement of Policy Principles;[12]
- the introduction of the National Energy Customer Framework (NECF);
- the conclusions of the *Review of Energy Market Frameworks in light of Climate Change Policies*;
- the conclusions of AEMO's 2010 *Small Generation Framework Design*;
- submissions received during consultation; and
- the Commission's analysis as to the ways in which the proposed rule will or is likely to contribute to the National Electricity Objective (NEO).

11 Under section 103(3) of the NEL the rule that is made in accordance with section 103(1) need not be the same as the draft of the purposed rule to which a notice under section 95 relates or the draft of a rule contained in a draft rule determination.

12 Under section 33 of the NEL the AEMC must have regard to any relevant MCE statement of policy principles in making a rule.

## 2.3 Commission's power to make the rule

The Commission is satisfied that the rule falls within the subject matter about which the Commission may make rules. The rule falls within section 34 of the NEL as it relates to the "the activities of persons (including Registered Participants) participating in the National Electricity Market or involved in the operation of the national electricity system."[13] Further, the rule falls within the matters set out in schedule 1, item 1 of the NEL because it pertains to the registration of Registered Participants.

## 2.4 Rule making test

Under section 88(1) of 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. This is the decision making framework that the Commission must apply.

The NEO is set out in section 7 of the NEL as follows:

> "The objective of this Law is 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."

For this rule change request, the Commission primarily considered whether the proposed framework was likely to lead to more efficient investment in and use of generation in the NEM, and potentially the effects of these on the price of electricity.[14]

The Commission is satisfied that the rule would, or is likely to, contribute to the achievement of the NEO for the following reasons.

- The rule should lower barriers to small generators entering the NEM as it should:
  - reduce the costs incurred by AEMO during the present application process for registering Market Participants and so reduce the costs that are passed on to applicants;
  - lower the costs incurred by small generators in preparing the required documentation; and
  - allow entities that are not familiar with the NEM to participate through a more experienced agent.

13 NEL section 34(1)(a)(iii)

14 Under section 88(2), for the purposes of section 88(1) the AEMC may give such weight to any aspect of the NEO as it considers appropriate in all the circumstances, having regard to any relevant MCE Statement of Policy Principles.

- An increase in the amount of small generation capacity could lead to marginally lower long term prices faced by consumers due to:
    - an increase in market participation and thus more competition in peak generation capacity; and
    - improved efficiency in the use of peaking capacity.
- There are no major costs in the rule change proposal.
    - AEMO estimates that implementation costs are approximately $600,000.[15] These costs have already been budgeted for in its internal processes.
    - There should be minimal impact on the security of the network as owners of small generators would be exempt from registration as a Generator by AEMO under the current rules
    - The proposed rule does not appear to impose inefficient costs on any other Registered Participants.

On balance, the Commission considers that the rule is likely to contribute to the achievement of the NEO as it lowers costs and so provides greater flexibility for new generators to enter the market without imposing inefficient costs on other Registered Participants. This is likely to enhance efficiency and therefore lead to a reduction in the long term prices seen by consumers.

Under section 91(8) of the NEL 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 AEMO's declared network functions. The rule will not affect these functions.

15 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011, p11.

# 3 Commission's reasons

The Commission has analysed and assessed the issues arising out of this rule change request. For the reasons set out below, the Commission has determined that a rule should be made. The reasons for this decision are set out in section 3.1. The differences between the rule as made and the proposed and draft rules is in section 3.2. The reasons for creating a separate category of Registered Participant and Market Participant are elaborated in section 3.3. Finally section 3.4 sets out issues regarding civil penalty provisions.

## 3.1 Assessment of issues

### 3.1.1 Current situation

Anyone that owns, controls or operates a generating system connected to a distribution or transmission network in the NEM must register as a Generator with AEMO.[16] However, AEMO has the authority to grant an exemption from registration for generators that meet certain criteria.[17] AEMO's registration guidelines set the criteria for exemption from registration as generators that have a nameplate capacity of less than 5 MW. Alternately, generating units that have a capacity of between 5 MW and 30 MW and are able to satisfy AEMO that they will export less than 20 GWh per year are also able to apply for exemption.[18]Under the rule as made, those generators that have the option of obtaining an exemption from AEMO are defined as *small generating units*.

Under the current arrangements, small generators have two options for selling their generated electricity. First, they may participate in the NEM in the same way as other Market Generators. Alternatively they may directly contract with a retailer or another customer at the same connection point to sell all their generated electricity at an agreed price. The second option avoids having to register as a Generator.

Registering and being classified as a Market Generator involves relatively large upfront administration costs. AEMO charges $5,100 for registering a generator and this price will increase to $10,000 by 2015/16.[19] This must be paid for every unit that is to be registered as a market generating unit and does not include the costs incurred by the applicant in the course of preparing the relevant documentation for AEMO. For a small generator this registration process represents a significant impost relative to potential revenue.

This fee is intended to cover the cost that AEMO incurs in processing the registration application. AEMO is obliged to collect the same information using the same procedure for all applicants. Much of the information collected from small generators

16 Section 2.2.1 of the NER.

17 Section 2.2.1(c) of the NER.

18 AEMO, *Guide to NEM Generator Registration*, 2012.

19 Ibid p6.

in this process is of limited use for the purpose of maintaining network security. Thus the initial registration costs create a potential barrier to market entry for small generators which does not serve any administrative purpose or help achieve system security.

The benefit of market participation is that small generators can access the spot market at times of high prices. This benefits the owner of the small generator in terms of potentially higher revenues, and also benefits consumers as it increases competition amongst peaking plants. It allows generating capacity to be used more efficiently.

In contrast, non-market small generators are not always able to receive and therefore react to the spot price. The payment agreement between a small generator and a retailer is subject to negotiation and may not fully reflect the spot price. Hence the potential benefits to both the generator owner and the wider community of existing generation capacity are not fully realised.

The Commission therefore considers that there is a barrier to the efficient participation of small generators in the NEM and, further, that their participation could enhance efficiency. Consequently, it has been determined that a rule should be made to address this barrier.

The following three subsections explain why the rule is likely to be efficiency enhancing and so meet the rule making test.

We also note that an additional barrier to entry of small generators may be jurisdictional licensing arrangements. This is an issue that is outside of the AEMC's area of responsibility. However, every jurisdiction in the NEM has differing regulatory requirements for small generators that the owners of such systems should be aware of. This issue is briefly examined in Appendix A.

### 3.1.2 Benefits to small generators

Owners of small generation units are likely to benefit from this rule. The rule removes an existing barrier to market participation by lowering the costs associated with participating in the NEM. In doing so, the framework provides greater flexibility for small generator owners by increasing their range of choices to include a more cost effective means of entering the market. This additional option may also put pressure on retailers to offer more attractive contracts for those small generators that choose not to participate in the market.

The rule change should also remove another barrier relating to the information requirements of small generation owners. Many small generators are owned by entities whose primary focus is outside the energy industry. As a result these entities may lack knowledge of the structure and operation of the NEM, which is inherently complex. SGAs, which should have experience and knowledge of the market trading systems, should provide an alternative means for small generator owners to capture some of the benefits of participating in the NEM without the need to acquire such knowledge.

Therefore the Commission expects that this rule change should have a positive impact on reducing barriers to small generation. Any reduction in barriers should lead to an increased number of small generators participating in the NEM, although it is difficult to quantify the amount of additional generation that will enter the market due to the creation of a new Market Participant that can aggregate small generating units. This is discussed further in chapter 5.

### 3.1.3 Benefits to other Market Participants and consumers

The creation of the new category of Market Participant is expected to lead to an increase in market participation for small generators. Such an increase in small generator participation should have benefits for the wider market, including a more efficient market for peaking plant and increased business opportunities for Market Participants.

Aggregators of small generating units are expected to operate their portfolios as peaking plant because these units potentially have higher fuel cost. Therefore this new framework could lead to more competition for peaking capacity and potentially lead to marginally reduced peak prices as existing small generators participate in the market. More broadly, the new framework will promote the more efficient use of existing generation capacity.

Furthermore opportunities may open for existing Market Participants to expand into the role of an SGA. An example of potential synergies is a retailer also registering as an aggregator. Doing so will allow the retailer the opportunity to 'bundle' retail electricity and an aggregation service to consumers with small generators. Having access to this peaking capacity may also improve a retailer's contract position as they will have additional independent capacity during high price periods.

### 3.1.4 Potential costs

The Commission considers that the potential costs from this rule change are low. The main costs associated with the rule are those incurred in implementing the framework. These costs primarily fall on AEMO, which will need to change a number of its systems and procedures. AEMO has estimated these costs at $600,000.

There do not appear to be any inefficient additional costs imposed on other Registered Participants or consumers as a result of the rule.

Furthermore, there are no major network or system security concerns raised by the rule change. Small generators covered by this rule change are already able to be connected to the network without registering with AEMO. There should be minimal impact as a result of these generators selling their generation in the market compared to contracting directly with a retailer.

## 3.2 Key features of the rule

As described in section 3.1 the Commission broadly agrees with AEMO's views on the need for a rule. The Commission further considers that the framework for introducing a new Market Participant that was proposed by AEMO and summarised in section 1.4 is broadly appropriate. The key features of how the final rule differs from the proposed rule are below:

- The rule clarifies that a Small Generation Aggregator is a Registered Participant who has one or more small generating units. The new category of a Market Small Generating Aggregator (MSGA) is a Market Participant with each small generating unit classified as a market generating unit. Each market generating unit has its own connection point. These provisions are necessary and consequential on the creation of the SGA and the MSGA. This is discussed further in section 3.3.

- The rule states that for the purposes of Chapter 5A of the NER the MSGA is deemed to be an agent of a retail customer[20] where there is an agreement relating to the customer's small generating unit. This alteration is to indicate there should be no change to the connection regime between embedded generators and DNSPs if the embedded generator is part of an MSGA (see section 8.3).

- The rule provides that the dispute resolution provisions in Chapter 8 of the rules do not apply for a notice for deregistration of an MSGA. This provision is consequential on creating the MSGA as a Market Participant.

- The rule does not include small generating units in the calculation of distribution loss factors as proposed because the existing reference to embedded generating units is sufficient.[21]

- The rule provides that AEMO is to make a number of changes to facilitate the introduction of MSGAs in the NEM. These changes include alterations to ancillary services transactions and amendment of the metrology procedures to take into account the draft rule (see section 9.1).

Additionally the rule as made amends the following from the draft rule:

- Small generating units that are part of an MSGA will be required to use a type 1-4 meter (see section 6);

- MSGAs will be required to pay ancillary service fees in the same way as Market Generators as well as having to contribute to the payment of compensation for "other" directions (see section 7); and

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20 In Chapter 5A of the NER a retail customer "includes a non-registered embedded generator and a micro embedded generator."

21 NER 3.6.3(b)(2).

- AEMO will not collect participant and ancillary service fees from MSGAs until a date specified by AEMO which is expected to be June 2013 but must be before December 2013. (see section 9.1).

In making the rule, the Commission relies upon its consequential rule making powers in section 91B of the NEL.

## 3.3 Market Small Generation Aggregator

The rule amends the structure of the new participant type proposed by AEMO in the rule change request. AEMO's proposal included the creation of a single participant category: a "Small Generation Aggregator". This entity would be both a Registered Participant and a Market Participant. However the Commission considers that this structure is not consistent with the existing rules and definitions for other categories in the NER. For all current categories the Registered Participant (for example Generator or Customer) is classified separately from the Market Participant (Market Generator or Market Customer). For these other categories it is possible to be a non-market Registered Participant body and be subject to the NER. Additional standards such as prudential requirements are placed on entities that are Market Participants but not Registered Participants.

The Commission considers that this rule change should follow the structure of the NER for all other participants. The reasoning behind this decision is to make the NER consistent across all categories so as to ease future interpretation. Thus the rule includes a Registered Participant which is the SGA and a Market Participant which is the MSGA.

The existence of the SGA and the MSGA should have limited impact in practical terms for the operation of the new framework. As the primary reason of the rule change is to allow small generators to have access to the market, the existence of an MSGA does not imply the existence of a non-Market Small Generation Aggregator. This issue is elaborated in Section 8.4. The rule, in placing the registration of SGAs and MSGAs under one clause, allows AEMO to make to the process of applying to be an SGA/MSGA a single step process. The AEMC does not expect that there will be an SGA that is not an MSGA.

The Commission agrees that MSGAs should be administered in a manner similar to Market Customers. Under the rule as made each MSGA will be able to add small generating units to its portfolio through MSATS in the same method as Market Customers currently add end customers. To emphasise that the MSGA is a body that is analogous to a Market Customer, the rule change places the framework after the customer section of Chapter 2 in the NER.

## 3.4 Civil Penalties

AEMO's proposed rule included two clauses which the proponent considered should be civil penalty provisions. AEMO also stated that the Australian Energy Regulator

(AER) has agreed that these civil penalty provisions are required. These provisions relate to a requirement for all MSGAs to sell all their exported electricity to AEMO and to purchase all their imported electricity from AEMO.[22] These provisions are the equivalent to the current clauses for the operation of Generators in the NEM.[23]

The Commission considers that these civil penalty provisions are appropriate and hence will recommend to the Standing Council on Energy and Resources (SCER) that these provisions be classified as civil penalty provisions.[24]

In the consultation paper, the AEMC requested stakeholder views on any risks if these provisions come into force after the commencement of the rule. Stakeholders who commented were in favour of the rule not being delayed because of concerns relating to these civil penalty provisions.[25] The Commission agrees the risks are likely to be minimal if the rule comes into force before SCER has determined whether the civil penalty provisions should apply and thus will not delay the rule for this reason.

22 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011 p9.

23 NER sections 2.2.4(c) and 2.2.4(d).

24 Rule as made 2.3A.1(g) and 2.3A.1(h).

25 City of Sydney, Consultation paper submission, p2; Clean Energy Council (CEC) , Consultation paper submission, p5; EnerNOC, Consultation paper submission, p3; LMS, Consultation paper submission, p3; TRUenergy, Consultation paper submission, p3; United Energy, Consultation paper submission, p5.

# 4 Commission's assessment approach

This chapter describes the analytical framework that the Commission has applied to assess the rule change request in accordance with the requirements set out in the NEL (and explained in Chapter 2). To assess this rule change the Commission examined whether the proposed new framework could lead to:

- lower administrative costs for AEMO (and therefore Market Participants) as well as small generators, reducing barriers to entry; and
- more efficient use of and investment in generation, through more efficient participation of small generators in the NEM.

We also considered:

- the potential use of small generators as peaking plant to reduce peak price and potentially demand; and
- a possible reduction in the need for network infrastructure and hence network charges for customers.

Any cost reduction must be balanced against security, reliability and safety issues, including AEMO's ability to manage network security issues and DNSPs' ability to manage reliability requirements.

The Commission has focussed on this set of issues because they represent the most likely effects of the rule change.

Generally, the Commission considers that where a proposed rule provides increased flexibility and reduces barriers to entry to a group of participants without imposing inefficient costs on other participants, the proposed rule is likely to enhance efficiency.

The following chapters outline the specific issues examined in this rule change request, including those raised by stakeholders. These issues include:

- the participation of small generators in the NEM (section 5);
- how small generating units should be metered (section 6);
- whether ancillary services fees should be paid by MSGAs (section 7);
- implementation issues (section 8); and
- the transitional arrangements that will be necessary (section 9).

# 5 Participation of small generators

## 5.1 Rule Proponent's view

The rule proponent considered that there are currently barriers to entry for small generators, as described in section 1.2. Permitting an SGA to add additional generating units to its portfolio without the need to classify each unit as a market generating unit should reduce this barrier and so increase the market participation of small generators. AEMO estimated there may be fifty new small generators in the NEM with a combined capacity of 150 MW over the next three years.[26]

## 5.2 First round of consultation

### 5.2.1 Barriers to Entry

A number of a stakeholders agreed with the proponent that there are currently barriers to small generators becoming market generators.

The CEC (Clean Energy Council) stated that "[p]articipation costs are a clearly evident barrier".[27] Haron Robson stated that barriers to entry such as "application, ongoing compliance and unclear regulatory guidance" means that there are large numbers of small generators (specifically tri-generation) that have been constructed and do not participate in the NEM.[28]

A number of stakeholders considered that the rule proponent underestimated the costs small generators currently face. AEMO focussed solely on the costs it passes on to applicants and did not take into account the cost of preparing the relevant documentation. EnerNOC noted that some applications are over one hundred pages long.[29] TRUenergy stated that the process is unnecessarily complex and sometimes requires applicants to seek legal advice.[30]

Moreover many small generator owners have limited knowledge of how the NEM operates and this lack of information acts as a barrier to entry.[31] As a consequence Haron Robson stated that the creation of SGAs will "increase feasibility and stimulate adoption" of small generation.[32] It also stated that the existence of SGAs will mitigate

26 AEMO, *Small Generation Aggregator Framework rule change request*, p9, 2011.

27 CEC, Consultation paper submission, p2.

28 Haron Robson, Consultation paper submission, p1.

29 EnerNOC, Consultation paper submission, p1.

30 TRUenergy, Consultation paper submission, p2.

31 Haron Robson, Consultation paper submission, p1; United Energy, Consultation paper submission, pp4-5.

32 Haron Robson, Consultation paper submission, p1.

skills shortages as trained people can work with multiple different generator owners while remaining at the one company.[33]

On the other hand the National Generators Forum (NGF) was strongly opposed to the rule change on the grounds that it may lead to a cross subsidisation of small generation by scheduled generators. The NGF stated that there is already a system in place for a small generator to avoid the application fee and process by choosing to be non-market generator and contracting with a retailer.[34] The NGF further stated that if the registration process collected unnecessary information then it should be redesigned for all generators, not just small generators.[35]

### 5.2.2 Potential new small generators from the rule change

There were a number of differing views on the likelihood that the proposed rule would stimulate additional market entry by small generators. GlobalNRG believed that the rule change would lead to 216 new small generators which would export 119,836,800MWh per year.[36] However a number of other stakeholders indicated that the framework will not lead to a marked increase in small generation due to the existence of other barriers, although they supported this rule change as a first step.[37]

### 5.2.3 Impact on the wholesale market

A number of stakeholders indicated that they considered that the introduction of SGAs would increase competition in the wholesale market.[38] These stakeholders considered that as small generators will have incentives to operate during price peak periods, the average pool price may be reduced due to more competition. United Energy and Mark Johnston also considered that the rule would lead to AEMO better being able to predict demand.[39]

However the NGF was concerned that encouraging small generators to enter the market and run as peaking plant would result in productive inefficiencies because relatively high cost small generating units (eg diesel fuelled plant with variable fuel costs in the range of $400 to $500/MWh) may displace lower cost scheduled plant. The NGF considered that this does not constitute an improvement in economic efficiency even if it results in lower prices in a particular trading interval.[40]

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33 Ibid, p1.

34 NGF, Consultation paper submission, p2.

35 Ibid, p2.

36 GlobalNRG, Consultation paper submission, pp1-2.

37 TRUenergy, Consultation paper submission, p2; LMS, Consultation paper submission, p2.

38 CEC, Consultation paper submission, p4; Energy Retailers Association of Australia (ERAA), Consultation paper submission, p1.

39 Mark Johnston, Consultation paper submission, p3; United Energy, Consultation paper submission, p4.

40 NGF, Consultation paper submission, p2.

The NGF was also concerned that AEMO are "willing to pursue measures to decrease price volatility for the sake of delivering short term benefits to customers".[41] The NGF considered this would adversely impact investment in large scale peaking plant and so dynamic efficiency if it creates a perception that the operator is willing to decrease volatility for short term benefits.

### 5.2.4 Impact on networks

A number of stakeholders supported the view that small generators could reduce long term distribution infrastructure spending.[42] They considered that many small generators would be connected to the distribution network and could operate during high price periods. This could reduce the peak requirements on DNSP network spending.

However both the NGF and Ausgrid stated that small generators may not be located near demand.[43] Furthermore Ausgrid noted that high demand periods do not necessarily coincide with high price periods and hence there is no certainty that SGAs will export their energy when it is most necessary. Therefore these companies do not consider that there will be much of a reduction in distribution infrastructure spending as a result of this rule change. However Ausgrid noted that there are some benefits from increased embedded generation, which may become apparent as their penetration is increased.[44]

## 5.3 Second round of consultation

Ausgrid commented that the rule change proposal, while providing for improved conditions for small generators, does not take into account the situation for the market as a whole. Ausgrid considered that there has been no failure demonstrated in the status quo. Furthermore, the ability of small generating units to contract with retailers means that it is already possible for small generating unit owners to interact with the market through a more experienced body. Therefore there are no information benefits that can come from MSGAs. Ausgrid also considered that the AEMC did not fully evaluate the alternative of streamlining the registration process for all generators. If the process of registration was altered it may remove the necessity for the change of the rules.[45]

Both the CEC and Energy Makeovers made reference to the fact that there is no locational or time signal for small generating units. However these stakeholders noted that small generating units will usually be near major load centres and that there is a correlation between high spot price and high demand on the networks. Therefore there

41 NGF, Consultation paper submission, p3.

42 Haron Robson, Consultation paper submission, p1; CEC, Consultation paper submission, p2.

43 Ausgrid, Consultation paper submission, pp2-3; NGF, Consultation paper submission, p4.

44 Ausgrid, Consultation paper submission, pp2-3.

45 Ausgrid, Draft determination submission , pp5-6.

should be a benefit to the network, even if it is not quantifiable.[46] Energy Makeovers also stated that this indicated that improvements were needed in the processes to pass on savings from avoided network costs.[47]

## 5.4 Conclusion

### 5.4.1 Barriers to entry

The Commission considers that this rule change should remove one of the barriers to small generation entering the NEM. Specifically the rule change should reduce the transaction costs faced by small generators when applying to participate in the market. This reduction includes the indirect costs in collating the application documentation and the direct costs that are passed on by AEMO in processing applications.

The Commission notes that the reduction in costs for small generators from this rule does not represent cross subsidisation from scheduled generation. The cost reductions for small generators come from passing on registration cost savings by AEMO and not from a subsidy.

Further, much of the information collected in the registration and classification process for a Market Generator is important for determining the impact of a large plant on system security but is not relevant for a small generator. This is why such generators are permitted to be exempt from registration. Choosing to participate in the market does not change these information requirements. Consequently the Commission does not consider that the SGA framework treats small generators more favourably than large scheduled generators.

Altering the registration process as proposed by both the NGF and Ausgrid would be a large expansion in the scope of the rule change. Altering the registration system would require redesigning the entire process of registering to be a Generator. It would also require creating a layered distinction of different generator categories with different levels of responsibilities. Undertaking such a change would require examining the process not just for small generators, but all registered Generators. As a consequence the implementation costs of such a process would be high.

### 5.4.2 Potential new small generators from the rule change

A reduction in administration costs due to this rule change may lead to more small generators participating in the market. This should lead to the more efficient use of generation capacity in the NEM. However, predicting the amount of new generation that may enter is difficult, particularly as other barriers to entry may remain. Therefore the Commission considers this determination to be an incremental step in the task of removing impediments to market participation for small generation. We note that there

46 CEC, Draft determination submission, p2; Energy Makeovers, Draft determination submission, p1.

47 Energy Makeovers, Draft determination submission , p1.

are separate processes examining these other barriers, including the AEMC's *Power of Choice* review and a rule change request on connecting embedded generation.

Furthermore, the rule as made will lead to more options being available to the owners of small generating units. Allowing the owners of small generating units to sell their generation to the market through a third party will represent a new opportunity for these individuals or companies, many of whom lack experience in the energy market. We note that stakeholders, including the NGF and Ausgrid, questioned the need for the rule on the ground that direct sale contracts can currently be negotiated with a Market Customer. However the nature of the relationship between a MSGA and small generating unit is different as the generating unit will directly represent a market unit in a small generation portfolio rather than a non market offset in a load portfolio.

### 5.4.3 Impact on wholesale markets

The Commission considers that this rule may result in marginally more efficient wholesale market outcomes through increased competition as a result of additional small generators entering the NEM. However, much of the benefits stem from the more efficient use of existing generation capacity to meet peak demand. There is existing generation capacity that is currently being underutilised due to the costs of market participation. Providing a mechanism to access such generation could also delay the need for additional investment in peak capacity, lowering costs to consumers.

The Commission disagrees with the NGF's concerns regarding the impact on productive efficiency. An MSGA will only run a unit if its total revenue is higher than total costs, i.e. the spot price must be high enough before that unit will switch on. Since the spot price is set by the marginal scheduled generator (which will also only operate where it will recover its costs), it is unlikely that the small generator will offset lower cost scheduled plant unless it runs at a loss. There may be a chance of an MSGA running a unit in error, particularly where the spot price is very close to the point at which a portion of the MSGA's portfolio becomes economic to generate. However, given that this would cost the MSGA it is likely to take steps to minimise this risk.

The Commission also disagrees with the NGF's concerns regarding the rule impacting inefficiently on large scale peaking plant and dynamic efficiency. In contrast, utilising existing capacity is likely to improve dynamic efficiency because it delays the need to undertake new capital investment in peaking plant, reducing costs for consumers. However, if small generators were ultimately more expensive to use for peaking plant then the spot price would rise, signalling the need for additional investment. This simply represents the efficient operation of the market.

### 5.4.4 Impact on networks

While there is a potential for embedded generators to reduce some distribution infrastructure requirements, this rule is unlikely to contribute towards this goal. For small generators to reduce network spending, the generators must be located near loads whose demand profiles match the supply output of the generator. However the

rule includes no locational signal for the small generating unit. Thus there is no reason for small generators to connect where benefits to the network will be maximised.

# 6 Metering

## 6.1 Rule Proponent's view

The rule change request stated that since SGAs would become Market Participants they would be required to:

- provide compliant metering; and
- be the Responsible Person for any metering installations or alternatively allocate this role to a DNSP.[48]

Hence AEMO did not propose that any different criteria apply to SGAs compared to other Market Participants in relation to metering.

## 6.2 First round of consultation

Ausgrid noted that the rule change proposal implies that the "existing arrangements would continue to apply".[49] Mark Johnston stated that making the DNSP the Responsible Person of SGA connections may lead to a reduction of innovation.[50] The NGF was concerned that SGAs could avoid participant fees by running generation through the same meter as any serviced load and thus use the two flows to counter one another.[51]

## 6.3 Second round of consultation

A number of stakeholders raised concerns about the metering arrangements for MSGAs described in the draft rule. These concerns fell into two broad categories:

- the potential for small generating units to use manually read meters; and
- the possibility of there being more than one Financially Responsible Market Participant (FRMP) at a connection point.

### 6.3.1 Remote read meters

The capability of the meters that can be used by small generating units was an area of concern to stakeholders. Energex considered that the draft rule may not have required small generating units use interval meters.[52] Furthermore Ausgrid and AEMO stated

48 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011, p6.

49 Ausgrid, Consultation paper submission, p2.

50 Mark Johnston, Consultation paper submission, p4.

51 NGF, Consultation paper submission, p4.

52 Energex, Draft determination submission, p1.

that neither the original proposal nor the draft rule explicitly required the usage of a remote read meter.[53]

The usage of type 5 meters - i.e manually read with interval data - appears concerning to these stakeholders mainly because of the possible impact on settlement processes. They were concerned that forward estimates of payments will be necessary for all the unscheduled generators that are part of an MSGA. Forward estimates of this type will require the development of new processes and systems from both AEMO and DNSPs, which may represent a considerable cost.

### 6.3.2 Multiple FRMPs at a connection point

The draft determination suggested that the rule change may provide a driver for situations where multiple FRMPs seek to use the same metering installation.[54] Many stakeholders interpreted this as implying that the rule change involved altering the rules relating to metering to allow multiple FRMPs at the same connection point.

Origin stated that such a modification would represent a substantial alteration in the design of the NEM and "changes the nature of the connection interface between a customer and the market".[55]Ausgrid also elaborated that any change to the one to one relationship between a connection point, National Metering Identifier (NMI) and FRMP will have large cost impact on DNSPs.[56]

TRUenergy noted that the usage of multiple NMIs at a connection point could potentially lead to a variety of problems with pre-existing market procedures and arrangements. For example multiple Market Participants sharing an NMI could cause confusion in the eventuality of a Retailer of Last Resort event.[57] As such TRUenergy sought "clarity as to whether the intention is to alter the level at which financial responsibility falls within the market procedures".[58]

Both AEMO and the Private Generators indicated that clarification was needed on the potential for multiple FRMPs at the same connection point.[59]AEMO further noted that "it is not intended that this rule change provides a framework to support this concept".[60]

53 AEMO, Draft determination submission, p1; Ausgrid, Draft determination submission, p3.

54 Australian Energy Market Commission, *Small Generation Aggregator Framework*, Draft determination, AEMC 2012, Sydney, p25.

55 Origin, Draft determination submission, p1.

56 Ausgrid, Draft determination submission, p4.

57 TRUenergy, Draft determination submission, pp1-3.

58 TRUenergy, Draft determination submission, pp1-3.

59 AEMO, Draft determination submission, p3; Private Generators, Draft determination submission, p1.

60 AEMO, Draft determination submission, p2.

On the other hand, the CEC considered that the risk of conflicts arising from multiple FRMPs using the same metering installation are "very small".[61]

## 6.4 Conclusion

### 6.4.1 Remote read meters

The draft determination included a requirement that small generating units have interval meters. Including small generating units in the requirements for non-market generators obligates these units to use an interval meter as per NER clause 7.3.1(i)(2). However as stakeholders noted, this clause as previously written does not specifically introduce a requirement for remote read meters to be used by small generating units.

In light of submissions the Commission notes that allowing the use of a manually read meter would result in costs being borne by DNSPs and AEMO to alter their systems to allow forward estimation of small generation.

Furthermore the AEMC notes that in some jurisdictions the provision of a type 5 meters for a connection point is the responsibility of the local DNSP. Therefore if a manually read meter is used then the cost of such a meter to allow a small generating unit to be part of an MSGA's portfolio may be borne by the local DNSP and passed on to all consumers. Such an outcome is considered inappropriate by the Commission as the full cost of any meter should be borne by the benefiting parties, namely the MSGA and the small generating unit's owner.

The Commission observes that an explicit requirement in the NER that small generating units only use type 1-4 meters will reduce the flexibility available to MSGAs. However, we consider it is not an unreasonable requirement to place on small generating units.

Therefore, the AEMC has determined that in addition to requiring to meet the metering requirements of non-market generators, all small generating units will be required to use a remote read meter. Hence to undertake market functions any small generating unit which sells its electricity through an MSGA will require a type 1-4 meter, which is capable of recording interval data relevant to settlements and be remotely read

The AEMC has therefore revised the draft rule by adding a new clause to the NER (7.7.1(j)). This will contain the additional metering requirements for small generating units classified as market generating units. Thus market small generating units will have distinct metering requirements which are separate from non market generators.

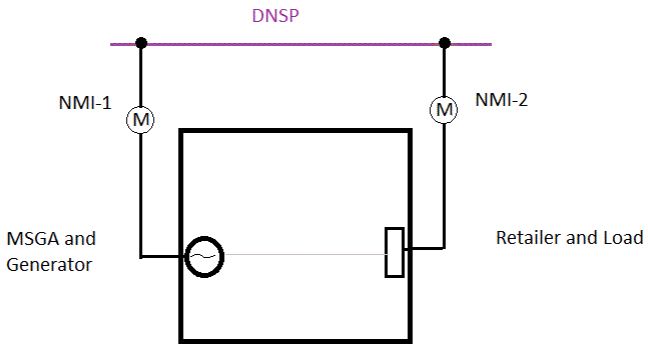
61 CEC, Draft determination submission, p2.

### 6.4.2 Multiple FRMPs at a connection point

The draft determination noted that, as a Market Participant, an MSGA will be the FRMP of the connection points for all small generating units in its portfolio. As such, all the current obligations that a FRMP is expected to fulfill under the NER will apply equally to MSGAs in relation to the units in its portfolio. Each small generating unit must have a unique connection point which will be allocated a unique NMI. As a Market Participant with a type 1-4 meter, the MSGA will be required to either be the Responsible Person or request a DNSP to take the role. This rule is designed to require no change in metering arrangements for any Market Participant in the NEM.

It is possible that within the same physical premises there will be a load which will be under contract with a Retailer and a small generating unit that is part of the portfolio of an MSGA. In this situation the retailer's load and the small generating unit will need to be separately metered. Both of these FRMPs at the same physical site will have an individual connection point with a unique NMI and metering installation as well as independently appointed Responsible Persons. As such a separate type 1-4 meter will need to be installed for a small generating unit to participate in the market through an MSGA. This conceptually can be seen in the below diagram.

**Figure 6.1 Metering arrangement for MSGA and retailer servicing the same end customer**




Under the current arrangements there could be small generating units connected to the grid as exempt generators at the same connection point as a load. These may be using the same single bidirectional meter. If, after the rule comes into effect, the small generating unit owner wishes to transfer to an MSGA then a new meter will be required.

In the draft determination, mention was made of issues related to multiple FRMPs sharing the same metering installation. These comments were in relation to a situation where there is a pre-existing multi-element type 1-4 meter in use. In this situation there conceivably could be a preference for the MSGA to utilise some elements of the metering installation while the load utilised others with separate NMIs. It was considered that the Responsible Person would be appointed as per clause 7.2.4 of the NER. This was considered to be an exceptional and rare circumstance. However a

number of stakeholder submissions indicated that such an outcome is not possible under current market specifications.

The Commission notes that the recently released draft advice on *Energy Market Arrangements for Electric and Natural Gas Vehicles* examines the issues of multiple FRMPs at the same location. The recommendations from the final advice will equally apply to MSGAs. Hence no alterations to current market conditions are planned as part of this rule change. Any future redevelopment of the rules and regulations governing metering to provide incentives for demand side participation will take the needs of MSGAs into account.

As such the Commission notes that until any revised arrangements are put in place in the above situation of a multi-element meter the small generating unit owner will have to install a unique and separate meter for the generator's output.

# 7 Ancillary Services

## 7.1 Proponent's view

AEMO proposed that SGAs should not have to pay for ancillary services. AEMO stated that as non-market small generators do not pay ancillary service fees then requiring SGAs to do so would represent a barrier to entry for small generators intending to enter the market.[62]

## 7.2 First round consultation

The NGF indicated that it was concerned about the proposal from AEMO that SGAs were not to be charged for Frequency Control Ancillary Services (FCAS). The concerns related to the fact that the rapid start up and shut down of small generators may cause frequency problems that scheduled generators and Market Customers would have to pay for through increased FCAS payments.[63]

## 7.3 Second round consultation

The Private Generators raised concerns that having no requirement for MSGAs to pay for ancillary services would undermine the concept of technical neutrality and hence MSGAs should be liable for the same ancillary service payments as Market Generators.[64] On the other hand the CEC suggested that MSGAs should not pay ancillary service fees as exempt generators currently do not do so.[65]

## 7.4 Conclusion

The Commission has determined that MSGAs will be liable for ancillary service fees in a similar manner to Market Generators. We note that this is a revision of the position taken in the draft determination.

Ancillary service fees are paid by participants to fund services that are required to maintain the secure operation of the network. These include non-market services such as the system restart and market services such as FCAS to maintain the frequency at secure operating levels.

Currently generators that have received an exemption from registering do not pay any ancillary service fees. These generators generally contract to a Market Customer, such as a retailer. To the wider market this relationship is seen as a reduction in the total load of the Market Customer (i.e. the output of the exempt generator offsets some of

62 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011, p7.

63 NGF, Consultation paper submission, pp3-4.

64 Private Generators, Draft determination submission, pp1-2.

65 CEC, Draft determination submission, p2.

the Market Customer's load). Therefore exempt generators currently face no charge, and actually reduce the ancillary service liabilities of their associated Market Customers.

On the other hand all Market Generators, regardless of size, must pay for ancillary services. This means that there would be a competitive advantage for an MSGA, as compared to a Market Generator, if it was not charged ancillary service fees.

The Commission considers that, initially, the penetration of MSGAs is likely to be relatively low. This means that they are likely to be physically (if not contractually) offsetting load and will also not materially affect the ancillary service market, regardless of if they were to pay or not. These were the main considerations that led the Commission to make its draft determination.

However, the AEMC notes the possibility that the number of MSGAs may increase and become significant in the future. If an expansion in the number of small generating units were to take place, this would make the comparison to the existing arrangements for exempt generators less relevant and would make the considerations put forward by stakeholders relating to competitive neutrality more compelling.

The Commission considers that the rationale for the introduction of the MSGA framework is to provide exempt generators with better access to the market. The most relevant category to compare to MSGAs are therefore Market Generators. Consequently, the Commission has concluded that the arrangements for the payments of ancillary service fees by MSGAs should match those for Market Generators as closely as possible.

*Related considerations*

The AEMC notes the situation for ancillary services differs from CDEII reporting, as described in section 8.1, as it involves the transfer of money between participants and the market. Not charging MSGAs would result in, initially marginal, increases to ancillary service prices for all Market Generators. In the long term, if the take up of MSGAs were to represent a sizable portion of the market, then this could potentially represent a significant wealth transfer.

The Commission is also aware that currently MSGAs are not in a position to offer ancillary services. We note that in the *Small Generator Framework Design* AEMO concluded that there may be benefit to allowing the aggregation of small generation to provide FCAS. AEMO also considered that alteration to market procedures should be able to allow aggregated loads and generation to offer ancillary services simultaneously.[66] We further note that the *Power of Choice* draft report recommends that new Market Participants be created to allow for the unbundling of all non-energy services from the sale and supply of electricity. This would enable parties other than retailers, responsible for the sale and supply of electricity, to aggregate loads to allow the supply of ancillary services. We consider that any assessment of this proposal, in a

66 AEMO, *Small Generator Framework Design*, 2010, p47.

rule change process, could potentially also examine the aggregation of small generators to offer ancillary services.[67]

*Funding of compensation for directions*

In the course of reconsidering levying ancillary service fees on MSGAs, the Commission identified a need to consider the funding of compensation for directions.

AEMO has the authority to direct participants to act to maintain the secure and reliable operation of the system. These directions can either be for a participant to provide energy, ancillary services or be a direction of an "other" type. Participants who receive a direction are compensated by charges to other participants which are levied by AEMO. The compensation for energy directions are paid solely by Market Customers.

The compensation for an ancillary service direction is determined with reference to the equations in the NER for calculating ancillary service fees. No additional amendments have been made to how these compensation payments are calculated so these will now include MSGAs.

Furthermore, the Commission has previously indicated that payments to compensate for "other" directions should be contributed to by all generators and customers in the affected regions.[68] To maintain consistency with this earlier decision, the Commission has determined that MSGAs will be required to contribute towards compensation in such situations.

67 Australian Energy Market Commission, *Power of Choice*, Draft report, AEMC 2012, Sydney, p79.

68 Australian Energy Market Commission, *Cost Recovery for Other Services Directions*, Final determination, AEMC 2010, Sydney.

# 8 Implementation

The Commission considered three separate issues related to how best to integrate MSGAs into existing market structures. The issues examined are:

- the Carbon Dioxide Equivalent Intensity Index (CDEII);
- a possible minimum threshold in the size of MSGAs; and
- connection agreements between small generating units and DNSPs.

## 8.1 Carbon Dioxide Equivalent Intensity Index

### 8.1.1 Proponent's view

Currently all market generators are required to report their carbon dioxide emission factor to AEMO, who uses the information to calculate jurisdiction and NEM wide CDEII values. AEMO proposed in its rule change request that small generating units should not be considered market generating units for the purposes of the CDEII. Thus SGAs would be exempt from CDEII reporting requirements.

The proponent stated that requiring SGAs to undertake carbon dioxide reporting would represent a costly administrative burden on both AEMO and the SGA.[69] AEMO also pointed out that currently exempt generators do not report their emissions.[70] Therefore requiring SGAs to report carbon emissions will lead to an additional cost paid by small generators under the SGA framework but not by non-market small generators.

### 8.1.2 First round of consultation

Stakeholders were generally supportive of the proposal to not require SGAs to report under the CDEII. City of Sydney, EnerNOC, LMS and TRUenergy all agreed that SGAs should be exempt for the reasons given by AEMO.[71] Haron Robson and the CEC both added the view that small generators would generally have a lower carbon intensity than the grid average.[72] Hence the contribution of carbon dioxide emissions from these generators will be very small compared to the NEM total. CEC also noted that the generation and hence carbon emissions of SGAs in the NEM is expected to be low. If in the future SGAs become significant then the issue may need to be revisited at that point.[73]

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69 AEMO *Small Generation Aggregator Framework rule change request*, December 2011, p7.

70 Ibid, p7.

71 City of Sydney, Consultation paper submission, p1; EnerNOC, Consultation paper submission, p2; LMS, Consultation paper submission, p2; TRUenergy, Consultation paper submission, p2.

72 CEC, Consultation paper submission, p3; Haron Robson, Consultation paper submission, p1.

73 CEC, Consultation paper submission, p4.

United Energy's submission indicated broad support for the concept of exempting SGAs from the CDEII. However, United Energy was concerned that if the SGAs become a large enough proportion of the market then they may compromise the national statistics. Therefore United Energy proposed that if SGAs expand to a large enough size, as determined by exported energy, then they should report under the CDEII.[74]

### 8.1.3 Second round of consultation

The Private Generators group raised concerns about exempting MSGAs from CDEII requirements. It stated that 150MW is a sizeable bloc of NEM capacity and that the emissions factor of small generators would be higher than the NEM average. Therefore any exclusions of MSGAs from CDEII reporting may introduce unnecessary errors into carbon emission data calculated by AEMO.[75]

On the other hand the CEC was supportive of the exemption for MSGAs from CDEII reporting. It stated that the majority of small generators will have a low emission intensity. Furthermore, the installed capacity of small generators will be low relative to the generation in the market. As a consequence the small generators will have minimal impact on the CDEII statistics.[76]

### 8.1.4 Conclusion

The Commission has decided to exempt small generating units from CDEII reporting as proposed. The Commission agrees that placing a requirement on MSGAs to report will lead to an unreasonable level of administrative workload for the reasons stated in the proposal.

Furthermore the Commission notes that it would likely be more difficult for an MSGA to calculate the CDEII than for an equivalently sized generator. This added difficulty is because:

- it is possible that an MSGA will have a portfolio of multiple different small generating units with different fuel intensities and fuel types. Therefore calculating a CDEII emission factor would involve determining a separate emission factor for each technology; and

- many small generating units would be trigeneration or cogeneration facilities which generate different types of energy, such as heating, as well as electricity. It may be difficult for the operators of such units to determine what percentage of total emissions to allocate to generated electricity and thus report to AEMO.

74 United Energy, Consultation paper submission, p3.

75 Private Generators, Draft determination submission, p2.

76 CEC, Draft determination submission, p2.

A number of stakeholders offered differing views on whether small generating units would have a higher or lower emission factor than the NEM average. We note that such a consideration did not influence the Commission's decision. However, the existence of such differing views between stakeholders is indicative of the wide variance that could be seen in the emission factors of small generating units and thus the difficulty in MSGAs reporting.

The Commission has also decided that it will not set a limit for an MSGA's exported energy, above which the MSGA must undertake CDEII reporting as proposed by United Energy. The Commission was concerned that any upper limit to an exemption from the CDEII may act as a cap on the total generation traded by an MSGA. Selling any more power than the CDEII reporting limit would result in a requirement to determine emission factors for an entire portfolio. Hence a market distortion may eventuate if MSGAs were to maintain an annual power output just below the reporting requirement. For example, MSGAs may refuse to include small generating units with relatively large expected output in their portfolios. Placing an arbitrary value for inclusion in the CDEII may therefore lead to inefficient outcomes for small generation owners, MSGAs and consumers.

Note that the rule exempts all small generating units from the CDEII reporting requirements irrespective of whether they participate in the NEM directly or indirectly through an MSGA.

## 8.2 Minimum threshold for MSGAs

### 8.2.1 Issue

Ausgrid raised concerns of the possibility that micro embedded generators, such as domestic solar photovoltaic units, may join an MSGA in large numbers. Ausgrid noted that there are approximately 47,000 such units in its distribution area alone. Thus it and other DNSPs may face costs if a large proportion of these users choose to join an MSGA.[77]

### 8.2.2 First round consultation

This issue was not raised during first round consultation.

### 8.2.3 Second round consultation

AEMO observed that there was concern from participants about the potential for domestic solar to join MSGAs in large numbers. AEMO considered that a framework to integrate these units into the NEM could best be developed through the *Power of Choice* and *Energy Market Arrangements for Electric and Natural Gas Vehicles* reviews. As a consequence AEMO suggested four potential methods for explicitly excluding such

77 Ausgrid, Draft determination submission, p6.

micro generators from an MSGA. A preference was stated for the first of these options. The options recommended were:

- excluding *micro embedded generators* as defined in Chapter 5A of the NER;
- excluding small generating units at a residential premise;
- excluding any unit that is eligible to receive a jurisdictional feed in tariff; or
- excluding any unit with a nameplate rating below a certain threshold.[78]

It should be noted that since making its submission to the draft determination AEMO has indicated that it now considers that such actions may not be appropriate or necessary.

### 8.2.4 Conclusion

The Commission considers that explicitly excluding domestic micro embedded generators would be inappropriate. Such an exclusion would place a barrier to entry to certain units without any compelling reason.

It seems unlikely that there will be a large number of domestic photovoltaic owners joining an MSGA. We note that an intermittent micro embedded generating unit joining an MSGA would face significant costs in purchasing and installing a separate type 1-4 meter. As TRUenergy noted in its submission, jurisdictional feed in tariffs are administered by retailers.[79] Hence a micro generating unit that leaves a Market Customer contract to join an MSGA may forgo the jurisdictional feed in tariff. As a consequence the Commission considers it unlikely that DNSPs will incur the significant costs in the manner suggested by Ausgrid.

We also note that in Victoria the Advanced Metering Infrastructure (AMI) meters with remote read capacity installed in most domestic residences are currently classed as type 5 due to a derogation. This derogation ends in December 2013 and at that point these meters will potentially be considered type 4. Hence concerns have been raised that there may be an influx of Victorian applicants at this point. However these meters are only capable of net flow measurement and therefore for these consumers becoming part of an MSGA will require the purchase of new meters in any event. Therefore the same reasoning on the costs of micro embedded generation joining an MSGA applies in Victoria as it does in other jurisdictions of the NEM.

78 AEMO, Draft determination submission, p3.

79 TRUenergy, Draft determination submission, p3.

## 8.3 Connecting small generating units to the network

### 8.3.1 Issue

The connection arrangements for small generators were not discussed as part of the rule change proposal. However, the Commission identified a concern that small generators might inadvertently be excluded from connecting to the distribution network via the streamlined process proposed under the NECF framework.

On 1 July 2012 the NECF came into force in some jurisdictions in the NEM, with other jurisdictions indicating they will consider commencing the NECF at a later date. Included as part of the NECF package is the *National Electricity (Retail Connection) Amendment Rules*. This amendment inserted Chapter 5A into the NER, outlining how connection arrangements are to function between DNSPs and embedded generators.[80]Chapter 5A includes a number of requirements for connection agreements which DNSPs must offer connecting embedded generation applicants. These connection agreements relate to basic connection services, standard connection services and negotiated connection services.

In its first round submission Ausgrid noted that there may be an interaction between the proposed rule and the new Chapter 5A of the NER.[81]

The Victorian Competition and Efficiency Commission (VCEC) noted this rule change as part of its *Power from the People Review*. It concludes that "[a]s registered participants, SGAs would be ineligible to connect through NER chapter 5A and would be required to connect to the distribution network through the chapter 5 process."[82]

### 8.3.2 Conclusion

The AEMC understands that MSGAs will not be party to the connection agreement, which will be negotiated between the retail customer as the owner of the small generating unit and the relevant network service provider. Consequently, this rule change should have no impact on the existing connection arrangements.

However, there is some concern that owners of small generating units that decide to participate in the market through an MSGA will be excluded from accessing the new chapter 5A arrangements due to the MSGA's status as a Market Participant. Market Participants are excluded from utilising the Chapter 5A connection process unless they are “acting as the agent of a retail customer”.[83] Thus the proposed rule may have had

80 An embedded generating unit is defined in Chapter 10 of the NER as a "generating unit connected within a distribution network and not having direct access to the transmission network". This is not the same as a small generating unit, which may be connected to a transmission network, but there is expected to be a significant overlap between the two categories.

81 Ausgrid, Consultation paper submission, p3.

82 VCEC, *Power from the People*, final report, p240.

83 NER 5A.A.2.

the consequence of excluding any small generators which are also embedded generators from the Chapter 5A connection process.

The Commission considers that there should not be a distinction between small generating units that are part of an MSGA and those that are non-market for the purpose of connections. Having such a distinction may act as deterrent for newly constructed small generators to contract with an MSGA as doing so could make the connection process more difficult.

Thus, the Commission has decided to amend the proposed rule to clarify the intention in relation to connections. An MSGA is to be considered an "agent" for the purposes of Chapter 5A of any retail customers who have allocated the MSGA financial responsibility for a connection point. Therefore the owners of small generating units that are part of an MSGA portfolio should be able to connect under the Chapter 5A process if they meet all the other relevant criteria.

## 8.4 Request for exemption from registration

### 8.4.1 Rule Proponent's view

As part of the proposal AEMO indicated that the rule change will not alter the system for generators with a capacity between 5 MW and 30MW.[84] Therefore the rule change proposal was explicit that the intention was to retain the current requirement for applicants in this band to apply for exemption from registration from AEMO.

### 8.4.2 First round consultation

Origin considered that all small generators that registered through an SGA should have a standing exemption from registration. Origin noted that information on such generators would be available to AEMO through MSATS. This proposal was intended to further reduce costs for small generators.[85]

Furthermore Origin proposed that SGAs should have a non-market option. This would allow small generators to have their details registered in MSATS by the SGA and avoid having to undertake the exemption process, while also avoiding any additional costs associated with market participation.

The purpose of Origin's proposed changes to the rule would be to reduce the administrative load on small generators between 5MW and 30MW that do not want to participate in the market. Under Origin's proposal, neither the SGA nor the small generator would need to request an exemption from AEMO for the relevant small generator. Origin stated this would lead to lower barriers for small generators to undertake non-market contracts.

84 AEMO, *Small Generation Aggregator Framework rule change request* , December 2011, p7.

85 Origin, Consultation paper submission, p2.

### 8.4.3 Second round consultation

The CEC stated that the request for exemption for generating units with capacity between 5-30MW was important for maintaining network security. The CEC also noted that it was possible for retailers to offer non market contracts to small generators so the benefit of a non-market SGA wasn't clear.[86]

### 8.4.4 Conclusion

The Commission is not including any provisions to allow automatic exemption for small generators as part of this rule change. The primary reason for this decision is the potential for system security to be negatively affected.

The application for exemption for registration by a generator with a capacity of 5-30MW but with an output less than 20 GWh a year is important for the maintenance of system security. The request for exemption provides AEMO with important information about the location and capacity of small generators and allows it to assess any impact on system security. Furthermore, the ability to impose conditions on any exemptions allows AEMO to consider individual cases, taking into account factors such as the expected impact of that generator at the location, and thus maintain system security.

Under Origin's proposal, AEMO would have limited information on small generators, in the range that currently require an exemption application and would not have any control over the conditions under which the generators operated.

Consequently, the Commission has determined that the rule will not alter the requirement for all generators between 5-30MW with generation less than 20GWh a year that consider they should be exempt to request an exemption from AEMO. MSGAs will only have the ability of adding generators with a capacity less than 5MW without seeking exemption. The criteria for determining which generators are to be exempted under clause 2.2.1(c) of the NER is left to AEMO's discretion. As a consequence there is no reason for non-market MSGAs to be created as these will not serve any purpose.

86 CEC, Draft determination submission, pp2-3.

# 9 Transition

## 9.1 AEMO's Procedures

### 9.1.1 Rule Proponent's View

AEMO has indicated that if the rule change is to come into effect then it needs to amend some of its systems and procedures.[87] AEMO proposed that for timely implementation of the rule change it should begin some changes during the rule making process.

AEMO proposed that the rule includes transitional arrangements for the alteration of:

- MSATS procedures;
- participant fees;
- CDEII procedures; and
- ancillary services fees.

#### MSATS

The proposal indicated that SGAs are to be administered through MSATS and hence an update will be necessary for the implementation of this rule change. AEMO proposed to begin the standard consultation for the relevant alterations before the release of the Commission's final rule determination. This would allow any necessary changes to be ready for release as part of the next tranche of updates to the procedures.

The proposed provisional arrangements had two purposes:

- to impose an obligation on AEMO to amend MSATS to take effect from the commencement date of the rule; and
- to recognise any action taken by AEMO prior to the commencement date specifically in relation to the amendment of the MSATS procedure.

#### Participant Fees

AEMO proposed that participant fees would not be charged to SGAs for the initial period until AEMO has done the necessary upgrades, which is expected to be the middle of 2013.[88] After this, participant fees would be calculated with SGAs treated as if they were negative Market Customers. Therefore SGAs would be charged a fee based on the amount of energy generated.

87 AEMO, *Small Generation Aggregator Framework rule change request*, December 2011, p9.

In 2015 AEMO will undertake a review of how best to calculate SGA participant fees as part of its broader 5-yearly participant fee review. The outcome of this review will determine the fees paid by SGAs from 2016 onwards.[89]

### CDEII

AEMO also proposed beginning alterations to the CDEII procedures as described in section 8.1. AEMO wished to shorten the consultation process for these changes as it would be bringing the CDEII into line with the amended rules. As the AEMC has consulted on the rule change AEMO considered there would be no need to repeat this consultation. Hence AEMO's rule proposal would:

- impose an obligation on AEMO to amend the CDEII to take effect from the commencement date of the rule;
- remove the requirement for AEMO to consult using the rules consultation procedures in relation to changes to the CDEII procedures for this rule change; and
- recognise any action taken by AEMO prior to the commencement date specifically in relation to the amendment of the CDEII procedure.

### Ancillary services fees

Including SGAs within the ancillary services system will require changes to AEMO's IT systems that will take time to complete. To resolve this issue AEMO proposed that:

- in the initial period small generators be included as Market Customers in the calculation of ancillary services. AEMO noted that this would lead to SGAs receiving some small payments in this time which AEMO anticipates would be less than $10,000 a year;[90] and
- when the necessary IT changes had been finalised, which is expected to be by mid 2013 AEMO would inform all Market Participants, including SGAs, in writing when they were able to make the necessary alterations.[91] From the date nominated by AEMO at this point, MSGAS would begin to be charged ancillary service fees in the same manner as Market Generators.

88 Ibid, p6.

89 Ibid, p7.

90 ibid, p7.

91 Ibid, p7.

### 9.1.2 First round consultation

The City of Sydney and the CEC stated that they were in favour of any actions that would speed up the implementation of the rule.[92] EnerNOC called the proposed participant fee structure "inelegant" but indicated that it was not going to raise objections as the amount of money involved is likely to be low.[93] United Energy did not oppose the transitional arrangement but stated that care must be taken to make sure there are no unintended consequences of any changes to the transitional arrangements.[94] United Energy also noted that placing many small generators under the control of an SGA may make it easier for AEMO to collect participant fees than if they were being collecting from multiple individual units.[95]

Ausgrid was opposed to the proposed transitional arrangements. It stated that it is inappropriate that the specific details of the obligations DNSPs would have in the eventuality of this rule change being accepted have not been made apparent. Ausgrid further suggested that a rule change request which changes the structure of the market procedures should include a summary of the details in the original proposal.[96]

### 9.1.3 Second round consultation

AEMO stated that the draft transitional clauses did not specify that it will not collect participant fees until June 2013. Hence it requested that the transitional clause relating to participant fees be placed in a separate schedule to be commenced in a later date.[97]

Ausgrid had concerns that cost benefit analyses were not undertaken on system changes by bodies like the B2B and MSATS Reference Group (BMRG) before the rule change process. This may mean that the full impact of the rule change on participants may not be properly assessed as part of the rule change procedure.[98]

### 9.1.4 Conclusion

The Commission considers that, in principle, it is appropriate for there to be some transitional measures to allow AEMO to begin preparation for implementing the framework before the rule change is made. AEMO is already permitted to make changes to MSATS, participant fees and CDEII procedures provided it acts in accordance with the relevant rule requirements.

Furthermore AEMO is not planning to shorten its standard consultation processes for the relevant changes to MSATS and participant fees. Therefore Registered Participants

92 City of Sydney, Consultation paper submission, p2; CEC, Consultation paper submission, p5.

93 EnerNOC, Consultation paper submission, p3.

94 United Energy, Consultation paper submission, p5.

95 United Energy, Consultation paper submission, p4.

96 Ausgrid, Consultation paper submission, p2.

97 AEMO, Draft determination submission, p3.

98 Ausgrid, Draft determination submission, p7.

such as Ausgrid, who are concerned about potential consequences of a proposal, are able to raise their concerns with AEMO through the standard consultation procedures. Full analysis of the process changes of the rule change cannot be assessed before the AEMC has considered the rule. This is because the AEMC may change, reject or add elements to a rule change that may alter its implementation. Thus it is appropriate that an estimated impact be used for decision making.

The Commission agrees with the proposed transitional provision to allow AEMO to undertake a shortened consultation period to meet the requirements of the rule change in relation to CDEII. This approach is appropriate as the changes to the CDEII procedures are being consulted on as part of the AEMC rule making process.

With regards to ancillary service fees, the Commission notes that the existing IT systems must be changed. While it is not desirable for MSGAs to receive ancillary service fees as negative Market Customers, the Commission accepts that the materiality of this will be low. Therefore the approach proposed by AEMO is accepted as a pragmatic option. The Commission also notes that the causer pays procedure may need minor consequential amendments to be brought in line with this rule. The Commission has determined that the changes required to align the procedure with this rule change will not require a full consultation.

Under the rule as made, AEMO will be required to announce a date when it will commence collecting participant fees and ancillary service fees from MSGAs. Furthermore a number of equations in Chapter 3 of the NER have been amended to reflect the Commission's determination that MSGAs should pay ancillary services fees. The old formulas will continue to apply until the participant and ancillary service commencement date is reached. This date must be before the end of 2013, and it is expected it will be approximately June 2013.

While the Commission approves of the intention of the transitional arrangements proposed by AEMO, a number of further changes were made to the drafting. These changes included removing retrospective obligations on AEMO as was originally requested. This is because the Commission is unable to require entities to undertake actions prior to the commencement of the rule. Rather, AEMO has a requirement to amend and publish its systems and procedures as soon as practicable after the commencement of the rule.

An additional transitional arrangement was included in relation to the Metrology Guidelines published by AEMO. Similar to the other transitional arrangements, the rule requires AEMO to amend its metrology procedures as soon as practicable after commencement of the rule so that references to a Generator also include references to SGAs.

## 9.2 Transferring from non-market to market generation

### 9.2.1 Stakeholder views

TRUenergy and LMS raised concerns that the owners of small generators may have difficulties in transferring from a direct non market contract with a retailer to being part of an SGA. These businesses were concerned that the exemption from registration from AEMO for generators in the 5-30MW band were sometimes held by an intermediary (the retailer). If a small generator wanted to contract with an SGA the small generator might be required to reapply for exemption from registration which could be a barrier to market participation. Hence TRUenergy and LMS proposed that the exemption from registration should automatically switch over from the intermediary to an SGA as a transitional arrangement.[99]

### 9.2.2 Conclusion

The Commission has decided not to include a transitional arrangement that allows automatic transfers of exemptions from intermediaries to MSGAs. The generation profile for a small generating unit may be different, depending on whether the generator is market based or directly contracted with a retailer. Hence it is appropriate for AEMO to be able to re-examine the conditions of the exemption from registration when the generator's category changes. Therefore any generators that are currently non-market that wish to transfer from a retailer contract to an MSGA will have to reapply for an exemption where it is required.

99 TRUenergy, Consultation paper submission, p3; LMS, Consultation paper submission, p2 .

## Abbreviations

| | |
|---|---|
| AEMC | Australian Energy Market Commission |
| AEMO | Australian Energy Market Operator |
| AER | Australian Energy Regulator |
| AMI | Advanced Metering Infrastructure |
| BMRG | B2B and MSATS Reference Group |
| CDEII | Carbon Dioxide Equivalent Intensity Index |
| CEC | Clean Energy Council |
| DNSP | Distribution Network Service Provider |
| ERAA | Energy Retailers Association of Australia |
| FCAS | Frequency Control Ancillary Services |
| FRMP | Financially Responsible Market Participant |
| MCE | Ministerial Council on Energy |
| MSATS | Market Settlement and Transfer Solution |
| MSGA | Market Small Generation Aggregator |
| NECF | National Energy Customer Framework |
| NEL | National Electricity Law |
| NEM | National Electricity Market |
| NEO | National Electricity Objective |
| NER | National Electricity Rules |
| NGF | National Generators Forum |
| NMI | National Metering Identifier |
| SCER | Standing Council on Energy and Resources |
| SGA | Small Generation Aggregator |

# A Jurisdictional Issues

Each jurisdiction retains the authority to undertake regulation of the electricity industry within its region. Thus some regulatory requirements differ between each of the jurisdictions. The AEMC notes that there are interactions between the registration requirements in the NER as amended by this rule change and the operation of some jurisdictional laws and instruments, specifically in NSW and Victoria.

*Victoria*

The *Electricity Industry Act 2000* requires all generators in Victoria to apply to the Essential Services Commission for a Generation license. Under an Order in Council dated from 2002 there is an exemption from this requirement if the generator has a capacity of less than 30MW and sells the total output to a licensed retailer. This suggests that small generating units that are in the portfolio of an MSGA which is not a licensed retailer may be required to hold a Victorian generation licence (which would not be the case for small generating units registered to a retailer).

*New South Wales*

Section 16 of the *Electricity Supply Act 1995* indicates that DNSPs can only convey electricity for or on behalf of a code participant (ie a Registered Participant) or a retailer. It is not entirely clear why it is necessary to identify retailers separately from other Registered Participants. However, it appears possible that this may have been intended to address situations where a connecting generator was not itself a Registered Participant but was selling its output to a retailer.

In the rule as made, as discussed in section 8.3, connection agreements will be between the DNSP and the small generating unit's owner. As the small generating unit's owner will not be a Registered Participant there is the potential that small generating units registered to an MSGA may be excluded from utilising the network. However, to the extent that DNSPs were satisfied that electricity was being conveyed on behalf of MSGAs, which would be registered participants, this risk may not eventuate.

*South Australia*

The *Electricity Act 1996* requires generators to hold a license. Generators with a capacity of below 100kVA are excluded from this requirement under the *Electricity (General) Regulations 1997*. As a consequence, this rule change will not affect the requirement for all South Australian generators with a nameplate capacity of more than 100kVA to hold a license.

*Queensland*

The Electricity Act 1994 requires all generators to hold a generation authority unless they have special approval. Under the *Electricity Regulations 2006* generators with a nameplate capacity less than 30MW have automatic special approval. It appears that

this special approval would apply irrespective of whether the small generating unit was part of the portfolio of a retailer or a MSGA.

*Australian Capital Territory*

There are no licensing requirements for generators in the ACT.

*Tasmania*

The *Electricity Supply Industry Regulations 2008* indicates that generation licenses are required in Tasmania with an exemption threshold at 5MW. All generators above 5MW capacity must hold a jurisdictional license, with all generators with a smaller capacity exempt. Thus the rule change will have no impact on the jurisdictional licensing requirements for small generators in Tasmania.

# B Summary of issues raised in submissions

## B.1 First round of consultation

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| Ausgrid | Note that the current metering arrangement will apply for SGAs. p2 | The rule includes some clarification on how metering shall operate for MSGAs. See section 6 for details. |
| Ausgrid | Do not approve of the transitional arrangements. Believes that AEMO should have been specific on the details of possible alterations to MSATS procedures in the proposal. p2 | For all the transitional arrangements except those to the CDEII, AEMO will be following its standard consultation procedure as discussed in section 9. Therefore there will be opportunities for Ausgrid or any other participant to raise concerns with the details. The CDEII changes have been consulted on as part of the rule change procedure. |
| Ausgrid | Uncertain on how the AEMC will assess any reduction in infrastructure spending by DNSPs, as demand may not be in the same time or place as generation. pp2-3 | As elaborated in section 5.4.4 the Commission considers that there will be no significant reduction in infrastructure spending due to this rule change. This is because there will be no locational signal for the small generating unit as a result of the rule change. Furthermore peak network demand is not always at the same time as the peak spot price. |
| Ausgrid | Concerned about the potential for contradiction between the proposed rule and the NECF connection rules. | The Commission has clarified the MSGAs' role in Chapter 5A of the NER which is being introduced as part of NECF. As section 8.3 discusses MSGAs will be defined as agents of the small generating units. This should allow the small generating units to connect using Chapter 5A if appropriate. |
| Ausgrid | Notes that while it is outside the scope of the rule change, increasing the number of embedded generators may lead to a number of complications for networks. Recommends that a | Agree that these issues are out of scope of the rule change. However we note that the issue of deep connection costs and who will fund them is being examined as part of the *Connecting embedded generators* rule change process. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | review of the impacts of embedded generation on networks be undertaken. Further note that responsibility for network reliability lies with the DNSP. This is why they closely monitor any new connections from embedded generators pp3-4 | |
| Ausgrid | The NER does not adequately address embedded networks. AEMO recommended that the MCE conduct a review on the issue in 2010. Since this time no action has been taken and the rule change may exacerbate these existing issues around embedded networks. p4 | This issue is outside the scope of the rule change but is being considered as part of the *Power of Choice* and *Energy Market Arrangements for Electric and Natural Gas Vehicles* reviews |
| Clean Energy Council | The SGAs should not be included in the CDEII. This is as SGAs will be low emitting technology types and the low expected penetration of small generators in the NEM. pp3-4. | As examined in section 8.1 the AEMC agrees that MSGAs should be exempt from CDEII requirements. |
| Clean Energy Council | The NECF framework will allow DNSPs to recover network costs from embedded generators. Hence any costs to DNSPs should be offset. p4 | The issue of deep connection costs and who will fund them is being examined as part of the *Connecting embedded generators* rule change process. |
| Clean Energy Council | There may be a small decrease in air quality in central business districts if many diesel generators are simultaneously operating to sell electricity during a peak price period. p5 | The rules are technology neutral. |
| Clean Energy Council | The risk of problems occurring during a delay after rule implementation but before the civil penalty provisions are approved is minimal. p5 | The AEMC notes the point. |
| EnerNOC | The rule change only deals with three of the principles outlined by AEMO in the *Small* | The AEMC notes this point. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | *Generator Framework Design*. p2 | |
| EnerNOC | The rule change will benefit other Market Participants by reducing AEMO's workload, lowering pool price and reducing the amount of necessary spending by DNSP. pp1-2 | The rule change may lead to a reduction in AEMO's workload and costs as it will no longer have to register individual small generating units. However any reduction in pool price and infrastructure requirements would likely be minimal. For more details on these points see section 5. |
| EnerNOC | Even if a small generator doesn't join an SGA, the ability to do so gives a better negotiating position with retailers. p2 | The Commission agrees that the rule should provide greater flexibility for small generator owners. |
| EnerNOC | AEMO may need to improve its modelling to account for additional embedded generation. However such work is already underway. p3 | The AEMC notes this point. |
| EnerNOC | Agrees with AEMO's proposed transitional arrangements but believes the participant fee structure is inelegant. p3 | Noted. For a full discussion of the transitional arrangement for AEMO's procedures see section 9.1. |
| GlobalNRG | 216 generators with a combined capacity of 119,836,800MWh would be expected to enter the market over the next three years. pp1-2 | The AEMC considers that there could be an increase in small generation in the market from this rule change but it is difficult to predict due to the existence of other barriers. This issue is discussed in section 5.4.2. |
| Haron Robson | There are barriers to entry for trigeneration into the NEM due to the complexity of the process. Hence many generators have been installed but are islanded.p1 | The AEMC agrees that the current system includes barriers to the market participation of small generation. The Commission's considerations are elaborated in section 5.4.1. |
| Haron Robson | There is a shortage of qualified staff. SGAs will allow their knowledge to be spread more evenly across the market. p1 | The AEMC notes this point. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| Haron Robson | The majority of small generators will be located near demand centres. This should reduce required network infrastructure spending. | As elaborated in section 5.4.4 the Commission considers that there will be no significant reduction in infrastructure spending due to this rule change. This is because there shall be no locational signal for the small generating unit as a result of the rule change. Furthermore peak network demand is not always at the same time as the peak spot price. |
| Haron Robson | Doesn't believe there will be any adverse impact on the business model of any NEM participant. p1 | The AEMC notes this point. |
| LMS | Every time the Financially Responsible Market Participant of a generator changes it must be reregistered. This makes it difficult for small generators to transfer to a more preferable direct contract. p1. | The AEMC notes this point. |
| LMS | Lowering market barriers may increase innovation in small generators. p3 | The AEMC notes this point. |
| LMS | An additional transitional arrangement should be added to allow currently exempt generation to automatically transfer their exemption from an intermediary retailer to an SGA. p3 | The AEMC has not included an automatic transition of exemption from registrations. See section 9.2 for more detail. |
| Mark Johnston | Agrees with the intent of the rule change but has reservations that it is too focussed on the Market Participant and not on the owner of the generating unit. p1 | The AEMC notes this point but considers that the structure of the rule is appropriate. |
| Mark Johnston | The owner of both a generating unit and a load should have the option of having separate bodies be the load's retailer and the generating unit's | Agreed. This principle is consistent with the rule. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | SGA. p1, p3 | |
| Mark Johnston | Potentially a sliding scale of fees depending on generation size could be used in generation registrations. p2 | Undertaking such a scheme will require AEMO to examine generators at a different level of thoroughness for each point on the scale. Therefore a examination of the requirements will be needed and transitional costs may be large. There is no evidence that making such a change will better meet the NEO then the rule. |
| Mark Johnston | Questions whether SGAs will be trading their energy on the spot market or contracting for network services. p3 | Expect that SGAs will be operating on the spot market because of the diversity in the location of individual generating units. |
| Mark Johnston | Enquires how the rule change will affect the current arrangements for exempt generation with direct contracts with retailers. p3 | Generators that are exempt from registration will continue to be able to contract directly with retailers for a fixed price for their electricity. |
| Mark Johnston | Metering arrangements will have to be considered. A type 4 or better meter will be necessary for all small generating units. If DNSPs is the Responsible Person there will be low drivers of ongoing improvements p4 | The Commission has determined that small generating units must use a type 1-4 meter. An MSGA can nominate itself as the Responsible Person. Metering is discussed in section 6. |
| Mark Johnston | The rule change could allow AEMO to better forecast demand. p4 | Noted. |
| National Generators Forum | If the costs of registration for generators are too high then it should be reviewed for all generators. p2 | The reason the cost is too high for small generators is that their size does not justify the expense of the information collected by AEMO in the registration process. This is why they have the option of being exempt from registration. If there are concerns on the information collected for larger generation then this could be the grounds of a separate rule change request. This issue is examined in greater detail in section 5.4.1. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| National Generators Forum | Volatility in the wholesale market is beneficial. Peak prices drive investment in generation technologies and hence introducing small generation peaking plant may lead to a loss in dynamic efficiency. p2 | As described in section 5.4.3 if the existing capacity of a small generating unit is used instead of investing in more expensive peaking plant, then dynamic efficiency is improved. |
| National Generators Forum | This rule change implies the removal of the connection technical requirements in the NER for some generators. However no assessment was stated in the rule change request on the potential impacts of such with connections. p3 | The connection requirements for small generating units are unaltered by this rule change. |
| National Generators Forum | It is not clear what technical standards will apply to small generating units. Of particular note is fault ride through. p3 | The current standards for exempt from registration generation will continue to apply. |
| National Generators Forum | Concerned about AEMO's capacity to identify issues in dispatch with limited information. This could make the process for directing SGAs difficult. Enquires whether the SGA get payment if given a direction. p3 | It is not envisaged that AEMO will give directions to MSGAs. |
| National Generators Forum | The rule change may cause frequency problems as small generators are turned on/off en masse to meet peak prices. If they are not charged for FCAS these costs could be passed on to other Market Participants. p3 | The AEMC has determined that MSGAs should be liable for ancillary service fees in the same manner as Market Generators. This is elaborated in section 7. |
| National Generators Forum | Concerned with the possibility that SGAs may alternate between generating and purchasing electricity to avoid paying participant fees. p4 | This behaviour should not be possible as the load for a retailer and the MSGA's generation shall be metered separately. See section 6 for details. |
| National Generators Forum | If the AEMC determines there is a social good in | This rule change includes no subsidy. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| | small generation, then the small generators should be directly subsidised by customers. p4 | |
| Origin | Many small generators are currently on non-market fixed price contracts with retailers which provide certainty of returns to the generators.p1 | The AEMC notes this point. |
| Origin | Being a Market Participant adds compliance costs to small generators. p1 | Owners of small generators will continue to have a choice to contract directly with a retailer. If they opt to contract with an MSGA, it is the MSGA that will be responsible for any compliance costs. |
| Origin | Considers that small generating units as part of an SGA should not have to register with AEMO if they meet the exemption criteria. Furthermore there should be a non market option for SGAs to undertake direct contracts with retailers. p2 | The rule does not alter the requirement for a generator between 5-30MW to request an exemption from AEMO. This requirement is necessary for system security. Small generators that do not wish to participate in the spot market can continue to contract directly with a retailer. See section 8.4 for more detail on this issue. |
| Origin | The 20GWh/year generation limit for exempt generators means that small generators will be unable to operate with a high capacity factor. Thus this limit should be raised. pp2-3 | The 20GWh/year requirement is at the discretion of AEMO as per NER2.2.1(c). Any request to alter this criteria should be made to AEMO. |
| TRUenergy | Every time the Financially Responsible Market Participant of a generator changes it must be reregistered. This makes it difficult for small generators to transfer to a more preferable direct contract. p1 | The AEMC notes this point. |
| TRUenergy | Do not believe that the rule change will in its own right increase participation. However even a competition benefit will meet the NEO. pp1-2. | The AEMC considers that there could be an increase in small generation in the market from this rule change but it is difficult to predict due to the existence of other barriers. This issue is discussed in section 5.4. |

| Stakeholder | Issue | AEMC Response |
|---|---|---|
| TRUenergy | Believes that SGAs should not be included in CDEII. p3 | As examined in section 8.1 the AEMC agrees that MSGAs should be exempt from CDEII requirements. |
| TRUenergy | Full benefits on wholesale price may not be seen if the small generating units aren't in the central dispatch. p2 | The AEMC considers that including SGAs in central dispatch may be difficult due to the geographical spread of their portfolio. |
| TRUenergy | An additional transitional arrangement should be added to allow current exempt generation to automatically transfer their exemption from an intermediary retailer to an SGA. p3 | The AEMC has not included an automatic transition of exemption from registrations. See section 9.2 for more detail. |
| United Energy | Exemption of small generators from the CDEII may be inappropriate if they become a large enough part of the market. Recommend there be a maximum generation for any exclusion from CDEII. pp3-4 | The Commission has decided not to place a maximum generation value on the exemption to report CDEII values. This is because such an action may result in a cap on the size of MSGAs. This issue is elaborated in section 8.1 |
| United Energy | The SGA framework may lead to some embedded generators being paid twice due to payments received through the Reliability and Emergency Reserve Trader. p5 | Currently AEMO is required to be satisfied that no entities that receive payment due to the Reliability and Emergency Reserve Trader also receive payment from the market (see NER 3.20.8(3)). This requirement will not change. |
| United Energy | Care should be taken with any amendment to market procedures made as part of the transitional arrangements. | Noted. The transitional arrangements are described in section 9.1. |

## B.2 Second round of consultation

| Stakeholder | Issue | AEMC response |
|---|---|---|
| AEMO | Support the rule change. p1 | The AEMC notes this point. |
| AEMO | Request clarification on whether the rule change envisages change on the possibility of multiple FRMPs at a connection point. p1 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6 for elaboration on the AEMC's considerations on metering. |
| AEMO | Considers that metering installations used by a small generating unit should have remote read metering due to settlement issues. p1 | The AEMC consider that remote read metering capacity should be necessary for small generating units which sell their output through an MSGA. See section 6.4 for more detail. |
| AEMO | Notes that participants are concerned with the potential for a large number of micro-embedded units joining MSGA. Recommends four potential options to achieve this goal. pp2-3 | As explained in section 8.4 the Commission considers that the risks of many micro embedded generators joining an MSGA are minimal. Therefore there is no compelling reason to preclude this from happening. |
| AEMO | Requests that the transitional arrangements for the payment of participant fees be placed in a separate schedule to commence in June 2013. p3 | AEMO requires extra time to implement the charging of participant fees. Therefore it is necessary to commence this section of the rule later. This is elaborated in section 9. |
| Ausgrid | Unless metering obligations are clear, there may be costs for market participants. p3 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Ausgrid | If small generating units are manually read it will require settlements to done through forward estimates. Doing this will require the development of new systems by DNSPs. p3 | The AEMC consider that remote read metering capacity should be necessary for small generating units. See section 6.4 for more detail. |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| Ausgrid | Unsure of how the division of responsibilities will work in a situation where there are multiple FRMPs at a connection point. p3 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Ausgrid | Concerned about the allocation of NMIs where more than one FRMP is present. p4 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Ausgrid | Consider that it is inappropriate to evaluate costs of the rule change before AEMO has undertaken the linked procedure changes and the cost-benefit analysis. pp4, 6-7 | AEMO is not in a position to undertake the full cost benefit analysis until after the final rule is determined. Therefore it is appropriate for the AEMC to undertake its decision based on estimates of expected costs. |
| Ausgrid | Note that if take up is higher than expected, the costs for DNSPs may be substantial. p5 | As explained in section 8.4 the Commission considers that the risks of many micro embedded generators joining an MSGA are minimal. Therefore there is no compelling reason to preclude this from happening. |
| Ausgrid | Consider that altering the Generation registration process may be an appropriate method of undertaking the goal of the rule change. pp5-6 | Altering the registration process for all Generators is out of scope of this rule change as it will effect the entire market as described in section 5. |
| Ausgrid | The current option of exempt generators contracting with a retailer means concerns about a lack of knowledge on the market is misplaced. p6 | Participation through a retailer generally does not expose a small generating unit to the market. Therefore, such agreements do not improve market participation. |
| Ausgrid | AEMO has underestimated the potential number of small generating units that may join an MSGA. This is especially the case if the owners of domestic photovoltaic units utilise the framework.p6 | As explained in section 8.4 the Commission considers that the risks of many micro embedded generators joining an MSGA are minimal. Therefore there will be no explicit actions to stop them. |
| Ausgrid | The rule change will only benefit some customers and therefore does not demonstrate a failure in the | If the rule change benefits the market through increased penetration of small generators which may marginally improve the efficiency of the |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| | rules. p6 | market. This is descried in more detail in section 5. |
| Ausgrid | Connection agreements between a small generating unit and the DNSPs may contain conditions of operation. MSGAs should be made aware of these conditions. | The AEMC notes this point. |
| Ausgrid | Considers the draft determination misinterpreted Ausgrid's views in relation to the benefit on network spending. p7 | The AEMC notes the point. |
| Clean Energy Council | Consider that benefits outweigh costs and thus the rule change meets the NEO. p2 | The AEMC notes this point in section 3 |
| Clean Energy Council | Notes that expected system security impacts will be minimal. p2 | The AEMC notes this point. |
| Clean Energy Council | The rule change will improve negotiating position of all small generators. p2 | The AEMC notes this point. |
| Clean Energy Council | There should be no relationship between being part of an MSGA and the connection regime for a small generating unit. p2 | The AEMC agrees that small generating unit owners should be undertaking the connection agreement with DNSPs. This is described in section 8.3. |
| Clean Energy Council | The exemption of MSGAs from CDEII reporting is appropriate as their emission factor will be lower than the NEM average. | The AEMC notes this point. |
| Clean Energy Council | Risk of metering conflicts are minimal. p2 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Clean Energy Council | MSGAs should be exempt from ancillary service | As elaborated in section 7 the AEMC has determined that ancillary |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| | fees. p2 | service fees should be paid by MSGAs. |
| Clean Energy Council | The application for generation to be exempt in the 5-30MW band is reasonable as there is a potential for market impact. pp2-3 | The AEMC notes this point. |
| Clean Energy Council | There is no clear benefit for non-market SGAs. p3 | The AEMC notes this point. |
| Clean Energy Council | Small generating unit and embedded generating unit distinction is potentially confusing. These definitions should possibly be integrated. p3 | The definitions of *embedded generating unit* as used in the NER and NECF is defined in relation to the location of the connection. The definition of *small generating unit* applies to the market operation of the unit. Though it is possible that many generators will be part of both categories the definitions refer to different areas of responsibility. |
| Energex | Supports the intention of the rule change. p1 | The AEMC notes this point. |
| Energex | As MSGAs are part of 'Market Customers' they should pay for network and credit support. p1 | The rule as drafted indicates that there should be no interaction between an MSGA and a DNSP. The rule should not alter the relationship between the DNSP and the small generating units' owner. |
| Energex | Multiple information flows through the same metering installation should be banned. p1 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Energex | It must be made clear in 7.3.1(i) that MSGAs must use interval metering. p1 | The AEMC has determined that all the units of an MSGA's portfolio will need to use interval and remote read meters. See section 6 |
| Energex | The local retailer is responsible for parent NMIs in embedded networks. Therefore the meter provider and the metering data provider should be the same entity to avoid MSATS errors.p1 | This issue is outside the scope of the rule change and it is also being considered as part of the *Power of Choice* and *Energy Market Arrangements for Electric and Natural Gas Vehicles* reviews |
| Energex | There are restriction on new embedded networks | The AEMC notes this point |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| | in Queensland. p2 | |
| Energy Makeovers | Believe that the rule change will lower practical barriers to the introduction of small generators in the NEM. This should lower peak prices faced by retailers and ultimately consumers. | The AEMC notes this point. |
| Energy Makeovers | Note that there is no locational signals in the rule change. Suggest that the payment for avoided TUOS/DUOS should become simpler. Accept that this is being examined by the Power of Choice Review. | The AEMC notes this point as it is discussed further in section 5. |
| Energy Makeovers | The rule change may spur on the creation of novel business models like battery storage at a household level. p1 | The AEMC notes this point. |
| EnerNOC | Support the rule change. | The AEMC notes this point. |
| Origin | Multiple FRMPs at a connection point is a large change and should have a more thorough examination. pp1-3 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Origin | The draft rule may exclude small generating units which have a capacity of >10MW from distribution loss factors. p3 | The reference to *embedded generating unit* in NER clause 3.6.3(b)(2)(i)(A) is sufficient as a *small generating unit* connected to a distribution network will also be an *embedded generating unit* by definition. Therefore distribution loss factors will be calculated with *small generating units* in mind. |
| Origin | In favour of rule changes to ease small generators access to the market. However concerned about FRMP issues. | The AEMC notes this point. |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| Private Generators | Concerned about multiple FRMPs at a single connection point. p1 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| Private Generators | Do not consider MSGAs should be exempt from ancillary service payments. Consider they are "small generators" and thus should pay generator ancillary service fees. pp1-2 | The AEMC agrees that MSGAs should be required to pay for ancillary services. See section 7 for more detail. |
| Private Generators | MSGAs should not be exempt from CDEII. The estimate of 150MW of capacity is reasonably significant. Furthermore MSGAs may have a carbon intensity higher than the NEM average. Ignoring this capacity may lead to AEMO's calculation being in error. pp2 | The AEMC considers that MSGAs should not be required to report under the CDEII. This is elaborated in section 8.1. |
| TRUenergy | Supportive of measures to encourage the uptake of small generators. p1 | The AEMC notes this point. |
| TRUenergy | Considers the rule change can include a simplistic fix on pre existing issues through the addition of a new participant flag. p2 | The potential for changes to any procedures would best be directed to AEMO. |
| TRUenergy | Concerned about the use of separate NMIs at a connection point. p2 | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. See section 6.4 for elaboration on the AEMC's considerations on metering. |
| TRUenergy | Considers that there should be a new 'Aggregator' flag used in MSATS. p2 | The design of the operational IT system is for AEMO and bodies such as the BRMG to determine. |
| TRUenergy | Does not know how Retailer of Last Resort arrangements will work in any amended metering arrangement. States that separate metering makes | The rule change includes no alteration to the current relationship between FRMPs, connection points and NMIs. There will be no change to Retailer of Last Resort mechanisms due to this rule change. See section 6.4 for |

| Stakeholder | Issue | AEMC response |
|---|---|---|
| | the issue nonexistent. pp2-3 | elaboration on the AEMC's considerations on metering. |
| TRUenergy | Concerned about the potential for customers to double dip both feed in tariffs and spot price. Note that this may be possible if a small generating unit and a retailer are sharing the same metering installation. p3 | This should not be possible if the small generator is separately metered. |