Australian Energy Market Commission

RULE DETERMINATION

National Electricity Amendment (Scale Efficient Network Extensions) Rule 2011

Commissioners
Pierce
Henderson
Spalding

30 June 2011

JOHN PIERCE
Chairman
For and on behalf of the Australian Energy Market Commission

Inquiries

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

E: aemc@aemc.gov.au
T: (02) 8296 7800
F: (02) 8296 7899

Reference: ERC0100

Citation

AEMC 2011, Scale Efficient Network Extensions, Rule Determination, 30 June 2011, Sydney

About the AEMC

The Council of Australian Governments, through its Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. Our key responsibilities are to consider rule change proposals, conduct energy market reviews and provide policy advice to the Ministerial Council as requested, or on AEMC initiated reviews of energy matters.

Executive summary

The Australian Energy Market Commission (AEMC or Commission) has decided to make this final Rule determination and Rule as Made in response to the Ministerial Council on Energy's (MCE) Rule Change Request regarding Scale Efficient Network Extensions (SENEs).

The Commission's final determination is to make a Rule which is largely reflective of, and consistent with, the draft Rule determination and draft Rule, with some minor clarifications. The Commission has made this final Rule determination after carefully considering the arguments and evidence put forward throughout the Rule change process, including in submissions to the draft Rule determination and draft Rule.

The Commission's final Rule determination

The Rule as Made is a more preferable which differs from the proposed Rule as well as the options presented in the AEMC's Options Paper. The key advantage of the Rule as Made is that it does not compel anyone to bear the risk and cost of stranded assets. Rather, it provides a mechanism under which opportunities to capture scale efficiencies can be made transparent.

The Rule as Made creates a new obligation on transmission businesses to undertake, on request, specific locational studies to reveal to the market the potential opportunities for efficiency gains from the coordinated connection of expected new generators in a particular area. A study will assist potential investors to make an informed, commercial decision to fund a SENE having regard to potential gains from coordinated, efficient generator connection arrangements and the potential costs of assets not being fully used and therefore 'stranded'.

Efficiency gains will be realised where opportunities for the coordinated connection of expected new generators in an area are provided, and the expected new generators in that area materialise and participate in the coordinated solution as forecast.

Once a study is published, the decisions to fund, construct, operate and connect to a SENE will be made by market participants and investors within the existing framework for connections in the Rules.

In making its final determination, the Commission considered what mechanisms are likely to contribute to minimising expected total system costs over time. The Commission considers that this will occur where an appropriate trade-off is made between: (1) building spare capacity in anticipation of future generation so as to capture the scale economies associated with transmission investment; and (2) the risk that the expected additional generation investment does not occur, thereby stranding that spare capacity. This decision is best made by market participants or investors with the appropriate information, ability and incentive to manage the asset stranding risk.

The Commission considers the Rule as Made is an appropriate and proportionate response to the issues raised in this Rule Change Request and is satisfied that the Rule

as Made is likely to better contribute to the achievement of the National Electricity Objective (NEO) than the alternatives considered, including the proposed Rule.

Broader issues around access rights and connection which have been raised during consultation on this Rule Change Request will be considered holistically as part of the Transmission Frameworks Review (TFR).

Summary of the Rule Change Request

On 15 February 2010, the MCE submitted a Rule Change Request to the AEMC in relation to the efficient connection of multiple generators in the same geographic areas that seek connection to the network over time. The key issue identified in the Rule Change Request was that, without some change to the connections framework, there is a risk of inefficient duplication in network assets and potential delays in connection where connections cannot be coordinated or built to an efficient scale.

The challenge to building speculative capacity in anticipation of future connections is the risk of being unable to recover the potentially significant costs incurred if the additional capacity is not used.

The Rule Change Request sought to provide a framework that would address this challenge and facilitate spare capacity being built in anticipation of future generation, thereby reducing both the cost of, and potential delays in, connection. The proposed Rule required consumers to underwrite the cost (and risk) of spare capacity, to be paid back through generator charges if all generation connects as forecast. A regulatory oversight mechanism was included to reduce asset stranding risk to consumers.

Reasons for the Commission's decision

The Commission is satisfied that the Rule as Made is likely to contribute to the achievement of the NEO. Moreover, the Commission is satisfied that the Rule as Made is likely to better contribute to the achievement of the NEO than the proposed Rule. In coming to this view, the Commission considers that the Rule as Made:

- more efficiently allocates the asset stranding risk associated with building an extension in anticipation of future generation to those entities best able and willing to manage that risk (registered participants or investors) as opposed to those who are unable to manage such risk (consumers);

- promotes more efficient investment in electricity services by maintaining a market based approach to connections rather than requiring non-market facing entities to take risks on generator investment decisions. It promotes competition in funding which should lead to lower costs for such connections. It also avoids potentially superfluous work being undertaken by AEMO and TNSPs; and

- is less complex than the arrangements proposed by the Rule Change Request. The relatively simple change to the Rules maintains current arrangements for access and connection thereby avoiding the potential for inconsistencies with existing frameworks.

Further, the Rule as Made may assist in overcoming the first mover disadvantage. This is because, by publishing a SENE design and costing study, additional information is provided to the market on potential opportunities for capturing scale economies through coordinated connections. In this way, the Rule as Made should broaden the possible funding outcomes, thereby reducing the burden on first generators to have to fund excess capacity themselves.

In addition, where an entity chooses to fund a SENE, all connecting generators would be required to individually negotiate a charge with the TNSP. To the extent that the first connecting generator is able to negotiate a charge that is lower than its standalone cost of connection, the opportunities for later generators to free-ride on efforts of first movers and connect at a substantially lower cost are reduced.

Consultation on the Rule Change Request

The Commission has consulted extensively throughout its consideration of this Rule Change Request and has found highly divergent views amongst stakeholders.

Twenty-eight submissions and two supplementary submissions were received in response to the staff Consultation Paper, published on 1 April 2010. These responses generally (although not unanimously) suggested a shift in support away from the more complex SENE Rule as set out in the Rule Change Request. While there was still some support for change, this was tempered by the complex nature of the proposed Rule and the implementation difficulties it posed.

In recognition of the high level of interest in this Rule Change Request, the Commission considered it appropriate to test a number of alternative solutions with stakeholders. The Commission published an Options Paper on 30 September 2010 which outlined five possible alternative options. The Commission also held a public forum on 20 October 2010 to provide an opportunity to discuss the issues and options presented in the Options Paper.

A further twenty-one submissions and one supplementary submission were received in response to the Options Paper. These responses continued to demonstrate a divergence in views not only on whether a change to the existing framework is required, but if so, what the appropriate solution is.

On 10 March 2011, the Commission published the draft Rule determination, including draft Rule, for the SENEs Rule change. The Commission's draft determination was to make a more preferable Rule which differed from the proposed Rule as well as the options presented in the AEMC's Options Paper.

Twenty-one submissions were received in response to the draft Rule determination and draft Rule. The Commission's draft determination continued to elicit divergent views across the industry and within industry sectors.

In submissions to the draft Rule determination, a number of stakeholders raised concerns in relation to the Commission's Rule making process in light of the

Commission's draft determination to make a Rule which differed from the proposed Rule and options set out in the AEMC's Options Paper.

In response to these concerns, the Commission notes that when making a decision as to whether or not to make a Rule, it is required to follow the standard Rule making process, and apply the Rule making test, both of which are set out in legislation. It is through following this process that the Commission has been able to: (1) determine the best way to address the issues identified by the Rule Change Request; and (2) ensure that any changes to the existing framework are proportionate to the problems identified, and will or are likely to contribute to the achievement of the NEO.

Contents

1 Ministerial Council on Energy's Rule Change Request

1.1 The Rule Change Request

On 15 February 2010, the MCE[1] (Rule change proponent) made a request to the AEMC seeking to introduce a new framework to facilitate the connection of clusters of new generation that are expected to seek to connect to the network over time (Rule Change Request).

The purpose of the proposed arrangements for SENEs was to allow the efficient connection to the network of multiple generators in proximate locations over a period of time so as to minimise expected network costs. The Rule Change Request set out a framework for planning, charging and revenue recovery of SENEs and adjustments to the process for connections.

1.2 Rationale for the Rule Change Request

The expanded Renewable Energy Target (RET) is expected to drive extensive new investment in renewable generation, particularly wind-powered generation, over the next decade. A mechanism which places a price on carbon would be likely to further stimulate increased investment in renewable – as well as lower carbon intensive – generation.

The characteristics of the new generation likely to connect over the next decade differ in a number of respects from traditional generation sources in that:

- some of the lowest cost sources of generation are located remote from the existing networks; and
- much of the new generation that is likely to seek connection is relatively small compared to the "lumpy" network investment required to connect it.

This implies that there are likely to be efficiencies from coordinating such connections, particularly where new generation clusters around an energy resource such as wind or gas. Connecting generators in a way that will minimise expected total system costs will require investment that is more forward looking than has historically been required.

However, the MCE considered that the existing market framework is unlikely to promote the efficient connection of multiple generators in the same location over a period of time.[2]

1 Note that from 1 July 2011, the MCE will change its name to the Standing Council on Energy and Resources (SCER).

2 Ministerial Council on Energy 2010, Rule Change Request - Scale Efficient Network Extensions, February 2010, p.4.

There are three key issues that may challenge the efficiency of the existing framework, which is based on bilateral negotiations between generators and Network Service Providers (NSPs) for connection services. These are:

- the connection of multiple generators in the same area;
- the time period over which generators might seek connection; and
- a lack of incentives on NSPs to build scale efficient network extensions for connections.

Difficulties in coordinating the connection of multiple generators have been lessened to some extent through a Rule change that reduced restrictions on NSPs releasing any information received as a result of a connection enquiry or application.[3] However, while improved information release provisions may better facilitate the coordination of multiple generators seeking to connect at a single point in time, challenges still exist as it is unlikely that generators will be ready to commit to connect at precisely the same time.

The Rule Change Request states that NSPs currently have no commercial incentive to build network connections to an efficient scale in anticipation of future connection.[4] NSPs currently receive no benefit from, and will potentially incur significant costs, if they oversize their network assets in anticipation of future connections that do not eventuate. Consequently, NSPs are unlikely to consider the possible scale efficiencies that could be achieved by sizing new assets to enable the more efficient connection of potential future entrants.

It is also unlikely that the initial connecting party would be willing to pay for the excess connection capacity given it is likely to facilitate the future connection of a competitor.

This could lead to the unnecessary duplication of connection assets and delays in connection as each new generator connects to the network, potentially resulting in significantly higher costs to consumers.

1.3 Solution proposed in the Rule Change Request

The Rule change proponent sought to resolve these issues by proposing a new Rule which would allow capacity to be built in anticipation of future connections so as to enable consumers to benefit from scale economies associated with a larger network asset. It did so by requiring consumers to underwrite the cost of spare capacity; however, this would be paid back through generator charges if all generation connects

3 AEMC 2009, *Confidentiality Provisions for Network Connections, Rule Determination*, 12 November 2009, Sydney.

4 Ministerial Council on Energy 2010, *Rule Change Request - Scale Efficient Network Extensions*, February 2010, p.4.

as forecast. A regulatory oversight mechanism was included to minimise asset stranding risk to consumers.

The proposed Rule set out a framework for the planning, charging and revenue recovery of SENEs and adjustments to the process for connections, and included the following key elements:

- Australian Energy Market Operator (AEMO) to identify possible SENE zones as part of the National Transmission Network Development Plan (NTNDP);
- NSPs to identify credible connection asset options and undertake preliminary planning, to be reported in their Annual Planning Report (APR);
- NSPs to publish a planning report and connection offer, including technical design issues and annual charges payable by generators based on a forecast generation profile;
- AEMO and the Australian Energy Regulator (AER) to have regulatory oversight roles, including a requirement that AEMO reviews the relevant NSP's forecast generation profile and an opportunity for the AER to disallow the project;
- the connection offer to contain an agreed power transfer capability, including compensation arrangements where a generator is constrained off below its agreed capability;
- construction of the SENE to be triggered by agreement on the connection offer by at least one generator;
- a charging framework that requires connecting generators to pay for the share of the SENE they use. Consumers would pay for any revenue requirement not recovered from generators, where fewer generators connect or connect later than was planned for; and
- a review of the policy, to be undertaken by the AEMC and provided to the MCE, after five years to ensure the anticipated benefits are being achieved.

A draft Rule for the implementation of SENEs was initially set out in the Commission's Final Report for the Review of Energy Market Frameworks in light of Climate Change Policies (Climate Change Review or CCR).[5] In addition, the MCE considered that the Rule should contain:

- provisions that give NSPs an internal incentive to prudently size SENEs to ensure appropriate discipline is applied to develop accurately sized proposals;
- an obligation on NSPs to consider explicitly any benefits that may accrue to consumers as a result of a SENE. Where such benefits exist, part (or all) of a SENE may be permanently funded by consumers; and

5 AEMC 2009, *Review of Energy Market Frameworks in light of Climate Change Policies: Final Report*, September 2009, Sydney. See section 1.4 for further details.

- a requirement for a favourable assessment by AEMO of the profile of new generation assumed by NSPs as a prerequisite for further consideration by the AER.

1.4 Relevant background

The development of a framework to promote the efficient connection of clusters of new generation to the electricity networks as new generation connects over time was first considered by the Commission as part of the Climate Change Review.

In August 2008, the MCE directed the AEMC to review the existing energy market frameworks to assess whether they were resilient to the changes in behaviour that were likely to result from the planned introduction of the expanded RET and the Carbon Pollution Reduction Scheme (CPRS).

The AEMC submitted its Final Report on the Climate Change Review to the MCE on 30 September 2009. The Final Report concluded that the energy market frameworks, supported by a number of recommended changes, were capable of accommodating the impacts of the expanded RET and CPRS.

The AEMC made a number of recommendations that sought to strengthen energy market frameworks and ensure they would be resilient to the changes in behaviour expected as a result of climate change policies. One of the key recommended framework changes was the introduction of measures to promote the efficient connection of clusters of new generation to the electricity networks as new generation connects over time.

The MCE supported the AEMC's findings and recommendations in its response to the Final Report.[6] In particular, the MCE endorsed the recommendation regarding the efficient connection of clusters of generation, noting that the SENE framework will deliver benefits to the market by providing greater flexibility for the National Electricity Market (NEM) to respond to the challenges posed by climate change policies.[7] The MCE therefore requested that the AEMC progress consideration of the Rule Change Request, having regard to the MCE's response.

1.5 Commencement of the Rule making process

Although the Rule Change Request arose from the Commission's previous work in the context of the Climate Change Review, the Commission is nonetheless required to follow the standard Rule making process, including undertaking further public consultation.

On 1 April 2010, the Commission published a notice under section 95 of the National Electricity Law (NEL) advising of its intention to commence the Rule change process

6 Ministerial Council on Energy 2009, *Review of Energy Market Frameworks in light of Climate Change Policies: Response to Australian Energy Market Commission's Final Report*, December 2009.

7 Ibid, p.5.

and the first round of consultation in respect of the Rule Change Request. A Consultation Paper prepared by AEMC staff identifying specific issues or questions for consultation was also published with the Rule Change Request. Submissions closed on 13 May 2010.

The Commission received twenty-eight submissions and two supplementary submissions on the Rule Change Request as part of the first round of consultation.

On 16 August 2010, the Commission announced that it would publish an Options Paper before proceeding to a draft Rule determination. The Commission decided that an additional step was necessary due to the complex nature of the proposed Rule, the divergent views expressed across the industry and the emergence of possible alternative solutions. A brief overview of the Options Paper, published on 30 September 2010, is provided in the next section. Submissions to the Options Paper closed on 5 November 2010.

The Commission received twenty-one submissions and one supplementary submission on the Options Paper as part of the additional round of consultation.

The submissions and supplementary submissions received to both the Consultation Paper and the Options Paper are available on the AEMC website. A summary of the issues raised in submissions, and the Commission's response to each issue, is contained in Appendix B.

On 20 October 2010, the AEMC held a Public Forum in Adelaide. The Forum provided an opportunity to discuss the issues and options presented in the Options Paper.

1.6 Alternative solutions proposed in the Options Paper

The purpose of the Options Paper, published in 30 September 2010, was to test a number of alternative solutions with stakeholders in order to:

1. assist the Commission in determining the best way to address the issues identified by the Rule Change Request; and

2. ensure that any changes to the existing frameworks were proportionate to the problems identified and would, or would be likely to, contribute to the achievement of the NEO.

Options 1 and 2 were based on the SENEs framework proposed in the Rule Change Request, with some revisions to strengthen the risk mitigation mechanisms and simplify the proposal. The key differences between these options and the Rule Change Request were:

- Option 1 introduced a cost threshold trigger such that a SENE would only be built once 25 per cent of the capital costs of the investment were underwritten by firm connection agreements with generators; and

- Option 2 also included a cost threshold trigger, but further strengthened the risk mitigation measures through explicit application of an economic test. In addition, the proposed framework was simplified by removing the prescribed compensation arrangements, leaving those to be negotiated between NSPs and generators.

Option 3 required the application of the Regulatory Investment Test for Transmission (RIT-T) to incremental capacity above that required to connect a first generator (or group of generators). The first generator(s) would pay the stand alone costs of its connection to the network in the absence of a scale efficient connection. Subsequent connecting generators would contribute to the stand alone cost of the first generator(s). The cost of any incremental capacity justified by the RIT-T would be met by consumers.

Option 4 was a variation on this approach with different cost recovery arrangements such that generators would be expected to pay for the SENE over time, provided that generation materialises as forecast. Consumers would continue to underwrite the cost of any spare capacity, but with a simplified charging framework.

Option 5 maintained the principle that generators should face the costs incurred in connecting them to the network. However, instead of recovering this as a negotiated service, a new type of prescribed service would be introduced that would be paid for by generators. Consumers would still underwrite the cost of any spare capacity, but with a simplified charging framework.

1.7 Publication of the draft Rule determination and draft Rule

On 10 March 2010, the Commission published the draft Rule determination and draft Rule in relation to the Rule Change Request. Submissions to the draft Rule determination closed on 5 May 2011.

The Commission received twenty-one submissions on the draft Rule determination. These are available on the AEMC website.[8] A summary of the issues raised in submissions, and the Commission's response to each issue, is contained in Appendix A.

The Commission's draft Rule determination was to make a more preferable Rule which differed from the Rule proposed in the Rule Change Request as well as the options presented in the AEMC's Options Paper. A key advantage of the draft Rule compared to the proposed Rule was that it would not compel anyone, including consumers, to bear the risk and cost of stranded assets. Rather, it provided a mechanism under which opportunities to capture scale efficiencies could be made transparent.

8 See: www.aemc.gov.au.

1.8 Extensions of time

On 1 July 2010, 19 August 2010 and 3 February 2011, the Commission published notices under section 107 of the NEL extending the periods for publishing the draft and final Rule determinations for the Rule Change Request. The Commission considered that the Rule Change Request raised issues of sufficient complexity and difficulty such that additional time was necessary.

1.9 Stakeholder views on the Rule change process

In submissions to the draft Rule determination, a number of stakeholders commended the AEMC for the work undertaken in assessing the Rule Change Request. In particular, they commended the AEMC for undertaking extensive consultation with stakeholders. [9]

In respect of the Commission's decision to make a more preferable Rule, AGL stated that *"…the AEMC has done an outstanding job balancing the interests of generators, TNSPs, customers and other stakeholders in developing this alternative to the options…"*[10]

However, in contrast to these views, several stakeholders raised concerns in relation to the Commission's Rule making process, specifically in light of the Commission's draft decision to make a more preferable Rule which differed from the proposed Rule and options presented in the AEMC's Options Paper.

Almost half the stakeholders who did not support the draft Rule, recommended that the AEMC halt the Rule change process and refer back to the MCE for further direction.[11] These stakeholders were firmly of the view that the MCE had been clear in its direction in the Rule Change Request that it was appropriate for customers to underwrite some of the costs of SENEs. On this basis, they considered it was unacceptable for the Commission to have concluded otherwise in its draft Rule determination.

A number of stakeholders also raised concerns in respect of the draft Rule differing significantly from the solutions proposed in the Rule Change Request and options presented in the Options Paper.[12]

Origin, having noted that it had no issue with the process followed by the AEMC, considered that the content of the draft Rule did not reflect the time and resource intensive nature of the consultation process.[13]

---

9 Alinta, draft determination submission, p.1; NGF, draft determination submission, p.1; Origin, draft determination submission, p.1.

10 AGL, draft determination submission, p.1.

11 Vestas, draft determination submission, p.2; Infigen, draft determination submission, p.2; Clean Energy Council, draft determination submission, p.2; Pacific Hydro, draft determination submission, p.1.

12 Infigen, draft determination submission, p.3; TRUenergy, draft determination submission, p.4.

Pacific Hydro considered that, "*...given the significance of the policy interaction between the SENE, the RET and the transmission frameworks review…it is not reasonable to introduce a "new" draft Rule without further consultation.*"[14]

The Commission acknowledges these concerns and recognises that the Rule change process has required significant commitment from stakeholders in terms of time and resources. In this regard, the Commission would like to thank stakeholders for their continued high level of engagement throughout the process.

In response to these concerns, the Commission notes that it continues to believe that the Rule as Made reflects an appropriate change to current frameworks having considered the arguments and evidence put forward in submissions, and having undertaken further analysis.

In addition, the process to which the AEMC must adhere before making any changes to the Rules is set out in legislation. This process involves undertaking several stages of public consultation and applying the "Rule making test". The Rule making test, also set out in legislation, requires that the Commission be satisfied that a Rule will or is likely to contribute to the NEO before deciding to make a Rule. This is the standard process that must be followed when assessing all Rule change requests, irrespective of their origin.

The Commission notes that it is through following this process that it has been able to: (1) determine the best way to address the issues identified by the Rule Change Request; and (2) ensure that any change to the existing framework is proportionate to the problems identified, and will or is likely to contribute to the achievement of the NEO.

The Commission's assessment of the SENEs Rule Change Request is set out in the following chapters.

13 Origin, draft determination submission, pp.2,5.

14 Pacific Hydro, draft determination submission, p.1.

2 Final Rule Determination

For the remainder of this document, the following terms will have the meanings described below:

- "proposed Rule" (or "original Rule") - the Rule initiated by the MCE and set out in the Rule Change Request;
- "draft Rule" - the Rule proposed by the AEMC and attached to and published with the draft Rule determination;
- "Rule as Made" ("final Rule" or "more preferable Rule") - the Rule made by the AEMC and attached to and published with this final Rule determination; and
- "Options 1 to 5" - the five options presented by the AEMC in the Options Paper and described in section 1.8.

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 the MCE. In accordance with section 103 of the NEL the Commission has determined not to make the Rule proposed by the MCE and to make a more preferable Rule.[15]

The Commission's reasons for making this final Rule determination are set out in the remainder of this document.

The *National Electricity Amendment (Scale Efficient Network Extensions) Rule 2011 No 7* (Rule as Made) is published with this final Rule determination. The Rule as Made commences on 1 July 2011. Its key features are described in section 2.7.

2.2 Commission's considerations

In assessing the Rule Change Request, the Commission considered:

- the Commission's powers under the NEL to make the final Rule determination and final Rule;
- the Rule Change Request;

15 Under section 91A of the NEL the AEMC may make a Rule that is different (including materially different) from a market initiated proposed Rule (a more preferable Rule) if the AEMC is satisfied that having regard to the issue or issues that were raised by the market initiated proposed Rule (to which the more preferable Rule relates), the more preferable Rule will or is likely to better contribute to the achievement of the National Electricity Objective.

- the fact that there is no relevant MCE Statement of Policy Principles;[16]
- the MCE's policy response to the AEMC's Review of Energy Market Frameworks in light of Climate Change Policies Final Report;[17]
- submissions and supplementary submissions received during first round consultation;
- submissions and supplementary submissions received on the Options Paper;
- stakeholder views at the SENEs Public Forum held in Adelaide;
- submissions received on the draft Rule determination and draft Rule; and
- the Commission's analysis as to the ways in which the proposed Rule, Options 1 to 5 and the Rule as Made will, or are likely to, contribute to the NEO.

2.3 Commission's power to make the Rule

The Commission is satisfied that the Rule as Made falls within the subject matter about which the Commission may make Rules. The Rule as Made falls within the matters set out in section 34 of the NEL as it relates to the activities of persons (including Registered Participants) participating in the NEM or involved in the operation of the national electricity system. In particular, it relates to obligations imposed on TNSPs to undertake SENE studies. Further, the Rule as Made falls within the matters set out in schedule 1 to the NEL as it relates to:

- Item 12, which relates to the augmentation of transmission systems and distribution systems;
- Item 30F, which relates to the application (with or without modification) of Rules, applicable to NSPs, to regulated transmission system operators, or to AEMO in its capacity as a provider of transmission services; and
- Item 35, which relates to confidential information held by Registered Participants, the AER, the AEMC, AEMO and other persons or bodies conferred a function, or exercising a power or right, or on whom an obligation is imposed, under the Rules, and the manner and circumstances in which that information may be disclosed.

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

17 Ministerial Council on Energy 2009, *Review of Energy Market Frameworks in light of Climate Change Policies: Response to the Australian Energy Market Commission's Final Report*, December 2009.

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 the Rule Change Request, the Commission considers that the relevant aspect of the NEO is efficient investment in electricity services.[18]

Achieving efficient investment in electricity services, in particular connections, should result in lower expected total system costs which, over time, will lead to more efficient prices and higher quality and service for consumers. The Commission considers that efficient investment outcomes are likely to occur where risk is allocated efficiently.

The Commission is satisfied that the Rule as Made will, or is likely to, contribute to the achievement of the NEO by providing a mechanism which promotes more efficient connection outcomes than under existing arrangements, thereby promoting the long term interests of consumers in respect of the price of electricity. The Rule as Made promotes efficient investment in the following ways:

- provides a new mechanism to identify the potential benefits of building efficiently sized transmission assets for the purposes of connection, so as to take advantage of scale economies. In doing so, the new mechanism will facilitate more efficient coordination amongst generators. Where lower connection costs reduce total system costs, it is likely that some benefits will be passed on to consumers;

- provides an approach that allows stranded asset risk to be allocated to those parties that are best able and willing to manage that risk through a process of commercial negotiation. This is consistent with existing frameworks;

- provides additional information transparency to the market by publishing potential efficiency gains from coordinated connections. If a SENE study is undertaken, it should overcome any information asymmetry between TNSPs and

18 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.

the market on the likely magnitude of benefits that could potentially be gained from efficient connection outcomes. The Rule as Made should also promote interest in funding by third parties thereby promoting competition in funding. In addition, the Rule as Made maintains the existing approach to connections and does not affect generators' rights to seek access to the network; and

- provides a change to the existing framework that is proportionate to the identified issues. It does not introduce significant complexity or the potential for inconsistencies with existing frameworks and does not impose unrecoverable costs or unreasonable requirements on market participants or consumers.

Compatibility with AEMO's declared network functions

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 as Made sets out a new requirement for Transmission Network Service Providers (TNSPs), where requested and funded by another entity, to undertake a SENE design and costing study.

AEMO, in its capacity as a TNSP in Victoria, would be required to undertake such studies where requested. The role of conducting the SENE design and costing study is compatible with AEMO's declared network functions under section 50C of the NEL, in particular its function of providing information and other services to facilitate decisions for investment and use of resources in Victoria's electricity industry.

As the Rule as Made affects the allocation of powers, functions and duties between AEMO and a declared transmission system operator, AEMO's consent to the making of the Rule is required. On 17 June 2011, AEMO provided its consent to the Rule as Made.

2.5 More preferable Rule

Under section 91A of the NEL, the AEMC may make a Rule that is different (including materially different) from a market initiated proposed Rule (a more preferable Rule) if the AEMC is satisfied that, having regard to the issues raised by the market initiated proposed Rule (to which the more preferable Rule relates), the more preferable Rule will or is likely to better contribute to the achievement of the NEO.

Having regard to the issues raised by the Rule proposed in the Rule Change Request, the Commission is satisfied that the Rule as Made will, or is likely to, better contribute to the NEO than the proposed Rule by providing a framework which better promotes efficient investment outcomes in transmission, thereby better promoting the long term interests of consumers in respect of the price of electricity. The Commission considers that the Rule as Made promotes investment efficiency better than the proposed Rule for the following reasons:

- the Rule as Made more efficiently allocates the asset stranding risk associated with building an extension in anticipation of future generation to those entities

best able and willing to manage that risk (registered participants or investors) as opposed to those who are unable to manage such risk (consumers);

- the Rule as Made promotes more efficient investment in electricity services by maintaining a market based approach to connections rather than requiring non-market facing entities to take risks on generator investment decisions. It promotes competition in funding which should lead to lower costs for such connections. It also avoids potentially superfluous work being undertaken by AEMO and TNSPs; and

- the Rule as Made is less complex than the arrangements proposed by the Rule Change Request. The relatively simple change to the Rules maintains current arrangements for access and connection thereby avoiding the potential for inconsistencies with existing frameworks.

2.6 Other requirements under the NEL

In applying the Rule making test in section 88 of the NEL, the Commission also considered whether there are any relevant MCE Statements of Policy Principles as required under section 33 of the NEL. The Commission has determined that there is no MCE Statement of Policy Principles which is relevant to this Rule change.

The Commission considers that the following sections of the NEL are also not relevant to the Rule as Made:

- section 88A (specifying the circumstances in which the AEMC must take into account form of regulation factors);

- section 88B (specifying the circumstances in which the AEMC must take into account revenue and pricing principles); and

- section 89 (relating to the matters to which the AEMC must have regard when making jurisdictional derogations).

2.7 Rule as Made

Overview

The Rule as Made is intended to promote the more efficient connection of multiple generators in the same geographic area compared to the existing arrangements, through commercial arrangements with minimal regulatory intervention. It does so by placing a new obligation on TNSPs to undertake, on request, specific locational studies to reveal to the market the potential opportunities for efficiency gains from coordinated connections. Once a study is published, the decisions to fund, construct, operate and connect to a SENE will be made by market participants and investors within the existing framework for connections in the Rules.

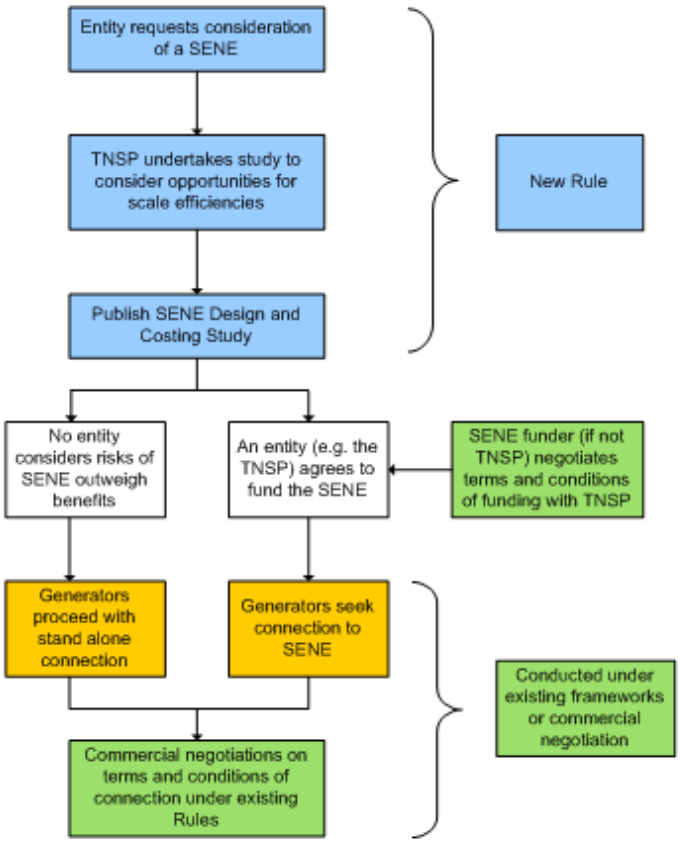
The key advantage of the Rule as Made is that it does not compel any entity, including consumers, to bear the risk of stranded assets. Instead, it provides a mechanism by which opportunities to capture scale efficiencies are made transparent and any entity that chooses to do so can underwrite a SENE.

Consideration of a SENE would be triggered by a generator, or any other entity, requesting that a TNSP undertake a study to examine the potential scale economies available from constructing a SENE in a particular geographic area. The TNSP would then be required to publish the study detailing possible designs and their associated costs, compared with connecting forecast generation on a stand alone basis.

Any willing entity (or consortium) such as the TNSP, a generator, government or any other third party would then have an opportunity to fund a SENE. The terms and conditions of the funding arrangements between the funder, builder and TNSP operating the SENE would be subject to commercial negotiation between the relevant entities. Once the SENE is built, it would become part of the TNSP's network and generators would be able to seek access on a fair and reasonable basis, consistent with existing arrangements.

The following diagram sets out a summary of the Rule as Made. The blue boxes indicate matters governed by the Rule as Made; the green boxes indicate where commercial negotiations, as per the existing Rules if applicable, take place.

Figure 2.1



A detailed description of the Rule as Made is set out below.

Trigger for considering a SENE

Consideration of a SENE would be triggered by a generator, or any other entity, requesting that a TNSP undertake a study to examine the potential scale economies from constructing a SENE in a particular geographic area. A generator seeking connection to the network could:

- make a standard connection enquiry. In this instance, the existing procedures set out in the Rules would be followed; and/or
- request a TNSP to undertake a study. The "SENE design and costing study" would consider opportunities for a scale efficient network extension that would provide a more efficient connection arrangement for both the enquiring generator, and other anticipated generation in the area.

The TNSP would not be required to bear the costs of the SENE study. Instead, the entity that requests the study would also need to arrange for its funding, thereby discouraging spurious requests for SENE studies. A generator seeking connection may be willing to fund the study on the basis that its overall cost of connection to the shared network may be lower if a SENE is built. However, the generator (or any other interested entity) could request contributions to the cost of the study from other generators proposing to locate in the same area.

TNSPs would generally be obliged to undertake the study if requested and funded by the study proponent or another person. There is no such obligation on Distribution Network Service Providers (DNSPs). In Victoria, the relevant TNSP to undertake the study is AEMO. This is consistent with AEMO's declared network functions under section 50C of the NEL and, in particular, its function of providing information and other services to facilitate decisions for investment and the use of resources in Victoria's electricity industry.

The TNSP would also be required to publish a notice on its website indicating commencement of a SENE study. The notice must specify the area that is being considered, the dates agreed between the study proponent and the TNSP for completion of the study, and any interim milestones. The notice should also invite persons to provide information or data to the TNSP to help inform the study.

The Commission recognises the possibility that the scope and timing of a SENE design and costing study may change in light of a TNSP receiving data or information from interested parties following publication of the notice. The Commission would expect this possibility to be considered during negotiations between the TNSP and the entity that funds the study as part of their broader negotiation on scope and timeframe.

Scope of the SENE design and costing study

The purpose of the SENE design and costing study is to examine the extent of the scale efficiencies that may be gained from more efficiently connecting generators in the same

geographic area to the transmission network, compared to those same generators connecting on an individual stand alone basis.

The study would therefore need to compare the cost of forecast generation in the same geographic area connecting to the transmission network as augmented by a SENE with the cost of the forecast generation otherwise connecting to the national grid. The difference between these costs would highlight the potential savings from building a SENE.

The study would likely also need to consider the risk that not all generation assumed for the purpose of estimating costs will necessarily materialise. This is a key issue and the Commission would expect the TNSP to perform some sensitivity analysis based on different probabilities of generation entry. For example, the Commission would expect the study to encompass a number of different forecast generation scenarios and different assumptions about the probability of the forecast generation materialising.

The cost of connecting to the transmission network as augmented by a SENE will likely always be less than the total cost of providing stand alone connections to the existing network. However, the costs included in the study would likely only represent the total project costs - they would not be expected to take into account the risks associated with undertaking the investment. Once the risk of asset stranding is reflected in a risk adjusted return, the stand alone connection outcome may actually minimise expected total system costs relative to the SENE outcome.

The exact scope and timeframe for undertaking the SENE design and costing study would be subject to negotiation between the TNSP and the person requesting the study. However, the Rule as Made requires the TNSP to consider certain matters when negotiating the scope of the study, including:

- potential benefits of capturing scale economies;
- the future generation capacity in a defined area that is considered likely to connect to a SENE;
- the location of the point(s) of connection of the SENE to the present transmission network;
- the configuration of the SENE including the point at which individual future generators may connect to the SENE;
- the capacity and technical specifications of the SENE;
- indicative development, operating and other costs for the SENE, based on an indicative timetable for development of the SENE;

- opportunities for developing the SENE incrementally. This may be based on different scenarios reflecting different assumptions about forecast generation;[19] and

- the impact of the SENE (under each scenario) on the present transmission network, including the type and estimated cost of any augmentation that would be required to ensure that the SENE did not increase congestion on the TNSPs network.

The study should take account of the most recent NTNDP, published by AEMO. While AEMO would not be required to identify potential "SENE zones" as under the proposed Rule, the Commission would encourage AEMO to continue to identify clusters of generation in its NTNDP, as it did in the 2010 NTNDP.[20]

The Rule as Made also requires TNSPs to consider their most recent APR when negotiating the scope of the study.

The Commission would also expect the proposed design of the SENE to take into account environmental and planning considerations, particularly in defining the route of the SENE. However, the Commission recognises that environmental and planning approvals would most likely be sought after a possible source of funding had been identified for the SENE.

The TNSP may, but would not be required to, consider calling for expressions of interest from potential connecting generators to inform their study.

Once complete, the study must be published on the TNSP's website.

Confidentiality

The process of connecting a generator to the network requires generators to submit commercially sensitive information to a TNSP for the purpose of conducting the necessary impact studies. The Rule as Made does not allow a TNSP to use this confidential connection information for a SENE study without a generator's consent.

To ensure that a TNSP has sufficient information to conduct the SENE design and costing study, the Rule as Made enables TNSPs to use (for the purpose of the SENE study) and disclose (in the study report) information provided to it by the enquiring generator, and other interested generators, for the purposes of the study.

The Rule as Made requires TNSPs to invite persons who wish to provide data or information for the study to register their interest in doing so. Information provided by parties who have registered their interest may be used and disclosed by TNSPs in the SENE study report.

---

19 For example, one scenario could include generators that have been classified as committed, a second scenario could include both committed and anticipated generation, etc. Each scenario could indicate opportunities for staged development, as well as providing additional information on the likelihood of various generators connecting to the SENE

20 See AEMO, 2010 National Transmission Network Development Plan, 15 December 2010, Chapter 7.

Where generators have concerns regarding potential use and disclosure of commercially sensitive information and therefore choose to withhold information from TNSPs, TNSPs may not receive the best or most accurate information for the SENE study. However, generators that consent to take part in the study should have an incentive to provide accurate information. These arrangements ensure the transparency of inputs into the study.

When the SENE study is published, the information it contains may be used by any entity. In other words, no proprietary rights are bestowed upon the funder of the study in terms of the use of the information presented. This implies that, although a generator may ultimately opt to proceed with a stand alone connection, the study may still be used as the basis for constructing, or at least further exploring possibilities for, a SENE.

Interaction with DNSPs

The most efficient stand alone connection for a connecting generator may be directly to the distribution network rather than to the transmission network. In this instance, the study would require input from the relevant DNSP as well as the TNSP to assist in determining the stand alone cost of connection. The Rule as Made therefore:

1. requires DNSPs to cooperate with TNSPs that request information for the purposes of the SENE study; and

2. allows the DNSP to recover from the relevant TNSP its reasonable costs incurred in contributing to the study.

Trigger for building the SENE

In publishing a SENE design and costing study, additional information is provided to the market on potential opportunities for capturing scale economies in connections through a SENE. This enhances the possibility of any entity funding a SENE where they are willing to take on the risk of asset stranding, in light of the potential to capture scale economies.

The investment would be made where an entity (or consortium) is willing to fund the SENE and bear the asset stranding risk. Possible entities could include:

- a TNSP (either the TNSP that undertakes the study, or another TNSP), noting that the TNSP would not be able to recover those costs from consumers;[21]

- a generator;

- a government; or

- another third party.

21 The Commission notes that an augmentation may be classified as providing a prescribed transmission service as so be funded by customers where it could be shown to provide shared transmission services or above standard services with system-wide benefits.

While a decision to invest would be informed by the SENE design and costing study, this would be supplemented with additional information, including the rate of return required by the investing entity and any private information they might hold to further inform their decision. For example, the investing entity may have different views on the likely profile of future connecting generation. The investing entity may also consider calling for firm interest from connecting generators, for example by requiring a capital contribution, to inform the investment decision.

Deciding on whether to invest would also require finalising the plans for the design of the SENE. This includes details such as the capacity and technical design features of the SENE, as well as the location of the SENE hub. These details depend critically on the assumptions of future generation entry and so would also require these assumptions to be clearly established. During this process, environmental and planning approvals would also need to be obtained as they may influence the ultimate design of the SENE.

These design features are likely to be influenced by the entity funding the SENE.[22] For example, if a generator who was intending to connect to the SENE was funding the additional capacity, it may do so on the basis that the hub is located as close as possible to its own generating facilities. In contrast, the most efficient location for the hub is where it minimises the connection costs of all connecting generators.

Any entity that chooses to fund a SENE is likely to negotiate with the relevant TNSP for a revenue stream where generators choose to connect to the SENE. The SENE funder bears the risk that anticipated generation does not materialise. The return to the SENE funder would therefore be expected to be commensurate with this risk. This also applies where the SENE funder is a TNSP, noting that this may imply a return to the TNSP that is different from that which it receives for its assets that provide prescribed transmission services.

The terms and conditions of repayments to the SENE funder, and the way in which risk is allocated between the relevant parties, would be subject to commercial negotiation between the SENE funder, the SENE builder, the SENE operator and, potentially, connecting generators.

Once an entity commits to funding a SENE and a final design has been decided, negotiations for its construction, operation (where relevant) and connections can commence. While a SENE could be funded and/or constructed by a number of entities, the party that owns, controls or operates the SENE would be required to register with AEMO as a TNSP.[23] Alternatively, a party could arrange for an existing registered TNSP to undertake this function on its behalf.

---

22 It is envisaged that the design of the SENE would be the subject of negotiation between the TNSP and the entity funding the SENE based on, amongst other things, applications to connect to the SENE and forecast generation scenarios.

23 NER clause 2.5.1(a) requires that only a licensed NSP own, control or operate a transmission or distribution system unless exempted under clause 2.5.1(d). The AER may grant exemptions from the requirement to register as a Network Service Provider in accordance with guidelines issued from time to time by the AER ("Guidelines for exemption from the requirement to register as a

The SENE funder would not be entitled to influence who may or may not access the SENE. The TNSP that owns, operates and controls the SENE would be required to negotiate directly with generators that seek connection to its transmission network (as augmented by the SENE) on a fair and reasonable basis as per the existing arrangements. Arrangements for connection to the SENE, including charges for use of the SENE, are discussed further below.

Negotiating connection to the SENE

The Rule as Made does not change the existing connections framework. Therefore, where a SENE proceeds, generators would negotiate with the relevant TNSP on the commercial and technical terms and conditions with respect to its proposed connection, including for use of the network as augmented by the SENE.

The framework under which negotiations between the generator and the TNSP take place (i.e. under the Rules or outside of the Rules) will depend on the classification of the services provided by means of the SENE. Transmission services are classified by reference to definitions of those services set out in Chapter 10 of the Rules. A transmission service may be a prescribed transmission service, a negotiated transmission service, or neither, in which case it will be a non-regulated transmission service.

In practice, the service classification may depend to some extent on the approach of individual TNSPs. Consequently, there may be some debate about what type of transmission service a SENE asset provides. Generally, these matters will be resolved during the commercial negotiation of connection agreements.[24]

Given that the classification of services will be determined on a case by case basis, and, in practice, may be influenced by individual TNSP practices, it is difficult to be prescriptive on the classification of services provided by SENEs and consequently the framework under which negotiations will take place.

If a service is classified as a negotiated transmission service, discussions between the TNSP and the generator take place under the TNSP's approved negotiating framework.[25] The generator also has recourse to the dispute resolution process.[26] In contrast, if a service is classified as a non-regulated transmission service, this means that service is not subject to economic regulation under the Rules.

For clarity, the services provided by SENE assets are not intended to provide prescribed transmission services and therefore the costs should not be recovered from

---

network service provider", www.aer.gov.au). An exemption must not be inconsistent with the NEO. The AER may also impose any conditions on an exemption, including conditions relating to standards and regulatory controls in place for the network, access and charging.

24 A more detailed discussion of the existing connections framework is available in Chapter 5 of the Options Paper for this Rule change request. See AEMC 2010, Scale Efficient Network Extensions, Options Paper, 30 September 2010, Sydney, pp.18-32.

25 Under Chapter 6A Part D of the Rules.

26 Under Part K of Chapter 6A of the Rules.

consumers, even where funded by the TNSP. However, the Commission notes that the characteristics of a transmission service may change over time such that some or all of the services provided by means of a SENE fall within the definition of a prescribed transmission service. In this instance, the Commission anticipates that the AER would carefully consider any application by a TNSP to include in its Regulatory Asset Base (RAB) the costs of the SENE. The Commission also anticipates that the AER would be cognisant that the TNSP funded the SENE based on calculated risks regarding its likely return on investment.

In other words, if a TNSP chooses to fund a SENE and so bear the asset utilisation and funding risk, any costs associated with the SENE that are not recovered from generators should not be recovered from consumers.

Following negotiations, the TNSP would develop a connection offer for the enquiring generator, including the terms and conditions for use of the SENE based on its final design, funding arrangements and negotiations between the TNSP and generator. This should also include provisions for how the generator's charges will change as other generators connect.

Distribution

The Commission has determined to make a Rule that does not contemplate SENEs on a distribution network.

The Commission considers the scope for efficiency gains at the distribution level is likely to be less than those available in transmission due to the nature of the assets and the likely location of clusters of generation. In addition, there are a number of challenging issues that are unique to distribution. These issues, including those raised in submissions to previous consultations on this Rule Change Request, have been considered by the AEMC in developing the Rule as Made.

For example, distribution networks are most likely to connect embedded generators located close to load and therefore long extensions to connect generators are typically not required. As noted by Energex, this means *"…there are limited opportunities for large scale renewable generation within the distribution networks."*[27]

In addition, the highly integrated nature of the distribution network implies that providing assets that are dedicated to generator connections is likely to be impractical and potentially inefficient given the greater potential for load to connect to the SENE in the future. In NSW, this issue is dealt with by arrangements which provide for any extensions or augmentations required to connect a generator's facilities to the shared network, which are built and paid for by the generator, to be gifted to the DNSP upon connection. This principle is intended to reflect the highly meshed nature of the distribution network and the reality that load can be expected to locate around the embedded generator.

27 Energex, Consultation Paper submission, p.1.

It is important that arrangements on the distribution network recognise and support these characteristics. As noted by Citipower/Powercor, ring fencing a SENE *"…could result in very inefficient duplication of assets to separately serve load and generation requirement."*[28]

Finally, distribution is currently undergoing a series of reforms in a number of key areas covering issues relevant to SENEs such as planning, connections and capital contributions. The Commission is mindful of introducing changes to existing frameworks which are subject to change as a result of these reforms.[29]

28 Citipower/Powercor, Consultation Paper submission, p.2.

29 These reforms stem from work undertaken by the Ministerial Council on Energy Standing Committee of Officials (MCE SCO) to develop a national framework for electricity distribution network expansion and planning, connection charges and capital contributions. For further information on these reforms, see: www.ret.gov.au.

3 Commission’s reasons

The Commission has analysed the Rule Change Request and assessed the issues that it raises. This chapter provides a brief overview of the Commission's analysis. The Commission's assessment framework and analysis of the key issues are set out in subsequent chapters.

3.1 Assessment of issues

The Commission considers there is a role for a mechanism that will help strengthen the connections framework to ensure that consumers' energy needs can continue to be met at an efficient cost, consistent with the NEO, in light of changing patterns of generation that may result from policy and technological developments.

Without some changes to the Rules, there is some risk of inefficient duplication in network assets and potential delays in connection where connections are not coordinated or built to an efficient scale.

For several reasons, achieving coordinated connections under existing frameworks may prove challenging. For example, the probabilities of proposed investments being realised over time differ between generators. This challenge implies that there is a need for an assessment of the likelihood of future generation materialising. However, uncertainty regarding the likelihood of generator entry means that forecasting future generation and investing on that basis is inherently quite risky. In addition, achieving coordinated connections requires market participants to be willing to participate and cooperate with one another if efficient outcomes are to be achieved.

These challenges may result in market participants being either unwilling, or unable, to underwrite the risks of building additional network capacity in advance of future generator connections.

The introduction of a mechanism which identifies the potential benefits of building efficiently sized connection assets should help to promote more efficient connection outcomes relative to the status quo, by providing potential investors with a greater level and quality of information from which to make better informed, and hence more efficient, investment decisions.

Although such a mechanism would not directly address the coordination of multiple generators seeking to connect over time because it does not force any entity to fund the SENE, it would encourage market participants to enter into commercial discussions to build efficient connections, particularly where the potential scale efficiencies are shown to be material.

Further, such a mechanism may assist in overcoming the first mover disadvantage where the first generator is able to negotiate a charge that is lower than the amount it would be charged to connect to the network in the absence of a SENE. This might occur where there is considerable likelihood of other generators connecting soon after and so

the risk of asset stranding is considered to be relatively low. This negotiated approach to charging for connection to the SENE is consistent with the existing arrangements.

To the extent that connection frameworks more generally require further consideration, it is appropriate to do this holistically in the context of the TFR.

3.2 Differences between the proposed Rule, options and draft Rule

The Rule proposed by the MCE is described in section 1.3. In summary, the proposed Rule would allow transmission capacity to be built in anticipation of future generator connections by requiring customers to underwrite the cost (and risk) of spare capacity, to be paid back through generator charges where all generation connects as forecast. A regulatory oversight mechanism was included to minimise asset stranding risk to consumers.

In line with the proposed Rule, the five options set out in the Options Paper also required customers to underwrite at least some proportion of the cost (and risk) associated with building spare capacity in anticipation of future generator connections. These options are described in detail in section 1.6.

In contrast to the proposed Rule and Options 1 to 5, the draft Rule did not compel anyone to bear the cost (and risk) associated with building spare capacity in anticipation of future generator connections. Instead, it provided a mechanism under which opportunities to capture scale efficiencies could be made transparent. A SENE could then be funded by any entity that considers the opportunity for capturing scale economies and earning a risk-adjusted return outweighs the risk of generation not materialising.

The draft Rule also maintained a market based as opposed to central planning approach to connections and was significantly less complex than the arrangements proposed by the Rule Change Request and Options 1 to 5.

3.3 Difference between the Rule as Made and draft Rule

Taking into consideration the issues raised in the consultation on the draft Rule determination, several minor amendments have been made to the draft Rule. The Rule as Made differs from the draft Rule in the following ways:

- **Dual function assets**[30] - the draft Rule did not contemplate SENE design and costing studies being undertaken regarding connections to a distribution network. However, given that references to "Transmission Network Service Provider" in the Rules would capture DNSPs acting in their capacity as owners, operators or controllers of dual function assets, the draft Rule would have

30 A dual function asset is defined as "a part of a network owned, operated or controlled by a DNSP which operates between 66kV and 220kV and which operates in parallel, and provides support, to the higher voltage transmission network which is deemed by clause 6.24.2(a) of the NER to be a dual function asset…"

required a DNSP, acting in its capacity as a TNSP in respect of those assets, to conduct a SENE design and costing study in respect of connection to those assets. The Rule as Made clarifies that DNSPs are not required to undertaken SENE design and costing studies even in respect of transmission network (dual function assets) that it owns, controls or operates;

- **Scope of SENE design and costing study** – having regard to issues raised in submissions on the draft Rule determination, the matters that the TNSP is required to consider when negotiating the scope of the SENE design and costing study have been expanded by:

    - requiring the TNSP to consider the TNSP's most recent annual planning report; and

    - clarifying that consideration of the likely impact of a SENE on the transmission system should include the type and estimated cost of any augmentation required in order to ensure that the SENE does not increase network congestion.

- **Minor amendments** – other minor amendments to clarify the provisions have also been made. Additional details are set out in the responses to issues raised in the consultation on the draft Rule determination in Appendix A.

3.4 Civil Penalties

The Rule as Made does not amend any Rules that are currently classified as civil penalty provisions under the National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the MCE that any of the proposed amendments in the Rule as Made be classified as civil penalty provisions.

4 Commission's assessment approach

This chapter describes the approach taken by the Commission in assessing the Rule Change Request in accordance with the requirements set out in the NEL (and explained in chapter 2). The assessment framework was also used to assess the broad alternative options proposed in the AEMC's Options Paper, as well as the draft Rule which was subsequently developed.

In assessing the Rule Change Request and proposed alternative solutions, including the Rule as Made, the Commission considered the following issues:

- the ability of the proposed framework to capture scale efficiencies, being mindful that the Rules will promote efficient investment where overall transmission and generation costs are minimised;
- whether the proposed framework facilitates efficient risk allocation by ensuring risk is allocated to those entities best able and willing to manage it;
- the extent to which the proposed framework facilitates competition and efficient investment decisions by promoting market-driven, as opposed to centrally planned, solutions; and
- the extent to which the changes being proposed are proportionate to the identified issues and consistent with existing regulatory arrangements.

The Commission also considered the extent to which frameworks facilitate timely generator connection and avoid bias towards any particular technology or entity.

In applying these assessment criteria, the Commission recognised that trade-offs would likely be required between competing objectives. For example, consideration was given to:

- the magnitude of inefficiencies associated with duplicated assets and the complexity of any Rule, including the degree to which it is consistent with existing frameworks; and
- the magnitude of potential scale efficiency benefits and the risks and costs of asset stranding.

The Commission must assess all NER Rule Change Requests against the NEO. That is, the Commission must assess whether a proposed change to the Rules will, or is likely to, promote efficient investment in, and efficient operation and use of, electricity services in the long term interest of consumers. The Commission's role is therefore to make Rules which is considers will provide a framework under which efficient outcomes are promoted in the context of the legislative environment within which the market operates.

In respect of environmental legislation and associated government policies, the Commission's role is to ensure that behavioural changes in the market as a result of

these can be accommodated in the most efficient way. It is governments' role to ensure that environmental policy objectives are met.

The key assessment factors and underlying principles are described in more detail below.

Minimising expected total system costs

Investment in network and connection assets should be efficiently sized and located. This is particularly relevant given that scale economies are a characteristic of network investment. This means that, where possible and feasible, mechanisms and incentives should be in place to ensure that generators have the opportunity to coordinate their connections to capture potential scale economies, taking into account potential generation investment in the same geographic areas. Coordinating or building connections to an efficient scale will reduce the risk of inefficient duplication of network assets and potential delays in connection, thereby lowering expected total system costs.

In considering these issues, the Commission notes that one of its objectives is to ensure that any changes to the Rules promote efficient investment in electricity services, thereby lowering expected total system costs which, over time, should lead to efficient prices and higher quality and service for consumers. The Rules should therefore promote efficient decision making by encouraging market participants to appropriately trade-off between transmission and generation investment to reduce overall costs.

Creating incentives to invest in the cheapest transmission or the cheapest generation solution will not necessarily promote efficient overall outcomes: it is the appropriate balance between the two which minimises total system costs that we seek to drive.

Risk allocation arrangements

Efficient investment decisions will be made where the risk associated with those decisions is allocated efficiently. This will occur where:

1. risk is borne by the entity responsible for making the investment decision; and

2. risk is managed by the entity best able and willing to do so.

Typically, efficient outcomes will arise where those entities responsible for making investment decisions are also required to bear the risks associated with those decisions. Allocating risk in this way creates incentives on decision makers to ensure that decisions are well informed by drawing on the best available information. Efficient investment will occur where informed decisions on trade-offs between risks and potential rewards of undertaking a particular investment are made.

In addition, efficient outcomes will likely arise where risk is borne by the entity best able to manage it. This ensures the cost of reducing or mitigating risk will be minimised, allowing least cost outcomes to be achieved.

The Commission notes that the entity best placed to bear risk and the entity best placed to manage that risk may in some circumstances differ. Where this is the case, there will be incentives on both parties to coordinate to ensure the most efficient outcome can be achieved.

Arguably, in some circumstances, risk may be borne by beneficiaries where no other party is willing or able to do so. In these instances, it must be clear who the beneficiaries are, that the benefits are realisable and likely to justify the risks, and that appropriate risk management mechanisms are in place.

Market-driven approach

Competitive, and hence lower cost, outcomes will generally arise where market based solutions are utilised. This means that, where feasible and practical, market participants and investors that receive the rewards and face the costs of a particular investment should be responsible for decision making. Market participants are well informed, commercially driven entities and as such are best placed to make efficient investment and operational decisions. This includes making efficient decisions on the location, type and size of generation.

Moreover, frameworks which provide scope for market-driven, commercial negotiations are generally less intrusive and administratively costly than frameworks relying on more prescriptive regulation.

The Commission considers that utilising commercial arrangements, and minimising regulatory intervention, is desirable in markets with effective competition as the means of promoting efficient investment thereby lowering expected total system costs in the long term interests of consumers.

Complexity of the framework

Any changes made to the Rules frameworks should be appropriate and proportionate to the identified issues they seek to resolve. This means that unreasonably burdensome regulatory arrangements and unrecoverable costs should not be imposed on market participants. This is in line with good regulatory practice.

In addition, making piecemeal changes to frameworks in the Rules should be avoided in order to minimise the risk of inconsistencies being introduced. Ensuring that any changes to the Rules are consistent with existing arrangements will contribute to a more certain investment environment for market participants, thereby promoting continued investment in the electricity market.

Other considerations

The Commission notes that, during the course of this Rule change process, some issues have arisen that could also fall within the scope of the TFR. The AEMC decided to proceed with this Rule Change Request on the basis that many of the issues highlighted by SENEs are sufficiently separable. Notwithstanding this, the scope of the TFR has been a factor in making the Rule as Made. In particular, the Commission has

been cognisant that some of the issues raised are currently being considered under the TFR, and that this may be a better vehicle for giving appropriate consideration to them.

5 Issues this Rule change is seeking to address

The purpose of this chapter is to provide a summary of the issues raised during the analysis of the Rule Change Request, noting that some of the issues are explored in more detail in later chapters. This chapter is structured as follows:

- Section 5.1 briefly recaps stakeholder views on the issues the Rule Change Request is seeking to address, as set out in submissions to the Consultation and Options Papers;
- Section 5.2 outlines the Commission's analysis of the problems and challenges raised during the Rule change process, as provided in the draft Rule determination;
- Section 5.3 provides a summary of stakeholders responses to the draft Rule determination; and
- Having regard to the arguments and evidence put forward in submissions, section 5.4 sets out the Commission's final view on the extent to which these challenges can be addressed under existing frameworks.

We note that the draft Rule determination included a summary of the Rule change proponent's rationale for this Rule Change Request. It also provided a comprehensive summary of stakeholder views received on the Consultation Paper and Options Paper in relation to the need for change to the existing frameworks. These summaries are reproduced in Appendix C.1.

5.1 Stakeholder responses to the Consultation and Options Papers

In their submissions to the Consultation and Options Papers, many stakeholders agreed that timely and efficient connection will be a challenge where the pattern of generation investment changes.[31] The issues raised to support this view included:

- the first mover disadvantage. While generators may be better off if they can share the cost of an extension with others, this may represent a first mover hurdle for the initial generator to the extent that costs are not equitably shared with future connecting generators.[32] There is currently a lack of clarity in the Rules regarding access rights, particularly for connection assets and non-regulated services,

31 Grid Australia, TRUenergy, Infigen, CEC, Geodynamics, Tasmanian Department of Infrastructure, Energy and Resources (Tasmanian DIER), South Australian Chamber of Mines and Energy (SACOME), Origin.

32 Clean Energy Council (CEC), Options Paper submission, p.3; Grid Australia, Consultation Paper submission, p.6; Infigen, Options Paper submission, p.1; Origin, Consultation Paper submission, p.3.

which may provide a disincentive for first mover generators to fund additional capacity;[33]

- coordination issues. Timeframes for delivering generation investment are uncertain and multiple projects being undertaken by multiple parties are unlikely to reach completion at the same time. Further, generators are unlikely to be willing to tie their project timeframes to those of third parties;[34]

- limited incentives on NSPs to build scale efficient assets.[35]

More generally, some stakeholders considered that increased entry of renewable generation in the market has highlighted weaknesses in the network connections framework.[36]

Those stakeholders that supported the proposed Rule considered existing frameworks would not be robust to the challenges posed by changing patterns of generation investment. They considered the RIT-T was not the appropriate mechanism for facilitating the construction of spare capacity in advance of future generation connections.[37] These stakeholders therefore considered that implementing a SENEs framework is required to provide for more efficient connection outcomes and promote competition through timely connections.

Several stakeholders agreed there are potential hurdles facing the connection of multiple generators which may lead to a duplication of assets.[38] However, they tempered their comments with questions around whether the issues identified by the Rule change proponent and raised during consultation on the Rule Change Request were sufficiently material to warrant complex new Rules.

Approximately half the stakeholders who responded to the Options Paper considered that a case has not been made for change or that existing frameworks are sufficient to promote efficient outcomes. In particular, these stakeholders considered:

- there are no barriers to developing cost sharing arrangements that would allow generators to coordinate their connections, facilitated if necessary by an NSP;[39]

---

33 See AEMC 2010, Scale Efficient Network Extensions, Options Paper, 30 September 2010, Sydney, Chapter 5 for further discussion on this issue.

34 CEC, Options Paper submission, p.3; Green Grid, Options Paper submission, p.1; Origin, Consultation Paper submission, p.3; Grid Australia, Consultation Paper submission, p.8.

35 TRUenergy, Consultation Paper submission, pp.2,3.

36 AEMO, Options Paper submission, p.2; South Australian Department of Transport, Energy and Infrastructure (SA DTEI), Options Paper submission, p.1.

37 Infigen, Consultation Paper submission, p.4. See also Origin, Consultation Paper submission, p.4; Origin, Options Paper submission, p.7.

38 Grid Australia, Options Paper submission, pp.5-6; Tasmanian Department of Infrastructure, Energy and Resources (Tasmanian DIER), Consultation Paper submission, p.2.

39 AGL, Consultation Paper submission, p.3; Major Energy Users (MEU), Options Paper submission, p.7.

- the RIT-T and the National Transmission Planner (NTP) are new initiatives that could support efficient connections in the absence of a new framework and should be given the opportunity to work;[40] and

- modelling undertaken by ROAM Consulting suggests that "...highly concentrated wind development with substantial transmission development...does not appear to be the lowest cost way of meeting the RET."[41]

Some stakeholders considered some of the specific issues raised during the SENEs Rule change process would be better examined as part of the TFR.[42]

A number of stakeholders also noted difficulties in demonstrating that the proposed SENE framework would promote the NEO.[43] Others considered that the NEO would not be met where customers are required to underwrite the costs of SENEs and forecasts of future generation prove inaccurate.

5.2 Draft Rule determination

5.2.1 Patterns of generation investment are changing and uncertain

Over the next decade, significant new investment in renewable generation capacity needs to be accommodated in the national grid. Estimates suggest that the expanded RET will stimulate approximately 8000 MW of new renewable plant by 2020.[44] It is currently anticipated that many of the new connections over the course of the next decade will be wind generators, given the economics of available renewable generation technologies.[45] However, other types of technology may enter the market as they become commercially viable, including geothermal, large scale solar and bioenergy.

More generally, there is significant uncertainty in the long term about the type and location of the large amount of generation investment that is required, including new base load plant. Market and regulatory frameworks will therefore need to accommodate a broad range of outcomes.

Historically, investment in electricity generation has been characterized by sizable instalments of generation capacity. The existing transmission networks have developed

40 AGL, Consultation Paper submission, pp.3,5; EnergyAustralia, Consultation Paper submission, p.11; LYMMCo, Consultation Paper submission, pp.11-12; Macquarie Generation et al, Consultation Paper submission, pp.5-6.

41 AGL, Options Paper submission, p.3.

42 Origin, Options Paper submission, p.9; SA DTEI, Options Paper submission, p.2; Grid Australia, Options Paper submission, p.3; AGL, Options Paper submission, p.4; Alinta, Options Paper submission, p.5; LYMMCo, Consultation Paper submission, p.12.

43 International Power, Options Paper submission, p.1; Hydro Tasmania, Options Paper submission, p.3; Origin, Options Paper submission, p.3; National Generators Forum (NGF), Consultation Paper submission, p.11.

44 McLennan Magasanik Associates (MMA) 2008, Treasury Paper, Figure 3-6, p.39.

45 ROAM 2008, Market Impacts paper, pp.29-32.

over time to meet the requirements of these investments, which have typically located close to coal sources, the dominant source of fuel to date.

Unlike generation from traditional sources of fuel, wind generation is characterised by smaller units of investment, often less than 100 MW. The most resource rich locations are often, but not always, located remote from the existing network. It is possible that new investment in wind generation by multiple parties will seek to cluster in these resource rich locations and are expected to connect at different times over a period of several years.

These views are supported by analysis undertaken by AEMO[46] and ElectraNet[47] in considering options for the efficient connection of new generators clustered in regions of Victoria and South Australia respectively. While AEMO and ElectraNet have both been exploring how efficient connection could be facilitated under current frameworks, it is possible that additional tools will be required to allow further efficiencies in connection to be captured.

In addition to the potentially large number of connection applications NSPs will be required to process over a relatively short period of time, these characteristics of likely new entrant generators highlight a number of challenges for current frameworks to connect multiple generators to the network in a timely and efficient manner.

5.2.2 Efficiently connecting new types of generation is challenging

If NSPs knew with certainty the volume and location of generation that would connect over a period of time, it would be relatively simple to match the network investment required to connect it. However, achieving this outcome is likely to prove challenging as generation investment uncertainty creates difficulties in managing the trade-off between optimising investment and managing stranded asset risks. Whether or not a proposed mechanism aimed at improving the efficiency of connections will contribute to the achievement of the NEO will ultimately depend on the outcome of this trade-off, which cannot be known in advance.

Transmission is characterised by lumpy investment, i.e. it can only be provided in discrete, often large amounts. This has been appropriate to date, as historically the size of generation investment has typically matched the size of transmission required to connect it to the network. However, as noted previously, transmission investment needs to accommodate new generation that is relatively small compared to the lumpy transmission investment required to connect it. Under the existing arrangements,

46 AEMO has indicated that both Regional Victoria (Ballarat region) and the South West Corridor of Victoria are potential sources of significant new generation development. See AEMO's analysis of connection hubs: Connecting Generator Clusters to the Victoria Electricity Transmission Network, 17 June 2010.

47 The Eyre Peninsula has been mooted as a location with large scale renewable energy resource potential. See ElectraNet's discussion on connection "nodes": South Australian Annual Planning Report 2010, p.107. In addition, the Green Grid Initiative being undertaken by a consortium of Capital, Worley Parsons and Baker McKenzie considers options to harness large scale wind generation on the Eyre Peninsula. See: www.renewablessa.sa.gov.au.

transmission is likely to be relatively more expensive for these smaller blocks of generation. The implication is that significant economies of scale are likely to exist where clusters of generators in the same geographic area can connect utilising the same infrastructure.

The potential magnitude of efficiency gains will depend on several factors including the number and volume of potential generators, the geographical spread of generators within a cluster and the distance of the cluster from the shared network. Examples provided to the Commission demonstrate that there are clear efficiencies to be gained through improved coordination of connections.[48]

However, coordinating multiple generators to capture the potentially significant scale economies that are characteristic of transmission investment is likely to prove challenging because of:

- difficulties in coordinating multiple parties;
- the temporal nature of the problem; and, as a consequence,
- problems in managing the risks of stranded assets.

Generators may be unwilling to tie their projects to the timeframes of others. Grid Australia has noted that *"...members have already experienced reluctance of individual connection applications to tie their project delivery to the timelines of third parties."*[49]

Similarly, commercial sensitivities may limit the amount of information generators are willing to share. As a result, generators may be hesitant to volunteer sufficient information in a timely way so as to coordinate connections.

In addition, generators who express an interest in connection have different probabilities of their proposed investments being realised over time. This implies that the challenge is not limited to one of coordination, but also to one of timing, requiring an assessment of the likelihood of future generation materialising. With that said, it is important to note that this type of coordination has and does occur in order to develop infrastructure in the gas sector.

However, forecasting future generation is inherently difficult, particularly if site specific. While it can generally be expected that load forecasts will eventually be realised, although possibly later than anticipated, there is a significantly higher risk that forecast generation in a particular area may never materialise. This makes the temporal nature of the problem particularly challenging.

---

48 Citipower/Powercor, submission to AEMC Review of Energy Market Frameworks in light of Climate Change Policies: 1st Interim Report, p.5, February 2009; NERA Economic Consulting, Case Study of the Network Extension - Public Report, 30 July 2010, AEMC 2009, Review of Energy Market Frameworks in light of Climate Change Policies: 2nd Interim Report, June 2009, Sydney, Appendix E.

49 Grid Australia, Consultation Paper submission, p.8.

Therefore, in order to achieve economies of scale and help ensure timely connections, an entity needs to be prepared to build extra capacity in the expectation that future generation will materialise. Conversely, that entity must also bear the risk that future generation will not eventuate, leaving them to face the cost of a stranded asset.

The Rule change proponent and others consider that, under the existing frameworks, no entity will take on this risk. They consider that implementing a framework that allocates this risk to consumers would provide an opportunity for efficient connection outcomes to occur.

5.2.3 Current arrangements provide limited scope for efficiency gains

The Commission considered that while there may be difficulties in coordinating generators and few incentives on NSPs to build in anticipation of future generation investment, there is some scope under existing frameworks to promote efficient connection outcomes. In part, this has been assisted by a Rule change made in 2009 that reduces the restrictions on NSPs from releasing any information received as a result of a connection enquiry or application.[50]

More generally, the Commission considered that:

- where there are clear economies of scale to be gained, generators should have a strong incentive to coordinate with their competitors;
- TNSPs have an obligation to consider the adequacy of connection points as part of its annual planning review. To the extent that the existing connection points are inadequate, the TNSP must include planning proposals for future connection points. Thus, there is already some obligation on TNSPs to consider future generation requirements; and
- while TNSPs may have limited incentives to invest in additional capacity in advance of future connections, they may be able to apply the RIT-T to incremental investment in addition to the stand alone requirements of a first mover generator.

Similarly, AEMO states that in its own experience *"...hubs are being developed as negotiated services suggesting that, in some circumstances it is possible to accommodate the needed changes under the current framework."*[51]

The Commission noted that AEMO has acknowledged there are some limitations that have yet to be addressed by the hubs arrangement, and that there may be some differences between the Victorian experiences and other jurisdictions in the NEM.[52]

50 AEMC 2009, Confidentiality Provisions for Network Connections, Rule Determination, 12 November 2009, Sydney.

51 AEMO, Options Paper submission, p.3.

Generators funding spare capacity

Previously it has been argued that generators are unlikely to be willing to finance additional capacity beyond their own requirements even where building additional capacity is likely to result in lower average costs. In addition to bearing the risk of future generators not materialising, a generator would also risk under-recovery of costs even where generation materialises. This is the 'first mover disadvantage'. Further, there is little commercial incentive for generators to build spare capacity to facilitate a competitor's connection.

This implies that there is a disincentive for a first mover generator to pay for transmission in excess of its requirements. This disincentive is likely to be heightened for generators located remote from the existing network because connection costs will typically be higher.

However, the Commission considers that there is some scope under existing frameworks for generators to cooperate and enter into cost-sharing arrangements with other investors. To the extent that there are large scale economies to be gained from cooperation, generators should have strong incentives to coordinate. While the Commission recognises the uncertainties in timing of investment, if the savings are significant then we would expect market participants in a competitive market to come up with innovative solutions to capture those gains.

NSPs funding efficient outcomes

Similarly, the Commission considers there is some scope for NSPs or other entities to fund additional capacity where there is clear future demand, and earn a return on capital that is commensurate with the risk taken. NSPs arguably have the best information regarding likely future connections and, as such, would have a better idea of risks involved in building additional capacity. To the extent that NSPs can earn a return that is commensurate with the risk that anticipated future generation does not materialise, there is some, albeit potentially weak, incentive on them to fund such investment.

Applying the RIT-T

In response to the Consultation Paper, some stakeholders considered the RIT-T may be sufficient to promote efficient outcomes and that it should be tested before imposing a new framework.[53] In this instance, a TNSP could consider whether the services provided might meet the definition of a prescribed transmission service and so be funded by consumers. In undertaking the planning of future network augmentations, TNSPs might consider the need for a network extension to efficiently connect future generation in a given location even in the absence of formal connection enquiries or applications.

---

52 Ibid, p.3.

53 AGL, Consultation Paper submission, pp.3,5; EnergyAustralia, Consultation Paper submission, p.11; LYMMCo, Consultation Paper submission, pp.11-12; Macquarie Generation et al, Consultation Paper submission, pp.5-6.

An augmentation may be classified as providing a prescribed transmission service where it can be shown to provide standard shared transmission services or above standard services with system-wide benefits. Arguably, this could be demonstrated by undertaking a RIT-T if system-wide benefits can be considered equivalent to net market benefits.

NERA Economic Consulting, in a report commissioned by Grid Australia, found that there are likely to be a number of difficulties in applying the RIT-T to a network extension in the absence of a generator application for connection, for a number of reasons.[54]

In particular, NERA found that establishing the base case generation development scenario and identifying alternative credible options are likely to be highly contentious and subject to dispute. This is partly because there is no clear limit on the scope of the base case or alternative options that may be considered. Given this, it is unlikely that TNSPs would have an incentive to propose and assess such an extension.

However, Grid Australia also raised the possibility of an "incremental RIT-T" approach.[55] Under this approach, generators fund an extension to meet their connection requirements and the RIT-T is then applied to assess whether building additional capacity to allow future connections would be efficient. Grid Australia considered that this approach could be accommodated under existing frameworks, although greater clarity regarding when the RIT-T may be applied and the implications for service classification and cost allocation may be helpful.

Grid Australia also noted that, under this approach, the first mover issue would remain. However, as discussed above, the Commission considers there is some scope for generators to cooperate and contribute to the first mover's stand alone costs where significant benefits are demonstrated.

Grid Australia considers that assessing the worth of building incremental capacity would clearly bound the scope of alternative credible options. This is because the stand alone cost of meeting the connection requirements of the first connecting generator(s) would be treated as sunk and the RIT-T assessment would be limited to examining the net market benefits of increasing the capacity or changing the configuration of the extension.

However, Grid Australia were also concerned that regulated options, such as that described in this section, should not crowd out market-driven investments. As discussed further in chapter 7, this approach would still require TNSPs with limited information to anticipate market based decisions through forecasts of future generation investments.

---

54 NERA Economic Consulting 2010, Case Study of the Network Extension – Public Report, 30 July 2010. Available at: www.aemc.gov.au.

55 Grid Australia, Consultation Paper supplementary submission, 4 August 2010. AEMO has been testing a similar approach. See, for example, AEMO 2010, Connecting generator clusters to the Victorian Electricity Declared Shared Network: A technical paper, 16 June 2010.

The Commission considers there may be some scope for TNSPs to apply the RIT-T to assess whether building incremental capacity in anticipation of future generator connections may be efficient. However, the Commission recognises there may be some risks associated with this approach. In particular, use of the RIT-T could potentially distort the market based decision-making process.

5.3 Stakeholder responses to the draft Rule determination

The consultation process has demonstrated a high level of interest from stakeholders regarding the Rule change request and the issues raised. Over the course of this Rule change, the Commission has received a total of seventy-three submissions and supplementary submissions to the Consultation Paper, Options Paper, and draft Rule determination and draft Rule.

However, there has been no clear consensus amongst stakeholders either on whether a market failure has been demonstrated or, amongst those who considered a change to the existing framework is required, what the appropriate solution is.

The need for change

Views expressed by stakeholders during consultation on the draft Rule determination were generally reflective of the views raised in earlier submissions.

Grid Australia and the AER who had previously questioned whether the issues identified by the Rule Change Request were sufficiently material to warrant a complex new framework, supported the draft Rule on the basis that it provided an appropriate and proportionate response to the identified issues.[56]

The AER considered that *"...the current bilateral negotiation process for connecting new generators can be improved to better accommodate multiple connection applicants. However, the AER has previously noted that the shortcomings of the current arrangements are not so significant that major amendments to the network planning and augmentation process are warranted."*[57]

Ausgrid (formally "EnergyAustralia") also reiterated its view that the Rules should not be amended in a manner suggested by the proposed Rule or options presented in the Options Paper, as there was no evidence of a market failure occurring under the existing arrangements.[58] The MEU submission provided a similar view.[59]

In contrast, several stakeholders who continued to support the proposed Rule or one of Options 1 to 5, considered that the draft Rule would not overcome the existing

56 Grid Australia, draft determination submission, p.1; AER, draft determination submission, p.1.

57 AER, draft determination submission, p.1.

58 Ausgrid, draft determination submission, p.2.

59 MEU, draft determination submission, p.9.

weaknesses identified in the connections framework and as such, would be unlikely to result in the building of a SENE.[60]

Origin, TRUenergy and the South Australian Department of Transport, Energy and Infrastructure (SA DTEI) reiterated the view that the key challenges in respect of timely and efficient connections related to: the first mover disadvantage[61]; generator coordination issues[62]; and incentives on NSPs to build efficiently sized assets.[63]

Interaction with the TFR

In line with the views expressed in response to the earlier SENEs consultations, stakeholders were generally supportive of issues around access and the connections framework being considered in the context of the TFR.[64]

Grid Australia noted that it *"...supports the referral of a number of wider issues to the AEMC's Transmission Frameworks Review where they can be addressed on a more holistic basis."*[65]

Several stakeholders continued to advocate more generally for consideration of SENEs to be rolled into the TFR. Origin considered this would allow more time for the issues associated with connecting generator clusters to be resolved.[66]

International Power concluded that the issue of SENEs could not be successfully resolved until the TFR had reached conclusions on the wider questions of generator connection and access to the network.[67]

Further, Pacific Hydro noted that in the creating the draft Rule *"...the AEMC is assuming that the yet to be completed Transmission Frameworks Review (TFR) will fill out the remaining detail."* Pacific Hydro noted that, given the experience with SENEs, it is *"...not confident that the MCE's directions [to improve framework methods for renewable generation connection] will be given sufficient weight in the TFR."*[68]

60 CEC, Infigen, SA DTEI, Origin, TRUenergy.

61 Origin, draft determination submission, p.4.

62 Origin, draft determination submission, p.3; SA DTEI, draft determination submission, p.1; TRUenergy, draft determination submission, pp.3-4, Infigen, draft determination submission, p.2.

63 TRUenergy, draft determination submission, p.3; SA DTEI, draft determination submission, p.1; Infigen, draft determination submission, p.2; CEC, draft determination submission, p.2.

64 Grid Australia, draft determination submission, p.1; International Power, draft determination submission, p.1; NGF, draft determination submission, p.4; TRUenergy, draft determination submission, p.7; Alinta, draft determination submission, p.4; AEMO, draft determination submission, p.3.

65 Grid Australia, draft determination submission, p.1.

66 Origin, draft determination submission, p.1.

67 International Power, draft determination submission, p.1.

68 Pacific Hydro, draft determination submission, p.3.

5.4 Final Rule determination

On balance, the Commission continues to believe that, while some change is warranted, there is some scope within existing frameworks to take advantage of the economies of scale available from efficiently coordinating the connection of clusters of generation in the same geographic area to the network. The importance of ensuring that any changes to the Rules are proportionate to the identified challenges is discussed further in chapter 8.

The Commission is mindful that the NEO is likely to be achieved where overall transmission and generation costs are balanced in a way that minimises total system costs. This will not necessarily occur through promoting investment in locations with the cheapest fuel sources for generation. Any changes to the Rules should therefore preserve locational signals and ensure that the cost of transmission is factored into generators' locational decisions.

Transparency in the size of the economies of scale that could potentially be captured by coordinating the connection of clusters of generation should help facilitate more efficient connection outcomes than would otherwise occur. For example, where there are clear advantages in coordinating generator connections, transparency in the potential cost-savings could help to encourage cooperation amongst generators.

In addition, providing additional information transparency to the market should overcome any information asymmetry between TNSPs and the market on the likely magnitude of benefits that could potentially be gained from efficient coordination outcomes. By broadening possible funding outcomes, the Rule as Made may reduce the burden on first mover generators to have to fund excess capacity themselves.

6 Efficient allocation of stranded asset risk

The purpose of this chapter is to set out the Commission's final views in respect of the efficient allocation of stranded asset risk, having regard to the views raised by stakeholders in submissions to the draft Rule determination and draft Rule. This chapter is structured as follows:

- Section 6.1 sets out the principles underlying the Commission's assessment of efficient risk allocation;
- Section 6.2 briefly recaps stakeholder responses to the Consultation and Options Papers on this issue;
- Section 6.3 provides a summary of the Commission's analysis of the Rule Change Request and the proposed alternative solutions (including the draft Rule), as set out in the draft Rule determination;
- Section 6.4 summarises the views of stakeholders in relation to the Commission's assessment of efficient risk allocation; and
- Based on the arguments and evidence put forward in submissions, section 6.5 sets out the Commission's final considerations and conclusions on this matter.

The Commission's draft Rule determination included a summary of the risk allocation arrangements proposed by the MCE in its Rule Change Request. It also set out a detailed summary of stakeholder views in relation to efficient allocation of stranded asset risk as set out in submissions to the Consultation Paper and Options Paper. These summaries are both reproduced in Appendix C.2.

6.1 Efficient allocation of risk

Efficient investment decisions will be made where the risk associated with those decisions is allocated efficiently. This will occur where:

1. risk is borne by the entity responsible for making the investment decision; and
2. risk is managed by the entity best able and willing to do so.

Typically, efficient outcomes will arise where those entities responsible for making investment decisions are also required to bear the risks associated with those decisions. Allocating risk in this way creates incentives on decision makers to ensure that decisions are well informed by drawing on the best available information. Efficient investment will occur where informed decisions on trade-offs between risks and potential rewards of undertaking a particular investment are made. In addition, efficient outcomes will likely arise where risk is borne by the entity best able to manage it. This ensures the cost of reducing or mitigating risk will be minimised, allowing least cost outcomes to be achieved.

The Commission recognises that the entity best placed to bear risk and the entity best placed to manage that risk may in some circumstances differ. Where this is the case, there will be incentives on both parties to coordinate to ensure the most efficient outcome can be achieved. Arguably, in some circumstances, risk may be borne by beneficiaries where no other party is willing or able to do so. In these instances, it must be clear who the beneficiaries are, that the benefits are realisable and likely to justify the risks, and that appropriate risk management mechanisms are in place.

6.2 Stakeholder responses to the Consultation and Options Papers

Allocating risks to those best able to manage them

A number of stakeholders raised concerns that the proposed Rule would require customers to bear significant risks which they are not best placed to manage.[69] For example, a number of stakeholders considered that none of the risk mitigation measures proposed either as part of the Rule Change Request or within the Options Paper would appropriately manage risk exposure on behalf of customers.[70]

A key input into the investment decision on whether, or how much, additional capacity should be built is the forecast of likely future generation entry. A number of stakeholders were of the view that forecasting future generation is inherently uncertain and as such, generators and NSPs should bear the risk of any investment decisions undertaken on the basis of such forecasts.[71]

In contrast to these views, two stakeholders considered that the AER was the appropriate body to represent consumers and manage risk on their behalf.[72]

In addition, one stakeholder considered that customers were best placed to manage risk on the basis that risk to customers would be diversified across a broad portfolio of individual transmission assets in accordance with the application of Transmission Use of System (TUOS) charges.[73]

69 AGL, Consultation Paper submission, p.1; Alinta Energy, Consultation Paper submission, p.10; esaa, Consultation Paper submission, p.5; EnergyAustralia, Consultation Paper submission, p.7; Ergon Energy, Options Paper submission, pp.4-5; Tasmanian DIER, Consultation Paper submission, p.2; Energex, Consultation Paper submission, p.1; Macquarie Generation et al, Consultation Paper submission, p.3.

70 AGL, Consultation Paper submission, p.3; Alinta, Options Paper submission, pp.4-5.

71 AGL, Consultation Paper submission, p.3; EnergyAustralia, Options Paper submission, p.3.

72 Geodynamics, Consultation Paper submission, p.4; Infigen, Consultation Paper submission, p.3.

73 Macquarie Capital, AEMC SENE Options Paper: Report to the Green Grid Forum, December 2010, p.5.

Sharing risks based on the "beneficiaries pay" principle

A number of stakeholders considered that customers would ultimately gain from SENEs and therefore it would be appropriate for them to bear the asset stranding risk.[74]

In contrast, several stakeholders considered that generators would also stand to benefit from more efficiently sized connection arrangements and therefore should also bear some of the risk of asset stranding.[75]

One stakeholder noted that consideration should be given to allocating some of the risk to taxpayers, on the basis that the benefits from renewable energy are societal.[76] Others considered it may be appropriate to recover SENE charge shortfalls across all NEM customers on the basis that increased penetration of renewable energy has market-wide benefits.[77]

Extent to which benefits will be passed through to customers

A number of respondents expressed some reservations as to whether the scale efficiency benefits resulting from SENEs would ultimately be passed through to customers.[78] For example, one stakeholder considered it was unlikely consumers would benefit from SENEs through reduced electricity and Renewable Energy Certificate (REC) prices due to the market price setting process in the NEM.

In contrast, two stakeholders considered that the cost savings resulting from SENEs would flow through to customers. These stakeholders generally agreed that ultimately customers would benefit from reduced connections costs as generator cost savings would flow through the competitive market delivering lower wholesale energy costs over time.[79]

6.3 Draft Rule determination

In its draft determination, the Commission considered that, on balance, it was not appropriate to require consumers to bear the risk that assets oversized with the intention of more efficiently connecting multiple future generators, may be under-utilised. The Commission was not convinced on the basis of the evidence provided by stakeholders that the benefits to consumers would outweigh the costs. Even with risk mitigation measures in place, the Commission held concerns that without linking the

74 CEC, Consultation Paper submission, p.4; Options Paper submission, p.5; South Australian Chamber of Mines and Energy (SACOME), Consultation Paper submission, p.3; Infigen, Consultation Paper submission, p.7.

75 Energex, Consultation Paper submission, p.1; MEU, Consultation Paper submission, p.16; Tasmanian DIER, Consultation Paper submission, p.2.

76 esaa, Consultation Paper submission, p.5.

77 Ergon Energy, Consultation Paper submission, p.4; Origin, Consultation Paper submission, p.4.

78 Alinta Energy, Consultation Paper submission, p.7; MEU, Consultation Paper submission, p.25.

79 TRUenergy, Consultation Paper submission, p.2; Origin, Options Paper submission, p.5.

investment decision maker and the risk bearer, inefficient investment outcomes may occur.

The Commission noted that the proposed Rule and Options 1, 2 and 5 in particular would require consumers to bear the entirety of the asset stranding risk. The decision on how much capacity to build would be made by TNSPs, who do not face the costs of any inefficient investment decisions. While the SENE would not be built until some market interest had been demonstrated and the SENE would be subject to regulatory review, the Commission was concerned that inefficient investment decisions could occur for the reasons described above.

While Options 3 and 4 would transfer some risk back to the first connecting generator(s), who would drive the construction of the SENE, the Commission considered this would only reduce risk to consumers and would not eliminate it. This residual risk would reflect the amount of spare capacity built in addition to the requirements of the first connecting generator(s). The Commission noted that again, the decision on how much spare capacity to build would be driven by an entity - the TNSP - that would not face the consequences of its decision.

The Commission considered that the draft Rule, in contrast, would not require any entity to take on risk, but rather would facilitate the provision of information to enable those parties who are best able and willing to manage the risk to make their own trade-off between the potential risks and the potential rewards from over-sizing capacity in advance of future generation. By linking the investment decision maker to the entity that bears the risk, the Commission noted that the investor would have strong incentives to appropriately assess the likely costs and benefits of an investment, thereby ensuring the investment decision is efficient.

The Commission considered that the draft Rule would also maintain consistency with existing frameworks by maintaining the status quo which allows the allocation of risk to be determined by the market, through a process of commercial negotiation. The consequence of this would be that risk would be allocated to those parties that are best able and willing to manage it.

Finally, in providing a new mechanism to identify the potential benefits of building efficiently sized connection assets so as to take advantage of scale economies, the Commission considered that the draft Rule should assist in facilitating more efficient coordination amongst generators than would likely be achieved under the current arrangements, proposed Rule and five options. The Commission considered that the cost savings to generators from lower connection costs should ultimately lower total system costs and at least a portion of these cost savings should then flow through to consumers.

6.4 Stakeholder responses to the draft Rule determination

The majority of stakeholders who supported the draft Rule endorsed the allocation of risk to market participants and investors rather than to consumers.[80] For example, the AER considered that *"...the AEMC has correctly concluded that customers are not best placed to manage these risks. As such, the AEMC's preferred rule is supported as being more consistent with the national electricity objective than the proposed rule change."*[81]

In addition, Ausgrid was of the view that the proposed Rule *"...created a potential moral hazard whereby there was no incentive for SENEs proponents to manage or mitigate the risk of underutilisation of the built SENE asset."*[82] Ausgrid considered the draft Rule was more beneficial than the proposed Rule because *"...customers no longer underwrite the costs of SENEs. Rather these costs will be borne by the party funding the SENE. This is an appropriate allocation of risk in a competitive wholesale market."*[83]

The NGF expressed a similar view, noting support for the AEMC's characterisation of efficient risk allocation in the context of efficient investment decisions. The NGF considered that *"...the preferred rule change ensures market participants or active TNSPs are able to appropriately manage the risk where over investment is likely to be beneficial."*[84]

Further, AGL reiterated its view that the risks and returns of developing infrastructure should be appropriated on the same entities. AGL noted that by *"...focusing only on the provision of information to market participants, the [draft] Rule ensures that the risks and returns of developing infrastructure remain with those that make the investment decision."*[85]

In contrast to these views, a number of stakeholders opposed to the draft Rule disagreed with the Commission's assessment of efficient risk allocation.

Renewables SA disagreed with the Commission's view that the risks of a SENE should rest with market participants and investors, with no residual risk applying to consumers. Renewables SA considered that *"...the draft determination pre-judges the issue of acceptable and unacceptable risk without benefit of quantification or qualification. Moreover, its conclusion that economies of scale offer the principle benefits to consumers oversimplifies the analysis of risk."*[86]

The SA DTEI considered that *"...undue emphasis appears to have been placed on [the rationale that market participants are best able and willing to manage risk rather than*

80 AER, AGL, Grid Australia, Ausgrid, MEU, Nyrstar, NGF.

81 AER, draft determination submission, p.2.

82 Ausgrid, draft determination submission, p.2.

83 Ibid, p.1.

84 NGF, draft determination submission, p.2.

85 AGL, draft determination submission, p.2.

86 Renewables SA, draft determination submission, p.2.

consumers] considering that in relation to shared network decisions, customers already assume risk of forecast demand failing to materialise in expected timeframes."[87]

The Conservation Council of SA (CCSA)[88] and the CEC[89] considered that allocating risk to market participants and investors would risk under-investment in the transmission capacity needed to support renewable generation. In addition, the CEC[90] and Vestas[91] considered that the draft Rule would place more commercial risk than ever before on generators, while also making the SENE process relatively commercially unattractive for TNSPs.

Several stakeholders opposed to the draft Rule considered it was unrealistic to assume that commercial entities would be prepared to bear the risk of asset stranding.

In respect of TNSPs funding a SENE and bearing asset stranding risk, TRUenergy noted that *"...because the draft rule fails to realistically mitigate the asset stranding risk associated in developing a SENE for a TNSP, it runs the risk of being irrelevant."*[92]

In respect of generators funding a SENE and bearing the asset stranding risk, Origin considered that difficulties in respect of coordination and timing meant there would always be a disincentive for generators to overbuild a connection asset, given the stranded asset risk. On this basis, Origin considered *"...generators are not best placed to manage the stranded risk often associated with transmission build."*[93]

In line with this view, TRUenergy considered that the idea of underwriting asset stranding risk to secure a lower connection cost would add disproportional business risk that a rational entity would most likely avoid. TRUenergy considered *"...renewable generators are not the best entity placed to manage transmission risk."*[94]

In respect of the possibility that a government may fund a SENE and bear the asset stranding risk, both International Power and Origin considered this possibility may be at odds with the Commission's view that customers should not be exposed to the risk of asset stranding.[95]

More generally, Infigen considered that all funding options envisaged by the draft Rule *"...are extremely unlikely to occur."*[96]

---

87 SA DTEI, draft determination submission, p.1.

88 CCSA, draft determination submission, p.1.

89 CEC, draft determination submission, p.2.

90 Ibid, p.2.

91 Vestas, draft determination submission, p.3.

92 TRUenergy, draft determination submission, p.3.

93 Origin, draft determination submission, p.4.

94 TRUenergy, draft determination submission, p.4.

95 International Power, draft determination submission, p.2; Origin, draft determination submission, p.4.

96 Infigen, draft determination submission, p.1.

Finally, Origin notes that the risk of over-sizing assets already occurs where TNSPs undertake augmentations to the shared network. In these instances, customers are exposed to the risk of asset stranding which they are unable to manage themselves. To mitigate that risk, Origin notes that customers rely on the oversight of the AER and the application of the RIT-T. On this basis, Origin *"...sees no reason why the above approach could not be applied to the connection of generation clusters."*[97] Origin considers the development of an appropriate cost benefit analysis should now be one of the key focuses of the SENEs consultation.

6.5 Final Rule determination

Having considered the arguments and evidence put forward in stakeholder submissions to the draft Rule determination in relation to the efficient allocation stranded asset risk, the Commission maintains its view that it is not appropriate to require consumers to bear the risk associated with over-sizing assets in anticipation of future generator connections.

The Commission maintains that efficient investment decisions are more likely to be made where the risk associated with those decisions is allocated efficiently. This will occur where:

- risk is managed by the entity best able to do so; and
- risk is borne by the entity responsible for making the investment decision.

In the case of SENEs, a large risk to manage is the asset stranding risk associated with under-utilised assets. The full efficiency gains available from building excess capacity in anticipation of future generator connections will only be realised where all anticipated generation materialises and connects to a SENE as forecast. Where generation does not materialise as forecast, the party bearing the asset stranding risk faces the cost of the under-utilised capacity.

Being able to manage risk in this sense requires having the best available information on likely future generation entry and taking measures to reduce asset stranding risk, such as through staged or modular network investment. The accuracy of information and ability to undertake staged development will differ between potential SENEs, such that each SENE has its own risk/reward trade-off.

Unless those entities with the best information and best ability to manage risk are responsible for bearing some or all of that risk, then they have few incentives to give due consideration to the relative benefits and risks of an investment decision. Further, risk is less likely to be managed in the most cost effective way. In contrast, where the decision maker and risk bearer are linked, there is a strong incentive on that entity to ensure:

97 Origin, draft determination submission, pp.3-4.

- they are fully informed, to the best of their ability, about the true level of risk; and

- they have in place risk mitigation measures to reduce the risk, and so cost, of asset stranding.

For the reasons set out in this chapter, the Commission maintains its view that the Rule as Made, by facilitating an outcome whereby asset stranding risk would be allocated to those parties that are best able and willing to manage that risk, should lead to efficient investment decision making, consistent with the NEO.

7 Market based versus central planning approaches

The purpose of this chapter is to set out the Commission's final view in respect of market based versus central planning approaches, having regard to the views of stakeholders in submissions to the draft Rule determination and draft Rule. This chapter is structured as follows:

- Section 7.1 sets out the principles underlying the Commission's assessment of market based versus central planning solutions;
- Section 7.2 provides a brief recap of stakeholder responses to the Consultation and Options Papers on this issue;
- Section 7.3 provides a summary of the Commission's analysis of the Rule Change Request and the proposed alternative solutions (including the draft Rule) in respect of market-driven solutions, as set out in the draft Rule determination;
- Section 7.4 summarises the views of stakeholders in relation to the Commission's assessment; and
- Based on the arguments and evidence put forward in submissions, section 7.5 sets out the Commission's final considerations and conclusions on this matter.

The Rule change proponent did not directly address this issue in the Rule Change Request. A detailed summary of stakeholder views in relation to market based solutions as set out in submissions to the Consultation Paper and Options Paper is reproduced in Appendix C.3.

7.1 Market-driven approach

Competitive, and hence lower cost, outcomes will generally arise where market based solutions are utilised. This means that, where feasible and practical, market participants and investors that receive the rewards and face the costs of a particular investment should be responsible for decision making. Market participants are well informed, commercially driven entities and as such are best placed to make efficient investment and operational decisions. This includes making efficient decisions on the location, type and size of generation.

Moreover, frameworks which provide scope for market-driven, commercial negotiations are generally less intrusive and administratively costly than frameworks relying on more prescriptive regulation.

The Commission considers that utilising commercial arrangements, and minimising regulatory intervention, is desirable in markets with effective competition as the means of promoting efficient investment thereby lowering expected total system costs in the long term interests of consumers.

7.2 Stakeholder responses to the Consultation and Options Papers

In submissions to the Consultation and Options Papers, several stakeholders expressed a preference for a market based solution to the issue of more efficiently connecting generation to the network.[98] Market based solutions were preferred primarily because risk would be allocated to those parties best able to manage it. In addition, it was considered that a market based solution would avoid a more formal, time-consuming and costly regulatory approvals process.

A number of stakeholders considered that a lack of property rights limits market-driven options for building extensions and that providing firm access would increase investment in merchant transmission.[99] Generally, these stakeholders considered that any regulated framework should not crowd-out private investment.

A number of stakeholders supportive of the SENEs proposal considered that the introduction of the SENEs framework which involves a degree of intervention in the market would be an appropriate and proportional response to the issues the Rule Change Request is seeking to address.[100]

Several stakeholders were concerned that the proposed SENEs framework would distort market arrangements by providing renewable generators in SENE zones an advantage over generators located elsewhere.[101] One stakeholder considered this approach would be contrary to competitive neutrality.[102]

One stakeholder expressed concern that the very presence of a SENE would distort locational decisions by generators by making one particular location more attractive as a result of reduced connection times and construction risks for later users.[103]

Another noted that a regulated approach had the potential to distort investment decisions by passing the risk of development onto customers, and that any intervention should be limited to removing any barriers to market response.[104]

---

98 AER, Consultation Paper submission, p.1; EnergyAustralia, Options Paper submission, p.2; Grid Australia, Consultation Paper submission, p.4; Macquarie Generation et al, Consultation Paper submission, pp.6-7; MEU, Consultation Paper submission, p.28; NGF, Options Paper submission, p.5; SP AusNet, Consultation Paper submission, pp.5-6; United Energy Distribution (UED), Consultation Paper submission, p.11.

99 LYMMCo, Consultation Paper submission, p.11; NGF, Consultation Paper submission, p.10 and Options Paper submission p.4; TRUenergy, Consultation Paper submission, pp.2-3; UED, Consultation Paper submission, p.11.

100 Infigen, Consultation Paper submission, p.1; Geodynamics, Consultation Paper submission, p.5; Origin, Consultation Paper submission, p.3; Green Grid, Options Paper submission, p1; TRUenergy, Consultation Paper submission, p.5.

101 NGF, Consultation Paper submission, p.8; LYMMCo, Consultation Paper submission, p.4; MEU, Consultation Paper submission, pp.12-13; EnergyAustralia, Consultation Paper submission, p.4.

102 MEU, Consultation Paper submission, pp.12-13.

103 International Power, Options Paper submission, p.2.

104 AER, Consultation Paper submission, p.3.

In contrast, one stakeholder considered that, in addition to connection costs, locational signals such as loss factors and congestion risk would be taken into account prior to a SENE being built. As such, a SENE would not dampen the market's current locational signals, including the cost of connection.[105]

Several stakeholders considered that the SENE proposal would achieve a leveling of the playing field for remote generation.[106]

7.3 Draft Rule determination

In the draft Rule determination, the Commission acknowledged that the frameworks provided under the proposed Rule and Options 1 to 5 would each involve some degree of central planning.

While the Commission recognised that, in each case, firm generator interest would be required before a SENE could proceed, each option would nonetheless require non-market facing entities (namely AEMO and TNSPs) to make assumptions about future generator entry, attempting to anticipate commercial decisions. In addition, the Commission recognised that because these entities would not directly face the consequences of their decisions, they would be unlikely to have strong incentives to ensure their decisions reflect the best available information, and to carefully evaluate the risk reward trade-off.

The Commission also recognised that because these entities would not bear the risk of their decisions, they would have limited incentives to (1) ensure those decisions reflect the best available information and (2) carefully evaluate the risk reward trade-off.

For these reasons, the draft Rule reflected the Commission's view that solutions should generally promote outcomes in keeping with a decentralised decision-making process. The draft Rule would do this by providing a mechanism under which opportunities to capture scale efficiencies would be made transparent, allowing the market to make decisions on the efficient allocation of risk. The Commission considered such an approach to risk allocation would promote more efficient decision making, more so than under the proposed Rule and Options 1 to 5, given that participants have greater incentives to ensure their investment decisions are well-informed and balanced against any associated risks.

The Commission also considered a key advantage of the draft Rule was its ability to promote competition in the funding of SENEs.[107] The Commission considered that providing information transparency should overcome any information asymmetry

105 Origin, Options Paper submission, p.4.

106 Infigen, Consultation Paper submission, p.1. Geodynamics, Consultation Paper submission, p.3.

107 Firstly, by explicitly allowing any entity to fund potential SENEs studies; and, secondly, through the publication of the SENE design and costing study, it provides that entity, and any other potential investor, with information to assist the decision on whether to further investigate the potential benefits and risks of investing in a SENE.

between TNSPs and the market, opening up the possibility of contestability in funding as well as in the construction of a SENE.

The Commission also considered that the draft Rule would maintain existing locational signals by requiring generators to negotiate with TNSPs in developing connection solutions consistent with existing arrangements for connections. In addition, the Commission recognised that the draft Rule would preserve a generator's rights to connect to the network. The Commission was supportive of the terms and conditions of connection to the transmission network (as augmented by the SENE) being negotiated between the TNSP and the generator, subject to the existing Rules governing connections.

7.4 Stakeholder responses to the draft Rule determination

Stakeholders who expressed support for the draft Rule were generally those who had previously indicated a preference for a market based solution to the identified issues. In its submission, Grid Australia expressed support for the Commission's approach on the basis that it was consistent with Grid Australia's support for a commercially negotiated market based solution for the development of network extensions.[108]

In addition, the AER reiterated its view that market mechanisms are best placed to ensure efficient investment outcomes and that regulatory intervention should be limited to removing impediments to market participants developing an efficient market response.[109]

AGL confirmed its view that the proposed Rule was not consistent with the near two-decades of reforms in the energy market. AGL considered the reliance of the proposed Rule on central planning would introduce an array of risks where no market failure had been evidenced. Further, AGL considered that *"...given the dynamic nature of the energy market, the competitive market will develop solutions to capture economies of scale available in connection and extension assets if the savings are significant."*[110]

Ausgrid noted its support for the AEMC adopting a market-driven approach as the preferred option, given the lack of evidence of a market failure. Ausgrid and AGL also flagged that the gas industry routinely manages the situation that the SENE concept is seeking to address.

The MEU considered there needed to be good reasons to move from a market based approach to a centrally planned approach. The MEU noted that, *"As there is no clear efficiency gain from making such a decision in relation to a SENE…the clear indication is that there should not be such a change made."*[111]

108 Grid Australia, draft determination submission, p.1.

109 AER, draft determination submission, p.1.

110 Ibid, p.3.

111 MEU, draft determination submission, p.8.

In respect of the impact of locational signals, Ausgrid considered that the approach taken in the draft Rule would ensure that the locational costs of connecting to the network are taken into account by generators before making an investment decision. Ausgrid considered that *"...the inclusion of locational costs into investment decisions improves the scope for allocative efficiency compared to the MCE Rule change request."*[112]

In contrast to the views above, TRUenergy submitted that *"...the market based solution embedded in the draft rule does not adequately deal with what we regard as the major stumbling block in the workability of SENEs [- the asset stranding risk associated with developing a SENE for TNSPs]."*[113] TRUenergy considered that given the solution proposed in the draft Rule is very similar to current arrangements, and given that SENEs have not been built to date, this situation will continue if the draft Rule is accepted.

The NGF also reiterated its concern that a lack of property rights would limit market-driven options for building extensions. Generally, the NGF considered that providing firm access would increase investment in merchant transmission.[114]

7.5 Final Rule determination

The Commission has considered the arguments and evidence put forward in stakeholder submissions to the draft Rule determination in relation to market based versus central planning solutions. However, the Commission maintains its view set out in the draft Rule determination that, in the context of the issues identified by this Rule Change Request, insufficient evidence has been provided to suggest that extensive regulatory intervention is warranted.

As discussed in the previous chapter, the Commission is supportive of a market based approach to risk allocation given that generators, TNSPs or other potential investors willing to fund a SENE are likely to be better placed to manage risk than consumers.

The Commission considers this market based approach will promote efficient decision making given that participants that face market signals typically have greater incentives to ensure their investment decisions are well-informed and balanced against any associated risks. Efficient investment will help promote dynamic efficiency, lowering expected total system costs and, over time, leading to more efficient prices and higher quality and service for consumers.

As the Commission has noted throughout the Rule change process, it accepts that there are some difficulties in coordinating generation investment due to difficulties in timing. Nonetheless, the Commission considers there is insufficient evidence to suggest that these challenges are insurmountable and therefore require a complex new regulatory framework. Instead, the Commission considers it is appropriate to introduce an additional mechanism to assist market based outcomes to occur.

112 Ausgrid, draft determination submission, p.2.

113 TRUenergy, draft determination submission, p.3.

114 NGF, draft determination submission, p.3.

For these reasons, the Commission maintains its view that the Rule as Made will promote efficient investment, more so than the proposed Rule and Options 1 to 5, thereby lowering total system costs in the long term interests of consumers.

The Commission has previously acknowledged that some stakeholders consider market based outcomes could be promoted through alternative means, in particular, by assigning firm access rights to those that fund transmission investment. Access issues are currently being considered as part of the TFR on the basis that these issues are better considered holistically to ensure that any changes to the way in which generators can connect to and access the national grid are internally consistent.

8 Complexity

The purpose of this chapter is to set out the Commission's final view in respect of the extent to which the proposed changes are proportionate to the identified issues and consistent with existing regulatory arrangements. This chapter is structured as follows:

- Section 8.1 sets out the principles underlying the Commission's assessment of the complexity of the proposed frameworks;
- Section 8.2 provides a brief recap of stakeholder responses to the Consultation and Options Papers on this issue;
- Section 8.3 provides a summary of the Commission's analysis of the Rule Change Request and the proposed alternative solutions (including the draft Rule), as set out in the draft Rule determination;
- Section 8.4 summarises the views of stakeholders in relation to the Commission's assessment; and
- Based on the arguments and evidence put forward in submissions, section 8.5 sets out the Commission's final considerations and conclusions on this matter.

The Rule change proponent did not directly address this issue in the Rule Change Request. The views of stakeholders in response to the Consultation Paper and Options Paper in relation to the issue of complexity are reproduced in Appendix C.4.

8.1 Complexity of the framework

Any changes made to the Rules framework should be appropriate and proportionate to the identified issues. This means that burdensome regulatory arrangements and unrecoverable costs should not be imposed on market participants or consumers. This is in line with good regulatory practice. In addition, ensuring that solutions are proportionate to the problems they are seeking to address will help to ensure that the costs of any solution do not exceed the costs of the problem.

In addition, the Commission is not supportive of arrangements that introduce a disproportionate level of complexity into the Rules. Introducing complex Rules may increase the costs of compliance and implementation, and may act as a barrier to market participants choosing to utilise any new framework.

Further, the Commission considers it important to avoid introducing changes which may be inconsistent with the existing Rules. The Commission considers that increasing confusion and uncertainty is undesirable and risks creating a less certain investment environment for market participants.

For this reason, making piecemeal changes to frameworks in the Rules should also be avoided. Ensuring that any changes to the Rules are consistent with existing

arrangements will contribute to a more certain investment environment for market participants, thereby promoting efficient investment in the electricity market.

Chapter 5 provided a summary of the issues raised during the analysis of the proposed Rule. The Commission concluded that while it considers some change to the existing connections framework is warranted, there is some scope under existing frameworks to capture economies of scale and promote efficient connection outcomes. The Commission has been mindful of this conclusion throughout its assessment of the complexity of the proposed Rule, Options 1 to 5 and the draft Rule.

8.2 Stakeholder responses to the Consultation and Options Papers

In responses to the Consultation and Options Papers, several stakeholders were of the view that whilst consideration should be given to whether a SENE may lead to efficiency gains, any changes to the Rules should represent an appropriate and proportionate response to the issues the Rule change is seeking to address.[115]

In addition, a number of stakeholders explicitly expressed support for the principle that any new rules to implement a SENE regime should be consistent with the features of the existing Rules, as far as possible, to maintain regulatory certainty and stability.[116] More specifically, several stakeholders considered that the introduction of capacity rights as implied in the Rule Change Request would be out of step with the current open access regime. On this issue, two stakeholders considered that private agreements for determining compensation and access would be more appropriate and would negate the need for complex regulatory rules in these areas.[117]

Further, DNSPs generally expressed some concern that the SENE arrangements would be potentially onerous on DNSPs and require them to undertake a number of activities which they are not best placed to undertake.[118]

In contrast to these views, several stakeholders considered that a market based approach would likely be significantly more complex than the proposed Rule. One of these stakeholders considered that because the detailed design of the SENE had not been previously articulated, this, along with a number of misconceptions about the

115 AER, Consultation Paper submission, p.3; Electricity Networks Association (ENA), Consultation Paper submission, p.1; Ergon Energy, Options Paper submission, p.2; Grid Australia, Consultation Paper submission, p.4; Macquarie Generation et al, Consultation Paper submission, p.2; SP AusNet, Consultation Paper submission, p.2.

116 SP AusNet, Consultation Paper submission, pp.2-3; Grid Australia, Consultation Paper submission, pp.4-5.

117 NGF, Consultation Paper submission, p.3; Macquarie Generation, Consultation Paper submission, p.7.

118 Citipower/Powercor, Consultation Paper submission, p.1; UED, Consultation Paper submission, p.7; Energex, Consultation Paper submission, p.2; Ergon Energy, Consultation Paper submission, p.6.

mechanism, has led to a perception of complexity and an unwarranted shift in support away from SENEs.[119]

8.3 Draft Rule determination

In the draft Rule determination, the Commission recognised that implementing the proposed Rule or Options 1 to 5 would require introducing a new framework (with varying degrees of complexity) into the Rules. Whilst some aspects of these frameworks would already be permitted under the Rules, albeit subject to minor amendments; other aspects, including those in the proposed Rule, would likely require substantial amendments to the Rules in order to be implemented.

The Commission noted that, in contrast to the proposed Rule or Options 1 to 5, the draft Rule would require a relatively simple change to existing frameworks in order to be implemented. Whilst the draft Rule would enable better information to be provided to the market by way of a study, the arrangements for connection would progress as per the existing frameworks, through commercial negotiations between generators and TNSPs.

The Commission noted that the broader issues around access rights and connection raised throughout the Rule change process would be considered more holistically as part of the TFR. The Commission considered this approach would avoid some of the complexity associated with the proposed Rule and Options 1 to 5 and would minimise the risk of potential inconsistencies being introduced into existing frameworks.

In addition, the draft Rule reflected the Commission's support for arrangements which would not require any entity to bear unrecoverable costs or significant risks, thereby avoiding increases in regulatory burden on market participants.

The draft Rule would maintain consistency with existing frameworks, by providing a mechanism which supports the allocation of risk amongst market participants. It would provide a light-handed approach whereby risk would be borne by those parties best able and willing to manage it, through the process of commercial negotiation. On this point, the Commission acknowledged that the negotiation of commercial contracts with multiple parties can be challenging. However, the Commission considered that, to the extent that there are large scale economies to be gained from the coordination of multiple parties, there should be strong incentives on parties to negotiate and reach agreement.

Finally, the Commission clarified that the draft Rule does not contemplate SENE design and costing studies being undertaken regarding connections to a distribution network. The Commission considered that excluding distribution from the draft Rule represented an appropriate and proportionate response on the basis that generally there are likely to be limited scale efficiency benefits available in distribution.

119 Origin, Options Paper submission, p.2.

8.4 Stakeholder responses to the draft Rule determination

Several stakeholders supportive of the Commission's draft Rule determination considered that the draft Rule was an appropriate and proportionate response to the identified issues.[120]

In respect of the proposed Rule, the AER noted that the length and complexity of the draft rules associated with the previous proposal *"...was likely to create significant upfront and ongoing costs for parties involved in the SENE process. It is not clear that these costs would be proportionate to the problems that the SENE rules sought to address."*[121]

Similarly, Ausgrid considered that the proposed Rule *"...created [a] regulatory and administrative burden on the AEMO and AER that was greater than the scale of the identified issue it sought to resolve."*[122] Ausgrid also noted its support for *"...the emphasis given by the AEMC to the principle of proportionality when considering the Rule change request."*[123]

Grid Australia noted that it supported the Commission's approach on the basis that it does not unduly add complication to an already complex set of connection arrangements.[124]

NGF noted that, leaving aside the issues it considers require further clarification, it agrees that *"...the preferred rule change, which reflects minimal change, is desirable as there is insufficient evidence to justify the original proposed (sic) rule change."*[125] The NGF considered that complexity was borne out in the extended debate on the many additional regulatory measures and additional prescriptions suggested by various parties, and that the avoidance of a burdensome regulatory outcome is welcomed.[126]

The MEU also expressed support for the AEMC's analysis and conclusions in respect of the issue of complexity of the proposed Rule, and the decision to maintain the current approach to new generator connections, albeit with a new requirement for the provision of additional information.[127]

In contrast to these views, Origin disagreed that the draft Rule provided a change that was proportionate to the identified issues. Instead, Origin considered that the AEMC had *"...erred on the side of being too simplistic in its approach and runs the risk that the draft Rule will not address the underlying problems."*[128] In addition, Origin noted that *"...the*

120 AER, Ausgrid, Grid Australia, MEU.

121 AER, draft determination submission, p.1.

122 Ausgrid, draft determination submission, p.2.

123 Ibid, p.1.

124 Grid Australia, draft determination submission, p.1.

125 NGF, draft determination submission, p.4.

126 Ibid, p.4.

127 MEU, draft determination submission, p.9.

128 Origin, draft determination submission, p.5.

existence of complexity is in itself not necessarily an indicator of inefficiency, just as simplicity does not automatically equate to better outcomes."[129]

8.5 Final Rule determination

Having considered the arguments and evidence put forward in stakeholder submissions to the Rule as Made determination in relation to the complexity of a proposed solution, the Commission maintains its view that the draft Rule is an appropriate and proportionate response to the identified issues.

In addition, the Commission considers the Rule as Made does not introduce significant complexity or the potential for inconsistencies with existing frameworks and does not impose unrecoverable costs or unreasonable requirements on market participants or consumers.

Further, Commission considers that the cost of compliance with, and implementation of, the Rule will not be unreasonably high.

For these reasons, the Commission maintains its view that the Rule as Made will contribute to a more certain investment environment for market participants relative to the proposed Rule and Options 1 to 5, thereby promoting efficient investment in electricity services in the long term interests of consumers.

129 Ibid, p.5.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APR	Annual Planning Report
CCR	See Climate Change Review
CCSA	Conservation Council of SA
CEC	Clean Energy Council
Climate Change Review	Review of Energy Market Frameworks in light of Climate Change Policies
Commission	See AEMC
CPRS	Carbon Pollution Reduction Scheme
DNSP	Distribution Network Service Provider
ENA	Electricity Networks Association
LYMMCo	Loy Yang Marketing Management Company
MCE	Ministerial Council on Energy
MCE SCO	Ministerial Council on Energy Standing Committee of Officials
MEU	Major Energy Users
MMA	McLennan Magasanik Associates
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NGF	National Generators Forum
NSP	Network Service Provider

NTNDP	National Transmission Network Development Plan
NTP	National Transmission Planner
RAB	Regulatory Asset Base
REC	Renewable Energy Certificate
RET	Renewable Energy Target
RIT-D	Regulatory Investment Test for Distribution
RIT-T	Regulatory Investment Test for Transmission
SA DTEI	South Australian Department of Transport, Energy and Infrastructure
SACOME	South Australian Chamber of Mines and Energy
SCER	Standing Council on Energy and Resources
SENEs	Scale Efficient Network Extensions
Tasmanian DIER	Tasmanian Department of Infrastructure, Energy and Resources
TFR	Transmission Frameworks Review
TNSP	Transmission Network Service Provider
TUOS	Transmission Use of System
UED	United Energy Distribution

A Summary of issues raised in submissions to the draft Rule determination

The table below provides a summary of the issues raised by stakeholders in their submissions to the draft Rule determination and draft Rule. The table sets out the Commission's response to each of these issues.

The submissions received to the draft Rule determination are available on the AEMC website at www.aemc.gov.au.

For ease of reference, relevant page numbers from submissions have been included in the table.

Stakeholder	Issue	AEMC response
AER	In respect of the drafting of clause 5.5A, the AER considered there may be scope to more explicitly require NSPs to consider the future development of the transmission network. It suggested that, in addition to the NTNDP, NSPs should also take into account recent APRs. (p.2)	The Commission agrees there is merit in NSPs also being required to consider the most recent APR when negotiating the scope of the SENE design and costing study with the SENE study proponent. The Rule as Made has been amended to include this requirement.
AER	The AER noted that under clause 5.5A.4(c), an NSP would not be explicitly required to provide data which has been requested by the TNSP undertaking the study. The AER considered it unclear why this provision was included. Subject to further articulation of the reason for inclusion of the clause, the AER suggested that it be amended to explicitly require the provision of such data to a requesting NSP. (p.2)	The purpose of clauses 5.5A.4(c) and (d) is to require NSPs, to the extent that they provide information under clause 5.5A.4(b), to identify any such information that is confidential. In the Rule as Made, clauses 5.5A.4(c) and (d) have been combined in one clause to clarify the intent.
AEMO	AEMO considered the final Rule determination should make clear that a SENE provides either a negotiated or prescribed transmission service, depending on how it is justified and funded. In respect of the possibility that a SENE may be classified as a non-regulated service, AEMO noted that it has trouble with the concept of permitting a non-regulated service to be provided by a natural monopoly. (p.3)	The Rule as Made does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing frameworks. To the extent that the connections framework more generally requires further consideration, it is appropriate to do this holistically in the context of the TFR.

Stakeholder	Issue	AEMC response
AEMO	AEMO considered the success of the SENEs framework would depend on investors having confidence that they can obtain appropriate access/property rights to the additional scale investment. AEMO considered the issue of property and transport rights should be addressed under a system-wide framework that deals with the issue in a comprehensive and holistic manner along with associated revenue and planning arrangements. AEMO recognised that the AEMC has committed to look at access rights in the TFR. (p.3)	The Commission confirms that issues around firm financial access and property rights will be considered holistically as part of the TFR.
AEMO	AEMO considered that an impediment to clustered generator connections was the difficulty in finding suitable places to share entry connection facilities. As such, AEMO considered that if generators had access to specific information about other potential generation connections, they could potentially make more efficient investment decisions. AEMO considered that, in the context of the SENE Rule change, the AEMC should reconsider allowing the publication of connection application and enquiry information on a TNSPs website, or through their APRs. (p.4)	In the Directions Paper for the TFR, the Commission recognised that a more detailed exploration of information transparency requirements of the negotiation process was merited.[130] This general issue will therefore be considered further in the context of the TFR.
AGL	AGL noted that it could be argued that the key limitation of the existing regulatory framework (in relation to scale development) was the lack of transparent and comparable information which would allow a SENE to be adequately considered by an investor. AGL noted that the draft Rule sought to address this limitation by focusing on ensuring that a TNSP is incentivised to conduct a study into the need for a SENE. (p.2)	Noted.

130 AEMC, *Transmission Frameworks Review*, Directions paper, 14 April 2011, Sydney.

Stakeholder	Issue	AEMC response
AGL	AGL noted it strongly believes that if proponents of remote renewable generation clusters have more cost effective projects (including transmission connection costs) than resources closer to the existing grid, there is no regulatory impediment related to their financing a connection. AGL considered the actual impediment is likely to relate to the total project costs of renewable resources being developed today being lower than those of remote clusters. (p.3)	Noted.
Alinta	Alinta remain concerned that the AEMC has failed to present appropriate quantitative analysis that adequately addresses the costs and benefits of the proposed Rule change. Alinta noted that it failed to see how the draft Rule would contribute to the NEO and any reasonable doubt regarding its ability to do so should be the basis for exclusion from the Rules. (p.1)	The Commission has previously highlighted that it is difficult to quantitatively assess the likely benefits and costs of a SENE as efficiency gains would depend on whether and when the spare capacity is utilised, which cannot be known *ex ante*. In addition, the costs and potential magnitude of efficiency gains would depend on several factors including volume and number of potential generators, geographical spread of generators in a cluster and distance of the cluster from the shared network. Chapter 3 sets out the Commission's assessment of the proposed Rule and alternative options, including the draft Rule, against the NEO.

Stakeholder	Issue	AEMC response
Alinta	Alinta held reservations regarding the AEMC's decision not to assign property rights over the outcomes of a study. It considered that failing to do so may diminish the incentives facing an entity to fund the SENE study. Alinta strongly urged the AEMC to reconsider this issue. (pp.1-2)	The key feature of the Rule as Made is the introduction of a mechanism under which opportunities to capture scale efficiencies can be made transparent. In doing so, the Rule as Made aims to overcome any information asymmetry between TNSPs and the market on the likely magnitude of benefits that could potentially be gained. The Rule as Made also aims to promote interest in third party funding, thereby promoting competition in funding. The Commission considers that a SENE study proponent should have an interest in making public the results of the SENE design and costing study, as doing so will enable generators and other market participants to make more informed, and hence more efficient, commercial decisions on whether to fund a SENE.
Alinta	Alinta considered that whilst the AEMC stated that a funding entity may influence the design features of a SENE, it had not indicated the level of influence and who will ultimately make the final decision regarding the SENE design. Alinta recommended the AEMC provide guidance on this issue. (p.2)	It is envisaged that the design of the SENE would be the subject of negotiation between the TNSP and the entity funding the SENE based on, amongst other things, applications to connect to the SENE and forecast generation scenarios.

Stakeholder	Issue	AEMC response
Alinta	Alinta expressed concern that the recovery of a revenue stream by a funding entity from connecting generators may be idealistic given the practical implementation of the revenue requirements and the existing TUoS charging regimes. Alinta maintained that the AEMC was required to provide further analysis into the recovery of a revenue stream by TNSP and non-TNSP funding entities prior to making its final determination. (p.3)	The Commission considers that if a TNSP recovers amounts from connecting generators for connection or non-regulated services, there is nothing to prevent them agreeing commercially to pay amounts to the funder.
Alinta	Alinta considered there to be limited scope for merchant transmission ownership under existing frameworks, particularly in those jurisdictions where a licensed generator was forbidden to hold a transmission licence. Alinta considered that, as a result, any commercial negotiation would likely be between a non-TNSP funder and a TNSP as builder and operator. It considered that generators would therefore be at the mercy of jurisdictional TNSPs. (p.3)	In the TFR Directions Paper, the Commission indicated its intention to consider further issues raised by stakeholders in respect of the negotiation of connections. The Commission noted that consideration of this issue may highlight the difficulties faced by generators and users in negotiating connection services with monopoly service providers, in order to identify possible solutions that may optimise generator and use connection outcomes.[131]
Alinta	Alinta considered the ability of TNSPs to fund a SENE and earn a non-regulated rate of return would create an incentive to classify a SENE as a non-regulated service. Alinta considered this would present issues whereby generators who wished to connect to a TNSP funded SENE would potentially be required to pay higher charges under its connection agreement. Alinta considered this, in turn, would result in end-users paying high electricity charges as generators attempt to re-coup their costs. (p.3)	The Commission notes that the Rule as Made does not require generators to connect to a SENE or prescribe how services provided by means of a SENE would be classified. Rather, generators would always have the option of pursuing an individual stand alone connection to the transmission network. This outcome would be expected where the cost of providing a stand alone connection was less than the cost of connecting to the transmission network as augmented by the SENE. As noted in the draft Rule determination, once the risk of asset stranding is reflected in the risk adjusted return, the stand alone connection outcome may well provide a lower cost outcome relative to the SENE outcome.

131 AEMC 2011, Transmission Frameworks Review, Directions Paper, 14 April 2011, p.89.

Stakeholder	Issue	AEMC response
Alinta	Alinta argued that whilst the Rules provide for the commercial negotiation of a service classification between a generator and TNSP, this rarely occurs in practice where a TNSP is able to exhibit monopoly power over the final outcome. Moreover, given a TNSPs ability to assess each SENE connection on a case by case basis, these restrictions are likely to remain. Alinta recognised that service classification was considered out of scope for the purpose of the Rule change and would be covered further as part of the TFR. (p.4)	Noted.
Ausgrid	Ausgrid noted that as currently drafted, the Rule would apply to Ausgrid in its capacity as a TNSP in relation to its dual function assets. Ausgrid requested that the Rule be amended such that a request for a SENE study could not be made to a TNSP in respect of dual function assets. (p.2)	It is not intended that DNSPs should be required to undertake SENE studies under the Rule as Made, including in respect of transmission network (dual function assets) that it owns, controls or operates. The Rule as Made has been amended to clarify this position.
Ausgrid	Ausgrid noted the AEMC's view that customers should not bear the costs of SENEs and therefore the services they provide should be classified either as negotiated or non-regulated services. Ausgrid raised concerns about the implications of suggesting that SENE services may correctly be classified as non-regulated services. (p.4)	The Rule as Made does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing frameworks. To the extent that the connections framework more generally requires further consideration, it is appropriate to do this holistically in the context of the TFR.
Ausgrid	Ausgrid questioned what the obligations on parties who operate SENEs but who are exempt from registering as TNSPs would be, particularly in respect of meeting reliability standards and access arrangements. (p.4)	The AER may impose any conditions on the granting of exemptions, including conditions relating to standards and regulatory controls in place for the network, access and charging.

Stakeholder	Issue	AEMC response
Ausgrid	Ausgrid noted that it supported the AEMC's market driven approach which relies on commercial negotiation. Ausgrid noted that if there was concern that such an approach, in particular to compensation between parties, may not work, then the reimbursement scheme under the NSW capital contributions policy may provide a helpful precedent for the AEMC's funding approach. (p.5)	Noted.
Brookfield	Brookfield considered that the challenge of investing in new transmission capacity in advance of new connections would not be addressed by the introduction of a requirement to conduct a market study. Brookfield noted that in its experience, successful solutions are those that find an equitable balance between the interests of investors and consumers, which the draft Rule does not. (p.2)	Noted. However, the Commission maintains its view that the Rule as Made will, or is likely to, contribute to the achievement of the NEO more so than the proposed Rule and alternative options set in the Options Paper. See chapter 2for further discussion on the reasons for the Commission's decision.
Brookfield	Brookfield agreed that a market study should be the starting point for a successful solution, but that such a study should be conducted by an independent party, not the NSP, or should be subject to independent regulatory review and approval. (p.3)	The Commission considers that TNSPs are best placed to undertake the SENE design and costing study, consistent with their roles and responsibilities under the existing connections framework. However, the Rule as Made does not prevent any other entity from undertaking a study similar in scope to the SENE design and costing study where they consider there is benefit in doing so.
Clean Energy Council	The CEC considered the draft Rule would be unlikely ever to be used by generators to connect to the NEM. The CEC considered the draft Rule would not deal with asset stranding risk, placing more commercial risk on generators and making the SENE process commercially unattractive for TNSPs. (p.2)	As noted in chapter 5, the Commission maintains its view that, to the extent there are large scale economies to be gained from cooperation, generators should have strong incentives to coordinate. In addition, to the extent that NSPs can earn a return that is commensurate with the risk that anticipated generation does not materialise, there is some (albeit potentially weak) incentive on them to fund such investment.

Stakeholder	Issue	AEMC response
Clean Energy Council	The CEC considered the draft Rule would: make the connection process more complicated than it already was; would not result in timely investment in new transmission lines; and would not adequately address the high cost for developers of renewable energy facilities to connect to the NEM. (p.2)	The Commission notes that some stakeholders have raised concerns in respect of the draft Rule failing to support increased penetration of renewable energy in the NEM. However, the Commission notes that the NEO, against which it assesses all Rule Change Requests, is to promote efficient investment in and use of electricity services in the long term interests of consumers. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes in the context of the legislative and policy environment within which the market operates. In keeping with this principle, the Rules should not be biased towards or against any particular technology or market outcome.
Conservation Council of SA	The CCSA noted its concern that the draft Rule would fail to support the urgent network and capacity expansion required across the electricity grids to underpin a transition to optimise renewable energy. This was because the draft Rule would allocate risk and costs to market participants and investors rather than to consumers. (p.1)	See comment above.
Conservation Council of SA	The CCSA encouraged the AEMC to collaborate with necessary stakeholders to develop a National Transmission Plan and State Transmission Plans specifically targeted to enhance Australia's transmission grids towards transitioning to a low carbon economy as fast as possible. (p.2)	See comment above. In addition, see the TFR Directions Paper for a discussion on current transmission planning frameworks including on providing a national focus for transmission planning.[132]

132 AEMC 2011, Transmission Frameworks Review, Directions Paper, 14 April 2011, Sydney, p.63.

Stakeholder	Issue	AEMC response
Grid Australia	Grid Australia noted that clause 5.5A.2 required a TNSP and study proponent to agree the scope, timing and funding of a SENE study before publishing a notice to seek information and data from relevant parties. However, Grid Australia noted that information gathered through this process may impact the scope, timing and cost. It considered it would be preferable to establish the initial scope and seek initial consultation from other interested parties to refine scope, timing and cost. (p.2)	The Commission notes this possibility would likely be considered during negotiations between the TNSP and the entity that funds the SENE design and costing study, as part of their broader negotiations on scope and timeframes. No change has been made to the Rule as Made.
Grid Australia	To provide further clarity, Grid Australia considered it would be useful to include a specific reference to SENE study information in clauses 5.5A.2(e)(3) and (4) inviting parties to register interest and consent to subsequent disclosure of information for the purposes of the SENE design and costing study. (p.2)	Noted. The Rule as Made has been amended to clarify these provisions.
Grid Australia	Grid Australia considered that given the disclosure arrangements and protections for confidential information obtained from another NSP already included in the draft Rule, it appeared unnecessary to include reference to clause 8.6 in clause 5.5A.6(a)(2). Grid Australia suggested this clause be removed. (p.2)	The Commission considers it is useful to reference clause 8.6 of the Rules as this clause refers to, among other things, permitted disclosures of information provided in confidence. No change has been made to the Rule as Made.

Stakeholder	Issue	AEMC response
Grid Australia	Grid Australia suggested that the defined terms: forecast generation scenario, Scale Efficient Network Extension. SENE Design and Costing Study, SENE Study Proponent and SENE study information be italicised through the Rule to avoid any possible ambiguity. (p.2)	These terms in the draft Rule were treated as consistent with other local definitions in the Rules. No change has been made to the Rule as Made.
Grid Australia	Grid Australia disagreed with the AEMC that the characterisation of the services provided to the second generator in the example set out in Appendix B of the draft determination, would be negotiated. Rather, Grid Australia considered that since a non-regulated service would be provided to the first generator, then services provided to subsequent generators would also be non-regulated services. (p.4)	The Commission has previously stated the classification of the services provided by a SENE would be determined on a case by case basis and, in practice, may be influenced by individual TNSP practices. On this basis, it is difficult to be prescriptive on the classification of services provided by SENEs. Appendix B of the draft Rule determination attempted to provide one example of the possible classification of SENEs services, drawing on the approach advocated by Grid Australia in its Categorisation of Transmission Services Guideline.[133]
Infigen	Infigen considered the final draft Rule did not address the problem SENEs were supposed to solve. It considered the most likely outcome would be that SENEs would not be constructed. (p.1)	Noted. See chapter 5 for further discussion on: (1) the issues and challenges raised during analysis of this Rule Change Request; and (2) the Commission's conclusions on the extent to which these challenges can be addressed under existing frameworks.
Infigen	Infigen considered that generators would be unlikely to fund a SENE. Infigen questioned why a generator would risk significant additional capital building an oversized extension which their competitors can utilise. It considered that where generators can afford to build a stand alone connection, they would almost certainly undertake that option. (p.1)	The Commission maintains its view that to the extent there are large scale economies to be gained from cooperation, generators should have strong incentives to coordinate in order to capture those gains.

133 Grid Australia, Categorisation of Transmission Services Guideline, Version 1.0, August 2010.

Stakeholder	Issue	AEMC response
Infigen	Infigen considered that NSPs would be unlikely to fund a SENE. Infigen questioned why an NSP would spend its capital on an unregulated asset likely to have similar returns to their regulated assets which have a risk-free guaranteed concern. (p.2)	The Commission maintains the view that there is some scope for NSPs to fund additional capacity where there is clear future demand, and earn a return on capital that is commensurate with the risk taken.
Infigen	Infigen also considered that third party companies with no financial interest or expertise in generation or transmission, would be even less likely to invest in constructing a SENE. (p.2)	The Commission maintains its view that a SENE may be funded by any entity that considers the opportunity for capturing scale economies and earning a risk-adjusted return outweighs the risk of anticipated generation not materialising.
Infigen	Infigen considered one could argue that the Consultation and Options Papers might as well not have been circulated given the draft Rule takes a different direction from the previous consultations. Infigen considered this was not appropriate. (p.3)	The Commission notes that it is through undertaking extensive analysis, informed by consultation with stakeholders, that the Commission has been able to determine: (1) the best way to address the issues identified by the Rule Change Request; and (2) to ensure that any changes to the existing framework are both proportionate to the problems identified, and will or are likely to contribute to the achievement of the NEO. See section 1.9 for further discussion on this issue.

Stakeholder	Issue	AEMC response
International Power	International Power noted that aspects of the current Rules on which the draft Rule would rely are matters that in the context of the TFR have been widely criticised as insufficiently defined and unsatisfactory. Therefore, International Power suggested that the Commission not complete its consideration of the Rule until the TFR reached conclusions on the related matters. (p.1)	The Commission acknowledges that some of the issues raised during consideration of the Rule Change Request are currently being considered under the TFR. However, the Commission considers that the Rule as Made will, or is likely to, contribute to the achievement of the NEO and, on this basis, has determined to make a Rule.
International Power	International Power suggested that the Commission investigate whether the opportunities contemplated in the draft Rule are available equally to Victorian generators as to other generators. It noted that the proposal that generators may fund an extension raised particular issues for Victorian generators who are subject to a legislative restriction that they may not own transmission assets. (p.1)	The Commission does not consider that Part 3 of the Electricity Industry Act 2000 (Victoria), which relates to separation of generation, transmission and distribution sectors, would prevent a licensed generator in Victoria from funding a SENE provided that the funding of the SENE does not result in the generator holding a "controlling interest"[134] or a "substantial interest"[135] in the TNSP and at least one more licensee.
International Power	International Power suggested that if the Commission considered that risk should not be borne by customers, it should also conclude that risk should be not be borne by taxpayers (this may be the outcome if SENEs are funded by government). (p.2)	The Commission considers this is a policy decision that would need to be made by governments. For the avoidance of doubt, the Commission considers that consumers should not bear the risk of stranded assets associated with excess transmission capacity in advance of future generator connections as the Commission considers such an arrangement is unlikely to contribute to the achievement of the NEO. See chapter 6 for further discussion on this issue.

134 That is, holding more than 20% of the voting rights in the relevant TNSP or dominating or controlling the TNSP, its management or activities.

135 That is, holding more than 5% of the voting rights in the relevant TNSP.

Stakeholder	Issue	AEMC response
International Power	International Power suggested the Commission consider the question of consistent treatment of all questions of scale-efficient design. It noted that network development for reliability of supply or market-benefits uses the RIT-T and option value. However, in the case of SENEs, the RIT-T would not apply. (p.2)	The Commission recognises that there may be some scope for TNSPs to apply the RIT-T to assess whether building incremental capacity in anticipation of future generator connections may be efficient. A TNSP could consider whether the services provided might meet the definition of a prescribed transmission services and so be funded by customers. In the context of SENEs, the Commission maintains the view that a market-based approach is more appropriate. See chapter 5 for further discussion on this issue.
International Power	International Power considered that arrangements for any SENE should be made to contemplate possibility that a SENE might later become part of the meshed network. (p.2)	The Commission notes that commercial agreements relating to the funding of, or connection to, a SENE should contemplate that the nature of the services provided by the SENE assets may change over time.
International Power	International Power noted that the draft Rule contemplates the possibility that a party funding a SENE (including a generator) may become a TNSP. It noted that under Chapter 5 of the NER, this party would then be responsible for responding to any generator seeking connection to that part of the network. International Power considered that this possibility could create a situation where one generator had extensive power to set conditions for the connection of a competing generator. International Power considered the Rules should be modified to prevent this situation or else provide sufficient regulation to ensure the intention of open access would be realised. (p.2)	Any party registered with AEMO as a TNSP is required to grant access in accordance with the Rules. Note that jurisdictional electricity legislation may limit cross ownership between generators and TNSPs

Stakeholder	Issue	AEMC response
NGF	The NGF wondered if the absence of proprietary rights for the funder of a study may deter an entity from funding SENE studies in some circumstances. (p.2)	The Commission considers that a SENE study proponent should have an interest in making public the results of the SENE design and costing study, as doing so will enable generators and other market participants to make more informed, and hence more efficient, commercial decisions on whether to fund a SENE. In addition, the Commission notes that the Rule as Made does not prevent a private person commissioning a private study.
NGF	The NGF considered it was unclear who would have final control over the dimensions and design features of a SENE. The NGF noted that it would be supportive of the final design criteria being defined by the entity funding the SENE as opposed to the TNSP responsible for building the SENE (p.3).	It is envisaged that the design of the SENE would be the subject of negotiation between the TNSP and the entity funding the SENE based on, amongst other things, applications to connect to the SENE and forecast generation scenarios.
NGF	The NGF noted it was not convinced that the revenue recovery and ownership arrangements would incentivise construction of SENEs. The NGF considered that, given the lack of control over any overbuild of SENE assets by a connecting generator and the need to register as a TNSP, the incentive to pursue merchant transmission investment had been lost. (p.3)	The Commission intends to consider issues around firm financial access and property rights holistically as part of the TFR.

Stakeholder	Issue	AEMC response
NGF	The NGF considered the lack of clarity around the process for connecting to a SENE was indicative of the wider problems associated with the connections methodology and arrangements in the Rules. The NGF considered this issue required clarification and resolution during the TFR. (p.4)	Noted.
NGF	The NGF considered that, given the draft Rule was wholly reliant on the current arrangements for negotiation and provision of services between TNSPs and market participants, it would suffer from the existing limitations of those arrangements and problems associated with dealing with a monopolist. The NGF held some reservations that the negotiation between a SENE funder and a TNSP may be an impediment to actual funding progressing. (p.4)	In the TFR Directions Paper, the Commission indicated its intention to consider further issues raised by stakeholders in respect of the negotiation of connections. The Commission noted that consideration of this issue may highlight the difficulties faced by generators and users in negotiating connection services with monopoly service providers, in order to identify possible solutions that may optimise generator and use connection outcomes.[136]

136 AEMC 2011, Transmission Frameworks Review, Directions Paper, 14 April 2011, p.89.

Stakeholder	Issue	AEMC response
Origin Energy	Origin expressed concern that the draft Rule did not address the problems identified in the CCR and essentially maintained the status quo. Origin considered that this outcome suggests that the AEMC, contrary to its earlier conclusions, now considers there are no issues associated with the connection of generation clusters. (p.2)	The Commission does not consider that sufficient evidence has been provided to suggest that inefficiencies are likely to occur under existing arrangements to a sufficient degree to warrant extensive regulatory intervention. As noted in chapter 5, the Commission is of the view that while some change is warranted, there is some scope within existing frameworks to take advantage of the economies of scale available from efficiently coordinating the connection of clusters of generation in the same geographic area. In addition, having carefully considered the arguments and evidence put forward in submissions and undertaking comprehensive analysis, the Commission was not satisfied that the proposed Rule was likely to contribute to the achievement of the NEO.
Origin Energy	Origin considered the publication of a study outlining the cost savings associated with a coordinated connection would not be sufficient to facilitate coordinated connection. Origin reiterated its view that the main issue related to potential projects having varying timetables. (p.3)	As noted in Chapter 5, the Commission recognises that there are challenges associated with coordinating multiple generators to capture potentially significant scale economies, including uncertainties around timing of investment. However, the Commission maintains its view that if the savings are significant, then it would expect market participants in a competitive market to develop innovative solutions to capture those gains.
Origin Energy	Origin considered that the AEMC had taken a view that the complete avoidance of stranding risk was by default an efficient market outcome. Origin argued that in many instances, if transmission assets are being built minus some level of stranding risk then this is an indicator that these assets have not been efficiently sized. (p.2)	The Commission considers that efficient outcomes are likely to occur where risk is allocated efficiently. The Commission considers this will occur where (1) where risk is managed by the entity best able to do so; and (2) risk is borne by the entity responsible for making the investment decision. See chapter 6 for further discussion on this issue.

Stakeholder	Issue	AEMC response
Origin Energy	Origin noted that risk in relation to over-sizing already occurs and is managed by the application of the RIT-T and oversight by AER. It considered there was no reason why the RIT-T could not be applied to the connection of generation clusters. That said, Origin recognised that the RIT-T would be unlikely to be suitable for this purpose. It therefore considered that development of an appropriate cost benefit analysis should be a key focus of this consultation. (pp.3-4)	The Commission recognises that there may be some scope for TNSPs to apply the RIT-T to assess whether building incremental capacity in anticipation of future generator connections may be efficient. A TNSP could consider whether the services provided might meet the definition of a prescribed transmission service and so be funded by customers. In the context of SENEs, the Commission maintains the view that a market-based approach is more appropriate. See chapter 5 for further discussion on this issue.
Origin Energy	Origin considered the draft Rule would be unlikely to assist in overcoming the first mover disadvantage and that under the current connections framework, there would always be a greater incentive to be a subsequent as opposed to first mover. (p.4)	The Commission notes that, in publishing a SENE design and costing study, additional information is provided to the market on potential opportunities for capturing scale economies through coordinated connections. In this way, the Commission notes that the Rule as Made should broaden the possible funding outcomes, thereby reducing the burden on first generators to have to fund excess capacity themselves. In addition, where an entity chooses to fund a SENE, all connecting generators would be required to individually negotiate a charge with the TNSP. To the extent that the first connecting generator is able to negotiate a charge that is lower than its standalone cost of connection, the opportunities for later generators to free-ride on efforts of first movers and connect as a substantially lower cost are reduced. See chapter 5 for further discussion on this issue.
Origin Energy	Origin considered that the AEMC's point that a government could fund a SENE was not consistent with the AEMC's desire to encourage market driven outcomes. Origin noted that such an outcome could expose customers to the risk of stranding without safety net or AER oversight of a CBA. (p.4)	The Commission considers this would be a policy decision that would need to be made by governments.

Stakeholder	Issue	AEMC response
Origin Energy	Origin disagreed that the draft Rule would provide a change that was proportionate to the identified issues. It was concerned that the AEMC had erred on the side of being too simplistic in its approach and as such would run the risk of not addressing the underlying problem. (p.5)	Noted.
Origin Energy	Origin considered the content of draft Rule was not reflective of the time and resource intensive nature of the consultation process. (p.5)	The Commission considers the Rule as Made reflects the change to the existing framework that the Commission considers is appropriate based on its extensive consultation and analysis of the issues identified in the Rule Change Request. As noted in section 1.9, it is through undertaking extensive analysis, informed by consultation with stakeholders, that the Commission has been able to determine: (1) the best way to address the issues identified by the Rule Change Request; and (2) to ensure that any changes to the existing framework are both proportionate to the problems identified, and will or are likely to contribute to the achievement of the NEO.
Origin Energy	In the context of AEMO's hub proposal, Origin considered it is becoming increasing clear that connection of clusters of generators presented some challenges for current framework. Origin considered AEMO's work emphasised the need for a cohesive national approach to resolving these issues as opposed to jurisdictional TNSPs devising their own sets of Rules. (p.6)	Noted. In the TFR Directions Paper, the Commission noted that AEMO, in collaboration with industry participants in Victoria, intends to pursue its own assessment of the current connection arrangements in Victoria, with a view to identifying improvements to the connection process. The Commission noted that it will consider the outcomes of the working group in its consideration of Victorian connection issues under its review.[137]

137 AEMC 2011, Transmission Frameworks Review, Directions Paper, 14 April 2011, Sydney, p.93.

Stakeholder	Issue	AEMC response
Pacific Hydro	Pacific Hydro considered the draft Rule failed to meet key elements of the MCE's proposed Rule and potentially provided adverse (higher cost) outcomes for consumers. Pacific Hydro considered the draft Rule failed to meet the NEO and should not be pursued by the AEMC. (p.1)	Noted. See chapter 3 for further discussion on the Commission's assessment of the proposed Rule and alternative solutions (including the draft Rule) against the NEO.
Pacific Hydro	Pacific Hydro considered the draft Rule would further ensure that the Rules were weighted to the advantage of the TNSP which would: potentially enhance anti-competitive behaviour; further preclude new entrants from entering the market; and deliver sup-optimal outcomes and arrangements for generators and consumers. (p.2)	Noted. In the TFR Directions Paper, the Commission indicated its intention to consider further issues raised by stakeholders in respect of the negotiation of connections. The Commission noted that consideration of this issue may highlight the difficulties faced by generators and users in negotiating connection services with monopoly service providers, in order to identify possible solutions that may optimise generator and use connection outcomes.[138]
Pacific Hydro	Pacific Hydro was of the view that while there continued to be no mention of renewable energy or the delivery of the 20 per cent RET in the NEO, the market impetus for development of SENEs would likely falter. In addition, Pacific Hydro considered that without change to the way network development was guided by the Rules, renewable energy would continue to be disadvantaged in network negotiation and development. (p.2)	Noted.
Pacific Hydro	Pacific Hydro noted that in creating this Rule, the AEMC was assuming the TFR would fill out the remaining detail. In relying on the TFR, Pacific Hydro expressed concern that the process would *"again move away from the MCE's clear directions to improve framework methods for renewable generation connection."* (p.2)	The AEMC is required to have regard to the NEO in every review it undertakes and every change to the NER that it assesses. The NEO will therefore form the overarching principle for the TFR assessment framework.

138 AEMC 2011, Transmission Frameworks Review, Directions Paper, 14 April 2011, p.89.

Stakeholder	Issue	AEMC response
Private Individual	Clause 5.5A.2(b): in situations where multiple TNSPs are conducting SENE design and costing studies in the same geographic area, this individual considered there would be advantages in considering both studies together. (p.1)	The Commission considers that, to the extent there are advantages in considering the studies together, the SENE study proponents may wish to enter into discussions in respect of combining the respective studies. This is a matter for the funding parties and as such, no change has been made to the Rule as Made.
Private Individual	Clause 5.5A.2(e): the possibility exists that once a notice has been published, another party may wish to join a SENE. This individual considered that additional efficiencies in scale may be achieved by allowing the scope of the study to be enlarged at that stage, recognising that doing so could delay the original study. (p.2)	The Commission considers that allowing flexibility in the scope and timing of the study would likely be considered during negotiations between the TNSP and the entity that funds the study as part of their broader negotiation on scope and timeframe. No change has been made to the Rule as Made.
Private Individual	Clause 5.5A.3(b)(6): questioned whether the word “required” in this clause is appropriate. The individual considered the draft Rule should at least require TNSPs to identify both the limitations of the existing transmission network and the approximate cost of increasing transfer capacity of the shared network to accommodate the SENE without increasing network congestion. (p.2)	The Commission agrees that the use of the word “required” is not appropriate in this instance. The Commission has amended the Rule as Made to ensure this provision is consistent with the intent, that is, to ensure that TNSPs consider SENEs in a manner consistent with their network planning processes, including assessing future transmission needs.
Private Individual	Clause 5.5A.4: the individual noted that NSPs have obligations under the Rules regarding the use and disclosure of confidential information (clause 8.2 and 5.3.8). Suggested it may be preferable to reword this clause consistent with clause 5.5A(b). (pp.2-3)	Noted. However, no change has been made to the Rule as Made.

Stakeholder	Issue	AEMC response
Private Individual	Clause 5.5A.5: In the interests of market transparency and to act as guide to future proponents, the individual suggested that the actual cost of the study be published in the SENE report. (p.3)	The Commission considers that the cost of the SENE design and costing study should be treated as confidential. The scope and timing, and hence the cost, of the SENE study is a matter of commercial negotiation between the TNSP and SENE study proponent. In addition, the Commission notes that the cost is likely to vary on a case by case basis depending on the scope that is negotiated. The Commission therefore questions how useful a guide the cost would be to future SENE study proponents.
Renewables SA (on behalf of the Green Grid Forum)	Renewables SA considered the draft determination prejudged the issue of acceptable and unacceptable risk without the benefit of quantification or qualification. It considered the conclusion that economies of scale offer the principle benefit to consumers over-simplifies the analysis of risk. (p.2)	The Commission has previously noted that it is difficult to quantitatively assess the likely benefits and costs of a SENE as efficiency gains will depend on whether and when the spare capacity is utilised, which cannot be known ex ante. In addition, the costs and potential magnitude of efficiency gains will depend on several factors including volume and number of potential generators, geographical spread of generators in a cluster and distance of the cluster from the shared network. For the avoidance of doubt, the Commission considers risk to be "unacceptable" when it is: (1) deliberately allocated to parties who have no control over that allocation and who have no ability to manage that risk and (2) where the offsetting benefits from bearing that risk are unclear.

Stakeholder	Issue	AEMC response
Renewables SA (on behalf of the Green Grid Forum)	Renewables SA considered that, at present, analysis of the industry is seriously compromised by modellers routinely omitting opportunity cost of powering large-scale wind farms developed in the areas most prospective for wind but which cannot be connected due to the absence of transmission facilities. It considered the costs of this risk to the community came in two forms: cost of market failure preventing exploitation of the best wind resources; and risk of leaving consumers exposed to land use planning interventions which drive up wind farm costs. (p.2)	Noted.
Renewables SA (on behalf of the Green Grid Forum)	Renewables SA considered the effect of AEMC's decision was to remove the ability of consumers to underwrite SENEs and to thereby oblige those consumers to underwrite the diseconomies imposed by (1) use of less optimal sites and (2) by land use planning interventions. (p.3)	Noted.
Renewables SA (on behalf of the Green Grid Forum)	Renewables SA considered the draft Rule did not address the potential for market failure resulting from developers with different timeframes, commercial considerations and financing strategies needing to act in concert to realise economies of scale. (p.3)	As noted in Chapter 5, the Commission recognises that there are challenges associated with coordinating multiple generators to capture potentially significant scale economies, including uncertainties around timing of investment. However, the Commission maintains its view that if the savings are significant, then it would expect market participants in a competitive market to develop innovative solutions to capture those gains.
Renewables SA (on behalf of the Green Grid Forum)	Renewables SA considered the draft Rule proposed a set of arrangements that rely on a series of anticompetitive mechanisms for SENE investigation and construction. (pp.2-3)	The Rule as Made requires TNSPs to undertake SENE design and costing studies in certain circumstances. However, the Rule does not prevent any entity commissioning a private study.

Stakeholder	Issue	AEMC response
SA DTEI	The SA DTEI noted it was disappointed that the draft Rule did not overcome weaknesses in the connections framework identified by the AEMC in the CCR. In particular, the lack of incentives on TNSPs to build network connections to an efficient scale to accommodate anticipated future connections. (p.1)	As noted in Chapter 5, the Commission considers there is some scope for NSPs or other entities to fund additional capacity where there is clear future demand, and earn a return on capital that is commensurate with the risk taken.
SA DTEI	The SA DTEI considered the draft Rule assumes an investor would be forthcoming to fund a SENE where a SENE design and costing study reveals there are potential efficiency gains. However, the SA DTEI noted its disappointment that this assumption was not tested with stakeholders, particularly in an environment where project finance is difficult to secure. (p.1)	To clarify, the draft Rule does not assume an investor would be forthcoming to fund a SENE. Rather, the draft Rule allows for information to be provided on a potential SENEs which may, or may not, be attractive to potential funders. In addition, the Commission notes that stakeholders were invited to provide views on the draft Rule during consultation on the draft Rule determination. Having considered the arguments and evidence put forward in submissions, the Commission maintains its view that a SENE may be funded by any entity that considers the opportunity for capturing scale economies and earning a risk-adjusted return outweighs the risk of anticipated generation not materialising.
SA DTEI	The SA DTEI agreed that customers should not bear the full risk of SENEs. It continued to advocate for a Rule change which balanced the risk between market participants and consumers by including a minimum threshold level and a requirement for incremental costs to be met by customers until such time that all generators materialise. (p.2)	The Commission maintains its view that despite the various risk management mechanisms included in the proposed Rule and five options, these frameworks would continue to expose consumers to unacceptable amount of risk. For the avoidance of doubt, the Commission considers risk to be "unacceptable" when it is: (1) deliberately allocated to parties who have no control over that allocation and who have no ability to manage that risk and (2) where the offsetting benefits from bearing that risk are unclear.

Stakeholder	Issue	AEMC response
SA DTEI	The SA DTEI considered that in the absence of the AEMC making a Rule which would result in the construction of a SENE, the Commission should consider in the TFR whether existing market frameworks incentivise and facilitate efficient network extensions where the transmission network is privately owned and operated. (p.2)	Noted.
TRUenergy	TRUenergy considered that the draft Rule did not mitigate asset stranding risk for TNSPs. As such, it considered SENEs would not be built and renewable generators would continue to inefficiently duplicate smaller stand alone assets in order to connect. TRUenergy considered this would have adverse impacts on energy and REC pricing. (p.3)	As noted in Chapter 5, the Commission considers there is some scope for NSPs to fund additional capacity where there is clear future demand, and earn a return on capital that is commensurate with the risk taken. In addition, the Commission notes that possible funding entities would not be limited to TNSPs and could also include a generator, a government and/or another third party. See chapter 5 for further discussion on this matter.
TRUenergy	TRUenergy considered the idea that a generator would underwrite asset stranding risk in order to secure a connection cost below SAC adds a disproportional business risk that a rational entity would most likely avoid in most cases. (pp.3-4)	Noted. The Commission notes that the Rule as Made does not require any entity to take on risk. Instead, it allows those parties who are best able and willing to manage the risk to make their own trade-off between the potential risks and the potential rewards from over-sizing capacity in advance of future generator connections. The Commission recognises that projects which carry an unreasonably high level of risk may not receive support from potential investors and therefore may not be built. In respect of a generator choosing to underwrite the risk of asset stranding, the Commission maintains its view that to the extent there are large scale economies to be gained from cooperation, generators should have strong incentives to coordinate in order to capture those gains.

Stakeholder	Issue	AEMC response
TRUenergy	TRUenergy considered that since the draft determination was a significant departure from the direction indicated in the Options Paper, the idea of regulatory predictability had not been met. (p.5)	The Commission acknowledges that the draft Rule differed significantly from the proposed Rule and five options presented in the Options Paper. However, the Commission notes that, in line with the standard Rule making process, there is always the option to not make a Rule where the Commission does not consider that a proposed Rule will, or is likely to, contribute to the achievement of the NEO. Having carefully considered the arguments and evidence put forward in submissions and undertaking comprehensive analysis, the Commission was not satisfied that the proposed Rule was likely to contribute to the achievement of the NEO.
TRUenergy	TRUenergy considered the draft Rule raised some interesting questions regarding the classification of a SENE as a transmission service and its treatment as part of the shared network. TRUenergy submitted that the idea that a SENE would be treated as a negotiated service or a non-regulated service which formed part of the shared network represented a new idea which the AEMC needed to consider further. (pp.5-6)	Noted. However, the Commission reiterates that the classification of the services provided by a SENE would be determined on a case by case basis and, in practice, may be influenced by individual TNSP practices. On this basis, it is difficult to be prescriptive on the classification of services provided by SENEs. To the extent that the service classification more generally requires further consideration, the Commission considers it is appropriate to do this holistically in the context of the TFR.
TRUenergy	TRUenergy remained disappointed that a party who chooses to fund a SENE would not receive some form of property right in exchange for that investment. TRUenergy noted that it was not convinced that SENE assets would form part of the shared network and would therefore be subject to open access. (p.6)	The Commission intends to consider issues around firm financial access and property rights holistically as part of the TFR.

Stakeholder	Issue	AEMC response
Vestas	Vestas considered that Rule change process had been a waste of time and money. It noted that the MCE was the primary policy-making body in the NEM, and that if the AEMC considered an MCE Rule Change Request could not be accommodated, the AEMC should communicate this to the MCE and halt the Rule change process. (pp.2-3)	See section 1.9 for further discussion on this matter.
Vestas	Vestas considered the draft Rule would be unlikely to ever be used by generators in the NEM given it placed more commercial risk than ever before on generators while making SENEs relatively commercially unattractive for TNSPs. (p.3)	The Commission maintains its view that a SENE may be funded by any entity, including a generator or TNSP, that considers the opportunity for capturing scale economies and earning a risk-adjusted return outweighs the risk of anticipated generation not materialising. See chapter 5 for further discussion on this issue.

B Summary of issues raised in submissions to the Consultation and Options Papers

The table below provides a summary of the issues raised by stakeholders in their submissions and supplementary submissions to the Consultation Paper (CP) and Options Paper (OP). The table sets out the Commission's response to each of the issues and reflects the Commission's view at the time of making the draft Rule determination.

The submissions and supplementary submissions received to both documents are available on the AEMC website at www.aemc.gov.au.

For ease of reference, relevant page numbers from submissions have been included in the table.

Stakeholder	Issue	AEMC Response
AEMO	Raised a number of concerns in respect of AEMO's SENE identification role under the proposed Rule. (CP p.5)	The draft Rule does not require AEMO to identify potential "SENE zones". However, the Commission considers there is merit in AEMO continuing to identify clusters of generation in its NTNDP, as it did in the 2010 NTNDP.
AEMO	Raised a number of concerns in respect of AEMO's role assessing NSP generation forecasts under the proposed Rule. (CP p.6)	The draft Rule does not require AEMO to assess NSP generation forecasts.
AEMO	Supported a staged approach to developing SENEs under the proposed Rule. However, recognised that the cost implications of such a development would require consideration. (CP p.7)	The draft Rule does not preclude the staged development of a SENE. While the scope of the SENE design and costing study would be subject to negotiation between the TNSP and the person who requested the study, any opportunities for staged or modular development should be considered.
AEMO	Considered there may be some benefit in making the construction of SENE assets subject to competitive tender. (OP p.4)	The draft Rule does not address the arrangements for the construction of a SENE and does not preclude the construction of the SENE being subject to competitive tender.

Stakeholder	Issue	AEMC Response
AEMO	Considered the final version of the proposed Rule would need to include provisions clarifying which SENE functions would be performed by AEMO and which by the other Victorian NSPs. (CP p.9)	The draft Rule sets out a new requirement for all TNSPs, where requested and funded by another entity, to undertake a SENE design and costing study. AEMO, in its capacity as a TNSP in Victoria, would be required to undertake such studies where requested. This is consistent with AEMO's declared network functions under section 50C of the NEL.
AEMO	Considered that the SENE options as set out in the Options Paper should be assessed in the context of the broader network access issues being considered in the TFR. (OP p.1)	The Commission considers that the issue of access is best considered holistically as part of the TFR. The draft Rule does not introduce new arrangements for access.
AEMO	Considered there may be benefit in clarifying the third party access regime that applies to transmission connection assets. It considered doing so may facilitate alternative development opportunities to SENEs, by allocating risks to parties who are potentially better able to manage them. (OP p.2)	The Commission considers that the broader issues around access and connections raised in the context of the Rule Change Request are best considered holistically as part of the TFR.
AEMO	Considered the use of an economic test would provide worthwhile assurance that any costs imposed on customers would provide overall benefits. However, considered the application of a full RIT-T would be difficult for TNSPs to apply and ways to simplify the test should be considered. (OP p.4)	The draft Rule allocates risks and costs to market participants and investors rather than to consumers. The draft Rule therefore does not include an explicit efficiency test.
AEMO	Considered there are problems with the current arrangements stemming primarily from the bilateral negotiation process. (OP p.2)	The Commission considers that the broader issues around connection are best considered holistically as part of the TFR.
AER	In respect of the proposed compensation arrangements, made a number of comments regarding the preparation and publication of data on the marginal costs of generation facilities, proposed under the Rule Change Request. (CP p.5)	The Commission considers that issues around firm financial access are best considered holistically as part of the TFR.

Stakeholder	Issue	AEMC Response
AER	Considered AEMO's role under the proposed Rule should be expanded to provide it with the discretion to advise the AER on any aspects on the relevant SENE connection offer and planning report. (CP p.4)	This issue is not relevant to the draft Rule which does not propose that AEMO or the AER have regulatory oversight roles in respect of SENE planning.
AER	Proposed that the AEMC consider giving it the discretion to include an economic efficiency test in the SENE planning guidelines which could be used by NSPs to determine whether material scale efficiencies exist and the best options for capturing those benefits. (CP p.4)	This issue is not relevant to the draft Rule which does not require NSPs to undertake preliminary planning or require the AER to produce planning guidelines.
AGL	Considers a market failure has not been identified (CP p.2) and that there are no barriers to generators entering cost-sharing arrangements. (OP p.1)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request.
AGL	Considers customers should not bear the stranded asset risk. Instead, market participants should bear these risks, or government should invest if they consider there is a market failure. (CP pp.1,3)	The Commission agrees that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion.
AGL	Concerned that the proposed Rule may not be consistent with the NEO. (CP p.4)	The specific issues raised by AGL are less relevant in the context of the draft Rule. See chapter 2 of the draft Rule determination for a discussion of why the Commission considers that the proposed Rule meets the NEO.
AGL	Consider there are insufficient checks and balances under the proposed Rule. Proposed some specific risk management mechanisms in the context of the proposed Rule. (CP pp.3-5)	This is not relevant to the draft Rule where consumers are not exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation.

Stakeholder	Issue	AEMC Response
AGL	Any further deliberation on the SENE concept should be encompassed in the TFR to ensure holistic review. (CP p.5; OP p.4)	The Commission considers the SENEs concept is sufficiently separable to make a draft Rule on the SENEs Rule change. However, the AEMC agrees that there are some issues, such as access and broader connection issues, that are better considered holistically as part of the TFR.
AGL	Considers that, of the options presented, Option 4 is the "least worst" option because it best aligns risk exposure. (OP pp.1-2)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion.
AGL	Considers applying the RIT-T or a SENEs test is problematic. (OP pp.5-6)	The draft Rule does not include an explicit efficiency test. The "investment test" is privately undertaken by entities that are willing and able to bear the risk of funding a SENE. Application of an economic test is less relevant where consumers are not exposed to asset stranding risk.
AGL	Raised concerns regarding the central planning element of the proposed Rule. (OP p.1)	The draft Rule does not require non-market facing entities to take risks on generator investment decisions or for consumers to bear these risks.
AGL	Modelling undertaken by ROAM Consulting for the Clean Energy Council leads to the conclusion that the economies of scale in transmission connection and extension assets is likely to be small. (OP p.3)	Noted. Nevertheless, the Commission considers there is some scope for change to the existing frameworks to promote more efficient connection outcomes.
Alinta	Considers the proposed Rule does not meet the NEO because it increases transmission costs to customers and negatively impacts reliability, safety and security of the system. (CP p.2; OP p.6)	The Commission considers that the draft Rule is likely to promotes the NEO and is likely to better promote the NEO than the proposed Rule. See chapter 2 of the draft Rule determination for further discussion.

Stakeholder	Issue	AEMC Response
Alinta	Doesn't support average cost charging. (OP p.11)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Alinta	Considers access arrangements under the proposed Rule are appropriate. (OP pp.11-13)	The Commission considers that the issue of access is best considered holistically as part of the TFR.
Alinta	Expressed concern at the limited quantitative analysis. (OP p.2)	It is difficult to quantitatively assess the likely benefits and costs of a SENE as efficiency gains will depend on whether the spare capacity is utilised, which cannot be known *ex ante*. In addition, the costs and potential magnitude of efficiency gains will depend on several factors including volume and number of potential generators, geographical spread of generators in a cluster and distance of the cluster from the shared network.
Alinta	Considers the Commission must demonstrate that connecting remote renewable generators will provide greater efficiency than if they were not connected. (OP p.7)	The Commission is bound to make Rules that it is satisfied will or are likely to contribute to the achievement of the NEO. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes within the legislative and policy environment within which the market operates. The RET is likely to increase investment in renewable energy. The Commission's role is to put in place frameworks that promote efficient outcomes in this context.
Alinta	Considers the Rule change would be better assessed following completion of the TFR. (OP p.5)	The Commission considers the SENEs concept is sufficiently separable to make a draft Rule on the SENEs Rule change. However, the Commission agrees that there are some issues, such as access and broader issues around connections, that are better considered holistically as part of the TFR.
Citipower/Powercor	Raised a number of issues in respect of the proposed capacity rights and compensation arrangements under the proposed Rule. (CP p.4)	The Commission considers that issues around firm financial access are best considered holistically as part of the TFR.

Stakeholder	Issue	AEMC Response
Citipower/Powercor	Considered the proposed Rule was not clear on how a distribution SENE provider would be able to recover costs from customers. (CP p.6)	The draft Rule does not apply to distribution businesses.
Citipower/Powercor	Key concern was that any SENE framework must be able to ensure adequate and workable cost recovery arrangements in order for NSPs to recover their efficient costs. (OP pp.3-4)	The draft Rule does not address funding of the SENE. There are no limits on investment by the TNSP and no requirements for a TNSP to fund a SENE.
Citipower/Powercor	Considered adopting the proposed RIT-D would ensure consistency with the existing framework. However, considered timeframes for any test would need to take into account the difficulties associated with assessing SENE options, including any delays by regulatory authorities. (OP p.4)	The draft Rule does not include an explicit efficiency test. The "investment test" is undertaken privately by entities that are willing and able to bear the risk of funding a SENE. Application of an economic test is less relevant where customers are not exposed the asset stranding risk associated with investing in transmission for the purpose of connecting future generation.
Citipower/Powercor	In respect of distribution, held some concerns in respect of service classification. Considered the Commission should be mindful that the AER is ultimately the authority who determines service classification and therefore cost recovery, from DNSP's customer base. (OP p.4)	The draft Rule does not apply to distribution. Further, the draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing frameworks.
Citipower/Powercor	Did not consider that a prescriptive regime for access was required given that access is sufficiently addressed under chapter 5 of the Rules and under the Victorian Jurisdictional arrangements. (OP p.5)	The Commission considers that the issue of access is best considered holistically as part of the TFR.
Clean Energy Council	Considered the NEO requires amendment to consider renewable objectives consistent with the legislated objectives of the Australian Government. (OP p.2)	This is outside the scope of the AEMC's role.
Clean Energy Council	Considered several aspects of the proposed Rule should be reviewed to ensure NSPs have appropriate incentives to deliver SENE projects on time and budget. (CP p.4)	Current arrangements for connections will apply. Further, TNSP incentives in the context of connections will be addressed as part of the TFR.

Stakeholder	Issue	AEMC Response
Clean Energy Council	Suggested an option to allow generators to lock in a long term tariff is needed under the proposed Rule in order to align tariff costings with generator financing timeframes. (CP p.5)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Clean Energy Council	Considered the trigger for considering a SENE should be either a generator connection enquiry or AEMO identifying SENE zones. It considered both were needed to holistically capture options for renewable energy generation. (OP p.4)	Under the draft Rule, consideration of a SENE would be triggered by a generator, or other entity, requesting that a TNSP undertake a study to examine the potential scale economies from constructing a SENE in a particular geographic area.
Clean Energy Council	Considered the RIT-T requires further work if it is going to be used as the SENE investment test, particularly in respect of the requirement for the proponent to produce multiple options. (OP p.4)	The draft Rule does not include an explicit efficiency test. The "investment test" is privately undertaken by entities that are willing and able to bear the risk of funding a SENE. Application of an economic test is less relevant where consumers are not exposed to asset stranding risk.
Clean Energy Council	Supported defined access rights but considered these issues would best be addressed as part of the TFR. (OP p.5).	Agree that these issues are best considered as part of the TFR.
Clean Energy Council	Believed it was critical that SENE cost allocation ensures there is direct financial incentive to encourage the first generator to participate in establishing a SENE. Therefore supportive of the first generator facing proportional average cost. (OP p.5)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Clean Energy Council	Noted that the theory behind the SENE framework was to provide a regulatory framework to assist in unlocking the untapped renewable energy resources in remote areas of Australia and to bring low carbon energy to load centres. (OP p.2)	The Commission is bound to make Rules that it is satisfied will or are likely to contribute to the achievement of the NEO. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes within the legislative and policy environment within which the market operates. The Commission's role is to put in place frameworks that promote efficient outcomes in this context.

Stakeholder	Issue	AEMC Response
ENA	The ENA considered further work should be undertaken to explore whether there were less complex alternative solutions to the proposed Rule. It considered amending existing market arrangements would be a preferred solution. (CP p.1)	The Commission considers the draft Rule represents a less complex approach than the proposed Rule. Further, under the draft Rule consumers are not exposed to the asset stranding risk associated with investing in transmission for the purpose of connecting future generation.
Energex	Considered there may be value in generators facing some risk to improve reliability of information they provide to NSPs under the proposed Rule. (CP p.2)	The Commission considers that risk should be borne and managed by those best able and willing to do so. See chapter 6 of the draft Rule determination for further discussion on this issue.
Energex	Considered the AEMC should give further thought to the issues around DNSP cost recovery, and the classification of services provided by means of a SENE connected to a distribution network. (CP p.2)	The draft Rule does not apply to distribution businesses. Further, the draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.
EnergyAustralia	Concerned at the lack of evidence presented to suggest existing frameworks would result in higher electricity prices for customers than under the proposed Rule. Encouraged the AEMC to undertake modelling on this issue before considering changes to the Rules. (OP pp.1-2)	It is difficult to quantitatively assess the likely benefits and costs of a SENE as efficiency gains will depend on whether the spare capacity is utilised, which cannot be known *ex ante*. In addition, the costs and potential magnitude of efficiency gains will depend on several factors including volume and number of potential generators, geographical spread of generators in a cluster and distance of the cluster from the shared network.
EnergyAustralia	Considered that all market-led solutions should be exhausted before implementing a regulatory solution such as a SENE. (OP p.2)	The Commission considers that consumers should not be exposed to asset stranding risk, and that this risk is better borne and managed by market facing entities to promote efficient decision making. See chapters 6 and 7 of the draft Rule determination for further discussion.

Stakeholder	Issue	AEMC Response
EnergyAustralia	Considered the SENE framework would provide preferential treatment to generators located in SENE zones and would therefore be contrary to the principle of competitive neutrality. (OP p.3)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
EnergyAustralia	Considered there was a risk that the proposed SENE framework could result in perverse behaviour by generators by not penalising generators from walking away from a proposed connection after a SENE is built. (OP p.3)	Additional measures to help mitigate risk to consumers are not relevant to the draft Rule where market entities are responsible for managing their own risk. Any penalties would be agreed between the relevant parties during negotiations.
EnergyAustralia	Considered, if a SENE framework was to be pursued, AEMO should identify and rank SENE areas based on an economic assessment of the long term benefits to customers. (OP p.4)	The draft Rule does not require AEMO to identify potential "SENE zones". However, the Commission considers there is merit in AEMO continuing to identify clusters of generation in its NTNDP, as it did in the 2010 NTNDP.
EnergyAustralia	Considered, if a SENE framework was pursued, a SENE should be classified as providing standard control (prescribed) services. (OP p.4)	The draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.
EnergyAustralia	Held concerns in respect of the preliminary planning arrangements set out in the proposed Rule. For example, considered that DNSPs would not be best placed to forecast future generation and this role was better suited to AEMO. (CP p.24)	The draft Rule does not apply to distribution businesses. Further, the draft Rule does not require TNSPs to undertake preliminary planning prior to a request for a SENE study.
EnergyAustralia	Held a number of concerns regarding the compensation arrangements set out under the proposed Rule. In particular, considered the requirement for NSPs to administer the arrangements should be removed as NSPs have no current market involvement. (CP p.26)	The draft Rule does not prescribe arrangements for access to a SENE. These would be negotiated between generators and TNSPs as per the existing arrangements. The Commission considers that issues around firm financial access are best considered holistically as part of the TFR.

Stakeholder	Issue	AEMC Response
Ergon Energy	Considered that penalties should apply to potential SENE generators who delay or abandon a project under the proposed Rule. (CP p.3)	Any penalties would be agreed between the relevant parties during negotiations.
Ergon Energy	Considered there were a number of areas in respect of distribution which lacked clarity under the proposed Rule and five options. Also considered the draft Rule should be delayed until issues regarding distribution networks were satisfactorily analysed and resolved. (OP pp.2,3,4)	The draft Rule does not apply to distribution businesses.
Ergon Energy	Concerned that the preliminary planning requirements set out under the proposed Rule were potentially onerous on DNSPs. (CP p.4)	The draft Rule does not impose preliminary planning requirements prior to a request for a SENE study. Further, the draft Rule does not apply to distribution businesses.
Ergon Energy	Considered that the NEO would not be satisfied where forecast generation failed to transpire, particularly where SENE costs were borne by customers. (OP p.4)	By ensuring risk is allocated to those parties best able and willing to manage risk, the Commission considers the draft Rule is likely to promote more efficient investment decisions, consistent with the NEO. See chapters 2 and 6 of the draft Rule determination for further discussion.
esaa	Considered an alternative approach worth consideration was whether tax payers as opposed to electricity consumers should bear the costs associated with SENEs under the proposed Rule. (CP p.5)	The draft Rule seeks to facilitate a process under which risks and costs are allocated to market participants and/or investors rather than consumers. Under the draft Rule, a government may choose to fund a SENE. See chapters 2 and 6 of the draft Rule determination for a more complete discussion.
Geodynamics	Development of transmission solutions has long lead times. Planning, approvals and easement acquisition should begin at the earliest possible stage. (CP p.1)	This is an issue for state governments. TNSPs' rights and obligations regarding planning approvals and easement acquisitions are set out in jurisdictional electricity legislation.
Geodynamics	Agree that inefficient duplication of assets is likely to occur under existing frameworks and that a Rule change is required. (CP p.3)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion of this issue.

Stakeholder	Issue	AEMC Response
Geodynamics	Considered sufficient checks and balances were contained in the proposed Rule to minimise risk to customers. (CP p.4)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion of this issue.
Geodynamics	Commented on cost arrangements for the proposed Rule. (CP p.5)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Geodynamics	Does not support the proposed compensation for constrained utilisation and does not support the proposed agreed power transfer capability more generally on the basis that this is incompatible with the rest of the shared network. (CP p.6; OP p.6)	The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
Geodynamics	Commented on the connection of interruptible generation and load to the SENE under the proposed Rule. (CP pp.7-8)	This issue is not relevant to the draft Rule as these situations will be covered through commercial negotiations and existing Rules.
Geodynamics	Considers Option 1, of the options presented in the Options Paper, is the most appropriate. (OP p.1)	The Commission considers the risk allocation under Option 1 and the complexity of the arrangements limit the effectiveness of this option. See chapters 6 and 8 of the draft Rule determination for further discussion.
Geodynamics	Considers an explicit investment test adds an unnecessary level of regulatory burden. (OP pp.1-2)	The draft Rule does not contain a regulatory investment test.
Green Grid Forum	Consider the current frameworks do not effectively allow investors to coordinate to build efficiently sized transmission infrastructure. (OP p.1)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion of this issue.

Stakeholder	Issue	AEMC Response
Green Grid Forum	Is strongly supportive of the proposed SENE Rule. (OP p.2)	The Commission considers that the draft Rule is more likely to promote the NEO than the proposed Rule for the reasons discussed in the body of this report. In particular, the risk allocation arrangements under the draft Rule are likely to promote more efficient investment decisions.
Grid Australia	Supports commercially negotiated market-based solutions for the development of network extensions, where possible, and considers that these should not be inadvertently crowded out (CP p.1; OP p.3)	The Commission agrees that market participants and investors are better able to manage and bear the risk associated with asset stranding and therefore better equipped to make efficient investment decisions than an approach which allocates risk to consumers.
Grid Australia	Considers a first mover hurdle exists, and that some TNSPs have experienced a reluctance of individual connection applicants to tie their project delivery to third parties. (CP pp.7-8; OP pp.5-6)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for further discussion of this issue.
Grid Australia	Supports consideration of the use of the RIT-T where the extension is likely to have significant market benefits. (CP p.4)	The Commission considers there is scope for this to occur under existing frameworks. See chapter 5 of the draft Rule determination for further discussion.
Grid Australia	Concerned that the proposed Rule introduces a third category of regulated transmission service and that it may not be robust to future network developments. (CP p.10)	The draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.
Grid Australia	Consider the proposed Rule would face significant practical difficulties in Victoria. (CP p.11)	No longer relevant.

Stakeholder	Issue	AEMC Response
Grid Australia	Of the options presented, Grid Australia prefers a variant of Option 1. (OP p.4)	The Commission considers that the draft Rule is more likely to promote the NEO than an options that allocates risk to consumers for the reasons discussed in the body of this report. In particular, the risk allocation arrangements under the draft Rule are likely to promote more efficient investment decisions.
Grid Australia	Areas highlighted in the Options Paper as requiring clarification would be better considered as part of the TFR. (CP p.5; OP pp.6-7)	The Commission agrees that these issues are better considered holistically as part of the TFR.
Grid Australia	Mandating preliminary planning for all potential SENE zones is likely to have limited value. (OP p.11)	The draft Rule does not require preliminary planning on the part of TNSPs prior to a request for a SENE study.
Hydro Tasmania	Considers it remains unproven that SENEs are needed, but notes difficulties in relation to presenting evidence for the future. (OP p.3)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion of this issue.
Hydro Tasmania	Supports the use of financial access rights, including the preservation of rights in the event that SENEs become part of the shared network. (CP p.1; OP p.6)	The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
Hydro Tasmania	Made a number of comments on risk mitigation measures, such as use of a cost threshold, auctioning options and the way in which costs are apportioned between generators and customers under the proposed Rule and options. (CP pp.1,4; OP p.4)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. Risk mitigation measures are therefore less relevant under the draft Rule. See chapter 6 of the draft Rule determination for further details.
Hydro Tasmania	Commented on the variability of charging under the proposed Rule and options. (CP pp.1,4; OP p.7)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.

Stakeholder	Issue	AEMC Response
Hydro Tasmania	Considers the RIT-T is probably not the right tool to connect renewable generation quickly. (OP pp.3-4)	The draft Rule does not employ the RIT-T.
Hydro Tasmania	Considers all SENE services should be treated as prescribed services. (OP p.6)	The draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.
Hydro Tasmania	Considers high-level, fast-tracked environmental/planning approvals in relation to SENE developments should be considered. (CP pp.1,8)	This is an issue for state governments. TNSPs' rights and obligations regarding planning approvals and easement acquisitions are set out in jurisdictional electricity legislation.
Infigen	Consider existing rules do not adequately allow for scale efficient connections. (CP p.1; OP p.1)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion of this issue.
Infigen	Prefers a slight variation of Option 1. (OP p.3)	The Commission considers the risk allocation under Option 1 and the complexity of the arrangements limit the effectiveness of this option compared to the draft Rule. See chapters 6 and 8 of the draft Rule determination.
Infigen	Considers the proposed Rule contains sufficient checks and balances. Provides specific suggestions on risk mitigation measures. (CP pp.1,2,4; OP p.4)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further details.
Infigen	Provides specific comments/queries on the cost allocation and charging arrangements for the proposed Rule and options. (CP p.2; OP p.5)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Infigen	The RIT-T is slow and laborious and would not be appropriate for rapid roll-out of SENEs. (CP p.4; OP p.5)	The draft Rule does not employ the RIT-T.

Stakeholder	Issue	AEMC Response
Infigen	Provides specific comments on the connection of interruptible generation and load in the context of the proposed Rule. (CP pp.6-7)	This issue is not relevant to the draft Rule as these situations will be covered through commercial negotiations and existing Rules.
Infigen	Considers the Rule should maintain mandatory compensation arrangements consistent with the proposed Rule. (OP p.5)	The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
Integral Energy	Expressed concern that the Commission had not yet demonstrated a market failure with the current connection framework. Considered the new NTP arrangements and RIT-T may address the perceived risk and should be given sufficient time to operate. (OP p.1)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request.
Integral Energy	Considered clarification of circumstances where transmission investment may become economically regulated could address some of the disincentives faced by generators in respect of joint financing by generators. (OP p.1)	Noted. The Commission considers that broader issues around connection and access are best considered holistically as part of the TFR.
Integral Energy	Preferred that the terms and conditions of access to SENEs be kept consistent with the current shared network arrangements. Considered that mandatory compensation arrangements should not be introduced without first being considered in the context of the TFR. (OP p.2)	The Commission agrees. Under the draft Rule, arrangements for access to a SENE would be negotiated between generators and TNSPs as per the existing arrangements. The Commission considers that the broader issues around access are best considered holistically as part of the TFR.
International Power	Considers SENEs cannot be evaluated as consistent with the NEO *per se*, but only on the basis of forecasts of whether net savings or net costs will predominate over time. (OP p.1)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request. See chapter 2 of the draft Rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.

Stakeholder	Issue	AEMC Response
International Power	Charges should be based on stand alone connection costs until the SENE is fully subscribed to prevent distortions to locational signals (OP p.2)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
International Power	Considers generators should pay their stand alone cost and receive firm access rights. (OP pp.2,4-5)	The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
International Power	SENEs that have an element of central planning are likely to create biases in favour of a particular location and hence distort decision making. (OP p.2)	The draft Rule does not require non-market facing entities to take risks on generator investment decisions, nor does it require consumers to bear those risks.
LYMMCo	Not convinced there is a clear economic case for introducing SENEs. (CP p.11)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request. See chapter 2 of the draft rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.
LYMMCo	Considers the RIT-T should be tested as a possibility for promoting efficient shared connections. (CP p.11)	The Commission considers there is limited scope under existing frameworks for the RIT-T to be used to build incremental spare capacity for connecting future generators. See chapter 5 of the draft Rule determination for further discussion.
LYMMCo	Considers the charging regime for the proposed Rule distorts locational signals, risks inefficient investment and subsidises renewable generation. (CP p.4) Also commented on the variable nature of the charging regime under the proposed Rule. (CP p.6)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
LYMMCo	Consider that, despite the checks and balances, there is significant risk associated with the centrally-planned elements of the proposed Rule. (CP p.10)	The draft Rule does not require non-market facing entities to take risks on generator investment decisions, nor does it require consumers to bear those risks.

Stakeholder	Issue	AEMC Response
Macquarie Capital Advisors	Requested clarification on whether the calculation of the annual SENE charge under the proposed Rule would be based on the life of the generator's connection to the SENE or the economic life of the SENE itself. (CP p.1)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Macquarie Generation et al	Questions whether the costs of a complex new regulatory framework have been fully considered. (CP p.2)	The Commission considers that the proposed Rule was complex, and that a simpler approach is appropriate. See chapter 8 of the draft Rule determination for further discussion.
Macquarie Generation et al	Concerned that under the proposed Rule customers face significant asset stranding risks and the proposed checks and balances are insufficient. (CP pp.2-3)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further details.
Macquarie Generation et al	Consider that the charging arrangements under the proposed Rule should be changed to minimise distortions. (CP pp.3-4)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Macquarie Generation et al	Consider the proposed Rule should be tested against the existing regulatory framework and possible market-based alternatives. (CP pp.5-7)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request. See chapter 2 of the draft Rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.
MEU	The MEU noted the lack of quantitative evidence to support the assumption that consumers will benefit from lower electricity prices as a result of providing SENEs. (OP p.4)	The Commission is not satisfied on the evidenced provided that it is appropriate for consumers to be exposed to the asset stranding risk associated with investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion.

Stakeholder	Issue	AEMC Response
MEU	Considered that the party next best placed to manage risk associated with a SENE (other than the generator) is the NSP. (OP p.39)	Any entity that chooses to may bear the risk associated with constructing a SENE.
MEU	Considered that the existing Rules provide adequate incentives and ability for generators to "coordinate" with NSPs to provide for their own SENE. (OP p.7)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request. See chapter 2 of the draft Rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.
NGF	Is unconvinced that SENEs are required. (OP p.2)	The Commission considers there is some scope for change to the existing frameworks. See chapter 5 of the draft Rule determination for a discussion on the issues identified as part of this Rule Change Request. See chapter 2 of the draft Rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.
NGF	Of the options presented in the Options Paper, prefers Option 4. Also presents a preferred model. (OP p.11)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion.
NGF	Considers the charging framework under the proposed Rule creates uncertainty, distorts locational signals and creates a competitive disadvantage for some generation. (CP pp.2,10; OP p.8)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
NGF	Commented on aspects of the Commission's assessment framework including issues around risk and regulatory certainty. (CP pp.8-9).	Noted. The Commission agrees that risk and regulatory certainty are important issues for consideration. Risk allocation, in particular, was a key factor in the Commission's draft decision.

Stakeholder	Issue	AEMC Response
NGF	Considers the provision of property rights may encourage greater merchant investment in transmission. (CP p.10; OP p.4)	The Commission considers that issues around firm financial access and property rights are better considered holistically as part of the TFR.
NGF	There are many problems with the existing connections framework that go beyond those this Rule change is intended to address. Without addressing these issues, the framework may not operate effectively. (OP p.4)	The Commission is considering connection issues as part of the TFR.
NGF	Considers the proposed SENE framework raises concerns regarding stranded asset risk for consumers. (CP pp.3,10; OP p.3)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further details.
NGF	Comments on specific aspects of the proposed Rule, including: it directs funds away from investment in other parts of the transmission network; it creates an additional form of regulatory risk; and it increases the cost of meeting the RET. (CP p.10)	The Commission considers that the draft Rule appropriately addresses these issues.
NGF	Considers the issues of NSP incentives and the interaction between SENEs and the shared network should be further considered as part of the TFR. (CP pp.13-14,19)	The Commission notes that NSP incentives in the context of connections will be addressed as part of the TFR. It is envisaged that the SENE will become part of the TNSP's network with the same access arrangements and rights as currently exist.

Stakeholder	Issue	AEMC Response
NGF	Considers that the AEMC's view that the Rules should be robust to government policies by ensuring any behavioural changes are accommodated in the most efficient way may be inconsistent with the NEO as it concerns social objectives. (OP p.3).	The Commission is bound to make Rules that it is satisfied will or are likely to contribute to the achievement of the NEO. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes within the legislative and policy environment within which the market operates. The RET is likely to increase investment in renewable energy. The Commission's role is to put in place frameworks that promote efficient outcomes in this context.
Nyrstar	Primary concern is that the costs and risks borne by end users could outweigh any scale efficiency benefits. Concerned that an option would be chosen that drives unintended consequences and distortions to the market. (OP p.1)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion.
Nyrstar	Considered there was a strong argument that any modification should at least be synchronised to the policy surrounding a carbon price. Considered that the options presented in the Options Paper did not accommodate major shifts in climate change policies. (OP p.1)	The Commission is bound to make Rules that it is satisfied will or are likely to contribute to the achievement of the NEO: that is, to make Rules that promote efficient investment in, and efficient operation and use of, electricity services in the long term interest of consumers. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes within the legislative and policy environment within which the market operates.
Nyrstar	Considered there was an argument that the Federal Government, through vehicles like Infrastructure Australia or other climate change based programmes, should either partially or fully fund the costs and underwrite the risks for SENEs.(OP p.2)	The Commission considers that efficient investment decisions will be made where risk is allocated to those parties best able and willing to manage that risk. The draft Rule seeks to allocate risk and cost to market participants rather than to consumers. The draft Rule does not limit who may choose to fund a SENE. See chapter 6 of the draft Rule determination for further discussion of this issue.

Stakeholder	Issue	AEMC Response
Origin	Supportive of SENEs. (CP p.1; OP p.4)	The Commission considers that some change to the existing frameworks is warranted. However, the Commission considers that consumers should not be required to bear the asset stranding risk associated with investing in transmission for the purpose of connecting future generation.
Origin	Consider the RIT-T is unworkable in the context of SENEs (CP p.2; OP pp.6-7) but that a well designed investment test may be appropriate. (OP p.7)	The Commission considers there is limited scope under existing frameworks for the RIT-T to be used to build incremental spare capacity for connecting future generators. However, the Commission considers a market-based approach is more appropriate.
Origin	Consider the magnitude and likelihood of asset stranding is minimal and discussions around this should be kept in perspective. (CP p.2)	The Commission considers that risk allocation is a key issue. The Commission is concerned that the allocation of risk under the proposed Rule could lead to inefficient investment. See chapter 6 of the draft Rule determination for further discussion on this issue.
Origin	Consider the cost of SENEs should be apportioned across the entire market. (CP p.4)	The Commission considers that the risk of SENEs should be borne by those best able to manage it. See chapter 6 of the draft Rule determination for further discussion on this issue.
Origin	Comments on the flexibility of the SENE configuration and connection of interruptible generation. (CP p.2)	Under the draft Rule these issues will be subject to commercial negotiation between the relevant parties.
Origin	Considers issues around increased levels of access should be dealt with under the TFR. (OP p.9)	Agreed.
Origin	Comments on the interaction between SENEs and the shared network. (CP p.10)	The impact on the shared network should be considered as part of the SENE design and costing study under the draft Rule.

Stakeholder	Issue	AEMC Response
Origin	Supports the basic charging regime in the proposed Rule and considers it imparts appropriate locational signals. (CP p.11)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Origin	Raised concerns regarding variability of charges under the proposed Rule. (CP p.11)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Origin	Of the options presented, prefer a variation of Option 2. (OP pp.8-9)	The Commission considers consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation.
Pacific Hydro	Considers the NEO should be amended to reflect low emissions objectives. (CP p.1)	This is outside the scope of the AEMC's role.
Pacific Hydro	Concerned that the proposed SENEs process does not address the prohibitive network cost barrier for developers making investments in the public good. Considers SENE deserve recognition as important nation building infrastructure. (CP p.2)	The Commission is bound to make Rules that it is satisfied will or are likely to contribute to the achievement of the NEO. The Commission's role is therefore to make Rules that it considers will promote efficient outcomes within the legislative and policy environment within which the market operates. The RET is likely to increase investment in renewable energy. The Commission's role is to put in place frameworks that promote efficient outcomes in this context.
Pacific Hydro	Concerned that the proposed SENE process does not include mechanisms to trigger investment in deep augmentation of the existing network. (CP p.2)	The impact of a SENE on the shared network should be considered as part of the SENE design and costing study under the draft Rule. Any subsequent augmentation to the shared network will be considered under the existing frameworks.
Pacific Hydro	The SENE design should consider the possibility of generators obtaining rebates in the event of new load centres connecting to the SENE. (CP p.2)	This is subject to commercial negotiation between the relevant entities.

Stakeholder	Issue	AEMC Response
Pacific Hydro	Considers charges should be based on the economic life of the SENE rather than the economic life of the generator. (CP p.3)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
Pacific Hydro	Provides qualified support for SENEs. (CP p.3)	Noted.
SACOME	Considered there may be benefit in extending the proposed SENE framework to allow the connection of remote load without the SENE reverting to a prescribed service. Considered this could provide a positive economic case for mining operations to connect to network extensions in preference to onsite diesel generation. (CP p.2)	The Commission notes the process for connecting to a SENE, by either generation or load, would be subject to the existing Rules governing connections. However, the Commission recognises that the characteristics of a transmission service may change over time such that some or all of the services provided by means of a SENE fall within the definition of a prescribed transmission service. See section 2.1 of the draft Rule determination for further discussion on this issue.
SA DTEI	Considers that increased entry of renewable generation has highlighted weaknesses in the connections framework. (OP p.1)	Noted. See chapter 5 of the draft Rule determination for a discussion of this issue.
SA DTEI	Of the options presented, preferred a variant of option 4. (OP p.1)	The Commission considers that the draft Rule is more likely to promote the NEO than an option that allocated risk to consumers for the reasons discussed in the body of this report. In particular, the risk allocation arrangements under the draft Rule are likely to promote more efficient investment decisions.
SA DTEI	Considers firm financial access is more appropriately dealt with in the TFR. (OP p.2)	Agreed.
SP AusNet	Supports concept of a SENE but considers aspects of the proposed Rule require reconsideration. (CP p.2)	Noted.

Stakeholder	Issue	AEMC Response
SP AusNet	Categorisation of assets under the proposed Rule is complex and inconsistent. (CP p.3)	The draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.
SP AusNet	Concerned with the introduction of capacity rights. (CP p.5)	The draft Rule does not introduce capacity rights. The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
SP AusNet	Considers the proposed Rule is inconsistent with the contestability framework used in Victoria. (CP p.5)	The Commission considers the draft Rule is consistent with arrangements in Victoria.
SP AusNet	Market-led approaches should be allowed to work where possible. (CP p.6)	Agreed. The draft Rule represents a market-based approach to risk allocation.
Tasmanian DIER	Expressed concern regarding the lack of jurisdictional involvement in determining the location of SENEs under the proposed Rule. Considered a SENE planner should also consider the delivery of other services and additional infrastructure requirements in an area that would arise from the construction of electricity assets. (CP p.3)	There is nothing in the draft Rule which prevents jurisdictional involvement in the funding and planning of SENEs.
TRUenergy	Consider the existing framework is insufficient to promote efficient investment in coordinated connections. (CP p.2)	The Commission considers that some change to the existing frameworks is warranted. However, the Commission considers that consumers should not be required to bear the asset stranding risk associated with investing in transmission for the purpose of connecting future generation.
TRUenergy	In general prefer market based approaches, but consider the SENE proposal is a reasonable hybrid. (CP p.3)	The Commission considers that a market-based approach to risk allocation is appropriate in this instance. Refer to chapters 6 and 7 of the draft Rule determination for more details.

Stakeholder	Issue	AEMC Response
TRUenergy	Considers the charging arrangements under the proposed Rule are uncertain. (CP pp.9-10)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply.
TRUenergy	Comments on issues specific to the proposed Rule including: supports a flexible approach to configuration of the SENE; consider interruptible generators should be free to connect only once all firm capacity is contracted; and consider potential for loops is a remote possibility. (CP pp.6,8)	These issues are generally dealt with either through commercial negotiation or existing frameworks.
TRUenergy	Supports compensation arrangements. (CP p.5, OP pp.4-5)	The Commission considers that issues around firm financial access are better considered holistically as part of the TFR.
TRUenergy	Considers of the options presented, a variant of Option 4 best promotes the NEO. (OP p.2)	The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation. See chapter 6 of the draft Rule determination for further discussion. See chapter 2 of the draft Rule determination for discussion on why the Commission considers the draft Rule is likely to promote the NEO.
TRUenergy	Considers an economic test that is separate from the RIT-T should be included. (OP pp.3-4)	The draft Rule allocates risks and costs to market participants and investors rather than to consumers. The draft Rule therefore does not include an explicit efficiency test.
TRUenergy	Supports the first generator paying stand alone cost, customers underwriting spare capacity and both these charges reducing as other generators connect. (OP p.4)	Charging for use of the SENE is not addressed in the draft Rule. Instead, the existing process for determining charges will apply. The Commission considers that consumers should not be exposed to asset stranding risk in the case of investing in transmission for the purpose of connecting future generation.

Stakeholder	Issue	AEMC Response
TRUenergy	Agrees that the Rules should provide a framework to allow the goals of government policies and programmes to be achieved, noting the market may not always agree with such policies. (OP p.2)	Noted.
UED	Considered the AEMC should provide specific examples of the failure of the planning and regulatory arrangements currently in place for transmission entities as this would provide a firmer basis for decision-making. (CP pp.2,3)	See chapter 5 of the draft Rule determination a discussion of the problems and challenges raised by the Rule Change Proponent and during consultation on this Rule Change Request.
UED	Considered contestability should be brought into the SENE planning process under the proposed Rule, for example, by allowing bilateral negotiations to take place between generators and competing NSPs. (CP p.5)	This is consistent with the draft Rule whereby any entity may approach a TNSP to request a SENE design and costing study, and any entity that chooses to may fund a SENE.
UED	Considered the regulatory oversight measures proposed in the Rule Change Request should be strengthened, for example, by requiring AEMO to provide explicit endorsement of the forecasts if it is satisfied these are reasonable. (CP p.7)	Under the draft Rule, consumers are not required to bear the asset stranding risk associated with transmission investment for the purpose of connecting future generation. Therefore regulatory oversight measures to protect consumers are not required.
UED	Considered the proposed Rule should allow NSPs to undertake an economic cost benefit analysis where they believe there is merit in doing so. (CP pp.9-10)	The draft Rule does not include an explicit economic test. The exact scope of the SENE design and costing study will be subject to negotiation between the TNSP and the entity requesting the study.
UED	Questioned the merits of classifying a SENE as a negotiated service under the proposed Rule given that SENEs were more akin to prescribed services. (CP p.12)	The draft Rule does not specify the type of transmission service provided by the SENE or how the SENE would be treated over time. These issues would be resolved under existing arrangements.

Stakeholder	Issue	AEMC Response
Vestas	Supports the Competitive Renewable Energy Zones framework used in Texas (noting significant changes to existing transmission pricing rules would be required). (CP p.2)	The Commission considers that significant changes to existing frameworks are not warranted at this stage.
Vestas	The SENE proposal will have limited success as it will not be able to deliver transmission investment in the timeframes required due to the complicated, lengthy process involved. (CP pp.2-4)	The draft Rule may promote more timely investment than the proposed Rule as consumers are not required to underwrite the risk of the investment. Therefore the checks and balances provided by the AER and AEMO under the proposed Rule are no longer required.
Vestas	Considers the NEO should be amended to address matters such as greenhouse emissions and the promotion of renewable energy. (CP p.4)	As noted by Vestas, this is outside the scope of the AEMC's role.

C Summary of Rule change proponent's view and stakeholder responses to the Consultation and Options Papers

C.1 Issues the Rule change is seeking to address

C.1.1 Rule change proponent's view

Section 1.2 sets out in detail the Rule change proponent's rationale for this Rule Change Request. In summary:[139]

- new investment in generation may be clustered in the same geographic areas, however it is unlikely that generators will be ready to connect at the same time;
- the existing connection framework makes it difficult for network businesses to develop connection solutions that would be efficient for multiple connections over time;
- given the scale economies available in network provision, the cost impact on customers from the inefficient duplication of connection assets may be large; and
- it is also unlikely that an initial connecting generator would be willing to pay for additional capacity given that it is likely to facilitate the connection of a competitor.

The Rule change proponent considered that the proposed Rule would, or was likely to, contribute to the achievement of the NEO by overcoming the risk of inefficient duplication of assets required to facilitate connections[140], ensuring efficient assets would be built[141] and minimising the risk to customers through various risk management mechanisms[142].

C.1.2 Stakeholder views

The SENE Rule change proposal has elicited divergent views across stakeholders and within industry sectors. There has been no clear consensus either on whether a need for change has been demonstrated or, amongst those who consider changes are required, what the appropriate solution is. Of the twenty-one stakeholders who submitted a response to the Options Paper, nine considered a case for change had been demonstrated.[143] Ten stakeholders considered that existing frameworks are sufficiently robust to support efficient connection outcomes or were not convinced that the

139 MCE, *Rule change request - Scale Efficient network Extensions*, 15 February 2010, p.4.

140 Ibid, p.4.

141 Ibid, p.5.

142 Ibid, p.6.

143 AEMO, CEC, Geodynamics, Green Grid, Grid Australia, Infigen, Origin, SA DTEI and TRUenergy.

proposal met the NEO[144] and the remaining two stakeholders did not offer an opinion on the need for change to the current framework[145].

The need for change

In their submissions to the Consultation and Options Papers, many stakeholders agreed that timely and efficient connection will be a challenge where the pattern of generation investment changes.[146] The issues raised to support this view included:

- the first mover disadvantage. While generators may be better off if they can share the cost of an extension with others, this may represent a first mover hurdle for the initial generator to the extent that costs are not equitably shared with future connecting generators.[147] There is currently a lack of clarity in the Rules regarding access rights, particularly for connection assets and non-regulated services, which may provide a disincentive for first mover generators to fund additional capacity;[148]

- coordination issues. Timeframes for delivering generation investment are uncertain and multiple projects being undertaken by multiple parties are unlikely to reach completion at the same time. Further, generators are unlikely to be willing to tie their project timeframes to those of third parties;[149] and

- limited incentives on NSPs to build scale efficient assets.[150]

More generally, some stakeholders considered that increased entry of renewable generation in the market has highlighted weaknesses in the network connections framework.[151]

Those stakeholders that supported the proposed Rule change considered existing frameworks would not be robust to the challenges posed by changing patterns of generation investment. They considered the RIT-T was not the appropriate mechanism for facilitating the construction of spare capacity in advance of future generation

144 AGL, Alinta, EnergyAustralia, Ergon Energy, Hydro Tasmania, Integral, International Power, MEU, Nyrstar, NGF.

145 CitiPower/Powercor and Energy Supply Association of Australia (esaa).

146 Grid Australia, Consultation Paper submission, p.7, Options Paper submission p.5; TRUenergy, Consultation Paper submission, p.2; Infigen, Consultation Paper submission, p.1; CEC, Consultation Paper submission, p.2; Geodynamics, Consultation Paper submission, p.3; Tasmanian DIER, Consultation Paper submission, p.2; SACOME, Consultation Paper submission, p.1; Origin, Consultation Paper submission, p.3.

147 CEC, Options Paper submission, p.3; Grid Australia, Consultation Paper submission, p.6; Infigen, Options Paper submission, p.1; Origin, Consultation Paper submission, p.3.

148 See AEMC 2010, *Scale Efficient Network Extensions, Options Paper*, 30 September 2010, Sydney, Chapter 5 for further discussion on this issue.

149 CEC, Options Paper submission, p.3; Green Grid, Options Paper submission, p.1; Origin, Consultation Paper submission, p.3; Grid Australia, Consultation Paper submission, p.8.

150 TRUenergy, Consultation Paper submission, pp.2,3.

151 AEMO, Options Paper submission, p.2; SA DTEI, Options Paper submission, p.1.

connections. For example, Infigen Energy considered that the RIT-T process is "slow and laborious" and therefore not appropriate for "the relatively rapid roll outs of SENEs and their associated renewable generation required to meet the Government's expanded RET target".[152] Origin also commented that, amongst other things, the RIT-T has not been successful in justifying transmission augmentations on the basis of market benefits.[153]

These stakeholders therefore considered that implementing a SENEs framework is required to provide for more efficient connection outcomes and promote competition through timely connections. They considered the proposed Rule would promote the NEO through:

- avoiding potentially inefficient duplication of assets;[154]
- levelling the playing field for remote generation;[155]
- lower prices in the contract and spot market, reducing retail prices for customers;[156] and
- potentially improving reliability.[157]

Grid Australia and the Tasmanian DIER agreed there are potential hurdles facing the connection of multiple generators which may lead to a duplication of assets. However, they tempered their comments with questions around whether the issues identified by the Rule change proponent and raised during consultation on this Rule Change Request were sufficiently material to warrant complex new Rules. For example, while supportive of some change, Grid Australia considered there was a lack of hard evidence on the shortcomings of existing frameworks. It expressed concern that a new framework may not be highly utilised.[158] Similarly, the Tasmanian DIER questioned how often duplication of assets would occur in practice.[159]

Approximately half the stakeholders who responded to the Options Paper considered that a case has not been made for change or that existing frameworks are sufficient to promote efficient outcomes.[160] In particular, these stakeholders considered:

152 Infigen, Consultation Paper submission, p.4. See also Origin, Consultation Paper submission, p.4.

153 Origin, Options Paper submission, p.7.

154 Geodynamics, Consultation Paper submission, p.3; Origin, Options Paper submission, p.5; TRUenergy, Consultation Paper submission, p.3.

155 Infigen, Options Paper submission, p.1; Origin, Options Paper submission, p.5.

156 Origin, Options Paper submission, p.5; TRUenergy, Consultation Paper submission, p.3.

157 Origin, Options Paper submission, p.5.

158 Grid Australia, Options Paper submission, pp.5-6.

159 Tasmanian DIER, Consultation Paper submission, p.2.

160 AGL, Consultation Paper submission, pp.3-5; Loy Yang Marketing Management Company (LYMMCo), Consultation Paper submission, p.12; Alinta, Consultation Paper submission, pp.6-7.

- there are no barriers to developing cost sharing arrangements that would allow generators to coordinate their connections, facilitated if necessary by an NSP;[161]
- the RIT-T and the NTP are new initiatives that could support efficient connections in the absence of a new framework and should be given the opportunity to work;[162] and
- modelling undertaken by ROAM Consulting suggests that "...highly concentrated wind development with substantial transmission development...does not appear to be the lowest cost way of meeting the RET."[163]

AGL considered that:[164]

> "The gas industry routinely manages the situation that the SENE concept is seeking to address, that is, a large fuel source with a number of users who are competing with each other to get the fuel to a common location. In that industry, participants jointly arrange the construction of necessary facilities to service their needs without recourse to public subsidy or regulatory intervention."

Interaction with the TFR

Some stakeholders considered some of the specific issues raised during the SENEs Rule change process would be better examined as part of the TFR. For example, Origin[165] and the SA DTEI[166] considered that broader questions around access should be dealt with as part of the TFR. Grid Australia considered that many issues, including connection arrangements, are better considered holistically and the SENE Rule change should not pre-empt the TFR.[167] AGL[168] and Alinta[169] more generally considered that the SENEs concept should be considered as part of the TFR to ensure holistic review. Similarly, LYMMCo raised concerns that the SENE Rule change may undermine the TFR.[170]

---

161 AGL, Consultation Paper submission, p.3; MEU, Options Paper submission, p.7.

162 AGL, Consultation Paper submission, pp.3,5; EnergyAustralia, Consultation Paper submission, p.11; LYMMCo, Consultation Paper submission, pp.11-12; Macquarie Generation et al, Consultation Paper submission, pp.5-6.

163 AGL, Options Paper submission, p.3.

164 AGL, Options Paper submission, p.2.

165 Origin, Options Paper submission, p.9.

166 SA DTEI, Options Paper submission, p.2.

167 Grid Australia, Options Paper submission, p.3.

168 AGL, Options Paper submission, p.4.

169 Alinta, Options Paper submission, p.5.

170 LYMMCo, Consultation Paper submission, p.12.

Assessing the Rule change against the NEO

International Power, Hydro Tasmania and Origin noted difficulties in demonstrating that the proposed SENE framework would promote the NEO. International Power considered:[171]

> "...the SENE concept cannot be evaluated as consistent with the NEO per se, but rather can be assessed only on the basis of forecasts of whether net savings or net costs will predominate over time."

On this basis, International Power[172] and Hydro Tasmania[173] did not support the implementation of a SENEs framework.

In contrast, while Origin recognised the difficulties in quantifying the benefits of future market developments, they considered a more strategic and forward looking approach to transmission planning and investment is required to accommodate the entry of new types of generation, and that:[174]

> "The inherent difficulties associated with this new strategic approach though challenging, are not sufficient to promote inaction – to which there is also an associated cost."

While the NGF recognised that SENEs may reduce the risk of transmission duplication in a discrete location, it considered that the risk of unnecessary construction of transmission assets overall may increase, and therefore the proposed SENE framework may not meet the NEO. The NGF did not believe it was necessarily clear cut that duplication would be inefficient in all instances if economies of scale benefits were traded-off against wider market efficiencies.[175]

Others considered that the NEO would not be met where customers are required to underwrite the costs of SENEs and forecasts of future generation prove inaccurate. This is because, where forecast generation does not materialise, customers would be required to continue to pay for the under-utilised capacity. Where such asset stranding occurs, customers could face a net cost.

C.2 Efficient allocation of stranded asset risk

C.2.1 Rule change proponent's view

The proposed Rule would require customers to underwrite the risks, and therefore the cost, of under-utilised capacity on a SENE. This means that if generators connect later

171 International Power, Options Paper submission, p.1.

172 Ibid, p.1.

173 Hydro Tasmania, Options Paper submission, p.3.

174 Origin, Options Paper submission, p.3.

175 NGF, Consultation Paper submission, p.11.

than forecast or do not connect at all, customers would be required to fund the cost of the unused portion of the SENE. Conversely, customers would benefit where generators connect earlier than expected.

The Rule change proponent considers this risk allocation arrangement was appropriate on the basis that customers are the ultimate beneficiaries of more efficient connection outcomes.

To help manage customer exposure to the risks and costs of sub-optimal investment, the proposed Rule incorporates a new SENE planning framework and a number of regulatory oversight measures.

The Rule Change Request states that the planning framework for SENEs is sufficient to promote a robust forecast of future generation connection requirements, including consideration of the suitability of the location and the potential of the fuel resource, in addition to the timing and size of generation connections.

The MCE proposed that this is achieved by the following components of the planning process:[176]

- "a strategic component involving identification by AEMO of potentially economic geographical locations for SENEs; and
- a design component involving the identification by network businesses of possible remote connection line locations, capacities, and indicative costs, taking into consideration possible implications for the shared network."

This two-step process would require AEMO to focus on locations that are more likely to offer the best outcomes for the NEM, promoting efficient investment in electricity services. This first step also provides for public consultation, allowing market participants to contribute to the identification of appropriate locations.

The second component would require NSPs to provide public information on the possible design and indicative costs of SENEs. This is intended to enable generators and other market participants to make more informed, and therefore more efficient, investment decisions than is currently possible.

In addition to inaccurate forecasting, both NSPs and generators may have some incentive to over-size SENEs, which could lead to inefficiently high levels of investment.

The Rule Change Request proposes a series of checks and balances to help mitigate these incentives and the risks of inaccurate generation forecasts leading to stranded assets. These include:

176 MCE 2010, *Rule Change Request - Scale Efficient Network Extensions*, February 2010, p.5.

- at least one generator must agree to connect to the SENE before it can be built. Therefore a SENE will only proceed if a generator finds it privately profitable to connect;

- AEMO would be required to review NSPs' forecast generation profiles. Further, the MCE has proposed that new projects should only go ahead if AEMO approves those forecasts. Stakeholders also have an opportunity to provide input into this process; and

- the AER has the option to disallow a proposed SENE if it considers the generation forecast or cost estimates are not sufficiently robust.

The MCE considered that, collectively, these elements would minimise the risks to customers of asset stranding.[177]

C.2.2 Stakeholder views

Allocating risks to those best able to manage them

A number of stakeholders raised concerns that the proposed Rule would require customers to bear significant risks which they are not best placed to manage.[178]

For example, AGL expressed concern that the proposed:[179]

> "...checks and balances, including AEMO approval being a condition precedent for the AER decision, would poorly emulate the investment decision process. AGL considered that risky and complex investments such as SENEs should be undertaken and underwritten by those best able to manage them."

Similarly, Alinta considered that none of the risk mitigation measures proposed either as part of the Rule Change Request or within the Options Paper would appropriately manage risk exposure on behalf of customers. Alinta noted:[180]

> "...passing risk exposure onto end users…represents an inefficient outcome given their limited ability to manage these potential risks."

177 MCE 2010, *Rule Change Request - Scale Efficient Network Extensions*, February 2010, p.5.

178 AGL, Consultation Paper submission, p.1; Alinta Energy, Consultation Paper submission, p.10; esaa, Consultation Paper submission, p.5; EnergyAustralia, Consultation Paper submission, p.7; Ergon Energy, Options Paper submission, pp.4-5; Tasmanian DIER, Consultation Paper submission, p.2; Energex, Consultation Paper submission, p.1; Macquarie Generation et al, Consultation Paper submission, p.3.

179 AGL, Consultation Paper submission, p.3.

180 Alinta, Options Paper submission, pp.4-5.

Although the MEU considered that the status quo would provide the best solution to generator connections, it nonetheless proposed an alternative solution whereby NSPs would bear asset stranding risk on the basis that NSPs have:[181]

> "...the ability to both minimise the costs for providing surplus capacity and to assess the likelihood of additional generators connecting to the extension and the capacities that might be the most efficient."

A key input into the investment decision on whether, or how much, additional capacity should be built is the forecast of likely future generation entry.

AGL[182] and EnergyAustralia[183] were both of the view that forecasting future generation is inherently uncertain and as such, generators and NSPs should bear the risk of any investment decisions undertaken on the basis of such forecasts. Specifically, EnergyAustralia noted:[184]

> "…prospective generators are in the best place to manage the risk of asset stranding. The utilisation of the SENE is heavily dependent on future generators locating as indicated at the time of the SENE… The regime transfers this risk to customers, who are not in a position to manage the risk."

Further, Ergon Energy considered that:[185]

> "...the NEO will not be satisfied if forecast generation does not transpire, particularly where the costs of developing a SENE are borne by customers. SENEs should therefore only be developed when a proponent or proponents can be found that are willing to financially commit to a material share of the development."

In contrast to these views, both Geodynamics[186] and Infigen[187] considered that the AER was the appropriate body to represent consumers and manage risk on their behalf.

In addition, in a report to the Green Grid Forum, Macquarie Capital noted that:[188]

> "...the risk to customers is diversified across a broad portfolio of individual transmission assets in accordance with the application of TUOS charges... Individual generators are unable to manage or adequately assess the intent

181 MEU, Options Paper submission, p.38.

182 AGL, Consultation Paper submission, p.3.

183 EnergyAustralia, Options Paper submission, p.3.

184 EnergyAustralia, Consultation Paper submission, p.19.

185 Ergon Energy, Options Paper submission, p.4.

186 Geodynamics, Consultation Paper submission, p.4.

187 Infigen, Consultation Paper submission, p.3.

188 Macquarie Capital, *AEMC SENE Options Paper: Report to the Green Grid Forum*, December 2010, p.5.

or timing of competing generators. Increasing the risks generators face may result in under investment in generation assets which would undermine progress for establishing appropriately sized large-scale SENE projects."

Sharing risks based on the "beneficiaries pay" principle

A number of stakeholders, including the CEC[189], SACOME[190] and Infigen[191] considered that customers would ultimately gain from SENEs and therefore it would be appropriate for them to bear the asset stranding risk.

Hydro Tasmania also considered it was appropriate for customers to fund additional capacity until future generation connects, provided sufficient checks and balances were in place, on the basis that the decision to build additional capacity is one of public policy.[192]

Similarly, the NGF, although ultimately supporting a market based approach, considered that requiring customers to underwrite risk was appropriate where it leads to least cost outcomes and does not distort locational decisions.[193]

In contrast, Energex[194], the MEU[195] and the Tasmanian DIER[196] considered that generators would also stand to benefit from more efficiently sized connection arrangements and therefore should also bear some of the risk of asset stranding.

The MEU further considered that customers will only indirectly benefit from scale efficient connections and therefore questioned whether it was appropriate for customers to directly bear the risk associated with such investments.[197]

The esaa noted that consideration should be given to allocating some of the risk to taxpayers, on the basis that the benefits from renewable energy are societal.[198] Others considered it may be appropriate to recover SENE charge shortfalls across all NEM customers on the basis that increased penetration of renewable energy has market-wide benefits.[199]

189 CEC, Consultation Paper submission, p.4, Options Paper submission, p.5.

190 SACOME, Consultation Paper submission, p.3.

191 Infigen, Consultation Paper submission, p.7.

192 Hydro Tasmania, Options Paper submission, p.4.

193 NGF, Consultation Paper submission, p.2.

194 Energex, Consultation Paper submission, p.1.

195 MEU, Consultation Paper submission, p.16.

196 Tasmanian DIER, Consultation Paper submission, p.2.

197 MEU, Consultation Paper submission, p.16; MEU, Options Paper submission, p.25.

198 esaa, Consultation Paper submission, p.5.

199 Ergon Energy, Consultation Paper submission, p.4; Origin, Consultation Paper submission, p.4.

Extent to which benefits will be passed through to customers

A number of respondents expressed some reservations as to whether the scale efficiency benefits resulting from SENEs would ultimately be passed through to customers.

The MEU considered it was a "giant leap of faith" to imply that consumers would ultimately benefit from SENEs through reduced electricity and REC prices. The MEU explained that this was due to the market price setting process in the NEM.[200]

Alinta also expressed some reservations as to whether these efficiencies would reach customers. It explained that in NEM jurisdictions where electricity retail prices are still regulated by jurisdictional regulators, the RET liability is passed through to customers via a range of approaches. Where generators' REC costs are less than the regulated pass through, consumers would be unlikely to capture any efficiency benefits.[201]

In contrast, Origin and TRUenergy considered that the cost savings resulting from SENEs would flow through to customers. Origin considered that efficiency gains would result in a:[202]

> "...lower cost of generation which is reflected in lower contract / spot prices, which lowers the wholesale cost of energy (WCE), which in turn lowers retail prices to consumers."

Similarly, TRUenergy noted that:[203]

> "...ultimately customers benefit from [reduced connections costs] as generator cost savings flow through the competitive market delivering lower wholesale energy costs over time."

Mechanisms to manage asset stranding risks to customers

While not necessarily supporting the Rule change proposal as a whole, many stakeholders commented on the relative effectiveness and appropriateness of introducing various risk management mechanisms in addition to those included in the Rule change proposal. These mechanisms included:

- introducing a threshold such that a given proportion of the capacity or construction costs of the SENE would need to be underwritten by firm contracts with generators prior to construction of the SENE commencing;

200 MEU, Consultation Paper submission, p.25.

201 Alinta Energy, Consultation Paper submission, p.7.

202 Origin, Options Paper submission, p.5.

203 TRUenergy, Consultation Paper submission, p.2.

- including an economic test, such as the existing RIT-T or an alternative efficiency test, to ensure net benefits would accrue to customers before requiring them to underwrite the risk of the SENE; and

- alternative cost allocation arrangements such that generators are required to pay a greater proportion of costs, more quickly reducing the burden on customers.

Origin considered that asset stranding is likely to be minimal on the basis that:[204]

- there are three levels of review before SENEs are agreed – AEMO, TNSP and AER;

- the shortage of transmission capacity and load growth means that transmission in Australia is under supplied and will be filled;

- the demand for renewable energy under the RET is such that huge amounts of generation need to be built; and

- the existence of a SENE asset would increase the probability of success associated with all projects in a particular region by reducing the risk associated with the project's ability to connect to the network, thus increasing the number of generators looking to connect.

Several of the responses to the Consultation Paper considered greater upfront commitment by generators in the form of a capacity threshold would help minimise asset stranding risk.[205]A capacity threshold would require firm commitments from generators, demonstrated by signed connection agreements covering a given proportion of the capacity of the SENE before it could proceed. Where stakeholders suggested a threshold level, this ranged from 25 to 60 per cent of the capacity of the SENE.[206]

Options 1 and 2 in the Options Paper proposed a threshold of 25 per cent of the capital costs of the investment, to be underwritten by firm connection agreements with generators. This was in addition to the regulatory oversight by the AER and AEMO. Geodynamics[207] and Infigen[208] considered the threshold sufficient as a risk mitigation measure.

Option 2 sought to introduce the use of an economic test applied to the entire SENE as a further risk management mechanism. Options 3 and 4 also proposed the use of an

204 Origin, Consultation Paper submission, p.8.

205 Citipower/Powercor, Consultation Paper submission, p.3; EnergyAustralia, Consultation Paper submission, p.8; Ergon Energy, Consultation Paper submission, p.3; Macquarie Generation et al, Consultation Paper submission, p.2; TRUenergy, Consultation Paper submission, p.4; Hydro Tasmania, Consultation Paper submission, p.4.

206 EnergyAustralia, Consultation Paper submission, p.8; Ergon Energy, Consultation Paper submission, p.3; Macquarie Generation et al, Consultation Paper submission, p.2; TRUenergy, Consultation Paper submission, p.1; Hydro Tasmania, Consultation Paper submission, p.4.

207 Geodynamics, Options Paper submission, p.1.

208 Infigen, Options Paper submission, pp.3-4.

economic test, specifically the RIT-T, which would be applied to the incremental capacity above that required to connect the first generator(s). Stakeholders had mixed views on these risk mitigation measures.

Origin[209] and TRUenergy[210] supported some form of economic test to minimise asset stranding risk, but considered that the RIT-T was not appropriate. In its response to the Options Paper, Origin set out a suggested framework for a conceptual economic test that would have the objective of deciding on the appropriate or efficient size of the SENE. Part of this proposed test was to use AEMO's generator assessment criteria to assign probabilities to the likelihood of generation projects reaching completion.

Similarly, Grid Australia considered that requiring forecasts of future generator connections to meet specific commitment criteria, in addition to the regulatory oversight mechanisms, would assist in appropriately managing asset stranding risk.[211]

Several stakeholders considered the RIT-T was not appropriate for determining whether SENE investments should be undertaken because, among other things, it is:

- overly complex given the speculative nature of the required inputs (specifically generation forecasts);[212]
- an unnecessary regulatory burden;[213] and
- unsuited to determining the efficient size of the SENE.[214]

In contrast, Citipower/Powercor[215], Ergon Energy[216] and the SA DTEI[217] supported the use of the RIT-T (or Regulatory Investment Test for Distribution (RIT-D)) with some modifications to streamline the process and so avoid delays in investment and therefore connection.

A number of stakeholders who did not support a Rule change being made nonetheless considered that, of the options presented in the Options Paper, Option 4 (or a variation) struck the most appropriate balance between allocating stranded asset risk amongst market participants.[218] As well as introducing an efficiency test, Option 4 allocated some of the asset stranding risk to generators by requiring them to pay charges based on their stand alone connections.

---

209 Origin, Options Paper submission, pp.6-9.

210 TRUenergy, Options Paper submission, p.3.

211 Grid Australia, Options Paper submission, p.8.

212 NGF, Options Paper submission, p.6; Hydro Tasmania, Options Paper submission, p.3.

213 Geodynamics, Options Paper submission, p.1; Infigen, Options Paper submission, p.5.

214 AGL, Options Paper submission, p.6; NGF, Options Paper submission, p.6.

215 Citipower/Powercor, Options Paper submission, p.4.

216 Ergon Energy, Options Paper submission, p.5.

217 SA DTEI, Options Paper submission, p.1.

218 AGL, Options Paper submission, p.2; Alinta, Options Paper submission, p.13; NGF, Options Paper submission, pp.11-12.

In contrast, several other stakeholders considered it undesirable to transfer asset stranding risk to generators, as would occur under Option 3 and particularly Option 4, especially where net market benefits have been demonstrated through application of the RIT-T.[219]

C.3 Market based versus central planning approach

C.3.1 Rule change proponent's view

The Rule change proponent did not directly address this issue.

C.3.2 Stakeholder views

General approach

Several stakeholders, particularly those that did not support the Rule Change Request overall, expressed a preference for a market based solution to the identified issues of more efficiently connecting generation to the network.[220]Market based solutions were preferred primarily because risk would be allocated to those parties best able to manage it. In addition, it was considered that a market based solution would avoid a more formal, time-consuming and costly regulatory approvals process.

A number of stakeholders considered that a lack of property rights limits market-driven options for building extensions and that providing firm access would increase investment in merchant transmission.[221]Similarly, UED considered incentives could be introduced to promote merchant distribution and transmission links, which would require firm transmission rights.[222]

Generally, these stakeholders considered that any regulated framework should not crowd-out private investment.

Origin considered that comments around the centrally-planned nature of the proposed SENE Rule change were misconceived, since investment in transmission could not proceed without sufficient market interest.[223]

---

219 Geodynamics, Options Paper submission, p.4; Infigen, Options Paper submission, p.5; Macquarie Capital, *AEMC SENE Options Paper: Report to the Green Grid Forum*, December 2010, p.5.

220 AER, Consultation Paper submission, p.1; EnergyAustralia, Options Paper submission, p.2; Grid Australia, Consultation Paper submission, p.4; Macquarie Generation et al, Consultation Paper submission, pp.6-7; MEU, Consultation Paper submission, p.28; NGF, Options Paper submission, p.5; SP AusNet, Consultation Paper submission, pp.5-6; UED, Consultation Paper submission, p.11.

221 LYMMCo, Consultation Paper submission, p.11; NGF, Consultation Paper submission, p.10 and Options Paper submission p.4; TRUenergy, Consultation Paper submission, pp.2-3.

222 UED, Consultation Paper submission, p.11.

223 Origin, Options Paper submission, p.4.

A number of stakeholders supportive of the SENEs proposal considered that the introduction of the SENEs framework which involves a degree of intervention in the market would be an appropriate and proportional response to the issues the Rule Change Request is seeking to address.[224] TRUenergy stated:[225]

> "It is difficult to envisage a pure market based approach being able to capture the relevant efficiency due to timing difficulties in generator commitment decisions, and information co-ordination barriers resulting from the competitive generation investment process. A degree of central planning therefore seems difficult to avoid in this instance."

From a different perspective, esaa considered that:[226]

> "In broad terms, the proposed approach for SENEs accords with the guided decentralisation of the philosophy of the NEM model: they entail a mixture of centralised planning with decentralised investment decisions by market participants. However, the overbuild feature does represent a step towards a strategic approach to building connection assets that is not present in the current frameworks."

Impact on locational signals and competitive neutrality

A number of stakeholders were concerned that the proposed SENEs framework would distort market arrangements by providing renewable generators in SENE zones an advantage over generators located elsewhere.[227]For example, LYMMCo considered:[228]

> "Given SENEs are driven by the interests of renewable generation the charging regime introduces bias towards wind connections. This is inappropriate and arguably not consistent with the National Electricity Objective."

Similarly, the MEU considered that the proposed Rule would give:[229]

> "....distant generation near an independently identified hub a commercial benefit compared to a renewable generator located closer to the shared network or not one able to locate near the hub or shared network."

The MEU considered this approach would be contrary to competitive neutrality.

---

224 Infigen, Consultation Paper submission, p.1; Geodynamics, Consultation Paper submission, p.5; Origin, Consultation Paper submission, p.3; Green Grid, Options Paper submission, p1; TRUenergy, Consultation Paper submission, p.5.

225 TRUenergy, Consultation Paper submission, p.5.

226 esaa, Options Paper submission, p.5.

227 NGF, Consultation Paper submission, p.8; LYMMCo, Consultation Paper submission, p.4; MEU, Consultation Paper submission, pp.12-13; EnergyAustralia, Consultation Paper submission, p.4.

228 LYMMCo, Consultation Paper submission, p.4.

229 MEU, Consultation Paper submission, pp.12-13.

International Power expressed concern that the very presence of a SENE would distort locational decisions by generators by making one particular location more attractive as a result of reduced connection times and construction risks for later users.[230]

The AER noted that a regulated approach had the potential to distort investment decisions by passing the risk of development onto customers, and that any intervention should be limited to removing any barriers to market response.[231]

In addition, the MEU considered:[232]

> "...the current rules provide appropriate signals for investment and generation location and the proposed rule will dilute these from being market driven to being one influenced by regulatory decision making."

In contrast, Origin considered that, in addition to connection costs, locational signals such as loss factors and congestion risk would be taken into account prior to a SENE being built. As such, Origin considered that the SENE "does not dampen the market's current locational signals, including the cost of connection."[233]

Geodynamics and Infigen both considered that the SENE proposal would achieve a levelling of the playing field for remote generation. For example, Infigen considered that:[234]

> "...properly designed SENEs will incentivise energy market participants in overcoming many of the hurdles presently faced by renewable energy proponents wishing to develop sites that are remote from the current electrical power system."

In reference to the Cooper Basin, Geodynamics held the view that the structure of the SENEs framework, whereby customers would underwrite the risks of under-utilised capacity, would create "clear benefit for generator project proponents to connect utilising the SENE process rather than developing their own transmission connection solution."[235]

C.4 Complexity

C.4.1 Rule change proponent's view

The Rule change proponent did not comment directly on this issue.

---

230 International Power, Options Paper submission, p.2.

231 AER, Consultation Paper submission, p.3.

232 MEU, Consultation Paper submission, p.28.

233 Origin, Options Paper submission, p.4.

234 Infigen, Consultation Paper submission, p.1.

235 Geodynamics, Consultation Paper submission, p.3.

C.4.2 Stakeholder views

Several stakeholders considered that, while consideration should be given to whether a SENE may lead to efficiency gains, any changes to the Rules should represent an appropriate and proportionate response to the issues the Rule change is seeking to address.[236]

ENA considered:[237]

> "…the SENE model appears overly complex in relation to the size of the problem and further work (eg a practical case study) should be carried out to explore less complex alternative solutions."

Grid Australia considered:[238]

> "...the lack of hard evidence of shortcomings in the current arrangements means that there is a real possibility that any new framework may, in practice, end up being used only in limited circumstances. It is therefore important that any Rule changes remain proportionate."

In addition, a number of stakeholders explicitly expressed support for the principle that any new rules to implement a SENE regime should be consistent with the features of the existing Rules, as far as possible, to maintain regulatory certainty and stability.[239]

Origin considered the regulatory regime governing the SENE should be clear and transparent, and issues surrounding the point at which the SENE becomes part of the shared network as well as the implications for the charging regime, must be resolved now and remain stable. Origin considered this would be imperative in providing certainty to prospective investors.[240]

Several stakeholders, including a number of DNSPs, also considered that certain characteristics of SENEs do not fit naturally into the existing framework, for example, the nature of the service that the SENE provides and compensation arrangements where generators are constrained off the SENE.[241] These stakeholders were of the view

---

236 AER, Consultation Paper submission, p.3; ENA, Consultation Paper submission, p.1; Ergon Energy, Options Paper submission, p.2; Grid Australia, Consultation Paper submission, p.4; Macquarie Generation et al, Consultation Paper submission, p.2; SP AusNet, Consultation Paper submission, p.2.

237 ENA, Consultation Paper submission, p.1.

238 Grid Australia, Options Paper submission, pp.5-6.

239 SP AusNet, Consultation Paper submission, pp.2-3, Grid Australia, Consultation Paper submission, pp.4-5.

240 Origin, Consultation Paper submission, p.7.

241 Energex, Consultation Paper submission, p.3; Grid Australia, Consultation Paper submission, p.1; SP AusNet, Consultation Paper submission, p.3; AER, Consultation Paper submission, p.1; EnergyAustralia, Consultation Paper submission, p.8; CitiPower/Powercor, Consultation Paper submission, p.1; Macquarie Generation et al, Consultation Paper submission, p.1.

that the proposed arrangements create a further layer of complexity in the Rules, which is not desirable. For example, Energex stated:[242]

> "...the proposed arrangements appear overly complex and their practical application may not deliver the efficiencies that are envisaged."

In respect of the proposed compensation arrangements, NSPs were generally opposed on the basis that the arrangements would be difficult to administer.[243] For example, EnergyAustralia noted:[244]

> "...the compensation regime will be unduly complex and burdensome to administer for assets which are shared by multiple parties."

Citipower/Powercor[245] and Ergon Energy[246] considered it may be more appropriate for AEMO to manage compensation arrangements.

EnergyAustralia[247] and SP AusNet[248] also noted that the introduction of capacity rights would be out of step with the current open access regime. The NGF[249] and Macquarie Generation[250] considered that private agreements for determining compensation and access would be more appropriate and would negate the need for complex regulatory rules in these areas.

DNSPs also expressed some concern that the SENE arrangements would be potentially onerous on DNSPs and require them to undertake a number of activities which they are not best placed to undertake.[251] In addition to administering compensation arrangements, DNSPs weren't convinced they were best placed to undertake future generation forecasts. For example, UED noted:[252]

> "NSPs possess only limited experience in the task of forecasting generation output, although TNSPs probably have a larger number of employees with requisite skills than DNSPs."

---

242 Energex, Consultation Paper submission, p.3.

243 SP AusNet, Consultation Paper submission, p.5; EnergyAustralia, Consultation Paper submission, p.22,;Citipower/Powercor, Consultation Paper submission, p.4; Ergon Energy, Consultation Paper submission, p.7.

244 EnergyAustralia, Consultation Paper, submission p.22.

245 Citipower/Powercor, Consultation Paper submission, p.4.

246 Ergon Energy, Consultation Paper submission, p.7.

247 EnergyAustralia, Consultation Paper submission, p.22.

248 SP AusNet, Consultation Paper submission, p.5.

249 NGF, Consultation Paper submission, p.3.

250 Macquarie Generation, Consultation Paper submission, p.7.

251 Citipower/Powercor, Consultation Paper submission, p.1; UED, Consultation Paper submission, p.7; Energex, Consultation Paper submission, p.2; Ergon Energy, Consultation Paper submission, p.6.

252 UED, Consultation Paper submission, p.7.

DNSPs were also strongly opposed to any ring fencing arrangements and considered that it was imperative that SENEs could be easily incorporated into the shared network given the meshed nature of the distribution network where load is more likely to connect to the SENE.[253] For this reason, DNSPs were also generally supportive of SENEs being classified as a direct control service as opposed to a negotiated distribution service.

In contrast to these views, Geodynamics considered:[254]

> "...the currently proposed SENE process has the crucial benefit of simplicity whilst maintaining the appropriate incentives on participants."

Geodynamics held the view that a market-based approach is likely to be significantly more complex.

Origin also disagreed that the proposed Rule was overly complex. Origin considered that, because the detailed design of the SENE had not been previously articulated, this, along with a number of misconceptions about the mechanism, has led to a perception of complexity and an unwarranted shift in support away from SENEs.[255]

253 EnergyAustralia, Consultation Paper submission, p.10; Citipower/Powercor, Consultation Paper submission, p.2; Ergon Energy, Consultation Paper submission, p.7.

254 Geodynamics, Consultation Paper submission, p.5.

255 Origin, Options Paper submission, p.2.