

Australian Energy Market Commission

RULE DETERMINATION

National Electricity Amendment (Connecting Embedded Generators) Rule 2014

Rule Proponent(s)

ClimateWorks
Property Council of Australia
Seed Advisory

17 April 2014

For and on behalf of the Australian Energy Market Commission

RULE
CHANGE

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Reference: ERC0147

Citation

AEMC 2014, Connecting Embedded Generators, Rule Determination, 17 April 2014, Sydney.

About the AEMC

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

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Summary

The Australian Energy Market Commission has made a final rule establishing a framework that provides for the efficient connection of embedded generators to distribution networks. A new framework has been created with the purpose of reducing the barriers that embedded generation proponents registered to participate in the market, have faced in attempting to connect to distribution networks. It also accommodates the need for distributors to adapt their networks to the changing environment while maintaining the reliable and safe supply of electricity to all consumers.

The new connection framework for generators has three stages: two enquiry stages and an application stage. To allow for the needs of the variety of embedded generation projects that may connect to the different distribution networks across the National Electricity Market, the final rule includes flexible timeframes throughout the connection process. In addition, the information that is to be exchanged between an embedded generation proponent and a distributor at various points in the connection process is specified in the final rule with the aim of amending the current information imbalance between the parties.

To address the various concerns raised by the rule change proponents and other stakeholders, the final rule sets out detailed regulatory requirements for both embedded generation proponents and distributors. Compliance with these new requirements will come at some cost for distributors. However, embedded generator proponents have faced some difficulties in trying to connect under the current regulatory framework. Amending this situation makes the consequent increase in regulation appropriate and in the long term interest of consumers who will ultimately benefit from efficient investment in embedded generation and the electricity network. The Commission therefore considers that the final rule will contribute to the achievement of the national electricity objective by establishing a clearly defined process for embedded generation connections.

The final rule also provides for greater transparency and information regarding the decision making process of distributors when considering the potential connection of embedded generators to their networks. This in turn will assist embedded generator proponents in their business decisions and enable them to put forward well informed proposals to distributors. Over time, the Commission anticipates that the new framework will provide for an efficient process to consider, develop and deliver embedded generation projects that produce a widespread benefit.

The final rule

The final rule amends Chapter 5 of the NER and applies to registered embedded generators (that is, generators with a capacity greater than 5MW). In addition, smaller generators located in Victoria and Queensland may, in some circumstances, be able to use the new Chapter 5 connection process. The connection framework under Chapter 5A of the National Electricity Rules for non-registered embedded generators (that is,

those with a capacity less than 5 MW) will be assessed in response to a rule change request submitted by the Clean Energy Council.

This final rule primarily amends Chapter 5 of the National Electricity Rules. It has been made in response to the rule change request and proposed rule submitted by ClimateWorks Australia, the Property Council of Australia and Seed Advisory. These organisations identified a number of significant issues with the current regulatory regime for connecting to distribution networks as well as highlighting the particular needs of embedded generation proponents.

The key features of the amendments to Chapter 5 of the National Electricity Rules:

- Information pack: each distributor is required to publish an ‘information pack’ that sets out relevant information to guide connection applicants on the connection process and requirements; provide an example of relevant costs; and provide a model connection agreement. The information pack will improve the clarity and transparency of the connection requirements and allow connection applicants to participate more effectively in the connection process.
- Enquiry process: a new two-stage connection enquiry process consisting of a preliminary enquiry stage followed by a detailed enquiry stage. With agreement from the distributor, an embedded generator may skip the preliminary enquiry step. Otherwise, a distributor has 15 business days to provide a preliminary enquiry response to an embedded generator. A distributor’s detailed enquiry response is to be completed within 30 business days. The timeframes for distributors to provide enquiry responses are extendable upon agreement. These provisions are intended to improve the timeliness and certainty of embedded generation connection enquiries. Distributors are permitted to charge an enquiry fee for preparing a detailed enquiry response. Any enquiry fee charged is to recover the reasonable costs incurred by a distributor related to the preparation of a detailed enquiry response.
- Application process: following the enquiry stages, an embedded generator proponent may lodge an application to connect with a distributor. Under the revised process, a distributor will be required to make an offer within four months of receiving an application. An embedded generator proponent has 20 business days in which to accept this offer. These timeframes are extendable upon agreement.
- Technical information: in the absence of practicably achievable automatic or minimum access standards for embedded generators, distributors will be required to publish a register of generating plant (which exceeds the standing exemption for registration) that have been successfully connected to the network in the preceding five years. Provision of this information will increase transparency and enable connection applicants to understand earlier and with greater certainty the types of equipment available for connection to a distribution network.

- Dispute resolution: embedded generator proponents or distributors are able to seek assistance in resolving disputes on technical or other matters arising during a connection process through the Wholesale Energy Markets Dispute Resolution Adviser in accordance with Chapter 8 of the National Electricity Rules.

Reasons for the Commission's final rule determination

Having regard to the issues raised by the rule change proponents and other stakeholders, the Commission has made a final rule that is a more preferable rule to the proposed rule included in the rule change request. The final rule is also different from the draft rule published on 27 June 2013.

The Commission has made a more preferable rule to the proposed rule that gives effect to the key objectives of the proponents' rule change request by amending the connection process located in Chapter 5 of the National Electricity Rules and related clauses. The final rule better balances the administrative burden placed on embedded generation proponents and distribution networks to comply with specific information requirements, provides greater certainty regarding the connection process, and provides flexibility for parties to mutually agree to changes to timeframes within the process.

The Commission is satisfied that the final rule will, or is likely to, contribute to the achievement of the national electricity objective for the following reasons:

- The final rule will provide a clearer connection process for embedded generation proponents and distributors compared to the proposed rule. This is because it includes clear obligations on both parties as well as timeframes within which to achieve outcomes. The connection process in the final rule is a three stage process: two enquiry stages and an application stage, designed to better meet the needs of the parties. The process also allows for the skipping of the preliminary enquiry stage under certain circumstances, providing experienced proponents and less complex generation projects with the ability to move through the connection process more quickly.
- The final rule provides greater clarity on what information is to be exchanged by the parties at various stages through the connection process. It aims to address the information asymmetry that currently exists. The information to be provided by distributors includes information on costs and the basis of cost calculations. The information provisions included in the final rule build upon existing information requirements for distributors to improve the availability and transparency of information that would assist embedded generation proponents before and during the connection process.
- Technical standards relevant to embedded generators are not included in this final rule. Nevertheless, the final rule requires distributors to publish and maintain a register of information about registered embedded generators (that is, with a capacity in excess of the 5MW standing exemption threshold) that have successfully connected to their networks over the preceding five years. This will improve the technical information available to embedded generation proponents

compared to the proposed rule. Such information will support a more the efficient and effective connection process.

For distributors, compliance with the new requirements will come at some additional cost. However, the Commission considers this increase in administrative burden is appropriate and proportionate to the issues. The new framework is not onerous, and, given the ability of the final rule to meet the national electricity objective, is in the long term interests of consumers.

Commencement of the final rule

This final rule commences on 1 October 2014.

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1 ClimateWorks Australia, Seed Advisory, and Property Council of Australia's rule change request

1.1 The rule change request

On 18 April 2012, ClimateWorks Australia, Seed Advisory, and Property Council of Australia (collectively, the proponents) requested the Australian Energy Market Commission (Commission) to make a rule regarding the process for connecting embedded generators to distribution networks in the National Electricity Market (NEM) (the rule change request).¹

Specifically, the proponents suggested a number of amendments to Chapter 5 of the National Electricity Rules (NER) to address their concerns about the current requirements and processes that are relevant to connecting embedded generators to distribution networks. The rule change request included a proposed rule.

1.2 Rationale for the rule change request

In this rule change request, the proponents sought to amend the existing framework for connecting embedded generators with a capacity between 10kW and 30MW to a relevant distribution network. The proponents have claimed amendments are needed because the NER is insufficient to facilitate cost effective and timely connections by embedded generators to distribution networks. In particular, the proponents identified a number of 'regulatory gaps' that have resulted in the connection process being conducted on a case-by-case basis, rather than a common approach across the NEM.

The problems identified by the proponents fall broadly into three categories: the connection process, technical requirements, and connection-related costs.

Connection process and terms and conditions

The proponents consider that although there are connection processes under Chapters 5 and 5A of the NER, these are not sufficiently prescriptive to provide certainty to connection applicants. In particular, the proponents have stated that there is significant uncertainty with respect to whether applications may be successful, the timeframe within which applications will be considered, and the overall costs of connection. The proponents have stated that the connection process can result in significant delays to embedded generation projects.²

¹ The rule change request also draws on the proponents' September 2011 joint report *Unlocking barriers to cogeneration: project outcomes report*. This report is available from the ClimateWorks website: http://www.climateworksaustralia.org/sites/default/files/documents/publications/climateworks_unlocking_barriers_to_cogeneration_report_sept2011.pdf (at 14 November 2013).

² Rule change request, p11.

The proponents have also noted that the terms and conditions for connection can vary significantly between distribution network service providers (DNSPs). The absence of standard terms and conditions are considered by the proponents to increase the difficulty with which embedded generators are able to anticipate the requirements and costs associated with connecting to a distribution network. The proponents also contend that the terms of connection agreements are frequently 'onerous, one sided and not negotiable'.³

Technical requirements

Technical requirements or standards for distribution networks are determined in accordance with jurisdictional and local requirements. As a result, the technical standards that apply to embedded generator connections vary between DNSPs. The proponents considered that at times these technical requirements 'are not clearly and comprehensively identified at the beginning of the connection process'. Consequently, these requirements can result in 'significant costs and undermine the viability' of a project as it impacts the ability of the embedded generator to make relevant commercial decisions.⁴

The proponents also noted that 'some technical requirements imposed by DNSPs disallow exports of electricity to the grid'.⁵ This, the proponents asserted, can impact project proponents' options in regard to viable solutions they can implement, resulting in project proponents installing generators they consider are not scale efficient.

Connection charges and shared augmentation costs

Depending on the specific requirements of the connection application and the relevant jurisdictional provisions, embedded generators can be required to contribute to the costs to augment the shared network that arises from their proposed connection to the distribution network. The proponents consider there is 'a lack of clarity and transparency regarding responsibility for, need for and the costs of augmentation to the network'.⁶ They further note that, at times, the costs associated with a connection may be 'prohibitively expensive'.

1.3 Solutions proposed in the rule change request

To address the issues they have identified, the proponents proposed a number of amendments to Chapter 5 of the NER. These amendments are intended to apply to DNSPs and embedded generators in the 10kW to 30MW size range.⁷ The rule change request included a proposed rule.

³ ibid, p13.

⁴ ibid, p12.

⁵ ibid.

⁶ ibid, p13.

⁷ While this size range was identified by the proponents in the rule change request, the proposed rule was not limited in this way.

Broadly, the rule change request proposed to address the following:

- **Connection process and terms and conditions** - amend the connection process to include more prescriptive timeframes for DNSPs to provide responses to connection applicants; require DNSPs to publish standard information requirements; and require DNSPs to provide standard terms and conditions for embedded generation connections.
- **Technical requirements** - introduce an automatic access standard for embedded generators (although the content of such a technical standard has not been included in the rule change request or proposed rule) and introduce the right of embedded generators to export electricity to the distribution network.
- **Connection and augmentation costs** - exclude embedded generators from being required to pay shared network augmentation costs; allow network service providers to charge a fee-for-service to provide services to embedded generation proponents at the project development stage.
- **Other changes** - require DNSPs to publish annual network reports⁸ and make various consequential amendments.

1.4 Relevant background

The rule change request, either directly or indirectly, raises a number of issues relevant to work recently or currently carried out by the AEMC or other organisations. These include:

- the AEMC's Transmission Frameworks Review. This review was concerned with the interface between transmission and generation and included consideration of how generators connect to the transmission network. The Commission recommended an approach to increase competition and transparency in the construction of the assets required for generator connections to a transmission network. It is anticipated that implementation of the recommendations included in this review will result in a closer alignment of generation and transmission investment and, ultimately, minimise prices for electricity consumers in the long term by minimising the total system cost of building and operating generation and transmission assets. A final report was published on 11 April 2013.
- the AEMC's Power of Choice Review. This review was concerned with reforms aimed at providing consumers with a greater ability to make informed choices based on the benefits that end use services provide. The AEMC's proposed recommendations included: encouraging commercial investment in technology that enables flexible pricing options and other demand side participation products; incentives for network service providers to consider demand side

⁸ The proponents acknowledged that the requirement for DNSPs to publish annual reports was being considered under the distribution network planning and expansion framework rule change at the time of lodgement. The proponents considered that the proposed rule under the network planning rule change would address their requirements.

projects in lieu of infrastructure investments; and, allowing consumers to sell energy they generate to parties other than their retail electricity supplier. A final report was published on 30 November 2012.

- the distribution network planning and expansion framework rule change. On 11 October 2012, the AEMC made a final rule establishing a national framework for distribution network planning and expansion. This included new obligations on DNSPs to develop and document a demand side engagement strategy and to engage with non-network providers. In addition, DNSPs are now required to publish an annual planning report that includes information on demand forecasts and system limitations.
- the Department of Industry (DOI) conducted a report into the feasibility of developing mid-scale embedded generation connection standards.⁹ A final report prepared by its consultant, AECOM Australia, in August 2013, examined the feasibility of developing Australian technical standards for the connection of embedded generators (of 30kW to 5MW in size) to distribution networks.¹⁰

1.5 Commencement of rule making process

On 14 June 2012, the Commission published a notice under s. 95 of the National Electricity Law (NEL) advising of its intention to commence the rule making process and the first round of consultation in respect of the rule change request. A consultation paper prepared by the AEMC identifying specific issues and questions for consultation was also published at this time. Submissions closed on 9 August 2012.

The Commission received 43 submissions as part of the first round of consultation, each of which is available from the AEMC website (www.aemc.gov.au). A summary of the issues raised by these submissions, and the Commission's response to each issue, is contained in Appendix C of the draft rule determination.

1.6 Publication of the draft rule determination and draft rule

On 27 June 2013, the Commission published a notice under s. 99 of the NEL and a draft rule determination in relation to the rule change request. The draft rule determination included a draft rule.

Submissions on the draft rule determination closed on 8 August 2013. The Commission received 21 submissions, each of which is 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 L of this final rule determination.

⁹ The AECOM report defines mid-scale embedded generating systems as having a capacity between 10kW and 5MW.

¹⁰ Further information on this report may be found on the SCER website: www.scer.gov.au/workstreams/energy-market-reform/demand-side-participation/embedded-generation/.

1.7 Publication of the position paper and draft final rule

On 30 January 2014, the Commission published for consultation a draft final rule and position paper for the connecting embedded generators rule change request. The position paper outlined the policy positions that were the basis for the draft final rule.

The draft final rule for consultation included changes from the draft rule that was published on 27 June 2013. These changes were made following the Commission's consideration of the issues and concerns raised by stakeholders in submissions and consequent consultation.

In light of the changes made the Commission considered it prudent to provide stakeholders with an opportunity to consider any material and complex issues regarding implementation arising from the way the draft final rule was worded. Submissions to the position paper closed on 20 February 2014. The Commission received 22 submissions. A summary of the issues raised in submissions, and the Commission's response to each issue, is contained in Appendix M of this final rule determination.

1.8 Extensions of time

On 18 October 2012, the AEMC published a notice under s. 107 of the NEL extending the period of time to make a draft rule determination on this rule change request. This extension of time was made to allow the AEMC to consider the many issues raised by a broad range of stakeholders that responded to the AEMC's consultation paper.

The time extension also provided for additional consultation with the proponents and other stakeholders in the form of meetings and a workshop on 13 March 2013, to discuss the connection process. As a result of this time extension, the AEMC made its draft rule determination on 27 June 2013.

On 19 September 2013 and 19 December 2013, the AEMC extended the period of time under s. 107 of the NEL in which it must make the final rule determination for this rule change request. The reason for the first extension of time related to the 21 submissions received on the draft rule determination raising many issues of material complexity. The additional time also provided the AEMC with the opportunity to consider the complexity by carrying out further consultation with stakeholders, which included two workshops 17 October 2013 and 1 November 2013.

The reason for the second extension of time was to provide stakeholders with an opportunity to consider any material and complex issues regarding implementation issues arising from the way the draft final rule published for consultation was worded (see section 1.7 above). The draft final rule reflected changes to the draft rule arising from consideration of stakeholder feedback and submissions.

1.9 Section 108A report

On 26 July 2013, the AEMC published a brief report setting out the reasons why this rule change request was not finalised within 12 months of formal commencement of the rule change process. The Commission is required to publish such a report under s. 108A of the NEL.

As noted in this report, the final rule determination was not made within 12 months of the publication of the notice under s. 95 of the NEL due to:

- the detailed and complex nature of the rule change request; and
- the nature and volume of issues raised by stakeholders during the first and second rounds of consultation on the rule change request.

The s. 108A report is available on the AEMC website.

2 Final rule determination

2.1 Commission's determination

In accordance with s. 102 of the NEL, the Commission has made this final rule determination in relation to the rule change request proposed by ClimateWorks, Seed Advisory and the Property Council of Australia. In accordance with s. 103 of the NEL, the Commission has determined not to make the rule proposed by the rule proponents and has instead decided to make a more preferable rule.¹¹

The Commission's reasons for making this final rule determination are set out in Chapter 3.

The *National Electricity Amendment (Connecting Embedded Generators) Rule 2014 No 3* (final rule) is published with this final rule determination. The final rule commences on 1 October 2014. The final rule is a more preferable rule. Its key features are described in section 3.4.

2.2 Commission's considerations

In assessing the rule change request, the Commission considered:

- the Commission's powers under the NEL to make the rule;
- the rule change request;
- feedback from stakeholders during workshops;
- submissions received during the first and second rounds of consultation and on the position paper; and
- the ways in which the proposed rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles that apply to this rule change request.¹²

¹¹ Under s. 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.

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

2.3 Commission's power to make the rule

The Commission is satisfied that the final rule falls within the subject matter about which the Commission may make rules under s. 34(1)(a)(iii) of the NEL. That is, regulating "the activities of persons (including registered participants) participating in the national electricity market or involved in the operation of the national electricity system".

Further, the final rule falls within the matters set out in Schedule 1 to the NEL, as it relates to:

- item 11 - the operation of generating systems, transmission systems, distribution systems or other facilities;
- item 12 - the augmentation of transmission systems and distribution systems; and
- item 13 - access to electricity services provided by means of transmission systems and distribution systems.

2.4 Rule making test

Under s. 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 applies.

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

"The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

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

For this rule change request, the Commission considers the relevant aspects of the NEO are:¹³

- efficient investment in distribution networks;
- efficient operation of distribution networks; and
- efficient use of electricity services.

¹³ Under s. 88(2), for the purposes of s. 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 Commission is satisfied that the final rule will, or is likely to, contribute to the achievement of the NEO by providing clearly defined, nationally consistent arrangements (to the extent they apply) for the connection of embedded generators. These new arrangements will support more efficient outcomes in the national electricity market than the current arrangements, particularly in terms of the investment in and operation of distribution networks.

As identified by the rule change request, embedded generators connecting to a distribution network are the focus of this final rule. In maintaining this focus, the Commission acknowledges that, in some instances, embedded generation proponents have faced difficulties in negotiating connection to a distribution network. This outcome may arise because the regulatory framework of the electricity market is not a core aspect of their business. As a consequence, many embedded generation proponents are relatively inexperienced in the details and operation of the NER.

In contrast, DNSPs have extensive experience and knowledge of the NER as it is an important part of the environment in which they operate. However, not all DNSPs are equally familiar with the operation and needs of embedded generators. As a result, the Commission has concluded that there is a need to improve the operation and clarity of certain aspects of Chapter 5 of the NER. Specifically, there is a need to reduce barriers for embedded generation proponents to allow for their efficient connection to distribution networks.

This final rule will promote the long term interests of consumers in respect of prices for electricity services. In particular:

- by providing potential embedded generators and DNSPs with the means to obtain the information they need, these parties will be able to make better informed decisions about connecting to a distribution network, thereby promoting efficient investment in distribution networks and efficient use of electricity services; and
- by providing potential embedded generators with a clearly defined process to plan and undertake the connection of embedded generators to a distribution network, thereby promoting efficient operation of, and investment in, distribution networks.

There will be some costs associated with the implementation of this rule. DNSPs will be required to make certain information available publicly and, as part of a connection enquiry process, to prospective embedded generator connection applicants. However, the provision of this information will, in part, build on requirements already in place in the NER as well as current practices.

In addition, embedded generation proponents may incur some costs in preparing information for a DNSP. In some instances embedded generation proponents may be required to pay an enquiry fee to DNSPs. However, in comparison to the current situation, and taking into account the benefits from greater clarity in the new process, embedded generators should benefit from a clearer and more certain process.

That is, the costs associated with this rule are outweighed by the benefits of a clearer, more streamlined process that guides parties through the development of an embedded generation project in a timely and more efficient manner.

2.5 More preferable rule

Under s. 91A of the NEL, the Commission may make a more preferable rule that is different (including materially different) from a market initiated proposed rule if it 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 NEO.

Having regard to the issues raised by the proposed rule and the rule change request, and other requirements of the NEL, the final rule is a more preferable rule. The Commission is satisfied that the final rule will, or is likely to, better contribute to the NEO for the following reasons:

- The final rule will provide a clearer connection process for embedded generation proponents and DNSPs compared to the proposed rule. It does this because it includes obligations on both parties as well as key timeframes within which to achieve certain outcomes. The final rule also amends the Chapter 5 enquiry process to provide a two-stage enquiry process that better meets the needs of connection applicants and DNSPs.
- The final rule provides greater clarity about what information (including cost-related information) is to be provided by DNSPs compared to the proposed rule. The final rule supplements and builds upon existing information requirements in the NER to improve the availability and transparency of information that will be relevant to connection applicants before and during the connection process. It also specifies what information connection applicants are to provide to DNSPs.
- The final rule includes a requirement for DNSPs to publish information relating to successful embedded generation connections that have occurred over the preceding five years. This will allow relevant technical information to be available to prospective connection applicants, aiding their own connection enquiries. The final rule does not prevent the future development of relevant technical standards for connecting embedded generators. In contrast, the proposed rule did not provide for a register of information of a technical nature or specify technical standards although the proponents identified the availability of technical information as a matter of concern. Accordingly, the final rule will better meet the NEO compared to the proposed rule.
- The final rule clarifies that connection applicants and DNSPs are able to use the dispute resolution process under rule 8.2 of the NER for disputes about the technical requirements (as well as other matters) to establish or modify a connection. Recourse to the dispute resolution process should better meet the

needs of the parties in progressing embedded generation connections under the new process.

3 Commission's reasons

This chapter provides an outline of the current arrangements in Chapter 5 of the NER on connections as well the proposed rule. It also identifies and responds to the issues that have been assessed during this rule change process. An overview of the final rule and the relevant recommendations regarding civil penalty provisions conclude the chapter. The detailed analysis and conclusions are set out in the remaining chapters of this final rule determination.

3.1 Current arrangements

3.1.1 Connection process

The current provisions of the NER require DNSPs to make available certain information either publicly or to parties seeking connection to the distribution network. Specifically, DNSPs are required to develop and publish a demand side engagement document, which is to set out information including the description of how DNSPs engage with non-network providers (such as embedded generators) and the process for lodging connection applications.¹⁴ DNSPs are also required to publish annual reports of their planning activities in a distribution annual planning report (DAPR) including information on forecast demand and network limitations under Schedule 5.8 of the NER.¹⁵ The NER also sets out the minimum terms and conditions that apply to connection agreements.¹⁶

The NER provides a single stage connection enquiry process. Schedule 5.4 sets out the information that is to be included in a connection enquiry. On receiving an enquiry, a DNSP has 20 business days to respond. The response is to include relevant technical details and the information that must be submitted in a connection application.¹⁷

Following this, connection applicants are to submit applications that include the information as specified by the DNSP in its enquiry response. Where applicable, the connection applicant is responsible for providing proposed negotiated access standards with its application. Where the application includes a negotiated access standard that the DNSP has accepted, the DNSP must make a connection offer that is fair and reasonable.¹⁸

¹⁴ Clause 5.13.1(h) and Schedule 5.9 of the NER.

¹⁵ Rule 5.13(c) and Schedule 5.8 of the NER.

¹⁶ Schedule 5.6 of the NER.

¹⁷ Clauses 5.3.2 and 5.3.3 of the NER.

¹⁸ Clauses 5.3.5(a), 5.3.6(a), 5.3.6(c).

3.1.2 Technical standards

The NER provisions regarding the technical requirements about the connection of registered participants (which includes embedded generators, unless provided otherwise) are located in a number of schedules to Chapter 5. In brief:

- Schedule 5.1 outlines, among other things, the requirements on network service providers (NSPs) to develop consistent processes to determine the appropriate technical requirements to apply for each connection enquiry or application with the objective that all connections satisfy the requirements of this schedule;
- Schedule 5.1a outlines the system standards that are necessary or desirable for the safe and reliable operation of the facilities of registered participants and for the safe and reliable operation of equipment;
- Schedule 5.2 sets out the conditions for connection of generators. For those embedded generation systems less than 5MW (and so automatically exempt from registration with AEMO), this schedule does not apply where the intended generating system is used in a manner the DNSP considers is unlikely to cause a material degradation in the quality of supply to other network users;
- Schedule 5.3 sets out details of the requirements and conditions that customers must satisfy as a condition of connecting load to a network. This is likely to apply to embedded generators if they are also load customers;
- Schedule 5.4 identifies the information required to be submitted with a preliminary enquiry for connection or modification of an existing connection;
- Schedule 5.5 lists the range of technical data which may be required to be provided by connection applicants to a NSP. The actual data required will be advised by the NSP and will form part of the technical specification in the connection agreement;
- Schedule 5.6 sets out the specific conditions that connection agreements must contain about connection and access to a distribution network; and
- Schedule 5.7 sets out the information for each connection point that must be provided to the relevant NSP by each registered participant that has a connection point to a transmission network of that NSP.

3.1.3 Connection charges and shared augmentation costs

Currently, Chapter 5 of the NER enables DNSPs to charge a connection applicant an application fee which is payable on lodgement of an application to connect. The application fee arises from clause 5.3.3(c)(5), which requires a NSP to advise the connection applicant in writing of, among other things, the details of any application fee that the NSP may charge. The amount of the application fee should not be more than necessary to cover the reasonable costs of all work anticipated to arise from

investigating the application and preparing the associated offer to connect. This clause does not require the NSP to publish the application fee on its website.

In respect of the fee-for-service arrangement suggested by the rule change proponents', unlike the application fee, there are currently no provisions in the NER relating to this type of service.

The current arrangements in the NER that relate to the itemised statement of connection charges outlined in the proposed rule are set out in Schedule 5.6. This schedule identifies the proposed terms and conditions that must be contained in a connection agreement. It includes metering arrangements and connection service charges.

Embedded generators are not currently exempt from paying for the cost of augmentation of the distribution network. For example, under clause 5.3.5(d) of the NER, a DNSP must assess an application to connect so as to maintain the levels of service and quality of supply to existing registered participants in accordance with the NER. That is, depending on a DNSPs view of the impacts of the connection and the size of the generator, it must consult with other market participants, including those it has connection agreements with ,when preparing an offer to connect. The purpose of this consultation is to enable the DNSP to assess the connection application and determine:

- the technical requirements for the equipment to be connected;
- the extent and cost of augmentations and changes to all affected networks;
- any consequent change in network service charges; and
- any possible material effect of this new connection on the network power transfer capability including that of other networks.

The provisions relating to the cost of augmentation of the network are similar under Chapter 5A of the NER. Clause 5A.C.3 outlines a negotiation framework between a DNSP and a connection applicant for negotiated connection under Chapter 5A.

3.2 Proposed rule

3.2.1 Connection process

To assist connection applicants, the proponents have proposed that DNSPs be required to publish information including: a description of how an application for a new connection is to be made; a description of the connection process; identification of the information that must be submitted with an application to connect; and the basis for the calculation of connection charges.¹⁹ The proposed rule outlined specific items to be

¹⁹ Rule change request, p26.

published by DNSPs upfront including a description of how connection applications are to be made.

As identified by the proponents, this type of information is critical for embedded generation proponents to be able to effectively engage with DNSPs in developing an embedded generation project. Information that could practically guide connection applicants would complement the demand side engagement document and the DAPR that DNSPs are now required to publish. The additional transparency about the connection process, technical requirements and fees and charges should aid in improving the negotiation process between the parties.

The proponents considered the current connection process could be burdensome, time-consuming and costly for small generators.²⁰ It was also suggested that some DNSPs have not always promptly responded to connection enquiries. In this regard, the current 'propose and respond' process does not provide satisfactory outcomes for connection applicants.²¹ Despite these concerns, the proposed rule did not seek to amend the connection enquiry process itself.

The proponents commented that there were no binding timeframes under the current connection application process. In their view, this has led to situations where there has been a misalignment between the project proponent's requirements and a DNSP's connection process.²² This misalignment of timeframes has resulted in significant additional costs to project proponents.²³ Consequently, the proponents proposed a 65 business day limit on DNSPs to provide connection offers in response to connection applications.

3.2.2 Technical standards

The rule change request proposed the inclusion of a new schedule in Chapter 5 that sets out the automatic access standards to apply to the connection of embedded generators to a distribution network. Although the proposed rule did not specify the types of information to be provided in this schedule, it did include a drafting note to insert a standard once it is developed. A drafting note cannot be included in the National Electricity Rules as suggested. Instead, reference to, or the detail of, the standards themselves would need to be included. However, in light of the work undertaken by the Department of Industry (formerly DRET), the Commission recognises that Australian standards may be created in the future.

Further, the submission from the Property Council of Australia's embedded energy technical working group contained detailed suggested changes to Schedules 5.1a, 5.1, 5.2, 5.3, 5.3a, 5.4, 5.5, 5.6 and 5.7.²⁴ The working group reviewed the technical

²⁰ ibid, p9.

²¹ ibid, p11.

²² ibid, p12.

²³ ibid.

²⁴ Property Council of Australia, Consultation paper supplementary submission.

requirements for the connection of generation and identified those aspects that they considered were not applicable to embedded generators with nameplate ratings up to and including 5 MW.

3.2.3 Connection charges and shared augmentation costs

The proposed rule contained a number of provisions requiring DNSPs to provide information about the connection charges and costs of shared network augmentation. These included obligations on DNSPs to:²⁵

- Publish on their website information on connection fees, application processing fees and the basis for calculating the connection charges. This would provide greater information transparency and aid embedded generator proponents in negotiating with DNSPs.
- Allow embedded generator proponents to be charged a fee-for-service (additional to any connection application fee) to aid in development of the connection application.²⁶ Although the NER does not prevent DNSPs from charging such fees, the proponents suggested that a clarification of this type would aid embedded generator proponents in understanding the potential financial implications of pursuing an embedded generation project.
- Include an itemised statement of connection costs (in so far as relevant) in the offer to connect. This would include: standard connection charges; meter type and cost; cost of network extension; details of network augmentation required; and any other incidental costs and the basis for their calculation.²⁷ The purpose of this being to reduce the information asymmetry faced by embedded generation proponents.
- Only charge embedded generator proponents the cost for shallow augmentation (connection and extension assets) and exempt them from paying shared network augmentation.²⁸ The proponents stated this was consistent with the current approach applied in Victoria. However, it would conflict with the general principle that where a user in the NEM creates a burden on a network then that user should contribute their share of the relevant cost created.

3.3 Assessment of issues raised

3.3.1 Identification of issues

As indicated from the above, the rule change proponents sought the resolution of a number of issues that had been experienced by embedded generation proponents.

²⁵ Rule change request, p26.

²⁶ ibid, p17.

²⁷ ibid, p27.

²⁸ ibid, p28.

During consultation, other stakeholders have raised further issues regarding the Chapter 5 connection requirements. In the context of the emergence of a greater interest in connecting embedded generators to distribution networks across the NEM, these issues can be summarised as:

- The application of Chapter 5 and 5A of the NER. The proponents had sought a number of changes to Chapter 5 of the NER. They did not regard the connection regime contained in the then draft Chapter 5A of the NER as appropriately addressing their needs. However, submissions and other stakeholder consultation indicated that the question of what process, and what part of the NER, would be relevant to different categories of embedded generator projects was not clearly understood by many stakeholders. Clarifying this point has been important;
- Lack of relevant and timely information. The rule change proponents asserted that the current provisions do not identify the information to be provided by DNSPs to an embedded generation proponent sufficiently and/or at the appropriate stage of the connection process. They argued that embedded generation proponents have not received information relevant to considering their investment decisions when needed. This view was held by other embedded generation proponents although not necessarily by DNSPs. Balancing information requirements – in terms of content and timing – has been a key consideration;
- The enquiry process is not sufficiently prescriptive. A number of stakeholders expressed a view that the process currently set out in Chapter 5 of the NER was too open. The experiences of embedded generation proponents differed noticeably between DNSPs and over time, creating confusion about what process could be reasonable to expect. It was generally acknowledged that if the number of embedded generator projects was to grow in the future, a clearer process would be beneficial to all parties;
- Technical requirements in connecting embedded generators. The proponents and other embedded generator proponents were concerned the current Chapter 5 provisions allow DNSPs to determine the technical standards and requirements for connecting embedded generators, as well as prevent embedded generator proponents from exporting electricity to the network. They stated that significant and/or late specification of technical requirements have impacted on investment decisions of embedded generation proponents. It has become important to clarify what technical information could be relevant to embedded generation proponents and when this should be provided in the context of their own decision making processes as well as the overall connection process;
- Dispute resolution process. Consultation with stakeholders revealed that the dispute resolution process included in Chapter 8 of the NER was not used in the context of negotiating a connection to a distribution network. Embedded generation proponents were not clear about how the process could operate and were concerned about the impact that a dispute may have on long term

relationships with DNSPs. A suitable dispute resolution mechanism in the context of connecting embedded generators has been considered;

- The cost of connection. The rule change proponents and other embedded generator proponents have stated that the NER lacks clarity about the costs associated with connecting to a distribution network. As a result, embedded generation proponents face uncertainty about the type and level of costs that they may be required to pay and this impacts on their investment decisions. These concerns include fees and charges related to the connection process itself and the costs incurred in making a connection (such as the cost of augmenting the network). It highlighted to the Commission that greater clarity on this issue to improve information on costs is important.

3.3.2 Response to issues

While the final rule that has been made is outlined in section 3.4, the Commission's responses to the issues raised by stakeholders are summarised here:

- The application of Chapter 5 and 5A of the NER. The final rule amends Chapter 5 of the NER. In doing so, it amends the connection process for embedded generators (regardless of technology) that are larger than the AEMO exemption from registration threshold of 5MW.²⁹ Chapter 5A of the NER provides connection processes for embedded generators that are under the AEMO threshold. An assessment of a rule change request submitted by the Clean Energy Council regarding the negotiated connection process set out in Chapter 5A for smaller embedded generators (that is, those that are less than 5MW) will commence soon;
- Lack of relevant and timely information. The current provisions on what information and when it is to be exchanged during the course of a connection process could be clarified to assist both parties in a connection process. In particular, accessing relevant and timely information would give embedded generation proponents the ability to prepare more informed enquiries, negotiate with a DNSP more effectively, and make more informed decisions about their investments;
- The enquiry process is not sufficiently prescriptive. If the number of embedded generator projects was to grow in the future, a clearer, more prescriptive process could be beneficial to all parties involved. It could specify the different stages within a connection process, and what is to occur at each of those stages, reflecting the good practices that have already been put in place in some instances. This would provide a consistent framework across all embedded generation connections using Chapter 5 of the NER. However, a new connection process should also be sufficiently flexible to accommodate the differences in the

²⁹ That is, registered embedded generators, generators intending to apply for exemption from registration, and generators in Victoria and Queensland that are able to access the Chapter 5 process.

complexities that may arise with different embedded generation projects. Overall, greater certainty about the connection process itself should allow DNSPs to manage connection enquiries and applications more efficiently as well as provide a clearer framework in which embedded generation proponents are able to make their business decisions;

- Technical requirements in connecting embedded generators. Clarification of the technical requirements relevant for embedded generation projects should include identifying the relevant technical information. It should also include at what stage of the connection process the information is needed by the embedded generation proponent and when it can be provided by the relevant DNSP. The clarification about technical requirements should result in placing embedded generation proponents in a more informed position when preparing an enquiry and negotiating with a DNSP, aiding the overall efficiency of the connection process;
- Dispute resolution process. The current process in Chapter 8 of the NER has not been used in the context of connections. Given the uncertainty about its application, it would be beneficial to clarify that the process is relevant and can be used for disputes regarding technical and other aspects of connecting to a distribution network;
- The cost of connection. Embedded generation proponents have indicated their uncertainty about the fees and costs associated with connecting to a distribution network. There would be a benefit to these parties if the relevant provisions of the NER were clear and consistent across DNSPs. This should improve the transparency about the costs that may be incurred, allowing embedded generation proponents to make better informed decisions.

3.4 The final rule

There are a number of differences between the final rule and the proposed rule. These differences reflect policy modifications and amendments to improve the clarity and application of the final rule. As a result, the Commission considers that the final rule will better contribute to achievement of the NEO compared with the proposed rule.

These policy modifications and amendments are set out in detail, with supporting reasoning, in the remainder of this final rule determination. In summary, the key amendments made to the proposed rule in making the final rule are set out below.

3.4.1 Connection process

The final rule provides for certain information to be made publicly available through an 'information pack'. The information is to include:

- process requirements;
- example costs that may be incurred;

- single line diagrams of the DNSP's preferred connection arrangements;
- schematic diagrams of the protection and control arrangements;
- technical requirements relevant to the processing of a connection enquiry; and
- a model connection agreement.

These provisions build on information provision requirements in the existing demand side engagement document and the DAPR requirements introduced into the NER in 2012. The purpose of making relevant information available to potential embedded generation proponents is to allow these parties to become more effective participants in the connection process.

While the proposed rule retained the current one step enquiry process, the final rule has created a two-step process of a preliminary enquiry stage and a detailed enquiry stage. This recognises the iterative nature of the current enquiry process. However, embedded generation proponents are able to skip the preliminary stage with the agreement of the relevant DNSP. This may be appropriate where the embedded generation proponent is experienced in a particular DNSP connection process or where a particular embedded generation project is not complex and has limited impact on the distribution network.

In response to the proponent's request for more clarity on the time taken for the connection process, the final rule specifies that a DNSP has 15 business days to respond to a preliminary enquiry and 30 business days to respond to a detailed enquiry. These timeframes may be extended by agreement. Where a DNSP considers that more time will be required, it must provide the connection applicant with reasons why this time is needed. In response to this request, the connection applicant should not unreasonably withhold consent to a time extension request.

In the subsequent application process, once an application to connect is made a DNSP is to respond to the applicant with an offer to connect within four months. Apart from the defined four month timeframe, this aspect of the final rule (the preparation of the offer to connect) does not operate any differently from the current arrangements. The final rule provides the embedded generation proponent with 20 business days to accept the subsequent offer to connect. However, similar to the timeframes for the preliminary and detailed enquiry responses, where a connection applicant considers that it needs more time to assess the DNSPs offer to connect, it must provide the DNSP with reasons why an extension is required and this consent should not be unreasonably withheld by the DNSP.

The feature of extendable timeframes throughout the connection process allows for one process to accommodate the different levels of complexities relating to the variety of possible embedded generation projects that may seek to connect to any distribution network across the NEM.

3.4.2 Technical standards

As noted above, the proposed rule provided a drafting note in anticipation of the future creation of technical standards relevant to embedded generators. It was anticipated that if these standards were met, then access to the relevant distribution network could be achieved more quickly and easily than would otherwise be the case.

A drafting note cannot be included in the NER as suggested. Instead, reference to, or the detail of, the standards themselves would need to be included. In light of the work undertaken by DOI (formerly DRET), the Commission recognises that Australian standards may be created in the future.

However, to improve the level of available technical information in any event, the final rule requires each DNSP to publish and maintain a register of completed embedded generation projects (that is, registered embedded generators or generators required to seek exemption from registration) that have been successfully connected to its network, over a rolling five year period. The inclusion of this information in a public register is subject to the confidentiality provisions of the NEL.

As with the other provisions relating to providing information, this aims to place embedded generation proponents in a more informed position when preparing an enquiry and negotiating with a DNSP.

3.4.3 Connection charges and shared augmentation costs

The proposed rule included some amendments to provisions regarding fees and charges by DNSPs. It also prevented embedded generators from being required to contribute to shared augmentation costs.

In regard to the first issue, the final rule provides DNSPs with the ability to charge connection applicants an enquiry fee for any analysis required to produce the detailed enquiry response. The amount of this enquiry fee must not be more than necessary to cover the reasonable costs of work required. Where a DNSP is not able to reasonably estimate the total cost of the enquiry fee (as a result of requiring quotes from relevant third parties, which may include AEMO, TNSPs or other DNSPs) the final rule allows the enquiry fee to be payable in components. The final rule does not alter the current ability for DNSPs to charge an application fee where this may be necessary for the DNSP to prepare an offer to connect.

In addition, the final rule also obliges a DNSP to include an itemised statement of connection costs as part of its detailed enquiry response and its offer to connect. The itemised statement of connection costs must include, so far as is relevant, connection service charges, costs associated with metering, costs of network extensions, details of augmentation required, costs of interface equipment, details of any ongoing operation and maintenance costs and charges for work to be undertaken by the DNSP, and other incidental costs and their basis for calculation. Where contestability arrangements exist in a jurisdiction, the itemised statement of connection costs should only include those services that are monopoly services. The DNSP is to inform the connection applicant of

any items for which they are able to obtain their own quotes from relevant accredited service providers.

In regard to the second issue, the final rule does not make any change to the current arrangements. If embedded generators were exempt from contributing to shared network augmentation costs, other users of the network would have to bear these costs. That is, embedded generators would not face the costs that they may cause on the distribution network. This would conflict with the general principle that where a user in the NEM creates a burden on a network then that user should contribute their share of the relevant cost.

3.5 Civil penalty provisions

The provisions of the NER that are classified as civil penalty provisions are listed in the National Electricity (South Australia) Regulations. The Commission may recommend to amend or remove these provisions and notify the Standing Council on Energy and Resources (SCER) of the policy rationale for this course of action.

The draft final rule further amended a number of clauses that were classified as civil penalty provisions in the draft rule. In response to these amendments, the Victorian DNSPs and CitiPower and Powercor considered the inclusion of civil penalty provisions in NER clause 5.3A.8 – detailed response to an enquiry – were inappropriate given that the information requirements in the relevant clauses are uncertain, variable on a case-by-case basis and subjective. Specifically:³⁰

- the information required by draft clause S5.4B(f) relating to technical information may vary on a case-by-case basis;
- the information required by draft clause S5.4B(g) relating to prudential requirements is a matter for negotiation between the DNSP and the embedded generator under clause 6.21.1(b) of the NER; and
- the application fee payable required by clause S5.4B(m) is only required to include the reasonable costs anticipated to be incurred by third parties whose participation in the assessment of the application to connect will be required per draft clause 5.3A.4(e)(2)(ii). Therefore, a civil penalty provision relating to the application fee payable to be provided at this stage is inappropriate.

In contrast, the CEC considered that the draft final rule appeared to be a significant relaxing of the existing civil penalty provisions for the connection process under Chapter 5. The CEC believed that the intent of the current civil penalty provisions within clause 5.3.3(b), (b1) and (c) are that the DNSP must provide the information relevant to the connection enquiry such that the connection applicant can make an informed decision on their investment and fully appreciate the commercial implications of their decisions.

³⁰ Position paper submissions from: Victorian DNSPs, p3; and CitiPower and Powercor, p2.

The CEC did not consider that there appeared to be any material difference in the information included in the preliminary and detailed responses, as it is required for exactly the same reasons as the information which is currently subject to civil penalty provisions in clause 5.3.3. Therefore, the CEC suggested the final rule apply civil penalty provisions to clause 5.3.7(a), and clause 5.3A.8(g) (to apply to the entire Schedule 5.4B). It considered this would be uncontroversial because it would be consistent with the spirit of the existing penalty provisions.³¹

Each of the clauses identified by the DNSPs above are already classified as civil penalty provisions in the existing connection process under Chapter 5 of the NER. DNSPs should have systems in place to deal with these civil penalty provisions given that they have been operating under these obligations for some time. That is, those clauses classified as civil penalty provisions in the draft final rule do not place any additional obligations on DNSPs compared to the current arrangements.

In contrast, and as noted by the CEC, the draft final rule in fact contained fewer civil penalty provisions than the draft rule. The Commission acknowledges the comments from the CEC, but does not consider it necessary to recommend any additional civil penalty provisions in the final rule. The Commission considers that the new connection process will provide connection applicants with more transparent information relevant to the connection enquiry for them to make informed decisions. That is, as a result of the NER prescribing in greater detail the obligations on both parties with respect to the information to be provided at each stage of the connection process, it is not necessary to recommend that these provisions be classified as civil penalty provisions.

Following consideration of submissions, the Commission has determined not to amend any of the civil penalty provisions in the final rule compared with the draft final rule. The civil penalty provisions that have been amended in the final rule are set out in Table 3.1.

While the Commission cannot create new civil penalty provisions, it may recommend to SCER that new or existing provisions of the NER be classified as civil penalty provisions. The new provisions that the Commission is recommending to SCER as civil penalty provisions are set out in Table 3.2.

The Commission considers that the new and amended provisions should be classified as civil penalty provisions because a breach of these provisions would pose a risk to the secure operation of the NEM. In addition, the classification of these provisions as civil penalties would encourage compliance by relevant parties with these provisions.³²

³¹ CEC, Position paper submission, p11.

³² These provisions would only become civil penalty provisions if the relevant amendments to the National Electricity (South Australia) Regulations are made and come into effect.

Table 3.1 Existing civil penalty provisions to be retained

Current clause reference	Final clause reference	Reason for recommendation
5.3.6(a)	5.3.6(a)(1)	Restructured and renumbered with amendments: original clause split into three separate clauses to reflect both processes (existing and revised for embedded generation) for connection. Clause remains consistent with original intent.
	5.3.6(a)(2)	
5.3.6(b)	5.3.6(b)	Minor amendments to reflect a continuation of the general connection process. Clause remains consistent with original intent.
5.2.3(d)	5.2.3(d)	Minor amendments to accommodate new connection process. Clause remains consistent with original intent.
5.3.3(c)	5.3.3(c)	Minor amendments to address cross-references to Chapter 6. Clause remains consistent with original intent.
5.3.4A	5.3.4A(c), and (e)	Minor amendments to accommodate new connection process. Clause remains consistent with original intent.
5.3.8	5.3.8(a), (b), (c)	Minor amendments to accommodate new connection process. Clause remains consistent with original intent.

Table 3.2 Recommended new civil penalty provisions

Draft clause reference³³	Final clause reference³⁴	Reason for recommendation
5.3A.8(g)(1)	5.3A.8(g)(1)	The detailed response from the DNSP is to include all items listed in Schedule 5.4B. Provision of a subset of these will be subject to a civil penalty. Equivalent to clauses to 5.3.3(c)(4), 5.3.3(c)(5) and 5.3.3(c)(6), which are civil penalty provisions.
5.3A.10(e)	5.3A.10(e)	Equivalent to current clause 5.3.5(g), which is currently a civil penalty provision.

³³ Clause reference as outlined in the draft rule determination.

³⁴ Corresponding to the clause in the final rule.

4 Commission's assessment approach

The Commission's assessment of the rule change request is subject to an assessment framework based on the national electricity objective (NEO) in addition to a number of other related factors. These other factors include a set of principles and issues arising from work conducted as part of other relevant rule changes and reviews (including reviews external to the AEMC).

In preparing this final rule determination, the Commission has had regard to the assessment framework outlined in this chapter.

4.1 National electricity objective

The Commission must consider whether the proposed rule promotes the NEO as set out under s. 7 of the NEL (see section 2.4 of this final determination). In assessing the rule change request against the NEO, the Commission's considerations have included whether the proposed changes would lead to:

- lower costs for embedded generators and distributors;
- more efficient investment outcomes that provide clearer, more cost-reflective price signals;
- clearer, more transparent and timely connection processes for connections to distribution networks; and
- clearer, more transparent processes and information related to determining connection costs.

4.2 Principles for assessing the rule change request

To assess the rule change request against the NEO, the Commission established a set of principles that have been applied:

- **transparency** - project proponents or connection applicants and DNSPs should have sufficient information available to them to allow efficient decisions to be made;
- **proportionality** - any costs arising from the regulatory requirements must be proportionate to the benefits;
- **technology neutrality** - the framework for connections should be technology neutral and not biased towards any class of participant or stakeholder;
- **consistency across the NEM** - where appropriate, the framework for connections should be consistent across all regions and all types of participants and stakeholders;

- **fit for purpose and reflecting local requirements** - while consistency is an important principle, allowances, where necessary, should be made for differences in participant requirements, operating requirements and network conditions; and
- **economic efficiency** - the framework for connections should promote efficient investment in, and operation of, distribution networks and generation systems.

4.3 Other relevant rule changes and reviews

As previously noted, the Commission has also taken into account considerations under other rule changes and reviews that relate to the issues considered in this assessment of the rule change proposal. These include:

- AEMC's distribution network planning and expansion rule change, where changes were made to the NER to require DNSPs to publish information about network limitations in their annual planning reports and process information in the demand side engagement document;
- AEMC's Transmission Frameworks Review (TFR), in which the AEMC has considered arrangements for connecting to the transmission network including the cost allocation framework;
- AEMC's Power of Choice review, where the AEMC has considered arrangements for encouraging flexible pricing options and demand side participation through increasing consumer participation in energy markets; and
- DOI's review of technical standards for connecting to distribution networks.

5 Scope and location of the final rule

This chapter provides a discussion on the most suitable location of the final rule connection process that addresses the issues raised by the rule change proponents.

This issue was raised by stakeholders in submissions to the draft rule determination and position paper and follows the adoption of the National Energy Consumer Framework (NECF) by a number of jurisdictions in the NEM.

5.1 Overview of the final rule

The final rule amends Chapter 5 of the NER. It creates a connection process for connecting registered embedded generators to distribution networks. The new process is based on and utilises the general connection process in Chapter 5 that has existed to date. This remains intact and continues to be relevant for generators connecting to transmission networks and customers connecting load.

As discussed in greater detail later in this chapter, the final rule does not make any changes to the new Chapter 5A provisions of the NER that provide connection processes for micro and unregistered embedded generators.

5.2 Current provisions

5.2.1 AEMO registration process

Under clause 2.2.1(c) of the NER, AEMO may exempt a person from the requirements to register as a generator in accordance with its guidelines issued from time to time.³⁵ Under these guidelines, the process for exemption from registration as a generator is outlined in Appendix 6.³⁶

The NEL requires a person engaging in generation in the NEM to register with AEMO as a generator. Exemption from this requirement may be obtained through a derogation, or otherwise under an exemption from AEMO.³⁷ There are two types of exemption: a standing exemption or a specific exemption granted on application to AEMO. The NEL does not preclude a potential generator who is eligible for exemption, but who wishes to participate in the market, from applying for registration.

³⁵ Under the NER, an Embedded Generator is a Generator who owns, operates or controls an embedded generating unit. A Generator is defined as someone requiring registration by AEMO as a Generator, or intends to register in that capacity.

³⁶ AEMO, May 2013, *NEM Generator Registration Guide*, Appendix 6 - guideline on exemption from registration as a generator, pp34-37.

³⁷ NEL, Part 2, Division 1, s. 11(1)(b).

Standing exemption

The current size threshold for the standing exemption from the requirement to register as a generator is currently set at 5MW by AEMO in its registration guidelines. In AEMO's opinion, a generating system with a nameplate rating of less than 5MW cannot significantly affect market outcomes or impact power system security. Therefore, AEMO considers that a person who engages in the activity of owning, controlling or operating a generating system is automatically exempt from the requirement to register as a generator, where:³⁸

- (a) one of the following applies:
 - (i) the generating system has a total nameplate rating at a connection point of less than 5 MW; or
 - (ii) the generating system is not capable of exporting to a transmission system or distribution system in excess of 5MW; or
 - (iii) the generating system has no capability to synchronise or to operate electrically connected to a distribution system or transmission system; and
- (b) either:
 - (i) the sent out generation of the generating unit is purchased in its entirety by the local retailer or by a customer located at the same connection point; or
 - (ii) each of the generating units comprising the generating system is classified as a market small generation unit (for the purposes of aggregation).

Where a connection applicant's generating system meets the above requirements, it does not need to submit any documentation to AEMO. It is automatically exempt from the requirement to pay participant fees or be scheduled or settled in the market.

Application for exemption from registration

Where a connection applicant's generating system is less than 5MW and does not meet the conditions outlined above, or has a nameplate rating of more than 5MW but less than 30MW, it may apply to AEMO for exemption from registration. The conditions that AEMO will take into consideration when granting an exemption from the requirement to register are:³⁹

- whether the nameplate rating of the generating system is between 5MW and 30MW; and
- if the generating system exports less than 20GWH of electricity in any 12-month period; or

³⁸ AEMO, May 2013, *NEM Generator Registration Guide*, Appendix 6, clause 5.

³⁹ AEMO, May 2013, *NEM Generator Registration Guide*, Appendix 6, clause 7.

- if extenuating circumstances apply.

To apply for exemption, the connection applicant must submit the 'application for exemption from registration as a generator' form to AEMO with all evidence to support its application.⁴⁰ The supporting evidence required by AEMO is significant.

Following consideration of the application, AEMO may grant the exemption in its absolute discretion and subject to any conditions it considers appropriate. In granting exemption, AEMO will need to be satisfied that the generating system will not have a material impact on the operation of the NEM or the activities of market participants in the NEM. As such, connection applicants usually apply for exemption relatively late in the connection process, close to the commissioning date of the generating system.

5.2.2 Chapter 5A

Chapter 5A was introduced into the NER for those jurisdictions implementing the NECF. The design and structure of Chapter 5A is to accommodate basic and standard connection service offerings primarily for load, but also for unregistered embedded generation.⁴¹

It also provides a framework to negotiate connection to a distribution network. With the introduction of the Chapter 5A connection arrangements, clause 5.3.1(c) was removed from Chapter 5 of the NER for those jurisdictions implementing the NECF.⁴² To the extent this clause may have been characterised as an 'opt in' to use the Chapter 5 connection processes and requirements by a person who is not registered as a Generator, it is no longer applicable. Under clause 5.1.2, a non registered embedded generator may seek to agree, under contract, with a DNSP to incorporate aspects of Chapter 5 into that contract. A DNSP is not obliged to agree.

However, a non-registered embedded generator can apply for connection to a distribution network under Chapter 5A. Chapter 5A applies to 'retail' customers, which includes connection applicants that are non-registered embedded generators.⁴³ Therefore, a registered participant cannot use Chapter 5A to connect to the network. However, as a non-registered embedded generator is a retail customer, it is also a connection applicant under Chapter 5A, and so has a right to apply to connect under it.

⁴⁰ The application form may be found on AEMO's website at:
www.aemo.com.au/Electricity/Registration/Application-Forms/Generator

⁴¹ Under Chapter 5A, a basic connection service includes a service provided to a retail customer or a retail customer who is, or proposes to be, a micro-embedded generator and a standard connection service is a connection service provided to a particular class of connection applicant for which the AER has approved a model standing offer submitted by a DNSP.

⁴² National Electricity (National Energy Retail Law) Amendment Rule 2012, Schedule 1 item 8. This amending rule does not apply in a participating jurisdiction until the National Energy Retail Law is applied in that jurisdiction as a law of that jurisdiction. Clause 5.3.1(c) noted that for the purpose of rule 5.3, 'any person wishing to establish a connection to a network may elect to follow the procedures in this rule 5.3'. At the time of publication of this rule change, Queensland and Victoria have not implemented the NECF.

⁴³ Clause 5A.A.1 of the NER.

Therefore, with the implementation of the NECF, it appears that the intention was for connection applicants in jurisdictions where the NECF applies and whose generating systems meet the standing exemption criteria from the requirement to register as a generator with AEMO, the relevant connection process is under Chapter 5A.⁴⁴

For those connection applicants in non-NECF jurisdictions whose generating systems nameplate rating is below the standing exemption from the requirement to register with AEMO as a generator, the applicable process for connection of embedded generation is as set out in any relevant local jurisdictional instrument. Alternatively, these applicants may seek to rely on clause 5.3.1(c) as outlined above. Where no jurisdictional instruments for the connection of embedded generators exist, the DNSP will determine the relevant connection process.

5.2.3 Chapter 5

Chapter 5 relates to the connection of registered participants and entitles a registered participant (or person who is required to, or intends to, become a registered participant) to connect to a distribution or transmission network.⁴⁵

Therefore, for any connection applicant whose generating system is greater than the standing exemption from registration with AEMO, the Commission is of the view that the applicable connection process is under Chapter 5 of the NER. Chapter 5 is the subject of the current rule change request.

5.3 Proponents' view

In the April 2012 rule change request, the proponents expressed the view that the connection framework to be established under Chapter 5A was designed predominantly to accommodate micro-embedded generators. That is, those generators that have a generating capacity of no more than 10kW.⁴⁶ At the time of submitting the rule change request, Chapter 5A had not commenced in any jurisdiction in the NEM. The rule change proponents noted that Chapter 5A would come into effect on 1 July 2012.

Under Chapter 5A, DNSPs are required to have a model standing connection offer for 'basic connection services', which are services that are directly connected to the distribution network. Basic connection services are only available for retail customers who are micro embedded generators or load.⁴⁷ The proponents considered that most

⁴⁴ The NECF is currently implemented in South Australia, Tasmania, New South Wales and the Australian Capital Territory.

⁴⁵ See the definition of Embedded Generator in Chapter 10 of the NER.

⁴⁶ Rule change request, p9.

⁴⁷ For the definition of basic connection service, see clause 5A.A.1 of the NER. A non-registered embedded generator is defined as an embedded generator that is neither a micro-embedded generator nor a Registered Participant.

cogeneration plants with a nameplate rating of up to 30MW that have obtained exemption from registration would not qualify for a basic connection service.⁴⁸

The proponents acknowledged that Chapter 5A includes a mechanism for the establishment of model standing offers for 'standard connection services', which could include the connection of cogeneration plants. However, they noted that DNSPs have discretion, rather than an obligation to offer these services.⁴⁹

The proponents submitted that this discretion may give rise to the potential for multiple connection processes to co-exist, depending on the classes or categories of customers established by DNSPs. For example, if every DNSP used the embedded generation categories proposed by the ENA – mini, small, medium and large – and proposed a different process for each category, there would be 44 separate processes in the NEM for cogeneration connection.⁵⁰

For these reasons, the proponents considered that the current regulatory framework contained a clear gap for generators with a nameplate rating of between 10kW and 30MW.⁵¹ They did not anticipate that the introduction of Chapter 5A connection framework would address this problem. For this reason, the rule change request focussed on amendments to Chapter 5 of the NER.⁵²

5.4 Stakeholder views - consultation paper

In response to the AEMC's consultation paper, a number of submissions noted the cross over between the connection processes under Chapter 5 and Chapter 5A. For example, Ausgrid suggested that further analysis should be undertaken to assess whether the introduction of Chapter 5A will address the issues raised by the proponents prior to commencing a further round of rule changes.⁵³

Similarly, Grid Australia considered that the best way to ensure that the proponents' concerns are dealt with, and transmission connection arrangements are not inadvertently impacted, is for the embedded generation connection process to be contained in Chapter 5A of the NER.⁵⁴ The CEC also considered that the rule change proponents concerns would be better addressed under Chapter 5A. It stated that the technical requirements for the connection of non-registered embedded generation can be clearly distinguished from those prescribed for registered generators as intended by

⁴⁸ Rule change request, p9..

⁴⁹ ibid, p10.

⁵⁰ ibid.

⁵¹ While this size range was identified by the proponents in the rule change request, the accompanying proposed rule was not limited in this way.

⁵² Rule change request, p10.

⁵³ Ausgrid, Consultation paper submission, p4.

⁵⁴ Grid Australia, Consultation paper submission, p2.

Chapter 5. The CEC considered that the NER should continue to recognise this, although the CEC suggested that Chapter 5A still required significant reform.⁵⁵

On the other hand, Endeavour Energy contended that pre-empting model standing offers for standard connection services under Chapter 5A by seeking amendments to the Chapter 5 connections process applying to registered generation is both unnecessary and inappropriate.⁵⁶

5.5 Draft rule determination

The amendments to Chapter 5 under the draft rule provided a clearer framework than the proposed rule and the current arrangements. The draft rule was intended to assist all generators seeking to connect to the distribution network. This would include connections of the size indicated by the rule change proponents in the range of 10kW to 30MW range, in addition to connections greater than 30MW. The process under the draft rule improved the availability of information and clarified the timeframes and obligations for the connection process.

The draft rule determination acknowledged that non-registered embedded generators would still be able to choose to proceed under Chapter 5 or Chapter 5A of the NER. Although, to provide regulatory certainty to all parties involved in a connection process, the draft rule clarified that once an applicant had elected to initiate a connection under a particular chapter, the connection must be completed under that same chapter.⁵⁷

The draft rule did not propose changes to the Chapter 5A connection process for non-registered embedded generators. The Commission noted that some stakeholders thought that this process had not been sufficiently tested and that it would be difficult to assess the efficacy of that process and any need to make amendments to it would not be consistent with the NEO.⁵⁸

5.6 Stakeholder views - draft rule determination

5.6.1 Applying a size threshold to the application of the draft rule

In response to the draft rule determination, a number of stakeholders suggested that the NER specify a clear MW threshold to dictate which chapter of the NER a connection applicant is to use. For example, AGL submitted that the draft rule could be effectively applied to the class of generators smaller than 5MW or exporting less than 20GWh per annum of electricity. AGL believed that the draft rule could prescribe these

⁵⁵ CEC, Consultation paper submission, p3.

⁵⁶ Endeavour Energy, Consultation paper submission, pp3-4.

⁵⁷ AEMC, 2013, *Connecting Embedded Generators*, Draft rule determination, 27 June 2013, Sydney.

⁵⁸ ibid, p43.

two thresholds. It considered this approach would be consistent with the original intent of the rule change request.⁵⁹

Similarly, Citipower and Powercor considered that the AEMC should limit the application of the draft rule to embedded generators with a capacity between 30kW and 5MW as proposed by the rule change proponents.⁶⁰

5.6.2 Application of the draft rule to registered embedded generators

Many stakeholders focussed on the draft rule's impact on embedded generators less than 5MW. However, a few made comments in regard to embedded generators greater than 5MW.

Fotowatio Renewable Ventures (FRV) noted that the scope of draft clause 5.3.1 captures all embedded generators, including registered embedded generators.⁶¹ FRV considered that draft clause 5.1.2(b) provided non-registered generators with the ability to opt-in to, and elect to be connected under Chapter 5, rather than Chapter 5A.⁶² FRV considered that the proposed connection process did not enhance the certainty, transparency or economic efficiency of the current connection process for registered embedded generators. Therefore, in its view, the scope of the draft rule should be limited to non-registered embedded generators which should be addressed with changes to Chapter 5A, not Chapter 5, of the NER.⁶³

AGL was concerned that the draft rule may become unworkable for the connection of registered embedded generators. It noted that these connections are generally technically more complex and require a much longer lead time. It may take up to 18 months or more before the technical requirements can be negotiated and agreed between the parties.⁶⁴

Origin Energy considered that there are practical problems with the draft rule in relation to the use of definitions under the proposed Part A. The reliance on definitions, as opposed to generator size, could potentially result in different connection frameworks applying to separate connection proponents seeking to connect an identical generating system to the grid. That is, the use of definitions could create confusion and regulatory gaps where jurisdictional differences exist between embedded generators, DNSPs and applicable local network service providers.⁶⁵

⁵⁹ AGL, Draft rule determination submission, pp1-2.

⁶⁰ Citipower and Powercor, Draft rule determination submission, p3.

⁶¹ Clause 5.3.1 states "where a connection applicant wishes to connect an embedded generating unit, rule 5.3A applies".

⁶² FRV, Draft rule determination submission, p5.

⁶³ ibid, p6.

⁶⁴ AGL, Draft rule determination submission, p2.

⁶⁵ Origin Energy, Draft rule determination, p1.

5.6.3 Issue of 'forum shopping'

Some stakeholders expressed concern that the draft rule allowed connection applicants to select a connection process.

The Victorian DNSPs interpreted the draft rule as providing for retail customers (whether as micro-embedded generators or non-registered embedded generators) or real estate developers (as non-registered embedded generators), as well as "any person" generally, to be able to request the connection process specified in Chapter 5 to apply instead of the Chapter 5A process. Therefore, the Victorian DNSPs suggested that the NER be amended to clarify that once a connection process has been initiated by a connection applicant under Chapter 5A then that process must continue to its conclusion. That is, non-registered embedded generators who choose to proceed under Chapter 5A should not be able to switch to Chapter 5 mid-way through the connection process. The Victorian DNSPs considered it would be more helpful if the NER were to direct a connection applicant to the most appropriate process.⁶⁶

Similarly, Ergon Energy and Energex were concerned that the draft rule would allow embedded generators to 'shop' between various connection processes. In their view, this would create uncertainty for DNSPs which would inevitably increase compliance costs.⁶⁷ Ergon Energy did not consider that embedded generator applicants should be treated any differently to other registered participants.⁶⁸

The NSW and Victorian DNSPs strongly suggested that the AEMC clarify the application of the connection process by amending the draft rule so it excludes connections compliant with AS4777. That is, any amendment of the draft rule should reflect:⁶⁹

- embedded generators intending to register as registered participants must apply for connection under Chapter 5;
- micro-embedded generators and non-registered embedded generators compliant with AS4777 are to apply for a connection under Chapter 5A; and
- non-registered generators with a nameplate rating of 10kW to 30MW, outside the scope of AS4777, are to apply for connection under the draft rule connection process (however, the NSW DNSPs considered that Chapter 5 would be more appropriate for embedded generators between 5MW and 30MW).

⁶⁶ Victorian DNSPs, Draft rule determination submission, pp6-7.

⁶⁷ Ergon Energy, Draft rule determination submission, p1; Energex, Draft rule determination submission, p2.

⁶⁸ Ergon Energy, Draft rule determination submission, p2.

⁶⁹ NSW DNSPs, Draft rule determination submission, p3; Victorian DNSPs, Draft rule determination submission, pp7-8.

5.6.4 Appropriate location for the connection process

Other stakeholders suggested that the nature of the draft rule was most relevant to embedded generators that would now use Chapter 5A and so changes should be made in Chapter 5A not Chapter 5.

Ergon Energy, Energex and the NSW DNSPs considered that Chapter 5A of the NER may be sufficient to address the perceived barriers in connecting as identified by embedded generator proponents. However, as Chapter 5A has essentially not been used, it remains unproven as to whether it will be sufficient to deal with these barriers or not. Therefore, Ergon Energy strongly recommended that the changes contemplated in the draft rule not be made until such time as Chapter 5A has been sufficiently tested by the market.⁷⁰

Similarly, Recurrent Energy also noted that the rule change request contemplated embedded generators with a capacity of 10kW to 30MW. Therefore, it believed that the draft rule is only appropriate for non-registered embedded generators and should make changes to Chapter 5A of the NER, not Chapter 5.⁷¹

The NSW DNSPs noted that NSW has implemented the NECF. They noted that the amendments to Chapter 5 as a result of the implementation of the NECF (particularly the removal of clause 5.3.1(c)) removed the scope for any person not required to register with AEMO to elect to follow the connection process under Chapter 5. Therefore, the additional connection process obligations under the draft rule would, in their view:⁷²

- add unnecessary administrative burden on DNSPs which will result in cost impacts to all customers;
- create confusion for customers in an already complex area; and
- potentially create confusion for DNSPs and increase the risk of processing errors.

The NSW DNSPs noted that these issues are relevant, given that Chapter 5A has the capability to address the connection process issues raised by the proponents rule change request. They suggested that the process outlined in the draft rule should apply to those non-registered generators with a nameplate rating of 10kW to 30MW.

The CEC also commented on the threshold issue. It recommended that the introduction of Chapter 5A be amended to clarify that it is to strictly apply to generators which comply with AEMO's standing exemption class. The CEC also suggested that Chapter 5 be amended to clarify that it applies to all generation otherwise.⁷³ This would quarantine generation of the size 10kW to 5MW to the Chapter 5A connection process

⁷⁰ Ergon Energy, Draft rule determination submission, p1; Energex, Draft rule determination submission, p1; NSW DNSPs, Draft rule determination submission, p2.

⁷¹ Recurrent Energy, Draft rule determination submission, p1.

⁷² NSW DNSPs, Draft rule determination submission, p2.

⁷³ CEC, Draft rule determination submission, p11.

and remove the ability for connection applicants of this size to choose a connection process.

5.7 Stakeholder views - position paper

Of the four issues discussed in draft rule determination and submissions on the matter of the scope and location of the rule, only the question of the appropriate location of the final rule was addressed by submissions to the position paper.

5.7.1 Appropriate location for the connection process

In responding to the position paper, some stakeholders still expressed concern about which connection process an embedded generation applicant must follow based on the size of their generating system. Stakeholders also sought clarification on where this will be reflected in the draft final rule.

Energex and Ergon Energy contended that the draft final rule was uncertain in relation to the proposed application and does not appear to adequately reflect the policy intent. Energex and Ergon Energy were concerned that a generator may apply (or intend to apply) for an exemption from registration or be subject to the standing exemption and therefore not be considered a registered participant. And, to address this concern, Energex suggested deletion of clause 5.1.2(b) to satisfy the policy intent for any generating system less than the standing exemption to follow the process outlined in Chapter 5A of the NER.⁷⁴

Ergon Energy also sought further clarification from the AEMC on which connection process an embedded generation applicant must follow based on their generating systems' size and where this is reflected in the supporting rules.⁷⁵

Similarly, the ENA was concerned at the potential ambiguity in the draft final rule and position paper in relation to the application of clauses 5.3.1A(a) and (b). According to the ENA, it was unclear whether the new process would apply to all embedded generators connecting to a distribution network regardless of the generation capacity or market registration status. While the position paper provides guidance on this point, the ENA did not consider that this was reflected in the rule.⁷⁶

The Victorian DNSPs stated that it was not clear whether the new connection process applied in both NECF and non-NECF jurisdictions and whether it was intended to cover registered and unregistered generation. In their view, the new process only applies to unregistered generators if agreed with the DNSP (under NER clause 5.1.2(b)). However, the Victorian DNSPs suggested that where it was more appropriate to follow

⁷⁴ Position paper submissions from: Energex, p1; and Ergon Energy, pp1-2.

⁷⁵ Ergon Energy, Position paper submission, pp1-2.

⁷⁶ ENA, Position paper submission, p2.

the embedded generation process in local jurisdictional instruments for unregistered embedded generators, they may prefer not to apply the new connection process.⁷⁷

The Victorian DNSPs consequently regard the coverage of the new process being limited to registered embedded generators above 5MW. Given the compliance costs that this rule change will impose on network businesses, the Victorian DNSPs requested that the AEMC clarify the purpose of adding this connection process to Chapter 5. That is, do the incremental benefits of this additional process justify the cost, given that embedded generators subject to the new process are currently subject to the existing Chapter 5 connection process.⁷⁸

The rule change proponents suggested the definition of connection applicant in Chapter 10 of the NER be amended to expand its application to "a person making a connection or an application to connect", as under rule 5.3A.⁷⁹

5.8 Conclusions

5.8.1 Applying a size threshold to the application of the draft rule

In response to submissions, the Commission investigated the potential for using a size threshold to delineate which process a connection applicant could use to connect an embedded generator. As noted by AGL, Citipower and Powercor the obvious size threshold would be 5MW. However, this value is not currently specified in the NER.

The 5MW size limit represents the current threshold for a standing exemption from the requirement for a connection applicant to register as a generator with AEMO. Currently, under clause 2.2.1(c) of the NER, AEMO may exempt a person from the requirement to register as a generator in accordance with guidelines issued from time to time. In this way, as conditions change in the NEM, AEMO has the discretion to amend the threshold as it deems appropriate and consistent with the NEO. That is, a level that would not affect the reliability, safety and security of the national electricity system for the long term interests of consumers.⁸⁰

On this basis, the Commission does not consider it appropriate to impose a threshold of 5MW in the NER. The value of the threshold may need to change in the future as a result of changing network conditions and is more appropriately determined by AEMO. For similar reasons, it does not appear appropriate to specify a MW threshold of any other value in the NER. For this reason, the final rule does not include a size threshold delineating which process a connection applicant must use.

⁷⁷ Victorian DNSPs, Position paper submission, pp1-3.

⁷⁸ ibid.

⁷⁹ Rule change proponents, Position paper submission, p2.

⁸⁰ AEMO, May 2013, *NEM Generator Registration Guide*, Appendix 6 - guideline on exemption from registration as a generator, provides the current guidelines made under clause 2.2.1(c) of the NER.

5.8.2 Application of the draft rule to registered embedded generators

Submissions on the draft rule determination correctly interpreted that the draft rule would apply to all generators greater than 5MW planning a connection to a distribution network. However, these stakeholders stated that the draft rule would not provide sufficient flexibility for technically complex connections to be completed within the prescribed timeframes.

The Commission recognises that the prescribed timeframes in the draft rule may not have provided sufficient flexibility for registered embedded generators. To address these concerns, each chapter on the connection process in this final rule determination provides an overview of how the connection process in the final rule has been revised to provide additional flexibility. This flexibility, especially with respect to timeframes, would allow the process under the final rule to be applied to both simple and complex embedded generator connections.

5.8.3 Issue of 'forum shopping'

A number of DNSPs were concerned that the draft rule would allow embedded generators to 'shop' between various connection processes. These DNSPs suggested that the draft rule be amended to dictate which process a connection applicant should use when proposing a connection to the network.

As outlined in section 5.8.4 below, the Commission has considered the issue of the appropriate location for the connection process that was set out in the draft rule. The final rule does not propose to make any changes to the operation of Chapter 5A of the NER. Accordingly, non-registered embedded generators compliant with AS4777 will still be required to apply for a connection under Chapter 5A. Further, non-registered generators with a nameplate rating between 10kW and the standing exemption from registration with AEMO (currently 5MW), will also have the right to apply for connection under Chapter 5A in those jurisdictions that have adopted the NECF.

As noted above, to the extent clause 5.3.1(c) may have provided an 'opt in', it is no longer applicable in NECF jurisdictions. Clause 5.1.2(b) merely states what the position is outside the NER, that is, that a connection applicant and DNSP could agree, under contract, to incorporate aspects of Chapter 5. It is difficult to see how such a clause acts as an 'opt in'.

Therefore, the connection process outlined in the final rule will apply to all other connection applicants greater than the current 5MW standing exemption threshold. The Commission notes that following adoption of the NECF in all jurisdictions, implementation of the final rule will result in there being only two processes for the connection of generation to distribution networks: Chapter 5A and Chapter 5. And, that the current threshold of registered versus non-registered generation (as reflected in the NER Chapter 10 definitions) is sufficient and appropriate to direct potential connection applicants to the relevant NER chapter. The Commission is satisfied that this arrangement appropriately addresses stakeholder concerns about a connection applicant's ability to 'forum shop'.

5.8.4 Appropriate location for the connection process

As noted above, at the time that the rule change request was submitted to the AEMC in April 2012, the NECF had not been implemented. In any event, the rule change proponents did not consider that the then proposed Chapter 5A connection process would address their concerns. As a result, the rule change request was accompanied by a proposed rule amending Chapter 5 of the NER. In response, the draft rule also focussed on, and made amendments to, the connection process under Chapter 5.

In response to the draft rule determination, a number of stakeholders suggested that the draft rule would be better placed in Chapter 5A. This follows from the NECF being adopted by a majority of NEM jurisdictions since initiation of the rule change request.⁸¹

To address these concerns, the position paper clarified the appropriate location for the connection process. Specifically, connection applicants proposing the connection of a generating system to a distribution network in a jurisdiction that has adopted the NECF:⁸²

- and where the generating system's rating is less than the standing exemption from registration as determined by AEMO, the appropriate process is under Chapter 5A; otherwise
- where the generating system is greater than the standing exemption from registration, the connection process under Chapter 5 and set out in the draft final rule is applicable.

For connection applicants proposing the connection of a generator to a distribution network in a jurisdiction that has not adopted the NECF:

- and where the generating system's rating is greater than the standing exemption from registration, the connection process under Chapter 5 and set out in the draft final rule is applicable; otherwise:
 - where the generating system's rating is less than the standing exemption from registration, the position is unchanged and the connection applicant may seek to follow the connection process in Chapter 5 by endeavouring to rely on clause 5.3.1 if it considers it appropriate to do so; or
 - the applicable process for connection of embedded generation may be in local jurisdictional instruments; or
 - where no jurisdictional instruments exist, the appropriate connection process will be determined by the DNSP.

⁸¹ The NECF arrangements now operate in South Australia, Tasmania, the Australian Capital Territory and New South Wales.

⁸² AEMC 2014, *Connecting embedded generators, Position paper*, 30 January 2014, Sydney, pp5-6.

In response to the position paper, some stakeholders were still concerned that the drafting of the rule did not provide enough certainty to connection applicants and DNSPs on which connection process they should use. In particular, Energex and Ergon Energy were concerned that a generating system may apply (or intend to apply) for an exemption from registration or be subject to the standing exemption and therefore not be considered a registered participant.

To address this concern, Energex suggested the deletion of clause 5.1.2(b) from the final rule because it regarded the policy intent was for any generating system less than the standing exemption to follow the process outlined in Chapter 5A of the NER.⁸³ In contrast, AEMO suggested an amendment to clause 5.3.1(b) that would make certain the final rule included those connection applicants that intended to apply for an exemption from registration.⁸⁴

The Commission's analysis of these issues and consideration of the appropriate location in the NER for the final rule is outlined below.

Connections under Chapter 5A of the NER

With the introduction of the NECF and the insertion of Chapter 5A in the NER, there were a number of changes to the operation of Chapters 5 regarding registered and unregistered participants. In particular, in NECF jurisdictions the ability for non-registered embedded generators to elect to use the Chapter 5 connection process was removed.⁸⁵ This is because Chapter 5A does not apply to registered participants or persons seeking to become registered participants. Therefore, a non-registered embedded generator (who by definition is not a registered participant) is not entitled to seek connection under Chapter 5.

In response to the issue identified by Energex and Ergon Energy relating to clause 5.1.2(b), the Commission does not consider that it acts as an 'opt in'. Clause 5.1.2(b) has been in the NER since its transition from the National Electricity Code and was intended to recognise that NSPs and unregistered connection applicants could make arrangements, outside the NER, to contractually include aspects of Chapter 5 in a connection agreement. It predates the introduction of retail customers that are also non-registered participants under the Chapter 5A framework. As such, clause 5.1.2(b) does not convey a right for a person that is not a registered participant to request that a connection be processed under Part A of Chapter 5 of the NER. Rather, it allows the relevant NSP to agree to enter into a contractual arrangement with the non-registered participant.

Chapter 5A of the NER provides the regulatory framework for electricity connection services for retail customers. For the purposes of Chapter 5A a retail customer includes

⁸³ Position paper submissions from: Energex, p1; and Ergon Energy, pp1-2.

⁸⁴ AEMO, Position paper submission, p1&3.

⁸⁵ In version 49 of the NER, clause 5.3.1(c) states that "any person wishing to establish a connection to a network may elect to follow the procedures in this rule 5.3".

a non-registered embedded generator.⁸⁶ A retail customer is a category of connection applicant and has the right to apply for connection to a distribution network. Accordingly, a non-registered embedded generator has a right to apply for a connection under Chapter 5A.

As discussed previously, the current threshold for standing exemption from the requirement to register as a generator with AEMO is 5MW. That is, a connection applicant proposing a generating system less than 5MW would not require any formal registration with AEMO and would be classified as a non-registered embedded generator. As such, proposed connections of this size must be progressed under Chapter 5A of the NER.

For those connection applicants classified as non-registered embedded generators in non-NECF jurisdictions, the applicable process for connection of embedded generation may be in local jurisdictional instruments. Otherwise, where no relevant jurisdictional instruments exist, the DNSP will determine the appropriate connection process. Alternatively, the Chapter 5 connection process may be applicable where a connection applicant seeks to rely on clause 5.3.1(c).

Connections under Chapter 5 of the NER

Chapter 5 includes provisions for the connection of registered participants to transmission and distribution networks. It entitles a registered participant, or a person intending to become a registered participant, to establish or modify a connection to a network.⁸⁷ Clause 5.3.1 requires those participants who wish to establish a connection to a network to follow the procedures in rule 5.3.

The current standing exemption threshold is stringently upheld by AEMO. Therefore, for those connection applicants proposing a generating system greater than the standing exemption (currently 5MW) there is a requirement that they seek registration. This is consistent with the definition of Embedded Generator which, for the purposes of Chapter 5, includes "a person who is required to, or intends to, register in that capacity, that is as a generator".

For those generating systems of a size between the standing exemption from registration, but less than 30MW, there is a presumption that the connection applicant will become a registered participant, even if they have not yet registered at the enquiry stage of the connection process. However, these connection applicants may apply to AEMO for exemption from registration as a generator if:

- the generating system exports less than 20GWh in any 12-month period; or
- extenuating circumstances apply.

⁸⁶ A non-registered embedded generator is defined in Chapter 5A of the NER as an embedded generator that is neither a micro-embedded generator nor a registered participant.

⁸⁷ Clause 5.1.2(a) of the NER.

The application must provide documentation to substantiate the criteria for exemption from registration. The AEMO guidelines do not state when a connection applicant may apply for exemption, but AEMO have advised that the project must be a 'committed project'. Therefore in practice, applications tend to be lodged late in the connection process just prior to commissioning.

In light of the above and to improve the operation of the final rule, clause 5.3.1(b) has been amended to make clear that a connection applicant to whom Chapter 5 applies includes a person who is or intends to be an embedded generator, or who otherwise is required to register as a Generator, but applies to AEMO for an exemption to do so. The Commission considers that, as noted by AEMO, this will remove doubt regarding the use of the Chapter 5 connection process for those connection applicants whose generating system's nameplate rating is greater than the standing exemption, but where they intend to apply for an exemption from registration in the future.

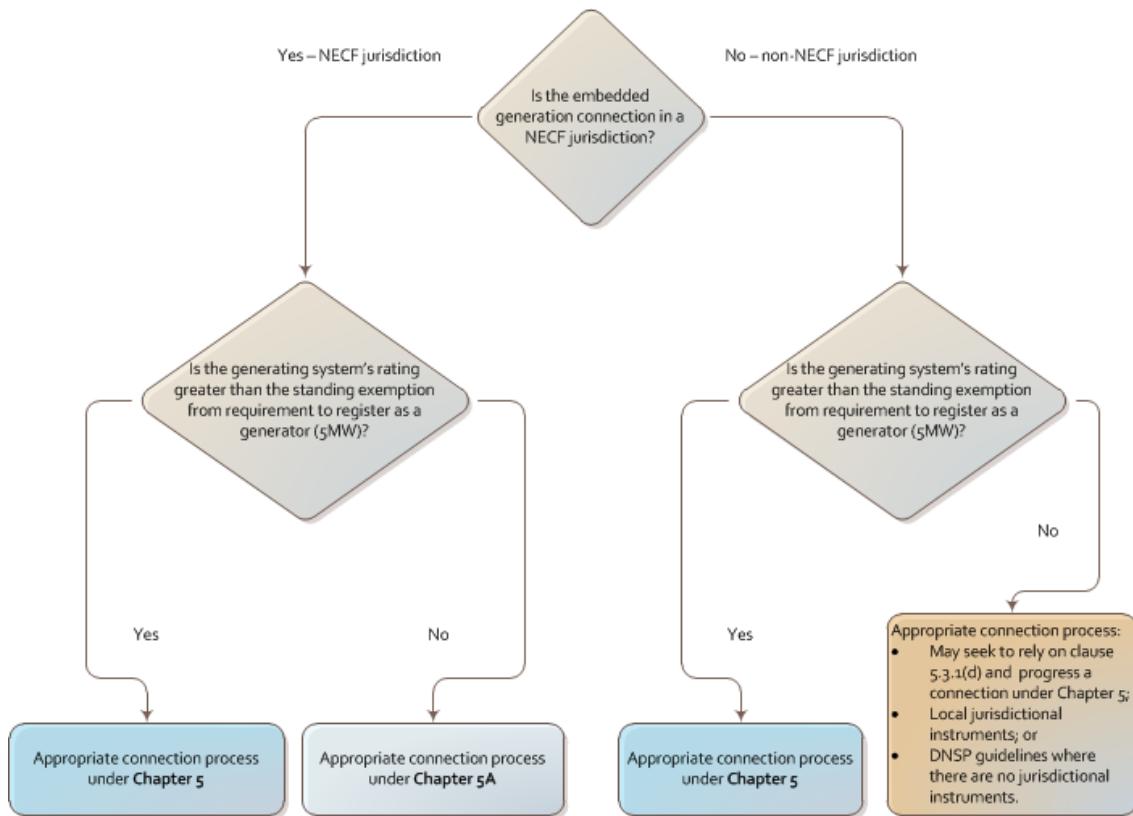
In summary, given that there is a presumption that connection applicants who do not satisfy the standing exemption criteria will become registered participants, the appropriate connection process is under Chapter 5 of the NER. This remains true for a connection applicant who at the outset, intends to lodge an exemption from registration with AEMO.

Conclusion

The Commission considers that the current registration process provides an appropriate method of delineating which connection process will apply to each connection applicant. That is, for connection applicants in a NECF jurisdiction proposing a connection of less than the standing exemption from registration as determined by AEMO, the appropriate process is under Chapter 5A. As previously noted, the final rule has not made any amendments to the connection framework under Chapter 5A.

For all other connection applicants, the appropriate connection process is under Chapter 5. Therefore, the final rule will provide a new connection framework for all generation connections to distribution networks (outside of the standing exemption) under Chapter 5 of the NER. This is represented by the diagram below.

Figure 5.1 Diagrammatic representation of appropriate connection process



While the final rule does not amend any provisions of Chapter 5A, it is noted that the CEC has submitted a rule change to the AEMC regarding the negotiated connection process in Chapter 5A. Following the completion of this current rule change process, it is the intention of the Commission to commence consideration of the matters identified by the CEC in their rule change request.

6 Connection process - availability of upfront information

This chapter sets out the Commission's analysis and conclusions on the upfront information to be published by DNSPs as part of the new connection process for embedded generation. It also includes an overview of this aspect of the final rule. Appendix B sets out the background and an overview of stakeholder consultation in relation to this matter. The availability of readily accessible information is intended to improve the transparency of the connection process.

The chapter is structured as follows:

- section 6.1 provides a summary of the final rule, including a comparison between the current NER provisions and the draft rule; and
- section 6.2 provides the Commission's analysis and conclusions in relation to this matter.

6.1 Overview of the final rule

Table 6.1 Upfront information - the final rule compared with the draft rule

Current NER provisions	Draft rule	Final rule
Information (see sections B.1, B.4 and 6.2)		
DNSPs are required to publish the demand side engagement document and the distribution annual planning report (DAPR), which includes information on network constraints.	DNSPs (not NSPs) would be required to publish an 'information pack'. The information pack would include a practical guide on making connection enquiries and applications, and example costs. It would complement the demand side engagement document which already includes details about the connection process and basis for calculating charges.	The final rule is unchanged from the draft rule. Clause 5.3A.3(b) requires DNSPs to publish an information pack.
Schedule 5.6 sets out the minimum terms and conditions that are to be agreed to in connection agreements and to be set out in the connection offer. Chapter 5 provides that the terms and conditions for connection are to be set out in commercial terms between network service providers and registered participants.	The information pack would include a model connection agreement to provide an example of the final connection agreement that applicants would need to enter into.	The obligations relating to the information pack are in clause 5.3A.3(b) of the final rule and include: <ul style="list-style-type: none">• a description of the process;• single line diagrams and schematic representation of protection and control systems;

Current NER provisions	Draft rule	Final rule
		<ul style="list-style-type: none"> • worked examples of connection service charges; • details of any minimum access or plant standards; • technical requirements relevant to the processing of a connection enquiry; and • a model connection agreement.
The offer to connect must define the basis for determining any distribution and transmission services charges (and other details).	DNSPs would include an itemised statement of connection costs in the connection offer.	The elements of the itemised statement of connection costs have been amended following consideration of stakeholder submissions and at workshops. The obligations relating in the itemised statement of connection charges in the final rule are outlined in clause 5.3.6(b2) and S5.4B(h).

6.2 Analysis and conclusions

Stakeholders generally agreed with the recommendations outlined in the draft final rule for DNSPs to publish an information pack. The Commission still considers there is value in publishing information that provides connection applicants with an understanding of the overall connection requirements and allows them to participate more effectively in the connection process. As noted by some DNSPs, such information should improve the transparency of the connection requirements and help connection applicants to define their connection requirements and the feasibility of their intended project at an early stage. Accordingly, the final rule requires DNSPs to publish information that:

- provides a practical guide that steps through the process of how to lodge connection enquiries and applications;
- outlines what an applicant can expect to happen at each stage of the connection process;
- contains single line diagrams and schematic representation of protection and control systems;
- outlines examples of possible connection charges that would be incurred for connection;

- details any relevant minimum access standards and plant standards;
- provides upfront information on the technical requirements relevant to the processing of a connection enquiry; and
- provides a model connection agreement.

Given that DNSPs have obligations under the NER to publish a demand side engagement document and a DAPR, the Commission still considers that DNSPs should have some flexibility in meeting these information requirements. This would also allow them to take into account any specific business or regional requirements (for example, those aspects of a connection service that are contestable in the relevant jurisdiction). However, to facilitate the efficient dissemination of this information, the Commission would see value in each DNSP publishing the contents of the information pack in one location on their website so it is easily accessible.

To further facilitate transparency, the final rule requires DNSPs to publish information on the technical requirements for the connection of embedded generation. The position paper noted the benefit of this additional information for DNSPs would be to minimise the requirement to educate prospective connection applicants (during the connection process) who may not be aware of these technical requirements. It would also provide connection applicants with a perspective of the individual DNSP's technical requirements before investing time and money into the development of their business case. That is, an understanding of how the DNSP's network operates and the requirements for the integration of embedded generation. This added transparency should lead to more efficient investment in embedded generation.

These technical requirements may include protection systems and protection schemes, fault level management principles, reactive power capability and power factor correction, power quality and how limits are allocated, responses to frequency and voltage disturbances, voltage control and regulation, remote monitoring equipment, control and communication, earthing requirements and other relevant safety requirements and commissioning and testing requirements. While these technical requirements are expected to be made available during the connection process, usually as part of the preliminary enquiry response, the Commission considers there is merit in providing this information earlier.

Technical information of this type is already published by Energex and Ausgrid in their connection guidelines.⁸⁸ As such, the Commission does not consider that it will be excessively onerous for DNSPs to comply with this aspect of the final rule. Furthermore, stakeholders considered that with the inclusion of this technical information, the information pack in conjunction with the preliminary enquiry response should provide them with sufficient detail to assess their business case and decide whether to continue the connection process.

⁸⁸ Energex, *Customer standard for small to medium scale embedded generation*, January 2012, and Ausgrid, NS194 - *Protection requirements of embedded generators greater than 30kW*, December 2013.

The position paper also specified the inclusion of single line diagrams of connection arrangements and a sample schematic diagram of the protection and control systems relevant to the connection of an embedded generator. The single line diagrams are intended to provide connection applicants with a range of possible connection arrangements for the integration of embedded generation, in addition to a DNSPs preferred connection arrangements. In response, the CEC suggested that the final rule make allowance for these single line diagrams and schematic diagrams to be provided for different classes of embedded generator.

The Commission notes that Appendix 1 of Ausgrid's protection requirements for embedded generators contains sample schematic diagrams of both synchronous and invertor connected embedded generators. Similarly, the range of single line diagrams identified in Energex's customer standard apply regardless of the type of generator, whether it be synchronous, asynchronous (induction machine) or power electronic (inverter or converter) coupled. The Commission considers it may be onerous to prescribe the CEC's request, but that as a matter of practice DNSPs make this type of information available where relevant or appropriate. The final rule does not specify that single line diagrams and sample schematic diagrams are to be provided for different classes of embedded generator.

The Commission notes that the NER obliges DNSPs to publish the demand side engagement document and a DAPR. Whether these documents contain all prescribed information is a compliance matter for the AER. Similarly, any incomplete information in the information pack will be a matter for the AER. Therefore, there is no need to make the changes sought by the EEC for AER oversight. The Commission does not consider it appropriate to mandate AER approval of the information pack.

The final rule includes a requirement for DNSPs to provide worked examples of potential costs. The intent of this requirement is to provide a useful guide to connection applicants to assist them in understanding the potential types and magnitudes of charges that may be incurred. As noted by CitiPower, Powercor and the ENA, each connection point is unique, with the magnitude of potential connection costs and charges dependent on the complexity of the proposed connection. Therefore, it is expected that the worked examples in the information pack would be indicative of the relevant charges (or ranges of charges) based on the type of technology being connected and the location of the connection. While it would be helpful to connection applicants for the worked examples to provide a worst case scenario where deep network augmentation is required, the examples are not intended to indicate an 'exact amount', but act as a guide. For connections where deep network augmentation is required, any worked examples of potential costs and charges are likely to be different, depending on the particular circumstances of a connection applicant.

As outlined in the draft rule determination and position paper, the final rule requires DNSPs to publish a model connection agreement to assist connection applicants with understanding the relevant commercial factors that would need to be considered throughout the connection process. At this early stage in the connection process the agreement is not intended to be binding, but is to address concerns regarding a lack of transparency about the terms and conditions of connection. It is also intended to

address stakeholders' concerns that a connection agreement may be provided late in the process and connection applicants may not be provided with sufficient time to review it prior to acceptance.

Although Schedule 5.6 of the NER currently sets out the terms and conditions of connection agreements, publishing a standardised or example document would assist connection applicants with understanding those DNSP's specific terms and conditions in the context of a connection agreement. This is intended to contribute to improving the efficiency of the negotiation process for both connection applicants and DNSPs.

The Commission notes the comments from the CEC suggesting that where DNSPs publish model connection offers, these should be accompanied with an indication of which aspects of the offer are generally flexible in negotiation. Each connection agreement is likely to be different as it reflects the specific circumstances of, and the terms and conditions of, the individual connection. Accordingly, the model connection agreement and those items in Schedule 5.6 more generally may change throughout the process as the connection progresses. For these reasons the Commission does not consider it appropriate to prescribe details that may reduce the ability for both parties to negotiate the most efficient connection agreement for their circumstances. However, this does not preclude DNSPs from autonomously indicating those aspects of a model connection agreement that are open to negotiation or identifying those aspects which are less flexible.

In considering the potential costs and benefits of implementing the final rule, the Commission acknowledges that DNSPs would incur some costs to prepare and publish the additional information outlined in the final rule. These costs may vary between DNSPs depending on their current circumstance. As DNSPs are already required to produce a demand side engagement document, and many DNSPs already publish some form of connection guideline, the additional costs should not be excessive

By clarifying the connection process and requirements, connection applicants can also assist DNSPs to address connection enquiries and applications in an efficient manner. The availability of the additional information would contribute to improving the confidence of connection applicants and assist with investment decision making and planning. Overall, there will be an increase in the transparency of the connection process, which should lead to improved efficiency in facilitating connections to distribution networks. To the extent that the publication of this information may lead to greater consistency in the information and management of potential embedded generators between DNSPs, then this should also improve transaction efficiency.

Accordingly, while there is some cost associated with providing upfront information, the Commission is satisfied that on balance, this aspect of the final rule provides benefits that are consistent with achieving the NEO.

7 Connection process - the preliminary enquiry stage

This chapter sets out a description of the preliminary enquiry stage of the new two part enquiry process. It also includes an overview of this aspect of the final rule. Appendix C sets out the background and an overview of stakeholder consultation in relation to this matter.

The chapter is structured as follows:

- section 7.1 provides a summary of the final rule, including a comparison between the current NER provisions and the draft rule; and
- section 7.2 provides the Commission's analysis and conclusions in relation to this matter.

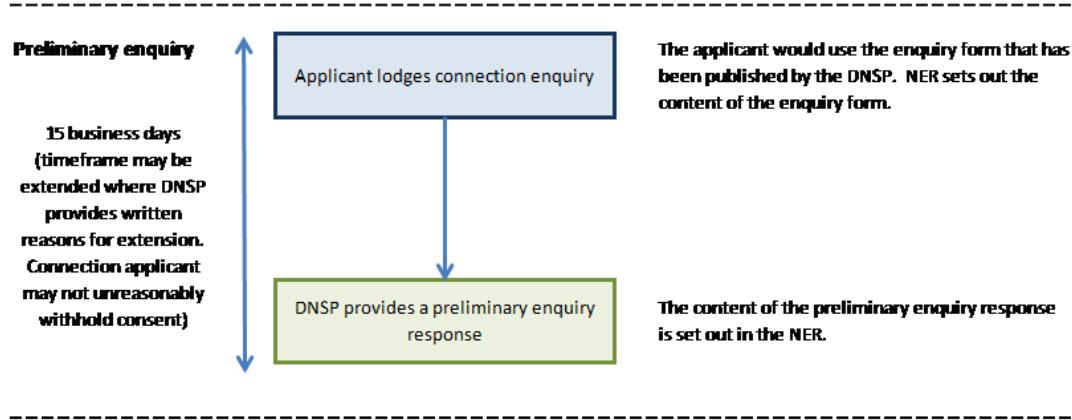
7.1 Overview of the final rule

Table 7.1 Preliminary enquiry stage - the final rule compared with the draft rule

Current NER provisions	Draft rule	Final rule
Preliminary enquiry stage (see sections C.1, C.4 and 7.2)		
Initiating an enquiry - Schedule 5.4 sets out the information to be included in a preliminary enquiry	DNSPs would be required to publish an 'enquiry form' to be used at the start of the enquiry process. The enquiry form would initiate the 'preliminary enquiry'. (No requirement for a connection application form to be published).	The final rule maintains the same obligations outlined in the draft rule.
There is no acknowledgement of receipt provision.	DNSPs would be required to acknowledge receipt of a connection enquiry within two business days.	The final rule provides DNSPs with five business days to acknowledge receipt of a connection enquiry.
The NER does not specify a timeframe for DNSPs to advise of where an enquiry is deficient in a material manner.	DNSP would be required to advise the connection applicant within five business days whether the connection enquiry is deficient or requires additional information.	The final rule maintains the same obligations outlined in the draft rule.
Within 20 business days, DNSPs provide technical requirements and information required to lodge a connection application. The current enquiry process	Within 15 business days, DNSPs provide a range of information, including: technical requirements, information on undertaking connection enquiries, relevant example costs,	The final rule maintains the same timeframes outlined in the draft rule. To account for the differing size and complexity of embedded generation, the 15 business days timeframe may be

Current NER provisions	Draft rule	Final rule
under the NER is for a single-stage process.	relevant information on network constraints for the enquiry lodged, and information required to be submitted for a 'detailed enquiry response' to be provided and any relevant enquiry fee. This would be the DNSP's 'preliminary enquiry response'.	<p>extended by agreement. Where a DNSP wishes to extend this timeframe, it must provide its reasons in writing and agreement to the extension should not be unreasonably withheld by the connection applicant.</p> <p>The final rule clarifies that the information provided in the preliminary enquiry response is intended to be high level, prepared as a result of a qualitative assessment only. That is, the DNSP is not expected to undertake any detailed quantitative analysis.</p> <p>The final rule sets out the information a DNSP must provide the connection applicant in Schedule 5.4A.</p>

Figure 7.1 Overview of the preliminary enquiry stage of the connection process



Note: A flowchart of the whole connection process is contained in Appendix A of this final rule determination.

7.2 Analysis and conclusions

7.2.1 Enquiry process and initiating the preliminary enquiry

As outlined in the draft rule determination, the purpose of the two-stage enquiry process is to provide a framework around the previous ad hoc negotiations between the parties at the outset of a connection enquiry. In particular, it is intended to provide structure and transparency to this initial part of the connection process. The

preliminary enquiry process includes providing general, high level information and any project specific information that the DNSP had at hand that may help the connection applicant understand its connection options.

The preliminary enquiry stage is also expected to provide improved certainty to both the applicant and the DNSP and improve the overall transparency of the connection process. Over time, this may lead to consistency in the connection processes between DNSPs operating in different jurisdictions. For these reasons, the final rule retains the two-stage enquiry process outlined in the draft rule that sets out a 'preliminary enquiry stage' followed by a 'detailed enquiry stage'.

The draft rule also included a requirement for each DNSP to publish an enquiry form which would be used by connection applicants to initiate the enquiry process. The intention of the enquiry form was to provide a clear point of initiation for the preliminary enquiry stage and govern subsequent timeframes for DNSPs to acknowledge the receipt of enquiry and provide a preliminary response. The enquiry form would request a qualitative description of the connection applicant's requirements, which provides a means to promote communication between the parties and aid in appropriately managing expectations.

This qualitative information would also provide an opportunity for the connection applicant to outline any information that may not otherwise be captured in the enquiry form itself (for example, if the applicant is considering a number of similar projects or the connection applicant is open to changing its proposed plant). Such information at the beginning of the enquiry process could assist both the applicant and DNSP in efficiently identifying relevant issues for analysis and further discussion.

Stakeholder submissions on the draft rule determination did not specifically comment on the proposed enquiry form. The final rule retains the enquiry form.

7.2.2 Timeframes for the preliminary enquiry process

Ability to bypass the preliminary enquiry response

A number of stakeholders submitted that there may be instances where it is not necessary to undertake the preliminary enquiry stage. Examples included where it is a similar or repeat connection with the same or similar attributes as an existing project. These stakeholders considered that skipping the preliminary enquiry stage would allow them to reduce the overall timeframe for processing a connection.

Following consideration of submissions and feedback at the stakeholder workshops, the draft final rule provided the ability for connection applicants to request a bypass of the preliminary enquiry stage.⁸⁹ However, despite it being a repeat connection with similar attributes from the perspective of the connection applicant, for the DNSP involved, each connection is unique to the location where it is being proposed. This

⁸⁹ Draft final rule clause 5.3A.5(g).

view may be due to the DNSP having specific knowledge of network constraints or other locational issues that are not immediately visible to the connection applicant. Therefore, the draft final rule only permitted a bypass of the preliminary enquiry stage where both parties were in agreement that this was appropriate in the circumstances.

In response to the draft final rule, stakeholders supported the ability for parties to skip the initial preliminary enquiry stage. However, the Victorian DNSPs sought an extension of the time for a DNSP to assess an enquiry where the connection applicant had requested a bypass of the initial preliminary enquiry stage. Specifically, if the material was to be assessed for its suitability for a DNSP to only provide a detailed response. The draft final rule only provided five business days for the DNSP to undertake this assessment. The Victorian DNSPs noted that DNSPs were provided with ten business days to assess a connection applicants request for a detailed enquiry response and advise whether the information is incomplete in a material respect.⁹⁰ They considered that these two timeframes should be aligned in the final rule.

The Commission considers that where the DNSP is assessing whether it agrees to a request from the connection applicant to bypass the preliminary enquiry stage, five business days should be sufficient. However, as acceptance of this request subsequently requires the DNSP to only provide a detailed response, the DNSP should be provided with enough time to assess whether the enquiry is sufficient for this purpose. The draft final rule provided that agreement to a bypass must be provided within five business days regardless of whether the DNSP has received a complete connection enquiry. However, following further consideration of this, the Commission is of the view that this requirement would be likely to reduce the use of the bypass, as DNSPs may be reluctant to agree to any bypass request made in relation to a connection enquiry that is incomplete.

It would be more appropriate to provide DNSPs with sufficient time to assess the enquiry and agree to the connection applicant bypassing the preliminary enquiry response following receipt of any additional information required. Consequently, the final rule allows DNSPs to request additional information from the connection applicant if it considers the enquiry is incomplete in a material respect. This change is consistent with similar aspects of the new connection process. As a result, the DNSP will be able to assess a connection applicant's request to bypass the preliminary enquiry stage once it has obtained all necessary information.

DNSP receipt of enquiry

DNSPs expressed concern with the obligation in the draft rule to acknowledge receipt of a connection enquiry within two business days. They noted that DNSPs often do not have a dedicated area of their business for responding to embedded generation connections. Rather, embedded generation enquiries are processed by the same area of the business that is responsible for customer load connections. Therefore, from a

⁹⁰ Draft final rule clause 5.3A.8(b).

practical and operational perspective, aligning the timeframes for customer load and embedded generation enquiries would be beneficial for DNSPs.

DNSPs also noted that currently, Chapter 5A of the NER does not have a corresponding obligation on DNSPs to acknowledge receipt of a customer enquiry within two business days. Instead clause 5A.D.2 requires a DNSP to respond to an enquiry within five business days. The response must include the information required to make an informed application, unless the required information is published on its website in which case the DNSP must refer the enquirer to the relevant part of its website.

Therefore, the DNSPs considered that it would be preferable for the final rule to align the process for acknowledging receipt of embedded generation enquiries with the business' processes for acknowledging customer load (as contemplated under Chapter 5A).

At the AEMC stakeholder workshops the proposal to increase the period to acknowledge receipt of a connection enquiry from two to five business days was discussed. Participants generally considered the proposed five business days for DNSPs to provide receipt of an enquiry was reasonable.

Taking these considerations into account, the final rule provides DNSPs with five business days to acknowledge to the connection applicant receipt of their connection enquiry.

Timeframe for DNSP to provide preliminary enquiry response

DNSPs have stated that they consider the 15 business day timeframe to provide a preliminary enquiry response in the draft rule did not appropriately reflect the scale or complexity of embedded generation connections that may arise under the proposed connection process.

To address this issue, a number of DNSPs suggested that the maximum timeframe for providing the preliminary enquiry response should be aligned with the time required to process large or technically complex connections. They considered that this would allow the framework to be applied flexibly so that it accommodated all connection sizes.

At the October 2013 stakeholder workshop, participants considered that the timeframe specified in the draft rule for the DNSP's preliminary enquiry response should be considered in light of the information (and the level of detail) to be provided. In addition, considering the purpose of the preliminary enquiry stage, and that embedded generators do not pay a fee, DNSPs considered that only high level information could be provided within the stipulated 15 business days. Participants also acknowledged that the new DAPR and demand side engagement documents to be published by DNSPs would provide some relevant information to potential embedded generators.

The policy intent of the preliminary enquiry response was to provide as much information early in the connection process as possible to enable connection applicants to assess the commercial implications of their connection. It was not intended for DNSPs to undertake detailed planning and design of the connection point, fault current contribution studies, or power system studies.

The November 2013 stakeholder workshop considered changes to draft Schedule 5.4A on the information to be provided by DNSPs in a preliminary enquiry response (see below for the details on the information requirements). It was reiterated that the policy intent was for the preliminary enquiry response to contain information that is readily accessible by a DNSP and not include information that required any further detailed work. Given this clarification, DNSPs considered the 15 business days to respond to the connection applicant was reasonable. However, DNSPs were concerned that the 15 business days timeframe is not sufficient to process large or technically complex connections.

Taking these considerations into account, the Commission considered that the final rule should allow for this timeframe to be extended by mutual agreement. The DNSP would need to provide reasons why it is not able to respond to the connection applicant within 15 business days. Agreement to this extension from the applicant should not be unreasonably withheld. That is, the timeframe in the final rule for a DNSP to respond to the connection applicant with its preliminary enquiry response is 15 business days, which may be extended on agreement by a connection applicant, but agreement must not be unreasonably withheld.

Validity period of the preliminary enquiry response

The draft rule required a preliminary enquiry response remain valid for three months. After this time, the DNSP could request the applicant to submit a new connection enquiry. The draft rule determination noted that as project and network requirements can change, it was not expected that the information provided by a DNSP in the preliminary response would remain valid for a long period of time. Hence, a three month validity period was considered reasonable.

In response, the CEC stated that three months was insufficient to allow the enquirer to carry out any necessary network studies and make commercial decisions regarding design concepts.⁹¹ To address this issue, the CEC suggested amending draft clause 5.3.A.7(b) to require the enquirer to confirm with the DNSP at three month intervals that the enquiry is still active and the applicant intends to follow through.

In light of this concern, the AEMC considered extending these timeframes and consulted with participants at the October 2013 stakeholder workshop. However, some participants expressed concern that extending the validity period may:

- imply that DNSPs would be required to hold open space on their network for a particular connection;

⁹¹ CEC, Draft rule determination submission, p16.

- imply that DNSPs would not be able to use that space on the network for other connections (either generation or load); and
- inadvertently lead to the queuing of applications, which is not the current practice in the NEM.

Removing the validity periods in the preliminary enquiry and detailed enquiry stages would reinstate the current circumstance: that it would be in the interest of the connection applicant to carry out the required work in a timely manner in order to progress the connection process. This was discussed at the November 2013 stakeholder workshop.

In general, DNSPs were supportive of the removal of validity periods. It was noted that it was consistent with the NEM's open access market approach and reflected current practice. Furthermore, the proposed connection process needs to work for a wide range of embedded generators of varying sizes and complexity and that the validity period may be problematic for some connections. Workshop participants from embedded generation businesses thought the validity periods were insufficient to allow them to properly prepare a robust business case for continuation of the connection process and supported their removal (and answer DNSP queries as part of the enquiry process). That is, the validity period in the draft rule was too early for connection applicants to make a firm commitment to pursue the proposed connection.

On the other hand, the rule change proponents were concerned that without these validity periods, a connection process could stall and a connection applicant would not have any recourse. Distribution networks are subject to change and the Commission considers that when circumstances change, DNSPs should, as a matter of good practice, notify the connection applicant and indicate how this may impact on their connection enquiry. In the event that the DNSP appears to be stalling the connection process, as noted in Chapter 12 of this final rule determination, the connection applicant would have recourse to take the matter to the dispute resolution process.

Taking the above considerations into account, the Commission has concluded that it is appropriate to remove the validity period between the preliminary enquiry response from the DNSP and a request for a detailed enquiry response from the connection applicant. Accordingly, the final rule does not provide for a validity period at this stage of the connection process.

AER oversight of the connection process timeframes

The draft rule did not include any AER oversight of the connection process over and above the AER's current monitoring and compliance role. However, the EEC considered that the proposed connection process still provided DNSPs with multiple options to "bend the rules and create unnecessary delays". To address this problem, the EEC suggested the that DNSPs be required to submit a basic annual report to the AER that sets out the times they have taken to respond to each preliminary and detailed enquiry.

The Commission is still of the view that the connection process does not require specific oversight by the AER over and above its usual role as regulator. However, to address some of the concerns raised by the EEC, the final rule does provide for annual reporting by DNSPs as part of their DAPR requirements under Schedule 5.8 of the NER. Specifically, the final rule requires the DAPR to include:

- a qualitative summary of key issues arising from applications to connect embedded generating units in the past year (clause S5.8(l)(1)(ii)); and
- a quantitative summary of (clause S5.8(l)(2)):
 - connection enquiries received under clause 5.3A.5;
 - applications to connect received under clause 5.3A.9; and
 - average time taken to finalise applications to connect.

7.2.3 Content of the preliminary enquiry response

Clause 5.3A.7 of the draft rule outlined the requirement for DNSPs to provide connection applicants with a preliminary enquiry response. The information to be included in a preliminary enquiry response was outlined in draft Schedule 5.4A. The types of information included:

- technical information relevant to the application to connect including minimum requirements necessary to maintain system security and reliability of supply relevant to technical matters of the sort under Schedule 5.2 of the NER (draft clause S5.4A(a));
- any additional information not provided for by draft clause S5.4A(a) necessary to facilitate the processing of a connection enquiry (draft clause S5.4A(b));
- written details of the automatic and minimum access standards, any applicable plant standards, and normal voltage level (draft clause S5.4A(c));
- whether negotiated access standards may be required (draft clause S5.4A(d));
- any other parties that may be relevant to the connection enquiry that has been lodged with the DNSP (draft clauses S5.4A(e) and (f));
- whether contestability arrangements exist in the relevant participating jurisdiction (draft clause S5.4A(g));
- worked examples of connection service charges relevant to the connection enquiry (draft clause S5.4A(h));
- information regarding the DNSP and its network, system limitations for sub-transmission lines and zone substations and other information relevant to constraints of the network (draft clause S5.4A(i));

- whether shared network augmentation may be required (draft clause S5.4A(j));
- description of how the DNSP proposes to amend its model connection agreement to address the connection sought in the enquiry (draft clause S5.4A(m));
- the DNSP's response to the objectives of the connection sought (draft clause S5.4A(n));
- a description of the process for the provision of the detailed response (draft clause S5.4A(o));
- using reasonable endeavours, all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained in the NER (draft clause S5.4A(p));
- a statement of further information required from the connection applicant for the preparation of the detailed response (draft clause S5.4A(q));
- the enquiry fee payable by the connection applicant to request a detailed response (draft clause S5.4A(r));
- an estimate of the application fee (draft clause S5.4A(s)); and
- any additional relevant information to the enquiry (draft clause S5.4A(t)).

In response to the draft rule, DNSPs noted that the amount of information and level of detail set out in draft Schedule 5.4A was too onerous to provide within the stipulated 15 business day time limit. It also included a number of provisions that DNSPs considered required the completion of detailed design work. Therefore, DNSPs contended that Schedule 5.4A and clause 5.3A.7 should be amended so that the requirement would be to provide the information where practicable. Of particular concern was the information requirements outlined in clauses 5.4A(a), (b), (c) and (d) of draft Schedule 5.4A.⁹²

CitiPower and Powercor also identified an additional two clauses (draft clauses 5.4A(m) and 5.4A(r)) where they considered it would not be possible to provide the information within the required timeframe.⁹³

The CEC stated that the preliminary enquiry stage should provide general high level information to the enquirer. A connection applicant must be provided with the opportunity to assess the commercial significance of the distribution network user access arrangements sought. To allow this, DNSPs provide detailed technical information and limiting the opportunity for the applicant or enquirer to request this information is unlikely to support efficient connection practices. To address this concern, the CEC recommended that draft clause S5.4A(b) be amended to state that

⁹² Victorian DNSPs, Draft rule determination submission, pp9-10.

⁹³ CitiPower and Powercor, Draft rule determination submission, p4.

any information needed to prepare an application to connect would be provided if reasonably requested by the enquirer.

The CEC also suggested that the preliminary enquiry response be amended to include options for connection at more than one point to enable connection applicants to be able to make informed investment decisions on an efficient connection point location. In addition, the CEC recommended a number of changes to the technical information outlined in draft clause S5.4A(a).

At the November 2013 stakeholder workshop, amendments to Schedule 5.4A regarding the information to be provided by a DNSP in its preliminary enquiry response were discussed. The intent of the preliminary response was clarified, that is, it was for the DNSP to provide information of the types outlined in draft Schedule 5.4A that is readily accessible to the DNSP and does not require further detailed analysis. That is, the intent is to provide as much information upfront as possible to assist the connection applicant in assessing whether it should pursue its proposed connection. To achieve this, participants discussed the level of information that should be provided by the DNSP in its preliminary enquiry response.

At the November 2013 stakeholder workshop, an embedded generation proponent suggested that the preliminary enquiry response should also include, if relevant to the project, information on a draft construction agreement or draft asset transfer agreement. Currently, the preliminary enquiry response provides the opportunity for DNSPs to supply any additional information relevant to the particular enquiry. Where a connection applicant considers that information regarding these types of agreements is an important aspect of their connection enquiry, they should raise this with the DNSP and seek this information. Given the preliminary enquiry response already provides the opportunity for the provision of this information where relevant, it has not been specifically included in the final rule.

Taking submissions and relevant comments into account, the Commission amended the information requirements under Schedule 5.4A in the draft final rule. The main changes from the draft rule were as follows:

- The leading paragraph of draft clause S5.4A(a) was amended to remove the reference to the '...minimum requirements necessary to maintain system security and reliability of supply...'. These words were removed from the draft final rule because to meet this requirement, DNSPs would need to undertake detailed network analysis. As previously noted, this is not the intent of the preliminary enquiry response. The leading paragraph was amended to 'relevant technical information about the DNSPs network, including guidance on how the connection applicant may meet the following requirements if it were to proceed to prepare an application to connect'.
- Draft clause S5.4A(d) required a DNSP to indicate to a connection applicant whether negotiated access standards are likely to be required. However, at this stage in the enquiry process, the connection applicant will not have undertaken any power system studies. Consequently, it would be unclear whether negotiated

access standards are required or what aspects of the access standard may be relevant for negotiation. This aspect of draft Schedule 5.4A was moved to the detailed enquiry response which was considered a more appropriate location.

- Draft clause S5.4A(j) outlined whether network augmentation would be required. Some stakeholders at the November 2013 workshop suggested that this information could be determined from information provided under draft clause S5.4A(i). While some participants agreed, others suggested that this clause may be better placed in the detailed enquiry response under draft Schedule 5.4B, as detailed site specific information could not be provided within the specified 15 business day timeframe. Nevertheless, the Commission considered it appropriate that an indication of whether network augmentation may be required is provided by a DNSP as part of its preliminary enquiry response.
- Draft clause 5.4A(m) required a DNSP to provide a description of how it proposed to amend its model connection agreement to address the connection sought in the enquiry. As noted above, DNSPs considered that the preliminary response was too early in the process to be able to provide a meaningful description of how a model connection agreement could be amended. However, the detailed response includes a draft connection agreement containing the proposed terms and conditions for connection to the network. This was considered more appropriate for that stage of the process and for that reason, draft clause 5.4A(m) was removed from the draft final rule.
- Draft clause 5.4A(p) required DNSPs to use reasonable endeavours to provide connection applicants with information on all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained in the NER. These requirements are an aspect of the general Chapter 5 connection process and have been included to mirror those obligations. This provision was moved to the detailed enquiry response, which the Commission considered was a more appropriate location for this information.
- Draft clause 5.4A(r) required a DNSP to provide the details of the enquiry fee payable by the connection applicant when requesting a detailed response. This is to include details of how the components of the fee were calculated. At the November 2013 stakeholder workshop, DNSPs agreed that information on the enquiry fee payable could be provided, but they were concerned about the DNSPs' abilities to obtain the relevant cost information from other parties (such as AEMO) within the 15 business day timeframe. On the other hand, embedded generation proponents noted that cost estimate information at this preliminary enquiry stage is a key decision variable. However, connection applicants need to be aware of the limitations of the cost estimate information. Taking the above considerations into account, the Commission considered it appropriate to amend the draft final rule to allow DNSPs to provide an estimate of the enquiry fee payable by the connection applicant. Where the DNSP is not able to provide an accurate estimate of the enquiry fee, it must inform the connection applicant of the component of the estimate of the enquiry fee payable by it to request the detailed response.

- The draft final rule contained a new clause in Schedule 5.4A that requires a DNSP to provide an overview of any options for connection to a network, or relevant to an enquiry lodged at more than one connection point in a network. This overview is expected to include an overview for each connection point of the different characteristics of supply and an indication of the likely impact on terms and conditions of connection at such differing connection points. The inclusion of this provision should enable connection applicants to assess the connection options available around the proposed point of connection and any likely implications.

In response to the draft final rule, stakeholders acknowledged support for the clarification in the position paper regarding the intent of the preliminary enquiry stage. However, DNSPs still expressed concern that Schedule 5.4A required DNSPs to provide a considerable level of detail specific to individual connection applications in its preliminary response, which may not necessarily be 'at hand'.⁹⁴ As these costs are being absorbed by the DNSP (that is, there is no enquiry fee for this stage of the process), it is not reasonable to request DNSPs to provide detailed information that requires analysis.

Following consideration of submissions, the Commission has decided not to amend the information in Schedule 5.4A that DNSPs are required to provide connection applicants as part of their preliminary enquiry response. The Commission considers that the intent of the preliminary enquiry response is clear. Furthermore, clause S5.3A.7(d) removes any doubt from the final rule that a DNSP is not required to undertake detailed design or perform detailed technical studies or analysis in the preparation of a preliminary enquiry response. In response to submissions on the position paper, the Commission makes the following comments.

First, DNSPs suggested that clauses S5.4A(a)(5) and (6), requiring the inclusion of existing fault levels and fault clearance times of relevant zone substations and switching and isolation facilities be moved to the detailed enquiry response. DNSPs contended that this information is not typically provided on a site-specific basis at the preliminary stage. The Commission considers that knowledge on existing fault levels and the fault clearance times of relevant zone substations are an essential part of a DNSP's business. When a fault occurs within a distribution network, it is essential that the DNSP has specific knowledge of their network, including the exact location of all switching and isolation facilities. Without this knowledge it would be very difficult for a DNSP to plan and operate its network. That is, DNSPs should have information of this type on hand for various locations within its network as part of its usual business practice.

Secondly, Clause S5.4A9(i) of the draft final rule required DNSPs to include in the preliminary enquiry response "an indication of whether network augmentation may be required and if required, what work the network augmentation may involve". In response, some DNSPs did not consider that at this stage sufficient analysis would

⁹⁴ Position paper submissions from: Energex, p2, ENA, p4, Victorian DNSPs, pp4-5, NSW DNSPs, pp1-2, and CitiPower and Powercor, p3.

have been done to provide details of any augmentation that may be required, or may need to be heavily qualified so the value of the information is useless or possibly misleading. The Commission considers that each embedded generator connecting to a distribution network in the NEM must as a matter of course liaise and negotiate in conjunction with the relevant DNSP. As such, DNSPs will have accrued substantial knowledge about the connections that it has processed. As a result, the DNSP is best placed to provide the connection applicant with an indication of whether network augmentation is likely to be required. The preliminary enquiry response does not require the DNSP to quote the likely cost of any network augmentation.

However, from the DNSP's experience, it should be able to indicate if the proposed connection is likely to require major or minimal network augmentation based on its knowledge of the local distribution network at the proposed connection point. Where the network augmentation required could be significant, the DNSP should be able to provide some indication of cost, or a relevant range of costs, based on its experience. As noted previously, the intention of the preliminary enquiry response is for the DNSP to provide as much information relevant to the proposed connection as it can to help the connection applicant assess the commercial implications of progressing a connection. This in turn will assist the connection applicant to take the next step in the connection process.

In addition, the Commission notes that Energex considered that worked examples of connection service charges in the preliminary enquiry response duplicated an obligation in the information pack and that the information pack would be more than sufficient. The Commission notes that the information pack makes provision for DNSPs to provide worked examples of connection service charges relevant to the connection of embedded generators. The intent of the information pack is to provide general information to connection applicants on the range of costs that typically arise throughout the connection process. In contrast, the preliminary enquiry response is expected to provide connection applicants with general information that relates to their proposed connection. As noted above, DNSPs are best placed to provide connection applicants with information on the expected costs associated with these connections. The Commission considers that in general, it is not unreasonable for a customer to expect the business providing a service to have an understanding of the approximate costs involved.

Finally, the Commission notes that in response to the position paper, the Victorian DNSPs did not consider that clause S5.4A(n) relating to an overview of available options was necessary in the preliminary response and should be excluded. In contrast, the NSW DNSPs and CEC considered this clause be redrafted to better reflect the policy intent, which was for DNSPs to provide high level generic examples of options for connecting to the DNSPs network rather than actual considered options. The Commission considers that the intent of this clause is clear and DNSPs should be able to provide an overview of available options for connection to a network. The drafting does not imply that a DNSP must undertake detailed analysis to provide connection applicants with considered options. For example, for a connection applicant seeking to connect an embedded generator, the cost of the connection may depend on where the generating system is located. The connection may be to a point in the network where

there is little remaining fault level headroom, alternatively it could be located close to a relatively unconstrained zone substation. Therefore, the Commission considers it appropriate that DNSPs provide connection applicants with an indication of any reasonable options available for connection. In general, it would be reasonable for a customer to expect a business to provide relevant alternatives for consideration.

On balance, and following consideration of submissions and other information, the Commission has determined not to make any substantive changes to the draft final rule in making the final rule regarding the information to be provided in a preliminary response. The resulting information specified in Schedule 5.4A of the final rule, includes:

- technical information relevant to the application to connect that the DNSP has at hand relating to information of the sort in Schedule 5.2 of the NER;
- applicable automatic and minimum access standards, relevant plant standards and information about normal voltage levels;
- details of other parties that need to be involved in the planning to make the connection;
- example charges that may be relevant to the connection enquiry;
- information on the network constraints that may apply in the area for which connection is sought;
- whether network augmentation may be required;
- details of the connection process including a link to the information pack on the DNSPs webpage and an explanation of the next steps in the connection enquiry and application process;
- an overview of any available options for connection to a network, as relevant to enquiry lodged, at more than one connection point in a network;
- an estimate of the enquiry fee payable by the connection applicant upon request for a detailed response from the DNSP and how components of the fee were calculated; and
- the component of the estimate of the enquiry fee payable by the connection applicant to request the detailed response where the DNSP is not able to provide details of the whole enquiry fee payable.

The Commission considers that the provision of this information to a connection applicant early in the connection process should provide them with the opportunity to fully assess the financial implications of progressing an embedded generation connection. This should lead to efficient investment in embedded generation for the long term interest of consumers.

8 Connection process - the detailed enquiry stage

This chapter sets out a description of the detailed enquiry stage of the new two part enquiry process. It also includes an overview of this aspect of the final rule. Appendix D sets out the background and an overview of stakeholder consultation in relation to this matter.

The chapter is structured as follows:

- section 8.1 provides a summary of the final rule, including a comparison between the current NER provisions and the draft rule; and
- section 8.2 provides the Commission's analysis and conclusions in relation to this matter.

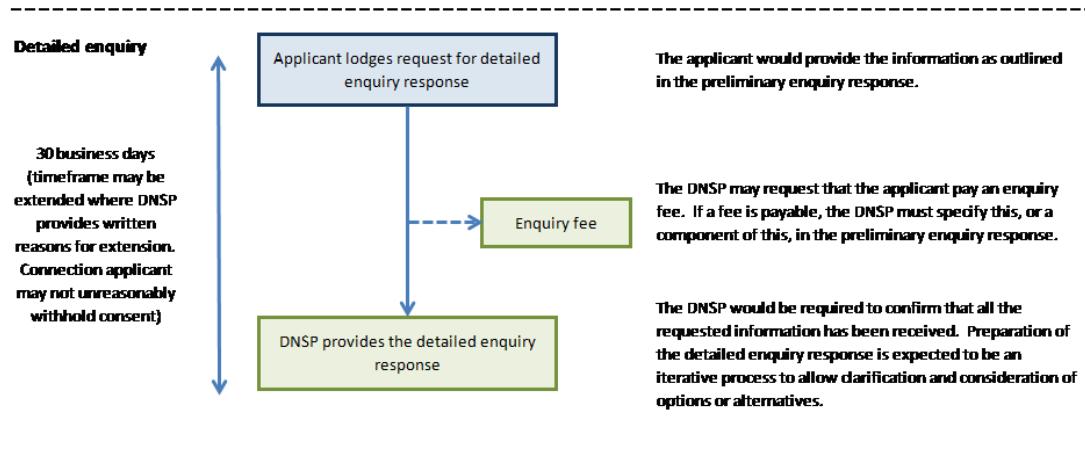
8.1 Overview of the final rule

Table 8.1 Detailed enquiry stage - the final rule compared with the draft rule

Current provisions	Draft rule	Final rule
Detailed enquiry stage (see sections D.1, D.4 and 8.2)		
The current enquiry process under the NER is a single-stage process	<p>The applicant may proceed with a detailed enquiry and submit the information requested by the DNSP and, if applicable, the enquiry fee to the DNSP. If a request for a detailed enquiry response was lodged after three months, the DNSP may request the applicant to submit a new enquiry.</p> <p>The DNSP would confirm that the request for a detailed enquiry response had been received and whether the requested information had been provided. This stage would be expected to be an iterative stage where the DNSP and applicant communicate as required on the progress of the enquiry.</p> <p>For a proposed connection that would not require shared network augmentation, the DNSP would need to provide the detailed enquire response within 30 business</p>	<p>The final rule removes the validity period between the preliminary enquiry response and a request for a detailed enquiry response.</p> <p>The DNSP is still required to confirm that the request has been received and all of the relevant information has been provided.</p> <p>The final rule still obliges a DNSP to provide its detailed response within 30 business days, but does not delineate the process as to whether shared network augmentation is required. To account for the differing size and complexity of embedded generation, the 30 business days timeframe may be extended by agreement. Where a DNSP wishes to extend this timeframe, it must provide its reasons in writing. The request should not be unreasonably withheld by the</p>

Current provisions	Draft rule	Final rule
	<p>days.</p> <p>Otherwise the applicant and the DNSP can agree a timetable for providing a response but within a maximum of four months.</p>	<p>connection applicant.</p> <p>While the final rule removes the validity period from between the detailed enquiry and application stages, it does provide the ability for DNSPs and connection applicants to agree to the detailed response remaining valid for a specified period of time to allow the connection applicant to lodge an application to connect within that time.</p>
There is no "agreed project" provision.	The DNSP's detailed enquiry response would form the "agreed project". Agreed projects would be subject to a fast-tracked connection application process.	<p>As a result of the removal of the validity period between the detailed response and an application to connect and changes to when technical information is provided to a connection applicant, arriving at an "agreed project" at the end of the detailed enquiry response is unlikely.</p> <p>For these reasons, the final rule does not include provision for an "agreed project" and consequently does not provide for a fast-tracked application process.</p>

Figure 8.1 Detailed enquiry stage of the connection process



8.2 Analysis and conclusions

8.2.1 Timeframe for receipt of request for detailed response

As noted in section 7.2.2 above, the period for a DNSP to acknowledge receipt of the request for a detailed response has been amended to five business days in the final rule.

8.2.2 General timeframe for the detailed response

The intent behind the timeframe outlined in the draft rule for the detailed enquiry response was to provide guidance on a reasonable time while allowing for the various sizes of embedded generation connections contemplated by the Chapter 5 process. For those less complex connections where no network augmentation was expected, a detailed response should be completed within the 30 business day limit set by the draft rule.

Where shared network augmentation was required, it would be reasonable to allow more time for the relevant network analysis to be completed. For this reason, the draft rule provided the ability for the connection applicant and the DNSP to agree an alternative timeframe to complete the detailed enquiry response. The introduction of these new timeframes by the draft rule sought to improve the ability for all parties to plan and manage the enquiry requirements, especially for larger, more complex connections.

The intention of the new connection process under Chapter 5 is still to be sufficiently flexible to progress various sizes of embedded generators. Therefore, to provide certainty to connection applicants that the connection process will not stall and progress as expected, the 30 business day timeframe has been retained in the final rule.

However, to provide flexibility to the connection applicants of more complex embedded generators, the 30 business day timeframe may be extended by agreement. Reasons for any time extension must be provided by the DNSP and agreement must not be unreasonably withheld. This will require a DNSP to explain to the connection applicant why the extension is necessary and that the extension is not intended to frustrate the process. Equally, a connection applicant is expected to properly consider a DNSP's request and respond promptly and in a reasonable manner.

8.2.3 Timeframe for the validity of the detailed response

The draft rule provided six weeks for an applicant to apply for a connection offer. The validity period acknowledged that whether a project went forward or not would impact on DNSPs, current users of the network and other connection applicants seeking to connect to the distribution network. Therefore, it was intended that specifying a time for which detailed enquiry responses are valid would improve the certainty for all parties involved in the connection process and using the network.

In response to the draft rule determination, embedded generator proponents submitted that the six week validity period was too short to allow for approvals and contracts to be signed under often complex ownership structures. These proponents suggested that the validity period be extended to 12 weeks. The CEC also noted that the six week validity period was unlikely to result in efficient investment. As the draft rule provided the ability for DNSPs to request a new connection enquiry, it contended that DNSPs are incentivised to reject any time extension as they receive additional fees from the applicant (at minimal cost) if a new enquiry is required to be started.

Further, at the October 2013 stakeholder workshop, an embedded generator proponent noted that under the current Chapter 5 connection arrangements, a DNSP's response to a connection enquiry contains the technical information of the sort set out in Schedule 5.5 that allows the connection applicant to determine the technical access requirements. Without this information the connection applicant would not be able to undertake the necessary power system studies and network studies to determine those access standards. These access standards are also an integral part of the connection offer and subsequent connection agreement between the parties. That is, a six week period would not provide the connection applicant with sufficient time to carry out all the work required to determine access standards.

The draft Chapter 5 process moved much of this necessary technical information to the preliminary response. However, as noted in section 7.2.2 above, the intent of the preliminary response was for the DNSP to provide as much information as it had at hand, not to undertake extensive network analysis. As such, under the draft rule process, it was unclear when the connection applicant would receive the technical information necessary to determine the access standards. That is, if the information was provided with the detailed response, a validity period would not allow connection applicants sufficient time to determine what access standards would be necessary.

At the November 2013 stakeholder workshop, removing the validity period from the final rule was discussed. The effect of this change would be to reinstate the current circumstance: that it would be in the interest of the connection applicant to carry out the required work in a timely manner in order to progress the connection process. DNSPs and larger sized embedded generator proponents expressed support for this approach and noted this was consistent with the NEM's open access market approach and reflected current practice.

However, the rule change proponents expressed concern that without the validity period, a connection process could stall and a connection applicant would not have any recourse to this. That is, the proponents considered this was a reversion to the perceived inefficient processes under Chapter 5 that the rule change sought to address.

DNSPs should, as a matter of good practice, notify connection applicants when there are changes in circumstances that may impact on their connection. The connection process also needs to work for a wide range of potential connecting embedded generators and for a network is subject to change.

Consequently, despite the draft rule providing that the project and connection requirements outlined in a DNSP's final detailed response be an agreed project, achieving this appears unlikely in reality. This is because, as a result of the changes in the information requirements for both the DNSP's preliminary and detailed responses and removal of the validity periods, arriving at an agreed project at the end of the detailed enquiry stage does not appear possible. Therefore, the removal of the agreed project and the related fast-tracked connection application from the draft final rule was considered appropriate. At the November 2013 stakeholder workshop, it was noted that removal of the agreed project did not preclude DNSPs and connection applicants from arriving at an informal agreed project through their negotiation that forms the basis of the connection application process.

The rule change proponents viewed the removal of the agreed project as a loss to the process for generators around 5MW in size. As noted in Chapter 5 of this final determination, those proposed connections less than 5MW will be progressed through Chapter 5A of the NER in most jurisdictions. Furthermore, as DNSPs have noted, a 5MW generator is not small for a distribution network and that negotiation on a number of aspects would be required to settle the connection requirements.

Therefore, given that an agreed project is unlikely to result from the DNSP's detailed response and that for most connections greater than 5MW negotiation of the access standards will be required, the Commission considered it appropriate for the draft final rule to not include the agreed project. In addition, as the fast-tracked connection application process was contingent on there being an agreed project, this too was omitted from the draft final rule.

However, the Commission acknowledged the views of the rule change proponents that for less complex embedded generators a validity period may provide more certainty for connection applicants. Rather than impose a validity period for all detailed enquiry responses, the draft final rule provided the ability for a DNSP to agree (if appropriate to do so) to the detailed enquiry response remaining valid for a specified period of time during which a connection applicant may lodge its application to connect.

In response to the draft final rule, embedded generator proponents considered that the validity period should be reinstated with a fixed period of six months. The Commission does not consider it appropriate for the NER to dictate a specified validity period. While the rule change proponents contend that load customers are provided with a validity period of six months, the Commission notes that this arrangement is not due to any obligations contained within the NER. That is, where DNSPs choose to provide load customers with a validity period, it is as a result of a commercial agreement between the two parties. The final rule is consistent with this approach. It clarifies what is currently permissible outside of the NER, that a connection applicant and DNSP may agree to the detailed enquiry response being valid for a mutually agreed period of time under a commercial agreement.

Subject to the terms of such commercial agreements, when this agreed period of time lapses, the DNSP may use the apportioned network capacity to service other connection enquiries. The Commission considers that this approach is an appropriate

response to the issue. It allows connection applicants to align their commercial obligations outside of the NER with the connection process as most relevant to their circumstances.

In response to the position paper, AGL and FRV suggested that in addition to an optional validity period, the NER should contain an obligation for DNSPs to promptly disclose any potential changes to their earlier advice (that is, the detailed enquiry response) where relevant to access requirements. These obligations should, for example, include the reasons why the earlier requirements will or may change including new or concurrent applications that may affect the ability to connect as advised. The Commission notes that during this rule change process, stakeholders have indicated that as a result of the significant time required between the detailed enquiry response and submitting an application to connect that in some instances, DNSPs have indicated that the network characteristics around the connection point have changed since providing the advice.

The Commission considered including a mechanism in the final rule obliging DNSPs to inform connection applicants where there had been a material change in circumstances that would impact on the advice provided as part of the detailed enquiry response. However, any mechanism would have been very onerous on DNSPs. With a periodic obligation, for example, every three months, or annually, the DNSP would be required to constantly monitor all connection applications on foot, which has the potential to be a substantial administrative burden. Moreover, this process could continue for an indeterminate and lengthy period of time, depending on how long it takes a connection applicant to submit its application to connect. Conversely, if this 'updating' obligation had a defined endpoint (for example, one year), it may be tantamount to a validity period which is not its intended purpose. The Commission considered validity periods should not be included for the reasons detailed above.

The Commission considers that this mechanism also represents a significant departure from the optional validity period described in draft final rule. In addition, the NER does not prevent either DNSPs or connection applicants from periodically enquiring about the current state of affairs of the application to connect. For this reason, the final rule does not include a mechanism for DNSPs to inform of any material changes to its advice.

8.2.4 Definition of an agreed project

As noted above, the final rule no longer contains provision for an agreed project. As a result, stakeholder feedback on the definition of an agreed project is no longer relevant to the final rule.

8.2.5 Content of the detailed enquiry response

The draft rule outlined the information that DNSPs would provide to connection applicants in a detailed enquiry response. The intent was for this information to build on information provided in the preliminary response and provide more in-depth

analysis and considerations. Draft Schedule 5.4B set out the information to be included in the detailed response. The types of information under draft Schedule 5.4B included:

- contact details for the person within the DNSP managing the connection (draft clause S5.4B(a));
- the technical requirements where the proposed arrangement will not meet the automatic and minimum access standards (draft clause S5.4B(b));
- details of the connection requirements based on the connection applicant's specifications of the facility to be connected (draft clause S5.4B(c));
- details of the level and standard of service of power transfer capability that the DNSP can ensure (draft clause S5.4B(d));
- commercial information to be supplied by the connection applicant to allow the DNSP to make an assessment of the ability for the connection applicant to meet any prudential requirements (draft clause 5.4B(e));
- an itemised statement of connection charges and an explanation of the factors affecting each component (draft clauses S5.4B(f) and (g));
- a draft connection agreement containing the terms and conditions for connection to the network (draft clause S5.4B(h));
- a description of the process for lodging an application to connect with the DNSP (draft clause S5.4B(i));
- the application fee payable when submitting an application to connect (draft clause S5.4B(j)); and
- any additional information relevant to the application to connect (draft clause S5.4B(k)).

In response to comments made by the CEC, the Commission does not consider it necessary to provide a period of 20 business days to allow a connection applicant to assess whether it has been provided with the complete provision of detailed technical information from a DNSP. This is because the general validity period of six weeks outlined in the draft rule between the detailed enquiry response and an application to connect has been removed. The Commission understands that the period between the detailed enquiry response and an application to connect is where the connection applicant undertakes the bulk of its network analysis. Therefore, removal of the validity period would remove this perceived time pressure. This should provide sufficient time for a connection applicant and a DNSP to go back and forth iteratively to discuss and negotiate all relevant technical matters.

In response to stakeholder feedback in submissions and at the workshops, the Commission considered a number of changes to Schedule 5.4B to bring it into line with the stage in the process where the appropriate information should be required. This involved moving information that was specified to be included in the preliminary

enquiry response into the detailed enquiry response. The main changes between the draft rule and the draft final rule are outlined below:

- Draft clause S5.4B(b) outlined the process for determining negotiated access standards where it did not meet the minimum or automatic access standards. A connection applicant will not have undertaken any network studies at this point in the process (prior to a DNSP's detailed response), therefore, it would not know whether negotiated standards are required. Therefore, it is not appropriate at this stage in the process and was omitted from the draft final rule.
- A new clause was added to Schedule 5.4B that replicates the information set out in draft clause S5.4A(c), but requires written details of each technical requirement relevant to the proposed plant as relevant to the access and plant standards and voltage level to be provided. This level of information is more appropriate for the detailed enquiry response than the preliminary enquiry response.
- A new clause was added to Schedule 5.4B that contains the information set out in draft clause S5.4A(d), requiring a statement from the DNSP about whether negotiated access standards may be required. As discussed above, this information in conjunction with the information below, will provide the connection applicant with certainty about which access standards will need to be negotiated.
- A new clause was added to Schedule 5.4B replicating the list of technical information under draft clause S5.4A(q)(3). It is important that the connection applicant obtains this technical information at this point in the process so it is able to undertake the network studies to determine the technical access standards that it must provide the DNSP in its application to connect.
- Draft clause S5.4A(p) outlined a requirement for the DNSP to use reasonable endeavours to provide information on all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained in the NER. These requirements are an aspect of the general Chapter 5 connection process and have been included to mirror those obligations. This provision has been moved to the detailed enquiry response, which is a more appropriate location for this information to be provided to the connection applicant.
- A new clause was added to Schedule 5.4B that allows a DNSP to agree to the detailed enquiry response remaining valid for a specified period of time to allow the connection applicant to lodge an application to connect within that time. This provision provides the ability for a DNSP and a connection applicant to agree to a validity period for the detailed enquiry response.

In response to the draft final rule stakeholders still had a number of concerns with the information to be included in the detailed enquiry response. The Commission's analysis of each of the issues raised by stakeholders is outlined below.

Energex and the Victorian DNSPs recommended the removal of clause S5.4B(j) relating to "all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained within the NER". While the Victorian DNSPs noted these requirements are currently an aspect of the existing Chapter 5, these businesses did not consider it appropriate for DNSPs to bear the risk of providing legal advice pertaining to planning and environmental laws.⁹⁵ The Commission notes that it is a matter for a DNSP to consider what advice, if any, is necessary to meet such requirements in respect of the proposed connection. However, it considers that this aspect of the draft final rule has been an integral part of the Chapter 5 connection process for some time. These provisions are not limited to embedded generation, but are equally applicable to load and generation connections. Therefore, DNSPs should already have systems in place to meet these obligations. There are no reasons why clause S5.4B(j) should not be retained in the final rule.

In the draft rule, clause S5.4B(e) also contained an obligation for a DNSP to notify the enquirer of the negotiated access standards which may require AEMO's involvement. This part of the clause was removed from the draft final rule, but the provision relating to a DNSP notifying whether negotiated access standards may be required was retained. In response to the draft final rule, the CEC recommended that the obligation for a DNSP to notify the applicant about the negotiated access standards that may require AEMO involvement should be retained so that it aligns with existing clause 5.3.3(b1).⁹⁶ However, the NSW DNSPs and the CEC considered that the part of the clause relating to whether negotiated access standards may be required should be deleted from the final rule, as a connection applicant should assume that negotiated access standards will be required.⁹⁷ The Commission understands that an integral part of the period between the detailed enquiry response and submission of an application to connect is for the connection applicant to determine any negotiated access standards. Therefore, as noted by the NSW DNSPs and the CEC, the connection applicant should know that negotiated access standards are required and this provision has been deleted from the final rule.

However, there is merit in the DNSP notifying embedded generators of those negotiated access standards that may involve AEMO. This is important for the connection applicant as the process to determine negotiated access standards is an iterative process. Following receipt of an application to connect, a DNSP is required to consult with AEMO in relation to 'AEMO advisory matters'⁹⁸ for each of the proposed negotiated standards. Where a negotiated access standard is rejected, the DNSP must advise the connection applicant of a negotiated access standard that it will accept. In response, the connection applicant may accept the proposed standard, or propose an alternative. When proposing an alternative access standard, the DNSP must again consult with AEMO. Given the iterative nature of this process, the Commission considers it appropriate that the final rule includes a provision obliging DNSPs to

⁹⁵ Position paper submissions from: Energex, pp2-3; and Victorian DNSPs, p5.

⁹⁶ CEC, Position paper submission, p8.

⁹⁷ Position paper submissions from: NSW DNSPs, p2; and CEC, p8.

⁹⁸ The negotiation of performance standards is termed 'AEMO advisory matters'.

notify connection applicants of those negotiated access standards that may involve AEMO.

FRV suggested an amendment to the detailed enquiry response to include options for connecting at more than one point in the network and reasons for preferred and rejected alternative options. FRV noted that its recommendation was essentially a relocation of an existing provision under clause 5.3.6(e) from the offer to connect stage to the detailed enquiry response stage of the connection process.⁹⁹ As outlined in section 7.8.2, the preliminary enquiry response contains a new obligation for DNSPs to provide an overview of any available options for connection to the network. As a result of this obligation early in the connection process, the Commission considers that connection applicants will be able to assess any options and determine the most appropriate option for its subsequent request for a detailed enquiry response.

The Commission is mindful that the inclusion of an obligation to advise on all options possible for a connection may, depending on the circumstances, be particularly onerous. It may also cause enquiry fees to be unnecessarily high. Further, as the detailed enquiry process is iterative, there remains scope for the connection applicant and DNSP to investigate alternative options, if appropriate. Therefore, it is unlikely that the offer to connect would contain options for connection at more than one point in the network that have not already been considered as part of the connection process up to this point. For these reasons, the Commission does not think it appropriate for the detailed enquiry stage to include an obligation for DNSPs to assess options for connecting at more than one point in the network. This obligation is not included in the final rule.

As a result, the final rule outlines the information that must be provided by a DNSP in its detailed enquiry response, including:

- The DNSP's description of the project being considered including the point of connection and the facilities.
- Details of the level and standard of power transfer capability.
- Details of each technical requirement relevant to the proposed plant as relevant to the access and plant standards and voltage level.
- A statement about which negotiated access standards may require the involvement of AEMO.
- An explanation of all components of the charges that would be incurred for connection and estimates of what the charges will be. This would include an explanation of what factors, if any, will affect the charges and what other information would be required during the connection application stage to finalise these charges (including what information would be required from the connection applicant).

⁹⁹ FRV, Position paper submission, p2.

- The proposed draft connection agreement with any outstanding areas for discussion clearly identified with explanation of what further considerations would be required (including what information would be required from the connection applicant).
- The list of technical data to be included with the application to connect of the nature of the information set out in Schedule 5.5, which will vary depending on the connection requirements and the type, rating and location of the facility to be connected.
- Any other information the applicant needs to provide to make a connection application.
- An explanation of the remainder of the process including requirements for submitting the application to the DNSP, any applicable connection fee, an explanation of the activities that would be undertaken by the DNSP
- Whether a DNSP agrees to a detailed enquiry response remaining valid for a specified period of time.

A detailed enquiry response could be subject to, or dependent on, meeting other legislative requirements such as a local planning or environmental requirements. Should this be the case, the detailed enquiry response would need to specifically identify these dependencies and how they may impact the project and the connection application process.

9 Connection process - the connection application process

This chapter sets out a description of the connection application stage of the new connection process. It also includes an overview of this aspect of the final rule.

Appendix E sets out the background and an overview of stakeholder consultation in relation to this matter.

The chapter is structured as follows:

- section 9.1 provides a summary of the final rule, including a comparison between the current NER provisions and the draft rule; and
- section 9.2 provides the Commission's analysis and conclusions in relation to this matter.

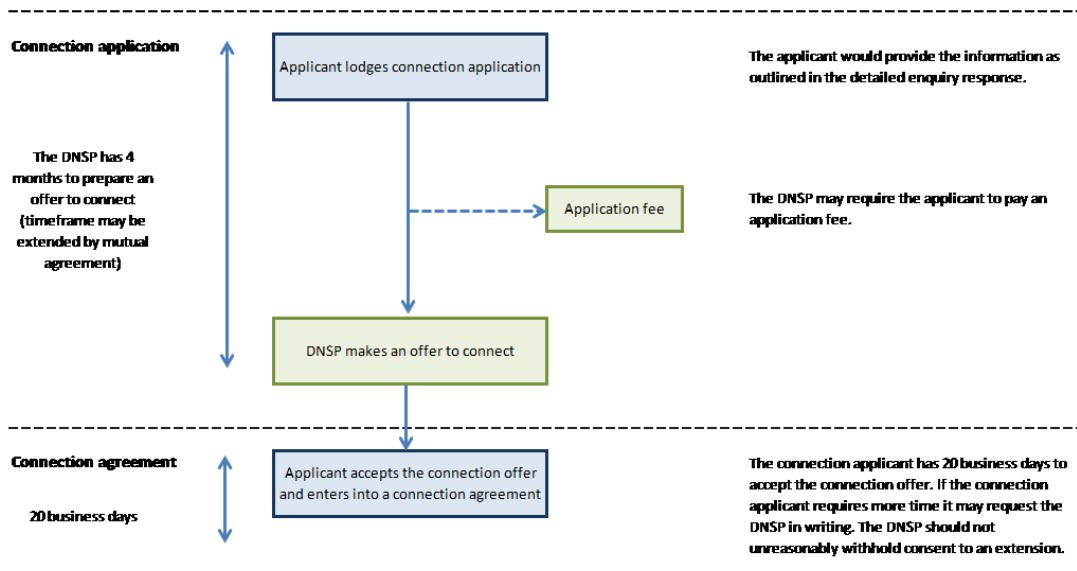
9.1 Overview of the final rule

Table 9.1 Connection application process - the final rule compared with the draft rule

Current provisions	Draft rule	Final rule
Connection application process (see section E.1, E.4 and 9.2)		
An application to connect may be lodged following the completion of the enquiry process. There are no provisions about the timeframe within which applications need to be lodged.	The applicant would decide whether to proceed with the agreed project decided at the conclusion of the detailed enquiry response, or make changes to its requirements. As a result of the validity period, if the connection application is lodged after six weeks, the DNSP may request the applicant lodge a new connection enquiry.	The final rule removes the general validity period of six weeks outlined in the draft rule. However, it retains the ability for a DNSP and a connection applicant to agree to the detailed response remaining valid for a specified period of time to allow the connection applicant to lodge an application to connect within that time.
Following the lodgement of a connection application, the DNSP makes the connection offer within the time as set out in its program.	Where the applicant lodges a connection application for an agreed project, the DNSP must make an offer to connect within 20 business days. Alternatively, where the connection application varies from the agreed project, the applicant and the DNSP would agree a timeframe for the DNSP to provide a connection offer. The applicant would be required to explain the differences and	The fast-tracked application process has been removed from the final rule as a result of the removal of the agreed project concept. The final rule obliges a DNSP to prepare an offer to connect in a period no later than four months from the date of receipt of the application to connect, unless otherwise agreed.

Current provisions	Draft rule	Final rule
	the DNSP could request that a new connection enquiry be lodged.	
There are no time limits within which the connection offer is to be accepted.	Once the DNSP has made a connection offer, the applicant would have 20 business days to accept the offer. The DNSP and the applicant could agree to extend this timeframe.	The final rule maintains the same obligations outlined in the draft rule.

Figure 9.1 Connection application process



9.2 Analysis and conclusions

9.2.1 Timeframe for DNSP to advise of a material information deficiency

DNSPs considered that five business days was insufficient to assess an application to connect and inform the connection applicant of any material deficiency. These DNSPs suggested a more appropriate timeframe was ten business days. The Commission acknowledges that during the five business day period, DNSPs would be required to assess any negotiated access standards and undertake complex design and technical analysis. Any analysis would also require specialist technical resources. Therefore, to allow sufficient time to undertake this analysis, the Commission considers it appropriate to amend the final rule to provide DNSPs with ten business days.

9.2.2 Timeframe for DNSP to prepare a connection offer under the fast-tracked process

As discussed earlier in this chapter, the final rule will not include the draft rule's agreed project and fast tracked connection application process. Consequently, the timeframes associated with these features do not require further consideration. Therefore, the final rule states that a connection application must be completed within four months, although this may be extended by agreement of both parties.

9.2.3 Operation of the stop-the-clock mechanism in preparation of a connection offer

The intent of the draft rule including a stop-the-clock mechanism under clause 5.3.6(a2) was to account for the time required by the DNSP to consult with AEMO or a TNSP under the fast-tracked and normal application processes. This consultation was expected to be more time critical under the fast-tracked process.

Of particular concern was draft clause 5.3A.9(e), which provides five business days for a DNSP to determine whether an application to connect is incomplete and to advise the applicant of the deficiency and the steps required to address it.¹⁰⁰ If a DNSP needed to consult with AEMO or a TNSP to be able to respond under draft clause 5.3A.9(e), this would need to occur within the five business days.

As such, DNSPs noted that under the draft rule, following receipt of an application to connect, they could only be expected to acknowledge whether the relevant material had been received, and not to check its veracity through internal analysis or consultation with AEMO or the relevant TNSP. Submissions on the draft final rule from DNSPs reiterated that this five business day timeframe was too short given the requirement for DNSPs to undertake complex design and technical analysis of the application to connect at this point in the process.¹⁰¹ DNSPs suggested that this timeframe be extended to ten business days in the final rule.

The Commission acknowledges that under a five business day timeframe that the DNSP would only be able to advise the connection applicant whether all of the relevant information had been provided in the application to connect. In order for the DNSP to undertake a more thorough analysis and determine whether all information required to prepare an offer to connect has been submitted, a longer timeframe may be necessary. A longer timeframe would also provide DNSPs with the ability to consult with AEMO, the relevant TNSP, or other DNSPs as required. The Commission also considers that a longer timeframe would allow DNSPs to identify all the additional information to be provided by the connection applicant. Therefore, the connection applicant would have certainty that the DNSP would be only likely to request any missing information once. For these reasons, the Commission considers that the

¹⁰⁰ Draft clause 5.3A.9(e) provided DNSPs with a period of five business days in which they must inform the connection applicant if the application to connect is incomplete in a material way.

¹⁰¹ Position paper submissions from: Energex, p3; ENA, p3; Victorian DNSPs, p4; and CitiPower and Powercor, p3.

timeframe in the final rule be extended to ten business days for a DNSP to determine whether an application to connect is incomplete and to advise the applicant of the deficiency and the steps required to address it.

In relation to the stop-the-clock mechanism, the position paper recommended its removal from the draft final rule. The mechanism was no longer considered necessary due to the removal of the 'agreed project' and 'fast-tracked' connection application process. However, as noted by stakeholders, the draft final rule did not adequately reflect this amended policy position.

In response to the draft final rule, DNSPs considered that the stop-the-clock mechanism should not be removed from the final rule. DNSPs contended that the mechanism should be retained because it provided transparency and (if civil penalty provisions are retained) it prevented network businesses being liable for breaches in timeframes where third parties provide information late.

Following submission of all required information by the connection applicant, the consequent preparation of the offer to connect should include any internal analysis and consultation with AEMO or TNSPs conducted by the DNSP. As such, the Commission still considers that any analysis and/or consultation required by a DNSP at this stage should be subject to the four month timeframe. Being able to stop-the-clock where consultation with third parties occurs does not improve the transparency of the connection process. In contrast, it is more likely to reduce the certainty for connection applicants with respect to the time taken for the DNSP to prepare the offer to connect, as the time for third party consultation is undefined. That is, there is a risk that without adequately defined timeframes, the connection process could continue for an indeterminate period of time. Further, as the total time to prepare the offer to connect is extendable by agreement between the parties, there does not appear to be a strong case for retaining the stop-the-clock mechanism in the final rule. As noted by the CEC, delays caused by third parties would fall into the category of a 'reasonable' need to extend and as such the stop-the-clock mechanism is effectively duplicative and unnecessary.

As such, the final rule does not provide the ability for DNSPs to stop-the-clock where they are required to consult with TNSPs and AEMO when preparing an offer to connect. That is, any time taken to undertake consultation must be included in the four month timeframe provided in the final rule, although this timeframe may be extended by agreement between the parties.

It should be noted that the final rule does not remove the stop-the-clock mechanism as it relates to the dispute resolution process. In cases where a dispute arises between two or more parties about an element of the connection process, it is appropriate that the timeframe from the start of, to the completion of, the dispute is not included in the time for a DNSP to respond to the connection applicant. This is in large part because of the inherent uncertainty involved in dispute resolution, both in relation to the issues considered and time taken to conclude. To provide greater certainty on the timeframe to be excluded as a result of a dispute, clause 5.3A.2(c) of the final rule has been amended.

9.2.4 Timeframe for connection applicant to accept the offer to connect

As noted in the connection enquiry stage previously, it is not expected that the connection offer would remain open indefinitely given that project and network conditions can change. Also, whether a project goes ahead would impact the DNSP, current users of the network and other applicants wishing to connect to a specific location. For this reason, the draft rule set a limit of 20 business days within which the connection offer remains valid.

The CEC considered that the 20 business day timeframe outlined in the draft rule was too short. It suggested that the timeframe should be extended to a maximum of six months.¹⁰² The Commission still considered that the offer to connect should remain open for acceptance for a shorter rather than longer period of time. This is because network conditions can change over time, which may require additional analysis to be undertaken. However, the draft final rule provided the ability for the connection applicant and DNSP to extend the period of acceptance by agreement. The Commission considered that this ability to extend the acceptance period would allow connection applicants and DNSPs the time to fully accept the commercial significance of an offer prior to acceptance.

In response to the draft final rule, a number of embedded generation proponents suggested that the obligation relating to the connection applicant's acceptance of an offer to connect be amended such that DNSPs may not unreasonably withhold consent to an extension greater than the required 20 business days. They considered that this recommendation would provide symmetry in the NER regarding the obligations on connection applicants and DNSPs.

The Commission still considers that a tight timeframe for acceptance of the offer to connect is appropriate. This is as a result of the greater transparency in the connection process regarding the information requirements on both parties and the obligation for DNSPs to provide connection applicants with model connection agreements throughout the process. However, as noted by embedded generator proponents, in some instances, especially for larger more complex embedded generator connections, the 20 business day timeframe may not be sufficient for the connection applicant to fully appreciate the commercial ramifications of the connection offer. To allow this to occur, the final rule provides the ability for the connection applicant and DNSP to extend the period of acceptance.

While unlikely this late in the connection process, the Commission appreciates that there is a risk for connection applicants that this request for a time extension may be withheld by the DNSP. The Commission also notes that where timeframes are extendable in the final rule that DNSPs must provide reasons supporting this extension and the connection applicant should not unreasonably withhold consent to any extension. Therefore, to provide greater symmetry in the final rule regarding the obligations on both parties, the final rule clarifies that where a connection applicant wishes to extend the period for acceptance of an offer to connect that it must provide

¹⁰² CEC, Draft rule determination submission, p15.

written reasons outlining why this extension is necessary, and that extension should not be unreasonably withheld by the DNSP.

10 Connection process - other issues

This chapter outlines two additional issues relating to the connection process identified by stakeholders during consultation. The remainder of chapter 10 sets out the Commission's view in relation to the impact on timeframes where an embedded generation connection triggers the need for the regulatory investment test for distribution (RIT-D) and the requirements for ongoing reporting of connection outcomes.

10.1 Impacts of the regulatory investment test for distribution (RIT-D)

Under the NER, where an investment in the network is estimated to cost a DNSP more than \$5 million, the DNSP must undertake the regulatory investment test for distribution (RIT-D).¹⁰³ The RIT-D provisions allow DNSPs to consider the investment options that best address the needs of the network. The provisions establish processes and criteria that are to be applied by DNSPs in circumstances where a network problem exists and the estimated capital cost of the most expensive credible option is above \$5 million. Certain types of projects, or expenditure, are exempt for assessment under the RIT-D including projects that relate to the replacement and refurbishment of existing assets. The RIT-D process requirements include specific provisions for consultation with stakeholders.

In some cases, it may be possible that a connection enquiry or application would be impacted by investments undergoing a RIT-D assessment. For example, a DNSP may be undertaking a RIT-D for a project to increase the transfer capability of one section of the shared network. A connection applicant may submit a connection enquiry or application for a project that would require that additional transfer capability being considered. In this case, the DNSP's response to the connection applicant may be subject to the outcomes of the RIT-D assessment.

Following the release of the draft rule determination, stakeholders have not presented the Commission with any new material to indicate that the draft NER provisions regarding the RIT-D processes interaction with the new connection process are not appropriate.¹⁰⁴ Accordingly, the final rule still takes into account this potential situation by requiring the DNSP to clearly explain the processes and potential situation to the connection applicant. The DNSP would also be required to outline potential options that may be available on how the connection enquiry or application may proceed.

The RIT-D process can take a number of months to allow sufficient consultation. In cases where connection enquiries or applications are impacted by a RIT-D assessment, the DNSP may agree with the connection applicant on appropriate timeframes to

¹⁰³ NER rule 5.17.

¹⁰⁴ Draft clause 5.3A.8(e), which allowed the DNSP and connection applicant to agree an alternative timeframe for the provision of a detailed enquiry response taking into account the status of the relevant RIT-D project.

respond to the enquiry in these circumstances that are outside of the timeframes discussed in sections 6.3, 6.4 and 6.5 above.

10.2 Ongoing reporting of connection outcomes

The proponents and some stakeholders consider that DNSPs have little incentive to complete connection processes in a timely manner and that there is a general lack of information and transparency on the requirements.¹⁰⁵

In consultation on the draft rule determination, the EEC considered that unless the AER takes a proactive regulatory approach, DNSPs will still have multiple options for "bending the rules and creating unnecessary delays". To overcome this problem, the EEC suggested the AEMC require DNSPs to submit a very basic annual report to the AER that sets out the times they have taken to respond to each preliminary and detailed enquiry.¹⁰⁶

The Commission considers there is merit in DNSPs reporting on the connection enquiries and applications they process to promote transparency and inform stakeholders of the connection process. However, it does not consider that DNSPs submitting a basic report to the AER is going to provide any additional certainty for connection applicants.

As such, the final rule requires DNSPs to include in their DAPR a quantitative summary of connection enquiries received under clause 5.3A.5, applications to connect received under clause 5.3A.9, and the average time taken to finalise applications to connect.¹⁰⁷ The provisions also include the requirement for DNSPs to provide a qualitative summary on any key issues arising from applications to connect embedded generating units received in the past year.¹⁰⁸

These provisions would promote understanding of the connection requirements and provide some transparency on the DNSPs' activities. They could also provide an incentive, through public scrutiny, for DNSPs to process enquiries and applications in accordance with the relevant requirements. Although there would likely be implementation and operational costs for DNSPs in undertaking this reporting, the Commission notes that DNSPs should already have systems in place to track enquiries and applications. The reporting would also cover high level statistics and case studies. For these reasons the additional costs are likely to be incremental.

¹⁰⁵ See consultation paper submissions from Clean Energy Council; ISPT Super Property; EnerNOC; Northern Alliance for Greenhouse Action; EEC; Infratil Energy Australia; and Sustainable Regional Australia.

¹⁰⁶ EEC, Draft rule determination submission, p4.

¹⁰⁷ NER clause Schedule 5.8(l)(2).

¹⁰⁸ NER clause Schedule 5.8(l)(1)(ii).

11 Technical issues

Chapter 11 sets out the Commission's views in relation to the technical requirements for the connection of embedded generators to distribution networks. It also includes an overview of this aspect of the final rule. Appendix F sets out the background and an overview of stakeholder feedback from consultation in relation to this matter.

The chapter is structured as follows:

- section 11.1 summarises the final rule; and
- section 11.2 outlines the Commission's analysis and conclusions in relation to the technical requirements for the connection of embedded generation to distribution networks.

11.1 Overview of the final rule

A summary of the final determination, in comparison with the existing provisions and the draft determination, is set out in Table 11.1, followed by an overview of the Commission's reasons.

Table 11.1 Technical requirements under the final rule - comparison with existing provisions and the draft rule determination

Current NER provisions	Draft rule determination	Final rule determination
Technical requirements for connection (see sections F.1, F.4 and 11.2)		
The specific technical requirements that connection applicants must adhere to are located in the schedules to Chapter 5. Schedule 5.2 specifically outlines the conditions for connection of generators. However, this schedule does not apply to generators that are exempt from registration. As such, it does not apply to embedded generators with a nameplate rating of less than 5 MW. Technical requirements for these generators are determined by DNSPs based on network and jurisdictional requirements.	The draft rule did not provide for a technical standard to apply to embedded generators, or an automatic access standard. However, for generating plant that meets minimum access standards, the draft rule placed an obligation on DNSPs to publish a register of this equipment. Further, to cover those aspects of Schedule 5.2 relevant to the connection of embedded generators, the preliminary enquiry response must include details of the technical requirements relevant to the connection enquiry.	The final rule does not provide for a technical standard to apply to embedded generators or an automatic access standard. However, the final rule requires each DNSP to publish a register of completed projects that contains the type of embedded generating plant and associated connection equipment that has been connected to its network, by registered Embedded Generators, in the last five years. DNSPs are required to update the register annually, on a rolling five year basis. Further, to cover those aspects of Schedule 5.2 relevant to the connection of embedded generators, the preliminary detailed enquiry

Current NER provisions	Draft rule determination	Final rule determination
		response must include details of the technical requirements relevant to the connection enquiry.

11.1.1 NER to include register of completed projects

In the absence of nationally consistent technical standards, the final rule requires DNSPs to publish a register of completed projects, which will contain information on the generating plant and associated connection equipment that has been installed on a DNSP's network in the previous five years in accordance with the Chapter 5 connection process.

Publishing this information will promote efficiency in investment decisions by allowing connection applicants to identify projects that may not be commercially feasible earlier and so reducing the unnecessary commitment of resources. The register will also allow connection applicants to make more informed connection enquiries, and should therefore reduce the time and resources required by DNSPs to respond.

Importantly, the register is only a guide for potential connection applicants and DNSPs are not obliged to accept an application based on information in the register. This is due to the potential for specific locational, or other requirements, that may be unique to a particular connection. Similarly, connection applicants are not limited to the use of equipment listed on the register of completed projects.

11.1.2 NER to contain high level detail on technical network access requirements

The Commission considers that an obligation for DNSPs to provide information regarding technical access requirements to embedded generation proponents at the preliminary and detailed enquiry stages will enhance transparency and certainty for connection applicants.

Provision of this information early in the connection process will allow a more detailed assessment of the financial implications of progressing an embedded generation connection, leading to efficient investment in embedded generation, which is in the long term interest of consumers.

The Commission's analysis on this matter is outlined in chapters 7 and 8, which sets out the connection process at the preliminary and detailed enquiry stage, respectively.

11.2 Analysis and conclusions

11.2.1 Technical requirements for connection

The first part of the Commission's assessment relates to the technical requirements for the connection of embedded generators to distribution networks, including the development of nationally consistent technical standards and automatic access standards.

After considering stakeholder feedback on the register of compliant equipment, the Commission has made a number of changes in the final rule. While the reason for requiring DNSPs to publish a register of generating plant and associated equipment remains largely unchanged, the Commission has made refinements to minimise the burden on DNSPs and maximise the usefulness of the information to potential connection applicants.

The final rule requires DNSPs to publish on their website a register of embedded generating units and associated equipment that has been connected to their networks in the previous five years. The final rule has been amended to avoid the unintended consequences noted by DNSPs about the register including household solar PV installations. To achieve this outcome, the final rule is limited to embedded generator systems of 'Embedded Generators' – that is, it will only apply to registered participants that connect embedded generating systems under the Chapter 5 connection process (or applicants that were required to seek exemption from registration) and so by definition, primarily generating systems of 5MW or more nameplate capacity.¹⁰⁹

The register will be updated annually on a rolling five year basis from commencement of this rule. As the final rule requires the register to be established by DNSPs, it will need to be operational from the commencement date of the final rule. Following commencement, DNSPs will be required to update the register on an annual basis on the date they publish their DAPR.

Given that the register will reflect generating plant and associated equipment that has been connected to a DNSP's network, as opposed to all compliant equipment, the register has been renamed 'register of completed projects'.

The purpose of the register is to provide potential connection applicants with up-to-date information on the type of generating plant, including connection configuration, that has been connected to a DNSP's network. In doing so, the register will allow potential connection applicants to make more informed decisions with respect to their prospective embedded generation projects at an earlier stage than is currently possible.

In the absence of nationally consistent technical standards, the Commission considers that a register of completed projects will benefit connection applicants by increasing

¹⁰⁹ In the context of Chapter 5A, the definition of 'Embedded Generator' has been replaced by a definition specifically applicable to that Chapter. See clause 5A.A.1 for the local definition.

information available at the early stages of considering whether to invest in embedded generation. A register will also allow embedded generation connection proponents to make more informed connection enquiries and should therefore reduce the time and resources required by DNSPs to respond.

Updating the register annually on a rolling five year basis will provide certainty that the register contains the most up-to-date and relevant information for prospective connection applicants. It will also mean that it does not become overly large and burdensome for DNSPs to maintain.

Importantly, the register of completed projects is only intended as a guide for connection applicants and DNSPs are not obliged to accept an application to connect based on a configuration outlined in their register. This is due to the potential for specific locational, or other requirements, that may be unique to a particular connection. Similarly, connection applicants are not obliged to only propose the use of equipment listed on the register.

The minimum level of information DNSPs will be required to publish in the register of completed projects is:

- type of generating unit (for example, synchronous, induction among others), and its make and model; and
- associated connection equipment, including, but not limited to:
 - maximum power generation of whole plant;
 - fault level contribution;
 - transformer (size and rating);
 - single line diagram of the connection arrangement;
 - protection systems and communication systems (for example, run-back schemes, etc.);
 - voltage control and reactive power capability; and
 - any site specific implications with the connection arrangement.

Some of the information included in the register may be confidential information. The final rule explicitly addresses the question of confidential information in the register noting that "subject to satisfying any relevant exemptions contained in clause 8.6.2, the DNSP must not publish confidential information as part of, or in connection with, the register".¹¹⁰ Therefore, unless an exemption to publish confidential information as set out in clause 8.6.2 can be relied on,¹¹¹ the DNSP will not be obliged to publish such

¹¹⁰ Clause 5.4.5(c) of the final rule.

¹¹¹ For example, the information is in the public domain (clause 8.6.2(e)), the relevant connection applicant has consented to publication (clause 8.6.2(e)), the information is trivial (clause 8.6.2(f)).

information as part of the register. The Commission considers that these provisions should allay stakeholder concerns about the potential for the register to include confidential information.

Publishing this information will increase efficiency in investment decisions through the earlier identification of projects that may not be commercially feasible and therefore not proceed, preventing the unnecessary commitment of resources. The information in the register may also allow applicants to submit more targeted questions to the DNSP, potentially providing for a quicker and more relevant response, and thus increasing the efficiency of the connection application process.

The Commission notes that it investigated whether any of the above information was provided by DNSPs under their DAPR or demand side engagement obligations, in order to minimise regulatory burden. However, these documents do not require the level of detail contained in the register of completed projects. Further, the Commission was reluctant to risk confusing the intention of the register with the purpose of the DAPR and demand side engagement document by rolling it into these documents.

In making this final determination, the Commission acknowledges that implementing a register of completed projects will impose a regulatory burden on DNSPs. However, it considers the benefits to the market of more transparent and upfront information, and therefore increased efficiency in the connection process, will outweigh this cost.

In sum, making available relevant and up-to-date information on the technical requirements for the connection of embedded generation to distribution networks will advance the NEO by promoting the efficient investment in electricity services, which is in the long term interests of consumers.

NER to contain high level detail on technical network access requirements

In line with the draft determination, the Commission considers that an obligation for DNSPs to provide minimum technical access requirements to embedded generation proponents at the enquiry stage would enhance transparency and certainty for connection applicants.

Provision of this information early in the connection process should provide connection proponents with greater opportunities to assess the financial implications of progressing an embedded generation connection. This should provide for the efficient investment in embedded generation, which is in the long term interest of consumers.

The Commission's detailed reasons and conclusion on this matter is outlined in Chapter 7, which sets out the connection process at the preliminary enquiry stage, and Chapter 8, which details the detailed enquiry stage. Chapter 6 also discusses the technical requirements to be included in the information pack published by DNSPs.

11.2.2 Automatic right to export electricity

This section covers the Commission's analysis with respect to the automatic right of embedded generators to export electricity to distribution networks.

When considering the ability of embedded generators to export electricity to the distribution network, the Commission considers that there are two aspects that need to be addressed. Firstly, the technical capability of the distribution network to receive any electricity exported by embedded generators. Secondly, the commercial arrangements that need to be in place for the embedded generator to sell that exported electricity. Of these two aspects, the DNSP is only able to advise on the technical capability of the distribution network to receive exports.

In relation to the technical capability of the network, augmentation may be required to enable the unconstrained export of electricity. The costs of such augmentation should be borne by the primary beneficiary of the augmentation, who, with the DNSP, is best placed to manage them. If all consumers are left bearing augmentation costs associated with an embedded generator's automatic right to export electricity, this is unlikely to lead to efficient investment in the distribution network or embedded generation, or be in the long term interests of consumers. Therefore, where there is agreement that the proposed connection will not adversely affect network stability, power quality, supply reliability, or safety (or all necessary network augmentation has been completed to avoid these outcomes), exports can occur.

The export of electricity by embedded generators also requires appropriate commercial arrangements to be in place. For example, where an embedded generator is a non-market exporting generator, it is required to sell electricity to either the local retailer or local customers at the generator's point of connection. In these circumstances, an embedded generator would also be required to sign a power purchasing agreement with its local retailer, or have appropriate contractual agreements in place with local customers for the sale of exported electricity. Alternatively, an embedded generator may also be registered as a market generator and sell its exported electricity through the NEM spot market.¹¹² It may also hedge its financial position through bilateral agreements.

In light of the above analysis and feedback from stakeholder submissions, the Commission maintains its view, given the reasons set out in the draft determination, that any export of electricity from an embedded generator to a distribution network should be based on explicit agreement between the relevant parties.

11.2.3 Publication of system fault level limitations

This section covers the Commission's findings with respect to the publication of system fault level limitations.

¹¹² An embedded generator may also be able to be aggregated as a small generator and its exported electricity sold into the NEM spot market.

The Commission considers the rule change proponents' suggested amendments in relation to fault level head room information have been addressed through the Distribution Network Planning and Expansion Framework rule change process. With respect to the NSW DNSPs' and CEC's views on the inclusion of fault level headroom information in the preliminary enquiry response, this is addressed in section 7.2.3. In relation to Origin Energy's suggestion regarding a register or map of fault level headroom, the Commission notes that DNSPs will begin providing this type of information as they complete their DAPR processes.

The final rule makes no change to the existing NER provisions with respect to the obligations on DNSPs to publish system fault level limitations.

12 Dispute resolution process

Chapter 12 sets out the Commission's analysis and conclusions on the dispute resolution process as relevant to embedded generators and DNSPs. It also includes an overview of this aspect of the final rule. Appendix G sets out the background and an overview of stakeholder consultation on this issue in support of these conclusions.

The chapter is structured as follows:

- section 12.1 provides an overview of the final rule; and
- section 12.2 outlines the Commission's analysis and conclusions in relation to this matter.

12.1 Overview of the final rule

The Commission has decided that the most appropriate dispute resolution mechanisms available are those included in Chapter 8 of the NER. It has also decided to provide clarification on the intended scope and application of the dispute resolution process acknowledging that registered participants and connection applicants may also access this process for technical disputes.

Table 12.1 Dispute resolution process under the final rule - comparison with existing provisions and the draft rule

Current NER provisions	Draft rule	Final rule
Part B of Chapter 8 sets out the general processes for dispute resolution under the NER. Part L of Chapter 6 provides for a dispute resolution process solely for access disputes under clause 5.5.	The draft rule outlines an additional process to the existing NER dispute resolution process in which connection applicants or DNSPs may appoint an independent engineering expert to assess the reasonableness of any technical requirements arising out of the connection process.	The final rule maintains the existing dispute resolution process in Chapter 8 and provides greater clarity on the scope and application of the dispute resolution process to the embedded generation connection process. The draft rule provision for an independent expert appraisal process is not included in the final rule.

12.2 Analysis and conclusions

During consultation with stakeholders, concerns were raised that avoidable disputes were occurring between DNSPs and embedded generator connection applicants around the interpretation and reasonableness of the technical requirements of the connection process. Some embedded generator proponents voiced concerns that using the existing dispute resolution process could undermine their working relationships with DNSPs. Given these concerns, the draft rule included the provision of an

independent expert appraisal process to facilitate the resolution of technical disputes that arise during the connection process.

There was some support for the expert appraisal process from embedded generator proponents. However, most of the DNSPs considered this proposal to be unnecessary and duplicative of the existing dispute resolution process under Chapter 8 of the NER.

The Commission has reconsidered the concerns of stakeholders on a dispute resolution framework. It has considered that the current provision for the Wholesale Energy Market Dispute Resolution Advisor (WEMDRA) and the two-staged dispute resolution process under Chapter 8 provides a workable process for evaluating and resolving technical and other connection-related disputes related to embedded generation.

The Commission considers that this existing dispute resolution process provides sufficient scope of application to the types of disputes likely to occur as part of the Chapter 5 embedded generation connection process. As noted by AEMO, the Chapter 8 dispute resolution process is not limited to technical disputes, but rule 8.2 applies to all connection applications (both generation and load connections).

The aspects of the connection process where the dispute resolution process could be of assistance to the connecting parties include:

- design, specification and arrangement of connection assets;
- monitoring, metering, control and protection systems;
- provision of modelling data and block diagrams; and
- the nature of constraints and costs of any mitigation.

The flexibility built into Chapter 8 also allows parties, by agreement, to utilise the most appropriate and efficient mechanism for their needs, which may include negotiation, mediation or non-binding evaluation by the WEMDRA. Each of these may also incorporate or utilise an independent engineer (as was proposed in the draft rule).

This framework to resolve disagreements throughout the connection process provides an avenue to keep the connection process progressing. Used in good faith, and with the assistance of the WEMDRA, the Chapter 8 dispute resolution process provides for relatively low-cost assistance in resolving points of disagreement as well as more resource intensive mechanisms for complex matters.¹¹³

The Commission notes the dispute resolution adviser responsible for administering the Chapter 8 dispute resolution process has advised that, to date, there have been no connection-related dispute referral notices made by embedded generation proponents or DNSPs. In other words, despite the clear application of the existing dispute

¹¹³ The Chapter 8 dispute resolution process is not designed to enforce or sanction alleged breaches of the NER. The investigation of alleged rule breaches are, in accordance with the NEL, matters within the remit of the AER.

resolution process to mediate connection-related disputes, it has never been used to mediate or resolve such disputes.

In the final rule, the time taken from lodgement of a dispute until it is resolved is not included in the relevant timeframe at that stage in the connection process. This stop-the-clock mechanism isolates the time required to undertake any dispute resolution process from the general timeframes specified throughout the connection process.

The Commission considers the scope of the existing dispute resolution process is sufficient to facilitate the resolution of a range of disputes that may arise between registered participants in the embedded generation connection process. Accordingly, it has decided to maintain the existing dispute resolution process under Chapter 8 and not to add the separate expert appraisal process as proposed in the draft rule. However, by way of clarification, the final rule makes clear that the rule 8.2 process also applies to disputes about the technical requirements of a connection.¹¹⁴

Overall, the Commission is satisfied the final rule's clarification that Chapter 8 provides an appropriate dispute resolution process in the NER for connecting embedded generators will, or is likely to, support the achievement of the NEO through the provision of a clear and flexible dispute resolution process.

¹¹⁴ Clause 5.3A.11 of the final rule.

13 Connection charges and the cost of network augmentation

This chapter sets out the Commission's views in relation to connection charges and the cost of augmentation of the distribution network. It also includes an overview of this aspect of the final rule. Appendix I sets out the background and an overview of stakeholder feedback during the consultation process in support of these conclusions.

This chapter is structured as follows

- section 13.1 summarises the provisions in the final rule; and
- section 13.2 outlines the Commission's analysis and conclusions on connection charges, augmentation of the shared network, the itemised statement of charges and other charging issues.

13.1 Overview of the final rule

Table 13.1 connection charges and network augmentation - the final rule compared with the draft rule

Current provisions	Draft rule	Final rule
Connection charges (see sections I.1.1, I.1.4 and 13.2.1)		
The NER does not include any provisions for DNSPs to charge an enquiry fee for a connection enquiry. Chapter 5 enables DNSPs to charge an application fee payable on lodgement of an application to connect. This fee should not be more than necessary to cover the reasonable costs of all work anticipated to arise from investigating the application to connect and preparing the associated offer to connect.	The draft rule clarified that DNSPs would be able to charge an enquiry fee for preparing detailed enquiry responses. The enquiry fee was to recover the reasonable costs incurred by the DNSP. The provisions in the draft rule differed from the consultancy style 'fee-for-service' arrangements proposed by the rule change request.	Consistent with the draft rule, the final rule allows DNSPs to charge connection applicants an enquiry fee to undertake a detailed enquiry. The final rule also allows DNSPs to nominate a component of the enquiry fee payable by the connection applicant to request a detailed response. The final rule does not limit the ability of DNSPs to undertake fee-for-service arrangements, or change any of the current provisions in relation to an application fee.
Augmentation of the shared network (see sections I.2.1, I.2.4 and 13.2.2)		
Under Chapter 5 and Chapter 5A of the NER, embedded generators are not exempt from paying for the cost of augmentation of the distribution network.	The draft rule proposed no changes to the NER that would have the effect of exempting embedded generators from contributing to shared network	Consistent with the draft rule, the final rule does not make any change to the arrangements regarding the recovery of costs for shared network augmentation.

Current provisions	Draft rule	Final rule
	augmentation costs.	
Itemised statement of charges (see sections I.3.1, I.3.4 and 13.2.3)		
<p>Schedule 5.6 of the NER identifies the terms and conditions that are to be contained in a connection agreement. Relevantly, these include, metering arrangements, connection service charges and payment conditions. However, the NER is not explicit in how the DNSP may provide this information to the connection applicant.</p> <p>In contrast, Chapter 5A sets out a more detailed obligation for DNSPs to provide the connection applicant with a connection offer accompanied by a schedule containing an itemised statement of connection costs.</p>	<p>The draft rule obliged DNSPs to provide cost information and the basis of the cost calculations to connection applicants as part of the detailed enquiry response and connection offer.</p>	<p>Consistent with the draft rule, the final rule obliges DNSPs to provide connection applicants with an itemised statement of connection charges as part of the detailed enquiry response and offer to connect.</p>

13.2 Analysis and conclusions

13.2.1 Connection charges

Consistent with the draft rule, the final rule makes no changes to the provisions regarding connection application fees. Nor does it prevent or limit a DNSP's ability to offer fee-for-service consultancy-style services.

Classification of enquiry fee

The draft rule determination noted that the classification of the service (that is, the provision of the detailed enquiry response) would be an important consideration in developing and/or introducing an enquiry fee. As part of a revenue determination, the AER classifies various distribution services and decides the appropriate form of control to apply to those distribution services.¹¹⁵ The criteria the AER uses to determine how services are classified are specified in the NER.

The Commission's intent in the draft rule determination, as noted by the Victorian DNSPs, was not to state that the enquiry fee and application fee were outside the classification of services, or to pre-empt the AER's assessment and decision on how a

¹¹⁵ See Appendix H for an overview of the classification of connection services for DNSPs in the NEM.

DNSP's services may be classified. It was simply to note that for each DNSP, its connection services are classified differently. To remove the enquiry fee from classification altogether, a high degree of prescription on setting an enquiry fee would need to be introduced into the NER to account for the differences and complexities involved in assessing each connection service to provide for appropriate cost recovery methods.

In addition, specifying the details about the charging of an enquiry fee in the NER would need to address:

- the various cost recovery arrangements specific to the enquiry fee services;
- whether some of the services related to the enquiry fee (for example, undertaking network studies, fault level calculations, or assessing the potential impact on distribution network protection requirements) are classified as entry connection services;
- service classification, and consequently the cost recovery arrangements, may change over time; and
- that the scope of the work carried out to respond to a detailed enquiry response would vary, reflecting the specific circumstances of the embedded generation project (making the flat fee per MW less likely to reflect the reasonable costs incurred).

In light of the prescription required, the Commission does not consider it appropriate to amend the final rule. Therefore, the final rule makes no provision for transitional classification, classification, or price setting mechanisms.

Ability to charge an enquiry fee

The draft rule determination clarified that currently the NER does not limit the ability for DNSPs to charge an enquiry fee to potential connection applicants. The Commission was satisfied this was reasonable and did not find any reason to remove this option. However, the draft rule provided some clarification regarding the charging of an enquiry fee.

The purpose of the enquiry fee is to allow a DNSP to recover the reasonable costs incurred in the initial investigations for the connection of an embedded generator. As such, these investigations would be specific to the enquiry being assessed and only cover the work required to prepare the detailed enquiry response for the connection applicant. This was generally accepted by stakeholders in submissions to the draft rule determination.

Consistent with the draft rule, the final rule includes provisions that acknowledge what is currently permissible under the NER: that DNSPs are able to charge connection applicants an enquiry fee. The final rule also states that the fee charged should not be more than necessary to recover the reasonable costs of all work anticipated to arise from investigating and responding to a request for a detailed enquiry response.

The EEC recommended that DNSPs inform connection applicants of the likely scale of the fee at the preliminary enquiry phase (or within 10 days of receiving a detailed enquiry) and that there must be a right of appeal to the AER to prevent DNSPs charging excessive fees. In response to these comments, the Commission notes that under the final rule a DNSP's preliminary response must contain an estimate of the enquiry fee payable upon the request for a detailed enquiry response. Where the DNSP is unable to estimate the likely fees for part of the detailed response (for example, where it must liaise with AEMO, a TNSP, or another DNSP), the final rule allows DNSPs to nominate a component of the enquiry fee payable by the connection applicant to request a detailed response. This clarification in the final rule should address the concerns raised by the Victorian DNSPs about their ability to identify and engage all affected parties within the required timeframe.

In those circumstances where the connection applicant considers that the enquiry fee is excessive compared with the scope of work quoted by the DNSP, the connection applicant has recourse to the dispute resolution procedures of the NEL.¹¹⁶

Origin Energy submitted that high connection enquiry fees could act as a disincentive and a barrier to connecting embedded generators and suggested a maximum be set. As noted in the draft rule determination, the Commission considered setting a maximum value for the enquiry fee. However, as these fees are project specific, the scope of work that a DNSP will be required to undertake for the detailed response will depend on the size, scale and location of the proposed embedded generation connection. For this reason, presetting fees that recover reasonable costs is difficult. Accordingly, the final rule does not require DNSPs to publish a set of fees on their website. However, it does require DNSPs to include details of how components of the enquiry fee are to be calculated in the preliminary enquiry response and in worked examples in the information pack.

The Commission does not consider it appropriate for the NER to oblige DNSPs to provide a report of time and expenses to the connection applicant at end-of-month intervals as suggested by the CEC. This is a commercial undertaking that parties may agree to if they consider it relevant to their circumstances. The NER does not prevent such an arrangement. The final rule does not include an obligation as proposed by the CEC.

13.2.2 Augmentation of the shared network

The draft rule proposed no changes to the NER that would have the effect of exempting embedded generators from contributing to shared network augmentation costs. This is consistent with the general approach that appropriate price signals can be achieved by allocating costs of providing a service to parties that benefit from that service.

¹¹⁶ For further information about the dispute resolution process, see Chapter 12 of this final rule determination.

The EEC disagreed with the general principle outlined in the draft rule determination that where a user creates a burden on a network, that user should contribute their share of the relevant cost of network augmentation. In response, the Commission notes that under Chapter 5A of the NER, only retail customers (including non-registered embedded generators) are exempt from paying a capital contribution towards the cost of network augmentation if certain conditions are met, including if the cost exceeds an AER determined threshold.¹¹⁷ However, there are a number of pre-existing (that is, prior to the introduction of Chapter 5A) jurisdictional instruments that allow, or prescribe, shared network augmentation charges for large users.¹¹⁸ For example:

- Clause 2.4 of South Australia's Electricity Distribution Code and Electricity Industry Guideline No.13 indicates that for a new customer, customer demand subject to an augmentation charge is the customer's estimated maximum demand at times corresponding to network design conditions, less a specified augmentation allowance. This allowance is set by the Essential Services Commission of South Australia from time to time, and has remained constant since 1 July 2005.¹¹⁹
- Victoria's Electricity Industry Guidelines No.14 and 15 relate to the connection of embedded generation among other things. Guideline No. 14 sets out the provision of services by DNSPs and permits the recovery of a capital contribution for new works and augmentation. However, for embedded generators that are not customers, Guideline 15 does not allow the connection charge to include deep augmentation charges.¹²⁰
- In NSW, IPART published a report which sets out that for capital contributions for network augmentations:¹²¹
 - a DNSP must, at its own cost, fund network augmentations, except as specified by IPART;
 - a DNSP may require that a rural customer or a large load customer procure and fund network augmentations specified by the DNSP in accordance with IPART's directions;

¹¹⁷ Clause 5A.E.1(2) of the NER. The method used by the AER to calculate the shared network augmentation charge and relevant threshold level for 100A 3-phase low voltage supply is outlined in the connection charge guidelines.

¹¹⁸ All of these instruments remain in place until the end of the current relevant regulatory control period.

¹¹⁹ ESCOSA, July 2005, *Application of Chapter 3 of the Electricity Distribution Code, Electricity Industry Guidelines No. 13*, Clause 2.4, pp5-6.

¹²⁰ Essential Services Commission of Victoria, *Electricity Industry Guideline No. 14, Provision of services by electricity distributors*, April 2004, and Essential Services Commission of Victoria, *Electricity Industry Guideline No. 15, Connection of Embedded Generation*, August 2004.

¹²¹ IPART, April 2002, *Final Report: capital contributions and repayments for connections to electricity distribution networks in New South Wales*, Schedule 1 Capital Contributions, p25.

- a rural customer or large load customer may also be obliged to make reimbursements (for network augmentations that another such customer has funded), in accordance with the schedule specified by IPART.

The above demonstrates that there are current instruments providing for DNSPs to charge large users for shared network augmentation and that this applies equally to load and generation connections. That is, there is a general principle in the NEM that where a user creates a burden on a network, that user should contribute their share of the relevant cost. DNSPs may exercise their discretion on whether to charge these costs.

In its submission, the EEC suggested that the final rule require DNSPs to inform the AER of all connection charges they impose on embedded generators in their annual reports and also provide a right to appeal connection charges. In regard to the first, only the connection applicant is really in a position to judge whether the quoted price appears excessive as costs can vary significantly across projects depending on the level of complexity and location. Further, how and what charges a DNSP applies to a customer for the services it provides needs to be consistent with its revenue determination. Accordingly, there will be variations in charges across DNSPs. Where a connection applicant does not agree with the amount of the charge proposed by a DNSP, the connection applicant has recourse to the dispute resolution provisions of the NEL.¹²²

As noted by the EEC, its request for a review of the way that both energy users and generators are charged for connecting to, and using, the network is out of scope for this rule change. Some of the concerns of the EEC may be addressed in the rule change request being considered by the AEMC in relation to the distribution network pricing arrangements rule change.¹²³ Under the current arrangements, once the revenue for a DNSP is set by the AER, there is a further annual process by which prices are set. That is, a DNSP proposes prices that the AER must assess having regard to certain principles, including:

- the stand alone and avoidable cost boundaries of providing the distribution service;
- the long run marginal cost of providing the distribution service;
- transaction costs for consumers and distribution businesses; and
- whether consumers are able to respond to price signals.

The EEC also recommended AEMO, or another body, undertake a study of the last 50 embedded generator connections in the NEM to determine the costs and benefits to the NEM. While the AEMC is the rule maker for the NEM, it is not able to direct specific market participants to undertake studies that are outside of the NER. Accordingly, the final rule does not reflect this suggestion from the EEC.

¹²² For further information on the dispute resolution process, see Chapter 12 of this final rule determination.

¹²³ AEMC, 2013, *Distribution Network Pricing Arrangements*, Consultation Paper, 14 November 2013.

The draft rule determination noted that the current approach to attributing connection costs, particularly in relation to shared network augmentation, is approved by the AER as part of a DNSP's revenue determination. As noted earlier in this chapter, the classification of connection services varies between DNSPs and classification will influence how the costs of shared network augmentation will be recovered. To the extent that services are classified as negotiated distribution services, the framework for negotiation is under rule 6.7 of the NER. This approach is applied to all connecting customers, whether load customers or generation customers.

As discussed in the draft rule determination, if the current NER provisions were to be amended to exempt embedded generators from paying shared network augmentation, the cost of connecting the embedded generator would be paid by other network users, creating a cross-subsidy. Depending on the relevant service classification and the details of the revenue determination, the burden may be borne entirely by the other users of the network. This outcome would dilute the cost-reflective price signals for a connection applicant.

Further, the benefits of embedded generation may not be maximised if generators receive locational signals based only on the costs of shallow augmentation as these signals may not account for a substantial part of the full connection costs. That is, the connection cost of generators connecting to the distribution system should include the impact of deep and shallow augmentation to support the efficient and optimal location of embedded generators.

Nevertheless, the question of which users pay for shared network augmentation is a matter for the AER through the revenue determination process.

In conclusion, the Commission remains of the view that requiring embedded generators to contribute to shared network augmentation recognises that they are treated the same as large loads. Also, allocating costs to the party that benefits from the expenditure is likely to provide appropriate price signals for generators to locate efficiently and is therefore desirable. That is, to achieve efficient price signalling, customers should generally be charged the attributable costs that they impose on the network.

For these reasons, the final rule does not make any change to the arrangements regarding the recovery of costs for shared network augmentation.

13.2.3 Itemised statement of charges

The draft rule determination noted that the current clause 5.3.6(h), which is designated as a civil penalty provision, states that "an offer to connect must define the basis for determining distribution service charges in accordance with Chapter 6, including the prudential requirements set out in Part K of Chapter 6". Further, Schedule 5.6 of the NER outlines the specific terms and conditions that a connection agreement must contain. These terms include, but are not limited to: metering arrangements, technical, commercial and legal conditions governing works required for the connection or extension to the network and, payment conditions and connection service charges.

While the NER does currently specify that an offer to connect must contain the basis, and the terms and conditions, for determining distribution service charges, it does not specify how this information is presented. Therefore, the draft rule included an obligation for DNSPs to provide an itemised statement of charges, limited to the extent that they are relevant. Also, as noted by the NSW and Victorian DNSPs and the CEC, where there are contestable services, the DNSP would be obliged to inform the connection applicant that it may obtain its own quotes from suitably qualified accredited service providers. That is, where contestability arrangements are in place, a DNSP would only be required to provide an itemised statement of costs for the monopoly services that it will provide.

In relation to the itemised statement of costs outlined in the draft rule, the CEC suggested a number of additional items to be included. The Commission considered:

- that in regard to the scope of work required to facilitate the connection, that the draft rule already addressed this concept because clause 5.3.6(b2) specified that 'the cost of network extension' and 'details of augmentation required to provide connection' are to be included in the offer to connect from a DNSP; and
- that draft clause 5.4B(g) already required a DNSP to provide 'an explanation of the factors affecting each component of the itemised estimate of connection costs and the further information that will be taken into account by the DNSP in preparing the final itemised statement of connection charges'.

Accordingly, in relation to both of these matters, the draft final rule was not amended. However, the Commission did see value in adding 'interface equipment costs' and 'a description of any ongoing operational and maintenance costs and charges where undertaken by the DNSP' to the itemised statement of connection costs to be provided in the detailed enquiry response and the offer to connect. Including these items would provide greater transparency about the costs for a connection applicant. The draft final rule was amended to reflect this decision.

In response to the draft final rule, DNSPs again requested that the provisions regarding the itemised statement of costs should be clarified to reflect any contestability arrangements. For example, in NSW, DNSPs identify and inform the connection applicant of those services required to establish a connection that are contestable. As a result, the NSW DNSPs would only be able to provide estimates for the monopoly services required to establish the connection. As noted above, the intent of the itemised statement of costs is for DNSPs to provide any costs relevant to the services they intend to provide to the connection applicant. To more adequately reflect this intent, the leading paragraph of final rule clauses 5.3.6(b2)(1) and S5.4B(h) have been amended to state "so far as is relevant and in relation to services the DNSP intends to provide...". This clarification has been made to remove doubt that for services that are contestable and/or where the DNSP does not intend to provide those services, the cost of these do not need to be included in the itemised statement of costs.

The Commission does not consider that the final rule requires amendment to address the issue of third party costs raised by Ergon Energy and Energex. This is because the

NER already addresses third party costs throughout the connection process. For example, clause 5.3A.4(e)(2(ii) states that the application fee include the "reasonable costs anticipated to be incurred by AEMO and other NSPs whose participation in the assessment of the application to connect will be required". Also, clause 5.3A.10(d) regarding the preparation of an offer to connect states that "the TNSP consulted with must determine the reasonable costs of addressing those matters for inclusion in the offer to connect and the DNSP must make it a condition of the offer to connect that the connection applicant pay these costs". The Commission is satisfied that the NER contemplates the costs of third party involvement at different (and appropriate) times in the connection process and places requirements on connection applicants to pay these costs. Accordingly, the itemised statement of costs in the final rule has not been amended in regard to this issue.

Energex and Ergon Energy also considered that the itemised statement of costs should not include "details of any ongoing operation and maintenance costs and charges to be undertaken by the DNSP", as it is difficult to isolate these costs. The Commission notes that the operation and maintenance of assets forming part of the distribution network are a component of network services rather than a component of a connection service and should therefore remain funded through distribution use of system charges.

However, connection agreements may contain customer specific connection services that may include maintenance of any generating facilities and/or substations. The classification of these services will dictate how the DNSP will recover this cost from the connection applicant. For example, where these services are classified as unregulated or negotiated services, the DNSP will typically charge a fee to the connection applicant to undertake the work.¹²⁴ Where a fee is charged, it is appropriate for the fee to be included in the itemised statement of connection charges.

Where a DNSP does not charge a fee and recovers this cost through an alternative method, the DNSP should inform the connection applicant. That is, as noted above, the DNSP is only required to provide details of operation and maintenance costs and charges so far as is relevant to the services it provides. For this reason, this item remains in the itemised statement of costs in the final rule.

13.2.4 Other issues

Addressing the 'last in, worst dressed' issue

The proponents considered that the current method for allocating shared network augmentation costs is inequitable because they regard it as applying a 'last in, worst dressed' approach.¹²⁵ That is, the connection application that requires the marginal item of augmentation to occur is effectively penalised by having to contribute to the cost of augmenting the shared network while previous connections did not.

¹²⁴ See Appendix H for an overview of the classification of connection services by DNSP.

¹²⁵ Rule change request, p22.

The draft rule determination noted that the NER currently provides an avenue through which DNSPs and connection applicants are able to manage this issue. One of the principles relating to access to negotiated distribution services (which govern the negotiated distribution services criteria set out in a regulatory determination) foreshadows the possibility of cost recovery. Specifically, clause 6.7.1(6) states that "the price for a negotiated distribution service should be subject to adjustment over time to the extent that the assets used to provide that service are subsequently used to provide services to another person, in which case the adjustment should reflect the extent to which the costs of that asset are being recovered through charges to that other person".

Furthermore, Schedule 5.6 of the NER states that "connection agreements may include other technical, commercial and legal conditions governing works required for the connection or extension to the network which the parties have negotiated and agreed to".

As a result of these provisions, the NER provides some ability for parties to manage the 'last in, worst dressed' issue. For example, where an embedded generator undertakes shared network augmentation (for instance, to improve fault level headroom in the distribution network) in respect of its connection to the distribution network, it may negotiate with the DNSP terms in its connection agreement relating to those assets and any subsequent connections in the same location. These provisions would be equally applicable to the connection of load customers.

In response to the draft rule determination, stakeholders noted that they were "not confident that the existing obligation in the NER regarding the reimbursement of money for the use of assets funded by the connection applicant to provide services to other connection applicants was working as intended".¹²⁶ The rule change proponents suggested an amendment to the NER that "ensures DNSPs are aware of their obligation to provide a reimbursement".¹²⁷ However, the CEC considered that this matter required significantly more work to resolve and suggested that the AEMC consider whether the NER obligations regarding cost sharing are, or have ever been, carried through to connection agreements.¹²⁸

Furthermore, in response to the position paper, the Victorian Department of State Development, Business and Innovation (DSDBI) was not convinced that the NER, or the application of the NER in practice, was able to overcome this issue as outlined in the draft rule determination. In its view, while the NER may make provision for a negotiated agreement that takes into account the value of shared augmentation to other users, it is unclear whether this is occurring, given power imbalances between DNSPs and proponents, particularly for unregistered embedded generation. Potentially, there may be a lack of incentives for DNSPs to provide such cost sharing arrangements. DSDBI also noted that clause 6.7.1(6) focuses on cases where the new asset provides services that are "subsequently used to provide services to another person". DSDBI

¹²⁶ TEC, Draft rule determination submission, p3; Rule change proponents, Draft rule determination submission, p5; Moreland Energy Foundation, Draft rule determination submission, p2.

¹²⁷ Rule change proponents, Draft rule determination submission, p5.

¹²⁸ CEC, Draft rule determination submission, pp25-26.

argued that it did not specifically address connections which occur prior to the point in time that new connection is requested, but which result in a threshold being reached, triggering the need for augmentation. For these reasons, DSDBI supports the development of a cost sharing mechanism that more precisely allocates network augmentation costs to those parties that benefit from the augmentation where appropriate and practicable.

The Commission acknowledges that some stakeholders are concerned about the usefulness of clause 6.7.1(6) in addressing the 'last in, worst dressed' issue. As noted by the CEC, the issue of appropriate cost sharing is a matter that would require significantly more work to resolve than could be achieved within the current rule change process. It would require consideration of its application to load customers as well as generators across the NEM rather than focussing on the impact on certain embedded generators alone. Because of this wide scope and the NEM-wide implication of these changes, any amendments to clause 6.7.1(6) or Schedule 5.6 are outside of the scope of this rule change request. The issues raised by the rule change proponents and the DSDBI would be more appropriately considered in another forum where careful consideration of the wider implications of changing the current cost sharing arrangements can be fully assessed.

Therefore, the Commission has not made any change to the final rule to address the 'last in, worst dressed' approach to allocating shared network augmentation costs for embedded generators subject to the Chapter 5 connection process. It does not consider it appropriate to do so prior to any substantive work being carried out on this wide ranging matter.

Interaction with the regulatory investment test for distribution

As noted in section 10.1, there may be circumstances where a DNSP considers that the shared network augmentation required to connect an embedded generator would also benefit other network users or new customers in the future. In this case, the DNSP may elect to fund the investment itself and recover the cost through regulated prices.¹²⁹ In funding this investment, it is possible that the DNSP's costs may exceed the cost threshold for the regulatory investment test for distribution (RIT-D).

The purpose of the RIT-D cost threshold is to balance the administrative burden of conducting the RIT-D process with the potential benefits in finding an efficient and cost-effective solution to augment the network. It achieves this by providing a dollar amount below which the RIT-D would not be applied. The RIT-D cost threshold is currently set at \$5 million.

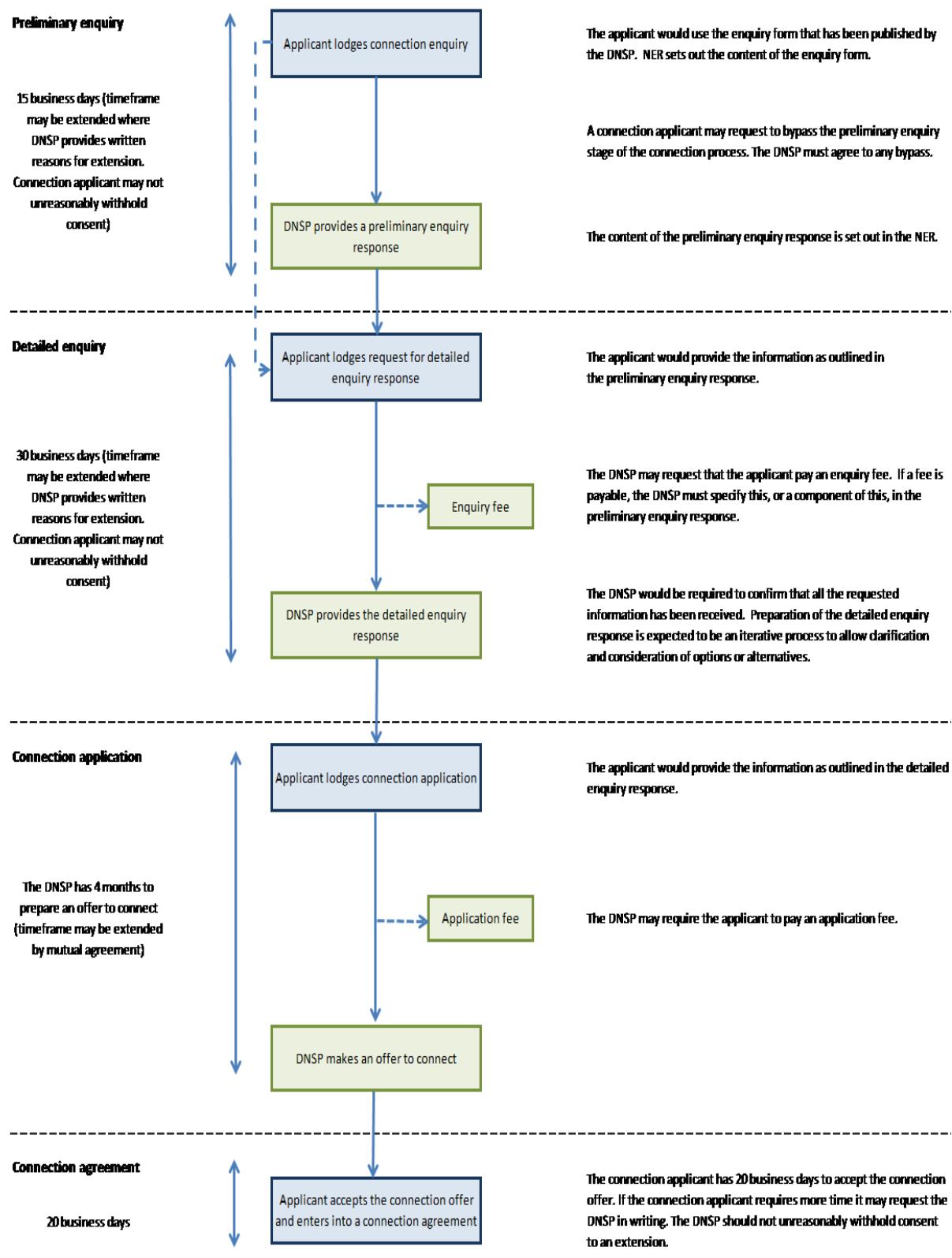
¹²⁹ Triggering the RIT-D may also occur in other circumstances where the DNSP is to carry out capital expenditure. However, a RIT-D assessment is required for all projects which meet the following criteria: the driver for the investment is the need to address an issue on a distribution network (or a transmission network if the need is identified under the joint planning process); the expenditure will be made by an NSP; the expenditure will be (fully or partially) recovered from all users of the network; and the RIT-D project meets the RIT-D cost threshold.

If the investment required by the DNSP to connect an embedded generator triggers the RIT-D process, this may necessitate an interruption to the connection process. Depending on the network and non-network options considered by the DNSP, the RIT-D process may take up to 18 months to complete. In these circumstances, the DNSP and connection applicants would need to agree to halt the connection process to enable the DNSP to complete the RIT-D assessment.¹³⁰ The amended timeframe included in the final rule allows for altering the connection process schedule for this reason.¹³¹

¹³⁰ For further information and discussion on the operation of the RIT-D process, see AEMC 2012, *Distribution Network Planning and Expansion Framework*, Rule Determination.

¹³¹ NER clause 5.3A.8(f).

A Connection process flow chart



B Connection process - availability of upfront information

This appendix provides the background and overview of stakeholder consultation on the availability of upfront information that supports the Commission's conclusions in Chapter 6. It is structured as follows:

- section B.1 outlines the current provisions under the NER;
- section B.2 summarises the proponents' views in relation to the existing connection process;
- section B.3 provides a summary of stakeholders' feedback on the consultation paper;
- section B.4 outlines the Commission's draft rule determination in relation to this matter;
- section B.5 summarises the main issues raised by stakeholders on the draft rule determination; and
- section B.6 sets out an overview of stakeholder feedback on the position paper.

B.1 Current provisions

Currently under the NER, DNSPs are required to develop and publish a demand side engagement document which is to include information about how DNSPs engage with non-network providers (including, embedded generators) and the process for lodging connection applications.¹³²

DNSPs are also required to publish annual reports of their planning activities, termed the Distribution Annual Planning Report (DAPR). The DAPR includes forecast information on demand and network limitations (or constraints).¹³³ The NER also sets out the minimum terms and conditions that apply to connection agreements.¹³⁴

A number of DNSPs have also published 'connection guidelines'. Some of these guidelines are published under specific jurisdictional provisions such as the NSW accredited service provider requirements.¹³⁵ Others have been published voluntarily.

¹³² Clause 5.13.1(h), Schedule 5.9 of the NER.

¹³³ Rule 5.13.2 of the NER.

¹³⁴ Schedule 5.6 of the NER.

¹³⁵ Further information on the NSW Accredited Service Provider (ASP) scheme may be found on the NSW Trade & Investment website:
www.resourcesandenergy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/network-connections/contestable

B.2 Proponents' view

To assist connection applicants, the rule change proponents proposed that DNSPs be required to publish information including: a description of the connection process; identification of the information that must be submitted with an application to connect; and the basis for the calculation of connection charges.¹³⁶

The rule change proponents acknowledged that the Distribution Network Planning and Expansion Framework rule change request was under consideration at the time requiring DNSPs to publish an annual planning report, which would include information on network constraints.¹³⁷ The proponents considered this report would provide sufficient information. The proposed rule outlined specific items to be published upfront by DNSPs, including a description of how connection applications are to be made.

B.3 Stakeholder views - consultation paper

Stakeholders generally agreed that upfront public information for connection applicants would assist with their understanding of connection requirements and allow enquiries and applications to progress more effectively. For example, the Northern Alliance for Greenhouse Action submitted that the connection process would be "improved and facilitated with increased information and transparency on local grid capacity, response periods for connection applications and costs for fees and connections".¹³⁸ It stated that the connection requirements can be difficult to understand, and considered there was a lack of transparency about the factors that DNSPs took into consideration when progressing enquiries and applications.

Arup also submitted that it had found the connection process to be "variable and evolving".¹³⁹ The Clean Energy Council considered that "a lack of clarity in Chapter 5 had led to many DNSPs applying a connection process consisting of parts of Chapter 5 and other in-house processes".¹⁴⁰

Some stakeholders noted that there were already requirements for DNSPs to publish information relating to connection requirements under the demand side engagement document and also that some DNSPs published 'connection guidelines'.¹⁴¹ Some DNSPs also noted that the information published under requirements in Chapter 5A of the NER could also assist Chapter 5 connection applicants.¹⁴²

¹³⁶ Rule change request, p26.

¹³⁷ The rule change proposal (p18) stated that if the requirement for DNSPs to publish capacity constraints in their annual planning report was adopted, it would be sufficient to meet the objectives of this rule change proposal.

¹³⁸ Northern Alliance for Greenhouse Action, Consultation paper submission, p1.

¹³⁹ Arup, Consultation paper submission, p1.

¹⁴⁰ Clean Energy Council, Consultation paper submission, p3.

¹⁴¹ DMITRE, Consultation paper submission, p4; ENA, Consultation paper submission, p1.

¹⁴² Consultation paper submissions from: United Energy, p1; SP AusNet, pp1-2; and Energex, p3.

B.4 Draft rule determination

The Commission considered there was value in providing upfront information to connection applicants, to develop an understanding of, and effective participation in, the connection process. The publication of this information could improve the transparency of the connection requirements and assist all parties with reducing the overall complexity of putting the NER requirements into practice. Accordingly, the draft rule required that DNSPs publish information that:

- provided a practical guide that stepped through the process of how to lodge connection enquiries and applications;
- outlined what an applicant should expect to happen at each stage of the connection process;
- outlined examples of possible charges that would be incurred for connection; and
- provided a model connection agreement.

The demand side engagement documents published by DNSPs only include a description of the connection process rather than any specific guidance to applicants on how to follow and apply the connection requirements. For this reason, the draft rule included an obligation to publish information that actively guides applicants through the whole connection process.

The draft rule also provided DNSPs with some flexibility in how they implement these information requirements to take into account any specific business or regional requirements to minimise regulatory burden. That is, DNSPs may either publish the information together with the demand side engagement document or separately. The expectation was that DNSPs will publish all related information in a centralised location so that it would be easily accessible. Together with the information requirements under Chapter 5, the DNSPs could develop an 'information pack' which captures all relevant information for connection enquiries and applications.

B.5 Stakeholder views - draft rule determination

A number of stakeholders supported the draft rule requiring DNSPs to publish an information pack containing material and procedural requirements to assist embedded generators.¹⁴³ For example, the NSW DNSPs considered the requirement to publish an information pack would assist in:¹⁴⁴

- providing further guidance to potential applicants;
- helping the connection applicants to define their connection requirements; and

¹⁴³ Draft rule determination submissions: Alinta Energy, p2; CitiPower and Powercor, p3; Victorian DNSPs, p8; and CEC, p15.

¹⁴⁴ NSW DNSPs, Draft rule determination submission, p1.

- providing an indication of the possible costs for connections, which would help the connection applicant to determine the feasibility of their proposed connection (prior to lodging an enquiry), thus reducing the number of connection enquiries for DNSPs to process.

However, rather than providing DNSPs with discretion over how to publish the required information, the EEC suggested that the AER have oversight. That is, the AER be able to direct a DNSP to redevelop its information pack where it appeared to be lacking. The EEC also suggested greater prescription in the NER on the contents of the information pack, which it recommended should be determined by a working group.¹⁴⁵

In relation to worked examples of connection charges, CitiPower and Powercor noted that each connection point is unique. Therefore, DNSPs would only be able to include worked examples of connection service charges and application fees for very simple connections not involving any deep augmentation and very basic shallow augmentation variations.¹⁴⁶ They argued that this may be different from the reality faced by the applicant, and so be of limited assistance.¹⁴⁷

The Victorian DNSPs supported the publication of model connection agreements in the information pack, but noted it must be made clear that these agreements are not binding. This would provide sufficient flexibility for DNSPs and connection applicants to negotiate the provisions that best suit the particular circumstances of the proposed connection.¹⁴⁸ The CEC also suggested that where DNSPs publish model connection offers, these should be accompanied with an indication of which aspects of the offer are generally flexible in negotiation.¹⁴⁹

B.6 Stakeholder views - position paper

Stakeholders raised a number of policy questions about the information pack in submissions to the position paper. Specifically, stakeholders sought clarification on the those items required in the information pack.

For example, the CEC suggested a number of amendments to the information pack, including:¹⁵⁰

¹⁴⁵ EEC, Draft rule determination submission, p3.

¹⁴⁶ Under the NEL, augmentation relates to work to enlarge the transmission or distribution system to increase its capacity to convey electricity. Shallow augmentation is usually defined by the energy industry as being the connection assets and extension assets up to and including the first transformation in the distribution system. Deep augmentation, or shared network augmentation is any augmentation of the distribution system other than shallow augmentation.

¹⁴⁷ CitiPower and Powercor, Draft rule determination submission, p3.

¹⁴⁸ Victorian DNSPs, Draft rule determination submission, p8.

¹⁴⁹ CEC, Draft rule determination submission, p15.

¹⁵⁰ CEC, Position paper submission, pp3-4.

- advice on those aspects of a connection service that are contestable in the relevant jurisdiction;
- a requirement for single line diagrams and sample schematic diagrams to be provided for different classes of embedded generator;
- clarification of the meaning of aggregation in the context of connecting embedded generators; and
- the inclusion of the obligations on the parties at each stage within the connection process with the description of the process.

In relation to the requirement for the information pack to include examples of connection service charges, the ENA questioned the value of this requirement as this information would need to come with substantial caveats and a disclaimer that any upfront information is site specific.¹⁵¹

¹⁵¹ ENA, Position paper submission, pp3-4.

C Connection process - the preliminary enquiry stage

This appendix provides the background and overview of stakeholder consultation on the preliminary enquiry stage that supports the Commission's conclusions in Chapter 7. It is structured as follows:

- section C.1 outlines the current provisions under the NER;
- section C.2 summarises the proponents' views in relation to the existing connection process;
- section C.3 provides a summary of stakeholders' feedback on the consultation paper;
- section C.4 outlines the Commission's draft rule determination in relation to this matter;
- section C.5 summarises the main issues raised by stakeholders on the draft rule determination; and
- section C.6 sets out an overview of stakeholder feedback on the position paper.

C.1 Current provisions

The NER currently outlines a single stage enquiry process where DNSPs are required to provide a response to an enquiry within 20 business days. Schedule 5.4 sets out the information that is to be provided by a potential connection applicant with a preliminary enquiry.¹⁵² The information includes, but is not limited to:

- preferred site location;
- maximum power generation or demand of whole plant;
- expected energy production or consumption;
- plant type and configuration;
- technology of proposed generating unit;
- when plant is to be in service;
- name and address of enquirer, and, if relevant, of the party for whom the enquirer is acting; and
- other information may be requested by the network service provider, such as amount and timing of power required during construction or any auxiliary power requirements.

¹⁵² Clause 5.3.2(b) of the NER.

C.2 Proponents' views

The rule change proponents considered the connection process could be burdensome, time-consuming and costly for small generators.¹⁵³ They also suggested that some DNSPs have not always promptly responded to connection enquiries. In this regard, the current 'propose and respond' process does not provide satisfactory outcomes for connection applicants.¹⁵⁴

Despite these concerns, the proposed rule did not include any amendment to the connection enquiry process.

C.3 Stakeholder views - consultation paper

Submissions from embedded generator stakeholders agreed with a number of the issues raised by the proponents.¹⁵⁵ Many of these stakeholders considered that the time taken to complete connection enquiries was too long, there was a lack of clarity on whether enquiries had been received, and there could be a lack of response from DNSPs. For example, the EEC submitted that its members had experienced "many instances where DNSPs have provided unclear and unreasonable responses to connection enquiries".¹⁵⁶

Through informal discussions with stakeholders and observations made at the March 2013 stakeholder workshop, the Commission understood that many stakeholders currently follow an 'informal' process to initiate an enquiry. This may include phoning a DNSP to discuss preliminary details about a potential connection prior to lodging a connection enquiry.

In contrast, DNSPs noted that at times connection enquiries have been incomplete and unclear. They argued that in some cases, it has been difficult to ascertain the project requirements and therefore how best to respond. United Energy submitted that there have been cases where the applicant did not have sufficient knowledge of the technical aspects of its application.¹⁵⁷

Some stakeholders acknowledged that in practice the enquiry process was iterative and could reasonably take time depending on the nature of the project.¹⁵⁸

Stakeholders also noted that communications often take place prior to connection enquiries being lodged despite there being no clear guidance on these interactions.¹⁵⁹

¹⁵³ Rule change request, p9.

¹⁵⁴ *ibid*, p11.

¹⁵⁵ Consultation paper submissions from: EEC, p1; Australand, pp1-2; Honeywell, p1; CEC, p1; ISPT Super Property, p2; TEC, p3.

¹⁵⁶ EEC, Consultation paper submission, p6.

¹⁵⁷ United Energy, Consultation paper submission, p3.

¹⁵⁸ Consultation paper submissions from: Arup, p3; Grid Australia, p3; Energex, p9; United Energy, p7; and CitiPower and Powercor, p5.

Both connection applicants and DNSPs expressed dissatisfaction with the progress of enquiries under the current enquiry process. They also questioned the overall effectiveness and purpose of the current process.

C.4 Draft rule determination

The proposed rule did not address the issue of preliminary negotiation between parties. However, the Commission took into consideration the issues raised by stakeholders regarding the initiation of a connection enquiry. That is, some level of preliminary preparation is required by both the applicant and the DNSP prior to an enquiry being formally lodged. The Commission understood that in some circumstances connection applicants may be considering a number of options and some preliminary discussions and exchange of information was required prior to proceeding with a specific project.

The draft rule therefore set out a two-stage enquiry process with the first stage being the 'preliminary enquiry stage' followed by the 'detailed enquiry stage'. The Commission considered the draft rule would acknowledge the initial step that often occurred in practice in the enquiry process under the NER. The preliminary enquiry stage also provided clear timeframes for responses and set out the requirements for both the applicant and the DNSP. The draft rule also provided the preliminary enquiry response with a validity period of three months from the date it was made by a DNSP, for the connection applicant to request a detailed enquiry from that DNSP.

The draft rule also required DNSPs to publish an enquiry form which would be submitted by the connection applicant to initiate the connection process. Its intention was to provide a clear point of initiation for the preliminary enquiry stage, provide guidance as to the level of detail needed at this stage of the enquiry and govern specific times for DNSPs to acknowledge the receipt of the enquiry and provide a preliminary response.

By providing a clearer framework for initiating connection enquiries in the draft rule, the benefits for both DNSPs and applicants was expected to outweigh any costs.

C.5 Stakeholder views - draft rule determination

C.5.1 Enquiry process and initiating the preliminary response

Alinta Energy and Origin Energy broadly supported the two stage enquiry process of the draft rule as one which is superior to existing enquiry arrangements and would provide greater clarity and efficiency to stakeholders.¹⁶⁰

¹⁵⁹ EEC, Consultation paper submission, p1, for example noted that connection processes were typically 'ad hoc'.

¹⁶⁰ Alinta Energy, Draft rule determination submission, p2; Origin Energy, Draft rule determination submission, p2.

However, the NSW DNSPs had a number of concerns regarding the draft rule. In particular, that the process is unlikely to be effective or efficient in practice due to:¹⁶¹

- the potential overlap and duplication of obligations under the National Energy Customer Framework (NECF) and lack of clarity surrounding the application of the process;
- timeframes under the proposed connection process and how they will operate in practice;
- information requirements;
- possible disconnect between policy intent and the draft rule; and
- the proposed technical dispute resolution process.

Stakeholder submissions did not comment on the requirement for DNSPs to publish an enquiry form.

C.5.2 Timeframes for the preliminary enquiry process

Ability to skip the preliminary enquiry stage

The City of Sydney, the proponents, TEC and Moreland Energy Foundation welcomed the new preliminary enquiry stage, but suggested that project proponents be able to skip this stage and shorten the overall timeframe where it is a similar or repeat connection with the same or similar attributes as an existing project.¹⁶²

DNSP receipt of acknowledgement

The NSW DNSPs and the ENA considered that the two business day limit to acknowledge receipt of an enquiry was too short and that it prioritised embedded generation connection enquiries over load customer enquiries.¹⁶³

Timeframe for DNSP to provide preliminary enquiry response

The NSW DNSPs and the ENA were also concerned that the 15 business day timeframe created an unrealistic expectation regarding the time required to provide a response to larger or more complex connection enquiries. The NSW DNSPs and the ENA outlined

¹⁶¹ NSW DNSPs, Draft rule determination submission, p2.

¹⁶² Draft rule determination submissions from: City of Sydney, p1; proponents, p2; TEC, p4; and Moreland Energy Foundation, p2.

¹⁶³ NSW DNSPs, Draft rule determination submission, pp5-6; and ENA, Draft rule determination submission, pp6-7.

circumstances where they considered that the draft rule's timeframes would not be adequate, such as:¹⁶⁴

- the timeframes are inappropriate for large-scale embedded generation connections (such as those with nameplate capacity greater than 5MW); and
- connection to CBD, or remote areas of the network and connection involving new technology that is unfamiliar to the DNSP.

The ENA considered the draft rule timeframes were too prescriptive and failed to take into account the broad range of issues that may require a DNSP to take longer and would be difficult to meet from an operational perspective.

Similarly, the Victorian DNSPs considered that the 15 business day timeframe was too short in light of the information required in the preliminary enquiry response.¹⁶⁵ The NSW DNSPs also strongly argued that better outcomes can be achieved (for both DNSPs and the connection applicants) if the timeframes under the draft rule connection process were longer than the prescribed 15 business days to reflect more appropriate timeframes, such as for connecting large and complex connections.¹⁶⁶

Validity period of the preliminary enquiry response

In relation to the period of validity for a preliminary enquiry response, the CEC considered that three months was insufficient to allow the enquirer to carry out network studies and make commercial decisions regarding design concepts.¹⁶⁷ The CEC suggested amending draft clause 5.3A.7(b) to require the enquirer to confirm with the DNSP at three month intervals that the enquiry is still active and the applicant intends to follow through.¹⁶⁸

AER oversight of connection process timeframes

The EEC considered that unless the AER took a proactive regulatory approach, DNSPs would still have multiple options for "bending the rules" and creating unnecessary delays. To overcome this problem, the EEC suggested that DNSPs submit a very basic annual report to the AER that sets out the times that have been taken to respond to each preliminary and detailed enquiry.¹⁶⁹

¹⁶⁴ NSW DNSPs, Draft rule determination submission, pp3-5; and ENA, Draft rule determination submission, pp4-5.

¹⁶⁵ Victorian DNSPs, Draft rule determination submission, pp9-10.

¹⁶⁶ NSW DNSPs, Draft rule determination submission, pp3-5.

¹⁶⁷ CEC, Draft rule determination submission, p16.

¹⁶⁸ Clause 5.3A.7(b) set out the process to be followed by a DNSP to provide a preliminary response to a connection applicant after receiving a connection enquiry.

¹⁶⁹ EEC, Draft rule determination submission, p4.

C.5.3 Content of the preliminary enquiry response

The Victorian DNSPs regarded the level of information set out in draft Schedule 5.4A as too onerous to provide within the stipulated 15 business day time limit, as a number of provisions require completion of detailed design work.¹⁷⁰ They argued that Schedule S5.4A and draft clause 5.3A.7 should be amended so that the requirement is to provide the information where practicable. In the absence of this qualification, the Victorian DNSPs considered that the following draft clauses, S5.4A(a), (b), (c), and (d) should be removed.¹⁷¹ In addition, they suggested that draft clause S5.4A(m), relating to how the DNSP proposed to amend its model connection agreement to address the enquiry, should be deleted because it is not reasonable this early in the connection process.¹⁷²

CitiPower and Powercor also considered that many of the clauses specifying the information to be included in the preliminary response required design work about the proposed connection, which would not be able to be provided within 15 days. For example, draft Schedule 5.4A (m) and (r), relating to amending the model connection agreement and the enquiry fee payable to request a detailed response.¹⁷³

The CEC noted that the preliminary enquiry stage should only provide high level information to the enquirer. Draft clauses S5.4A(a) and S5.4A(b) set out the technical information to be provided by the DNSP. The CEC did not consider the draft connection process provided connection applicants with the opportunity to assess the commercial significance of this information. Therefore to provide connection applicants with the ability to request additional information needed to prepare an application to connect, the CEC recommended that draft clause S5.4A(b) be amended.¹⁷⁴

The CEC noted that current clause 5.3.6(e) enables the offer to connect to include options for connection at more than one point. The CEC considered that this detail needs to be brought into the connection enquiry response (for example, in S5.4A) for connection applicants to be able to make informed investment decisions on an efficient connection point location.¹⁷⁵

Further, the CEC considered that the preliminary enquiry response could be improved by including the following minor changes to the technical information outlined in draft

¹⁷⁰ Victorian DNSPs, Draft rule determination submission, pp9-10.

¹⁷¹ Draft clauses S5.4A(a), (b), (c) and (d) set out technical information of the sort set out in Schedule 5.2; any additional technical information relevant to processing a connection enquiry; information about the relevant access and plant standards, and nominal voltage levels; and an assessment about whether negotiated access standards may be required.

¹⁷² ibid.

¹⁷³ CitiPower and Powercor, Draft rule determination submission, p4.

¹⁷⁴ CEC, Draft rule determination submission, p15.

¹⁷⁵ ibid, p16.

clause S5.4A(a). That is, the technical information of the sort set out in Schedule 5.2 in the draft rule in addition to:¹⁷⁶

- ‘fault levels and fault clearance’ should reference existing maximum and minimum fault levels and fault clearance times relevant to local substations;
- protection specifications, insulation coordination and lightning protection requirements should include the relevant philosophies to describe their objectives;
- ‘switching and isolation facilities’ should include all interface equipment requirements at the point of connection; and
- the response should also include relevant voltage and frequency limits in a new subparagraph of that clause.

C.6 Stakeholder views - position paper

C.6.1 Ability to bypass the preliminary enquiry stage - relevant timeframe

In response to the position paper, stakeholders supported the ability to bypass the preliminary enquiry stage where the connection was a similar or repeat connection with the same or similar attributes as an existing project. However, the Victorian DNSPs sought clarification of the time for a DNSP to assess an enquiry where the connection applicant had requested a bypass of the initial preliminary enquiry stage.

Specifically, under the normal connection process, the draft final rule allowed DNSPs five business days to acknowledge receipt of the enquiry and to request further information if the enquiry was incomplete. The Victorian DNSPs contended that where the connection applicant had requested to bypass the preliminary enquiry stage and the material provided in the enquiry was to be assessed for suitability for a detailed response only, then a five business day response period was insufficient. The Victorian DNSPs also noted that as specialist resources were required, DNSPs should be provided with a longer timeframe to assess the request, such as ten business days, consistent with the review undertaken by the DNSP in 5.3A.8(b).¹⁷⁷

C.6.2 Content of the preliminary enquiry response

Schedule 5.4A of the draft final rule outlined the contents of the preliminary enquiry response from a DNSP. The intent of the preliminary enquiry stage is to provide general, high level information and any project specific information that the DNSP has at hand that may help the connection applicant understand its connection options. Accordingly, the draft final rule was amended from the draft rule to specifically

¹⁷⁶ ibid.

¹⁷⁷ Victorian DNSPs, Position paper submission, p5.

acknowledge that the preliminary enquiry response did not oblige a DNSP to undertake detailed design or technical analysis of the connection application.

In response to the draft final rule, stakeholders acknowledged support for the clarification regarding the intent of the preliminary enquiry stage. However, DNSPs still expressed concern that Schedule 5.4A required DNSPs to provide a considerable level of detail specific to individual connection applications in its preliminary response, which may not necessarily be 'at hand'.¹⁷⁸ As these costs are being absorbed by the DNSP (as there is no enquiry fee for this stage of the process), they did not consider it reasonable to request DNSPs to provide detailed information that requires analysis.

Those items in the preliminary enquiry response that DNSPs considered may require detailed analysis included:

- Clauses S5.4A(a)(5) and (6), requiring the inclusion of existing fault levels and fault clearance times of relevant zone substations and switching and isolation facilities. According to DNSPs, this information is not typically provided on a site-specific basis at the preliminary stage. It was suggested these obligations be moved to the detailed enquiry response.
- Clause S5.4A9(i), requiring DNSPs to include in the preliminary response "an indication of whether network augmentation may be required and if required, what work the network augmentation may involve". Energex and the NSW DNSPs did not consider that at this stage sufficient analysis would have been done to provide details of any augmentation that may be required. Therefore, they suggested that the second part of this clause be deleted, or the clause be moved to the detailed enquiry response.
- Clauses S5.4A(g) and (n), that appeared to duplicate some of the requirements already published in the information pack. Energex considered that the level of information in the information pack would be more than sufficient for a preliminary response. The Victorian DNSPs did not consider that clause 5.4A(n) was necessary in the preliminary response and should be excluded. The NSW DNSPs requested the AEMC amend the drafting of this clause to better reflect the policy intent, which was for DNSPs to provide high level generic examples of options for connecting to the DNSPs network rather than actual considered options for connecting.

In relation to contestability arrangements, the NSW DNSPs considered that the policy intent was for a DNSP to inform the connection applicant that for certain services required to establish the connection it may obtain its own quotes for suitably qualified service providers. The NSW DNSPs suggested amending the wording of clause S5.4A(f) to clarify this intent.¹⁷⁹

¹⁷⁸ Position paper submissions from: Energex, p2, ENA, p4, Victorian DNSPs, pp4-5, NSW DNSPs, pp1-2, and CitiPower and Powercor, p3.

¹⁷⁹ NSW DNSPs, Position paper submission, p1.

The NSW DNSPs also highlighted a number of items in the preliminary enquiry response that in their opinion would be better placed in the detailed enquiry response. In addition to those clauses noted above, the NSW DNSPs considered that clause S5.4A(h) would be better placed in the detailed enquiry response. While they acknowledged that the intent of this clause was to provide proponents with an early indication of whether constraints exist in the specific location they are looking at connecting to, these DNSPs were concerned that any information provided at this early stage would need to be heavily qualified which may render the value of this information useless or possibly misleading.¹⁸⁰

¹⁸⁰ ibid.

D Connection process - the detailed enquiry stage

This appendix provides the background and overview of stakeholder consultation on the detailed enquiry stage of the new two stage connection process that supports the Commission's conclusions in Chapter 8. It is structured as follows:

- section D.1 outlines the current provisions under the NER;
- section D.2 summarises the proponents' views in relation to the existing connection process;
- section D.3 provides a summary of stakeholders' feedback on the consultation paper;
- section D.4 outlines the Commission's draft rule determination in relation to this matter;
- section D.5 summarises the main issues raised by stakeholders on the draft rule determination; and
- section D.6 sets out an overview of stakeholder feedback on the position paper.

D.1 Current provisions

As noted previously, the current NER provisions provide a single-stage enquiry process. Within this, a DNSP's response to a connection enquiry is to include relevant technical details and the information that must be submitted for a connection application.¹⁸¹

D.2 Proponents' views

The rule change proponents' views on the connection enquiry process were discussed in section C.2 above. The key points made by the rule change proponents are that the enquiry process takes too long to complete and the requirements on applicants and DNSPs are not clear.

D.3 Stakeholder views - consultation paper

Essential Energy proposed an "agreed project" concept which could be applied to allow some projects to be progressed more quickly through the connection application process under certain conditions.¹⁸² That is, an agreed project would result from an enquiry where both the proponent and the DNSP agree that a specified project would meet the generation objectives and network performance needs. This agreed project

¹⁸¹ Clause 5.3.3 of the NER.

¹⁸² Essential Energy, Consultation paper submission, p3.

would then become the subject of the formal connection process under Chapter 5 of the NER.¹⁸³

D.4 Draft rule determination

The technical requirements for embedded generation connection to a distribution network vary significantly from one connection to another. This is due to the variety of available technologies, as well as the nature of distribution networks, which may lead to issues specific to the location at which a connection is sought. Time and coordination between applicants and DNSPs is required to investigate the potential connection requirements and any alternatives. In addition, connection applicants can also be diverse with varying levels of knowledge and expertise in the electricity market. The potential for significant differences in resources and expertise was acknowledged in the draft rule determination.

The two-stage enquiry process set out in the draft rule was to provide a clear framework for the necessary investigations and discussions to take place. Following the receipt of the preliminary response, applicants would have more information to allow them to assess their business case and determine the appropriate next steps. The subsequent detailed enquiry stage then provided a framework to consider more specific network analysis that would be required to carry out a connection.

The draft rule's detailed enquiry process largely reflected the current enquiry process under the NER. However, it added specific timeframes and clarified the obligations of connection applicants and DNSPs. The Commission considered that the costs of implementing the draft rule would not outweigh the benefits of providing greater certainty and transparency to the enquiry process.

D.5 Stakeholder views - draft rule determination

D.5.1 Timeframe for receipt of request for detailed response

The NSW DNSPs and the ENA considered that a two business day limit for acknowledging receipt of the detailed enquiry response was too short and that it prioritised embedded generation connection enquiries over load customer enquiries.¹⁸⁴ If the enquirer requires a written response or information about a specific situation, the response must be provided as soon as reasonably practicable.

The NSW DNSPs considered that aligning the proposed process with that of Chapter 5A would address the risk of processing errors and would reduce the administration burden on DNSPs from having to implement separate processes. That is, they considered that five business days would be a more appropriate timeframe for

¹⁸³ ibid.

¹⁸⁴ NSW DNSPs, Draft rule determination submission, pp5-6; ENA, Draft rule determination submission, pp6-7.

acknowledging receipt of embedded generation enquiries than the timeframe currently proposed.¹⁸⁵

D.5.2 General timeframes for the detailed response

The Victorian DNSPs were concerned that the timeframes were unrealistic for the following reasons:¹⁸⁶

- The presence of shared network augmentation is not the only factor that might necessitate longer timeframes. Each connection is unique and many factors could potentially determine the level of complexity associated with achieving an agreed project.
- Allowing a maximum of four months to prepare the detailed enquiry response is unrealistic. Complex projects can take up to a year to agree to scope and other details, especially if consultation with other parties is required.
- It is imperative that the timeframes do not preclude the DNSPs from fully assessing the risks associated with the proposed connection and being satisfied that it does not negatively impact the supply of services to other network users.
- Twenty days to make a connection offer for an agreed project is unrealistic. A longer period is needed to finalise such aspects as connection charges.

Similarly, the CEC was concerned about the timeframes in the draft rule. It considered that by applying a 30 business day limit to the detailed enquiry response, it is much more likely that the DNSP's response will require the generator to meet very onerous requirements.¹⁸⁷

The Victorian DNSPs proposed that the maximum timeframe, unless otherwise agreed, for completing the detailed enquiry stage, if there is no shared network augmentation, should be extended from 30 business days to 40 business days.¹⁸⁸

D.5.3 Timeframe for validity of the detailed response

Whether projects go ahead has an impact on DNSPs, current users of the network and other applicants wishing to connect to a specific location. For this reason, the draft rule limited the time the detailed enquiry response would remain valid. The draft rule provided a six week timeframe for an applicant to proceed in obtaining a connection offer. After this time, the DNSP could require a new enquiry to be lodged. In those cases where there had not been any changes in the network requirements, the DNSP could choose to proceed with the existing enquiry.

¹⁸⁵ NSW DNSPs, Draft rule determination submission, pp5-6.

¹⁸⁶ Victorian DNSPs, Draft rule determination submission, p11.

¹⁸⁷ CEC, Draft rule determination submission, p17.

¹⁸⁸ Victorian DNSPs, Draft rule determination submission, p12.

The rule change proponents, TEC and Moreland Energy Foundation indicated that the period of validity for the detailed enquiry response was too short and should be increased from six to 12 weeks to allow for approvals and contracts to be signed under often complex ownership structures.¹⁸⁹ Similarly, the CEC noted that the 30 day validity period was unlikely to result in efficient investment. While the validity period can be extended under agreement, DNSPs are incentivised to reject an extension as they receive additional fees from the applicant (at minimal cost) if a new enquiry is required.¹⁹⁰

The CEC suggested a more effective framework would be to extend the validity period defined under draft clause 5.3A.8(g) to six months. A requirement for the DNSP to notify the holder of a valid detailed response if it received a separate application to connect for a similar part of the network, which may impact the distribution network user access arrangements, would also be required. The DNSP should then consider the concurrent connection of the two projects, if they both wish to proceed. The CEC suggested adding a new draft clause 5.3A.8(j) to ensure that concurrent connection applications are reasonably considered.

D.5.4 Definition of an agreed project

The City of Sydney and the rule change proponents submitted that both the agreed project and fast-tracked aspects of the draft rule must be clearly defined and be based on performance criteria. It should not be left to the DNSP's discretion.¹⁹¹

The rule change proponents, TEC and Moreland Energy Foundation queried if plant or equipment is exchanged, but the requirements of the access standards are still met, whether this is would be a variation to an agreed project.¹⁹² The rule change proponents also stated that the draft rule refers to "project parameters and corresponding access standards and technical requirements" in connection with an agreed project and sought clarification about what constitutes a variation to it.¹⁹³

The CEC noted that a connection applicant will carry all of the risk and costs associated with the connection of an embedded generator. For this reason, the process must facilitate efficient decision making by the applicant. It acknowledged that an agreed project may work for some projects where the connection applicant needs to prioritise a fast-tracked connection. However, the CEC thought it essential that non-agreed projects are not discriminated against in the connection process. To achieve this outcome, the CEC suggested that a new subparagraph (3) be inserted into draft clause 5.3A.9(b) allowing the applicant to submit an application to connect for a non-agreed

¹⁸⁹ Draft rule determination submissions from: the proponents, p2; TEC, p3; and Moreland Energy Foundation, p2.

¹⁹⁰ CEC, Draft rule determination submission, p18.

¹⁹¹ Draft rule determination submissions from: City of Sydney, p1; and the rule change proponents, p2.

¹⁹² Draft rule determination submissions from: proponents, p3; TEC, p4; and Moreland Energy Foundation, p2.

¹⁹³ Rule change proponents, Draft rule determination submission, p3.

project. In this case, the offer can simply be made within an agreed timeframe, up to the maximum of four months.¹⁹⁴

The CEC also submitted that the scope of what “materially different” applies to must be limited. It should be restricted to only include those parts of an agreed project which have a material impact on the distribution network user access arrangements sought by the initial project in draft clause 5.3A.9(d).¹⁹⁵ The CEC considered that the option to invoke the independent expert’s assessment should be more clearly stated in this clause as “materially different” is undefined and creates scope for subjective rejection by the DNSP.¹⁹⁶

D.5.5 Content of the detailed enquiry response

The CEC considered that the detailed enquiry stage must be framed appropriately to allow the complete provision of detailed technical information to fully assess the distribution network user access arrangements sought. The CEC thought that a maximum time period of 20 business days should be applied to the provision of this information.¹⁹⁷

D.6 Stakeholder views - position paper

D.6.1 Timeframe for validity of the detailed response

The draft final rule removed the validity period between the detailed enquiry response and the connection applicant stage of the connection process. However, the draft final rule provided the ability for a connection applicant and a DNSP to agree to an optional validity period. In response, stakeholders raised a number of concerns regarding the inclusion of the option for DNSPs and connection applicants to agree to the detailed enquiry response remaining valid for a specified period of time.

Embedded generator proponents considered the validity period between the detailed response and application stages should be reestablished. These stakeholders contended that DNSPs already have validity periods for load customers, which is in most cases six months. Therefore, it is discriminatory and inconsistent with established DNSP practices to deny embedded generators the same opportunity as load customers. A six month period would be appropriate, and an extension may be granted if the

¹⁹⁴ CEC, Draft rule determination submission, pp17-18.

¹⁹⁵ ibid, pp18-19.

¹⁹⁶ Further information on the independent expert appraisal process proposed in the draft rule may be found in section 6.4.1 of the draft rule determination.

¹⁹⁷ CEC, Draft rule determination submission, p16.

connection applicant and DNSP agree. Where an extension is sought, this consent should not be unreasonably withheld by either party.¹⁹⁸

In contrast, AGL supported the Commission's decision to provide a choice for parties to agree on a validity period if, and when, it is warranted. However, in the absence of a validity period, AGL suggested explicit obligations requiring distributors to promptly disclose any potential changes to their earlier advice - where relevant to access requirements. These obligations should, for example, include the reasons why the earlier requirements will or may change including new or concurrent applications that may affect the ability to connect as advised. In AGL's view, it is problematic for project delivery if distributors can make significant changes to connection requirements with little notice or warning.¹⁹⁹

Similarly, FRV recommended that the validity period mechanism be replaced with a mechanism where the DNSP writes to confirm the connection applicants intention of proceeding with an application to connect 12 months after the detailed response to an enquiry has been provided, if the connection applicant has not already provided an application to connect. This letter must outline whether there have been any changes to the network that may affect the information contained within the detailed enquiry response.²⁰⁰ Alternatively, the CEC suggested that the validity period be replaced with a mechanism where the DNSP writes to confirm the connection applicant's intention of proceeding with the application to connect every three months after the detailed response has been provided. The CEC considered that any fees associated with this reporting be included in the fee for the detailed enquiry response.²⁰¹

D.6.2 Content of the detailed enquiry response

In response to stakeholder feedback in submissions and at the workshops, the Commission made a number of changes to Schedule 5.4B to make sure it contained the appropriate information for this stage in the process. This involved moving information that was specified to be included in the preliminary enquiry response into the detailed enquiry response. This information included among others: written details of each technical requirement relevant to the proposed plant as relevant to the access and plant standards and voltage level to be provided; a statement from the DNSP about whether negotiated access standards may be required; and providing the ability for DNSPs and connection applicants to agree to the detailed enquiry response being valid for a specified period of time.

In response to the draft final rule stakeholders had a number of concerns with the information to be included in the detailed enquiry response. Energex and the Victorian DNSPs recommended the removal of draft clause S5.4B(j) relating to "all risks and

¹⁹⁸ Position paper submissions from: Wood and Grieves Engineers, p1; Australand, p1; City of Sydney, p1; Crown Resorts, p1; Utilitas, p1; TEC, p1; WSP Buildings, p1; and the rule change proponents, pp2-3.

¹⁹⁹ AGL, Position paper submission, pp1-2.

²⁰⁰ FRV, Position paper submission, p1.

²⁰¹ CEC, Position paper submission, pp7-8.

obligations in respect of the proposed connection associated with planning and environmental laws not contained within the NER". While the Victorian DNSPs noted these requirements are currently an aspect of existing Chapter 5, these DNSPs did not consider it appropriate for DNSPs to bear the risk of providing legal advice pertaining to planning and environmental laws. If this clause is to be retained, the Victorian DNSPs stated that the final rule should set out the expectations in relation to the provision to better clarify responsibilities and assignment of risk.²⁰²

The NSW DNSPs and CEC had specific comments regarding draft clause S5.4B(e) relating to whether negotiated access standards may be required. In their opinion a connection applicant should assume that negotiated access standards will be required, even if they are proposing to meet the automatic access standards. Consequently, this responsibility sits more appropriately with the connection applicant rather than the DNSP and should be deleted from the final rule.²⁰³

Draft clause S5.4B(e) in the draft rule also contained an obligation for a DNSP to notify the enquirer of the negotiated access standards which may require AEMO's involvement. While this obligation was removed in the final draft rule, the CEC recommended that it be retained as a new paragraph in the final rule that aligned the detailed response obligations with existing clause 5.3.3(b1).²⁰⁴

FRV suggested an amendment to draft clause S5.4B to include options for connecting at more than one point in the network and reasons for preferred and rejected alternative options. This is essentially a relocation of the existing provision under clause 5.3.6(e) from the offer to connect stage to the detailed enquiry response stage. FRV considered that this recommendation was also consistent with the transmission frameworks review.²⁰⁵

²⁰² Position paper submissions from: Energex, pp2-3; and Victorian DNSPs, p5.

²⁰³ Position paper submissions from: NSW DNSPs, p2; and CEC, p8.

²⁰⁴ CEC, Position paper submission, p8.

²⁰⁵ FRV, Position paper submission, p2.

E Connection process - the connection application process

This appendix provides the background and overview of stakeholder consultation on the connection application aspect of the connection process that supports the Commission's conclusions in Chapter 9. It is structured as follows:

- section E.1 outlines the current provisions under the NER;
- section E.2 summarises the proponents' views in relation to the existing connection process;
- section E.3 provides a summary of stakeholders' feedback on the consultation paper;
- section E.4 outlines the Commission's draft rule determination in relation to this matter;
- section E.5 summarises the main issues raised by stakeholders on the draft rule determination; and
- section E.6 sets out an overview of stakeholder feedback on the position paper.

E.1 Current provisions

The current provisions under the NER require connection applicants to incorporate the information provided by the DNSP in the enquiry response as part of its connection application. Where applicable, the connection applicant is responsible for providing a proposed negotiated access standard with its application. Where the application includes a negotiated access standard that the DNSP has accepted, the DNSP must make a connection offer that is fair and reasonable.²⁰⁶

E.2 Proponents' views

The proponents commented that there were no binding timeframes under the current connection application process. In their view, this had led to situations where there has been a misalignment between the project proponent's requirements and a DNSP's connection process.²⁰⁷ For this reason, there have been significant additional costs to project proponents.²⁰⁸

The proponents proposed that a 65 business day limit be placed on DNSPs to provide connection offers in response to connection applications. In addition, the connection offer should provide an itemised list of connection charges (see section 13.2.3 of this final rule determination for further discussion on this point).

²⁰⁶ NER clauses 5.3.5(a), 5.3.6(a) and 5.3.6(c).

²⁰⁷ Rule change request, p12.

²⁰⁸ *ibid.*

E.3 Stakeholder views - consultation paper

Embedded generator proponents generally agreed with the issues raised by the proponents. Some of these stakeholders stated that the lack of specific timeframes under the connection application process had resulted in uncertainty for projects and significantly long times for connection offers to be made. For example, the City of Sydney submitted that the application of the Chapter 5 requirements can be burdensome, time-consuming and costly.²⁰⁹ These stakeholders also agreed that an itemised statement of charges would be necessary as part of the connection offer.

However, DNSPs considered that the proposed 65 business day timeframe did not take into account the varying complexities of connection applications. They noted that due to the natural evolution of distribution networks, it was generally necessary to undertake a case-by-case assessment of connection applications to ensure that relevant issues are analysed and resolved.²¹⁰ Other stakeholders submitted that there should be greater standardisation. For example, the CEC considered that the current practices applied to embedded generator connections are losing context given the growing interest in commercial scale embedded generation.²¹¹

E.4 Draft rule determination

The Commission acknowledged that project requirements may vary quite significantly and that in most cases some level of case-by-case assessment must be undertaken. At the same time, there may be less complex projects where the connection enquiry and application process should be able to be completed within a shorter timeframe. The draft rule for the connection application process provided a 'fast track' option for projects that had undergone the detailed enquiry stage. The fast-track process required a DNSP to provide a connection offer within 20 business days of receiving an application to connect from the applicant. To provide consistency with the existing provisions under the NER, the draft rule provided a stop-the-clock mechanism where there was a requirement for the DNSP to consult with transmission network service providers (TNSPs) or AEMO. This period of consultation was not included in the 20 business day timeframe.

The draft rule also governed the timeframe for connection applications not made under the fast-tracked process. These applications were to be completed by the DNSP and a connection offer provided within a time agreed with the connection applicant, but no later than four months.

The draft rule determination noted that DNSPs could incur operational costs to implement the changes to the connection application process. However, the potential costs were not expected to be material, as the changes to the application process are incremental. The draft rule was likely to improve the clarity of the requirements and

²⁰⁹ The City of Sydney, Consultation paper submission, p1.

²¹⁰ Consultation paper submissions from: CitiPower and Powernet, p6; ENA, p20; and Jemena, p7.

²¹¹ CEC, Consultation paper submission, p2.

obligations for both DNSPs and connection applicants, which was expected to promote certainty for all parties.

E.5 Stakeholder views - draft rule determination

E.5.1 Timeframe for DNSP to prepare a connection offer

In relation to fast-tracked projects, the EEC supported the 20 business day timeframe. Although, it believed that greater clarity must be given over what constitutes an agreed project. The EEC was concerned that DNSPs could use cosmetic, irrelevant or minor changes to the agreed project to justify delays or changes to a connection agreement. The EEC considered that this process also needs to be monitored and enforced by the AER.²¹²

The Victorian DNSPs considered that the 20 business day timeframe was too short and recommended the time for a DNSP to prepare a connection offer for an agreed project should be extended to 65 business days (consistent with clause 7.1 of the Victorian Electricity Distribution Licence).²¹³

However, the City of Sydney noted that the draft rule did not set out maximum timeframes for 'non fast-tracked' connections. It considered this was too open ended and any rule should set out a reasonable maximum timescale based on performance criteria rather than to be open to a DNSP's discretion.²¹⁴ Origin Energy also commented on the discretion provided to DNSPs. It considered that the timeframes could be managed in a way to effectively delay responses to connection applicants. Consequently, the potential existed for the connection process to literally run for an indeterminate period of time.²¹⁵

E.5.2 Timeframe for connection applicant to accept the offer to connect

The Victorian DNSPs considered that the maximum timeframe, unless otherwise agreed, to make a connection offer should be extended from four months to six months. This proposed maximum timeframe is contingent on there being a stop-the-clock mechanism for the time it takes proponents to respond to requests to provide further information needed by the DNSP to enable it to make a connection offer.²¹⁶

At the November stakeholder workshop, an embedded generator proponent suggested that as the timeframe for the preparation of a connection offer by a DNSP is extendable, the stop-the-clock mechanism relating to work carried out by AEMO or a TNSP was not required. This work could be accommodated by the extendable time frame.

²¹² EEC, Draft rule determination, p4.

²¹³ Victorian DNSPs, Draft rule determination submission, p12.

²¹⁴ City of Sydney, Draft rule determination submission, p1.

²¹⁵ Origin Energy, Draft rule determination submission, p2.

²¹⁶ Victorian DNSPs, Draft rule determination submission, p12.

Participants at the November 2013 stakeholder workshop considered this amendment appropriate.

E.5.3 Operation of the stop-the-clock mechanism in preparation of a connection offer

The CEC considered that the 20 day timeframe for acceptance of a connection offer was not appropriate. It suggested amending draft clause 5.3.6(b4) to allow a maximum timeframe of six months for the connection applicant to appreciate the commercial impact of the terms and conditions.²¹⁷

E.6 Stakeholder views - position paper

E.6.1 Timeframe for DNSP to advise of a material information deficiency

The draft final rule provided DNSPs with five business days to review an application to connect and advise the connection applicant of any material information deficiencies. A number of DNSPs considered that this timeframe was too short.²¹⁸ Given the requirement for DNSPs to undertake complex design and technical analysis of the application to connect at this point in the process, Energex and the Victorian DNSPs considered that this timeframe should be extended to ten business days.

E.6.2 Operation of the stop-the-clock mechanism in preparation of a connection offer

The position paper recommended the removal of the stop-the-clock mechanism from the application to connect stage of the process where a DNSP was required to consult with relevant third parties, such as AEMO, TNSPs or other DNSPs. However, this recommendation was not sufficiently reflected in the draft final rule.

In response to the draft final rule, Energex, CitiPower and Powercor and the Victorian DNSPs considered that the timeframe for the offer to connect under clause 5.3.6(a) should be extended to include time taken to consult with other DNSPs (in addition to AEMO and TNSPs).²¹⁹

Other DNSPs noted that the position paper stated the stop-the-clock mechanism was no longer required due to the removal of the agreed project and fast-tracked connection application process, but it still remained in the draft final rule. The ENA and Victorian DNSPs supported the retention of the stop-the-clock mechanism because it provides transparency and (if civil penalty provisions are retained) it prevents

²¹⁷ CEC, Draft rule determination submission, p15.

²¹⁸ Position paper submissions from: Energex, p3; ENA, p3; Victorian DNSPs, p4; and CitiPower and Powercor, p3.

²¹⁹ Position paper submissions from: Energex, p3; Victorian DNSPs, p4; CitiPower and Powercor, p2.

network businesses being liable for breeches in timeframes where third parties provide information late.²²⁰

In contrast, the CEC, FRV and the rule change proponents noted that parties can already seek to extend the four month timeframe under reasonable circumstances. Clearly, delays caused by third parties would fall into the category of a 'reasonable' need to extend, therefore clause 5.3.6(a2)(1) is effectively duplicative and unnecessary.²²¹

E.6.3 Timeframe for connection applicant to accept the offer to connect

The rule change proponents proposed that clause 5.3.6(b3) relating to the connection applicant's acceptance of an offer to connect be amended such that DNSPs may not unreasonably withhold consent to an extension greater than the required 20 business days. They contended that there were obligations in the draft final rule for connection applicants to not unreasonably withhold consent, therefore, their recommendation provided symmetry to the NER.²²²

²²⁰ Position paper submissions from: ENA, p3; Victorian DNSPs, p4; and CitiPower and Powercor, p2.

²²¹ Position paper submissions from: CEC, p3; rule change proponents, p3; and FRV, p1.

²²² Position paper submissions from: Wood and Grieve Engineering, p1; Australand, p1, City of Sydney, p1; Crown Resorts, p1; Utilitas, p1; TEC, p1; WSP Buildings, p1; and the rule change proponents, p2.

F Technical issues

This appendix provides the background and overview of stakeholder consultation that supports the Commission's conclusions in Chapter 11. It is structured as follows:

- section F.1 outlines the current provisions under the NER on network connections;
- section F.2 provides an overview of the technical requirements for connection;
- section F.3 outlines the issue of the automatic right to export electricity; and
- section F.4 discusses system fault level limitations.

F.1 Technical requirements for connection

F.1.1 Current provisions

Chapter 5 of the NER contains provisions to allow for the connection of generators, market customers and market network service providers. However, as these provisions cater for all distribution and transmission network connections, they tend to be generic and high level in application. With respect to the connection of generation, the specific technical requirements that connection applicants must adhere to are located in various schedules to Chapter 5 of the NER.

The schedules applicable to the connection of generation are:

- Schedule 5.1a: system standards. This schedule outlines the system standards that are necessary or desirable for the safe and reliable operation of the facilities of registered participants and for the safe and reliable operation of equipment. The system standards consist of:
 - the requirements for a frequency operating standard;²²³
 - the requirements for system stability;
 - allowable power frequency voltage;
 - voltage distortion, unbalance and fluctuations; and
 - fault clearance times.
- Schedule 5.1: network performance requirements to be provided or co-ordinated by NSPs. This schedule outlines the requirements on NSPs to develop consistent processes to determine the appropriate technical requirements for each

²²³ The frequency operating standard is determined by the Reliability Panel and published by the AEMC.

connection enquiry or application to connect processed by the NSP. In particular, the criteria and obligations on participants required to achieve a specific level of network service at an individual connection point.

- Schedule 5.2 sets out the conditions for connection of generators. For those embedded generation systems less than 5MW (and so automatically exempt from registration with AEMO), this schedule does not apply where the intended generating system is used in a manner the DNSP considers is unlikely to cause a material degradation in the quality of supply to other network users. However, guidelines and electricity codes in jurisdictions still require DNSPs and generators to comply with the technical requirements of Schedule 5.2 of the NER, despite the NER not requiring these exempt generators to comply under clause S5.2.1(b)(1). As a result, many DNSPs have published a guideline, or suite of guidelines, that detail the technical requirements for the connection of embedded generators. These guidelines are generally similar in scope to the NER requirements, but in some instances contain less detail about the technical requirements relating to power system security.
- Schedule 5.3: conditions for connection of customers. This schedule sets out details of the requirements and conditions that customers must satisfy as a condition of connecting load to a network. This is likely to apply to embedded generators if they are also load customers.
- Schedule 5.4: information to be provided with a preliminary enquiry. This schedule identifies the information required to be submitted with a preliminary enquiry for connection or modification of an existing connection. This schedule is relevant to anyone seeking to connect to the NEM.
- Schedule 5.5: technical details to support both an application for connection and subsequent connection agreement. Various sections of the NER require that participants submit technical data to NSPs. This schedule lists the range of data that may be required. The actual data required will be advised by the NSP, and will form part of the technical specifications in the connection agreement.
- Schedule 5.6: terms and conditions of connection agreements. This schedule sets out the specific conditions that connection agreements must contain in relation to connection and access to a network. This schedule is relevant to all registered participants including generation and load.
- Schedule 5.7: annual forecast information for planning purposes. This schedule sets out the information in respect of each connection point that must be provided to the relevant NSP by each registered participant that has a connection point to a transmission network of that NSP. This schedule is relevant for all registered participants, including generation and load.

F.1.2 Rule proponents' views

The proponents consider that DNSPs appear to have considerable discretion regarding the technical standards they may impose on embedded generators connecting to their network. Therefore, the technical requirements that apply vary across jurisdictions and, in some cases, within the same jurisdiction depending on the DNSP.²²⁴ This may be exacerbated by a perception that any connection must be at a level that provides maximum protection to network infrastructure and integrity of the grid more generally.²²⁵ The proponents have noted that this diversity may be, in part, due to a lack of technical standards that apply uniformly across the NEM.

The proponents have also noted that in circumstances where the technical standards are not clearly and comprehensively defined by the DNSP, this may lead to significant costs, undermining the viability of an embedded generation project.²²⁶

The proponents also submitted that DNSPs' views about the appropriate technical solutions are binding and there is little scope for negotiation. This may occur despite instances where newer, or more appropriate, technical solutions are available to the project proponent. Additionally, some technical requirements imposed by DNSPs may disallow exports of electricity to the distribution network.²²⁷

To address these concerns, the rule change proposes the development of an automatic access standard for embedded generators that would be included in the NER. In this way, generating plant that meet the specified standard would have an automatic right to connect to the relevant network. The proponents considered that this would create a transparent and consistent framework for connecting embedded generation.²²⁸

The automatic access standard for cogeneration plants should, in the proponents' view, be complemented by a standard connection agreement similar to that under Chapter 5A. In particular, Chapter 5A requires DNSPs to have in place a model standing offer for micro-embedded generators, which must include terms and conditions detailing timeframes for connection, safety and technical requirements, and the costs of connection.²²⁹

The proponents consider that the development of an automatic access standard should be provided under the NER as a matter of priority for cogeneration systems up to 5 MW because, relative to their size and capacity, the current costs of connection are disproportionately high and the connection process is unduly burdensome. The proponents also proposed that because automatic access standards are developed for larger cogeneration plants with a nameplate capacity between 5 MW and 30 MW,

²²⁴ Rule change request, p12.

²²⁵ ibid.

²²⁶ ibid.

²²⁷ ibid.

²²⁸ ibid, pp14-15.

²²⁹ ibid, p14.

automatic access should be extended to larger projects consistent with these standards.²³⁰

In addition to an automatic right of connection and standard connection agreement, the proponents have also requested changes to the NER to entitle embedded generators to export electricity to the distribution network.²³¹ This issue is addressed in section F.2 below.

The rule change proposal also includes a request that the NER require DNSPs to publish an annual report identifying where network capacity may be limited. However, it was acknowledged by the proponents that the AEMC was (at that time) already considering whether such information would be included in the Distribution Network Planning and Expansion Framework rule change process.²³²

F.1.3 Stakeholder views - consultation paper

Development of nationally consistent technical standards

Responses to the consultation paper indicated general agreement among stakeholders that nationally consistent technical standards for connecting embedded generators should be developed.

However, from the viewpoint of DNSPs, "what" is proposed to be connected and "where" it is to be connected should remain an integral aspect of the requirements in the process to connect.²³³ That is, it is difficult to completely standardise the technical requirements for the connection of embedded generators.

Many stakeholders considered that it would be difficult to develop nationally consistent technical standards in a timely manner. This is primarily because the technical parameters for connecting embedded generators vary depending on the installed capacity (size) and the type of generator (invertor, asynchronous, or synchronous).²³⁴ On this basis, the ENA noted that any standards should be relatively high level, performance-focussed documents with minimal prescriptive content to allow embedded generators to arrive at an optimal solution.²³⁵

230 ibid, pp14-15.

231 ibid.

232 ibid, p18.

233 Essential Energy, Consultation paper submission, p2.

234 Jemena, Consultation paper submission, p9; EnerNOC, Consultation submission, p 3; Endeavour Energy, Consultation paper submission, pp14-15; Ausgrid, Consultation paper submission, p20; City of Sydney, Consultation paper submission, p6; Wood & Grieve Engineers, Consultation paper submission, p4.

235 ENA, Consultation paper submission, p23.

A number of stakeholders noted that Australia is lagging behind many overseas countries in the development of technical standards for embedded generation.²³⁶ It was suggested that adoption of international standards, or particular aspects of existing international standards, may be more advantageous than developing a standard within Australia.²³⁷

Furthermore, many of the jurisdictional differences that exist between DNSPs are a result of licencing conditions unique to each jurisdiction that relate to safety and reliability.²³⁸ As a result, it may not be possible to develop a set of homogenous technical standards applicable to all DNSPs across the NEM.²³⁹ As a result, each DNSP has developed its own set of technical requirements pursuant to its jurisdictional requirements.²⁴⁰

EnerNOC submitted that the equipment used for connecting embedded generation is "bought off the shelf" from a small number of international suppliers and is therefore constructed to meet relevant international requirements. In its view, the generating plant should therefore be able to be used in Australia.²⁴¹ The ENA was strongly of the view that any equipment should be certified to an acceptable and relevant international or Australian standard.²⁴²

Automatic access standards

ETSA Utilities and the ENA supported the publishing of automatic access standards for some aspects of the connection process, such as generating units and associated protection and control equipment.²⁴³ However, the connection process should also determine the potential impact on network safety and security of supply and any shared network augmentation required to address this, which must be done on a case-by-case basis. Therefore, for these aspects there is no opportunity to allow an automatic right of access.²⁴⁴

On the other hand, CitiPower and Powercor stated that before any automatic access standards are implemented, many DNSPs would require investment to be undertaken to alleviate fault level constraints that already exist.²⁴⁵

²³⁶ SP AusNet, Consultation paper submission, p2; City of Sydney, Consultation paper submission, pp5-6.

²³⁷ EnerNOC, Consultation paper submission, p2; SP AusNet, Consultation paper submission, p2.

²³⁸ Ausgrid, Consultation paper submission, p4.

²³⁹ DMITRE, Consultation paper submission, p4; ENA, Consultation paper submission, p23; Energex, Consultation paper submission, p4.

²⁴⁰ Ausgrid, Consultation paper submission, p2; ENA, Consultation paper submission, p20; Energex, Consultation paper submission, pp11-12; Essential Energy, Consultation paper submission, pp3-4.

²⁴¹ EnerNOC, Consultation paper submission, p2.

²⁴² ENA, Consultation paper submission, p23.

²⁴³ ETSA Utilities, Consultation paper submission, p6; ENA, Consultation paper submission, p20.

²⁴⁴ *ibid.*

²⁴⁵ CitiPower & Powercor, Consultation paper submission, p6.

Origin Energy noted that the concept of an automatic access standard was a good idea in principle, but may have limited value in practice. It was also noted that the automatic access standard for large generators was set at a sufficiently high level to minimise the risk of adverse effects to the network. However, Origin was not aware of a connection agreement that used the automatic access standard.²⁴⁶

The esaa considered it premature to implement an automatic access standard before a national access standard has been developed.²⁴⁷ Further, it noted that if the AEMC decided to develop automatic access standards, then this rule change should be deferred until national standards are developed.²⁴⁸

F.1.4 Draft rule determination

The Commission's draft rule included the following changes to Chapter 5 of the NER to address aspects of the technical requirements for connection:

- DNSPs to publish a register of generating plant or associated equipment that complies with its minimum access standards (referred to as the register of compliant equipment); and
- DNSPs to include prescribed technical information in the preliminary and detailed responses to a connection enquiry.

In considering the development of technical standards for the connection of embedded generators, the Commission had regard to both the equipment and network connection requirements.

Equipment requirements

Generator equipment requirements relate to the standard to which the generation unit and the generator protection schemes are constructed. For most embedded generation projects, the proponent is solely responsible for the generating unit and its plant protection, any internal protection requirements downstream of the point of supply, and any control systems in place on the proponent's equipment.²⁴⁹ Any generating plant that is installed in the NEM must adhere to the frequency operating standards as determined by the Reliability Panel and voltage limits applicable to its location as advised by the local DNSP.²⁵⁰

In relation to the installed equipment, the DNSP must be confident that the proponent's embedded generation, as seen from the point of supply and/or generator

²⁴⁶ Origin Energy, Consultation paper submission, p3.

²⁴⁷ esaa, Consultation paper submission, p3.

²⁴⁸ ibid.

²⁴⁹ J.A. Pecas Lopes et al, *Integrating distributed generation into electric power systems: A review of drivers, challenges and opportunities*, Electric Power Systems Research, vol 77, 2007, pp1189-1203.

²⁵⁰ The Frequency Operating Standards for the Mainland NEM and Tasmania may be found at: www.aemc.gov.au/panels-and-committees/reliability-panel/guidelines-and-standards.html

connection, operates correctly and as agreed. In assessing whether this is the case, the DNSP has the right to witness all equipment testing of the generating plant undertaken by the embedded generation proponent. The NER makes reference to these provisions under rules 5.7 and 5.8.

Network connection requirements

The network connection requirements relate to the protection elements required at the point of supply. These elements are particularly important in maintaining the safety, security and reliability of the DNSPs distribution assets. Many of the licencing conditions throughout Australia give DNSPs the right to approve protection and control settings in relation to distribution network connections and, where appropriate, witness the testing of those systems.

It is important from the perspective of the DNSP that all protection elements are "certified". That is, the installation needs to be tested by a competent tester (in some Australian jurisdictions, a professional electrical engineer) in the presence of the DNSP. The testing usually involves, but is not limited to: synchronising checks and proving loss of mains and neutral over-voltage protection. For the DNSP this testing provides assurance that in the event of a fault, the embedded generation unit will quickly disconnect from the distribution network and completely isolate itself, minimising safety concerns.²⁵¹

In many cases, the technical requirements relevant to the protection parameters are dictated by individual DNSPs and are specific to the connection location. The following are some important considerations for the connection of embedded generators:

- the size of the generator and interconnection voltage;
- the type of generator (for example, synchronous, asynchronous, or inverter);
- export versus non-export of electricity;
- transformer connection;
- the minimum requirements for voltage and frequency protection, including:
 - islanding (where the embedded generator separates from the distribution network);
 - protecting the utility system from fault contribution and transient voltage conditions caused by the embedded generator; and
- power quality, including voltage flicker and harmonics.

²⁵¹ Ausgrid, NS 194, Connection of Embedded Generators, August 2008.

International literature indicates it is often difficult to provide definite technical standards that are relevant to all network configurations and conditions. While international standards provide overarching requirements, the detailed decisions on each connection requirement still necessitate individual DNSPs to exercise judgement. This is the position of organisations such as the Institute of Electrical and Electronics Engineers,²⁵² International Electrotechnical Commission,²⁵³ as well as local network design and operation standards and requirements.²⁵⁴

Given the complexity, time and expertise required to develop a nationally consistent set of technical requirements applicable to all embedded generation connections, the draft rule determination concluded that it was inappropriate for the Commission to be at the forefront of the development of these technical standards at this time. The rationale for this position was that the development of nationally consistent technical standards would:

- potentially require a suite of standards to be developed for various sizes and types of embedded generation;
- require significant technical expertise from a range of stakeholders within the industry;
- require a substantial amount of time to develop. For the standards to apply across Australia, approval by Standards Australia would be required. In the absence of this process, any standards developed by the AEMC would only apply to the NEM jurisdictions under the NER;
- require the Commission to significantly delay completion of this rule change request; and
- duplicate a body of work that is being undertaken by DOI into the feasibility of developing connection standards for unregistered embedded generation (see Box F.1).

Box F.1**Feasibility study into the development of connection standards for embedded generators**

Of particular relevance to this rule change request is a feasibility study that was overseen by SCER. SCER engaged AECOM Australia (AECOM) to examine whether it is feasible to develop technical standards for the connection of mid-scale embedded generation (defined in the report as being of the size 30 kW

²⁵² The Institute of Electrical and Electronics Engineers developed the IEEE 1547 set of standards for the interconnection of distributed resources with electric power systems, which have been made national law in the United States through the Energy Policy Act of 2005.

²⁵³ The International Electrotechnical Commission is the world's leading organisation that prepares and publishes international standards for all electrical, electronic and related technologies.

²⁵⁴ AECOM Australia, *Mid-Scale Embedded Generation Connection Standards - Feasibility Study Interim Report*, p11.

to 5 MW) to electricity distribution networks in Australia. AECOM's final report was published in August 2013.²⁵⁵

AECOM notes there "is significant interest and appetite from all stakeholders who have participated in the consultation process to develop a standard or suite of standards that covers the technical issues relating to the connection of mid-scale embedded generation within Australia".²⁵⁶ The report further states that "a connection standard that balances the costs and benefits would offer benefits beyond potential improvement to the connection process in terms of clarity, certainty, outcome predictability and cost to embedded generator connections".²⁵⁷

A defined technical standard would also "contribute to improving national consistency and promoting common industry practices in distribution network planning, design and operations".²⁵⁸ Furthermore, a defined standard could contribute to standardisation of equipment, which would lead to cost reductions in equipment, streamlined installation practices, and operational consistency.

AECOM noted that the development of any technical standard would require significant time and resources. Further, broad stakeholder participation in the development of any standard was crucial to its success. This is primarily because any standard not only impacts on the technical requirements of a project, but also on business processes, project risk, capital cost and return on investment for multiple parties.²⁵⁹

During consultation, AECOM identified a number of connection issues that are unique to each location and therefore require review on a case-by-case basis:²⁶⁰

- Protection related requirements;
 - pole-slip, breaker fail, inter-trip.
- Reactive power, voltage control and regulation;
- Power system stabilisers;
- Remote monitoring, communications and metering; and
- Safety related requirements;

²⁵⁵ See the SCER web page:
<http://www.scer.gov.au/workstreams/energy-market-reform/demand-side-participation/embedded-generation/>

²⁵⁶ AECOM Australia, *Mid-Scale Embedded Generation Connection Standards - Feasibility Study Final Report*, 24 June 2013, piii.

²⁵⁷ ibid.

²⁵⁸ ibid.

²⁵⁹ ibid.

²⁶⁰ ibid, p13.

- impedance earthing, auxiliary supplies via a different point of common coupling, and interlocking.

AECOM also considered that mid-scale embedded generators are unique in that they generally have a negligible impact on power system security. That is, they need less stringent requirements on operating characteristics and protection, remote control and monitoring capability than larger generators.

However, AECOM identified that embedded generators are more prone to fault level limitations and power quality issues at the connection point. Therefore, some technical requirements are unique to mid-scale embedded generators compared to micro embedded generators, including:²⁶¹

- Protection related requirements;
 - redundancy, main and backup, breaker fail, inter-trip, and impact on protection settings near the point of common coupling.
- Response to disturbances; and
 - fault level contribution and clearance times, breaker fail, delivery of active power and the ability to supply or absorb reactive power, including maintenance of the point of common coupling voltage level.
- Impact on network capability.

In the absence of nationally consistent technical standards, but with a view to increasing information available to embedded generation proponents, the draft rule determination noted that some improvements in the NER could be made with respect to equipment standards and network connection requirements. These are summarised below.

Register of compliant equipment

The draft rule required DNSPs to publish and maintain a register of generating plant and associated equipment that comply with their minimum technical requirements. The register was to be reviewed and updated at least every two years.

The Commission considered that a register of compliant equipment would provide connection applicants with relevant information at the early stages of considering whether to invest. Acting as a guide to equipment that had met DNSPs' technical standards, the register would provide connection applicants with an indication of whether their proposal may satisfy the minimum technical requirements of the network.

²⁶¹ ibid.

Importantly, connection applicants would not be obliged to use any of the equipment on the register nor would DNSPs be obliged to accept a connection application containing equipment identified on the register.

Nevertheless, making this information available would provide a degree of certainty for connection applicants. In doing so, the register would increase the efficiency of connection applicants' investment decisions.

In making its draft rule determination, the Commission acknowledged that implementing a register of compliant equipment would impose a cost and regulatory burden on DNSPs. However, the Commission considered that the benefits to the market of more transparent and upfront information on the equipment for connecting embedded generators would outweigh this cost.

NER to contain high level detail on technical network access requirements

As the development of a nationally consistent technical standard will take some time, the Commission's draft rule set out the technical requirements that DNSPs must make available to connection applicants. Under the draft rule, DNSPs were required to make this information available as part of the preliminary response to a connection enquiry.²⁶²

The technical requirements for the connection of unregistered embedded generators less than 5MW is essentially the same as for registered generators. That is, they require compliance with Schedule 5.2 of the NER, but with less stringent requirements on operating characteristics and protection, remote control and monitoring capability.²⁶³ This is due to unregistered embedded generators having a relatively small impact on overall system security compared with registered generators that require extensive compliance assessments to allow safe operation of the power system.

The technical requirements necessary for DNSPs to assess the impact of the proposed embedded generator on the distribution network are diverse. They include, but are not limited to: protection and control settings; metering; interlocking and isolation; switching and operational arrangements; and, plant capabilities and conformance to existing Australian Standards. DNSPs also need to be aware of any location specific issues when connecting embedded generators.

²⁶² See section 7.2.3 of the final rule determination for the contents of the preliminary enquiry response, and clause S5.4A(a) of the final rule for the relevant technical information.

²⁶³ AECOM Australia, *Mid-Scale Embedded Generation Connection Standards - Feasibility Study Final Report*, p12.

F.1.5 Stakeholder views - draft rule determination

The rule change proponents supported the inclusion of the register of compliant equipment, but requested confirmation that this would also include information on associated protection and control equipment.²⁶⁴

The EEC supported the proposal while recommending a number of changes, including:²⁶⁵

- that DNSPs list all equipment previously required, including protection and other equipment, with previously accepted equipment on the online registers;
- development of technical standards for embedded generators should be expedited; and
- DNSPs must not be allowed to use their lack of a published register as a rationale for delaying a response to a connection enquiry or refusing to offer a connection agreement.

The City of Sydney advocated the development of technical standards as quickly as possible and noted that many countries around the world already have these in place.²⁶⁶ Alinta Energy supported the recommendation that DNSPs maintain a register of compliant equipment, provided it is not overly burdensome or costly to maintain.²⁶⁷

The ENA considered it inappropriate for DNSPs to be required to publish a register of generating plant that meet minimum technical requirements. As technology is constantly evolving and new products come onto the market, the ENA considered that any published register would need constant monitoring and updating to ensure accuracy. This would require ongoing testing and analysis of new generating plant and impose a heavy compliance burden without clear benefits.²⁶⁸

The Victorian DNSPs considered that the register would be likely to provide limited, if any, net benefit due to the uniqueness of each connection point. As such, the specification of a “compliant” individual item of plant would not necessarily assist in determining whether a particular installation will comply with the technical requirements.²⁶⁹

²⁶⁴ Rule change proponents, Draft determination submission, p2.

²⁶⁵ EEC, Draft determination submission, p5.

²⁶⁶ The City of Sydney, Draft determination submission, p1.

²⁶⁷ Alinta Energy, Draft determination submission, pp2-3.

²⁶⁸ ENA, Draft determination submission, p8.

²⁶⁹ Victorian DNSPs, Draft determination submission, p14.

The CEC recommended that any register be updated annually as part of the DNSP planning process and be limited to interface equipment that the DNSP requires in order to meet non-negotiable safety, reliability and quality standards.²⁷⁰

At the workshop on 1 November 2013, a revised approach to the register of compliant equipment was discussed. Specifically, instead of requiring that all compliant equipment be listed, DNSPs would be required to publish the type of generating plant (for example, synchronous generating unit, induction generator among others) and associated equipment that had been connected to their networks since January 2008.²⁷¹ The associated equipment put forward included:

- maximum power generation of whole plant;
- fault level contribution;
- transformer (size and rating);
- circuit breaker arrangement;
- any special protections;
- voltage control and reactive power capability; and
- site specific implications.

The rule change proponents considered that the information suggested by the AEMC would be useful for connection applicants to gain an understanding of the type of plant and connection configurations that are possible. It was also noted that more detailed information, such as the make and model of generating plant, could also be helpful.

However, DNSPs commented that they are not always privy to this level of detail and this information may be subject to confidentiality requirements. AEMO agreed with this comment.

DNSPs suggested the proposed timeframe over which the information is collected could be a rolling five years, instead of fixed start date. This would capture the most relevant information as equipment that is more than five years old is less likely to be relevant and useful to connection applicants. DNSPs thought it should be clear that the register provides information for guidance only and should not be binding upon a DNSP to accept the connection of equipment that appears on the register.

DNSPs also considered that the name 'register of compliant equipment' was misleading and a name such as 'register of completed projects' was less so.

On balance, the DNSPs considered that the creation and maintenance of a technical register would not be onerous. The rule proponents were of the view that the level of

²⁷⁰ CEC, Draft determination submission, pp21-22.

²⁷¹ AEMC, Stakeholder workshop slides, 1 November 2013, p18.

detail contained in the register would provide relevant information for connection applicants.

NER to contain high level detail on technical network access requirements

In response to the draft rule determination, the CEC considered that the preliminary enquiry response could be improved by including the following changes to the technical information outlined in draft clause S5.4A(a):²⁷²

- ‘Fault levels and fault clearance’ should reference existing maximum and minimum fault levels and fault clearance times relevant to local substations. Assessment of fault levels at the connection point will require work in addition to that expected to prepare a preliminary response. Referencing fault levels and clearance information to local substations would be more appropriate as this information is known as a parameter considered within the DNSPs planning processes and asset database.
- Protection specifications, insulation coordination and lightning protection requirements should include the relevant philosophies to describe their objectives. This will provide the enquirer with a complete understanding of the DNSP’s need for them, and enhance the transparency of the DNSP’s decision making process.
- ‘Switching and isolation facilities’ should include all interface equipment requirements at the point of connection.
- The response should also include relevant voltage and frequency limits in a new subparagraph.

The Victorian DNSPs agreed that providing connection applicants with the minimum technical requirements for connection should enhance transparency and certainty for connection applicants. However, it was noted that DNSPs would be unlikely to be able to provide all the information in the proposed preliminary enquiry response time (as discussed in Chapter 7).²⁷³

F.1.6 Stakeholder views - position paper

Register of completed projects

In response to the draft final rule, DNSPs outlined a number of concerns with the operation of the register of completed projects. In particular, the scope of connections to be included in the register was unclear. That is, the draft final rule would require DNSPs to publish the details of all embedded generating units, including household solar PV installations. They considered that the scope should be amended to require

²⁷² CEC, Draft determination submission, p16.

²⁷³ Victorian DNSPs, Draft determination submission, p15.

publication of embedded generating systems greater than the standing exemption threshold (that is, greater than 5 MW).²⁷⁴

The Victorian DNSPs were also concerned that even where appropriate and clear disclaimers are provided regarding the use of information in the register, it risks misleading connection applicants to the extent that they base decisions on the information contained in the register. That is, they considered the benefit was unclear.²⁷⁵

In addition, the CEC and Victorian DNSPs believed that some information required in the register may be confidential. In particular, the CEC noted that information of the type included in the generator performance standards contains confidential information and may be in conflict with the requirement to publish it in the register.²⁷⁶

In contrast, embedded generator proponents requested that the register of completed projects also publish the makes and models of the embedded generation equipment connected to a network. They noted that other Australian public registers include similar aggregate information to assist market participants of various sectors. Information on makes and models would especially benefit new and less experienced embedded generator applicants.²⁷⁷

The CEC also suggested that the register be amended to include additional information. Specifically, the clause relating to protection schemes should be complemented by communication systems and the final rule should provide a clear linkage between when the register is created and updated and its interaction with the annual planning report.²⁷⁸

F.2 Automatic right to export electricity

F.2.1 Current provisions

The ability for embedded generators to export excess electricity is dependent on the capability of the distribution network to receive this excess electricity at the point of connection. DNSPs are able to support the export of electricity from embedded generators to the grid where the embedded generator demonstrates to the satisfaction of the DNSP that its connection will not adversely affect the stability, power quality, supply reliability, or safety of the network.

²⁷⁴ Position paper submissions from: Energetex, p3; ENA, p3; Victorian DNSPs, pp3-4; and CitiPower and Powercor, p2.

²⁷⁵ Victorian DNSPs, Position paper submission, p4.

²⁷⁶ Victorian DNSPs, Position paper submission, p4, and CEC, Position paper submission, p10.

²⁷⁷ Position paper submissions from: Wood and Grieves Engineers, p1; Australand, p1; City of Sydney, p1; Crown Resorts, p1; Utilitas, p1; TEC, p1; WSP Buildings, p1; City of Melbourne, p1; and the rule change proponents, p2.

²⁷⁸ CEC, Position paper submission, p10.

Where the network is not able to safely and reliably accommodate electricity exported by embedded generators, augmentation of the network may be necessary, if export capability is required, for the project to proceed. The cost of any necessary network augmentation in these circumstances is borne by the embedded generation proponent. Therefore, following consultation with the DNSP regarding the network capability at the connection point, it is a choice for the embedded generation proponent to make between generator size and export quantities versus the shared network augmentation costs required.

As such, any export of electricity to the distribution network requires consideration by the DNSP on a case-by-case basis. This includes ensuring that the embedded generator connection does not unduly degrade the capability of the distribution network for all other network customers. That is, the right to export is available subject to the technical and commercial decision making of the project.

F.2.2 Proponents' views

The proponents have requested changes to the NER to entitle embedded generators to export electricity to the distribution network.²⁷⁹ Under the rule change request, DNSPs would be required to ensure that the distribution network is able to receive electricity from an embedded generator, even where augmentation is necessary.²⁸⁰

F.2.3 Stakeholder views - consultation paper

Alinta Energy considered that the right to export should be divorced from automatic access considerations.²⁸¹ It noted that the right to export requires discrete consideration by the affected DNSP including ensuring that the embedded generator connection does not unduly degrade the capability of the network.²⁸²

Many DNSPs stated that they do not disallow the export of electricity to the grid. However, in many cases the ability to export may be constrained by the capability of the distribution network, which may need to be augmented by the connection applicant to allow the level of export desired.²⁸³ Therefore, whether the export of energy to the grid proceeds is dependent on technical and commercial decisions made by the embedded generator proponent.²⁸⁴ In particular, ETSA Utilities noted in its experience, embedded generators have been allowed to export electricity to the distribution network where:²⁸⁵

²⁷⁹ Rule change request, p14.

²⁸⁰ ibid, p 28.

²⁸¹ Alinta Energy, Consultation paper submission, p2.

²⁸² ibid.

²⁸³ SP AusNet, Consultation paper submission, p2; Ausgrid, Consultation paper submission, p12.

²⁸⁴ SP AusNet, Consultation paper submission, p2; Jemena, Consultation paper submission, pp9-10.

²⁸⁵ ETSA Utilities, Consultation paper submission, p5.

- the appropriate network analysis has been undertaken to confirm the safety and security of the distribution network;
- any required shared network augmentation to facilitate the export of electricity has been undertaken; and
- a network connection agreement, including a maximum export capacity has been signed by ETSA Utilities and the connection applicant.

The ENA opposed an automatic or unlimited 'right' to export to the grid, noting no other generator has such a guarantee.²⁸⁶ In its view, the overriding requirement that networks must operate in a safe and reliable manner, often necessitates limits on the export of electricity. To be allowed to connect to the network, a generator must satisfy the DNSPs technical requirements to maintain safety, protection of equipment, reliability and quality of supply to customers. The ENA noted that these obligations are applicable to all customer connections, but recognised that it is typically more technically complicated to connect a generator that can export electricity to the network than it is to connect a load or a generator that will not export.²⁸⁷

The esaa similarly considered that the right to export should only be granted where the network can safely handle export from an embedded generator.²⁸⁸ The esaa's reasoning, based on the NEO, was that the reliability, safety and security of the national electricity system should remain the primary concern when deciding whether to allow the export of electricity from an embedded generator.²⁸⁹

F.2.4 Draft rule determination

In the draft rule determination, the Commission considered that any export of electricity from an embedded generator to the distribution network should be based on explicit agreement between both parties. Where there is agreement that exports from the proposed connection will not adversely affect network stability, power quality, supply reliability, or safety (or all necessary shared network augmentation has been completed to avoid these adverse outcomes) then exports can occur.

As non-market generators are required to sell their electricity to either the local retailer or local customers, an embedded generator (exempt from registration) would be required to sign a power purchase agreement with its local retailer, or have appropriate contractual agreements in place with local load customers. An embedded generator may also be registered as a market generator and sell into the market.

The draft rule determination indicated that these arrangements are preferable to the proposed automatic right to export. This was primarily because, in many cases, augmentation of the network will be required to enable the unconstrained export of

²⁸⁶ ENA, Consultation paper submission, p2.

²⁸⁷ ibid, p24.

²⁸⁸ esaa, Consultation paper submission, p3.

²⁸⁹ ibid.

electricity to the network. Augmentation could impose significant costs on all network users, especially if it is not paid by the connection applicant. This is unlikely to lead to efficient investment in embedded generation or the distribution network for the long term interests of consumers of electricity.

The issue of exporting electricity into distribution networks is under consideration in a number of other forums, including:

- SCER is currently developing guidelines for a national approach to feed-in-tariffs. These guidelines may consider how different feed-in-tariff structures might be used to encourage owners of embedded generation to maximise the export of electricity at times when it is of most value to the market, especially if the feed-in-tariff is a net tariff.²⁹⁰
- The Productivity Commission has recommended that existing feed-in-tariff arrangements be replaced with tariffs that reflect the varying value of power produced by embedded generation at different points in time. The Productivity Commission also recommended that arrangements be put in place to allow for payments from DNSPs to embedded generation providers to reflect the network value of their generation capacity and output.²⁹¹
- The AEMC Power of choice review also recommended the development of a national approach to feed-in-tariffs including the ability of time varying tariffs to encourage owners of embedded generation assets to maximise the export of electricity during peak demand periods.²⁹² This recommendation also enables generators to sell their electricity to parties other than their retailer.

Embedded generators have the option of registering with AEMO as a non-scheduled market generator and, subject to any network constraints, can elect to export any surplus electricity generated to the NEM wholesale electricity pool.

The draft rule determination noted that in time, when more innovative and flexible tariff arrangements are developed and deployed in the NEM, the economic incentives to export electricity to the grid may improve. This should lead to more embedded generators choosing to size their equipment to take advantage of the opportunities in providing electricity to the distribution network at times of peak demand, where it is able to do so.

F.2.5 Stakeholder views - draft rule determination

The EEC agreed that embedded generators should not have an automatic right to export unless they choose to become a registered market participant. However, the

²⁹⁰ SCER, Meeting Communiqué, 8 June 2012, p3.

²⁹¹ Productivity Commission, *Electricity Network Regulatory Framework: Final Report*, Melbourne, October 2012, Chapter 13.

²⁹² AEMC 2012, *Power of choice review - giving consumers options in the way they use electricity*, Final Report, 30 November 2012, Sydney, p 231.

EEC considered that the current arrangements are unacceptable as DNSPs have too much discretion. The EEC proposed changing the process so that the onus is with DNSPs to justify the restriction on exports.²⁹³

The Water Services Association of Australia (WSAA) noted that the potential to export electricity requires the point of generation to be in close proximity to the grid, that the grid has the capacity to take energy, and the project is economically viable. WSAA noted that connections require:²⁹⁴

- a willingness for DNSPs to facilitate the grid connection;
- a willingness of DNSPs to allow for unscheduled input where on-site generation is not constant;
- grid capacity – (where this does not exist, expensive augmentation may be needed); and
- a network study prior to a large input to understand capacity and then correct any issues identified, although there would be no guarantee of success.

The City of Sydney suggested that the draft rule be amended specifically to state that the "right to export be subject to the network being able to safely handle the export from the embedded generator". The purpose of this is to provide the right to export and to address DNSPs' concerns, while at the same time putting a mechanism in place to deter any unwarranted refusal to export electricity. The City of Sydney's submission also provides an example of the effects of not allowing the export of electricity from an office building, including the costs and benefits to the proponent and the DNSP.²⁹⁵

Alinta Energy commented that affected network services should be equipped with the discretion to refuse any connection that could potentially degrade the capability of the network. This will allow conditions to be placed on connections that can limit the potential degradation of service to other users.²⁹⁶ Moreland Energy Foundation considered that the NER should provide greater clarification, and an objective technical assessment, of a customer's right to export.²⁹⁷

The CEC submitted that the NER must specify that a technical justification is required to support any access standard proposed by a DNSP as part of an agreed project or an offer to connect. This should prevent DNSPs from refusing the generator the option to export without providing a clear technical justification.²⁹⁸

²⁹³ EEC, Draft determination submission, p6.

²⁹⁴ WSAA, Draft determination submission, p4.

²⁹⁵ City of Sydney, Draft determination submission, p23.

²⁹⁶ Alinta Energy, Draft determination submission, p3.

²⁹⁷ Moreland Energy Foundation, Draft determination submission, p3.

²⁹⁸ CEC, Draft determination submission, p23.

The TEC considered the draft rule determination discussion on this issue too simplistic and noted there is a spectrum of possible outcomes in choosing an embedded generator. For example, not exporting to the grid, synchronising with the grid either regularly or occasionally, and exporting for sale in the wholesale market. The TEC considered a right and ability to export would improve the business case for larger generators and precincts that could power multiple buildings.²⁹⁹

The NSW DNSPs, ENA and Victorian DNSPs strongly supported the Commission's conclusion not to allow an automatic right of export for embedded generators.³⁰⁰

F.2.6 Stakeholder views - position paper

Submissions did not comment on the policy positions outlined in the position paper in relation to this issue.

F.3 Publication of system fault level limitations

F.3.1 Current provisions

System fault level limitations on the distribution network are often cited by embedded generation proponents as 'show stoppers' when planning a connection. Of particular importance in managing a network is to know the potential fault currents in the event of a short circuit and to be certain that all equipment is able to interrupt or manage these currents. Every connection or generation input to the distribution network has the potential to increase fault currents and the head room up to the maximum fault current. For this reason, the capability of equipment connected to the distribution network is vital information for a DNSP.

At the time that the proponents submitted the rule change request to the AEMC (April 2012), there were no rules requiring DNSPs to publish information on fault levels or network constraints. The lack of this information was seen by the proponents as a key failing of Chapter 5. This is because when planning an embedded generation connection, fault level headroom and network constraints adjacent to the site can impact on the location of the generation unit within the site and/or the viability of the project entirely.

With the publication of the distribution network planning and expansion framework rules in October 2012, each DNSP now has an obligation to publish a DAPR. This report must include a description of any factors that may have a material impact on a network including among other things, fault levels, voltage levels, and the quality of supply to other network users.³⁰¹

²⁹⁹ TEC, Draft determination submission, pp2-3.

³⁰⁰ NSW DNSPs, Draft determination submission, p1; ENA, Draft determination submission, p 1; Victorian DNSPs, Draft determination submission, pp16-17.

³⁰¹ Rule 5.13 of the NER.

F.3.2 Stakeholder views - consultation paper

The CEC noted that "in general, and especially with regards to generation located in central business districts, fault level concerns would be the main driver for this refusal".³⁰² However, the CEC also stated that loads such as motors and other devices increase fault levels within a distribution network. Therefore the continued refusal of embedded generation connections was hard to justify. That is, transparency is required in order to identify the issues and properly inform connection applicants to make efficient investment decisions.³⁰³

EnerNOC emphasised the importance of providing all information relevant to generator proponents, such as fault level headroom in each area, and what the DNSP is planning to do to rectify this (if it is insufficient).³⁰⁴

CitiPower and Powercor noted that they had sought approval from the AER, as part of their 2011-2015 revenue determination, for funding to increase the fault level headroom in their networks.³⁰⁵ However, the AER did not approve this funding increase on the basis that such investment should be funded by embedded generators rather than all customers more generally.³⁰⁶

F.3.3 Draft rule determination

As noted above, with the publication of the distribution network planning and expansion framework rules in October 2012, DNSPs now have an obligation to publish a DAPR. These reports must include a description of any factors that may have a material impact on a network including among other things, fault levels, voltage levels, and the quality of supply to other network users.

At the March 2013 workshop, the proponents and other stakeholders commented that they expected the new DAPR rule requirements would achieve the objective in the rule change request for constraint information to be published.

As this aspect of the proponents' rule change request was already addressed under the NER, the draft rule did not include any other provisions relating to this issue.

F.3.4 Stakeholder views - draft rule determination

Origin Energy considered that a register or map of the fault level headroom at network connection points would assist in potentially deferring the need for network augmentation and the associated cost to the market.³⁰⁷

³⁰² CEC, Consultation paper submission, p8.

³⁰³ ibid.

³⁰⁴ EnerNOC, Consultation paper submission, p5.

³⁰⁵ CitiPower & Powercor, Consultation paper submission, p6.

³⁰⁶ ibid.

³⁰⁷ Origin Energy, Draft determination submission, p2.

The NSW DNSPs submitted that the provision of fault level information at the preliminary enquiry stage was inappropriate and failed to take into account that information of this nature is not readily available. Therefore they noted that it would be more practical to provide this information as part of the detailed enquiry response, which aligns with the current process under Chapter 5.³⁰⁸

The CEC considered that the preliminary enquiry response could be improved by including the following minor changes to the technical information outlined in draft clause S5.4A(a):³⁰⁹

- ‘fault levels and fault clearance’ should reference existing maximum and minimum fault levels and fault clearance times relevant to local substations;
- protection specifications, insulation coordination and lightning protection requirements should include the relevant philosophies to describe their objectives;
- ‘switching and isolation facilities’ should include all interface equipment requirements at the point of connection; and
- the response should also include relevant voltage and frequency limits in a new subparagraph.

F.3.5 Stakeholder views - position paper

Submissions did not comment on the policy positions outlined in the position paper in relation to this issue.

³⁰⁸ NSW DNSPs, Draft determination submission, pp7-8.

³⁰⁹ CEC, Draft determination submission, p16.

G Dispute resolution

This appendix provides the background, overview of stakeholder consultation and analysis that supports the Commission's conclusions in Chapter 12. It is structured as follows:

- section G.1 outlines the current provisions in the NER relating to the dispute resolution process and procedures;
- section G.2 provides the rule change proponents' views on dispute resolution;
- section G.3 details the views of stakeholders to the consultation paper;
- section G.4 outlines the draft rule determination in relation to this matter; and
- section G.5 summarises the main issues raised by stakeholders on the draft rule determination; and
- section G.6 sets out an overview of stakeholder feedback on the position paper..

G.1 Current provisions

The general processes and procedures for dispute resolution between registered participants are set out in Part B of Chapter 8 of the NER.³¹⁰

Chapter 8 of the NER outlines the dispute resolution regime for registered participants and connection applicants.³¹¹ This regime provides parties with the ability to choose an appropriate dispute resolution process (for example, negotiation, mediation or non-binding evaluation) that is staged and can be escalated to more formal and binding dispute resolution processes with limited rights of appeal.

The NER provides the Wholesale Energy Markets Dispute Resolution Adviser (WEMDRA) with wide discretion to design a dispute resolution process that is appropriate to the parties' needs and the nature of the dispute.³¹² The dispute resolution process is divided into two stages:

- stage one - encourages the exploration and joint resolution of the dispute by direct commercial negotiation, or assistance through a facilitated, or non binding expert process; and

³¹⁰ For the purposes of rule 8.2, a "Registered Participant" is deemed to include not just Registered Participants, but also AEMO, Connection Applicants, Metering Providers, Metering Data Providers and NMAS providers that are not otherwise Registered Participants. Certain exceptions apply; see clause 8.2.1(a1).

³¹¹ An overview flowchart for dispute resolution under Chapter 8 of the NER may be found at: www.aer.gov.au/sites/default/files/Overview%20flowchart%20for%20dispute%20resolution%20under%20Chapter%208%20of%20the%20NER_0.pdf.

³¹² Further information on the WEMDRA may be found at: www.aer.gov.au/about-us/dispute-resolution/wholesale-energy-market/electricity.

- stage two - the parties may agree to a dispute resolution process that is nominated by the WEMDRA, or for the establishment of an expert dispute resolution panel that can resolve the dispute by a binding determination.

The WEMDRA also provides other resources that may be beneficial to parties wishing to use the dispute resolution process under Chapter 8 of the NER, including: dispute resolution practice notes, and information on contracts for a dispute resolution panel called the dispute resolution agreement.

G.2 Proponents' views

The rule change proponents did not raise the dispute resolution process as an issue in the rule change request. This issue arose during consultation with embedded generation proponents who expressed difficulties negotiating the connection process, particularly related to their ability to challenge the reasonableness of the technical requirements required by the DNSP to connect to the distribution network.

G.3 Stakeholder views - consultation paper

Through consultation and at the workshop on 13 March 2013, some embedded generation proponents suggested they were not comfortable using the dispute resolution process contained in the NER and the NEL. Some of these stakeholders commented that attempts to use this process could antagonise their relationships with DNSPs, making it difficult to negotiate future connection agreements.

G.4 Draft rule determination

The Commission's draft rule determination recommended changes to Chapter 5 of the NER to address disagreements between connection applicants and DNSPs about the technical requirements for a connection. The draft rule introduced a new dispute resolution process that provided for the appointment of an independent engineering expert to assess the reasonableness of any technical requirements arising out of the connection process.

Under the draft rule where agreement cannot be reached on the reasonableness of any technical requirements, the connection applicant or the DNSP have the option to appoint an independent engineering expert to provide their opinion to assist the parties to reach agreement. The choice of the engineer was proposed to be agreed between the DNSP and the connection applicant, with the cost of the engineer's services to be shared equally between the parties. The engineer could be engaged at any stage in the connection process up until the connection agreement. This aspect of the draft rule is consistent with the Commission's recommendations in the Transmission Frameworks Review.

In circumstances where the parties are not able to agree on the appointment of an independent engineer, the draft rule provided scope for the AER to appoint one.

Under the draft rule, the expert's opinion would not be binding on the parties, but would assist them to come to a view on whether the technical requirement in dispute was fair and reasonable. It was considered that this would assist in resolving some disputes between parties in an early and cost-effective manner. If the dispute was not resolved, the expert's opinion could then be admissible in any subsequent dispute resolution process under Chapter 8 of the NER or, in the case of an access dispute, Part 6 of the NEL.

The draft rule determination noted that while the NER does not prevent either party employing an engineering consultant to obtain technical advice, an explicit provision as set out in the draft rule would bolster the independence of the expert's opinion, which would work to give it greater weight in any negotiation or subsequent dispute resolution process.

As noted above, under the draft rule, either party could request that an opinion be sought from an independent engineer, with costs to be borne equally. This provided an incentive for both parties to reach agreement without the engineer to avoid costs and strengthened the perceived independence of the expert engineer.

G.5 Stakeholder views - draft rule determination

The EEC supported the draft rule expert appraisal process, but had concerns about the potential for conflicts of interest to arise due to the relatively small pool of experts available to assess such matters.³¹³ The CEC considered the expert appraisal process would not be effective unless other issues raised in its submission related to transparency, timing and technical assessment were not resolved.³¹⁴ The CEC also suggested that the expert appraisal process only be able to be invoked by a connection applicant because these parties are exposed to undue risk.³¹⁵

The DNSPs from Queensland and NSW were not supportive of the independent engineer. The DNSPs considered the existing process sufficient to resolve disputes arising from the connection process.³¹⁶ The Victorian DNSPs considered there was some merit in the draft rule, but cautioned that there were a number of issues related to confidentiality and the potential not to use the independent expert appraisal process in good faith or for good cause.³¹⁷

ENA stated there was no need for the expert appraisal process because the existing dispute resolution processes currently available under Chapters 5, 5A, and 8 of the NER are effective at mediating technical disputes.³¹⁸ ENA recommended the

³¹³ EEC, Draft rule determination submission, p5.

³¹⁴ CEC, Draft rule determination submission, pp17-18.

³¹⁵ ibid.

³¹⁶ Draft rule determination submissions from: Ergon, p2; Energex, pp3-4; and NSW DNSPs, p9.

³¹⁷ Victoria DNSPs, Draft rule determination submission, pp15-16.

³¹⁸ ENA, Draft rule determination submission, pp9-10.

Commission retain the existing dispute resolution arrangements as they apply to connections under Chapter 5.³¹⁹

The NSW DNSPs and ENA expressed doubt that the provision of an independent expert process would provide an effective solution for resolving technical disputes. In their view, there is a small number of experts with a full understanding of generator characteristics, connection issues, and electrical safety and network performance. The NSW DNSPs submitted that the dispute resolution arrangements under Chapter 5A of the NER are more appropriate. That is, disputes regarding terms and conditions of connections and connection charges are to be treated as access disputes for the purpose of Part 10 of the NEL.

Ergon Energy and Energex considered that the existing dispute resolution provisions under Chapter 8 of the NER were appropriate and should be considered as the correct avenue to settle disputes between an embedded generator connection applicant and a DNSP.³²⁰

AEMO suggested that some of the issues identified in draft rule 5.9A may be more efficiently resolved by consulting with AEMO, given its experience in reaching agreement on access standards for a range of generator sizes and locations. AEMO suggested that only if the issue cannot be resolved with AEMO should it be referred to an independent expert under draft rule 5.9A.³²¹

The rule change proponents considered that because the draft rule did not propose an automatic right to export, there could be scope to use the expert appraisal process for disputes related to power transfer capability. However, the rule change proponents suggested the Commission provide more detailed guidance to DNSPs about the nature of their obligation to use reasonable endeavours to provide an applicant with the access sought.³²²

G.6 Stakeholder views - position paper

To address stakeholder concerns relating to the application and scope of the existing dispute resolution process, the draft final rule included an amended rule 8.2. This amendment clarified that the technical requirements to establish or modify a connection sought by a connection applicant in a connection enquiry or an application may be the subject of a dispute for the purposes of Chapter 8 of the NER. This amendment would not limit any other subject matter for dispute under rule 8.2.

³¹⁹ ibid.

³²⁰ Draft rule determination submissions from: Ergon Energy, p2; and Energex, pp3-4.

³²¹ AEMO, Draft rule determination submission, p3.

³²² Rule change proponents, Draft rule determination submission, p4.

In response, AEMO considered that there may be value in including an educative statement in the final rule determination noting that rule 8.2 applies to all connection applications.³²³

The CEC suggested that in order to ensure that stakeholders are fully informed, the final rule determination should outline how the process for seeking arbitration over a technical dispute may work in practice.³²⁴

³²³ AEMO, Position paper submission, p1.

³²⁴ CEC, Position paper submission, p9.

H Service classification of connection services

A connection can be broadly separated into the following four separate connection services. The connection services are as follows:

- **at the customer's connection point** – augmentation and/or installation of assets at the customer's connection point;
- **extension** – an augmentation outside the existing network boundary that is required to facilitate the connection;
- **augmentation** – any augmentation which is not an extension (including shared network argumentation); and
- **design and administration** – services that include administration, design, certification and inspection.

As part of a distribution revenue determination, the AER classifies distribution services and decides the appropriate form of control to apply to each distribution service. As noted above, shared network augmentation forms one of the connection services as part of a distribution determination.

In undertaking this process, each DNSP has a slightly different classification for these connection services. The following table provides an indication of how each connection service is classified for each DNSP in the NEM.

	Customer funded connections		Customer specific services	
	Activity description	Classification	Activity description	Classification
NSW service	Design and construction of new assets; design and construction of customer-funded network augmentations.	Unregulated service	Services by the customer which includes: asset relocation works; conversion to aerial bundled cable; temporary, stand-by, reserve or duplicate supplies, other customer-requested services which are non-standard.	Unregulated service
ACT equivalent service	Customer initiated replacements and relocations.	Standard control service	Miscellaneous services.	Standard control service
Qld equivalent service	New connection requiring augmentation works.	Alternative control service	Services provided on a quoted service basis.	Alternative control service
Vic equivalent service	New connection requiring augmentation works.	Standard control service	Services provided on a quoted service basis.	Alternative control service
SA equivalent service	The provision of connection to the extent that a distribution network user is required to make a financial contribution in accordance with the Electricity Distribution Code.	Negotiated services	Non-standard and customer requested services.	Negotiated services
Tas equivalent service	Where capital contributions are made by customers. That is, the customer contributes upfront to the cost of connection services.	Standard control service	Aurora provides a range of non-standard services on a quoted service basis.	Alternative control service

AER, *Matters relevant to the framework and approach for the ACT and NSW distribution network service providers 2014-2019*, December 2011, p13.

I Connection charges and augmentation costs

This appendix provides the background and overview of stakeholder consultation that supports the Commission's conclusions in Chapter 13. It is structured as follows:

- section I.1 discusses the issue of connection charging arrangements in the final rule;
- section I.2 outlines the arrangements for charging for shared network augmentation; and
- section I.3 provides an overview of the inclusion of an itemised statement of connection charges in the connection process.

I.1 Connection charges

I.1.1 Current provisions

Chapter 5 of the NER does not include any provisions on DNSPs charging an enquiry fee for the current connection process. The Commission understands that in some instances, embedded generator proponents have been charged an enquiry fee.

Currently, Chapter 5 of the NER enables DNSPs to charge a connection applicant an application fee payable on lodgement of an application to connect. Clause 5.3.3(c)(5) states that the amount of this application fee should not be more than necessary to cover the reasonable costs of all work anticipated to arise from investigating the application to connect and preparing the associated offer to connect.

The application fee arises from clause 5.3.3(c), which specifies that written advice from the NSP to the connection applicant must include all further information that the connection applicant must prepare and obtain in conjunction with the NSP to enable the NSP to assess an application to connect. That is, this written advice must contain details of any application fee that the NSP may charge. However, this clause does not require the NSP to publish the application fee on its website.

In respect of the consultancy style fee-for-service arrangement included in the proposed rule, there are no existing provisions in the NER relating to this type of service.

I.1.2 Proponents' views

The proponents considered that the current connection process does not provide DNSPs with a strong incentive to collaborate in the development or improvement of a connection enquiry or application.³²⁵ To address this, the proponents recommended the introduction of an option in the NER that would allow DNSPs to charge a

³²⁵ Rule change request, p17.

connection applicant a reasonable fee to cover costs directly and reasonably incurred by the DNSP in assessing the application and making an offer to connect.³²⁶

As this fee for these consultancy type services provided would be additional to any connection application fee, the proponents considered that the application fee "should be reduced to account for the improved alignment between the project and the DNSPs connection requirements".³²⁷

I.1.3 Stakeholder views - consultation paper

Objective of a fee-for-service

United Energy, SP AusNet and the CEC considered that there was no need for an explicit fee-for-service provision in the NER. These stakeholders noted that there are currently no restrictions on DNSPs from autonomously implementing such a fee structure if they wished to provide paid consultancy type services.³²⁸

On the other hand, Jemena and ETSA considered the introduction of a fee-for-service in the NER would be useful.³²⁹

Aurora Energy and Endeavour Energy supported the concept of a fee-for-service, but did not support the concept of DNSPs taking on the role of 'electrical consultant' during the connection process. In their view, these services are better obtained by non-registered embedded generation proponents elsewhere in the market.³³⁰

Other stakeholders supported the current process in which the AER classifies DNSP services.³³¹ The EEC also noted that as DNSPs are monopoly businesses, it is appropriate that the AER has an oversight role to determine if a fee-for-service is reasonable.³³²

Current provisions under the NER

The ENA and Energex noted that under current jurisdictional arrangements some DNSPs are able to charge a fee for processing connection applications. These fees are

³²⁶ ibid.

³²⁷ ibid.

³²⁸ United Energy, Consultation paper submission, p11; SP AusNet, Consultation paper submission, p3; CEC, Consultation paper submission, p8.

³²⁹ Jemena, Consultation paper submission, p9; ETSA Utilities, Consultation paper submission, p7.

³³⁰ Aurora Energy, Consultation paper submission, p2; Endeavour Energy, Consultation paper submission, p8.

³³¹ Ergon Energy, Consultation paper submission, p12.

³³² EEC, Consultation paper submission, p2.

currently classified as alternative control (quoted) services and the fee is determined in accordance with the quoted services formula determined by the AER.³³³

Furthermore, Ausgrid stated that the NSW DNSPs are in the process of proposing an additional service to the AER that specifically relates to generator connections.³³⁴ This would provide a clear mechanism for the NSW DNSPs to recover the efficient costs of connection if approved by the AER.

Classification of fee-for-service

A number of other stakeholders agreed that a process defining a fee-for-service should be undertaken by the AER.³³⁵ The ENA noted that the services provided by some DNSPs in assessing generator connection enquiries or applications are treated as a standard control service.³³⁶ However, not all stakeholders considered this appropriate. For example, United Energy considered this service should be unclassified, while Jemena stated that it should be classified as a negotiated service.³³⁷ Ausgrid considered that a fee-for-service should be classified as a direct control service.³³⁸

Conversely, embedded generation proponents (for example, the City of Sydney and Wood and Grieve Engineering) stated that any fee should be on a cost recovery basis only. While this fee need not be approved by the AER, the NER should contain guidelines on how such a fee should be determined. This could be time-based or connection stage-based.³³⁹ An alternative charging approach was suggested by the Department of Primary Industries, Victoria. It suggested that the fee-for-service could be a flat rate charged per MW of installed capacity for all connections up to 5MW that reflects the average cost to the distributor.³⁴⁰

I.1.4 Draft rule determination

The draft rule clarified that DNSPs would be able to charge an enquiry fee for preparing detailed enquiry responses. The enquiry fee was to recover the reasonable costs incurred by the DNSP. The provisions in the draft rule differed from the consultancy style 'fee-for-service' arrangements proposed by the proponents in their rule change request. The draft rule determination also noted that connection applicants are already able to enter into commercial arrangements with DNSPs for such consultancy style services. This optionality was not removed by the draft rule. Further, the draft rule made no changes to the existing provisions regarding the application fee.

³³³ ENA, Consultation paper submission, p28; Energex, Consultation paper submission, p14.

³³⁴ Ausgrid, Consultation paper submission, pp23-24.

³³⁵ Ergon Energy, Consultation paper submission, p12; TEC, Consultation paper submission, p4.

³³⁶ ENA, Consultation paper submission, p29.

³³⁷ United Energy, Consultation paper submission, p4; Jemena, Consultation paper submission, p11.

³³⁸ Ausgrid, Consultation paper submission, p24.

³³⁹ City of Sydney, Consultation paper submission, pp8-9; Wood and Grieve Engineering, Consultation paper submission, p5.

³⁴⁰ Department of Primary Industries Victoria, Consultation paper submission, p3.

I.1.5 Stakeholder views - draft rule determination

Submissions responding to the draft rule determination focussed on the issue of DNSPs charging an enquiry fee. There was no further discussion about the fee-for-service consultancy-style fees or application fees.

Classification of enquiry fee

Ergon Energy disagreed with the AEMC's statements in the draft rule determination, specifically noting:

- an enquiry fee would be one of these services that falls outside of the oversight of the AER; and
- to facilitate this position, the draft rule determination acknowledged that the NER currently did not prohibit DNSPs being able to charge connection applicants an enquiry fee.

Ergon Energy did not agree with the AEMC's rationale that the enquiry fee (and application fee) were outside the classification of services and a DNSP's revenue determination. It considered that how and what charges a DNSP applies to a customer for services it provides needs to be consistent with a DNSP's revenue determination. Ergon Energy also considered that the AEMC appeared to be pre-empting the AER's assessment and decision on how a DNSP's services may be classified through the revenue determination process. That is, the AEMC cannot assume enquiry and application fees will be unclassified or be classified as a negotiated distribution service. Ergon Energy stated that it is more appropriate for the AER to assess the classification and control mechanisms that apply to services the DNSP provides to customers during the connection enquiry and application stages.³⁴¹

Ability to charge an enquiry fee

The EEC supported the draft rule, but noted that in the past some DNSPs have charged excessive fees and/or only advised applicants of the scale of the fees at the end of the enquiry. The EEC considered that excessive fees contravene the NER, which states that the amount of any fee should not be more than necessary to cover the reasonable costs of all work anticipated to arise from the application. To address these problems the EEC recommended that:³⁴²

- applicants be advised of the likely scale of the fee at the preliminary enquiry phase or within 10 days of receiving a detailed enquiry; and
- there must be a right of appeal to the AER; and

³⁴¹ Ergon Energy, Draft rule determination submission, p2.

³⁴² EEC, Draft rule determination submission, p5.

- in their annual report to the AER, DNSPs be required to set out the detailed enquiry charges that they have proposed and/or collected.

Origin Energy also recommended that the DNSPs be required to submit an annual report to the AER that sets out the fees and charges they have invoiced and the time taken to respond to each preliminary and detailed enquiry timeframe. This could enable the AER to monitor compliance and identify specific DNSPs that may not be meeting the targeted timeframes and to negotiate in good faith to facilitate timely network connections.³⁴³

On the other hand, Alinta Energy considered it appropriate that DNSPs have the ability to charge an enquiry fee. Providing examples of how enquiry fees are calculated within the information pack provided to applicants supports transparency and encourages cost reflective fees.³⁴⁴ The CEC also supported the reasoning for the enquiry fee, but suggested that DNSPs be required to provide a report of time and expenses to the connection applicant at end-of-month intervals while processing any service funded by a connection applicant. The CEC suggested that draft clause 5.3A.10 be updated to include this requirement.³⁴⁵

While the Victorian DNSPs supported the conclusion in the draft rule determination related to the enquiry fee, they did not support the timing requirements for quoting the enquiry fee to the connection applicant. In particular, draft Schedule 5.4A(r) requires the DNSP to set out the enquiry fee that would be payable at the next stage of the process in its preliminary enquiry response. According to the Victorian DNSPs, it is unrealistic to expect that DNSPs would have the ability to identify all parties that may need to be engaged in the process; engage with those parties to discuss the implications as well as enable those parties to identify costs they are likely to incur; and then respond to the applicant with estimated fees within 15 days. Therefore, these stakeholders considered that this timing requirement should be removed from the preliminary enquiry stage.³⁴⁶

Origin Energy considered there is a wide disparity in generator connection enquiry costs, with costs that can range from \$5,000 to \$20,000. Proponents incur these costs regardless of whether their proposed connection is approved. Origin Energy considered that the connection enquiry fees could act as a disincentive and barrier to connecting embedded generators. However, if fees were allowable, then an option could be to fix a maximum cost for an enquiry fee. This would allow a connection applicant to budget a more accurate or manageable figure in project costs may also assist in shortening the time needed to obtain an offer to connect.³⁴⁷

³⁴³ Origin Energy, Draft rule determination submission, p2.

³⁴⁴ Alinta Energy, Draft rule determination submission, p3.

³⁴⁵ CEC, Draft rule determination submission, p24.

³⁴⁶ Victorian DNSPs, Draft rule determination submission, pp17-18.

³⁴⁷ Origin Energy, Draft rule determination submission, p2.

I.1.6 Stakeholder views - position paper

Under the draft final rule a DNSP's preliminary response must contain an estimate of the enquiry fee payable upon the request for a detailed enquiry response. Where the DNSP was unable to estimate the likely fees for part of the detailed response (for example, where it must liaise with AEMO, a TNSP, or another DNSP), the draft final rule allowed DNSPs to specify that the enquiry fee is payable in components. This will allow DNSPs to nominate a component of the enquiry fee payable by the connection applicant to request a detailed response.

No submissions specifically commented on these clarifications in the draft final rule.

I.2 Augmentation of the shared network

I.2.1 Current provisions

Under Chapter 5 and Chapter 5A of the NER, embedded generators are not exempt from paying for the cost of augmentation of the distribution network. For example, under clause 5.3.5(d), a DNSP must assess an application to connect so as to maintain the levels of service and quality of supply to existing registered participants in accordance with the NER. That is, depending on a DNSPs view of the impacts of the connection and the size of the generator, it must consult with other market participants, including those it has connection agreements with ,when preparing an offer to connect. Where the DNSP believes, in its reasonable opinion, that compliance with the terms and conditions of those existing connection agreements will be affected, it must assess the connection application and determine:

- the technical requirements for the equipment to be connected;
- the extent and cost of augmentations and changes to all affected networks;
- any consequent change in network service charges; and
- any possible material effect of this new connection on the network power transfer capability (including that of other networks).

The corresponding provisions on the cost of augmentation of a network are similar under Chapter 5A. Clause 5A.C.3 provides for a negotiation framework between a DNSP and a connection applicant. In assessing an application under clause 5A.C.3(a)(5), a DNSP must determine:

- the technical requirements for the proposed new connection or connection alteration;
- the extent and costs of any necessary augmentation of the distribution system;
- any consequent change in charges for distribution use of system services; and

- any possible material effect of the proposed new connection or connection alteration on the network power transfer capability of the distribution network to which the new connection or connection alteration is proposed to be made and any other distribution network that might be affected by the proposed new connection or connection alteration.

This framework can be used where the connection service sought under Chapter 5A is neither a basic nor standard connection service. It may also be used where an applicant wishes to negotiate the terms and conditions associated with a basic or standard connection service.

I.2.2 Proponents' view

The proponents stated that, depending on the specific requirements of a connection, a connection applicant may be required to contribute to costs to augment the shared network. The way in which these costs are determined may vary in accordance with provisions under a DNSP's revenue determination and any jurisdictional arrangements. Therefore, the rule change proponents proposed that embedded generators not pay any shared network augmentation costs, although they did not state how this was efficient or would otherwise satisfy the NEO.³⁴⁸

The proponents also raised information asymmetry issues regarding overall transparency of how costs are determined.

I.2.3 Stakeholder views - consultation paper

Wood and Grieves and the City of Sydney were opposed to embedded generators being charged network augmentation costs.³⁴⁹ All remaining stakeholders that provided submissions (including both embedded generation proponents and DNSPs) considered that embedded generator proponents should not be exempt from network augmentation charges.³⁵⁰ However, many of these stakeholders suggested that the NER could be amended to create a fairer cost allocation process. The work by the AER on its connection charge guidelines was noted by the ENA.³⁵¹

A number of stakeholders understood that if embedded generators do not pay for the costs of augmentation to the network, those costs will be borne by other consumers. To

³⁴⁸ Rule change request, p16.

³⁴⁹ Wood & Grieves Engineering, Consultation paper submission, p6; City of Sydney, Consultation paper submission, p9.

³⁵⁰ Consultation paper submissions on this point included: DMITRE, p2; EEC, p10; United Energy, p2; SP AusNet, p3; Ergon Energy, p13; Energex, pp15-16; Private Generators, p2; ETSA Utilities, pp1-2; Green Building Council of Australia, p3; EnerNOC, p5; Endeavour Energy, p19; Ausgrid, p14; esa, p2; ENA, p31; and AER p1.

³⁵¹ Energy Networks Association, Consultation paper submission, p19.

avoid this, embedded generators should generally be treated in a similar manner to all other connection applicants.³⁵²

The ENA expressed support for a rule change clarifying that the pricing principles under Chapter 5 should be consistent with pricing principles under Chapter 5A. It noted the AER's final connection charges guidelines state that the connection charge for non-registered embedded generators will be calculated on the total cost of the works required to support both the generation and load components of the connection service.³⁵³ This approach would treat all NEM jurisdictions equally even if they have not implemented the NECF.³⁵⁴ Alinta Energy noted that network augmentation issues should be considered with those solutions proposed in the AEMC's Transmission Frameworks Review.³⁵⁵

I.2.4 Draft rule determination

The draft rule proposed no changes to the NER that would have the effect of exempting embedded generators from contributing to shared network augmentation costs. Appropriate price signals would be achieved by allocating costs to parties that benefit from a service. Also, as acknowledged by some stakeholders, the Commission noted that if embedded generators were exempt from contributing to shared network augmentation costs, other users of the network would have to bear these costs.

I.2.5 Stakeholder views - draft rule determination

The NSW DNSPs, ENA and Victorian DNSPs supported the draft rule determination not to exempt embedded generators from paying 'deep' augmentation costs.³⁵⁶ Energex also suggested that the final rule should clarify the applicability of the AER's connection charge guidelines to embedded generation connections progressed under current Chapters 5 and 5A, and any new rule.³⁵⁷

Similarly, Alinta Energy was encouraged by the draft rule not to exempt embedded generators from paying shared network augmentation costs. Alinta Energy considered that excluding embedded generators from paying their fair share of network augmentation costs would mean such charges would be cross-subsidised by all other consumers, raising concerns among other generators as well as diluting efficient price signalling within the NEM.³⁵⁸

³⁵² DMITRE, Consultation paper submission, p2.

³⁵³ Energy Networks Association, Consultation paper submission, p19.

³⁵⁴ Currently, Tasmania, South Australia, NSW and the ACT have adopted the NECF.

³⁵⁵ Alinta Energy, Consultation paper submission, p2.

³⁵⁶ Draft rule determination submissions from: NSW DNSPs, p1; ENA, p1; and Victorian DNSPs, pp18-19.

³⁵⁷ Energex, Draft rule determination submission, p5.

³⁵⁸ Alinta Energy, Draft rule determination submission, pp3-4.

While the EEC agreed that embedded generators should pay a reasonable contribution to the augmentation and maintenance of networks, it considered that the current system is not transparent or fair and does not provide efficient price signals for investment in, operation of, or use of electricity services.³⁵⁹

Further, the EEC disagreed with the reasoning in the draft rule determination about the general principle that where a user creates a burden on a network then that user should contribute their share of the relevant cost of network augmentation. The EEC considered that this principle is not enforced consistently, fairly, or efficiently. For example, if a large user wishes to connect to the network, they are rarely required to pay for deep augmentation costs. The EEC recommended:³⁶⁰

- for this rule change, the AEMC require DNSPs to inform the AER of all connection charges they impose on embedded generators in their annual reports, and give generators a right to appeal connection charges proposed by DNSPs;
- the AEMC undertake a major review of the way that both energy users and generators are charged for connecting to, and using, the network (although this review would be outside of the scope of this rule change); and
- the AEMC direct either AEMO or another body to undertake a study of the last 50 embedded generator connections in the NEM to determine the costs and benefits to the network, whether the costs incurred by the network were efficient and whether the connection and ongoing charges reflected these costs and benefits.

I.2.6 Stakeholders views - position paper

The Commission remained of the view that requiring embedded generators to contribute to shared network augmentation recognised that they are treated the same as load. Also, that allocating costs to the party that benefits from the expenditure is likely to provide appropriate price signals for generators to locate efficiently, and is therefore desirable.

For this reason, the draft final rule did not make any changes to the arrangements regarding the recovery of costs for shared network augmentation. Stakeholders did not provide any specific comments in relation to this policy setting in the position paper.

I.3 Itemised statement of charges

I.3.1 Current provisions

Schedule 5.6 of the NER identifies the terms and conditions that are to be contained in a connection agreement. Relevant to this issue, these include, the metering

³⁵⁹ EEC, Draft rule determination submission, p6.

³⁶⁰ ibid.

arrangements, connection service charges and payment conditions. However, the NER is not explicit in how the DNSP provides this information to the connection applicant.

In contrast, Chapter 5A sets out a more detailed obligation for DNSPs to provide the connection applicant with a connection offer accompanied by a schedule containing an itemised statement of connection costs.

I.3.2 Proponents' view

The proponents raised information asymmetry issues regarding the overall transparency of how connection charges are determined in its rule change request. To address this issue, the rule change request proposed that connection offers should include an "itemised statement of connection costs" of the type set out in Chapter 5A.³⁶¹

I.3.3 Stakeholder views - consultation paper

Stakeholder submissions reported a significant lack of clarity about the costs associated with connecting to a distribution network.³⁶² In particular, stakeholders considered that an itemised statement of costs for connection charges, meter types and costs, system extension charges and network augmentation would be beneficial.³⁶³ This information could then be included by connection applicants in feasibility studies and used in budget preparations for feasibility scenario modelling purposes.

However, some DNSPs stated that it would be difficult to publish a standard itemised statement of costs applicable to embedded generators for each type, size and location.³⁶⁴ Furthermore, as connection charges are usually regulated by the AER as quoted services, standard fees are not applicable. Instead, application fees and connection costs are calculated specific to the individual embedded generator (using the AER approved formula and input rates detailed in the DNSP's Pricing Proposal for each regulatory year and Capital Contributions Policy, if applicable).³⁶⁵

Most DNSPs did not oppose the proposed requirement to provide an itemised statement of connection charges.³⁶⁶ However, the ENA expressed some reservation with the use of "standard" charges in relation to connections as these requirements can vary.³⁶⁷

³⁶¹ Rule change request, p27.

³⁶² Energy Efficiency Council, Consultation paper submission, p6.

³⁶³ City of Sydney, Consultation paper submission, p3; TRUenergy, Consultation paper submission, p3.

³⁶⁴ United Energy, Consultation paper submission, p5; Energex, Consultation paper submission, p7.

³⁶⁵ Energy Networks Association, Consultation paper submission, p28; Ergon Energy, Consultation paper submission, p6.

³⁶⁶ Consultation paper submissions from: CitiPower and Powercor, p5; United Energy, pp1, 7; and Jemena, p5.

³⁶⁷ ENA, Consultation paper submission, p15.

I.3.4 Draft rule determination

The draft rule obliged DNSPs to provide cost information and the basis of the cost calculations to connection applicants as part of the connection offer. The itemised statement of connection costs set out in the draft rule included:

- connection service charges;
- costs associated with the proposed metering requirements for the connection;
- costs of any network extension;
- details of augmentation required to provide the connection and associated cost; and
- other incidental costs and the basis of their calculation.

The provision of this information was expected to provide greater transparency regarding the costs necessary to connect embedded generation to distribution networks.

I.3.5 Stakeholder views - draft rule determination

The NSW DNSPs noted their ability to provide itemised cost estimates was limited due to the contestability arrangements in NSW. NSW DNSPs can only provide itemised cost estimates for monopoly services. Consequently, the connection process must be amended to recognise this limitation on NSW DNSPs.³⁶⁸ Similarly, the Victorian DNSPs and the CEC considered that the ‘itemised statement of charges’ proposal was workable provided that where there are contestable services, the DNSP would be obliged to inform the connection applicant that it may obtain its own quotes from suitably qualified accredited service providers.³⁶⁹

However, the CEC submitted that the connection cost estimates provided in the detailed enquiry response must be as complete as possible. In addition, the offer to connect must include final costs with a justification for any deviation from any estimate already provided to the connection applicant. The CEC suggested a number of additional items be added to the connection costs list in the draft rule. These additional items are:³⁷⁰

- a scope of work required to facilitate the connection;
- a statement of the basis on which charges were calculated;
- interface equipment costs; and

³⁶⁸ NSW DNSPs, Draft rule determination submission, p7.

³⁶⁹ Victorian DNSPs, Draft rule determination submission, p19; CEC, Draft rule determination submission, p17.

³⁷⁰ CEC, Draft rule determination submission, pp24-25.

- a detailed description of any ongoing operational and maintenance costs and charges, and the associated schedule of works.

I.3.6 Stakeholder views - position paper

The draft final rule required a DNSP to provide connection applicants with an itemised statement of connection costs. This statement must be provided as part of both the detailed enquiry response and the connection offer. The list of connection costs in the draft final rule differed slightly from the draft rule. It included the addition of: interface equipment costs, and a description of any ongoing operational and maintenance costs and charges where undertaken by the DNSP.

In response to the draft final rule, Energex and Ergon Energy considered that the itemised statement of costs should not include "details of any ongoing operation and maintenance costs and charges to be undertaken by the DNSP". This was because these costs are typically factored into network tariff charges and may be a component of the shared network cost and, as such, are difficult to isolate.³⁷¹ Energex also suggested that the final rule clarify that DNSP's costs should not include third party costs (where applicable), for example, AEMO or TNSP costs.³⁷²

Similarly, the NSW DNSPs had specific comments regarding clauses (h) and (i), relating to the itemised statement of costs. They considered there would be benefit in further clarifying these clauses to reflect the contestability arrangements in NSW. The NSW DNSPs will only be able to provide estimates for the monopoly services required to establish the connection.³⁷³

The CEC also recommended amending the wording of one item in the itemised statement of costs to the 'interface equipment required to provide the connection and associated costs', rather than the 'interface equipment contained in the offer to connect'.³⁷⁴

³⁷¹ Position paper submissions from: Energex, pp2-3; and Ergon Energy, p1.

³⁷² Energex, Position paper submission, p3.

³⁷³ NSW DNSPs, Position paper submission, p2.

³⁷⁴ CEC, Position paper submission, p4.

J Implementation and transitional arrangements

This appendix sets out the implementation and transitional arrangements designed to facilitate the transition from existing arrangements to the new framework for connecting embedded generators. The Commission is mindful that participants and connecting applicants should not face unnecessary regulatory risks from changes to NER arrangements.

J.1 Implementation of the new arrangements

The final rule modifies the current framework for the connection of embedded generators to distribution networks under Chapter 5 of the NER. These amendments will confer a number of obligations on DNSPs to improve the provision of information to the public and specifically to connection applicants to facilitate more timely connections. The modifications to the NER outlined in the final rule are as follows:

- **DNSPs to publish and maintain an information pack:** the information relevant to the making of an application to connect is required to be published by a DNSP under clause 5.3A.3. The information made available must include: a description of the process for lodging an application to connect for an embedded generating unit; a single line diagram of the DNSP's preferred connection arrangements and a range of other possible connection arrangements; a sample schematic diagram of the protection and control systems; worked examples of connection service charges, enquiry and application fees for the connection of embedded generation units (based on a range of connections with varying technical characteristics); details of any minimum access standards or plant standards the DNSP considers is applicable to embedded generation units and generating plant; technical requirements relevant to the processing of a connection enquiry or application to connect; and model connection agreements used by the DNSP.
- **DNSPs to create and publish an enquiry form:** a form specifying the information the DNSP requires from a connection applicant for connection of an embedded generator.
- **DNSPs to publish and maintain a register of completed projects:** a register of embedded generating plant or associated equipment that has been successfully connected to the DNSP's network over the preceding five years, which is to be updated annually.
- **DNSPs to prepare for connection enquiries under the new framework:** DNSPs will need to update their IT and other systems to prepare for preliminary and detailed enquiry responses under the new process for connecting embedded generators.

The draft rule determination identified 1 July 2014 as a reasonable date for the commencement of the rule. On the basis that the final rule was then expected to be published on 19 September 2013, this would have provided DNSPs with

approximately nine months to prepare and publish the relevant information required under the new process. The Victorian DNSPs supported this proposed implementation timing.³⁷⁵

The position paper proposed a commencement date of the rule of 1 October 2014, approximately six months after the publication of the final rule and final rule determination. In response to this proposed date, DNSPs commented that six months was insufficient time to allow them to transition to the new process. The DNSPs suggested a number of implementation dates varying from 1 January 2015 to a date that aligned with the NECF commencement date for that jurisdiction.³⁷⁶

In contrast, embedded generator proponents and the CEC considered that the proposed date of 1 October 2014 would be an appropriate commencement date for the final rule.³⁷⁷

The publication date of this final rule determination and the final rule is 17 April 2014. After considering the changes the final rule will make to the current NER, the progress already made by DNSPs in providing relevant public information, and the importance of not unduly delaying the introduction of the new connection process, the Commission has concluded that 1 October 2014 is an appropriate commencement date for this final rule.

J.2 Transition to the new arrangements

To transition to the new arrangements, the Commission considers that unless a connection applicant and DNSP otherwise agree, any enquiry lodged by the connection applicant under clause 5.3.2 that has not been responded to or otherwise finalised under clause 5.3.3 on the commencement date, must be responded to or finalised under clause 5.3.3 unless both the connection applicant and the DNSP agree otherwise.

These transitional arrangements were set out in the draft rule determination and the position paper. No submissions to the draft rule determination responded to the proposed approach. In response to the position paper, Ergon Energy and the CEC considered that the transitional arrangements outlined in the draft final rule would be sufficient. These stakeholders commented that the arrangements would enable the new process to be accessed immediately for some connection enquiries that may be underway already. It would also allow flexibility to fully transition to the new process

³⁷⁵ Victorian DNSPs, Draft rule determination submission, p19.

³⁷⁶ Position paper submissions from: Energex, p4; ENA, p4; Victorian DNSPs, p5; CitiPower and Powercor, p2; and Ergon Energy, p2.

³⁷⁷ Position paper submissions from: Wood and Grieve Engineering, p1; Australand, p1; City of Sydney, p1; Crown Resorts, p1; Utilitas, p1; TEC, p1; WSP Buildings, p1; the rule change proponents, pp1-2; and CEC, p11.

if the DNSP prefers as the DNSP can request agreement to do so from current enquirers.³⁷⁸

However, the CEC queried why the transitional arrangements outlined in the position paper limited the provision of an itemised statement of costs to offers to connect less than 30MW. This breakdown should be applied to all offers to connect made after the commencement date.³⁷⁹ The Commission notes that while the position paper stated that offers to connect for generating systems greater than 30MW would not contain an itemised statement, this was not the intent of the transitional arrangements and was not reflected in the draft final rule. All offers to connect under the final rule will include an itemised statement of costs regardless of the size of the generating system.

The Commission considers that the transitional arrangements outlined above are appropriate for the introduction of this final rule.

³⁷⁸ Position paper submissions from: Ergon Energy, p2; and CEC, p11.

³⁷⁹ CEC, Position paper submission, p11.

K Summary of submissions to the consultation paper

K.1 Submissions received

Alinta Energy	Ergon Energy
Alternative Technology Association (ATA)	Essential Energy
APA Group	ETSA Utilities
Arup Pty Ltd	Green Building Council of Australia
Aurora Energy	Grid Australia
Ausgrid	Honeywell Ltd
Australand	ISPT Pty Ltd
Australian Energy Regulator (AER)	Jemena Electricity Networks (Vic) Ltd
Citipower and Powercor Australia	Northern Alliance for Greenhouse Action
Citipower and Powercor Australia (supplementary submission - August 2012)	Origin Energy
City of Melbourne	Private Generators
City of Sydney	Property Council of Australia (supplementary submission)
Clean Energy Council (CEC)	SP AusNet
Department for Manufacturing, Innovation, Trade, Resources and Energy (DMITRE)	Sustainable Regional Australia
Department of Primary Industries, Victoria	Total Environment Centre (TEC)
Endeavour Energy	Toyota Motor Corporation Australia Ltd
Energex	TRUenergy
Energy Efficiency Council (EEC)	United Energy
Energy Networks Association (ENA)	Utilitas
Energy Supply Association of Australia (esaa)	Victorian Council of Social Services (VCOSS)
EnerNOC Pty Ltd	Wood & Grieves Engineers
	WSP Buildings Pty Ltd

K.2 Summary of stakeholder responses

A log of the issues identified by stakeholders on the consultation paper and the Commission's response to these issues may be found at Appendix C of the draft rule determination. Where applicable, the issues raised by stakeholder during this initial round of consultation are referenced in this final rule determination.

L Summary of submissions to the draft rule determination

L.1 Submissions received

AGL

Alinta Energy

Australian Energy Market Operator (AEMO)

Citipower and Powercor Australia

City of Sydney

Clean Energy Council (CEC)

ClimateWorks Australia, Seed Advisory and the Property Council of Australia

Energex

Energy Efficiency Council (EEC)

Energy Networks Association (ENA)

Ergon Energy

Fotowatio Renewable Energy Ventures (FRV)

Moreland Energy Foundation

NSW Distribution Network Service Providers

Origin Energy

Powerlink Queensland

Recurrent Energy

SG Ecodesign

Victoria Distribution Businesses

Total Environment Centre (TEC)

Water Services Association of Australia (WSAA)

L.2 Summary of stakeholder responses

Position in draft rule determination	Issues raised in submissions	AEMC response
<p>The draft rule requires each DNSP to publish an information pack setting out information to guide connection applicants on the process requirements.</p>	<p>The EEC (p3) considers that under the current proposal the quality of DNSP information packs could be insufficient to meet applicant needs. The EEC suggests the AER have discretion to direct a DNSP to redevelop its information pack. The EEC suggests greater prescription in the NER and the contents of the information pack be determined by a working group.</p> <p>Alinta Energy (p2) supported the draft rule change requiring DNSPs to release an information pack containing material and procedural requirements which assists embedded generators in enquiring and lodging connection applications.</p> <p>CitiPower and Powercor (p3) supported the requirement for DNSPs to publish information packs. However, they noted that each connection point is unique. Therefore, DNSPs would only be able to include worked examples of connection service charges and application fees for very simple connections not involving any deep augmentation and very basic shallow augmentation variations, which may be different from the reality faced by the applicant.</p> <p>The Victorian DNSPs (p8) supported the obligation to publish an information pack. However, the Victorian DNSPs noted that the information pack would only be able to include simplified worked examples of connection service charges and application fees, which may be vastly different from the reality faced by the connection applicant. The Victorian DNSPs also supported the publication of model connection agreements. However, it must be made clear that the model contract is not binding. That is to provide sufficient flexibility for DNSPs and connection applicants to negotiate provisions that best suit the particular circumstances of the proposed connection.</p> <p>The NSW DNSPs (p1) supported the obligation to publish an information pack.</p>	<p>There was broad stakeholder support for the publication of an information pack that provided upfront information on the connection process.</p> <p>The final rule retains the information pack as an integral part of the connection process. The information pack will contain:</p> <ul style="list-style-type: none"> • a practical guide of the process outlining how to lodge connection enquiries and applications; • an outline of what an applicant can expect to happen at each stage; • a single line diagram of the DNSPs preferred connection arrangements, and a range of other possible arrangements; • a sample schematic diagram of the protection and control systems; • examples of possible connection charges; • the technical requirements relevant to the processing of a connection enquiry, or application to connect; and • a model connection agreement.

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>They strongly supported the new requirements for connection applicants to provide more information when lodging their enquiries.</p> <p>The CEC (p15) supported the publication of an information pack, but submitted that the assessment had not considered the extent to which this will be useful to larger, registered embedded generators and noted draft clause 5.3A.3(b5) should be updated to ensure that where DNSPs publish model connection offers these should provide an indication of those aspects of the offer that are generally flexible.</p>	<p>The analysis in support of the information pack may be found in section 6.2 of the final rule determination.</p>
<p>The draft rule introduces a two-stage connection enquiry process: a preliminary enquiry stage and a detailed enquiry stage.</p>	<p>The EEC (p4) supported the timelines in the draft rule as an improvement over the current arrangements. However, the EEC considered that unless the AER takes a proactive regulatory approach, DNSPs will still have multiple avenues to bend the rules and cause unnecessary delays. The EEC suggested that the AEMC require DNSPs to submit a very basic annual report to the AER that sets out the time they have taken to respond to each preliminary and detailed enquiry.</p> <p>The City of Sydney (p1) noted that the draft rule did not set out maximum timeframes for ‘non fast-tracked’ connections and considered this was too open-ended and any rule should set out a reasonable maximum timeframe based on performance criteria and not left to DNSP discretion.</p> <p>Alinta Energy (p2) broadly supported the two-stage enquiry process of the draft rule and considered this will provide greater clarity and process efficiency to stakeholders. Origin Energy (p2) was also supportive of the two-stage connection process. However, Origin Energy considered the timeframes could be managed by DNSPs in a way to delay responses to connection applicants and potential for the connection process to run for an indeterminate period.</p> <p>The NSW DNSPs (p2) raised a number of concerns regarding the proposed connection process. In particular, they expressed concern that the proposed process is unlikely to be effective or efficient in practice due to:</p> <ul style="list-style-type: none"> • The potential for overlap and duplication of obligations under the NECF and 	<p>The final rule maintains the two-stage enquiry process outlined in the draft rule.</p> <p>To address stakeholder concerns about the timeframes, especially as the connection process relates to large-scale complex connections, a number of important amendments have been included in the final rule, including the ability to extend timeframes with agreement of the parties.</p> <p>The Commission considers the timeframes in the final rule increase certainty for both connection applicants and DNSPs and provide the framework for an efficient connection process. That is, the final rule would provide both the certainty and flexibility required to allow the safe and efficient connection of embedded generators.</p> <p>Further information on the relevant timeframes in the final rule may be found in sections 7.2.2, 8.2.1 and 8.2.3 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>lack of clarity surrounding the application of the process;</p> <ul style="list-style-type: none"> • Timeframes, information requirements, and practical operation under the proposed connection process; • A possible disconnect between policy intent and the draft rule; and • The proposed technical dispute resolution process. 	
The draft rule introduced a preliminary enquiry stage to the connection process.	<p>The City of Sydney (p1), the proponents (p2), TEC (p4) and Moreland Energy Foundation (p2) welcomed the new preliminary enquiry process, but suggested that project proponents be able to skip this stage to shorten the timeframe where it is a similar or repeat connection with the same or similar attributes as a similar project.</p> <p>CitiPower and Powercor (p4) considered many of the clauses in the preliminary response require design work associated with the proposed connection, which will not be possible to provide within 15 days. CitiPower and Powercor also identified two clauses in draft Schedule 5.4A (m) and (r) that they considered it would not be possible to provide the required information within the 15 day requirement.</p> <p>The CEC (p15) noted that the preliminary enquiry stage as drafted provides general, high-level information to the enquirer and also includes technical information related specifically to the proposed connection point and the application to connect, while the DNSP is also to provide other additional technical information it holds as it relates to the enquiry. The CEC noted a connection applicant must be provided with the opportunity to assess the commercial significance of the distribution network user access arrangements sought. Currently, DNSPs provide detailed technical information for this purpose, indicated that limiting the opportunity for the applicant or enquirer to request this information is unlikely to support efficient connection practices. The CEC recommended that draft clause S5.4A(b) be clarified to ensure that any information reasonably necessary to prepare an application to connect be provided if requested by the</p>	<p>Clause 5.3A.5(g) of the final rule outlines a mechanism that would allow the preliminary enquiry stage to be bypassed where there is agreement between the DNSP and connection applicant.</p> <p>The Commission notes the concerns of stakeholders regarding the intent of the preliminary enquiry stage and the granularity of information, especially the technical information to be provided by a DNSP in its response. Following consideration of submissions and additional stakeholder consultation, a number of amendments have been made to the final rule. In particular, Schedule 5.4A of the final rule outlines the obligations on DNSPs relating to the preliminary enquiry response.</p> <p>Further information relating to the preliminary enquiry stage of the connection process and the obligations on DNSPs and connection applicants may be found in section 7.2 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>enquirer.</p> <p>The CEC (p16) noted that clause 5.3.6(e) provides for the offer to connect to include options for connection at more than one point. The CEC considered this detail needs to be brought into the connection enquiry response (S5.4A) for connection applicants to be able to make informed investment decisions on an efficient connection point location.</p> <p>The CEC (p16) considered that the preliminary response could be improved by including the following changes to the technical information outlined in draft clause S5.4A(a):</p> <ul style="list-style-type: none"> • ‘fault levels and fault clearance’ should reference existing maximum and minimum fault levels and clearances relevant to local substations; • Protection specifications, insulation coordination and lightning protection requirements should include the relevant philosophies to describe their objectives; • ‘switching and isolation facilities’ should include all interface equipment requirements at the point of connection; and • The preliminary response should also include relevant voltage and frequency limits in a new subparagraph (11). 	<p>In response to the suggestions from the CEC, the Commission considers that the amendments in the final rule regarding the contents of the information pack would be sufficient. These requirements cover many of the issues identified by the CEC. Further information on the amended contents of the information pack may be found in section 6.2 of this final rule determination.</p>
	<p>The NSW DNSPs (p3) had a number of concerns regarding timeframes under the proposed connection process. Specifically, they were concerned that the proposed timeframes are inappropriate for large-scale embedded generation connections, connection to the CBD or remote areas of the network and connection involving new technology that the DNSP is not familiar with. They also submitted that the AEMC’s proposed trigger for longer timeframes is too prescriptive and does not take into account the range of issues that may require a DNSP to take longer than</p>	<p>The Commission notes these concerns and is satisfied the timeframes provided for under the final rule appropriately balance the administrative burden of DNSPs and connection applicants and provides a framework for an efficient, more certain embedded generation connection process.</p> <p>Further information on the relevant timeframes in</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>the prescribed timeframes.</p> <p>The NSW DNSPs (p3) expressed concern about the proposed timeframes and how they are calculated and noted, from an operational perspective, meeting the proposed timeframes are problematic.</p> <p>The NSW DNSPs (pp3-5) noted if the scope of the proposed process excluded embedded generators 5MW or greater, it would, to some extent, address their concerns. In their view, for these larger connections, the existing arrangements under Chapter 5 are more appropriate, given their size, location on the network, complexity and possible impact to customers.</p> <p>The NSW DNSPs suggested the AEMC should consider amending the scope of the process to exclude connections greater than 5MW or adjusting the timeframes so they align with the time required to process large/complex connections.</p> <p>The NSW DNSPs (pp3-5) and the ENA (pp4-5) expressed concern that the proposed timeframes create an unrealistic expectation regarding the time required to provide a response to larger, more complex connection enquiries. The NSW DNSPs and ENA provided examples where they considered that the proposed timeframes would be inadequate, including larger scale embedded generators (such as 5MW or greater), connections in the CBD or remote areas of the network, and connections involving new technology. The NSW DNSPs argued that better outcomes can be achieved if the timeframes under the proposed connection process adequately reflected appropriate timeframes for connecting large and complex connections and is necessary to manage appropriately connection applicants' expectations and ensure the best outcome can be achieved for the connection applicant.</p> <p>The NSW DNSPs (p7) and ENA (p8) sought clarification from the AEMC on how timeframes are to be calculated, noting, for the connection framework to work effectively, the draft rule should be amended to clarify:</p>	<p>the final rule may be found in sections 7.2.2, 8.2.1 and 8.2.3 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<ul style="list-style-type: none"> • Any time taken by the connection applicant to provide the DNSP with further information or clarify any aspect of their application is not counted towards the time taken by the DNSP to provide its response. • If a DNSP requires expert advice on a technical issue relating to the proposed connection, any time taken to engage the consultant or time that elapses while the consultant undertakes its analysis is not counted towards the DNSP timeframes for providing a response. • Any time taken by the connection applicant to correct a deficiency in their enquiry is not calculated in the DNSP timeframes. • Any time taken by another party to the connection process (such as under contestability arrangements in NSW) to provide the DNSP with information required to provide its response is not counted towards the DNSP timeframes. <p>The NSW DNSPs considered these clarifications were required given that the DNSP's ability to respond to connection applicant enquiries is constrained by the quality of information provided by the connection applicant and the ability of the connection applicant clearly to articulate its connection requirements and objectives.</p>	
	<p>The NSW DNSPs (pp5-6) and ENA (pp6-7) considered this timeframe was too short and prioritised embedded generation connection enquiries over load customer enquiries, noting that under the NECF there is no corresponding obligation for DNSPs to acknowledge receipt of a customer enquiry within two business days, but rather within five business days if the required information is on the DNSP website and if the inquirer requires a written response or enquiries about a specific situation, the response must be provided as soon as reasonably practicable. The NSW DNSPs considered that aligning these two processes would address the risk of processing errors and would reduce the administrative burden on DNSPs from having to implement separate processes. That is, they considered</p>	<p>Following consideration of submissions and feedback from stakeholders, this timeframe in the final rule has been amended. A DNSP is required to respond to the connection applicant within five business days to acknowledge receipt of a connection enquiry.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>that five business days would be a more appropriate timeframe for acknowledging receipt of embedded generation enquiries than the proposed timeframe.</p>	
	<p>The NSW DNSPs (pp6-7) and ENA (pp7-8) considered that meeting the AEMC's requirements to provide more information earlier in the connection process under the proposed timeframes will be difficult and noted DNSPs often need to adopt a multi-discipline approach involving a number of different areas within the business. For large or complex connections, given the number of different areas which must be involved, meeting the timeframes will be difficult. Unless timeframes are appropriately amended, the NSW DNSPs considered there is a risk the proposed process will result in inefficient outcomes and will be unlikely contribute to the NEO. The NSW DNSPs suggested amending the maximum timeframes to align with the time required to process large or technically complex connections.</p> <p>The NSW DNSPs noted that amending the maximum timeframes does not mean they will take the maximum time for all connections, but would allow the framework to be applied flexibly to accommodate all connection types. The NSW DNSPs suggested the relevant timeframes be achieved by holding a workshop with stakeholders. Alternatively, the NER could be amended to a set timeframe and instead require the DNSP to provide its response "as soon as practicable", which would align the proposed process with the negotiated process under Chapter 5A and allow the process to operate more flexibly and permit the parties to negotiate better outcomes.</p> <p>The Victorian DNSPs (pp9-10) noted the level of information required in rule S5.4A is too onerous to provide within the 15 business day time limit and indicated some of the preliminary response requirements include a number of provisions that require completion of detailed design work.</p> <p>For example, it was submitted that rule S5.4A and clause 5.5A.7 should be amended so that the requirement is to provide the information where practicable. In the absence of this qualification, the Victorian DNSPs considered the following clauses should be removed: S5.4A(a), (b), (c), and (d) and S5.4A(m) should be</p>	<p>As noted above, the information requirements under Schedule 5.4A relating to the preliminary enquiry response have been amended in the final rule. The final rule also clarifies how the timeframes under the preliminary enquiry stage of the connection process are governed.</p> <p>These matters are discussed in further detail in section 7.2 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>deleted because, they contended, a description of how the DNSP proposes to amend its model contract is not reasonable at this early stage of the connection process.</p> <p>In regard to the detailed enquiry response, the Victorian DNSPs expressed concern that the proposed timeframes are unrealistic for the following reasons:</p> <ul style="list-style-type: none"> • The presence of shared network augmentation is not the only factor that might necessitate longer timeframes. Each connection is unique and many factors could potentially determine the level of complexity associated with achieving an ‘agreed project’. • Allowing no longer than 4 months for the detailed enquiry stage is unrealistic. Complex projects can take up to a year to agree on scope, especially if consultation with other parties is required. • It is imperative that the timeframes do not preclude the DNSPs from fully assessing the risks associated with the proposed connection and ensuring it does not negatively impact the supply of services to other network users. • Twenty days to make a connection offer for an ‘agreed project’ is unrealistic. For example, it may be insufficient to finalise the connection charges. <p>To address these matters, the Victorian DNSPs proposed the timeframes be increased:</p> <ul style="list-style-type: none"> • The maximum timeframe, unless otherwise agreed, for completing the detailed enquiry stage if there is no shared network augmentation should be extended to 40 business days from 30 business days; • The maximum timeframe, unless otherwise agreed, to make a connection offer for an agreed project should be extended to 65 business days from 20 business days (consistent with clause 7.1 of the Victorian Electricity Distribution Licence); 	

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>and</p> <ul style="list-style-type: none"> The maximum timeframe, unless otherwise agreed, to make a connection offer for connections that are not agreed projects should be extended to six months from four months. The proposed maximum timeframe is contingent on there being a ‘stop-the-clock’ mechanism for the time it takes proponents to respond to requests to provide further information needed by the DNSP to enable it to make a connection offer. <p>The CEC (p17) considered that applying a 30 day timeline to the detailed response, increases the likelihood that a proposal from the DNSP will require the generator to meet onerous requirements. Connection applicants are always incentivised to provide clear information to the DNSP, if they wish to connect with reasonable arrangements.</p> <p>However, the 30 day timeframe is not sufficient for the connection applicant to consider the implications of the DNSPs proposals, should they appear onerous, and propose alternative arrangements prior to settling on an ‘agreed project’.</p> <p>The Victorian DNSPs (pp14-15) supported the requirement for DNSPs to make available the minimum technical requirements necessary to maintain system security and reliability of supply as part of its preliminary response to a connection enquiry. However, in many cases the DNSP is unlikely to be able to provide all the information on minimum technical requirements in the timeframe for the preparation of a preliminary enquiry response proposed in the draft rule.</p> <p>The CEC (p15) outlined a range of issues with the AEMC’s proposed timelines. It was of fundamental importance that hard and fast timeframes do not jeopardise the capacity for connection applicants to make efficient decisions on their investments. That is, optionality exists to ensure that the connection applicant can address risk and costs accordingly. A new subparagraph (13) should be added to rule 5.2.3(d) to require DNSPs to provide information in response to any reasonable request in a reasonable timeframe.</p>	

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>The CEC (p16) considered that the three month validity period for the preliminary enquiry response was insufficient to allow the enquirer to carry out network studies and make commercial decisions regarding concepts. The CEC suggested that a more appropriate measure would be to require the enquirer to confirm with the DNSP, at three month intervals, that the enquiry is still active and that the applicant intends to follow through with the project.</p>	
	<p>CEC (p16) considered that the detailed enquiry stage must be framed appropriately to ensure complete provision of detailed technical information to assess fully the distribution network user access arrangements sought. The CEC considered a maximum period of 20 business days should be applied to the provision of this information.</p>	<p>The Commission considers that the amendments in the final rule regarding the provision of technical information should make it easier for connection applicants to access any required information. For this reason, the final rule does not provide a prescribed timeframe for the provision of detailed technical information to fully assess the distribution network user access arrangements.</p>
<p>The draft rule proposed that projects likely to require shared network augmentation, the DNSP is to provide the detailed response within the time agreed with the applicant, but, in any event, within four months.</p>	<p>The NSW DNSPs (p5) and the ENA (p6) were concerned about the policy position regarding the trigger for longer timeframes. The draft rule determination indicated that longer timeframes are only appropriate in circumstances where share network augmentation is required. Longer timeframes should be determined according to whether the proposed installation is small/simple or large/complex. The NSW DNSPs were concerned that limiting the ability for DNSPs to access longer timeframes in the NER:</p> <ul style="list-style-type: none"> • Adds unnecessary prescription to the proposed connection framework; • Fails to take into account the evolving nature of operating a DNSP network; • May constrain technological innovation in the embedded generation and protection area; and • Reduces the effectiveness of the framework and is likely to lead to suboptimal 	<p>The final rule removes distinction around the requirement for shared network augmentation to trigger longer timeframes.</p> <p>However, the timeframe for a DNSP to provide a detailed response in the final rule remains four months. This timeframe may be extended by agreement to account for longer more complex embedded generation projects.</p> <p>Further discussion on the timeframe for the detailed response may be found in section 8.2.2 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>outcomes.</p> <p>The policy intent also fails to consider network augmentation that is dedicated to the customer and the time required to negotiate easements. The NSW DNSPs considered the proposed connection process needs to be flexible rather than prescriptive if it is to operate effectively in practice to achieve the connection applicants desired outcomes.</p>	
<p>The draft rule proposed that the detailed enquiry response from the DNSP would remain valid for six weeks.</p>	<p>The proponents (p2), TEC (p3) and Moreland Energy Foundation (p2) indicated this timeframe was too short and should be increased to 12 weeks to allow for approvals and contracts to be signed under often complex ownership structures.</p> <p>The CEC (p18) noted the 30 day validity period was unlikely to result in efficient investment. While the validity period can be extended under agreement, DNSPs are incentivised to reject an extension as they receive additional fees from the applicant if a new enquiry is required. The CEC suggested a more effective framework would be to extend the validity period defined under draft clause 5.3A.8(g) to six months. The CEC suggests adding a new draft clause 5.3A.8(j) to ensure that concurrent connection applications are reasonably considered.</p>	<p>The final rule removes the obligation for each detailed enquiry response to remain valid for a defined period of time. However, clause S5.4B(n) of the detailed enquiry response allows a DNSP to agree to the detailed response remaining valid for a specified period of time to allow the connection applicant to lodge an application to connect within that time.</p> <p>Further information on this aspect of the final rule may be found in section 8.2.3 of the final rule determination.</p>
<p>The draft rule proposes that under the revised connection process, for connection applications based on 'agreed projects', a distributor will be required to make an offer within 20</p>	<p>The EEC (p4) supported this recommendation, but considers greater clarity should be provided over what constitutes an 'agreed project'. The EEC was concerned that DNSPs could use cosmetic, irrelevant or minor changes to an application to justify delays or changes to a connection agreement. The EEC considered this process also needs to be monitored and policed by the AER.</p> <p>The CEC (p15) considered the 20 day period for acceptance of a connection offer was not appropriate and suggested amending draft clause 5.3.6(b4) to allow a maximum six months to permit the connection applicant to appreciate the commercial impact of the terms and conditions.</p>	<p>The final rule no longer makes provision for agreed projects or a fast-tracked connection application process.</p> <p>The reasoning in support of this change in the final rule is outlined in sections 7.2.2 and 8.2.4 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
business days.		
Definition of an 'agreed project'	<p>The City of Sydney (p1) and the proponents (p2) submitted that the definition of 'agreed project' and 'fast-tracked' must be clearly defined and be based on performance criteria, not allow for the introduction of other, discretionary criteria, to be linked to the DNSP's published standards.</p> <p>The proponents (p3), TEC (p 4) and Moreland Energy Foundation (p2) noted examples of where an element of equipment is changed, but the requirements of the access standards are still met, and query whether this would be a variation on the 'agreed project'. The proponents stated that the draft rule refers to "project parameters and corresponding access standards and technical requirements". The proponents sought clarification of what constitutes a variation in an 'agreed project'.</p> <p>The CEC (pp17-18) noted that as the connection applicant will carry the risk and costs associated with the connection, the process must facilitate efficient decision making processes by the applicant. While having an 'agreed project' may work for some projects, it is essential that non-agreed projects are not discriminated against in the application process. To achieve this, the CEC suggested allowing the applicant to submit an application to connect for a non-agreed project. In this case, the offer could be made within an agreed timeframe, up to the maximum four months.</p> <p>The CEC (pp18-19) noted the good faith and expert appraisal processes and submitted the scope of what "materially different" applies to must be restricted to include only those parts of an 'agreed project' that have a material impact on the distribution network user access arrangements sought by the initial project in draft clause 5.3A.9(d). The CEC considered that the option to invoke the independent expert's assessment should be more clearly stated in this clause.</p>	As noted above, the agreed project concept is no longer a feature of the final rule.
The draft rule proposes that in the	The Commission received feedback on the draft determination through submissions and public workshops held on 17 October 2013 and 1 November	In response to stakeholder feedback, the Commission made a number of changes to the

Position in draft rule determination	Issues raised in submissions	AEMC response
<p>absence of automatic or minimum access standards for embedded generators that DNSPs are required to publish a register of generating plant that meets their minimum technical requirements.</p>	<p>2013.</p> <p>The rule change proponents supported the inclusion of the register of compliant equipment, but requested confirmation in the final rule determination that this would also include information on associated protection and control equipment.</p> <p>The EEC supported the proposal in lieu of the development of technical standards and recommended a number of changes to include protection and other equipment.</p> <p>The City of Sydney advocated the development of technical standards as quickly as possible and noted that many countries already have these in place. Alinta Energy supported the recommendation that DNSPs maintain a register of compliant equipment, provided it is not too burdensome or costly to maintain.</p> <p>ENA considered it inappropriate for DNSPs to be required to publish a register of generating plant that meet minimum technical requirements. As technology is constantly evolving and new products come to the market, ENA considered that any published register would need constant monitoring and updating to ensure accuracy, requiring ongoing testing and analysis of new generating plant and imposing a heavy compliance burden without clear benefits.</p> <p>The Victorian DNSPs considered that the proposed register would be likely to provide limited, if any, net benefit due to the uniqueness of each connection point. As such, the specification of a “compliant” individual item of plant would not necessarily assist in determining whether a particular installation will comply with the relevant technical requirements.</p> <p>The CEC recommended that any register included in the final rule be updated annually as part of the DNSP planning process and be limited to interface equipment the DNSP requires in order to meet non-negotiable safety, reliability and quality standards.</p>	<p>register of compliant equipment, which are outlined in section 11.1.1 of the final determination.</p> <p>The key changes are:</p> <ul style="list-style-type: none"> • DNSPs are required to maintain a register of embedded generation plant and associated equipment that has been connected to the network in the last five years; • Register to be updated annually, on a rolling five year basis; and • Register re-named to 'register of completed projects' from 'register of compliant equipment' as DNSPs are no longer required to list all embedded generation equipment that meets the network's technical standards, only equipment installed in the previous five years. • Register effectively only requires embedded generating systems greater than 5MW (registered or exempted from registration) to be included. <p>The register of completed projects is only a guide for potential connection applicants and DNSPs are not obliged to accept an application based on information in the register.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>AEMO (p2) considered the proponent's rule change request suggested there was a lack of certainty regarding the application of Schedule 5.2 to small embedded generators. AEMO did not consider that the draft rule provided additional certainty to proponents of smaller embedded generating units or systems regarding whether Schedule 5.2 would apply to them. AEMO also noted that the draft rule places the responsibility for proposing negotiated standards on the DNSP rather than the connection applicant. AEMO considered this approach may be beneficial to the efficient development of embedded generation as the DNSP should have greater experience in developing acceptable standards. However, connection applicants are ultimately responsible for achieving and maintaining compliance with the performance standards and it is essential that they also gain understanding of these requirements. AEMO considered that clarifying the definition of embedded generators and restricting the application of the draft rule to generators exempt from registration, or below a certain size would resolve their concerns.</p>	<p>The Commission notes the comments by AEMO. To allow connection applicants to gain an understanding of the technical requirements and their responsibility for achieving and maintaining compliance with the performance standards, the final rule obliges DNSPs to provide more technical information upfront as part of the information pack.</p> <p>The benefit of providing this additional information for DNSPs is that it educates prospective connection applicants who may not be aware of these technical requirements, but need to have a perspective of the individual DNSP's technical requirements before investing time and money into the development of their business case. That is, it will help connection applicants understand how the DNSP's network operates and the requirements for the integration of embedded generation into their networks.</p>
	<p>The CEC (pp19-20) noted that if the AEMC intended to propose a new framework – one which removes the capacity for connection applicants to determine, propose and negotiate access standards and allows the DNSP to determine all of the technical requirements and expects the applicant simply to accept the DNSP's decisions – it must justify this against market objectives. This justification, the CEC submitted, has not been provided with the AEMC's draft determination and would be incompatible with the rule making test as risk is not allocated appropriately and inefficient costs will result.</p>	<p>The final rule is consistent with existing provisions of the NER and allows connection applicants to determine, propose and negotiate access standards.</p>
<p>The draft rule clarified that DNSPs may charge an enquiry fee for</p>	<p>The EEC supported this proposal, but noted that in the past some DNSPs have charged excessive fees and/or only advised applicants of the scale of the fees at the end of the enquiry. The EEC considered that these excessive fees contravene the NER, which states that the amount of any fee should not be more than</p>	<p>The final rule maintains the obligation for DNSPs to provide connection applicants with a reasonable estimate of the enquiry fee required to request a</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
<p>preparing detailed enquiry responses. The enquiry fee is to recover the reasonable costs incurred by a distributor.</p>	<p>necessary to cover the reasonable costs of all work anticipated to arise from the application. The EEC recommended that:</p> <ul style="list-style-type: none"> • Applicants be advised of the likely scale of the fee at the preliminary enquiry phase or within 10 days of receiving a detailed enquiry; and • There must be a right of appeal to the AER; and • DNSPs be required to set out the detailed enquiry charges that they have proposed and/or collected in their annual report to the AER. <p>Origin Energy (p2) recommended that the AEMC require DNSPs to submit an annual report to the AER that sets out the fees and charges they have invoiced and the time taken to respond to each preliminary and detailed enquiry timeframe to enable the AER to monitor compliance and identify specific DNSPs that may not be meeting the targeted timeframes and to negotiate in good faith to facilitate timely network connections.</p> <p>Alinta Energy (p3) considered it appropriate that DNSPs have the ability to charge an enquiry fee and provide examples of how enquiry fees are calculated within the information pack provided to applicants supports transparency and encourages cost reflective fees.</p> <p>Origin Energy (p2) considered there is a wide disparity in relation to generator connection enquiry costs ranging from as low as \$5,000 to as high as \$20,000, regardless of whether their proposed connection is approved. Origin Energy submitted that the connection fees could act as a disincentive and a barrier to connecting embedded generators and suggested the option to fix a maximum cost for an enquiry fee to allow a connection applicant to budget a more accurate or manageable figure in project costs and assist in shortening the periods required for obtaining an offer to connect.</p> <p>The Victorian DNSPs (pp17-18) supported the rationale for an enquiry fee.</p>	<p>detailed response from a DNSP.</p> <p>The final rule however, amends how the enquiry fee should be calculated and presented. For example, where a DNSP is unable to calculate the exact amount of the enquiry fee, due to being unable to obtain relevant information from affected parties, it will be required to inform the connection applicant of the component of the estimate of the enquiry fee payable to request the detailed response. Further information on the enquiry fee may be found in section 13.2.1 of the final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>However, they did not support the timing for quoting the enquiry fee to the connection applicant. In particular, Schedule 5.4A(r) requires the DNSP to set out the enquiry fee that would be payable at the next stage of the process with its response to a preliminary enquiry. It is unrealistic to expect that DNSPs would have the ability to identify all parties that may need to be engaged in the process, engage with those parties to discuss the implications as well as enable those parties to identify costs they are likely to incur, and respond to the applicant with estimated fees within 15 days.</p> <p>The CEC (p24) supported the rationale for an enquiry fee, but suggested that DNSPs be required to provide a reasonable report of time and expenses to the connection applicant at end-of-month intervals while processing any service funded by a connection applicant.</p>	
	<p>Ergon Energy (p2) disagreed with AEMC's statements in the draft rule determination that an enquiry fee would be one of these services that falls outside of the oversight of the AER and, because of this, the draft rule includes provisions acknowledging what is currently permissible under the NER (that DNSPs are able to charge connection applicants as enquiry fee).</p> <p>Ergon Energy did not agree with the AEMC that the enquiry fee (and application fee) is outside the classification of services and a DNSP distribution determination. Ergon Energy also submitted that how and what charges a DNSP applies to a customer for services it provides, still needs to be consistent with a DNSPs distribution determination. Ergon Energy also contended that the AEMC appeared to be pre-empting the AER's assessment and decision on how a DNSP's services may be classified through the distribution determination process and that it is more appropriate for the AER to make the assessment of classification and control mechanisms that apply to services the DNSP provides to all customers during the connection enquiry and application stages.</p>	<p>The Commission notes the comments from Ergon Energy. The Commission's intent in the draft rule determination, as noted by the Victorian DNSPs, was not to state that the enquiry fee and application fee were outside the classification of services, or to pre-empt the AER's assessment and decision on how a DNSP's services may be classified. As such, the final rule makes no provision for transitional classification, classification, or price setting mechanisms.</p> <p>Further discussion on this matter may be found in section 13.2.1 of the final rule determination.</p>
The draft rule proposed the	ENA submitted there was no need for this additional dispute resolution process and noted that currently there are dispute resolution process under Chapters 5, 5A	The Commission notes these concerns and considers that Chapter 8 of the NER provides an

Position in draft rule determination	Issues raised in submissions	AEMC response
introduction of an independent expert appraisal process to assist with technical disputes	<p>and 8 of the NER. ENA also noted there is a dispute resolution process that runs independently of the AER that is effective at mediating technical disputes. ENA (pp9-10) recommended the AEMC retain the existing arrangements under Chapter 8 of the NER, which provides for the dispute resolution regime that applies to connection applicants under Chapter 5.</p> <p>Ergon Energy (p2) and Energex (pp3-4) considered that the dispute resolution provisions that exist under Chapter 8 of the NER are appropriate and should be considered as the correct avenue to settle disputes between an embedded generator applicant and a DNSP.</p> <p>The Energy Efficiency Council (EEC) supported the expert appraisal process, but thought that given the small number of experts in the space, there was a risk that their independence would be compromised where they undertake work for DNSPs or the connection proponent. The EEC requested a meeting with the AEMC to identify options for ensuring that independent experts are available.</p> <p>AEMO (p3) suggested that some (but not all) of the issues identified in draft rule 5.9A might be more efficiently resolved by consulting with AEMO, which has experience in reaching agreement on access standards for a range of generator sizes and locations and should be able to contribute positively to resolving any disputes regarding technical standards. AEMO suggested that only if the issue cannot be resolved with AEMO should it be referred to an independent expert under the proposed procedure.</p> <p>The NSW DNSPs (p9) and ENA (pp9-10) did not view the proposed appointment of an independent expert appraisal as an effective solution for resolving technical disputes due to the small number of experts with a full understanding of generator characteristics, connection issues, and electrical safety and network performance. The NSW DNSPs submitted that the dispute resolution regime under Chapter 5A of the NER would be more appropriate, which provides for disputes regarding the terms and conditions of connection and connection charges to be treated as access disputes for the purposes of Part 10 of the NEL. In this way all disputes</p>	<p>appropriate framework to resolve disputes that may arise from the embedded generation connection process. The expert appraisal process has therefore been removed from the final rule, which now directs participants to use the dispute resolution process under Chapter 8 of the NER.</p> <p>The Commission notes these concerns. Expert selection is usually a mutually agreed decision, by both parties to a dispute.</p> <p>The Commission notes AEMO's viewpoint, but has not amended the final rule to place an obligation on AEMO to mediate in relation to technical disputes. This does not prevent AEMO from providing these services should it choose to.</p> <p>The Commission has considered the dispute resolution process under Chapter 5A of the NER, but has decided to link the connection process to the dispute resolution process under Chapter 8 of the NER as the Chapter 5 process deals with registered participants. Chapter 5A includes a dispute resolution process because non-registered participants using the Chapter 5A process are not able to access the Chapter 8 process.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>regarding the terms of connection of non-registered participants, either load or generation, would be dealt with under the same regime.</p> <p>The Victorian DNSPs (pp15-16) accepted there is merit in the AEMC's proposal and noted that these arrangements are not exclusive and, pursuant to clause 5.9A.1(a), a party may instead use the general dispute resolution process under rule 8.2. The Victorian DNSPs concurred it was important that both parties have incentives to reach agreement on the technical requirements under regulatory instruments, without incurring the additional costs associated with the appointment of an independent engineer. The Victorian DNSPs suggested the NER provide that any party raising a dispute found to be frivolous, vexatious or manifestly unfounded be liable for the full cost of an independent engineer's report.</p> <p>In relation to the independent engineer proposal, the Victorian DNSPs (p16) considered:</p> <ul style="list-style-type: none"> • The obligation on the expert to use reasonable endeavours to keep confidential information confidential (clause 5.9A.4(6)(i)) is weak. A 'best endeavours' obligation would be more appropriate; • The provision of confidential information by the expert to third parties subject to an undertaking to the expert to keep it confidential fails to protect the rights of the holder of the information (clause 5.9A.4(6)(v)); and • The test to be applied by the expert, "reasonable in all the circumstances", is very broad and no guidance or criteria are provided as to what is "reasonable". It was suggested that the AEMC give further consideration to these matters. <p>The Victorian DNSPs also considered it more appropriate that access to the technical expert should only be available following the receipt by the connection applicant of a detailed enquiry response from the DNSP, in accordance with clause 5.3A.8, and that the NER should preclude the expert from considering commercial or regulatory issues and require the expert's fees only to relate to activities within</p>	<p>The discussion above addresses the Victorian DNSPs' concerns.</p> <p>The final rule states that a technical dispute may be made in relation to a connection enquiry or an application to connect.</p> <p>The Commission notes these comments by the CEC. The final rule does not limit which party may lodge a dispute to the dispute resolution adviser. In relation to those technical matters that may be the subject of dispute resolution, the final rule states any dispute between the parties as to the technical requirements to establish, or modify a</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>scope.</p> <p>The CEC (pp22-23) considered that the independent engineering expert would remain ineffective while the information transparency, timing and technical assessment issues identified in its submission were unresolved. The CEC also did not see the merit in allowing the DNSP to invoke the independent expert at all. That is, the dispute resolution process triggered by draft clause 5.9A.1(a) should only apply to connection applicants as only they are exposed to undue risk. The CEC also suggested a number of amendments:</p> <ul style="list-style-type: none"> • That the NER be clear that any costs incurred by the DNSP cannot be charged back to the connection applicant in draft clause 5.9A.8; • Draft clause 5.9A.1(a) be less specific and apply to any aspect of technical design, plant specifications, interface equipment, network extension or augmentation, connection assets, distribution network user access arrangements or any other technical or financial matter; • As draft clause 5.9A.4(d)(1) expects that the expert will be providing an estimate of their costs after being appointed, the dispute resolution process is unlikely to come at an efficient cost; and • The draft rule should be reviewed in the context of the Transmission Frameworks Review recommendations which have not yet been initiated. 	<p>connection in relation to a connection enquiry or an application to connect.</p> <p>The expert appraisal process outlined in the draft rule determination has been removed from the final rule.</p>
	<p>The proponents (p4) considered that as the draft rule did not propose an automatic right to export, there could be the possibility to use the expert appraisal process for disputes around power transfer capability. However, the proponents thought that the draft rule did not appear specific enough to allow this process. Therefore, if it is not the intention of the AEMC that the independent technical appraisal of the DNSP's export offer is available to connection applicants, the AEMC needs to provide more detailed guidance to the DNSPs about the nature of their obligation</p>	<p>As noted above, the final rule removes the expert appraisal process outlined in the draft rule. Any disputes relating to technical matters can be progressed under Chapter 8 of the NER. There is nothing preventing the Chapter 8 dispute resolution process being used for disputes around power transfer capability.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	to use reasonable endeavours to provide an applicant the access sought.	
The draft rule did not propose any changes to the NER regarding providing embedded generators with the automatic right to export electricity into the connected distribution network.	<p>The EEC agreed that embedded generators should not have an automatic right to export unless they choose to become a registered market participant. The EEC however considered that the current arrangements are unacceptable and require change. DNSPs currently have far too much discretion regarding the ability to export and sometimes are told this late in the connection process. Therefore, the EEC proposes changing the process so that the burden of proof lies on DNSPs. That is, where a DNSP proposes to not allow an embedded generator to export to the grid, they must justify their proposal to the proponent and seek permission from the AER.</p> <p>The WSAA noted that the potential to export electricity requires the point of generation to be in close proximity to the grid, that the grid has the capacity to take energy, and that the project is economically viable. WSAA noted that connections also require:</p> <ul style="list-style-type: none"> • A willingness for electricity distribution companies to participate/facilitate the grid connection (this does not exist and is currently one of the biggest barriers); • Willingness of the distributor to allow for unscheduled input where on-site generation is not constant; • Grid capacity – where this does not exist, expensive augmentation may be needed; and • A network study prior to a large input – to understand capacity and then correct any issues identified, with no guarantee of success. <p>The City of Sydney suggested that the rule be amended to specifically state that the ‘right to export be subject to the network being able to safely handle the export from the embedded generator’. The purpose of this amendment is to provide the right to export and to address DNSPs concerns, but at the same time putting a</p>	<p>The Commission notes stakeholder comments on providing embedded generators with an automatic right to export electricity.</p> <p>The final rule does not propose any changes to the NER regarding providing embedded generators with an automatic right to export electricity to the network.</p> <p>In order to facilitate the unconstrained export of electricity from embedded generators, augmentation of the network may be required. The Commission's view is that these costs should be borne by those best placed to manage them - the connection applicants and DNSPs. If all consumers are left bearing augmentation costs associated with an embedded generator's automatic right to export electricity, then this is unlikely to lead to efficient investment in the distribution network or embedded generation, in the long term interests of consumers.</p> <p>The Commission has maintained its view in the draft determination that any export of electricity from an embedded generator to a distribution network should be based on explicit agreement between both parties. Further discussion on the automatic right to export electricity may be found in section 11.2.2 of the final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>mechanism in place to deter potential obfuscation, unwarranted refusal to export without a valid reason or anti-competitive behaviour by DNSPs. The City of Sydney's submission provides an example of the effects of not allowing the export of electricity from an office building, including the costs and benefits to the proponent and DNSP.</p> <p>Moreland Energy Foundation (p3) considered that the NER should provide greater clarification and an objective technical assessment of a customer's right to export.</p> <p>Alinta Energy (p3) was of the view that affected network services should be equipped with the discretion to refuse any connection which could potentially degrade the capability of the network. This will allow conditions to be placed on connections that limit the potential degradation of service to other users.</p> <p>The TEC (pp2-3) considered the AEMC discussion on this issue was too simplistic as there is a spectrum of possible outcomes in choosing an embedded generation system. For example, not exporting to the grid, synchronising with the grid either regularly or occasionally (small quantities for export insufficient to warrant a sale agreement), and exporting for sale in the wholesale market. The TEC considered the lack of an automatic right to export is restrictive and many systems are resized to offer less than the installation's potential. A right and ability to export would improve the business case for large systems and precincts which could power multiple buildings.</p> <p>The NSW DNSPs (p1), ENA (p1) and Victorian DNSPs (pp16-17) strongly supported the AEMC recommendation not to allow an automatic right of export to embedded generators.</p> <p>The CEC (p23) submitted that the NER must specify that a technical justification is required to support any access standard proposed by a DNSP as part of an agreed project, or an offer to connect. This should prevent DNSPs from refusing the generator the option to export, without providing a clear technical justification.</p>	

Position in draft rule determination	Issues raised in submissions	AEMC response
<p>The draft rule did not propose any changes to exempt embedded generators from contributing to shared network augmentation costs.</p>	<p>The EEC agreed that embedded generators should pay a reasonable contribution to the augmentation and maintenance of networks, but the current system is not transparent or fair and does not provide efficient price signals for investment in, operation of, or use of electricity services.</p> <p>The EEC disagreed with the reasoning in the draft rule determination about the general principle that where a user in the NEM creates a burden on a network then that user should contribute their share of the relevant cost. The EEC considered that this principle as stated is not enforced consistently, fairly, or efficiently. For example, if a large user wishes to connect to the network, they are rarely required to pay for deep augmentation costs. The EEC recommended:</p> <ul style="list-style-type: none"> • For this rule change that the AEMC require DNSPs to inform the AER of all connection charges they impose on embedded generators in their annual reports, and gives generators a right to appeal connection charges proposed by DNSPs; • The AEMC undertake a major review of the way that both energy users and generators are charged for connecting to, and using, the network (the EEC note that this review would be outside of the scope of this rule change); and • The AEMC direct either AEMO or another body to undertake a study of the last 50 embedded generator connections in the NEM to determine the costs and benefits to the network, whether the costs incurred by the network were efficient costs and whether the connection charges and ongoing charges reflected these costs and benefits. <p>The City of Sydney stated that the proponents justification for exempting embedded generators from paying for shared network augmentation is where export from the facility is truncated and the DNSP is required incur additional capital expenditure in augmenting the network to address demand growth. Customers will pay higher fixed charges for this capital expenditure. Whereas allowing the embedded generator to export more electricity would benefit all a</p>	<p>The Commission notes stakeholder comments on the costs of shared network augmentation.</p> <p>The final rule does not propose any changes to the NER to exempt embedded generators from contributing to shared network augmentation costs.</p> <p>For further discussion on the rationale for the Commission's decision not to exempt embedded generators from paying for shared network augmentation, see section 13.2.2 of the final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>DNSPs customers, whereas capital expenditure by the DNSP only benefits itself.</p> <p>Alinta Energy (pp3-4) was encouraged by the AEMC's recommendation to not exempt embedded generators from paying shared network augmentation costs. Alinta Energy considered that excluding embedded generators from paying their fair share of network augmentation costs means such charges will be cross subsidised by all other consumers, raising concerns amongst other generators as well as diluting efficient price signalling within the NEM.</p> <p>Energex (p5) suggested that the final rule determination should clarify the applicability of the AER's connection charge guidelines to embedded generation connections progressed under current Chapters 5 and 5A, and any new rule.</p> <p>The NSW DNSPs (p1), ENA (p1) and Victorian DNSPs (pp18-19) supported the AEMC's decision not to exempt embedded generators from paying deep augmentation costs</p>	
<p>The draft rule clarified that the 'last-in worst dressed' issue raised by the proponents is already addressed under the NER.</p>	<p>The City of Sydney noted the AEMC's reasoning of the 'last-in worst dressed' issue in the draft rule determination. However, it also noted that while this may be the case, there is nothing in place in the NER to ensure this happens. That is, DNSPs must be required to notify the embedded generator who has had to pay for shared network augmentation costs on an 'as and when' basis when other generators or load customers connect to, and take advantage of the shared network augmentation to ensure transparency and to enable the embedded generator to recover these costs from new generators or load customers. The City of Sydney did not agree with the AEMC's suggestion that the embedded generator should negotiate a term in a connection agreement to allow reimbursement to occur, submitting that a contractual term to recover shared network augmentation costs should form part of the connection agreement as a right and not subject to negotiation or the discretion of a DNSP.</p> <p>The proponents (p5), TEC (p3) and Moreland Energy Foundation (p2) were not confident that the existing obligation in the NER regarding the reimbursement of</p>	<p>The Commission notes stakeholder concerns about the usefulness of clause 6.7.1(6) in addressing the 'last in, worst dressed' issue. As noted by the CEC, the issue of appropriate cost sharing is a matter that would require significantly more work to resolve. Consideration of its application to load customers would also be required as well as for generation. Because of this wide scope, any amendments to clause 6.7.1(6) or Schedule 5.6 are outside of the scope of this rule change request and would be more appropriately considered in another forum where careful consideration of the impacts and implications of changing the current cost sharing arrangements can be assessed.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>money for the use of assets funded by the connection applicant to provide services to other connections is working as intended. The proponents were unable to identify any connection applicant that had received a reimbursement under the NER. The proponents suggested the AEMC reconsider its views on the 'last-in worst dressed' issue, or consider what additional requirements could be put in the NER to ensure DNSPs are aware of their obligation to provide a reimbursement.</p> <p>The CEC (pp25-26) considered that this matter requires significantly more effort to resolve. At a minimum, the AEMC should consider whether the NER obligations for cost sharing are, or have ever been carried through to connection agreements. Further work should also investigate more appropriate funding arrangements.</p>	<p>For this reason, the final rule has not been amended to address the 'last in, worst dressed' issue.</p> <p>Further discussion on this matter may be found in section 13.2.4 of the final rule determination.</p>
The draft rule applies the new provisions to all generators planning a connection to the distribution network.	<p>AGL (p2) submitted that the draft rule determination could be effectively applied to the class of generators smaller than 5MW or exporting less than 20GWh per annum of electricity. AGL considered that the draft rule would better prescribe these two thresholds so that they are applied to this class of generators, which AGL believed was consistent with the original intent of the rule change request.</p> <p>Citipower and Powercor (p3) considered that the AEMC should limit the application of the rules to the intended mid-scale embedded generators with a capacity between 30kW and 5MW.</p> <p>AGL (p2) is concerned that the draft rule may become unworkable for the connection of larger scale embedded generators, as these connections are generally technically more complex and require a much longer lead time (it may take up to 18 months or more before the technical requirements can be negotiated and agreed between the parties).</p> <p>Ergon Energy (p1) and Energex (p1) considered that Chapter 5A of the NER may be sufficient to address the perceived barriers identified by embedded generator proponents. However, as Chapter 5A has essentially not been used, it remains unproven as to whether it will be sufficient to deal with these barriers or not. Therefore, Ergon Energy strongly recommended that the changes contemplated in</p>	<p>The Commission considers that the current registration process provides an appropriate method of delineating which connection process will apply to each connection applicant.</p> <p>That is, for connection applicants proposing the connection of a generator to a distribution network in a jurisdiction that has adopted the NECF:</p> <ul style="list-style-type: none"> • where the generating system is less than the standing exemption from registration as determined by AEMO, the appropriate connection process is under Chapter 5A; otherwise • where the generating system is greater than the standing exemption from registration, the connection applicant must use the connection process under Chapter 5 and set out in the final rule.

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>the draft rule are not made until such time as Chapter 5A has been sufficiently tested by the market.</p> <p>Origin Energy (p1) considered that there are practical problems with the draft determination associated with the use of definitions under the proposed Part A. The reliance on definitions, as opposed to generator size, could potentially result in different connection frameworks applying to separate connection proponents seeking to connect an identical generating system to the grid. That is, the use of definitions could create confusion and regulatory gaps where jurisdictional differences exist between embedded generators, DNSPs and applicable LNSPs.</p> <p>FRV (p5) noted that the scope of draft clause 5.3.1 captures all embedded generators, including large scale embedded generators. FRV note that clause 5.1.2 provides an opt-in clause where non-registered generators can elect to be connected under Chapter 5 rather than Chapter 5A. FRV (p 6) considered that the proposed connection process did not enhance the certainty, transparency or economic efficiency of the current connection process for large scale registered embedded generators. Therefore, the scope of the draft rule should be aimed at non-registered embedded generators and should be addressed with changes to Chapter 5A, not Chapter 5 of the NER.</p> <p>Recurrent Energy (p1) also noted that the rule change request contemplated embedded generators with a capacity of 10kW to 30MW. Therefore, it believed that the draft rule is only appropriate for non-registered embedded generators and should seek to make changes to Chapter 5A of the NER, not Chapter 5.</p> <p>The Victorian DNSPs (pp6-7) indicated that it appears the AEMC's intent is that retail customers (whether as micro-embedded generators or non-registered embedded generators) or real estate developers (as non-registered embedded generators), as well as "any person" generally can request the connection process specified in Chapter 5 to apply instead of going through the Chapter 5A process. Therefore, the Victorian DNSPs suggested that NER be amended to clarify that once a connection process has been initiated by a connection applicant under</p>	<p>For connection applicants proposing the connection of a generator to a distribution network in a jurisdiction that has not adopted the NECF:</p> <ul style="list-style-type: none"> where the generating system is greater than the standing exemption from registration, the connection applicant must use the connection process under Chapter 5 and set out in the final rule; otherwise where the generating system is less than the standing exemption from registration, the connection applicant may seek to rely on clause 5.3.1(d), as appearing in version 49 of the NER, and elect to use the procedures in Chapter 5; or the applicable process for connection of embedded generation may be in local jurisdictional instruments; or where no jurisdictional instruments exist, the DNSP would determine the appropriate connection process. <p>Further discussion on the appropriate location for the connection process in the NER may be found in Chapter 5 of this final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>Chapter 5A then that process must proceed to its conclusion. That is, non-registered embedded generators who choose to a connection under Chapter 5A should not be able to switch to Chapter 5 mid-way through. The Victorian DNSPs considered it would be more helpful if the NER were to direct a connection applicant to the most appropriate process.</p> <p>The NSW DNSPs (p2) have implemented the NECF. The amendments to Chapter 5 following implementation of the NECF (particularly the removal of clause 5.3.1(c)) removed the scope for any person not required to register with AEMO to elect to follow the connection process under Chapter 5. Therefore, the additional connection process obligations under the draft rule would:</p> <ul style="list-style-type: none"> • Add unnecessary administrative burden on DNSPs which will result in cost impacts to all customers; • Create confusion for customers in an already complex area; and • Potentially create confusion for DNSPs and increase the risk of processing errors. <p>The NSW DNSPs considered that these issues are particularly relevant given that Chapter 5A has the capability to address the connection process issues raised by the proponent's rule change request. That is, Chapter 5A already accommodates embedded generator connections which fall outside the basic standing model offer without the need to create a separate framework.</p> <p>The NSW DNSPs (p3) and Victorian DNSPs (pp7-8) strongly suggested that the AEMC clarifies the application of the connection process by amending the draft rule so it excludes connection compliant with AS 4777. That is, any amendment to the application of the draft rule should reflect:</p> <ul style="list-style-type: none"> • Embedded generators intending to register as registered participants must 	

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>apply for connection under Chapter 5;</p> <ul style="list-style-type: none"> • Load, micro embedded generators and non-registered embedded generators compliant with AS 4777 are to apply for a connection under Chapter 5A; and • Non-registered generators with a nameplate rating of 10kW to 30MW, outside the scope of AS 4777, are to apply for connection under the AEMC's proposed connection process (however, the NSW DNSPs consider that embedded generators between 5MW and 30MW would be more appropriate to have their connection progressed under Chapter 5 given the size of the generator). <p>Ergon Energy (p1) and Energex (p2) were concerned that the draft rule would allow embedded generators to 'shop' between various connection processes. This creates uncertainty for DNSPs which will inevitably increase compliance costs. Ergon Energy (p2) did not consider that embedded generator applicants should be treated any differently to other registered participants.</p> <p>Energex (p3) and the ENA (pp3-4) proposed a more preferable rule for consideration by the AEMC. This preferable rule would:</p> <ul style="list-style-type: none"> • For non-registered embedded generators contemplated by AS4777, apply the basic connection framework established under Chapter 5A; • For non-registered embedded generators not contemplated by AS4777, apply the draft rule; • Amend Chapter 5A to limit the scope of standard and negotiated connections to load customers; • For registered embedded generators, apply the connection framework established under Chapter 5; and • Narrow the scope of the existing Chapter 5 connection process to Registered 	

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>Participants only.</p> <p>The CEC (p11) recommended that the introduction of Chapter 5A is refined to strictly apply to generators which comply with AEMO's standing exemption class, and Chapter 5 is refined to clarify that it applies to all generation otherwise.</p>	
Definition of 'embedded generator' under the NER.	<p>Alinta Energy (p3) considered there is a view among some participants that the definition of 'embedded generation' under the proposed amendments to chapter 5 are vague, potentially creating ambiguity. That is, generation unregistered with AEMO should proceed under the proposed rule, but registered generators may also be required, depending on the definitional interpretation, to adhere to the normal connection process. Alinta Energy noted that while a matter of drafting, it would be desirable to avoid further carve outs and new chapters.</p> <p>AEMO (p1) noted that the NER defines 'embedded generating unit' as: "a generating unit connected within a distribution network and not having direct access to the transmission network". AEMO considered that this definition is ambiguous, as it could be taken to mean any generator connected to a distribution network including large generators connected for the sole purpose of participating in the NEM. To overcome this perceived problem, AEMO (p2) considered that the proposed process in the draft rule should apply only to generators exempted from the requirement to register with AEMO under clause 2.2.1(c) of the NER.</p> <p>Alternatively, it may be appropriate that the proposed process only be applicable for a generating unit or generating system below 10MW. This is due to TNSPs being required for systems of this size. Origin Energy (p3) also noted there is the potential for misinterpretation of the definitions under the NER as to the type of generation system that could be classified as an Embedded Generator as opposed to the embedded generation system envisaged under the proposed embedded generator framework.</p> <p>The NSW DNSPs (p8) noted that the draft rule determination clearly applies to non-registered embedded generators with a name plate rating between 10kW and 30MW. This intention is not adequately reflected in the draft rule. The definition in</p>	<p>The Commission notes that those connection applicants proposing to connect a generating system of a name plate rating greater than the standing exemption (currently 5MW) must seek registration. This is consistent with the definition of Embedded Generator which, for the purposes of Chapter 5, includes "a person who is required to, or intends to, register in that capacity", that is, as a generator.</p> <p>Currently under Chapter 10 of the NER, an 'Embedded Generator' is a 'Generator who owns, operates or controls an embedded generating unit.'</p> <p>Further, a 'Generator' is a person who engages in the activity of owning, controlling or operating a generating system that is connected to, or who otherwise supplies electricity to, a transmission or distribution system and who is registered by AEMO as a Generator under Chapter 2 and, for the purposes of Chapter 5, the term includes a person who is required to, or intends to register in that capacity'.</p> <p>As such, the Commission considers the definition and their scope are appropriate for all embedded generation connections and the final rule does not</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>the draft rule needs to be further clarified so that it is clear to embedded generators which framework they should be seeking to progress their connection. The proposed framework should only apply to those embedded generating units that are outside the scope of AS 4777.</p>	<p>amend the definition of an embedded generator.</p>
<p>The draft rule proposed an obligation on DNSPs to provide an ‘itemised statement of charges’ with an offer to connect</p>	<p>The NSW DNSPs (p7) noted their ability to provide itemised cost estimates was limited due to the contestability arrangements in NSW. Therefore, the NSW DNSPs can only provide itemised cost estimates for monopoly services. The proposed connection process must recognise this limitation on NSW DNSPs.</p> <p>The Victorian DNSPs (p19) considered that the ‘itemised statement of charges’ proposal was workable provided that where there are contestable services, the DNSP would be obliged to inform the connection applicant that it may obtain its own quotes from suitably qualified accredited service providers of these particular services.</p> <p>The CEC (p17) stated the detailed enquiry stage should reinforce the obligation on DNSPs to advise the connection applicant on which aspects of the connection are likely to be contestable. A new clause should be added to the detailed response in order to outline which aspects of the connection charges are contestable. The CEC (pp24-25) submitted that the connection cost estimates provided within the detailed response must be as complete as possible. In addition, the offer to connect must include final costs along with a justification for any deviation from any estimate already provided to the connection applicant. The CEC suggested the following level of detail be made available in both the detailed response and the offer to connect (draft clauses 5.4B(f) and 5.3.6(b2)(2)). In addition, any estimate should include written justification for any deviation from the former.</p> <ul style="list-style-type: none"> • A scope of work required to facilitate the connection; a statement of the basis on which charges were calculated; • A connection cost component breakdown, including: 	<p>The final rule requires a DNSP to provide connection applicants with an itemised statement of connection costs. This statement of connection costs must be provided as part of both the detailed enquiry response and the connection offer.</p> <p>The list of connection costs in the final rule differs slightly from the draft rule. The final rule includes the addition of: interface equipment costs and a description of any ongoing operational and maintenance costs and charges where undertaken by the DNSP. In the Commission's opinion including these items will provide greater transparency on the costs applicable to a connection applicant in planning and connecting an embedded generator to a distribution network.</p> <p>Further information on the itemised statement of connection costs may be found in section 13.2.3 of the final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<ul style="list-style-type: none"> — Connection service costs, including: <ul style="list-style-type: none"> • Network augmentation and/or network extension costs; • Connection asset cost, where provided by the DNSP; — Metering equipment costs; — Interface equipment costs; — Any other incidental costs, and a basis for their calculation; • A detailed description of any ongoing operation and maintenance costs and charges, and the associated schedule of works. 	
The draft rule proposed implementation and transitional arrangements, with the final rule expected to commence 1 July 2014	<p>The Victorian DNSPs (p19) supported the transitional arrangements as they appeared to be practicable to enable sufficient time to develop and publish the relevant information.</p>	<p>The final rule includes transitional arrangements.</p>
Additional issues/comments on the draft rule	<p>Origin Energy (p2) considered that a register or map of the fault level headroom at network connection points be published and regularly updated, perhaps as part of a DNSPs Annual Planning Report would assist in potentially deferring the need for network augmentation and the associated cost to the market.</p> <p>The NSW DNSPs (pp7-8) submitted that the provision of fault level information at the preliminary enquiry stage was inappropriate and failed to take into account that</p>	<p>DAPR already has this obligation for DNSPs to publish information about specific network constraints. The NER does not specify how the DNSP is to publish this information.</p> <p>As noted above, the intent of the preliminary enquiry response to provide general, high level</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>information of this nature is not readily available. It would be more practical to provide this information as part of the detailed response, which aligns with the current process under Chapter 5.</p> <p>The NSW DNSPs (p8) noted that the information requirements in the preliminary enquiry would be more appropriate to provide as part of the detailed response. If the expectation is that detailed information is required to be provided as part of the DNSP's preliminary enquiry, then the draft rule should be amended to allow DNSPs to charge a fee. Otherwise, embedded generators will not receive cost reflective price signals and other load customers would effectively be cross subsidising the costs associated.</p> <p>The proponents (p5) considered that the AEMC should provide more guidance to DNSPs' obligations governing their assessment of connection applications, for example, in relation to queuing.</p> <p>The NSW DNSPs (p8) were concerned that the proposed framework did not sufficiently recognise the iterative nature of processing embedded generation connections. The NSW DNSPs considered it important that the connection process provide the discretion for DNSPs to request further information from the connection applicant. Primarily as information that becomes available during the design phase may change or negate previously agreed project parameters.</p> <p>The NSW DNSPs (pp9-10) noted issues that have not been explicitly raised by the rule change request, but require further examination in order to facilitate efficient levels of embedded generation in the NEM. The NSW DNSPs noted that the discussion has been limited to whether embedded generators should pay deep network augmentation costs and has not touched on the issue of grid support and whether embedded generators should receive avoided DUOS and TUOS.</p> <p>The NSW DNSPs noted that while it is true that greater levels of embedded generation connections can lead to network investment deferral, it is important to qualify that currently this is generally limited because:</p>	<p>information and any project specific information that the DNSP has at hand that may help the connection applicant understand its connection options. Fault level information is an important decision variable for a connection applicant proposing the connection of an embedded generator.</p> <p>The Commission does not consider that queuing is appropriate. The final rule does not address queuing.</p> <p>The final rule does not prohibit either connection applicants or DNSPs from contacting one another to request additional information.</p> <p>These issues are out of scope for the current rule change request. The final rule does not investigate further the issue of grid support and whether embedded generators should receive avoided DUOS and TUOS.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<ul style="list-style-type: none"> • Generators cannot, for technical reasons, be generally relied on for network support; • Have no contractual obligation to operate at the times they are needed; and • Upgrading of the shared network is often required to accommodate embedded generation. <p>The NSW DNSPs noted that connection applicants that have connected generators to supply their own load have generally sought to retain access to network supply for standby/backup to cover maintenance and failures of their generation systems. This requires those network assets to be maintained as if the customer was using them. However, due to a lack of cost reflective tariffs, these generators are not paying for the grid support/standby capacity. This had led to a number of unintended consequences, including:</p> <ul style="list-style-type: none"> • Embedded generators not paying for the standby capacity they receive and being cross subsidised by other load customers; and • Portions of the network appear to be underutilised (as the capacity is being reserved for the embedded generator), making it difficult for DNSPs to allocate the available reserve capacity. <p>The NSW DNSPs considered that this could be addressed by reforming tariffs, so they are more cost reflective. They considered that a mechanism in the NER would need to be developed to correct the current cross subsidisation of grid support.</p> <p>The NSW DNSPs (p10) also noted that the commercial arrangements for embedded generators can vary widely depending on the metering arrangements. For example, a commercial building with a cogeneration system where the building is owner occupied and has a single metered entity; it can locate a cogeneration unit behind the meter, and avoid both retail and network charges fully. If the</p>	<p>As above.</p> <p>As above.</p> <p>As above.</p> <p>The Commission considers that the issue of metering arrangements is out of scope for this rule change request.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>building is tenanted, with many individually metered customers, the cogeneration system could be placed behind the base services meter and fully offset costs for that account. However, energy to the tenant accounts would at best, avoid the retail portion of the bill and full network charges would be paid by all tenants. The NSW DNSPs considered that the long term solution to this issue is to convey cost reflective pricing solutions to these customers. This would result in:</p> <ul style="list-style-type: none"> • Investment in embedded generation being based on efficient incentives; and • Efficient generation behaviour occurring once the investment has been made. <p>The CEC (p25) noted ambiguity in relation to the interpretation of definitions. They submitted that a distribution system consists of the sum of the connection assets and network – that is the NER and NEL only contemplate two types of system asset. A connection point is strictly the interface between these two assets and generating plant connects to connection points via connection assets, not extensions assets. An extension is strictly an extension of the network owned operated and controlled by the DNSP for the purpose of supplying network users' connection points, it cannot exist on the generator side of a connection point. Similarly, connection assets cannot exist on the distribution network – they are strictly located on the network user's side of the connection point and are the part of the distribution system which is dedicated to that particular network user. The NER currently allows any party to own, control and operate connection assets – they are already fully contestable. There is no economic rationale for restricting this to an NSP because connection assets have no direct relationship to a NSP's obligation to supply other network users.</p> <p>SG-Ecodesign (p1) considered that regulation is required that allows people the option to switch off from the network if they choose, while still allowing them to contribute to the grid. SG-Ecodesign suggested a legal minimum grid connect service that removes a home from using any grid supplied energy, but will allow solar energy to be put into the grid on a one way basis. Through a legislated low and fixed fee, customers would pay for the lines and wires, but would not have to</p>	<p>The Commission notes the comments of the CEC regarding the definitions of the elements in the distribution network. The Commission did not see a need for the amendment of these definitions in this rule change request.</p> <p>The issue of a legal minimum grid connect service that removes a home from using any grid supplied energy, but allowing it to export electricity is out of scope for consideration as part of this rule change request.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	pay for the energy in those lines.	
The draft rule provided a number of new and amended civil penalty provisions.	<p>Energex (pp4-5) and the ENA (p10) considered that the AEMC rationale for recommending some civil penalty provisions was in tension with the application of this rule to non-registered embedded generators. That is, non-registered embedded generators are exempt from registration because those generating units are not considered to have an impact on the operation of the NEM. Therefore, a breach is unlikely to pose a risk to the secure operation of the NEM.</p> <p>Energex and the ENA (p10) also considered that the other recommendations did not reflect a balanced approach, nor are sufficient in themselves to support the recommendation because:</p> <ul style="list-style-type: none"> • There is no evidence that DNSPs do not and would not comply with mandated timeframes; • A civil penalty provision is inconsistent with achieving positive cooperation between the parties; • The annual reporting requirements set out in clause S5.8 of the draft rule encourages compliance; and • The existence of the dispute resolution framework under Chapter 8 of the NER encourages compliance. <p>Energex (p5) also noted the inclusion of embedded generation in the demand management incentive scheme. It considered that the scheme would provide incentives for DNSPs to not only implement efficient non-network alternatives, or to manage expected demand for standard control services, but provide incentives to efficiently connect embedded generators.</p> <p>The Victorian DNSPs (p12) requested that the AEMC review clause S5.4B(k) which requires the DNSP to provide “any additional information relevant to the</p>	<p>Following consideration of submissions and stakeholder feedback on the civil penalty provisions, the Commission has amended some aspects of the final rule.</p> <p>For example, as noted by the Victorian DNSPs, imposing a civil penalty provision where the obligation is open-ended, and the DNSPs capacity to comply will be dependent on the information provided by the applicant, is not good regulatory practice. This clause is not a civil penalty provision in the final rule.</p> <p>Further information on the civil penalty provisions may be found in section 3.5 of the final rule determination.</p>

Position in draft rule determination	Issues raised in submissions	AEMC response
	<p>application to connect” to the applicant. A civil penalty is proposed in the event that the DNSP does not satisfy this provision. The Victorian DNSPs cannot accept liability for a civil penalty where the obligation is open-ended, and the DNSPs capacity to comply will be dependent on the information provided by the applicant.</p> <p>The CEC (p14) submitted that draft clause 5.1.2(b) be classified as a civil penalty provision to prevent DNSPs from pressuring connection applicants to use Chapter 5A rather than the new process in Chapter 5.</p>	

M Summary of submissions to the position paper

M.1 Submissions received

Australian Energy Market Operator (AEMO);

AGL;

Australand;

CitiPower and Powercor;

City of Melbourne;

City of Sydney;

Clean Energy Council (CEC);

Crown Resorts Limited;

Energex;

Energy Networks Association (ENA);

Ergon Energy;

Fotowatio Renewable Ventures Services Australia (FRV);

NSW DNSPs;

NSW Government: Trade and Investment, Resources and Energy;

Reposit Power;

Seed Advisory, ClimateWorks and Property Council of Australia (rule change proponents);

Total Environment Centre (TEC);

Utilitas Limited;

Victorian DNSPs;

Wood and Grieve Engineers;

WSP Group

M.2 Summary of stakeholder responses

Table M.1 Log of issues identified in submissions on the position paper

Stakeholder	Issue	AEMC response
Appropriate location for the connection process		
Energex (p1), Ergon Energy (pp1-2)	<p>The draft final rule was uncertain in relation to the proposed application and does not appear to adequately reflect the policy intent. Energex and Ergon Energy were concerned that a generating system may apply (or intend to apply) for an exemption from registration or be subject to the standing exemption and therefore not be considered a registered participant. To address this concern, Energex suggested deletion of clause 5.1.2(b) because the policy intent was for any generating system less than the standing exemption to follow the process outlined in Chapter 5A of the NER.</p> <p>Ergon Energy sought further clarification on which connection process an embedded generation applicant must follow based on their generating systems' size and where this is reflected in the rules.</p>	Further discussion on this matter may be found in Chapter 5 of the final rule determination.
ENA (p2)	<p>The ENA was concerned about the potential ambiguity in the draft final rule and position paper in relation to the application of clauses 5.3.1A(a) and (b). The ENA was concerned that it is unclear whether the new process will apply to all embedded generators connecting to a distribution network regardless of the generation capacity or market registration status. While the position paper provides guidance on this point, the ENA does not consider that intent is reflected in the rule.</p>	<p>Some drafting changes have been made to the final rule. These changes also pick up on AEMO's comments about a similar issue. Clause 5.3A.1(b) makes clear that a Connection Applicant is someone who intends to be an Embedded Generator or is required to seek exemption from being a Generator (because the relevant generating system is greater than 5MW). An Embedded Generator is defined as being a Generator, and a Generator needs to be a Registered Participant. Further information on this point may be found in Chapter 5 of the final rule</p>

Stakeholder	Issue	AEMC response
		determination.
Victorian DNSPs (pp1-3)	<p>The Victorian DNSPs noted that it was not clear whether the new connection process applied in both NECF and non-NECF jurisdictions and whether it was intended to cover registered and unregistered generation. In their view, the new process only applies to unregistered generators if agreed with the DNSP (NER 5.1.2(b)). Where it was more appropriate to follow the embedded generation process in the local jurisdictional instruments for unregistered embedded generators, the Victorian DNSPs may prefer not to apply the new connection process.</p> <p>Given the coverage of the new process is limited to registered embedded generators above 5MW and the compliance costs that this rule change will impose on network businesses, the Victorian DNSPs asked if the AEMC could clarify the purpose of adding this connection process to Chapter 5. That is, do the incremental benefits of this additional process justify the cost, given that embedded generators subject to the new process are currently subject to the existing Chapter 5 connection process.</p>	<p>Prior to the NECF (and in jurisdictions where NECF does not apply), a non-registered embedded generator could (or can) elect to have Chapter 5 apply – see clauses 5.3.1(c) and 5.3.2(a) of version 49 of the NER.</p> <p>Further discussion on this matter may be found in Chapter 5 of the final rule determination, including commentary on the Commission's justification for a new connection process under Chapter 5 of the NER.</p>
The rule change proponents (p2)	The definition of connection applicant in Chapter 10 of the NER should be amended to expand its application to "a person making a connection or an application to connect", as per rule 5.3A.	As a result of the clarification of the application of rule 5.3A, further amendments to the definition of connection applicant in Chapter 10 of the NER is not necessary. No changes have been made to the final rule.
Publication of an information pack		
ENA (pp3-4)	The ENA questioned the value of requiring network businesses to publish examples of connection service charges as part of their information packs. This is because this information would need to come with substantial caveats and a disclaimer that any upfront information is site specific.	The Commission considers that requiring DNSPs to publish example costs as part of their information packs will provide valuable information to connection applicants about the range of potential costs involved in connecting embedded generators. The more information there is available to connection applicants, the

Stakeholder	Issue	AEMC response
		greater their ability to plan efficient embedded generator connections.
CEC (pp3-4)	In order to properly address the diversity of embedded generation sizes and technologies, clauses 5.3A.3(b)(2) and (3) should require that single line diagrams and sample schematic diagrams are provided for different classes of embedded generator.	These comments are noted. The final rule does not oblige DNSPs to publish single line diagrams and sample schematic diagrams for different classes of embedded generator. They may do this at their discretion.
CEC (p4)	The information pack should be required to include those aspects of a connection which are contestable in the relevant jurisdiction.	The final rule requires a DNSP's information pack to provide "a list of services, if any, relevant to the connection that are contestable in the relevant participating jurisdiction".
CEC (p4)	The AEMC should explain the intent of clause 5.3A.3(6)(ix) as the meaning of aggregation is unclear and the position paper did not clarify the intent of this clause.	Aggregation has been amended to augmentation in the final rule.
CEC (p4)	The information pack would benefit from including the obligations on the parties at each stage within the connection process with the description of the process under clause 5.3A.3(b)(1).	Clauses 5.3A.3(b)(1)(i) and (ii) already make allowance for DNSPs to include the obligations on the parties at each stage in the connection process. The final rule has not been further amended.
Civil penalty provisions		
Energex (p4)	Any new civil penalty provisions should be considered as part of the broader review of enforcement regimes currently being undertaken by the Standing Council on Energy and Resources (SCER).	The Commission notes that each of the clauses identified by the DNSPs are already classified as civil penalty provisions in the existing connection process under Chapter 5 of the NER. DNSPs should have systems in place to deal with these civil penalty provisions given that they have been operating under these obligations for some time. That is, those clauses classified as civil penalty provisions in the draft final rule do not place any
ENA (pp2-3), Victorian DNSPs (p3)	The ENA was concerned with the inclusion of civil penalty provisions in relation to the detailed response to an enquiry. In particular, the clauses subject to civil penalty provisions relate to the provision of technical information, prudential requirements and anticipated costs. As these considerations are subject to negotiation between the connection applicant and DNSP, it is not appropriate to subject these matters to	

Stakeholder	Issue	AEMC response
	<p>civil penalties.</p> <p>Under the offer to connect, should a DNSP require additional network studies to determine the appropriateness of a connection, the connection applicant has the ability to unreasonably withhold consent to extend the timeframe. This may result in the it being liable for civil penalties, despite the necessity of the time extension to adequately assess the application. The ENA recommended that the civil penalty provisions in the detailed response stage be removed from the final rule.</p>	<p>additional obligations on DNSPs compared to the current arrangements.</p> <p>The Commission considers that the new connection process will provide connection applicants with more transparent information relevant to the connection enquiry for them to make informed decisions. That is, as a result of the NER prescribing the obligations on both parties with respect to the information to be provided at each stage of the connection process, that it is not necessary to recommend further compliance obligations.</p>
Victorian DNSPs (p3), CitiPower and Powercor (p2)	<p>The detailed enquiry response included civil penalty provisions in NER clause 5.3A.8. DNSPs considered these were inappropriate given that the information requirements in the relevant clauses are uncertain, variable on a case-by-case basis and subjective. That is:</p> <ul style="list-style-type: none"> • the information required by draft clause S5.4B(f) relating to technical information may vary on a case-by-case basis; • the information required by draft clause S5.4B(g) relating to prudential requirements is a matter for negotiation between the DNSP and the embedded generator (under clause 6.21.1(b)); and • the application fee payable required by clause S5.4B(m) is only required to include the reasonable costs anticipated to be incurred by third parties whose participation in the assessment of the application to connect will be required per draft clause 5.3A.4(e)(2)(ii). Therefore, a civil penalty provision relating to the application fee payable to be provided at this stage is inappropriate. 	<p>The final rule does not amend any of the civil penalty provisions outlined in the draft final rule. Further discussion on this matter may be found in section 3.5 of the final rule determination.</p>
CEC (p11)	<p>The draft final rule appeared to be a significant relaxing of the existing civil penalty provisions when compared with the connection process under Chapter 5.</p> <p>The intent of the current civil penalty provisions within clause 5.3.3(b), (b1) and (c) are that the DNSP must provide the information relevant to the connection enquiry such that the connection applicant can make an informed decision on their</p>	<p>The Commission acknowledges the comments from the CEC, but as noted above does not consider it necessary to recommend any additional civil penalty provisions in the final rule.</p>

Stakeholder	Issue	AEMC response
	<p>investment and fully appreciate the commercial implications of their decisions.</p> <p>There does not appear to be any material difference in the information included in the preliminary and detailed responses, and is required for exactly the same reasons as the information which is currently subject to civil penalty provisions in clause 5.3.3. Therefore, the CEC suggested the final rule apply civil penalty provisions to clause 5.3.7(a), and clause 5.3A.8(g) (to apply to the entire Schedule 5.4B), which it considered would be uncontroversial being consistent with the spirit of the existing penalty provisions.</p>	
Connection process timeframes generally		
Energex (p3), ENA (p3), Victorian DNSPs (pp3-4), CitiPower and Powercor (p3)	<p>In regards to the timeframes for the various stages of the connection process, the final rule should clearly define when the timeframes specified for the provision of information and response commence and conclude in order to avoid confusion and disputes between DNSPs and connection applicants. That is, the timeframe for the DNSP to respond are calculated from the time that the deficiencies are remedied.</p> <p>For example, DNSPs noted in preparing the offer to connect it is unclear whether the time taken for a connection applicant to provide any further information requested by the DNSP is included or excluded from the four month timeframe. The four month period should start after the DNSPs have received all of the required information.</p>	<p>Clause 5.3A.7 (preliminary response) in the final rule has been amended so that the timeframe for the provision of the preliminary response runs from when additional information is provided (if requested) or otherwise 15 business days. This amendment is to maintain consistency with clause 5.3A.8 (detailed response) where the final rule makes this allowance.</p> <p>In relation to comments from DNSPs, clause 5.3.6(a)(2) has been amended to include 'and all such additional information (if any) requested under clause 5.3A.9(d)'. This amendment to the final rule is to maintain consistency with the amendments outlined above.</p>
Victorian DNSPs (pp3-4)	<p>The following drafting to account for the time disregarded due to a dispute in the draft final rule 5.3A.2(c) was proposed:</p> <p>(c) Where this rule 5.3A fixes a time limit for the provision of information or a response, for the purpose of calculating elapsed time, the period that:</p>	<p>The suggested drafting provided for clause 5.3A.2(c) has been adopted in the final rule.</p> <p>Clause 5.3A.2(d) was not adopted in the final rule.</p>

Stakeholder	Issue	AEMC response
	<p>(i) commences on the day when a dispute is initiated under clause 8.2.4(a); and</p> <p>(ii) ends on the day on which the dispute is withdrawn or is resolved in accordance with clauses 8.2.6D or 8.2.9(a), is to be disregarded;</p> <p>(d) For the avoidance of doubt, the days on which the events referred to in clause 5.3A.2(c) are to be included in the period of time that is to be disregarded".</p>	
Preliminary enquiry response		
<i>Ability to skip the preliminary enquiry stage - relevant timeframe</i>		
Victorian DNSPs (p5)	<p>Clause 5.3A.5(g) enables the proponent to seek a bypass the preliminary response stage and request that the NSP provide a detailed response to the enquiry. The NSP has five business days to acknowledge receipt of the enquiry and to request further information if the enquiry is incomplete. If the material provided in the enquiry is to be assessed for suitability for a detailed response then a five business day response period is insufficient. As specialist resources are required, the NSP should be provided with a longer timeframe, such as ten business days, consistent with the review undertaken by the NSP in 5.3A.8(b).</p>	<p>The final rule has been amended to provide DNSPs with 10 business days to assess the suitability of an enquiry for a detailed enquiry response only, when a connection applicant requests to bypass the preliminary response stage. Further discussion on this point may be found in section 7.2.2 of the final rule determination.</p>
<i>Content of the preliminary enquiry response</i>		
Energex (p2), ENA (p4), Victorian DNSPs (pp4-5), NSW DNSPs (pp1-2), CitiPower and Powercor (p3)	<p>Energex and the ENA considered that Schedule 5.4A requires DNSPs to provide a considerable level of detail specific to individual connection applications in its preliminary response, which may not necessarily be 'at hand'. As these costs are being absorbed by the DNSP, it is not reasonable to request NSPs to provide detailed information that requires analysis. This comment relates to:</p> <ul style="list-style-type: none"> • clauses S5.4A(a)(5) and (6) requiring the inclusion of existing fault levels and fault level clearance times of relevant zone substations and switching and isolation facilities. This information is not typically provided on a site-specific basis at the preliminary stage and the businesses suggested these obligations 	<p>The final rule does not change the information requirements for the preliminary enquiry response.</p> <p>Further discussion on the contents of the preliminary enquiry response may be found in section 7.2.3 of the final rule determination.</p>

Stakeholder	Issue	AEMC response
	<p>be moved to the detailed enquiry response;</p> <ul style="list-style-type: none"> • clause S5.4A9(l) requires DNSPs to include in the preliminary response "an indication of whether network augmentation may be required and if required, what work the network augmentation may involve". Energex and the NSW DNSPs did not consider that at this stage sufficient analysis would have been done to provide details of any augmentation that may be required. Therefore, they suggested that the second part of this clause be deleted, or the clause be moved to S5.4B; • clauses S5.4A(g) and (n) appeared to duplicate some of the requirements already published in the information pack. Energex considered that the level of information in the information pack would be more than sufficient for a preliminary response. The Victorian DNSPs did not consider that clause 5.4A(n) was necessary in the preliminary response and should be excluded. The NSW DNSPs considered that the AEMC amend the drafting of this clause to better reflect the policy intent, which was for DNSPs to provide high level generic examples of options for connecting to the DNSPs network rather than actual considered options for connecting. 	
NSW DNSPs (p1)	<p>The NSW DNSPs considered that the policy intent of draft clause S5.4A(f) was for the DNSP to inform the connection applicant that for certain services required to establish the connection it may obtain its own quotes for suitably qualified service providers. As such, the itemised statement of costs only related to the provision of monopoly services required to establish the connection. The NSW DNSPs suggested rewording this clause to read:</p> <p>(f) where relevant the <i>DNSP</i> is to identify whether any service required to establish a connection is <i>contestable</i> in the relevant <i>participating jurisdiction</i>.</p>	<p>The final rule clarifies that, where relevant, the DNSP is to identify whether any service required to establish a connection is contestable in the relevant participating jurisdiction.</p> <p>Further discussion on the contents of the preliminary enquiry response may be found in section 7.2.3 of the final rule determination.</p>
NSW DNSPs (p1)	<p>Clause S5.4A(h) would be better placed in S5.4B. While the intent of this clause was to provide proponents with an early indication of whether constraints exist in the specific location they are looking at connecting to, the NSW DNSPs were concerned that any information provided at this early stage would need to be</p>	<p>The final rule still requires DNSPs to identify whether constraints exist in the location of the proposed connection to the extent possible.</p>

Stakeholder	Issue	AEMC response
	heavily qualified which may render the value of this information useless or possibly misleading.	Further discussion on the contents of the preliminary enquiry response may be found in section 7.2.3 of the final rule determination.
Detailed enquiry response		
<i>Information requirements of the detailed enquiry response</i>		
Energex (pp2-3), Victorian DNSPs (p5), Ergon Energy (p1)	<p>Energex and Ergon Energy considered that clause 5.4B(j) relating to "all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained within the NER". While the Victorian DNSPs noted these requirements are currently an aspect of existing Chapter 5, these distribution businesses did not consider it appropriate for DNSPs to bear the risk of providing legal advice pertaining to planning and environmental laws.</p> <p>If this clause is to be retained the Victorian DNSPs stated that the final rule should set out the expectations in relation to the provision to better clarify responsibilities and assignment of risk.</p>	<p>The final rule retains the requirement for DNSPs to provide information relating to all risks and obligations in respect of the proposed connection associated with planning and environmental laws not contained within the NER. The drafting of this clause in the final rule uses the wording of the existing obligation in Chapter 5 of the NER.</p> <p>Further discussion on the contents of the detailed enquiry response may be found in section 8.2.5 of the final rule determination.</p>
NSW DNSPs (p2), CEC (p8)	<p>The NSW DNSPs had specific comments regarding clause S5.4B(e) relating to whether negotiated access standards may be required. In its opinion, this question can only be answered by the connection applicant. Consequently, this responsibility sits more appropriately with the connection applicant rather than the DNSP.</p> <p>The CEC also considered that clause S5.4B(e) was misleading as a connection applicant should assume that negotiated access standards will be required, even if they are proposing to meet the automatic access standards. For this reason, the CEC recommended the deletion of clause S5.4B(e) from the final rule.</p>	<p>Following consideration of submissions on this matter, the Commission is satisfied that the connection applicant should know that negotiated access standards will be required. Consequently, this clause has been removed from the final rule.</p>
CEC(p8)	Draft clause S5.4B(b) which stipulated that the DNSP nominate whether negotiated access standards are required was removed in the draft final rule. However, its removal has omitted the obligation for a DNSP to notify the enquirer of the	An obligation for a DNSP to notify the enquirer of the negotiated access standards which may require AEMO's involvement has been re-inserted

Stakeholder	Issue	AEMC response
	negotiated access standards which may require AEMO's involvement. The CEC recommended a new paragraph (b) that aligned the detailed response obligations with the existing clause 5.3.3(b1).	as a new clause (clause S5.4B(e)) in the final rule. Further discussion on the contents of the detailed enquiry response may be found in section 8.2.5 of the final rule determination.
CEC (p8)	Although discussed in the position paper, the new clause which replicates the technical information required to be provided to undertake network studies to determine the negotiated access standards does not appear to be in draft final rule S5.4B.	The clause relating to the technical information to be included with the application to connect is outlined in clause S5.4B(f) of the final rule.
FRV (p2)	FRV suggested an amendment to S5.4B to include options for connecting at more than one point in the network and reasons for preferred and rejected alternative options. This is essentially a relocation of the existing provision under 5.3.6(e) from the offer to connect stage to the detailed enquiry response stage. FRV considered that this recommendation was also consistent with the transmission frameworks review.	The final rule does not include an obligation for the detailed enquiry response to consider options for connecting at more than one point in the network. The Commission was concerned that this may mean that DNSPs need to provide a detailed enquiry response for each option investigated. However, the preliminary enquiry response requires DNSPs to provide an overview of any available options. Therefore, the connection applicant should be aware of the available options for connection. Further, the discretion to provide options at the connection offer stage remains.
<i>Timeframe for validity of the detailed response</i>		
Wood and Grieves Engineers (p1), Australand (p1), City of Sydney (p1), Crown Resorts (p1) Utilitas (p1), TEC	The validity period between the detailed response and application stages should be reestablished. A six month period would be appropriate, and an extension may be granted if the connection applicant and DNSP agree. This consent should not be unreasonably withheld by either party. The rule change proponents contended that DNSPs already have validity periods	The final rule does not provide for a mandatory validity period between the detailed enquiry response and the submission of an application to connect. The final rule retains the ability for the DNSP to agree to the detailed enquiry response remaining valid for a specified period of time to

Stakeholder	Issue	AEMC response
(p1), WSP Buildings (p1), the rule change proponents (pp2-3).	for load customers, which is in most cases six months. Therefore, it is discriminatory and inconsistent with established DNSP practices to deny embedded generators the same opportunity as load customers.	allow the connection applicant to lodge an application to connect within that time. Further discussion on the optional validity period may be found in section 8.2.3 of the final rule determination.
AGL (pp1-2)	AGL supported the Commission's decision to provide a choice for parties to agree on a validity period if, and when, it is warranted. However, in the absence of a validity period, AGL suggested explicit obligations requiring distributors to promptly disclose any potential changes to their earlier advice - where relevant to access requirements. These obligations should, for example, include the reasons why the earlier requirements will or may change including new or concurrent applications that may affect the ability to connect as advised. In AGL's view, it is problematic for project delivery if distributors can make significant changes to connection requirements with little notice or warning.	The Commission considered including a mechanism in the final rule obliging DNSPs to inform connection applicants where there had been a material change in the advice provided as part of the detailed enquiry response. However, any mechanism would likely be very onerous on DNSPs from a reporting perspective. The Commission considers that any additional mechanism in the final rule represents a significant departure from the possible agreement on a validity period described in draft final rule. Furthermore, the NER does not prevent either DNSPs or connection applicants from periodically enquiring about the current status of any advice received. For this reason, the final rule does not include a mechanism for DNSPs to inform of any material changes to its advice. Further discussion on this proposed mechanism may be found in section 8.2.3 of the final rule determination.
FRV (p1)	Schedule 5.4B(n) should be amended such that the proposed option for a validity period mechanism be replaced with a mechanism where the DNSP writes to confirm the connection applicants intention of proceeding with an application to connect 12 months after the detailed response to an enquiry has been provided, if	See comments above.

Stakeholder	Issue	AEMC response
	the connection applicant has not already provided an application to connect. This letter must outline whether there have been any changes to the network that may affect the information contained within the detailed enquiry response.	
CEC (pp7-8)	<p>The optional validity period should not be included in the final rule. The validity period would only serve to confuse the fact that this agreement can be made under a commercial agreement outside of the NER. Further, including it in the final rule will create an inconsistency with the remainder of the NER as this concept is not included in any other NER-defined connection process.</p> <p>Instead, the CEC recommended that it be replaced with a mechanism where the DNSP writes to confirm the connection applicant's intention of proceeding with the application to connect every three months after the detailed response has been provided. In doing so, the DNSP must also be required to confirm whether there have been any changes to the network that may affect the currency of the information provided in the detailed response. The CEC considered that any fees associated with this reporting be included in the fee for the detailed enquiry response.</p>	See comments above.
Application to connect		
<i>Timeframe for DNSP to advise of a material information deficiency</i>		
Energex (p3), ENA (p3), Victorian DNSPs (p4), CitiPower and Powercor (p3)	Energex, the ENA and the Victorian DNSPs considered that the five business day timeframe to review an application to connect and advise the connection applicant of a deficiency was too short. Given the requirement for DNSPs to undertake complex design and technical analysis of the application to connect at this point in the process, Energex and the Victorian DNSPs considered that this timeframe should be extended to ten business days.	<p>Given the requirement for DNSPs to undertake complex design and technical analysis of the application to connect at this point in the process, clause 5.3A.9 of the final rule has been amended to provide ten business days for this evaluation.</p> <p>Further discussion on this point may be found in section 9.2.1 of the final rule determination.</p>
Offer to connect		

Stakeholder	Issue	AEMC response
<i>Costs included in the itemised statement of costs</i>		
Energex (pp2-3), Ergon Energy (p1)	<p>The itemised statement of costs should not include "details of any ongoing operation and maintenance costs and charges to be undertaken by the DNSP". This was because these costs are typically factored into network tariff charges and may be a component of the shared network cost and, as such, are difficult to isolate.</p>	<p>Connection agreements may contain customer specific connection services that may include maintenance of any generating facilities and/or substations. The classification of these services will dictate how the DNSP will recover this cost from the connection applicant. For example, where these services are classified as unregulated or negotiated services, the DNSP will typically charge a fee to the connection applicant to undertake the work. Where a fee is charged, the Commission considers it appropriate for the fee to be included in the itemised statement of connection charges.</p>
Energex (p3)	<p>The offer to connect is to contain an itemised statement of costs. The final rule should clarify that DNSPs costs should not include third party costs (where applicable), for example, AEMO or TNSP costs.</p>	<p>The Commission does not consider that the final rule requires amendment to address the issue of third party costs. This is because the NER already addresses third party costs throughout the connection process where appropriate. For example, clause 5.3A.4(e)(2)(ii) states that the application fee include the "reasonable costs anticipated to be incurred by AEMO and other NSPs whose participation in the assessment of the application to connect will be required".</p>
NSW DNSPs (p2)	<p>The NSW DNSPs had specific comments regarding clauses S5.4B(h) and (i) of the itemised statement of costs. There would be benefit in further clarifying these clauses to reflect the contestability arrangements in NSW, as DNSPs are able to identify and inform the connection applicant which services required to establish a connection will be contestable, and as a result, the NSW DNSPs will only be able to provide estimates for the monopoly services required to establish the connection.</p>	<p>The intention of the itemised statement of costs is for DNSPs to provide any costs relevant to the services they intend to provide to the connection applicant. To more adequately reflect this intent, the leading paragraph of clauses 5.3.6(b2)(1) and S5.4B(h) in the final rule have been amended to</p>

Stakeholder	Issue	AEMC response
		state "so far as is relevant and in relation to services the DNSP intends to provide...".
CEC (p4)	The wording of draft clause S5.4B(h)(5) for the itemised statement of costs should be amended to the "interface equipment required to provide the connection and associated costs", rather than the "interface equipment contained in the offer to connect".	The wording of clause S5.4B(h)(5) has been amended in the final rule to state interface equipment required to provide the connection and associated costs.
<i>Timeframe for connection applicant to accept the offer to connect</i>		
Wood and Grieve Engineering (p1), Australand (p1), City of Sydney (p1), Crown Resorts (p1) Utilitas (p1), TEC (p1), WSP Buildings (p1), the rule change proponents (p2)	Draft clause 5.3.6(b3) should relate to the connection applicant's acceptance of an offer to connect and be amended such that DNSPs may not unreasonably withhold consent to an extension greater than the required 20 business days.	Clause 5.3.6(b3) in the final rule has been clarified to allow a connection applicant to request an extension of time longer than the 20 business days and if so requested, the DNSP should not unreasonably withhold consent to this extension.
<i>Stop the clock mechanism</i>		
Energex (p3), Victorian DNSPs (p4), CitiPower and Powercor (p2)	The timeframe for the offer to connect under clause 5.3.6(a) should be extended to include time taken to consult with other DNSPs (in addition to AEMO and TNSPs).	Following submission of all required information by the connection applicant, the consequent preparation of the offer to connect should include any internal analysis and consultation with AEMO or TNSPs conducted by the DNSP. As such, the Commission still considers that any analysis and/or consultation required by a DNSP at this stage should be subject to the four month timeframe, which may be extended by mutual agreement. Consequently, the final rule does not provide the ability for DNSPs to stop-the-clock

Stakeholder	Issue	AEMC response
		<p>where they are required to consult with TNSPs and AEMO when preparing an offer to connect.</p> <p>Further discussion on this matter may be found at section 9.2.3 of the final rule determination.</p>
ENA (p3), Victorian DNSPs (p4), CitiPower and Powercor (p2)	<p>The position paper noted that the stop the clock mechanism is no longer required due to the removal of the 'agreed project' and 'fast-tracked' connection application process, but it still remained in the draft final rule. The ENA and Victorian DNSPs supported the retention of the stop the clock mechanism because it provides transparency and (if civil penalty provisions are retained) it prevents DNSPs being liable for breeches in timeframes where third parties provide information late.</p>	See comments above.
FRV (p1), the rule change proponents (p3), CEC (p3)	<p>Draft clause 5.3.6(a2)(1) should be deleted so there is no stop-the-clock provisions for a DNSP to consult AEMO or a TNSP.</p> <p>The CEC noted that parties can already seek to extend the four month timeframe under reasonable circumstances. Clearly, delays caused by third parties would fall into the category of a 'reasonable' need to extend, therefore clause 5.3.6(a2)(1) is effectively duplicative and unnecessary.</p>	See comments above.
Register of completed projects		
Energex (p3), ENA (p3), Victorian DNSPs (pp3-4), CitiPower and Powercor (p2)	<p>The draft final rule would require DNSPs to publish the details of all embedded generating units, including solar PV installations. Therefore, Energex considered that the scope should be amended to require the publication of details of embedded generating systems greater than the standing exemption (that is, 5 MW).</p>	<p>The final rule has been amended to include a local definition of 'completed embedded generation projects', which includes the generating units of a Generator (that is, a registered participant) or of someone who was required to seek exemption from registration in relation to that embedded generating unit (that is, the embedded generating unit has a nameplate capacity in excess of 5MW). As a result, the final rule will only apply to registered participants.</p>

Stakeholder	Issue	AEMC response
ENA (p3)	<p>The ENA questioned the value of the register of completed projects as successful projects are generally very site specific and assessed on a case by case basis. The AEMC should provide further reasoning of the cost versus benefit analysis.</p>	
Victorian DNSPs (p4)	<p>The Victorian DNSPs were concerned that even where appropriate and clear disclaimers are provided regarding the use of information in the register, it risks misleading connection applicants to the extent that they base decisions on the information contained in the register. That is, the benefit is unclear.</p> <p>In addition, information required in the register may be confidential. Given that time and resources will be required to seek permission from connection applicants to publish this information, sufficient time should be provided for implementation of the new rule.</p>	<p>The purpose of the register is to provide potential connection applicants with up-to-date information on the type of generating plant, including connection configuration, that has been connected to a DNSP's network. The register will also allow embedded generation connection proponents to make more informed connection enquiries and should therefore reduce the time and resources required by DNSPs to respond.</p> <p>Importantly, the register of completed projects is only intended as a guide for connection applicants and DNSPs are not obliged to accept an application to connect based on a configuration outlined in their register.</p> <p>Publishing this information will increase efficiency in investment decisions through the earlier identification of projects that may not be commercially feasible and therefore not proceed, preventing the unnecessary commitment of resources. The information in the register may also allow applicants to submit more targeted questions to the DNSP, potentially providing for a quicker and more relevant response, and thus increasing the efficiency of the connection application process. The Commission considers the benefits to the market of more transparent and upfront information, and therefore increased efficiency in the connection process, will outweigh any costs to DNSPs of implementing the register.</p> <p>Further discussion on this matter is provided in</p>

Stakeholder	Issue	AEMC response
Wood and Grieves Engineers (p1), Australand (p1), City of Sydney (p1), Crown Resorts (p1) Utilitas (p1), TEC (p1), WSP Buildings (p1), City of Melbourne (p1), the rule change proponents (p2)	<p>The register of completed projects should also publish the makes and models of the embedded generation equipment connected to a DNSPs network.</p> <p>Stakeholders noted that other Australian public registers include similar aggregate information to assist market participants of various sectors. Information on makes and models would especially benefit new and smaller embedded energy applicants.</p>	<p>section 11.2.1 of the final rule determination.</p> <p>The register of completed projects in the final rule includes the make and model in addition to the type of technology of embedded generator equipment.</p>
CEC (p10)	<p>The suggested drafting changes including:</p> <ul style="list-style-type: none"> • Connected is 'undefined', therefore, is the register only for generators that have completed the physical connection, signed a connection agreement, or commissioned? • Some information on the register is included in the generator performance standards, which are a component of connection agreements. That is, they contain confidential information and conflict with clause 5.4.5(b). This includes, clauses (b)(2), (3), (5), (6) and (7). • The draft final rule provides no clear linkage between the register being created and updated and its publication. Is it intended to be a component of the annual planning report, or kept on a DNSP's website and updated in sync with the planning report or at the DNSP's discretion. The final rule should make this clear. • Draft clause 5.4.5(b)(6) on 'protection schemes' should be complemented by 'communication systems'. 	<p>Following consideration of the drafting changes suggested by the CEC, the final rule:</p> <ul style="list-style-type: none"> • defines 'connected'; • continues to make obligations around the register subject to the confidentiality provisions under rule 8.2 of the NER, so no changes have been made in relation to how confidential information is to be treated; • requires the register of completed projects to be established, so it will need to be operational from when the rule commences and then updated by the DAPR date each year; and • amends clause 5.4.5(b)(6) to include communication systems. <p>Further discussion on the register of completed</p>

Stakeholder	Issue	AEMC response
		projects may be found in section 11.2.1 of the final rule determination.
Dispute resolution		
AEMO (p1)	There may be value in including an educative statement in the final rule determination noting that rule 8.2 applies to all connection applications.	An overview of the current operation of the dispute resolution process under Chapter 8 of the NER is provided in the final rule determination in Appendix G. Further discussion on the dispute resolution process may be found in section 12.2 of the final rule determination.
CEC (p9)	In order to ensure that stakeholders are fully informed, the final rule determination outline how the process for seeking arbitration over a technical dispute may work in practice.	See comments above.
Commencement date of the final rule		
Energex (p4)	The implementation of the new framework should be delayed to align with the NECF commencement date for that jurisdiction, as this would avoid unnecessary duplication of effort and potential confusion for connection applicants.	After considering the changes the final rule will make to the current NER, the progress already made by DNSPs in providing relevant public information, and the importance of not unduly delaying the introduction of the new connection process, the Commission has concluded that 1 October 2014 is an appropriate commencement date for this final rule. Further information on the implementation date and transitional arrangements for the final rule may be found in Appendix J of the final rule determination.

Stakeholder	Issue	AEMC response
ENA (p4)	The six month delay to commencement of the rule was a reduction from the nine month implementation period outlined in the draft rule determination. Given the new documentation and business processes that will need to be developed to comply with the rule, the nine month implementation period be reinstated.	See comments above.
Victorian DNSPs (p5), CitiPower and Powercor (p2)	The six month implementation period was reduced from nine months in the draft rule determination. Given the requirements for DNSPs to create and publish new documents and obtain permission from existing generators to publish details of these connections, the rule should commence on 1 January 2015, which allows an eight month implementation period.	See comments above.
Ergon Energy (p2)	<p>This rule change was sufficiently comprehensive to warrant further time for DNSPs to ensure that they will be compliant with the final rule prior to commencement. Ergon Energy provided the following reasons:</p> <ul style="list-style-type: none"> <li>• Queensland and South Australian DNSPs are heavily engaged in the development of their regulatory proposals. Ergon Energy's regulatory proposal is due to the AER on 31 October 2014; <li>• The Queensland Government has conditionally agreed to adopt the NECF in 2014 after consideration of options that will ensure that protections for customers outside of south-east Queensland are delivered. This implementation will require significant resources and system changes; and <li>• system upgrades will be required to ensure that Ergon Energy can maintain the public register of completed projects. <p>In light of the above issues, Ergon Energy recommended delaying the commencement of the final rule until 1 July 2015.</p>	See comments above.
Wood and Grieve Engineering (p1), Australand (p1),	The new rules should be implemented by 1 October 2014, or sooner, as it has already been a long process with adequate consultation.	See comments above.

Stakeholder	Issue	AEMC response
City of Sydney (p1), Crown Resorts (p1) Utilitas (p1), TEC (p1), WSP Buildings (p1), the rule change proponents (pp1-2)		
CEC (p11)	The six month commencement period was appropriate to allow implementation of the final rule.	See comments above.
Transitional arrangements		
Ergon Energy (p2)	The final rule should contain transitional arrangements to support the move to the new process. These transitional arrangements should be embedded in the NER to ensure regulatory certainty for market participants.	<p>Transitional arrangements have been included in the final rule. These arrangements should enable the new process to be accessed immediately for some connection enquiries that may be underway already. It would also allow flexibility to fully transition to the new process if the DNSP prefers as the DNSP can request agreement to do so from current enquirers.</p> <p>Further information on the transitional arrangements are outlined in Appendix J of the final rule determination.</p>
CEC (p11)	The transitional arrangements outlined in the draft final rule would be sufficient. This would enable the new process to be accessed immediately for some connection enquiries that may be underway already. It would allow flexibility to fully transition to the new process if the DNSP prefers as the DNSP can request agreement to do so from current enquirers.	See comment above.
CEC (p11)	It is not clear that there is any benefit to restricting a detailed cost estimate to generators below 30 MW during the transitional phase. This breakdown should be	The transitional arrangements in the final rule do not restrict the operation of the itemised

Stakeholder	Issue	AEMC response
	applied to all offers to connect made after the commencement date.	statement of connection costs.
Other issues		
<i>Addressing the 'last-in, worst dressed' issue</i>		
DSDBI (pp2-4)	<p>The DSDBI was not convinced that the NER, or the operation of the NER in practice, was able to overcome this issue as discussed in the draft rule determination. That is, while the NER may make provisions for a negotiated agreement that takes into account the value of shared augmentation to other users, it is unclear whether this is occurring, given power imbalances between DNSPs and proponents, particularly at the smaller scale, and potentially a lack of incentives for distribution businesses to provide such cost sharing arrangements.</p> <p>DSDBI also noted that clause 6.7.1(6) focuses on cases where the new asset provides services that are 'subsequently used to provide services to another person'. DSDBI argued that it did not specifically address connections which occur prior to the point in time that new connection is requested, but which result in a threshold being reached, triggering the need for augmentation.</p> <p>For these reasons, the DSDBI supported the development of a cost sharing mechanism that more precisely allocates network augmentation costs to those parties that benefit from the augmentation, where appropriate and practicable.</p>	<p>The Commission notes stakeholder concerns about the usefulness of the NER in addressing the 'last in, worst dressed' issue. However, as noted by a number of stakeholders, the issue of appropriate cost sharing is a matter that would require significantly more work to resolve. It would require consideration of its application to load customers as well as generators across the NEM rather than focussing on the impact on embedded generators alone.</p> <p>Because of this wide scope, any amendments to clause 6.7.1(6) or Schedule 5.6 are outside of the scope of this rule change request on connecting embedded generators. This issue would be more appropriately considered in another forum where careful consideration of the wider implications of changing the current cost sharing arrangements can be fully assessed.</p> <p>Further discussion on this matter may be found in section 13.2.4 of the final rule determination.</p>
<i>Contestable provision of connection infrastructure</i>		
NSW Government - Trade, Investment, Resources and	NSW has the most developed contestable services regime utilising Accredited Service Providers to provide connection services to retail customers. The NSW Government considered it appropriate to note that this regime does not apply to	The comments are noted.

Stakeholder	Issue	AEMC response
Energy (p1)	generators covered by Chapter 5. Division 4 of Part 3 of the <i>NSW Electricity Supply Act 1995</i> addresses the arrangements for customer connection services and specifically states in Section 24 (3) that these are connection services within the meaning of Chapter 5A of the NER.	
<i>Explicit categorisation of energy storage as an embedded generator</i>		
Reposit Power (pp1-2)	The use of 'input' under rule 5.5(d) regarding the level of power transfer capability appeared ambiguous. Reposit Power suggested the definition of embedded generator be amended to include energy storage capable of both power input and output. Energy storage connection applicants should then be required to specify the maximum power transfer capability, real and reactive, in both directions.	The Commission considers that given the characteristics and size of energy storage, generally less than 5MW (even in aggregate form), it is more likely that energy storage will be connected under Chapter 5A of the NER. For further information on the regulatory framework for these types of devices, see the AEMC 2012, <i>Energy market arrangements for electric and natural gas vehicles</i> , Final Advice, 11 December 2012.
<i>Streamlining multiple connection applications of identically sized embedded generators</i>		
Reposit Power (p2)	The NER currently appears to allow multiple generating units to connect at the same point of connection. Reposit Power anticipates connecting identical energy storage units at multiple residential locations with separate points of connection to a distribution network feeder. Therefore, Reposit Energy suggested there should be a method for group submission of multiple connection applications for identical, kW-scale embedded generating units to the same DNSP, recognising that the workload of responding to these applications will be greatly reduced by their similarity.	<p>The Commission notes that the <i>Small Generation Aggregator Framework</i> rule change request introduced a new category of registered participant called a small generation aggregator. This rule change allowed the connection of one or more small generating units each as a market generating unit, with each market generating unit having a separate connection point.</p> <p>Reposit Energy noted that most energy storage is connected in conjunction with solar voltaic systems. It is the expectation of the Commission that these connections will most likely be processed under Chapter 5A of the NER owing to</p>

Stakeholder	Issue	AEMC response
		their smaller size. As energy storage becomes a mainstream technology, the Commission expects that DNSPs will start to make basic and standard connection offerings available for the connection of these systems. The Commission considers that Chapter 5A would be a more appropriate location in the NER to address this issue and has therefore made no changes to the final rule.

M.3 Summary of drafting issue

Table M.2 Log of drafting issues identified in submissions on the position paper

Stakeholder	Issue	AEMC response
AEMO (pp1&3)	There is some ambiguity in relation to the process that will apply to embedded generators that do not meet the standing criteria for exemption, but intend to apply to AEMO for exemption. Draft clause 5.3.1(b) could be amended with the addition of "...or a person intending to apply for an exemption from the requirement to register..." to address this concern.	Clauses 5.3.1A and 5.3A.1 have been clarified in the final rule to include those connection applicants that are required to apply to AEMO for an exemption from the requirement to register as a Generator under the new connection process.
AEMO (pp3-7)	The application of the rule may be further enhanced by substituting the words "generating units" with "generating systems", as this term is more universally applicable than generating unit.	The final rule has been amended to generating systems rather than generating unit(s). A generating system is defined in the NER as: (a) Subject to paragraph (b), for the purposes of the <i>Rules</i> , a system comprising one or more <i>generating units</i> ;

Stakeholder	Issue	AEMC response
		<p>(b) For the purposes of clause 2.2.1(e)(3), clause 4.9.2, Chapter 5 and a <i>jurisdictional derogation</i> from Chapter 5, a system comprising one or more <i>generating units</i> and includes auxiliary or <i>reactive plant</i> that is located on the <i>Generator's side of the connection point</i> and is necessary for the <i>generating system</i> to meet its <i>performance standards</i>.</p> <p>This amendments adds clarity to the operation of the final rule.</p>
AEMO (p4)	Draft clauses 5.3.5(e) and 5.3.5(f) have been superseded by clauses 5.3A.10(c) and 5.3A.10(d) and should be deleted.	These clauses have been removed from the final rule.
AEMO (pp3-4)	The order of the wording in clauses 5.3.4A(c), (d) and (e) should be amended to more adequately reflect the natural order a NSP would follow. That is, moving the reference to clause 5.3A.9(f) ahead of the reference to paragraph (h)(3).	These changes have been made to the final rule.
Victorian DNSPs (pp5-6)	To ensure that the term connection applicant is read down in all of 5.3A and Schedules 5.4A and 5.4B, the drafting approach should be similar to that used in 5.3A.2 to ensure that all instances of connection applicant are read to mean a connection applicant seeking to connect any generating units.	These changes have been made to the final rule.
Victorian DNSPs (p6)	The drafting of clause S5.4A(k) be amended to refer to the relevant contact point within the business, rather than the contact details for the person managing the connection. This would address their concerns where a person is sick, on leave or has resigned.	The reference to a person in the final rule has been amended to relevant point of contact.
Victorian DNSPs (p6)	The Victorian DNSPs suggested the following minor drafting	The Commission is not satisfied that the final rule does not

Stakeholder	Issue	AEMC response
	<p>amendments:</p> <ul style="list-style-type: none"> • drafting of clause 5.3A.1(a) and (b) is confusing, as it refers to the notion of connecting an embedded generating unit and does not link this connection process to the definition of embedded generator or generator which limit the connection process to registered units; • Schedule 5.4A(l) refers to clause 5.3A.5(b)(1) - this should refer to clause 5.3A.5(c)(1); • 5.3.7 inserted text needs a space between clause and S5.4A(d); and • 5.3A.2(a) zones substation should be amended to zone substation. 	<p>link the new connection process to the definition of an embedded generator. Clause 5.3A.1(b)(1) of the final rule clarifies that for the purposes of the connection process under rule 5.3A that a connection applicant is a person who intends to be an Embedded Generator, or required to seek exemption from registration. No changes have been made to the final rule.</p> <p>The other drafting amendments have been included in the final rule.</p>
CEC (pp12-15)	<p>The CEC recommended the following minor drafting amendments:</p> <ul style="list-style-type: none"> • Clause 5.3.1A - rectify duplication of the word 'to' and replace second occurrence with 'of ' in the heading; • Clause 5.3.1A(a) - 'unless otherwise provided' is ambiguous and should be removed from the final rule; • Clause 5.3A.3(b)(1)(v) - include 'and' at end of paragraph; • Clause 5.3A.3(b)(1) (vi) - clarify intent of subparagraph to apply to 'negotiation of <u>negotiated access standards</u>'; • Clause 5.3A.4(e)(1) - amend 'include an amount for <u>cover</u>' 	<p>Following consideration of the drafting amendments suggested by the CEC, the final rule has been amended.</p> <p>However, in relation to clauses 5.3.1A(a) and 5.3A.4(e)(1), the Commission does not consider it necessary to amend the final rule.</p>

Stakeholder	Issue	AEMC response
	<p>work that was...';</p> <ul style="list-style-type: none"> • Clause 5.3A.9(b) - check the reference to clause S5.4B(o) and amend if necessary; • Clause 5.3A.10(a)(2) - defined term <u>negotiated access standard</u> is not italicised; and • Clause S5.4A(h) - clarify constraints 'of the network' and amend to constraints 'on the network' if required. 	
CEC (p14)	<p>Draft clause S5.4A(n) on the information to be provided by DNSPs in relation to differing options for connection should be amended to:</p> <p>"an overview of any available options for connection to <u>the Distribution Network Service Provider's</u> network, as relevant to <u>the</u> enquiry, including</p> <ol style="list-style-type: none"> 1. <u>example</u> a-single line diagrams and relevant protection systems and control systems <u>used by</u> of existing connection arrangements; 2. <u>a description of</u> the characteristics of supply; and 3. an indication of the likely impact on terms and conditions of connection, <p><u>as relevant to</u> at each <u>optional</u> differing connection point".</p>	<p>The suggested changes have been included in the final rule as the Commission considers that they provide greater clarity on the options that a DNSP is to provide connection applicants in the preliminary enquiry response.</p>

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CEC	Clean Energy Council
Commission	See AEMC
DAPR	Distribution annual planning report
DRET	Department of Resources, Energy and Tourism
DNSP	Distribution network service provider
DOI	Department of Industry
DSP	Demand side participation
DUOS	Distribution use of system
EEC	Energy Efficiency Council
ENA	Energy Networks Association
esaa	Energy supply association of Australia
FRV	Fotowatio Renewable Ventures
GWh	gigawatt hour
kW	kilowatt
MCE	Ministerial Council on Energy
MW	Mega watts
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective

NER	National Electricity Rules
NSP	Network service provider
Proponents	ClimateWorks Australia, Seed Advisory and Property Council of Australia
RIT-D	Regulatory investment test for distribution
SCER	Standing Council on Energy and Resources
TEC	Total Environment Centre
TNSP	Transmission network service provider