Australian Energy Market Commission

RULE CHANGE

CONSULTATION PAPER

National Electricity Amendment (Connecting Embedded Generators Under Chapter 5A) Rule 2014

Rule Proponent
Clean Energy Council

15 May 2014

Inquiries

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

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

Reference: ERC0158

Citation

AEMC 2014, Connecting Embedded Generators Under Chapter 5A, Consultation Paper, 15 May 2014, Sydney

About the AEMC

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

This work is copyright. The Copyright Act 1968 permits fair dealing for study, research, news reporting, criticism and review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

Contents

1 Introduction

1.1 Summary

On 19 April 2013, the Clean Energy Council (CEC) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) in relation to negotiated connections for embedded generators under Chapter 5A of the National Electricity Rules (NER). The assessment of the rule change was deferred until it was practicable to consider the request and consider it in light of any amendments made regarding connecting embedded generators under Chapter 5 of the NER.[1]

The CEC considers that embedded generator applicants negotiating a connection to a distribution network under Chapter 5A of the NER will experience unexpected costs and delays and an uncertain investment environment. The main cause of this problem, according to the CEC, is that the negotiated connection process in Chapter 5A lacks prescription.

To resolve this, the CEC proposes amendments that would increase the level of prescription in the Chapter 5A negotiated connection process. These amendments include requiring distribution network service providers (DNSPs) to provide specific information, such as technical and design and planning information, to embedded generator applicants at different stages of the connection process and within specified timeframes.

The CEC also proposes a number of other amendments to the negotiated connection process in Chapter 5A of the NER. These relate to:

- the level of power transfer capability that the DNSP will provide;
- fees for negotiation and connection charges imposed on embedded generator applicants by DNSPs;
- the level of liability that a DNSP can impose on an embedded generator for damages to the network; and
- the dispute resolution arrangements available to an embedded generator applicant under Chapter 5A.

The AEMC has recently completed an assessment of a rule change request relating to the connection of larger embedded generators to distribution networks under Chapter 5 of the NER. Many of the issues considered during the Chapter 5 rule change process have also been identified by the CEC in relation to Chapter 5A. The AEMC will draw on relevant work carried out during the Chapter 5 rule change process to assist in its consideration of the CEC's rule change request.

---

1 The AEMC recently completed assessment of a rule change request on connecting embedded generators under Chapter 5 of the NER. See section 2.3.

1.2 Outline of the consultation paper

This consultation paper has been prepared to facilitate public consultation on the rule change request, and to seek stakeholder submissions on the rule change request.

This paper:

- sets out a summary of, and a background to, the issues raised and rule changes proposed by the CEC;
- identifies issues considered as part of the Chapter 5 rule change process that are relevant to the CEC's rule change request;
- identifies a number of questions and issues to facilitate consultation on this rule change request; and
- outlines the process for making submissions.

Submissions on this rule change request are sought by 12 June 2014.

2 Background

This rule change request relates to the negotiated connection process for embedded generators that are seeking to connect under Chapter 5A of the NER.

Embedded generation, also known as distributed generation, is a generation source that is connected to an electricity distribution network. Embedded generation technology varies, examples being photovoltaic generation (solar) and wind turbine generation.

This chapter of the consultation paper is set out as follows:

- section 2.1 provides an overview of the current arrangements for connecting embedded generators under Chapter 5A;
- section 2.2 provides an overview of the rule change request from the CEC;
- section 2.3 discusses the recently completed rule change request on connecting embedded generators under Chapter 5 of the NER; and
- section 2.4 sets out the AEMC's approach to assessing the rule change request.

2.1 Overview of current arrangements

2.1.1 Application of Chapter 5A

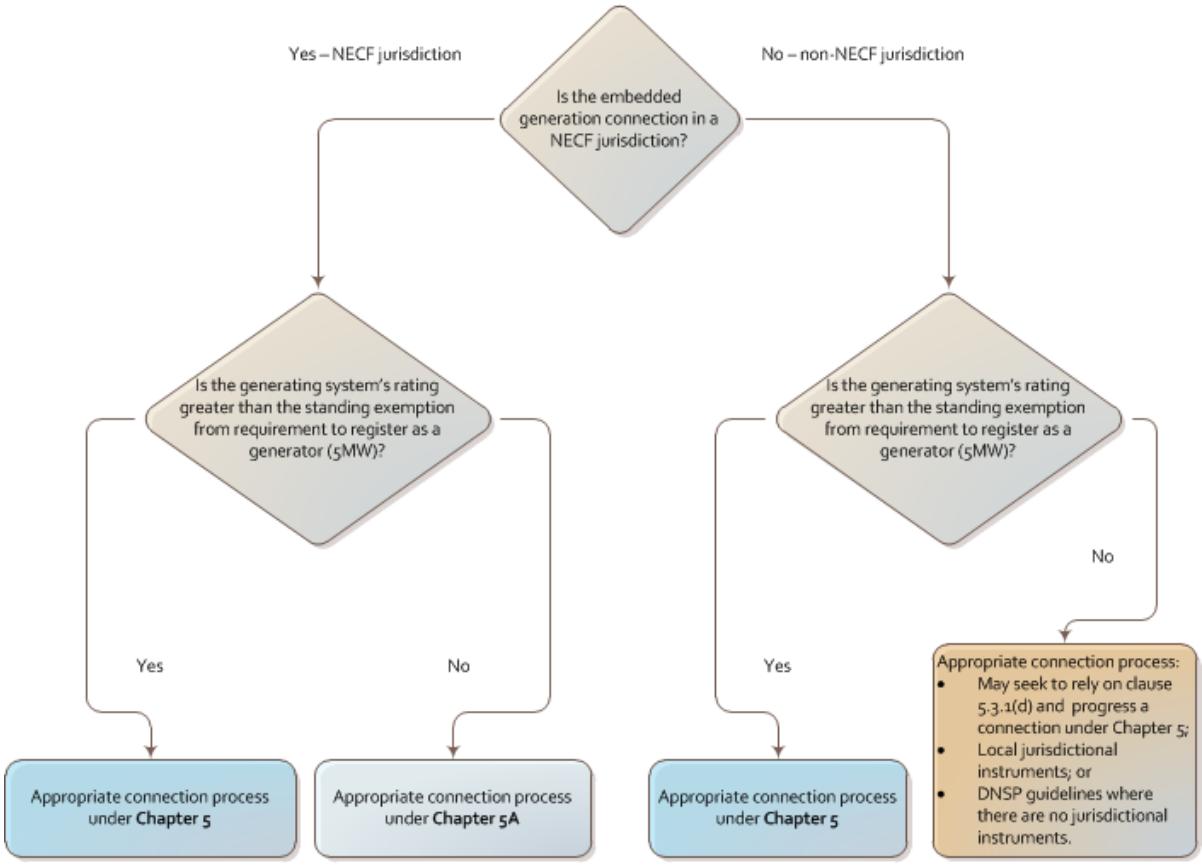
Chapter 5A of the NER, which governs the connection process for end-use customers and certain embedded generators, was introduced as part of the National Energy Customer Framework (NECF). To date, NECF has been adopted in the ACT, Tasmania, South Australia, and New South Wales.[2]

Chapter 5A of the NER applies only in those jurisdictions that have adopted NECF. Therefore, the embedded generator connection regime under Chapter 5A currently applies only in those jurisdictions.

A diagrammatic representation of the appropriate connection process for different embedded generator connection applicants is provided in Figure 2.1.

2 The NECF is effective in these jurisdictions: ACT, 1 July 2012; Tasmania, 1 July 2012; South Australia, 1 February 2013; New South Wales, 1 July 2013 .

Figure 2.1 Diagrammatic representation of appropriate connection process



Source: AEMC, *Connecting Embedded Generators, Rule Determination*, 17 April 2014, p. 52.

In NECF jurisdictions Chapter 5A applies to non-registered embedded generators.[3] This will include embedded generator connection applicants proposing a connection of less than the standing exemption from the requirement to register as a participant in the National Electricity Market (NEM).

The level that the standing exemption from the requirement to register as a participant in the NEM (currently five mega watts (MW)) is determined by the Australian Energy Market Operator (AEMO) in its registration guidelines.[4]

AEMO has decided that a person who engages in the activity of owning, controlling or operating a generating system is automatically exempt from the requirements to register as a generator in relation to that activity where one of the following applies:

(i) the generating system has a total nameplate rating at a connection point of less than five MW; or

(ii) the generating system is not capable of exporting to a transmission system or distribution system in excess of five MW; or

3 It also applies to micro-embedded generators which are defined in section 2.1.2.

4 AEMO, May 2013, *NEM Generator Registration Guide*, Appendix 6 - Guideline on exemption from registration as a generator.

(iii) the generating system has no capability to synchronise or to operate electrically connected to a distribution system or transmission system;

and 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).[5]

For those embedded generator connection applicants proposing a generating system greater than the standing exemption, the applicable connection process is under Chapter 5 of the NER.

In non-NECF jurisdictions, embedded generator applicants proposing a connection of less than the standing exemption can use an applicable process in a relevant jurisdictional instrument or can seek to use the Chapter 5 process.[6] Where no jurisdictional instruments for the connection of embedded generators exist, the relevant DNSP would determine the connection process.

For the avoidance of doubt, embedded generator applicants that propose a connection of greater than the standing exemption, but intend to apply for an exemption from registration,[7] because they are otherwise required to register, must use the Chapter 5 connection process.[8] The Chapter 5 process also applies to embedded generator connections in NECF jurisdictions with a proposed generating capacity of less than the standing exemption from registration and are already registered with AEMO as a registered participant or intending participant.

Conversely, in NECF jurisdictions, embedded generator connection applicants with a proposed generating capacity of less than the standing exemption from registration, but who nevertheless intend to register,[9] even though there is no requirement to be registered, the applicable process is the Chapter 5A process.

---

5 ibid. pp35-36.

6 In jurisdictions that have not adopted the NECF, an embedded generator applicant that proposes a connection of less than the standing exemption from the requirement to register can seek to rely on clause 5.3.1(c) of the NER (found in version 49) which provides that any person wishing to establish a connection to a network may elect to follow the procedures in clause 5.3 of the NER.

7 This would usually occur after an embedded generator applicant has started (or ended) the connection process.

8 Where an embedded generator connection applicant's generating system has a nameplate rating of more than five MW but less than 30 MW, it may apply to AEMO for exemption from registration.

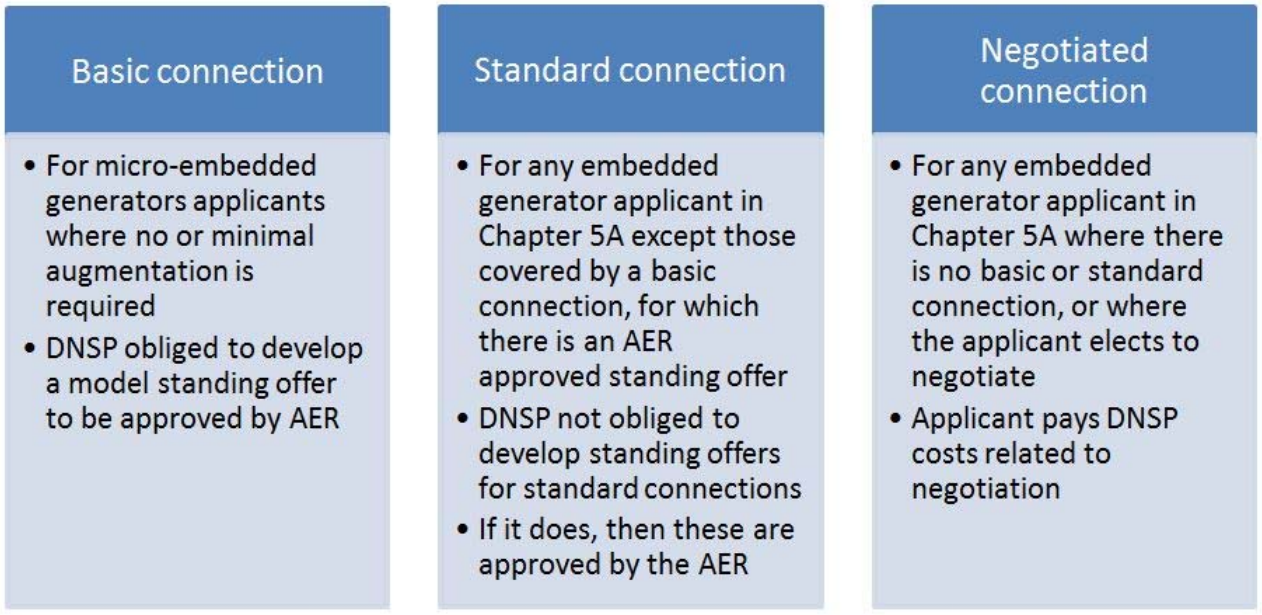
9 This would usually occur after embedded generator applicant has started (or ended) the connection process.

Further discussion of which connection process applies to embedded generator connection applicants can be found in the AEMC's recent final determination covering the Chapter 5 rule change request.[10]

2.1.2 Connection options in Chapter 5A

The CEC's rule change request relates to the negotiated connection process for embedded generators that seek to connect under Chapter 5A of the NER. A negotiated connection contract is one of three connection options available to embedded generator applicants seeking to connect to a distribution network under Chapter 5A. The scope and key features of each of these connection options are set out in Figure 2.2.

Figure 2.2 Chapter 5A embedded generator connection options



Source: AEMC; Chapter 5A of the NER.

Basic connection services are for proposed embedded generator connections that comply with Australian Standard AS4777[11] and which require no, or only minimal, augmentation to the network. The scope of AS4777 currently extends to embedded generators that have a generating capacity of up to ten kilo watts (kW) per phase.[12] These embedded generators are also referred to as micro-embedded generators in Chapter 5A of the NER. Residential roof top solar systems would generally fall into this category.

10 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapter 5.

11 Australian Standard AS4777 - Grid connection of energy systems via inverters.

12 The AEMC understand that Standards Australia is currently reviewing AS4777 and that the threshold for compliance with this standard may increase to 50 kW per phase. The revised standard may be published by the end of the year.

Each DNSP is required to provide a model standing offer for basic connection services for micro-embedded generators. A model standing offer is a template offer, describing the terms and conditions which will apply to the connection, such as the circumstances in which charges are payable and how they will be calculated and the timeframe in which work will be completed. The model standing offers developed by DNSPs must be approved by the Australian Energy Regulator (AER).

Standard connection services are for embedded generator applicants that are not covered by a basic connection service but for which there is an AER approved model standing offer. A standard connection service is a connection service that may be common across different embedded generators within a DNSP's area. A DNSP can develop a number of standard connection services. For example, a DNSP could develop a standard connection service for wind turbines with a generating capacity of less than 1 MW, or for micro embedded generators where more than minimal augmentation of the network is required. DNSPs may, but are not obliged to, develop model standing offers for standard connection services to their network. Where model standing offers are developed, these must be approved by the AER.

Where there is no relevant basic or standard model connection offer for an embedded generator applicant, it must use the negotiated connection process under Chapter 5A. In addition, any embedded generator applicant that may be eligible for a basic connection service or a standard connection service may elect to negotiate a connection. However, given the time and costs involved for embedded generator applicants seeking a negotiated connection contract, many embedded generator applicants eligible for a basic or standard connection service may accept the relevant standing offer available.

This rule change request does not propose any significant changes to the provisions regarding basic connection services or standard connection services.

2.2 Overview of rule change request

Broadly, the CEC considers that embedded generators using the Chapter 5A negotiated connection process will experience unexpected costs and delays and an uncertain investment environment.

Accordingly, the rule change request submitted by the CEC proposes a number of amendments to the negotiated connection process for embedded generators. The rule change request does not propose to amend the connection process for load customers.

Although the CEC acknowledges that some standard connection services will become available to some embedded generator applicants over time, it questions the extent to which DNSPs will develop these. The CEC suggests it will be impractical for DNSPs to develop standard connection services for all embedded generators within the scope of Chapter 5A. As a result, the negotiated connection process will be used by the vast majority of embedded generator applicants with a capacity between ten kW (per phase) and five MW.

The cause of the broad problem of a long and difficult connection process is, according to the CEC, that the negotiated connections process in Chapter 5A lacks sufficient prescription. It suggests this lack of prescription is due to the approach taken in the drafting of Chapter 5A. The CEC contends the drafting approach was intended to not significantly disrupt the existing jurisdictional processes. The CEC also considers that the drafting of Chapter 5A unnecessarily treats embedded generator connections in the same way as load connections.[13]

More specifically, the CEC has identified the following issues with the negotiated connection process in Chapter 5A:

- the structure and timing of the negotiated connection process;
- the information that should be made available to embedded generators during the negotiated connection process;
- the power transfer capability of the network (or the rate at which an embedded generator can inject electricity into the network at a connection point);
- process fees and connection charges;
- embedded generator liability to a DNSP; and
- the dispute resolution arrangements.

Each of the issues identified by the CEC are discussed in Chapter 3 of this paper.

2.3 Chapter 5 rule change process

The AEMC has recently completed an assessment of a rule change request relating to the connection of embedded generators to distribution networks under Chapter 5 of the NER (the Chapter 5 rule change request).[14]

Chapter 5 generally deals with connecting embedded generators that are above the AEMO standing exemption from registration threshold, that is, those with a generating capacity of five MW or more. Many of the issues considered during the Chapter 5 process have also been identified by the CEC with Chapter 5A.

The primary issues discussed in the Chapter 5 rule change request were as follows:

- the appropriate location of the relevant connection process for embedded generators;
- the structure and timing of the connection process to facilitate the exchange of information between the parties and reach a connection agreement;

13 CEC, Rule change request, April 2013, p7.

14 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014.

- what information should be available to embedded generators before the connection process, and both embedded generators and DNSPs during the connection process;
- the technical requirements for embedded generators to connect;
- process fees and connection charges; and
- the dispute resolution arrangements.

Following extensive consultation with stakeholders, the Commission made substantial amendments to the connection process for embedded generators in Chapter 5 in its final rule. The key amendments were:

- DNSPs are now required to publish an 'information pack' setting out information to guide embedded generators on matters such as the process requirements and potential costs;
- DNSPs are now required to publish a register of generating plant that has been successfully connected to the network in the preceding five years to allow embedded generators to better understand the types of equipment that have been able to connect to a distribution network;
- the introduction of a two-stage connection enquiry process consisting of a preliminary enquiry stage followed by a detailed enquiry stage;
- the introduction of clear, relevant information requirements and timeframes for both parties at each stage of the connection process; and
- clarifying that the existing dispute resolution process set out in the NER is applicable to technical issues as well as other matters arising during a connection process.

2.4 Assessment of current rule change request

As indicated above, many issues raised by stakeholders and considered by the AEMC during the Chapter 5 rule change process are similar to those raised by the CEC in this rule change request.

The AEMC will draw on relevant work carried out during the Chapter 5 rule change process to assist in its consideration of the CEC's proposals, stakeholder views and any potential amendments to the negotiated connection process in Chapter 5A for embedded generators.

In particular, and as discussed in section 3, the AEMC would like to understand to what extent allowing embedded generators (excluding embedded generators that are entitled to a basic connection service) that otherwise fall within the scope of Chapter 5A to use all, or part of, the Chapter 5 embedded generator connection process would resolve the issues raised by the CEC.

2.5 Questions

Question 1

Do you agree that the negotiated connection process in Chapter 5A will result in unexpected costs and delays for embedded generator applicants as submitted by the CEC?

Question 2

Do you have any examples or experience of using the negotiated connection process in Chapter 5A? Please identify any difficulties or positive experiences you encountered.

Question 3

Given that basic connection services will be available for micro-embedded generators (those with a generating capacity up to ten kW per phase), and that DNSPs can develop standard connection services, how often will the negotiated connection process in Chapter 5A be used by embedded generator applicants?

Question 4

The CEC questions the extent to which model standing offers for standard connection services will be available for embedded generators. Are model standing offers for standard connection services available for embedded generators now and will they be available in the future? Please identify any such offers. In addition, are you aware of circumstances where model standing connection offers for standard connection services may not be suitable, for example, where augmentation of the network is required?

3 Issues raised by the Clean Energy Council

This chapter sets out key issues raised by the CEC and discusses how it proposes to address these concerns. Many of the issues raised by the CEC were also considered in the Chapter 5 rule change process. Accordingly, this chapter also explains how the Chapter 5 rule determination addresses these issues.

3.1 Structure and timing of the connection process

3.1.1 Current arrangements

The process for obtaining a connection under Chapter 5A is set out in Figure 3.1. It can be summarised as follows:

1. The process generally commences with a preliminary enquiry from an applicant. The DNSP must provide the applicant with the information it needs to make an informed application within five business days or a period agreed to by the parties;

2. An application for a connection service is then lodged. If the application is for a basic or standard connection service, the DNSP must make a relevant connection offer to the applicant (steps 3 and 4 are not relevant in these circumstances). If the application is for a negotiated connection then the DNSP must advise the applicant of the negotiated connection process and possible costs and expenses related to the negotiations. The DNSP must respond to the application within ten business days or a period agreed to by the parties;

3. Following the response of the DNSP to the connection application that a negotiated connection process will be followed, negotiations may occur between the parties. Chapter 5A provides a framework for the negotiations to occur. For example, it provides broad requirements on the provision of information by the parties and timeframes for providing this information;

4. Following negotiations, the DNSP must make a connection offer to the applicant. The DNSP must use its best endeavours to make a negotiated connection offer within 65 business days after the date of the application for connection (this timeframe can be extended where the applicant is required to provide further information). The negotiated connection offer must contain minimum content requirements set out in the NER. For example, where the applicant is an embedded generator a connection offer must contain the maximum capacity of the connection to import and export electricity;[15]

5. The applicant has 20 business days to accept the connection offer for a negotiated connection. It has 45 business days for basic or standard connections. These timeframes can be extended by agreement of the parties;

15 Schedule 5A.1, Part B (a)(2) of the NER.

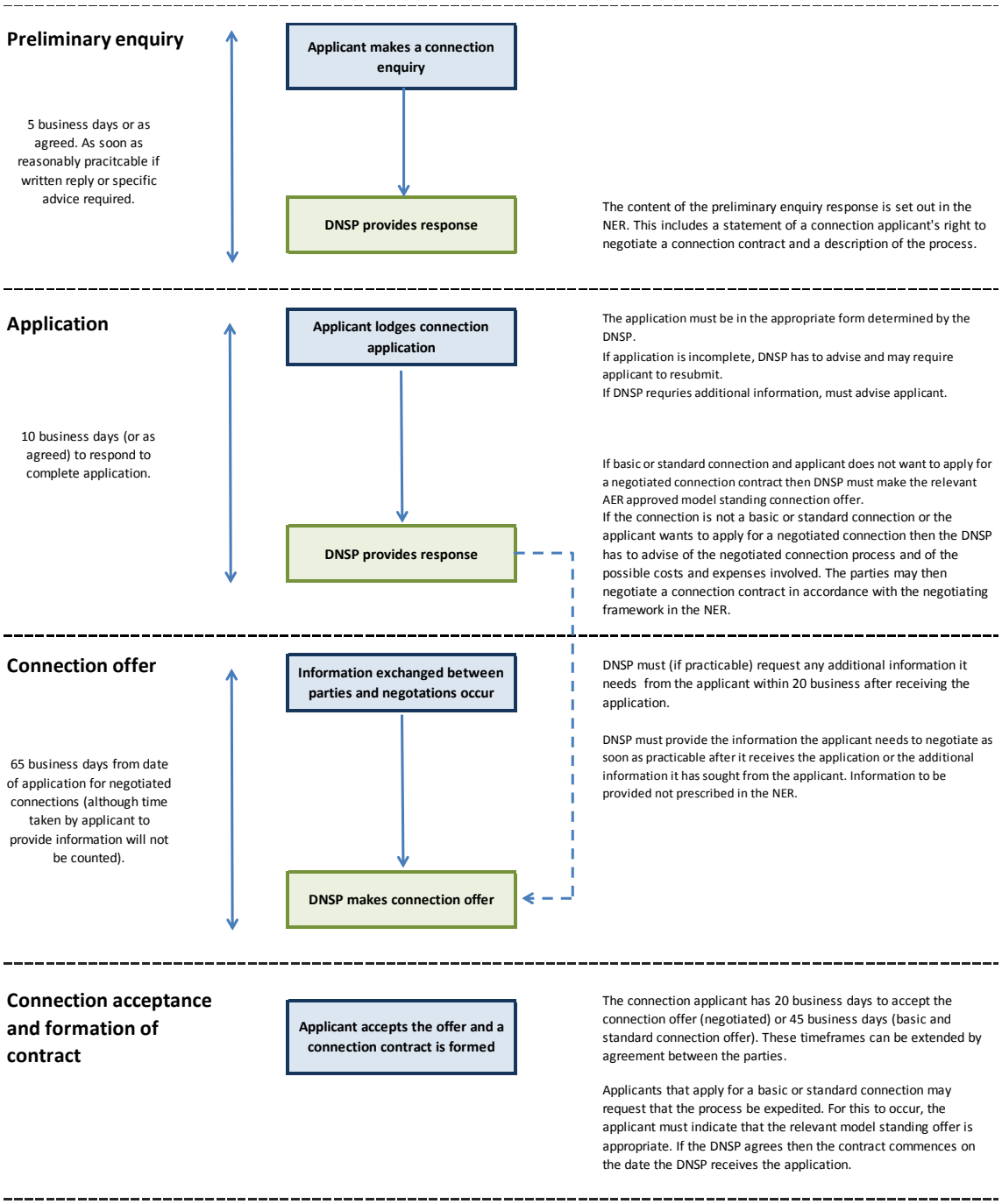
6. On acceptance of the connection offer by the applicant, the connection contract is formed.

It should be noted that the process for obtaining a basic or standard connection service can be expedited. For this to occur, the applicant has to request this in its application and indicate that the relevant model standing offer would be acceptable. In addition, the DNSP has to be satisfied that the service falls within the terms of the relevant model standing offer. In this scenario, a contract is deemed to have been entered into between the relevant parties when the DNSP receives the application.

The connection process applies to load as well as embedded generator applicants.[16]

16 Load applicants are customers supplied through a retailer in this instance.

Figure 3.1 The Chapter 5A connection process



Source: AEMC; Chapter 5A of the NER.

3.1.2 Issues raised by the CEC

The CEC is concerned with the connection process in Chapter 5A as it relates to embedded generator negotiated connections. It has not raised concerns with the process for obtaining basic or standard connection services, or the process for connecting load customers under Chapter 5A.

Of particular concern to the CEC is that Chapter 5A does not require DNSPs to provide information to embedded generator applicants early enough in the process. It suggests that under the existing requirements embedded generator applicants may not find out about potential connection costs until they have invested significant resources. If information was provided earlier in the process, the CEC argues, embedded generator applicants would be able to consider the commercial implications of their projects in light of the information provided and make relevant business decisions accordingly.

In addition, the CEC submits that DNSPs may stall and extend the process by being slow to provide information or by making multiple requests for information. Both scenarios would increase the cost and risk of an embedded generator project and may impact on the viability of a project.

To overcome these problems, the CEC proposes to make changes to the structure and timing of the negotiated connection process for embedded generators in Chapter 5A. The CEC proposes to:

- amend clauses 5A.D.3(d) and 5A.D.3(e) of the NER to require DNSPs to advise of a complete application or require additional information within ten business days. Currently these clauses do not provide a timeframe;[17]

- expand clause 5A.D.3(f)(2) to require DNSPs to notify the applicant, where the connection is to be negotiated, of the types of information it will receive and its timing. Currently this clause only requires DNSPs to advise the applicant of the negotiated connection process and of possible costs and expenses related to the negotiations;

- amend clause 5A.C.3(b)(1) to require DNSPs to provide information to the embedded generator applicant to negotiate on an informed basis within 20 business days of response to an application. Currently DNSPs are only required to provide this information as soon as practicable after they receive an application;

- introduce a new "negotiated connection application". A negotiated connection application would generally be submitted by the embedded generator connection applicant after it has received sufficient information to negotiate from the DNSP. The DNSP would set out the form and content of the negotiated connection application;

- require DNSPs to advise embedded generator connection applicants whether a negotiated connection application is complete within ten business days of receipt. Where the negotiated connection application is incomplete, require DNSPs to advise the connection applicant of the deficiency and that it can resubmit;

17 As drafted, these minor amendments proposed also impact on the application process for basic and standard connection services.

- make clear that any matter relevant to a connection is subject to negotiation by amending clause 5A.C.3(a)(1) of the NER. The CEC considers that the current provision indicates only connection charges are negotiable.;

- require DNSPs to consider the technical merit of the connection arrangements proposed, or determine the technical requirements for the connection when assessing negotiated connection applications;

- require DNSPs to either accept or reject the negotiated connection application. If the DNSP does not respond within 65 business days it is deemed to have accepted the application;

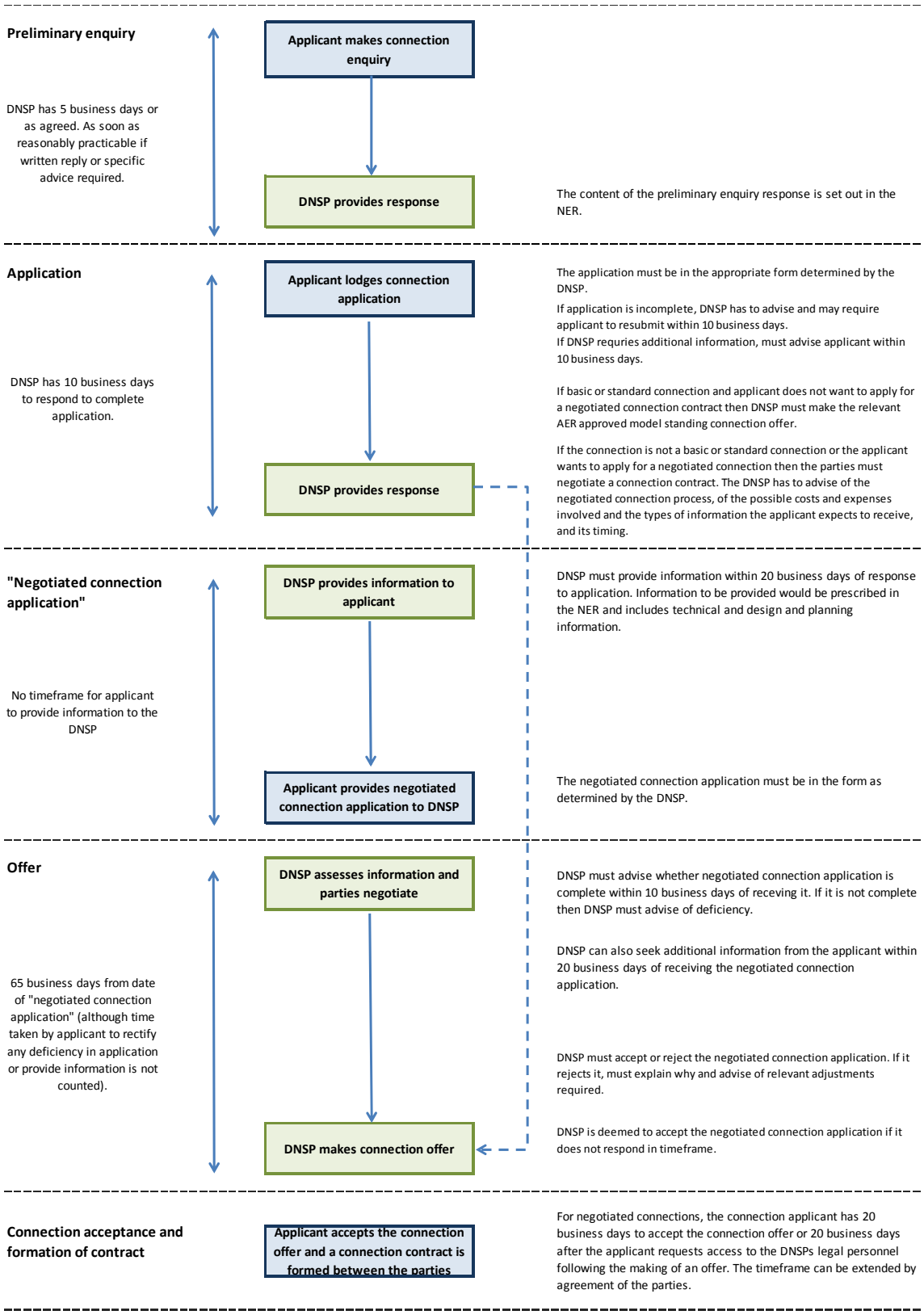
- require DNSPs to make a connection offer within 65 business days from acknowledgement of a complete negotiated connection application;

- require DNSPs to provide an embedded generator connection applicant access to their legal personnel in order to negotiate the terms and conditions of an offer, after the offer has been made; and

- require a negotiated connection offer to remain open for acceptance for 20 business days after the applicant makes a request to access a DNSP's legal personnel. This requirement is in addition to the current timeframes in the NER for applicants to accept an offer.

The proposed revised Chapter 5A connection process included in the CEC's rule change request is set out in Figure 3.2. As part of its rule change request the CEC has included a proposed rule. At this stage, the AEMC has not assessed whether the proposed rule effectively implements all aspects of the features described in the CEC's rule change request.

Figure 3.2 The CEC's proposed connection process



Source: AEMC; CEC Rule Change Request, April 2013.

3.1.3 Chapter 5 rule change process

The structure and timing of the Chapter 5 connection process for embedded generators was considered as part of that rule change request process.[18] In that context, the Chapter 5 connection process was amended to include a two-stage enquiry process in addition to the existing application stage.

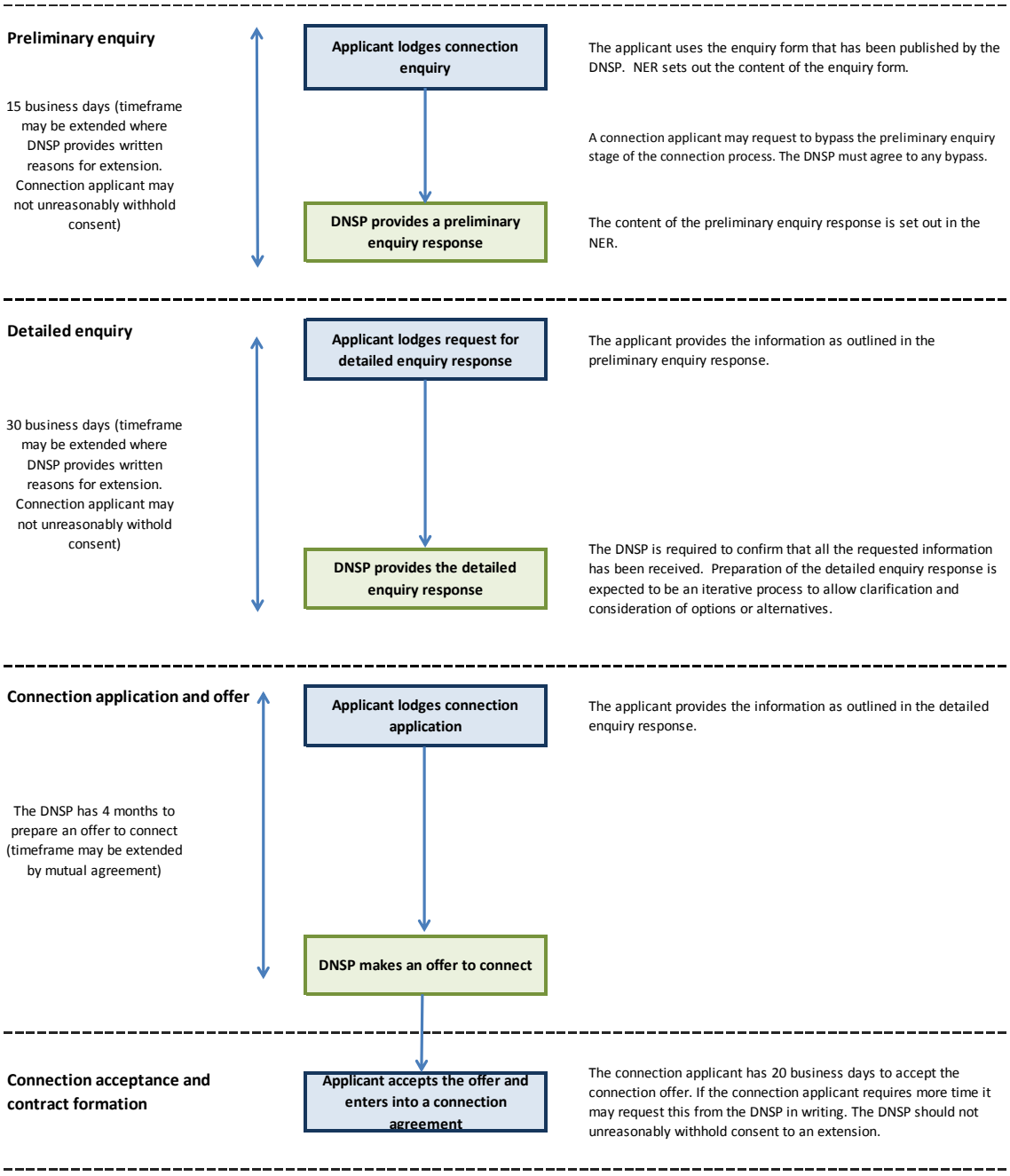
The revised process was designed to provide a framework around the negotiations between the parties and improve the timeliness and certainty of the connection process. Flexible timeframes have been provided to allow for the needs of the variety of embedded generation projects that applicants may want to connect to the different distribution networks. For example, an embedded generator applicant may skip the preliminary enquiry stage under certain circumstances and with the agreement of the DNSP.[19]

The new Chapter 5 connection process, which will take effect on 1 October 2014, is set out in a flow chart in Figure 3.3.

18 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapters 7-9.

19 ibid. Chapter 7.

Figure 3.3 The Chapter 5 connection process



Source: AEMC, Factsheet – Connection process for embedded generators, 17 April 2013.

3.1.4 Comparison of new Chapter 5 with the CEC's rule change request

Like the CEC's proposed process, the Chapter 5 embedded generator connection process provides a more detailed framework within which the parties negotiate a connection to a distribution network. Both processes include more specific requirements around the exchange of information between the parties and the timeframes to achieve this.

As indicated in Figure 3.3, the Chapter 5 embedded generator connection process includes a two-stage enquiry phase prior to the application stage. In a similar way,

CEC's proposed introduction of a 'negotiated connection application' also addresses the question of identifying the relevant information flows during the overall connection process.

However, there are also aspects of the CEC's rule change request where similar issues have not been considered as part of the Chapter 5 rule change process. For example, the CEC's proposed process includes a requirement for DNSPs to provide an embedded generator connection applicant access to the DNSP's legal personnel.

3.2 Information requirements

3.2.1 Current arrangements

Currently, Chapter 5A requires DNSPs to provide applicants with information they reasonably require in order to negotiate on an informed basis. It sets out that this information must include information about charges for connection services.[20]

In addition, clause 5A.C.3(a)(3) contains a note that DNSPs might need to provide further information to ensure the connection applicant is properly informed and that this may include information about:

- technical and safety requirements;
- the types of connection that are technically feasible;
- network capacity at the proposed connection point; and
- possible strategies to reduce the cost of the connection.

The NER also requires DNSPs to publish information for potential connection applicants on its website. Clause 5A.D.1 of the NER outlines the upfront information that needs to be made available currently.

3.2.2 Issues raised by the CEC

The CEC suggests Chapter 5A is not prescriptive enough about information requirements. As a result, the CEC contends that DNSPs will not provide the information embedded generator proponents require to assess the technical and financial implications of a connection.[21]

Consequently, the CEC proposes a number of changes to Chapter 5A relating to the information to be provided to embedded generator applicants by DNSPs. Specifically, the CEC proposes to:

20 NER clause 5A.C.3(a)(3).

21 CEC, Rule change request, April 2013, pp18-19.

- amend clause 5A.C.3(a)(3) of the NER to clarify that DNSPs must provide embedded generator applicants with the information they require to assess the commercial significance of the connection so that they can negotiate on an informed basis;

- prescribe specific information that DNSPs must provide an embedded generator applicant, prior to it submitting a negotiated connection application, in a new Schedule to Chapter 5A. This would include information such as proposed technical standards, design and planning information and interface requirements such as switching and isolation facilities;

- amend clause 5A.C.3(a)(5)(i) to require DNSPs to describe the technical requirements for connection, including any relevant technical standards, when assessing negotiated connection applications; and

- require that all information exchanged as part of the negotiation process be treated as confidential information for the purposes of the NER.

3.2.3 Chapter 5 rule change process

The information that should be made available to embedded generator proponents seeking to connect to a distribution network was considered as part of the Chapter 5 rule change process.

Following its assessment of this rule change request, the Commission determined that DNSPs should be required to publish:

- an information pack setting out information to guide embedded generator proponents on matters such as process requirements and potential costs to improve the clarity and transparency of connection requirements and allow connection applicants to participate more effectively in the connection process; and

- a register of generating plant (which exceeds the standing exemption from registration) that has been successfully connected to the network in the preceding five years to allow embedded generators to better understand the types of equipment that have been able to connect to a distribution network.

As this information is public, it would be available to embedded generator proponents before they formally commence the connection process. In this way, an embedded generation proponent would be able to make an initial enquiry from a more informed position than they could previously.

In addition, the Commission determined that the information to be provided to embedded generator applicants at the preliminary and detailed enquiry response stages should be more particularly specified in the NER. This includes technical information and standards relevant to the application, as well as information on connection fees and charges.

In general, the information provided at the detailed enquiry stage is intended to build on information provided in the preliminary enquiry response. It will include more in-depth analysis and considerations relevant to the specific connection proposed.

The amendments made to Chapter 5 of the NER also clarified what information an embedded generator applicant is to provide to the DNSP. For example, clause 5.3A.5(c) of the NER sets out information that DNSPs must request from applicants in an enquiry form.

3.2.4 Comparison of new Chapter 5 with the CEC's rule change request

The new Chapter 5 connection process requires more information to be published compared to the CEC proposed negotiated connection process. However, the requirements to specify information to be provided at each stage of the connection process in Chapter 5 is broadly consistent with the approach in the CEC proposed negotiated connection process.

3.3 Power transfer capability of the network

3.3.1 Current arrangements

The current provisions of Chapter 5A do not expressly deal with the issue of power transfer capability. Rather, the issue is generally raised in the context of a DNSP's responsibilities to provide information to meet embedded generator applicants' reasonable requirements and enable embedded generator applicants to negotiate on an informed basis.[22]

The current provisions of Chapter 5A also require DNSPs to provide a connection offer that contains the details of the connection point and the maximum capacity of the connection to import and export electricity.[23]

3.3.2 Issues raised by the CEC

The CEC contends that the current provisions of the NER relating to a DNSP's responsibility to provide embedded generator applicants with relevant, timely and accurate power transfer capability information are ineffective.[24] This, the CEC argues, means embedded generator applicants bear unnecessary risk due to a lack of information or unanticipated changes to the level of energy they may export to the network.

The CEC seeks to address this issue by amending the negotiated connection process to require DNSPs to do the following with respect to power transfer capability:

22 NER clauses 5A.C.3(a)(2), (3), (4), (6).

23 NER clause S5A.1, Part B, (a)(2).

24 Power transfer capability relates to how much energy the network can take at a connection point.

- provide negotiated connection applicants with information they reasonably require to fully assess the commercial significance of the distribution network user access arrangements sought;

- consult with other network users or prospective users who may be adversely affected by the proposed connection, connection alteration, or the distribution network user access arrangements sought by the applicant;

- in respect of a proposed negotiated connection application, provide interface requirements, including network control schemes that can be reasonably expected to affect the distribution network user access arrangements sought by the applicant, in information to support a negotiated connection application;

- using reasonable endeavours, make a connection offer that complies with the distribution network user access arrangements reasonably sought by the applicant, including the location of the proposed connection point and the level and standard of power transfer capability that the network will provide; and

- provide details of the connection point, including the level and standard of power transfer capability that the relevant network will provide, along with correlating network conditions, in the connection offer.

The CEC also seeks to enable negotiated connection applicants to seek distribution network user access arrangements at any level of power transfer capability between zero and the higher of the expected maximum demand or the maximum power input of the relevant embedded generator. It states this is consistent with clause 5.5(d) in version 62 of the NER.

3.3.3 Chapter 5 rule change process

Information requirements about power transfer capability, that had previously been required under Chapter 5, were maintained as part of the Chapter 5 rule change process and incorporated into the new Chapter 5 connection process. Specifically:

- connection applicants should be required to provide details of their reasonable expectations of the level and standard of service of power transfer capability that the network should provide when submitting a detailed enquiry;

- the DNSP should provide details of the level and standard of service of power transfer capability that the DNSP, with reasonable endeavours, considers the network provides at the location of the connection point as part of the detailed enquiry response; and

- the DNSP should consult with AEMO and other registered participants with whom it has connection agreements in certain circumstances when preparing an offer to connect.

These provisions were included as part of a broader package of information requirements aimed at providing greater information transparency.[25]

On a related issue to power transfer capability, the proponents of the Chapter 5 rule change sought an automatic right to export electricity. On this issue and in that context, the Commission determined that any export of electricity from an embedded generator to a distribution network should be based on explicit agreement, relating to the particulars of the connection, between the relevant parties.[26]

3.3.4 Comparison of new Chapter 5 with the CEC's rule change request

The requirements in Chapter 5 on the provision of information regarding power transfer capability are broadly similar to those included in the CEC's rule change request. However, the CEC's rule change request goes further in requiring DNSPs to use reasonable endeavours to make a connection offer that complies with the embedded generator applicant's requirements in respect of power transfer capability.

3.4 Fees and charges

This section considers issues raised by the CEC relating to fees and charges imposed by DNSPs to embedded generator applicants for:

- the costs of the negotiation process; and
- capital expenditure relating to the connection.

3.4.1 Fees relating to the negotiation process

Current arrangements

Currently, under Chapter 5A DNSPs may charge negotiated connection applicants fees to cover the cost of negotiation.[27]

Issues raised by the CEC

The CEC proposes to:

- restrict the ability of DNSPs to charge for the provision of information that they are required to maintain;

25 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapters 6-8.

26 ibid. p96.

27 NER clause 5A.C.4

- prevent DNSPs from charging a fee to cover the costs of negotiation and processing a negotiated connection application until the applicant has been advised by the DNSP that the relevant application is complete; and

- require any fees charged by DNSPs for negotiation to be accompanied with information on the basis of their calculation including an itemised listing of the associated labour costs, time and expenses, together with an explanation for any departure from any estimate of charges given by the DNSP prior to submitting a negotiated connection application.

The CEC has also raised concerns relating to the information that DNSPs provide embedded generator applicants in relation to costs when it makes a connection offer to an applicant. It contends that in its present form Chapter 5A is vague and does not provide sufficient information transparency. This may result in embedded generation applicants not being able to understand the scope of the proposed connection costs.

To address this concern, the CEC proposes to significantly expand clause 5A.E.2 relating to the itemised statement of connection charges that the DNSP has to provide. Specifically, CEC proposes to require DNSPs to provide the following additional information in the statement of connection charges under clause 5A.E.2:

- an explanatory statement on the basis on which costs have been calculated;

- a scope of work to which connection charges shall apply;

- a cost breakdown of network extensions, premises connection assets and any other incidental costs incurred;

- a detailed description of any ongoing operation and maintenance costs and charges; and

- an explanation of any divergence of costs from cost estimates previously provided.[28]

On a separate issue, the CEC proposes a broad provision that a negotiated connection offer must not include a charge that is inconsistent with Chapter 5A.

Chapter 5 rule change process

In the Chapter 5 rule change final determination the Commission considered it appropriate to permit DNSPs to charge a fee to recover the reasonable costs to respond to a detailed enquiry. Fees to recover the preliminary enquiry response have not been provided for as the response is intended to be sourced from information already available to the DNSP.[29]

28 CEC, Rule change request, April 2013, pp35-36.

29 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapter 13.

The itemisation and explanation of costs in the connection offer was also considered as part of the Chapter 5 rule change process.[30] The final rule obliges DNSPs to provide an itemised statement of connection costs in its detailed enquiry response and offer to connect where these items are relevant. Specifically the final rule requires the following in an itemised statement:

- connection service charges;
- costs associated with metering requirements;
- costs of network extension;
- details of augmentation required to provide the connection and associated costs;
- costs of interface equipment;
- details of the interface equipment required to provide the connection and associated costs;
- details of any ongoing operation and maintenance costs and charges by the DNSP; and
- other incidental costs and their basis of calculation; and
- an explanation of why any of those components have changed, if different from the estimate included with the detailed response.

These changes were made to provide greater transparency about the costs for an embedded generator connection applicant.

Comparison of new Chapter 5 with the CEC's rule change request

The Chapter 5 embedded generator connection process provides DNSPs with the ability to charge a fee to recover the reasonable costs to respond to a detailed enquiry, and not the preliminary enquiry. This is similar to the CEC's proposed connection process which prohibits DNSPs to charge for information that they are required to maintain. The CEC's proposal to require more detailed information about costs when making a connection offer is also consistent with the new Chapter 5 process.

3.4.2 Charges for capital expenditure

Current arrangements

Chapter 5A includes provisions regarding the costs of new connections. The costs that may be recovered from embedded generator connection applicants may include, as appropriate:

30 ibid.

- a reasonable capital contribution towards the cost of an extension necessary to provide the connection service;
- a reasonable capital contribution towards the cost of augmentation of premises connection assets necessary in order to provide a connection service; and
- if augmentation of the distribution system is necessary in order to provide a connection service under a negotiated connection contract, connection charges may include a reasonable capital contribution towards the cost of augmentation of the distribution system to the extent necessary to provide the service and to any further extent that a prudent service provider would consider necessary to provide efficiently for forecast load growth.[31]

However, a capital contribution may only be required in these circumstances if the costs are not to be recovered through use of system charges or a tariff applicable to the connection.[32]

Issues raised by the CEC

In its rule change request, the CEC states that clause 5A.E.1(c)(4) allows DNSPs to charge embedded generator applicants seeking to negotiate a connection, connection-related augmentation costs for forecast load growth. It submits that this creates the opportunity for DNSPs to transfer the financial risk of network expansion for load growth to embedded generators.[33] To remove this potential, the CEC proposes to amend clause 5A.E.1(c)(4) to remove any application this clause may have to embedded generator applicants within the scope of Chapter 5A.[34]

The CEC also seeks to limit connection costs that DNSPs can charge embedded generator connection applicants to those which could have been reasonably identified by the applicant from the information initially provided by the DNSP. The purpose of this limitation is to encourage DNSPs to provide complete, correct information to the embedded generator connection applicant in the first instance.[35]

Chapter 5 rule change process

The Commission considered a similar issue as part of the Chapter 5 rule change process on the cost of augmentation of the shared network. In this matter, the Commission determined that embedded generators should not be exempt from paying for augmentation to the shared network and no change was made to Chapter 5 of the NER in this regard.[36] This decision was consistent with the general approach that

31 NER clause 5A.E.1(c).

32 NER clause 5A.E.1(6).

33 CEC, Rule change request, April 2013, p21.

34 ibid. p36.

35 ibid.

36 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapter 13.

appropriate price signals can be achieved by allocating costs of providing a service to parties that benefit from that service. In addition, the Commission noted that if embedded generators were not to contribute to augmentation costs relating to their connection then other users of the distribution network would be required to pay these costs.

3.5 Embedded generator liability to a DNSP

3.5.1 Current arrangements

Presently, liability for damages caused to the network by an embedded generator is a matter between DNSPs and embedded generator applicants that may be addressed in a relevant connection agreement. That is, it is a commercial matter to be addressed outside of the NER.

3.5.2 Issues raised by the CEC

The CEC submits that connection agreements that require embedded generators to accept unlimited liability for damage caused by their conduct presents an unacceptable risk on embedded generator applicants. It argues that unlimited liability can place a significant, unnecessary cost on embedded generator applicants seeking to obtain project finance. The CEC's view arises from a perception that the negotiating positions of an embedded generator applicant and a DNSP are unequal. As a result, embedded generator applicants may accept liability that they consider is not appropriate.

The CEC proposes to amend Part B of Schedule 5.1 of Chapter 5A to require a connection offer involving an embedded generator to contain limitations on the embedded generator's liability for damages to the network. However, no specific limitations, either by dollar amount or how to calculate a dollar amount have been provided by the CEC.

3.5.3 Chapter 5 rule change process

This issue was not raised in the Chapter 5 rule change request.

3.6 Dispute resolution

3.6.1 Current arrangements

If an embedded generator applicant is not satisfied with the terms and conditions or charges in a negotiated connection contract, and it cannot resolve the issue directly with the DNSP, it can seek dispute resolution assistance from the AER.

The dispute resolution arrangements for embedded generator applicants seeking a connection under Chapter 5A are provided for in Part G of Chapter 5A. These

arrangements apply to basic and standard connections as well as negotiated connections.

Chapter 5A provides guidance to the AER when determining a dispute. For example, in determining a relevant dispute the AER has to give effect to the DNSP's connection policy.[37]

Importantly, if the AER considers that a dispute could be effectively resolved by other means then it may advise the parties of this. For example, the AER might advise the dispute could be dealt with more efficiently and with less expense by a jurisdictional ombudsman.[38]

The dispute resolution arrangements that apply to embedded generators that are seeking to connect under Chapter 5A are different from the dispute resolution arrangements that apply to embedded generators seeking to connect under Chapter 5. For embedded generator seeking to connect under Chapter 5, the relevant dispute resolution process is in Chapter 8 of the NER which provides for the Wholesale Energy Market Dispute Resolution Adviser to resolve disputes.

3.6.2 Issues raised by the CEC

The CEC proposes to amend the definition of a "relevant dispute" under Part G of Chapter 5A to broaden the scope of issues that can be considered under it. Specifically, to include in the definition of a "relevant dispute" a dispute between a customer and a DNSP about the requirements of Chapter 5A and any material produced by a DNSP that is consequent of Chapter 5A.[39]

This proposed change addresses the CEC's concerns that the Chapter 5A dispute resolution process is too narrow and excludes aspects of the negotiation process that may be subject to disagreement.

3.6.3 Chapter 5 rule change process

The dispute resolution arrangements available to embedded generators connecting to distribution networks under Chapter 5 of the NER were considered as part of the Chapter 5 rule change process. After extensive consultation with stakeholders, the Commission decided to retain the existing dispute resolution regime for embedded

37 A DNSP's connection policy is a document approved by the AER under Chapter 6, Part E of the NER which sets out the circumstances in which connection charges are payable and the basis for determining the amount of such charges.

38 NER clause 5A.G.3(a).

39 CEC, Rule change request, Attachment 1, Draft amendments to Chapter 5A, proposed clause 5A.G.1.

generators connecting under Chapter 5, that is the dispute resolution process in Chapter 8 of the NER.[40]

The Commission considered the scope of the existing dispute resolution framework is sufficient to facilitate the resolution of a wide range of disputes that may arise between embedded generator applicants and DNSPs and provide a clear, flexible and relatively low-cost dispute resolution mechanism.[41] For clarification, the final rule included amendments which specified that technical matters are also disputable matters.

3.7 Questions

Where relevant please respond to the questions in this section by reference to each of the issues raised by the CEC, those being:

- the structure and timing of the connection process;
- information for embedded generator applicants;
- the power transfer capability of the network;
- fees relating to the connection application process;
- connection charges;
- embedded generator liability to a DNSP; and
- dispute resolution.

Question 5

Do you agree with the issues identified by the CEC? Please provide evidence to support your claims.

Question 6

Are the CEC's solutions appropriate or are there better solutions to the issues raised? If so, please describe these. Are the proposed solutions consistent with the national electricity objective? What are the costs and benefits of the proposed solutions?

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

41 AEMC, *Connecting Embedded Generators*, Rule determination, 17 April 2014, Chapter 12.

Question 7

Are solutions identified by the AEMC on similar issues for connecting embedded generators under Chapter 5 appropriate to the issues identified in this rule change request?

Question 8

To what extent would allowing embedded generators (excluding embedded generators entitled to a basic connection service) that otherwise fall within the scope of Chapter 5A to use all or part of the Chapter 5 embedded generator connection process resolve the issues raised by the CEC? How could this best be achieved?

In assessing the CEC's rule change request, a key matter for the Commission will be the clear identification of a problem with the current negotiated connection process in Chapter 5A that requires resolution by making amendments to the NER. Accordingly, practical evidence of a problem with Chapter 5A would greatly assist the Commission in forming a view on this issue.

In addition, in assessing the rule change request the Commission will consider the trade-off between the benefits of having tailored connection processes versus the increased administrative burden that this may create. Specifically, whether the benefits of having a negotiated connection process in Chapter 5A that is different from the Chapter 5 connection process is an appropriate outcome that is consistent with meeting the national electricity objective (NEO).

4 Assessment framework

The Commission's assessment of this rule change request must consider whether the proposed rule promotes the NEO as set out under s. 7 of the National Electricity Law (NEL). The national electricity objective states:

> "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."

The objective captures the three dimensions of efficiency: productive (efficient operation), allocative (efficient use of) and dynamic efficiency (efficient investment).[42]

The Commission considers that an efficient connection process with respect to Chapter 5A, would have the following characteristics:

- meets the reasonable needs of embedded generator connection applicants;
- supports connection services being priced in a cost reflective manner;
- supports connection services being provided at least cost; and
- does not undermine the security and reliability of the distribution network.

The Commission considers these outcomes would support investment and competition in embedded generation and the supply of energy to consumers.

To support its assessment of whether the CEC's rule change request is likely to promote these outcomes, the Commission proposes to consider the following issues to inform its judgement:

- transparency: the rules should facilitate the provision of accurate and timely information to embedded generator connection applicants. This includes information by which the costs of connection can be reasonably assessed. Better and more transparent information promotes allocative efficiency. It also promotes dynamic efficiency by enhancing confidence in, and predictability of, the process;

---

42 Productive efficiency means goods and services should be provided at lowest possible cost to consumers; allocative efficiency means that the price of goods and services should reflect the cost of providing them, and that only those products and services that consumers desire should be provided; dynamic efficiency means arrangements should promote investment and innovation in the production of goods and services so that allocative and productive efficiency can be sustained over time, taking into account changes in technologies and the needs and preferences of consumers.

- allocation of costs (and risks): efficient contracting arrangements allocate costs and risks to the party best able to manage (reduce) them. This typically means those whose decisions cause the costs or risks to be incurred (assuming that causers can be clearly identified). Efficient risk and cost allocation supports productive and dynamic efficiency;

- transactions costs: the connection process should be timely and easily understood by stakeholders. An overly complex or burdensome process for negotiating connection is likely to deter efficient connections (with implications for investment and innovation in embedded generation). Low transactions costs support both productive and dynamic efficiency;

- security and reliability of supply: connections should not undermine the ability of DNSPs to meet their performance obligations for the safety, security and reliability of the network; and

- administrative burden: the rules should not impose an unnecessary administrative or compliance burden on either connection applications or DNSPs. Higher administrative costs will be reflected in prices and passed through to consumers, which reduces productive efficiency.

There are no specific requirements about the issues the Commission considers to assess efficiency or the weight it places on specific factors in the assessment process. It will use its judgement, based on information provided in submissions and its own analysis, to form a view on whether the rule change request is likely to promote the achievement of the NEO.

The rule change request will be compared with the current provisions under Chapter 5A of the NER.

5 Lodging a submission

The Commission has published a notice under s. 95 of the NEL for this rule change request inviting written submission. Submissions are to be lodged online or by mail by 12 June 2014 in accordance with the following requirements.

Where practicable, submissions should be prepared in accordance with the Commission's Guidelines for making written submissions on rule change requests.[43] The Commission publishes all submissions on its website subject to a claim of confidentiality.

All enquiries on this project should be addressed to Neil Howes on (02) 8296 7800.

5.1 Lodging a submission electronically

Electronic submissions must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code "ERC0158". The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of the electronic submission, the Commission will issue a confirmation email. If this confirmation email is not received within three business days, it is the submitter's responsibility to ensure the submission has been delivered successfully.

5.2 Lodging a submission by mail

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission should be sent by mail to:

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Or by fax to (02) 8296 7899.

The envelope must be clearly marked with the project reference code: ERC0158.

Except in circumstances where the submission has been received electronically, upon receipt of the hardcopy submission the Commission will issue a confirmation letter.

If this confirmation letter is not received within three business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

43 This guideline is available on the Commission's website.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CEC	Clean Energy Council
Commission	See AEMC
DNSP	distribution network service provider
kW	kilo watts
MW	mega watts
NABERS	National Australian Built Environment Ratings System
NEL	National Electricity Law
NEM	national electricity market
NER	National Electricity Rules
NEO	national electricity objective