

Australian Energy Market Commission

RULE DETERMINATION

National Electricity Amendment (Transmission Connection and Planning Arrangements) Rule 2017

Rule Proponent(s)
COAG Energy Council

23 May 2017

**RULE
CHANGE**

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Reference: ERC0192

Citation

AEMC 2017, Transmission Connection and Planning Arrangements, Rule Determination, 23 May 2017, 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.

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Summary

This final determination sets out significant changes to the transmission connections arrangements, as well as changes to enhance the planning arrangements in the National Electricity Market (NEM). These changes will provide for a comprehensive and coherent transmission connection and planning framework.

The final rule improves transparency, contestability and clarity in the transmission connection framework while maintaining clear, singular accountability for shared network outcomes, as well as enhancing the transmission planning and decision-making framework.

The Commission has made this final determination in response to a rule change request from the Council of Australian Governments' (COAG) Energy Council. The final rule puts in place arrangements in response to recommendations made in the Australian Energy Market Commission's (AEMC or Commission's) *Transmission frameworks review*, which recommended, amongst other things, reforms to facilitate more efficient connections between generators and transmission businesses, as well as more coordinated planning arrangements.

Between the *Transmission frameworks review* and this rule change request, the Commission has comprehensively reviewed the transmission connections process with substantial engagement from stakeholders, and through the final rule has put in place arrangements that it considers are fit for purpose and promote the long-term interests of consumers.

The Commission recognises that any new arrangements that are as significant as this change will take time for participants to prepare for and adapt to. The Commission therefore considers that stakeholder focus should be forward looking - that is, embracing and implementing the revised connection arrangements rather than reflecting on the existing connections framework.

The Commission's final rule is a more preferable rule, but is broadly consistent with the intention of the proposals put forward in the rule change request. The final rule is also largely the same as the draft rule, but has various minor amendments to clarify aspects of the rule, as well as to address some stakeholder concerns.

Connections aspects

Why is there a need to change the current connections framework?

The AEMC's findings in the *Transmission frameworks review*, stakeholder input on this rule change request and other processes over the past few years has highlighted a number of issues with the current framework in the National Electricity Rules (NER) for connecting to the transmission network. Specifically, the current arrangements:

- are unclear and are therefore open to a degree of interpretation by connecting parties and Transmission Network Service Providers (TNSPs)

- do not encourage the incumbent TNSP to provide connection services in a cost effective, transparent, simple and/or timely manner
- do not provide connecting parties with sufficient bargaining power to negotiate a better connection process or outcome than what is offered by the incumbent TNSP – for example, connecting parties are reluctant to raise disputes in relation to the connection because doing so may displease the only party that can connect them (that is, the incumbent TNSP) or delay the connection process further.

As a result, connection experiences and outcomes can be unpredictable, unnecessarily complex, lengthy and costly, and may vary across transmission network boundaries. The lack of a consistent approach to transmission connections across the NEM can create confusion for connecting parties, particularly those operating in more than one jurisdiction. A successful connection may rely on connecting parties learning and accommodating the specific interpretations of a particular TNSP, which can add time and cost to a connection process. It could also result in sub-optimal decisions being made by parties about where to locate their project.

The last decade has seen a rise in the number of new generators, most notably new wind generators and gas facilities, connecting to the transmission network. With falls in technology costs and policy drivers such as the Australian Government’s renewable energy target (RET) and jurisdictional schemes such as the Victorian Renewable Energy Target, an increasing number of new generators, including large-scale solar and wind, are expected to seek connection to the transmission network over the coming years. As of May 2017, AEMO listed over 120 generators that had publically announced their intention to connect to the NEM.¹ It is important that the connection framework is fit for purpose for these new connections.

Input from stakeholders indicates that connection costs account for roughly 10 per cent of a proponent’s total project costs, and that total project costs are in the order of several hundred million dollars. Improvements to the way in which parties connect to the transmission network are therefore likely to have an impact on project costs and ultimately, the costs that are passed on to consumers. For example, the connection costs for a project with total costs of \$300 million would be expected to be about \$30 million. A ten per cent reduction in these connection costs equates to \$3 million in potential savings. Scaling this up against the expected thirty to fifty large-scale generators that the Clean Energy Council considers will seek to connect to the NEM by 2020, equates to savings of over \$100 million in the next three years.²

Overview of the final rule

The final rule implements an approach that **allows contestability for as many connection services as possible**, while making it clear that the **incumbent TNSPs, termed ‘Primary TNSPs’ in the final rule, remain accountable for outcomes on the**

1 See: <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Generation-information>

2 Clean Energy Council, submission on discussion paper, p. 1.

‘shared’ transmission network, including the operation and maintenance of that network and access to it. Table 1 sets out who the incumbent TNSP is in the five jurisdictions of the NEM.

Table 1 Incumbent TNSP in each NEM jurisdiction

State	Primary TNSP
Queensland	Powerlink
NSW	Transgrid
South Australia	ElectraNet
Tasmania	TasNetworks
Victoria	AEMO and declared transmission system operators (including AusNet Services)

The connection arrangements described below apply equally to generators, loads, Market Network Service Providers (MNSPs) and embedded networks connecting to the shared transmission network. They do not apply to DNSPs connecting to the shared transmission network.

The final rule also **clarifies many existing aspects of the connection process, and the framework for economic regulation of services required to connect to the shared transmission network** in order to remove ambiguity and scope for interpretation. In particular, the final rule defines two types of assets that provide the services required to connect a party to the shared transmission network – identified user shared assets and dedicated connection assets:

- Identified user shared assets broadly describe the collection of components that are used to connect a connecting party to the shared transmission network and which, once commissioned, form part of the shared transmission network, for example parts of a substation.
- Dedicated connection assets describe the collection of components that are used to connect a connecting party to the shared transmission network and which, once commissioned, are able to be isolated from electricity flows on the transmission network, for example the power line that connects parts of a substation to a generating system.

Many stakeholders supported a fully contestable approach to transmission connections – that is, where the provision of all services to connect to the shared transmission network can be provided by any party on commercial terms. These stakeholders considered that such an approach would provide faster and cheaper connections. However, the Commission is of the view that the Primary TNSP should continue to be accountable for shared network outcomes in its licensed area. The final rule therefore allows contestability for as many services as possible, while making it clear that the

Primary TNSP has responsibility for control, operation and maintenance of the shared transmission network, which promotes a safe, reliable and secure network for consumers.

The final rule clarifies that all services provided for new dedicated connection assets, including design, construction, ownership, operation and maintenance, can be provided by any party on commercial terms. This is because the risks of inadequate design, construction and operation of those assets fall on these parties alone, and the shared network can be protected if appropriate action is taken, such as isolating the connection.

However, because identified user shared assets form part of the shared transmission network, the new arrangements for these assets make sure that the safety, reliability and security of the transmission network can be maintained while enabling parties to connect at efficient cost. The Commission considers that this is best achieved when there is one party accountable for outcomes on the shared transmission network. Therefore, the final rule allows for the services of detailed design, construction and ownership for certain components of identified user shared assets to be provided on a contestable basis to the extent that they meet a set of criteria as to what is contestable. However, the services of setting the functional specification, providing cut-in works, operation, maintenance and control of identified user shared assets must be provided by the Primary TNSP as negotiated transmission services. Further, the final rule maintains that the Primary TNSP is accountable for outcomes on the shared transmission network, which includes identified user shared assets (regardless of whether these are owned by the Primary TNSP or not).

In addition, the final rule amends the existing process by which parties connect to the shared transmission network. The final rule seeks to strengthen a connecting party's negotiating power with a TNSP by:

- requiring the Primary TNSP to publish certain information about connecting to its network on its website and provide certain information to connection applicants on request, to enhance the transparency of the connection process
- strengthening the principles that underpin negotiations for services required to connect to the shared transmission network and removing the requirement for TNSPs to develop individual negotiating frameworks for approval by the Australian Energy Regulator (AER)
- providing for a process by which an independent engineer can be engaged to provide advice on a technical issue related to a connection if either the connecting party or the TNSP requests it
- clarifying the process that applies to the resolution of disputes raised in relation to transmission connections.

The Commission has also considered how distribution network service providers (DNSPs) connect to the transmission network and the arrangements for economic regulation of the services provided to enable those connections. The Commission has

concluded the existing arrangements are appropriate and fit-for-purpose, and so the final rule does not change the arrangements by which a DNSP connects to a transmission network.

Expected outcomes of the rule change

The final rule should make the transmission connection process faster and quicker for connecting parties, and give them more control over the design and construction of assets required for their connection. This ultimately should lead to lower costs for consumers. Specifically:

- The final rule relies on some cost and timing information being revealed through a competitive market; but also sets out regulatory obligations on the Primary TNSP to provide certain information that will help a connecting party make informed decisions. The combination of these two paths for information being revealed will result in more efficient information being obtained by connecting parties.
- Having the services of detailed design, construction and ownership able to be provided on a contestable basis provides the connecting party with more control over the timing of its connection to the transmission network.
- The model also allows for competition in the provision of services for which the Commission and stakeholders consider there already is, or will be, a market. Promoting competition, where appropriate, should result in lower cost outcomes.
- Accountability is clear because the final rule provides that identified user shared assets form part of the shared transmission network and, once commissioned, will be under the full operational control of the Primary TNSP. Therefore, the safe, reliable and secure operation of the transmission network should be promoted.

Victorian arrangements

The framework under which connections to the transmission network in Victoria occur is fundamentally different to the processes and principles underlying the connection framework used in the rest of the NEM. This is because Australian Energy Market Operator (AEMO) is authorised to exercise declared network functions in Victoria. AEMO is responsible for the provision of shared transmission services in Victoria.

Given this, the rule change request sought to isolate most of the proposed changes to the connections framework from any jurisdiction where AEMO is authorised to exercise its declared network functions. The Commission is of the view that the scope of the rule change request does not include consideration of the application of the final rule to AEMO's declared network functions. Therefore, the changes to the transmission connections framework under the final rule will not apply in Victoria.

However, the COAG Energy Council requested the Commission to provide advice on whether the rule change should or should not be adopted in declared network

jurisdictions. In this final determination, the Commission outlines a number of ways the approaches to connections in Victoria and the rest of the NEM could be harmonised and made more consistent.

Planning aspects

Why is there a need to change the current planning framework?

Currently there are a number of mechanisms that work together in the NER to promote an efficient and transparent transmission network planning process. In turn, they help to promote efficient, strategic and coordinated transmission networks. Responsibility for transmission planning in the NEM is shared between AEMO, in its role as National Transmission Planner; and the jurisdictional planning bodies for each region of the NEM, which are typically the local TNSP. The Commission considers that there are a number of measures that could be undertaken to enhance the efficiency of existing arrangements and promote a more coordinated and integrated approach to transmission planning.

Overview of the final rule

The final rule makes a number of enhancements to the planning frameworks. Specifically it:

- requires TNSPs to include certain additional information in its transmission annual planning report on key changes since the last transmission annual planning report, the forecasting methodology used for forecast loads and more detailed information regarding network constraints
- requires the AER to develop a guideline to support consistency across transmission annual planning reports
- requires TNSPs to undertake joint planning with other TNSPs where there is the potential for investments in other transmission networks to deliver market and reliability benefits in their own network.

Under the final rule the proposed changes to the transmission planning frameworks will apply in Victoria.

Expected outcomes of the rule change

The final rule promotes more efficient and consistent arrangements for supporting investment across regional boundaries, potentially lowering prices to consumers over the long-term and promoting a nationally coordinated planning approach. This makes sure that the investment options identified to meet a given investment take into account all potential options, and are not limited by geography or jurisdiction. Increased transparency and coordination on network planning should also assist market participants and other interested stakeholders in making investment and operational decisions.

Implementation

The connections aspects of the final rule will commence on 1 July 2018. Any parties seeking connection to the transmission network after this date will do so under the new rules.

The final rule requires the AER and AEMO to undertake a number of steps before this commencement date, including:

- by 1 March 2018, the AER must amend and publish the electricity network service provider registration exemption guideline to take account of the amending rule
- by 1 April 2018, AEMO must develop an application form for registration of network service providers that takes account of the amending rule.

While not set out in the final rule, there are a number of steps other parties will need to take before the commencement date in order to be able to comply with the final rule on and from the commencement date.

The planning aspects of the final rule commence when the final rule is made (i.e. on 30 May 2017). This provides TNSPs and the AER sufficient time to prepare for the changes set out in the final rule.

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Box 1 sets out a number of key terms that are used throughout this final determination in the context of transmission connections.

Box 1 **Glossary of key terms for connections**

connecting party: Not defined in the final rule, this term is used throughout this final determination to describe a load, generator, embedded network or market network service provider (MNSP) connecting to the shared transmission network. Distribution network service providers (DNSPs) connecting to the transmission network, or any party connecting to the distribution network, are not captured in the use of this term throughout this final determination.

dedicated connection asset: This term is introduced by the final rule and is used to describe the collection of components that are used to connect a connecting party to the shared transmission network and which, once commissioned, are able to be removed or otherwise isolated from the shared transmission network without affecting the provision of shared transmission services. For example, the power line that connects parts of a substation to a generating system. This term is defined in the final rule as:

“The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting* an *identified user group* to an existing *transmission network*;
- (b) are used exclusively by the *identified user group*;
- (c) can be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the *identified user group*;
- (d) are not:
 - 1. *network connection assets*;
 - 2. part of a *generating system*;
 - 3. part of a *distribution system*;
 - 4. part of *transmission system* for which a *Market Network Service Provider* is registered under Chapter 2;
 - 5. part of a *Transmission Customer's facility* that utilises electricity energy; or
 - 6. part of the *declared transmission system* of an *adoptive jurisdiction*.

Note

Where a *Primary Transmission Network Service Provider* is registered in

respect of a *dedicated connection asset* operating at distribution voltage, it will not be a *distribution system* and will constitute part of its *transmission system* for which it is registered. See definitions of *distribution system* and *transmission system*."

identified user group: This term is introduced by the final rule and is used to describe one or more connecting parties that are connected to the transmission network via the same connection point. This term is defined in the final rule as:

"One or more persons (other than a *Network Service Provider* who is not a *Market Network Service Provider*) who, from time to time, are connected to a *transmission network* at the same single *connection point*."

identified user shared asset: This term is introduced by the final rule and is used to describe the collection of components that are used to connect a connecting party to the shared transmission network and which, once commissioned, form part of the shared transmission network, for example parts of a substation. This term is defined in the final rule as:

"The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting* one or more *identified user groups* to an existing *transmission network*;
- (b) are not used exclusively by the relevant *identified user groups*;
- (c) under normal operating conditions, cannot be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the relevant *identified user groups*; and
- (d) are not part of the *declared transmission system* of an *adoptive jurisdiction*."

large DCA service: The final rule introduces this term to define the service provided by means of a large dedicated connection asset as a 'large DCA service' that is subject to a regime for third party access. The service provided by means of a small dedicated connection asset is not subject to this access regime. A dedicated connection asset is required to be classified as a large dedicated connection asset if the total route length for any power line forming part of it is 30km or longer. The final rule defines large DCA service as:

"A service provided by means of a *large dedicated connection asset*."

large dedicated connection asset: This term is introduced in the final rule to make clear that a dedicated connection asset that is 30km or longer constitutes a large dedicated connection asset, and is subject to the regime for third party access. It is defined in the final rule as:

“A dedicated connection asset where the total route length for any power lines forming part of the dedicated connection asset is 30 kilometers or longer.”

network connection asset: Introduced by the final rule and defined as:

“Those components of a transmission system which are used to provide connection services between Network Service Providers (excluding a Market Network Service Provider).”

Primary Transmission Network Service Provider: The final rule introduces the term Primary TNSP to strengthen the notion of incumbency and make it clear that only this party is providing access to the shared transmission network in its region of the NEM. It is defined in the final rule as:

“The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system.”

This final determination uses the term incumbent TNSP to refer to this party under the existing arrangements, that is, the existing TNSP in each jurisdiction that is responsible for the shared transmission network in its region and for processing connections to that network by other parties. But, this final determination uses the term Primary TNSP when referring to the arrangements for this party under the final rule.

shared transmission network: Not defined in the final rule, this term is used throughout this final determination to describe a transmission network owned, operated and controlled by the Primary TNSP, including all identified user shared assets and network connection assets.

third party DCA: The final rule introduces the term third party DCA to describe a dedicated connection asset that is owned, operated or controlled by a party other than the Primary TNSP. It is defined in the final rule as:

“A dedicated connection asset for which a person other than the Primary Transmission Network Service Provider is registered under Chapter 2.”

third party IUSA: The final rule introduces the term 'third party IUSA' to describe those components of an identified user shared asset that are contestable and are owned by a party other than the Primary TNSP. This term is defined in the final rule as:

“Those contestable IUSA components of an identified user shared asset that are not, or will not be, owned or leased by the Primary Transmission Network Service Provider.”

transmission network: Defined in Chapter 10 of the existing NER as:

“A network within any participating jurisdiction operating at nominal voltages of 220 kV and above plus:

- (a) any part of a *network* operating at nominal *voltages* between 66 kV and 220 kV that operates in parallel to and provides support to the higher voltage *transmission network*;
- (b) any part of a *network* operating at nominal *voltages* between 66 kV and 220 kV that is not referred to in paragraph (a) but is deemed by the AER to be part of the *transmission network*.

For a participating jurisdiction other than the State of Victoria, an identified shared user asset owned, controlled or operated by a Primary Transmission Network Service Provider (including a third party IUSA that is the subject of a network operating agreement) forms part of that Primary Transmission Network Service Provider’s transmission network.”

transmission system: This term is defined in the existing NER as "a *transmission network*, together with the *connection assets* associated with the *transmission network*, which is connected to another *transmission or distribution system*." It is amended in the final rule to make it clear that a transmission system includes dedicated connection assets that are owned by a party other than the Primary TNSP. It is defined in the final rule as:

“A transmission network, together with the connection assets associated with the transmission network, which is connected to another transmission or distribution system.

For a participating jurisdiction other than the State of Victoria, a transmission system includes, for the purposes of Chapter 2, a third party DCA, which is not a Notified Existing DCA within the meaning of clause 11.98.1.

Note

An identified user shared asset or a dedicated connection asset for which the Primary Transmission Network Service Provider is registered will form part of that provider’s broader transmission system (even if the

dedicated connection asset is operating at a distribution voltage) rather than constituting a separate *transmission system* requiring separate registration under Chapter 2. A person owning, controlling or operating a *third party DCA* is required to be registered under Chapter 2 as a *Transmission Network Service Provider*.”

'whole' transmission system: Not defined in the final rule, this term is used to collectively describe all infrastructure in the national electricity market (NEM) that is captured under the definition of transmission system, including transmission networks, network connection assets and dedicated connection assets.

Figure 1 conceptualises a number of these terms.

Figure 1 Key concepts and terms in the final rule and final determination

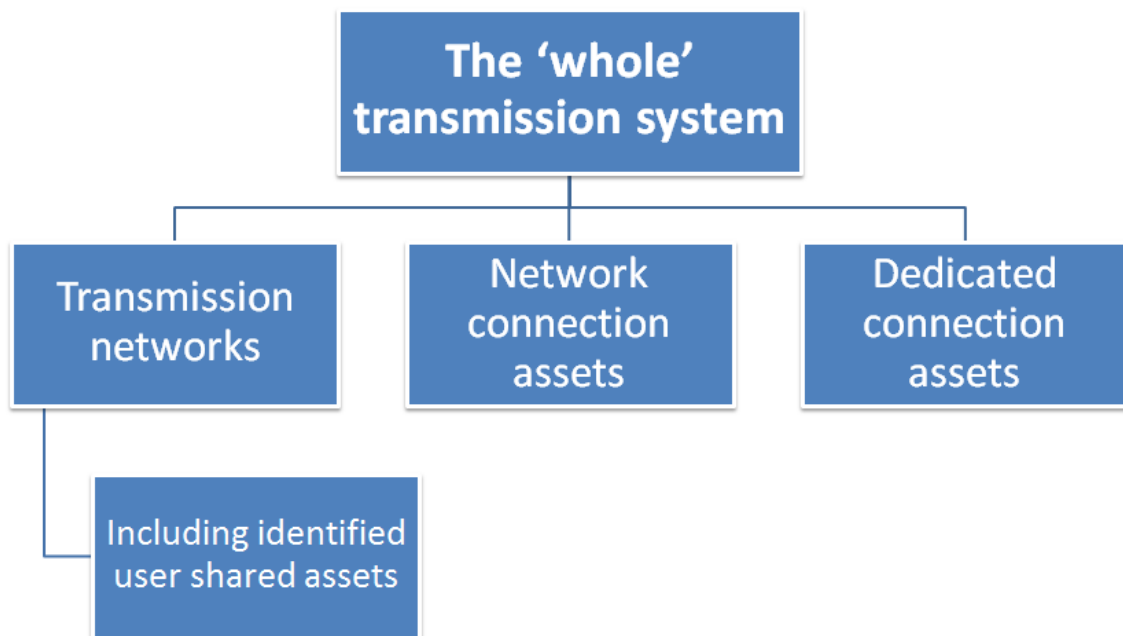
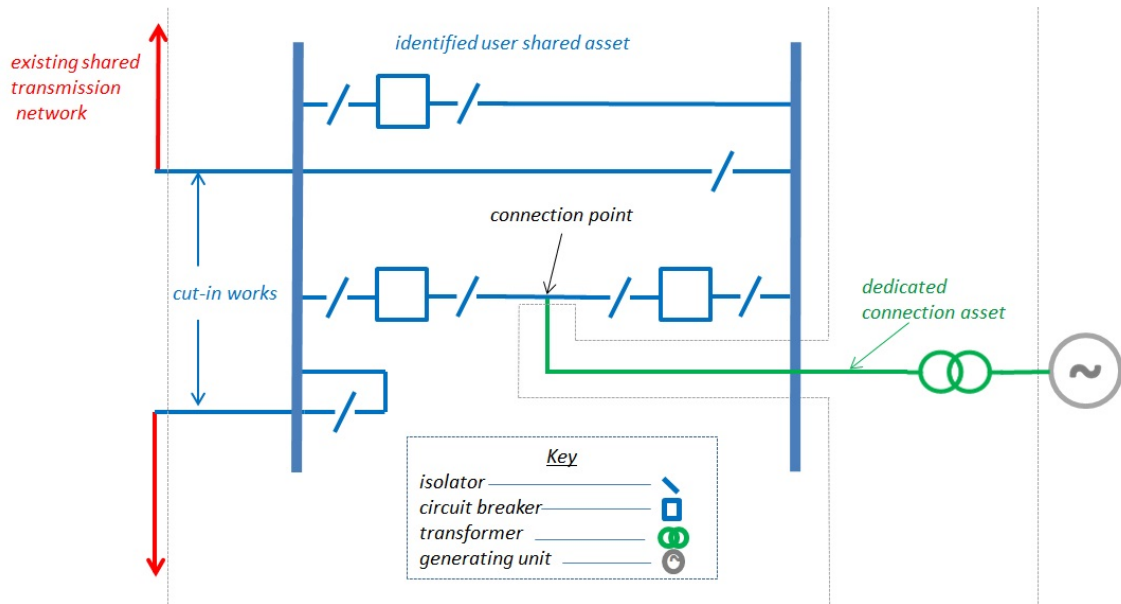


Figure 2 provides a simplified illustration of key terms used in the final rule and in this final determination in the context of connections to the shared transmission network.

Figure 2 Illustration of key concepts and terms in the final rule and final determination



1 The COAG Energy Council's rule change request

1.1 The rule change request

On 27 July 2015, the COAG Energy Council made a request to the Australian Energy Market Commission (AEMC or Commission) to make a rule regarding transmission connection and planning arrangements (rule change request). The rule change request is largely based on the connections and planning recommendations made by the Commission in the *Transmission frameworks review*, which was completed in 2013.³ The objective of the recommendations made by the Commission in the *Transmission frameworks review* was to improve transparency, contestability and clarity in the connections frameworks while maintaining clear accountability for shared network outcomes, and to enhance the transmission planning and decision making frameworks.

Specifically, the rule change request proposed to:

- clarify the definitions for connection assets, connection services and service classifications
- enhance contestability in the connection arrangements
- improve the transparency of information provided to seekers of negotiated transmission services
- establish a framework for the nomination of independent engineering experts who may provide independent advice around the appropriateness of the technical specifications for a particular connection asset
- support a nationally coordinated planning approach so that both intra-regional and inter-regional options are considered when a Transmission Network Service Provider (TNSP) is determining the optimal investment
- establish a process of formal consultation in the development of the National Transmission Network Development Plan
- introduce a uniform approach to transmission annual planning reports.⁴

The rule change request and accompanying proposed rule are available on the Commission website.⁵

³ See <http://www.aemc.gov.au/Markets-Reviews-Advice/Transmission-Frameworks-Review>

⁴ COAG Energy Council, *Transmission Connection and Planning Arrangements*, rule change request, July 2015, p. 2.

⁵ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

1.2 Current arrangements

This section summarises the current arrangements for transmission connections and planning under the National Electricity Rules (NER). These arrangements are described in further detail in the consultation paper on the rule change request that was published on 26 November 2015.⁶

1.2.1 Connections

The shared transmission network facilitates the secure and integrated operation of the electricity power system and flows of electricity between parties that produce electricity (generators) and those that consume electricity (end users or consumers). This shared transmission network is a meshed network, so it is nearly impossible to separate out those assets that provide services to a particular party from those that provide services to all users of the network. There is no way to attribute flows on specific assets to individual users, and any attempt to do so will have no scientific basis, and will therefore be arbitrary.

Generators, large energy users (referred to in this final determination as load), market network service providers (MNSPs) and distribution systems need to connect to the shared transmission network in order to facilitate the flow of electricity. The need for, and ongoing use of, assets that are used to facilitate connections to the network can be attributed to the party that uses them to connect. Connection arrangements include the process by which these parties connect, as well as the services and assets that are provided in order for them to connect.

The National Electricity Market (NEM) operates under an open access regime in which generators have a right to negotiate a connection to the network in accordance with the NER, but no right to the regional reference price.⁷ Generators earn revenue by being dispatched. The physical dispatch of electricity is determined by dispatch offers from generators, and the level of network congestion.

There are two main parts of the existing NER that relate to transmission connection arrangements:

- Part A of Chapter 5, which sets out the connection process, regulates aspects of the technical and contractual arrangements needed to connect, and sets out the obligations on parties throughout the connections process

⁶ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

⁷ Clause 5.4A of the current NER appears to contemplate generators negotiating firm transmission network user access with TNSPs i.e. for generators to negotiate compensation from a TNSP in the event they are constrained off or on the network, in return for an access charge. However, this provision cannot work in practice because the scheme is not mandatory and all generators have open access to the network. The final rule deletes this clause in order to make it clear that the NEM operates under an open access regime. This is discussed further in chapter 4.

- Chapter 6A, which covers the economic regulation of the provision of transmission services - that is, whether transmission services are to be provided as prescribed, negotiated or non-regulated services and consequently how they are economically regulated - and specifies the terms and conditions of access to be applied by TNSPs for the provision of prescribed and negotiated transmission services.

Part A of Chapter 5 - the connection process

Chapter 5 of the NER sets out the six main steps by which connecting parties negotiate a connection to the transmission network. These are, by reference to the relevant clauses in the current NER, summarised as follows:

1. connection enquiry (clause 5.3.2), where the applicant makes an enquiry to the TNSP
2. response to the connection enquiry (clause 5.3.3), where the TNSP informs the applicant of the information that it must provide the TNSP, the amount of the application fee and provides a preliminary program showing proposed milestones for the connection
3. application for connection (clause 5.3.4), where the applicant makes an application to the TNSP to connect to the network and pays the application fee as specified above
4. preparation of the offer to connect (clause 5.3.5), where the TNSP prepares the offer to connect, within the time period set out in the preliminary program
5. offer to connect (clause 5.3.6), where the TNSP makes an offer to the applicant, for example including the commercial terms and engineering requirements for the connection
6. finalisation of the connection agreements (clause 5.3.7), where the applicant accepts an offer following negotiations and enters into a connection agreement with the TNSP.

This process is a staged negotiation with defined timeframes for key steps in the process. The regime is relatively prescriptive, providing for clear accountability of the TNSP at the various stages of the process. However, the Commission understands that, in practice, there are often additional steps performed and that it is an iterative process as parties exchange relevant information in order to finalise negotiations.

This framework applies to new connections, as well as modifications to existing connections. It also covers the negotiation of costs and the specification of connection assets to meet a particular performance standard.

Chapter 5 of the NER contains provisions relating to technical standards, which define the level of performance required of the equipment that makes up, or is connected to, the power system (e.g. generating plant). These include rules defining:

- the standards to which the system as a whole must perform⁸
- the automatic access standard and minimum access standard for equipment connecting to the power system (known as access standards) - which inform the basis of the performance standards for each connecting party, once they are negotiated and the connection agreement is in place.⁹

Performance standards are relevant to this rule change because the process by which these are negotiated for a specific connection occurs through the connection process set out above. As such, the process for negotiating performance standards for connecting equipment, as well as the process for negotiating the services and assets that are required for connection to the shared transmission network occur concurrently and are interdependent.

Chapter 6A - economic regulation of transmission services

Chapter 6A of the existing NER provides for economic regulation of the following services:

- Prescribed transmission services:¹⁰ The costs of providing these services are recovered from transmission network users, with the revenues that a TNSP can recover for these services regulated by the Australian Energy Regulator (AER) pursuant to the transmission determinations made for each TNSP that provides these services under Chapter 6A.
- Negotiated transmission services:¹¹ There is no regulation of the revenues that a TNSP can earn for the provision of negotiated transmission services. The terms and conditions, including price, of the provision of these services are negotiated between the TNSP and the party who wishes to receive these services under a framework set out in Chapters 5 and 6A. As part of a TNSP's regulatory determination, the AER approves the negotiated transmission service criteria and negotiating framework that the TNSP will comply with when negotiating access to its negotiated transmission services. Chapter 6A sets out the principles on which the approved framework must be based.
- Chapter 6A envisages that TNSPs may also provide other transmission services that are unregulated, as they do not fall within the definitions of prescribed transmission service or negotiated transmission service. Currently, these services are provided by the TNSP outside the NER.

⁸ Schedule 5.1 of the NER. AEMO has a role in negotiating generator performance standards.

⁹ The access standards define the parameters of the technical obligations on network users and network owners when negotiating the connection of a generating unit, a MNSP or an end use customer. These standards are set out in Schedules 5.2 and 5.3 of the NER.

¹⁰ *Prescribed transmission service* is defined in Chapter 10 of the NER and broadly includes those services provided in relation to the shared transmission network.

¹¹ *Negotiated transmission service* is defined in Chapter 10 of the NER and broadly includes those services provide in relation to a party's connection to the shared transmission network.

Chapter 6A also sets out a framework for the resolution of disputes about the provision of prescribed or negotiated transmission services.

Assets and services required to connect to the transmission network

Every connection to the shared transmission network requires the TNSP to provide a connection service. However, the current definition of *connection service* in the NER, below, does not make clear the exact scope of the services required.

connection service

An *entry service* (being a service provided to serve a *Generator* or a group of *Generators*, or a *Network Service Provider* or a group of *Network Service Providers*, at a single *connection point*) or an *exit service* (being a service provided to serve a *Transmission Customer* or *Distribution Customer* or a group of *Transmission Customers* or *Distribution Customers*, or a *Network Service Provider* or a group of *Network Service Providers*, at a single *connection point*).¹²

The Commission understands that a connecting party may require the TNSP to provide some or all of the following assets and services to connect to the transmission network:

- The construction, operation, maintenance and control of any assets that are required to 'cut-in' to the existing shared transmission network.
- The design, construction, operation, maintenance and control of new assets (e.g. a substation) that will form part of the shared transmission network to facilitate the connection, or upgrades to existing assets, and/or any other upgrades to the shared transmission network (such as communication or protection systems) that are necessary to meet the requirements of the NER as a result of that connection.
- The design, construction, operation, maintenance and control of an "extension" from the party's facilities to the shared transmission network. For example, in the case of a generator connecting, this asset is often considered to be the power line that runs from the generating facility to the substation on the shared transmission network.

However, as identified in the *Transmission frameworks review*, the NER do not clearly set out or classify how the services to be provided in relation to the assets described above are to be classified (e.g. prescribed, negotiated or non-regulated). A degree of interpretation is therefore required by both TNSPs and connecting parties to establish their respective rights and obligations with regard to connections. As a result, connection processes can differ depending on which TNSP is involved.

Set out below is the Commission's understanding of the existing practice of most TNSPs for the connection of generation, load, DNSPs and embedded networks. This understanding was developed over the course of considering this rule change request. It is intended to illustrate the key concepts and terms that are used in the existing

¹² See Chapter 10 of the NER.

connection provisions of the NER. Stakeholders have not always entirely agreed with this understanding. However, the Commission considered that these differences in the interpretation of the existing arrangements demonstrated a need to clarify the NER to provide clarity on how these assets and services should be dealt with in the connection process, which is a clear focus of this rule change request.

Similarly, the Commission understands that connecting parties have had different experiences with the connection process as a result of the culture and practice of individual TNSPs, and that a number of TNSPs are working to improve the overall experience for connecting parties. The Commission is also aware of work that ARENA and Energy Networks Australia are doing to share lessons on the connection process for large scale solar projects. While the Commission is supportive of these efforts, it considered that it is important to set out a clear framework in the NER that drives a more consistent connection process across different jurisdictions.

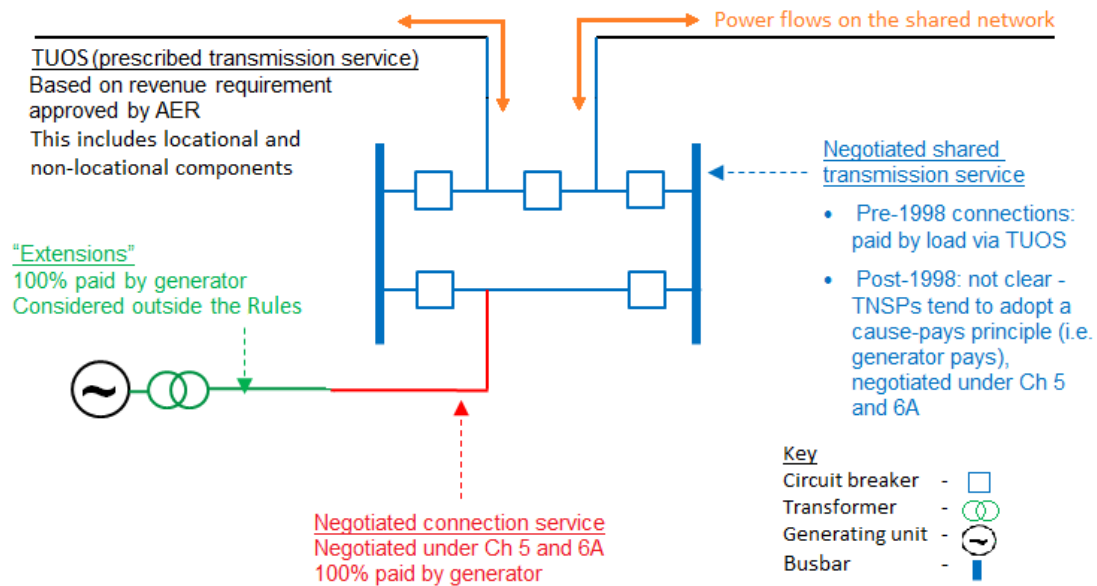
Stakeholder input also indicates that connecting parties face similar experiences when connecting load or generation to the distribution network - that is, the timeliness, cost and complexity of connections to the distribution network can vary between DNSPs depending on their culture, level of experience in connecting parties of a certain type (e.g. renewable generators) and interpretation of relevant regulations. While many of the proposals put forward in this rule change request would be applicable to connections to the distribution network, the scope of this rule change request is limited to connections to the transmission network only. If stakeholders consider that the arrangements set out in this final determination should apply to connections at the distribution level, a separate rule change request would need to be submitted.

Generator connection

By way of example, Figure 1.1 provides a simplified illustration of the Commission's understanding of the services that may be required to connect a new generator to the transmission network, and what form of regulation the provision of these services is subject to.¹³ Note that this example is one of a connection where a new substation is needed to connect the generator, that is, the diagram does not address a generator connecting to the shared transmission network via an existing substation.

¹³ The Commission understands that the arrangements to connect a MNSP are the same as those for the connection of a generator, although they negotiate different performance standards under the NER.

Figure 1.1 Current generator connection charging, based on our understanding of current practice



The transmission line at the top of the diagram (shown in black) is part of the shared transmission network. Prior to the connection, this line was unbroken. Services provided by the shared transmission network are paid for by customers through transmission use of system charges. Generators do not pay for any shared transmission services.

Other than this black line, everything else in the diagram is new and is constructed to allow the generator to connect. In order to connect the generator, the existing transmission line is cut into (i.e. split) and a new substation is built and connected to it. This service is provided by the incumbent TNSP as a negotiated transmission service. Once operational, electricity in that part of the network flows through that substation and the substation therefore forms part of the shared transmission network facilitating electricity flows to end-use consumers. The new substation is shown in blue.

A physical link or 'connection' is also needed within the TNSP's substation to connect the generator to the new substation, shown in red. This service usually comprises the provision of the physical connection plus any assets that are used exclusively by the generator and are located within the incumbent TNSP's area of control. Most TNSPs consider the connection point to be located at the point where the red and blue lines meet. However, some consider this point to be at the fence that separates the incumbent TNSP's area of control (i.e. the substation or switchyard) and the 'extensions' (see below) owned by the generator. This physical connection (the assets shown in red) is provided by the TNSP as a negotiated transmission service, and so is paid for fully by the generator.

The generator may also require a new transmission line to be constructed from its facilities to the boundary of the assets that are used to provide the connection service. In this diagram, this new line is referred to as an 'extension', which is consistent with the practice of most TNSPs who consider this line to fall within the definition of

extension under the NER.¹⁴ Under this interpretation, the extension is considered to comprise any assets, most likely power lines, between the generator's facilities and the substation. Depending on how close the generator's facilities are to the substation, this extension could be anywhere from only a few metres long to hundreds of kilometres long.

The Commission understands that current practice is that the generator may elect to construct and operate this extension itself, engage a third party to do so, or request the TNSP to do so on an unregulated basis. Therefore, TNSPs treat extensions as a non-regulated transmission service on the basis that they are contestable and do not fall within the definition of negotiated transmission service. As such, TNSPs consider that they are not obliged to provide extensions or be subject to their negotiating framework when negotiating any terms and conditions for the provision of extensions. That is, these assets (and the services provided by means of those assets) are considered to sit outside the scope of the economic regulatory framework in the NER.

Regardless of the uncertainty about how these different services are defined, the practice of all TNSPs is that the connecting generator is required to pay for all of the services that are required for it to connect to the transmission network.¹⁵ The only assets in Figure 1.1 that are not paid for by the connecting generator are those represented by the black line, i.e. the existing shared network. The classification of the services required to connect to the transmission network as either negotiated or non-regulated affects important matters such as how charges and other terms are determined and whether TNSPs are required to provide them, but not who pays for them.

Load connection

This section describes the Commission's understanding of the services that may be required to connect a new, direct-connected customer (or defined group of such customers) to the transmission network - that is, customers who are directly connected to the shared transmission network (but not customers connected via a regulated distribution system) - and what form of economic regulation applies to the provision of these services. The Commission also understands that embedded networks (i.e. parties who are exempt from registration as a DNSP) are connected in a manner similar to load. As above, this section assumes that a new substation is needed to connect the

¹⁴ See Chapter 10 of the NER.

¹⁵ There may be some circumstances where the services provided by a new substation to a generator could be classified as prescribed transmission services and therefore paid for by all customers, not the generator. This could occur if the TNSP applied the Regulatory Investment Test for Transmission (RIT-T) to the investment because it was a credible option to address an identified network need. However, these circumstances are rare and are not considered in this final determination. The Commission also notes that generators that were already connected prior to the start of the NEM do not pay any share of the costs of the existing substations to which they are connected, or do not contribute to the ongoing maintenance of those substations. The services for these connections were grandfathered in 2006 as prescribed transmission services under clause 11.6.11 of the NER.

load, that is, it does not address a load connecting to the shared transmission network via an existing substation.

In order to connect the load, as with generation, the existing transmission line is cut into (i.e. split) and a new substation is connected to it. Once operational, electricity in that part of the transmission network flows through that substation.

Contrary to what the Commission set out in its consultation paper (which was based on TNSP practice at the time of the *Transmission frameworks review*), the Commission now understands that the practice of the majority of TNSPs in recent years has been to treat the substation as providing a negotiated transmission service (i.e. the same as generators), and so the costs are paid for fully by the load.¹⁶ This means that the services, and regulation of those services, to connect a load are the same as those for a generator. That is:

- a new substation is required, which is treated as a negotiated transmission service and so paid for by the load as a negotiated transmission service provided by the TNSP
- a physical link or “connection” is required, which is treated as a negotiated transmission service and so paid for by the load as a negotiated transmission service provided by the TNSP
- a new transmission line is constructed from the facility to the boundary of the assets used to provide the connection service, which would be treated as an 'extension', and so the load may elect to construct and operate this extension itself, engage a third party to do so, or request the TNSP to do so as a non-regulated transmission service.

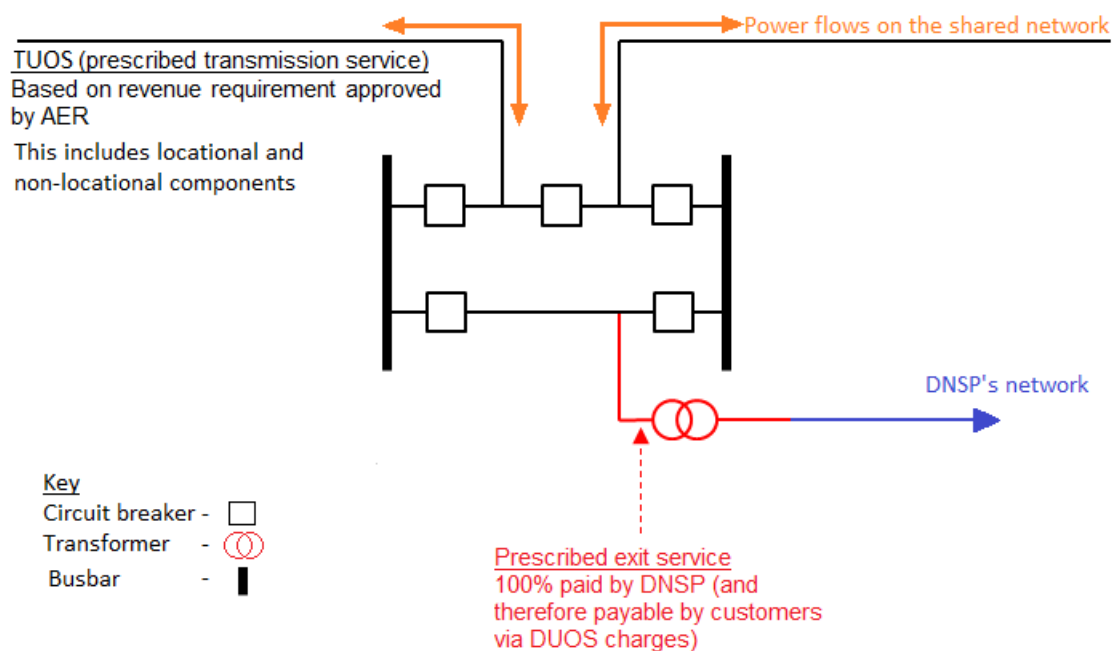
DNISP connection

Figure 1.2 provides a simplified illustration of the Commission's understanding of the services that may be required to connect a new distribution network service provider (DNISP) to the transmission network, and what form of regulation the provision of these services is subject to.¹⁷ As above, this connection implies that a new substation is needed to connect the DNISP (the diagram does not address a DNISP connecting to the shared transmission network via an existing substation).

¹⁶ The Commission understands that TNSPs' interpretation of the arrangements that apply to the connection of load to the transmission network has changed over time.

¹⁷ Under the NER, DNISPs and TNSPs must undertake joint planning, which includes assessing the adequacy of existing transmission and distribution networks and the assets associated with distribution connection points. Arrangements for the connection of a DNISP to the transmission network under the final rule are discussed in appendix E.

Figure 1.2 Current DNSP connection charging, based on our understanding of TNSP practice



For the connection of a DNSP, the substation is considered to form part of the shared transmission network. Unlike a generator or load connection, and as required by the NER, TNSPs treat this new substation as providing a prescribed transmission service, and so it is paid for by transmission customers.¹⁸

The costs associated with the provision of prescribed services (i.e. the substation above) are split into locational and non-locational components. That is, a share of the costs are attributed to the connection point at which they are incurred, while the other share of the costs is spread across all customers using a "postage stamp" method (a charge that does not vary by location or the level of utilisation of assets). So, through this method, the connecting DNSP (or, more accurately, the customers on the DNSP's network) should, in practice, pay for some proportion of the costs of the substation.

The physical link or connection (shown in red) is treated as a prescribed exit service,¹⁹ which is charged to the DNSP through transmission use of system charges. Ultimately, customers pay this through distribution use of system charges.

An 'extension' as such is not required - the physical connection simply links the transmission network to the distribution network, but either the TNSP or the DNSP may need to augment their network to create this proximity.

¹⁸ TNSPs also collect revenue from customers via a prescribed common transmission service charge, which is the sum of non-asset related common service costs and common service asset revenue.

¹⁹ Defined in Chapter 10 of the NER as "A service provided to serve a *Transmission Customer* or *Distribution Customer* or a group of *Transmission Customers* or *Distribution Customers*, or a *Network Service Provider* or a group of *Network Service Providers*, at a single connection point).

Arrangements in declared network jurisdictions

Under the National Electricity Law (NEL), jurisdictions can authorise AEMO to exercise declared network functions.²⁰ Such jurisdictions operate under a different regulatory framework in relation to the planning of investment in, and connection to, the transmission network. Where such arrangements apply, there is a separation of ownership of the declared transmission system from certain aspects of the operation and control of that system. AEMO is responsible for the provision of shared transmission services by means of, or in connection with, the declared shared network, and plans, authorises, contracts for and directs augmentation of the declared shared network. Declared Transmission System Operators (DTSOs) own and operate the system, subject to the functions conferred on AEMO.

Victoria is the only NEM jurisdiction where AEMO is authorised to exercise these functions. Given this, the arrangements to connect to the transmission network in Victoria are different to the arrangements to connect in all other NEM jurisdictions. In Victoria, AEMO is responsible for assessing all new connections to the declared shared transmission system against the NER requirements, but is not responsible for providing the assets associated with connection. If a connection requires an augmentation to the declared shared network, AEMO will determine whether the augmentation is contestable or non-contestable.²¹ If AEMO determines that the augmentation is contestable, the connection applicant can nominate a DTSO of its choice to build, own and operate the contestable assets, or it can ask AEMO to select a DTSO through an invitation to tender. If AEMO determines that the augmentation is not contestable, the assets will be provided by the incumbent DTSO, typically AusNet Services. A more detailed description of these arrangements is set out in chapter 6 of this final determination.

1.2.2 Planning

Transmission planning relates to the process of determining the investment needs of the transmission network in general terms, not specific investment decisions. Planning should create an informed basis for making specific investment decisions.

There are a number of mechanisms that work together in the NER to promote an efficient and transparent planning process for transmission systems. In turn, they help to promote the development of an efficient and coordinated transmission system. Transmission network planning arrangements should assist in strategic decision making across the NEM.

Responsibility for transmission planning in the NEM is shared between:

- AEMO, in its role as National Transmission Planner

²⁰ Part 5, Division 2, Subdivision 3, section 50C of the NEL.

²¹ An augmentation is contestable if its capital cost is reasonably expected to exceed \$10 million and it is capable of providing a distinct service as defined in clause 8.11.6(a) of the NER.

- jurisdictional planning bodies in each region of the NEM (typically the local TNSP).²²

Table 1.1 sets out the jurisdictional planning body in each NEM region.

Table 1.1 Jurisdictional planning bodies

Region	Jurisdictional planning body
Queensland	Powerlink
NSW (and ACT)	TransGrid
Victoria	AEMO
South Australia	ElectraNet
Tasmania	TasNetworks

There are a number of different forms of transmission planning, which are described below.

Long-term planning

Long-term planning is focused on the need for major, new transmission investments over the long term. Long-term planning in the NEM is largely undertaken by AEMO as the national transmission planner.²³ In undertaking this function, the national transmission planner is required to produce the National Transmission Network Development Plan, which provides "an independent, strategic view of the efficient development of the NEM transmission grid over a 20-year planning horizon."²⁴ The National Transmission Network Development Plan focuses on major transmission flow paths (that is, those areas of the transmission network connecting major generation or demand centres). Planning is undertaken over a number of different scenarios, covering different economic and government policy outcomes, demand forecasts and also generation scenarios.

Other documents produced by AEMO that are relevant to long-term strategic planning include:

²² The exception to this is in Victoria, where AEMO is the jurisdictional planning body as part of its declared network functions. And, while ElectraNet is the jurisdictional planning body for South Australia, AEMO performs additional advisory functions there.

²³ TNSPs may also undertake long-term planning for their own networks, although this is not required under the NEM.

²⁴ See <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/National-Transmission-Network-Development-Plan>

- the National Electricity Forecast report, which provides annual energy and maximum demand forecasts over the next ten years for each NEM region
- the Electricity Statement of Opportunities, which provides an assessment of supply adequacy in the NEM over the next 10 years, highlighting opportunities for generation and demand-side investment²⁵
- the NEM constraint report, which provides details on constraints in the transmission network.

Short-term planning

Detailed transmission planning is undertaken by each of the jurisdictional planning bodies (that is, in most cases, the TNSPs). Under the NER, parties must produce short-term plans for their network. This is done through annual planning reviews, which must be undertaken by the jurisdictional planning bodies. The results of the annual planning review must be published in a transmission annual planning report by 30 June each year.

Transmission annual planning reports draw upon the National Transmission Network Development Plan but outline more specific investment needs and drivers for the network in question. Transmission annual planning reports contain details of potential network investments given forecast loads in a particular network. Under the NER, the plans must cover at least the next ten years. However, typically there is an emphasis on planning needs for the next two to three years.

Project specific planning

TNSPs also carry out project specific planning that relates to a particular investment need and culminates in a particular investment decision. In the NEM there is a separate and distinct process for individual investment decisions, specifically the application of either:

- the Regulatory Investment Test for Transmission (RIT-T), which is applied for all augmentation investments greater than \$6 million in value²⁶
- non RIT-T assessments, where all other assets (for example those less than \$6 million in value) must be planned at least cost over the life of the investment.

Investment decisions are guided by cost-benefit assessments to identify the investment option that has the highest net benefits.

²⁵ This is required of AEMO under clause 3.13.3(q) of the NER.

²⁶ Note that application of the RIT-T to replacement expenditure is currently the subject of a rule change request, for which a draft determination was published in April 2017. See: <http://www.aemc.gov.au/Rule-Changes/Replacement-Expenditure-Planning-Arrangements>

Last resort planning power

Under the NER, the Commission may exercise the last resort planning power, which allows it to direct registered participants to apply the RIT-T to potential transmission projects if they are likely to be cost effective in relieving projected constraints in respect of national transmission flow paths that connect NEM regions. The Commission reports annually on the last resort planning power. To date, it has not identified any gaps in relation to inter-regional transmission planning that would require a direction to a TNSP to undertake a RIT-T.

1.3 Rationale for the rule change request

The COAG Energy Council's rule change request is largely based on the recommendations made by the Commission in the *Transmission frameworks review*. These recommendations, and a detailed description of the findings on which they are based, can be found in the consultation paper that was published on this rule change request, and in the *Transmission frameworks review* final report itself.²⁷

1.3.1 Connections

In relation to connections, the COAG Energy Council considered that there is significant ambiguity in the NER regarding the provision of assets forming part of the shared network that are required as an interface with a connection.

The COAG Energy Council referred to the Commission's findings in the *Transmission frameworks review*, which identified a lack of clarity in the NER in terms of what connection services actually entail; specifically, the assets involved and where the "connection point" (or agreed point of supply) exists in a practical sense. The location of the connection point can affect which part of the services provided by the TNSP in relation to a connection are treated as negotiated transmission services and which are considered to be non-regulated transmission services. The current arrangements may be open to TNSPs' interpretation and discretion about which services they provide and how they are regulated.

The COAG Energy Council also agreed with the Commission's recommendations in the *Transmission frameworks review* that the negotiating framework does not provide sufficient protection for connecting parties in light of TNSP's negotiating power, which is considered to lead to inefficient outcomes in terms of costs and time taken to connect. The existing principles in the NER are focused on cost issues and do not adequately cover a number of the other issues that are the source of disagreement in connection negotiations, for example, the perceived over-specification of technical requirements, timeliness and risk allocation.

²⁷ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>; <http://www.aemc.gov.au/Markets-Reviews-Advice/Transmission-Frameworks-Review>

1.3.2 Planning

The COAG Energy Council cited the Commission's findings in the *Transmission frameworks review*, which stated that some aspects of transmission planning could be improved to better reflect the needs of market participants and the intention of the market, and to promote more efficient transmission investment in the NEM.

Specifically, the Commission noted that:

- the NER do not explicitly allow for TNSPs to fund investments in a different region to meet an identified need in the region in which it operates. As a result TNSPs may have little or no incentive to consider options in other regions in determining their optimal investment
- the NER do not require TNSPs to formally comment on the National Transmission Network Development Plan
- the NER do not require TNSPs to consider the consistency of their transmission annual planning reports with the National Transmission Network Development Plan and other TNSPs' transmission annual planning reports and so TNSPs may adopt different approaches when presenting the outcomes of their annual planning.

1.4 Solution proposed in the rule change request

1.4.1 Connections

The rule change request proposed the following amendments to the NER to address the issues with transmission connections identified above:

- clarify the definitions for connection assets, connection services and service classifications by introducing two new categories of those assets into the NER. This would make a clear distinction between services provided by assets that form part of the shared network ("identified user shared network assets") and those services provided by assets used exclusively by the connecting party or parties ("dedicated transmission connection assets")
- enhance and promote contestability in the connection arrangements, while making it clear that TNSPs are accountable for outcomes on the shared network
- automatically exempt identified user shared network assets from regulation under Chapter 5 and 6A of the NER, but subject to them being operated, controlled and maintained by the local TNSP
- automatically exempt dedicated connection assets from regulation under Chapter 5 and 6A of the NER, but on the condition that third party access be allowed on reasonable terms

- provide for a mechanism to grant access to dedicated connection assets, and to transition these assets to the shared network if appropriate
- establish a single set of negotiating principles, contained in the NER, that apply as a uniform framework to all transmission connections covered under Chapter 5 of the NER
- require TNSPs to increase the level of transparency relating to the provision of negotiated transmission services
- establish a framework for the nomination of appropriate independent engineering experts who may provide independent advice on the appropriate technical specifications for a particular connection asset, including clarifying the dispute resolution process.

1.4.2 Planning

The rule change request proposed the following amendments to the NER to address the issues with transmission planning identified above:

- promote the identification and implementation of network investment options, both within and outside a particular region, by introducing:
 - a requirement on TNSPs to consider whether an option in another jurisdiction may also meet their investment needs when preparing their transmission annual planning reports
 - a requirement on TNSPs to consult with each other on the potential for an inter-regional investment to deliver market and reliability benefits
 - a requirement to specifically consider investments in other regions as a credible option to meet an identified need in their own network when undertaking a RIT-T
 - clarifications to the NER to ensure that investments in other regions to meet identified needs in a different region are treated as regulated investments
- introduce a requirement for AEMO to establish a working group consisting of TNSPs to provide input into the development of the National Transmission Network Development Plan
- introduce a uniform approach to transmission annual planning reports by providing minimum requirements for the content of transmission annual planning reports and requiring that AEMO report on the consistency of transmission annual planning reports in the National Transmission Network Development Plan.²⁸

²⁸ The rule change request proposed that these rules apply to the jurisdictional planning body in each jurisdiction.

1.4.3 Proposed arrangements for declared network jurisdictions

The COAG Energy Council noted that transmission connection and planning arrangements are different in those jurisdictions where AEMO is authorised to exercise its declared network functions.²⁹ The COAG Energy Council also considered that many of the requirements that would be imposed on TNSPs under the proposed rule would not be appropriate to impose on AEMO because it does not face the same commercial incentives that TNSPs who own, plan, operate and invest in transmission infrastructure do.

The rule change request therefore sought to isolate most of the proposed rule changes from any jurisdiction where AEMO is authorised to exercise its declared network functions. However, the rule change request asked the Commission to provide advice on:

- where the changes cannot be adopted in jurisdictions for which AEMO is authorised to exercise its declared network functions and should not apply at all
- where the changes could be adopted, but with some modification.³⁰

Chapter 6 sets out the Commission's consideration of, and advice on, these issues.

1.5 The rule making process

On 26 November 2015, the Commission published a notice advising of its commencement of the rule making process and consultation in respect of the rule change request.³¹ A consultation paper identifying specific issues for consultation was also published. Submissions closed on 28 January 2016. The Commission received 11 submissions to the consultation paper.

On 3 March 2016, the Commission published a notice under section 107 of the NEL advising that the time for making a draft rule determination on the rule change request had been extended to 24 November 2016. The Commission determined that an extension was necessary due to the complexity and broad scope of the issues raised by the rule change request, affecting many areas of the NER. The extended timeline enabled the Commission to conduct additional stakeholder consultation on this rule change request, including through:

- two stakeholder workshops
- the publication of a discussion paper

²⁹ See chapter 6 for a detailed explanation of AEMO's declared network functions and the corresponding impact on arrangements to connect to the transmission network in declared network jurisdictions.

³⁰ COAG Energy Council, *Transmission Connection and Planning Arrangements, rule change request*, July 2015, p. 21.

³¹ This notice was published under s. 95 of the NEL.

- a public forum on the discussion paper
- one on one meetings with a large number of stakeholders.

A discussion paper on the connections aspects of the rule change request was published on 26 May 2016. Submissions closed on 30 June 2016. The Commission received 14 submissions to the discussion paper.

On 24 November 2016, the Commission published a draft rule determination and draft rule and on 12 January 2017, the Commission published a consultation paper on the proposed savings and transitional arrangements to give effect to the draft rule. Submissions to the draft rule determination closed on 27 January 2017 with 10 submissions received. Submissions to the consultation paper on the proposed savings and transitional arrangements closed on 12 February with two submissions received.

On 9 March 2017, the Commission extended the period of time to make a final determination on the rule change request until 23 May 2017. The Commission considered that an extension was necessary to work through stakeholder feedback on specific aspects of the draft rule.

The Commission has considered all issues raised by stakeholders in submissions. Issues raised in submissions are discussed and responded to throughout this final rule determination. Issues that are not addressed in the body and appendices of this document are set out and addressed in appendices G and H.

The rule change timeline is set out in Table 1.2.

Table 1.2 Rule change timeline

Milestone	Date
Publication of consultation paper	26 November 2015
Close of submissions on consultation paper	28 January 2015
Stakeholder workshop (connections)	9 March 2016
Stakeholder workshop (planning)	21 April 2016
Publication of discussion paper	26 May 2016
Public forum on discussion paper	16 June 2016
Close of submissions on discussion paper	30 June 2016
Publication of draft rule determination	24 November 2016
Stakeholder meetings	December 2016 - January 2017
Publication of consultation paper on transitional arrangements	12 January 2017

Milestone	Date
Close of submissions on draft rule determination	27 January 2017
Close of submissions on consultation paper on transitional arrangements	10 February 2017
Stakeholder workshop (connection aspects)	6 March 2017
Publication of final rule determination	23 May 2017

1.6 Structure of final rule determination

This final rule determination addresses both the connections and planning aspects of the rule change request. It is structured as follows:

- Chapter 2 sets out the Commission's final rule determination, including its assessment framework and summary of reasons for making the final more preferable rule.
- Chapter 3 describes the Commission's detailed assessment framework for the connections aspects of the rule change request.
- Chapter 4 provides an overview of the final rule in respect of connections.
- Chapter 5 describes the transitional arrangements for the final rule.
- Chapter 6 sets out the Commission's views on the application of the final rule in declared network jurisdictions.
- Chapter 7 provides an overview of the final rule and sets out the Commission's analysis and final rule in respect of planning.
- Appendix A sets out the relevant legal requirements under the NEL for the Commission to make this final rule determination.
- Appendices B through F detail the Commission's analysis and final rule in respect of connections.
- Appendix G provides the Commission's response to stakeholder comments on connections that are not addressed in appendices B through E.
- Appendix H provides the Commission's response to stakeholder comments on planning that are not addressed in Chapter 7.

2 Final rule determination

2.1 The Commission's final rule determination

The Commission's final rule determination is to make a more preferable final rule. The more preferable final rule addresses the intent of the COAG Energy Council's rule change request by clarifying aspects of the existing NER and introducing new provisions to set out a comprehensive, consistent and coherent transmission connection and planning framework.

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

This chapter outlines:

- the rule making test for changes to the NER
- the more preferable rule making test
- the assessment framework for considering the rule change request
- the Commission's consideration of the more preferable final rule against the national electricity objective.

Further information on the legal requirements for making this final rule determination is set out in appendix A.

2.2 Rule making test

2.2.1 Achieving the national electricity objective

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 national electricity objective (NEO).³² This is the decision making framework that the Commission must apply.

The NEO is:³³

“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

³² Section 88 of the NEL.

³³ Section 7 of the NEL.

- (b) the reliability, safety and security of the national electricity system.”

The framework used for assessing whether the proposed rule will, or is likely to, contribute to the achievement of the NEO is set out in section 2.3.

The Commission has also had regard to the form of regulation factors,³⁴ with these considerations discussed further in appendix A.

2.2.2 Making a more preferable rule

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

Using the assessment framework set out in section 2.3, the Commission has determined that the more preferable final rule is likely to better contribute to the achievement of the NEO than the proposed rule. The reasons for this are set out in section 2.4.

2.2.3 Northern Territory legislative considerations

From 1 July 2016, the Commission assumed rule making responsibility for parts of the NER adopted by the Northern Territory.³⁵ Some aspects of the proposed rule relate to parts of the NER that apply in the Northern Territory,³⁶ the Commission is required to assess the proposed rule against additional elements required by the Northern Territory legislation.³⁷

The *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015* allows for an expanded definition of the national electricity system in the context of the application of the NEO to NER made in respect of the Northern Territory. The Commission must regard the reference in the NEO to the "national electricity system" as a reference to whichever of the following the Commission considers appropriate in the circumstances having regard to the nature, scope or operation of the proposed rule:

- (a) the national electricity system
- (b) one or more, or all, of the local electricity systems
- (c) all the electricity systems referred to above.

³⁴ Part 1, section 7A of the NEL.

³⁵ See [http://www.aemc.gov.au/Energy-Rules/National-electricity-rules/National-Electricity-Rules-\(Northern-Territory\)](http://www.aemc.gov.au/Energy-Rules/National-electricity-rules/National-Electricity-Rules-(Northern-Territory)) for details about parts of the NER adopted by the Northern Territory.

³⁶ The final rule amends Chapter 10 of the NER and makes minor amendments to Chapter 6, which applies in the Northern Territory. The other amendments made in the final rule are to parts of the NER that do not apply in the Northern Territory.

For this rule change, the Commission regarded the reference to the "national electricity system" as a reference to the "national electricity system" and all of the local electricity systems.

The *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015* also provides the Commission with the ability to make a differential rule that varies in its terms between the national electricity system and the Northern Territory's local electricity system. A differential rule is a rule that:

- (a) varies in its term as between -
 - (i) the national electricity system; and
 - (ii) one or more, or all, of the local electricity systems; or
- (b) does not have effect with respect to one or more of those systems,

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

The Commission has considered whether a differential rule is required for the Northern Territory electricity service providers and concluded that it is not required in this instance. This is discussed further in appendix A.

2.3 Assessment framework

This section sets out how the Commission assessed whether the proposed rule will, or is likely to, contribute to the achievement of the NEO. This assessment framework is consistent with that set out in chapter 4 of the consultation paper on this rule change request, and in section 2.3 of the draft determination.³⁸

The rule change request sought to amend those aspects of the NER that relate to transmission connection and planning. The Commission developed an assessment framework to address this broad scope of issues.

In considering the rule change request, the Commission assessed whether the proposed changes would:

- encourage efficient investment in, and operation of, electricity services
- provide energy services to consumers at an efficient cost while supporting the safety, reliability and security of the transmission network
- promote the provision of information in order to incentivise efficient transmission connection and planning arrangements.

³⁷ *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.*

³⁸ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

Each of these considerations is set out in detail below.

2.3.1 Efficient investment in, and operation of, electricity services

Connecting parties should be able to effectively negotiate efficient outcomes when seeking a connection to the transmission network. These negotiations will result in certain decisions being made, including decisions to invest in particular transmission equipment and decisions about the ongoing maintenance and operation of that equipment.

Connecting parties' objective is to negotiate with the TNSP for the most efficient provision of services to enable their connection to the transmission network, while meeting their specified requirements. Competition in the provision of these services, where appropriate, could contribute to more efficient investment in and operation of these services. Competition should give connecting parties greater ability to manage the costs and timing of their connection, as well as placing competitive pressure on TNSPs to improve their service offerings.

As inefficiencies in the connection process (e.g. a delay) may be ultimately borne by consumers, changes that would provide incentives for the timely and efficient investment in, and operation of, the services needed to connect to the shared transmission network would be in the long-term interests of consumers.

This would also apply when considering the planning of the shared transmission network. Here, the most efficient development occurs when the TNSP plans to deliver projects that maximise net benefits, being the value of higher reliability and system security less the cost of the project. For this to occur, TNSPs should have sufficient information and incentives to effectively trade off the cost of augmenting and replacing the network against contracting for demand side options, with the value to generators and consumers of relieving congestion and maintaining reliability. This should also include information on investments in other regions that could help maximise net benefits in a different region.

2.3.2 Allowing efficient costs, while preserving system safety, reliability and security

Connecting parties should be able to connect to the transmission network at an efficient price with an agreed level of service and quality in a timely manner. However, system safety, reliability and security should be taken as 'givens' - that is, they are outcomes that should not be compromised by a party's connection to the transmission network. An effective connections regime will therefore make sure that arrangements can be put in place to support system safety, reliability and security, in accordance with the NER and jurisdictional electricity legislation, while enabling connecting parties to connect at efficient cost.

It is paramount that AEMO and TNSPs have the ability to maintain power system security within a safe operating state. Doing so reduces the potential for damage to assets and human harm. Therefore, there should be clear, singular accountability for

the operation, control and maintenance of the shared transmission network. This includes accountability for those assets that are required to facilitate a connection, but which form part of the shared transmission network, since these assets provide services to end users as well as to the connecting party and the way in which those assets function can affect system safety, reliability and security.

Increased competition in the provision of services required to facilitate a connection must, therefore, be considerate of the need to maintain clear, singular accountability for outcomes on the shared network.

2.3.3 Transparency and predictability

The arrangements for connecting to the transmission network, and planning for the transmission network, should be clear, consistent and understandable to all participants and interested stakeholders. Clarifying these arrangements will, in turn, clarify accountability for the safe, reliable and secure operation of the transmission network. This should support investor confidence, which should result in benefits to consumers through lower investment costs.

The regulatory arrangements should promote the provision of relevant information. Readily available information (either on planning or connections) can support effective decision-making and the delivery of efficient outcomes. For example, in relation to planning, increased information sharing could contribute to more coordination between TNSPs, and so more efficient investment across the transmission network as a whole. Standardisation of the information provided in transmission annual planning reports should make it easier to examine plans and facilitate comparative analysis, resulting in more informed feedback from interested parties.

In relation to connections, parties seeking a connection need access to clear, timely and accurate information to enable them to make decisions, negotiate in a more informed manner and address the issue of asymmetric power between TNSPs and connecting parties. To create confidence in the transmission connection process and encourage investment, the arrangements must be predictable and should be consistent across locations and between connecting TNSPs.

Further, connection arrangements should be as simple as is practicable to achieve their intended objectives. Where regulation is complex or ambiguous it imposes unnecessary risks and increased costs for businesses. These costs may be passed through to consumers in the form of higher prices.

2.4 Summary of reasons

The final rule made by the Commission is attached to and published with this final rule determination. The key features of the final rule are summarised below.

With respect to transmission connections, the final rule:

- clarifies many existing aspects of the connection process, including making it clear that the NEM operates under an open access arrangement, and the framework for economic regulation of services required to connect parties to the shared transmission network to remove ambiguity and scope for interpretation
- clarifies that two types of assets provide the services required to connect parties to the shared transmission network by introducing the terms dedicated connection asset and identified user shared asset, and establishes a clear distinction between the way in which services provided by means of these two types of assets are regulated and the obligations of the parties who own, control and operate them
- introduces contestability for the detailed design, construction and ownership of identified user shared assets - where these assets or components of these assets meet a certain threshold and criteria to be classified as contestable - and defines these services as non-regulated transmission services that can be provided by any party on commercial terms
- clarifies that all services provided for new dedicated connection assets, including design, construction, ownership, operation and maintenance, are non-regulated transmission services and can be provided by any party on commercial terms
- requires parties who own, operate or control a dedicated connection asset to register with AEMO, and classify their dedicated connection assets as either small (under 30km total route length) or large (30km and over total route length), or be exempted from the requirement to register
- sets up a framework by which parties can negotiate access to the services provided by means of a large dedicated connection asset
- maintains that the Primary TNSP³⁹ remains accountable for outcomes on its network, even if parts of it (i.e. components of identified user shared assets) are designed, built and owned by other parties, by requiring the owner of those assets to enter into a network operating agreement with the Primary TNSP to operate, maintain and control all identified user shared assets on its network
- provides a process by which an independent engineer can be engaged to provide advice on a technical issue related to a connection if either the connecting party or the TNSP requests it
- strengthens the principles that underpin negotiations for services required to connect to the shared transmission network and removes the requirement for

³⁹ Primary TNSP is a new term defined in the final rule as "The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system." A Primary TNSP is one that is authorised by the relevant jurisdiction to operate a transmission system. This final determination uses the term incumbent TNSP to refer to this party under current arrangements, and the term Primary TNSP when referring to the arrangements for this party under the final rule.

TNSPs to develop individual negotiated transmission service criteria and negotiating frameworks for approval by the AER

- enhances the transparency of the connection process by requiring TNSPs to publish certain information about connecting to their network on their websites and provide certain information to a connection applicant on request
- clarifies the process that applies to the resolution of disputes raised in relation to transmission connections.

With respect to transmission planning, the final rule:

- requires a TNSP to include certain additional information in its transmission annual planning report on key changes since the last transmission annual planning report, the forecasting methodology used for load forecasts and detailed information regarding network constraints
- requires the AER to develop a guideline to support consistency across transmission annual planning reports
- requires TNSPs to undertake joint planning with other TNSPs where there is the potential for investments in other transmission networks to deliver market and reliability benefits in their own network.⁴⁰

Further detail on the connections aspects of the final rule, and the reasons for making the final rule, can be found in chapter 4 and the relevant appendices of this final determination. Further detail on the planning aspects of the final rule, and the reasons for making the final rule, can be found in chapter 7.

The Commission concluded that the scope of the rule change request did not allow the Commission to consider the application of the final rule in jurisdictions where AEMO is authorised to exercise declared network functions, i.e. Victoria. This is discussed further in chapter 6.

Having regard to the issues raised in the rule change request and during consultation, the Commission is satisfied that the more preferable final rule will, or is likely to, better contribute to the achievement of the NEO than the proposed rule.

With respect to connections, the final rule largely reflects the COAG Energy Council's proposal. The key features of the final rule, as summarised above, are consistent with the intention of the proposals put forward in the rule change request. However, the final rule contains a greater level of detail to give effect to these proposals, while retaining the COAG Energy Council's policy intent.

With respect to transmission planning, the final rule builds on the COAG Energy Council's proposals on the content and consistency of transmission annual planning

⁴⁰ Under the final rule, these obligations are placed on the jurisdictional planning bodies, i.e. the Primary TNSP in each jurisdiction and AEMO in Victoria.

reports, and provides more detail on these proposals based on stakeholder input and analysis. On the remaining planning aspects of the rule change request, the Commission considered that the final rule would, or was likely to, better contribute to the achievement of the NEO for the reasons set out below.

- The proposed rule would have introduced a formal requirement for TNSPs to provide input into the National Transmission Network Development Plan. Feedback from stakeholders indicated that the existing process for facilitating input on the National Transmission Network Development Plan is positive and includes a broader range of stakeholders than TNSPs alone. The Commission has concluded that the quality of engagement on the National Transmission Network Development Plan would not be improved under such a proposal. The more preferable final Rule therefore does not include such a requirement.
- While the final rule requires TNSPs to conduct joint planning with other TNSPs, it does not require TNSPs to explicitly consider investment options in other regions in their transmission annual planning reports or when undertaking a RIT-T, as was proposed in the rule change request. The Commission considers that the more general obligation on TNSPs to conduct joint planning will provide TNSPs with more flexibility about when and how to engage with other TNSPs on planning. This is likely to facilitate more efficient coordination between TNSPs than ad hoc consideration when producing a transmission annual planning report or undertaking a RIT-T. The costs of requiring TNSPs to explicitly consider such options in transmission annual planning reports and RIT-Ts are therefore likely to outweigh the benefits.
- The rule change request proposed that the arrangements for the economic regulation of investments in other regions should be clarified. The Commission decided not to make a rule to change the economic regulatory framework to provide additional incentives for TNSPs to undertake cross-regional investments. This is because stakeholders advised the Commission that the scope for such cross-regional investments is small. Therefore, given the large number of changes that would be required to the framework for economic regulation for what may only be limited benefit, the Commission considered that no changes to the current framework were needed.

More detailed analysis of the reasons for making the final rule as it relates to planning can be found in chapter 7 of this final determination.

2.5 Strategic priority

This rule change request relates to the Commission's 'markets and network' strategic priority. The final rule establishes market and regulatory arrangements that provide an environment for business evolution and efficient investment in transmission connection services. The final rule also introduces new arrangements to facilitate better engagement and increased coordination on planning for the transmission network to facilitate efficient investment in transmission infrastructure.

3 Assessment framework for the connections aspects of the rule change request

The AEMC's findings in the *Transmission frameworks review* and stakeholder input on this rule change request revealed a number of issues with the existing framework in the NER for connecting to the transmission network. Specifically, the existing arrangements:

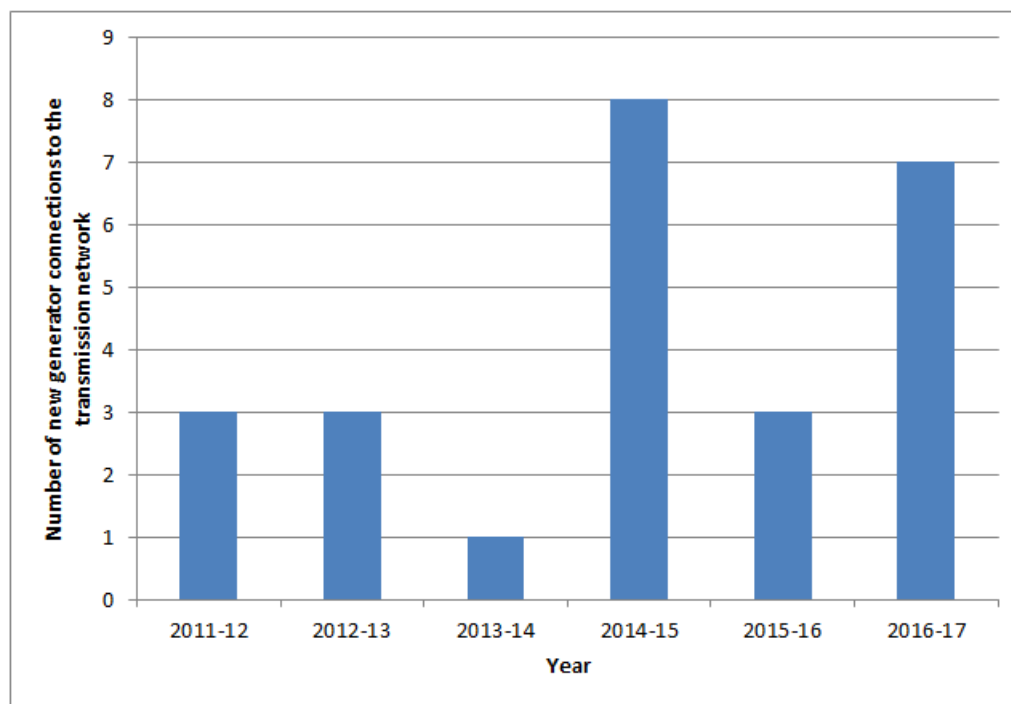
- are unclear, and are therefore open to a degree of interpretation by connecting parties and TNSPs
- do not encourage the incumbent TNSP to provide connection services in a cost effective, transparent, simple or timely manner
- do not provide connecting parties with sufficient bargaining power to negotiate a better connection process or outcome than what is offered by the incumbent TNSP - for example, connecting parties are reluctant to raise disputes in relation to the connection because doing so might displease the only party that can connect them (that is, the incumbent TNSP) or delay the connection process further.

As a result, connection experiences and outcomes can be unpredictable, unnecessarily complex, lengthy and costly, and may vary across transmission network boundaries.

The last decade has seen a rise in the number of new generators, particularly wind, connecting to the transmission network. Figure 3.1 shows the number of commissioned and forecast to be commissioned generator connections to the transmission network over the past five years.⁴¹

⁴¹ The graph shows new generator projects commissioned. The data for 2016-17 comprises those projects that are forecast to be commissioned in that year.

Figure 3.1 New transmission-connected generators⁴²



Source: AEMO Electricity Statement of Opportunities reports

There are also a substantial number of new generation proposals in addition to those shown in the figure above. At the time of publication of this final determination, AEMO listed over 120 generators that had publically announced their intention to connect to the NEM.⁴³ While not all of these generation projects will go ahead, with falls in technology costs and policy drivers such as the Australian Government's renewable energy target (RET) and jurisdictional schemes such as the Victorian Renewable Energy Target, an increasing number of new generators, including large-scale solar and wind, are expected to seek connection to the transmission network over the coming years.

It is worth noting that numerous changes to government environmental policies in recent years have led to uncertainty, which in turn is having a detrimental impact on potential investment in new generation. Submissions by energy market participants to the Chief Scientists' Independent Review into the Future Security of the NEM emphasise the need for policy certainty.⁴⁴ Despite this, existing environmental policies are still driving new generation and new connections. For example, the Clean Energy Council expects that, under the RET, thirty to fifty large-scale generators will be

⁴² This graph represents connections to the transmission network by generators only, not load.

⁴³ See <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Generation-information>

⁴⁴ Submissions are available at <http://www.environment.gov.au/energy/national-electricity-market-review/submissions>

seeking to connect to the NEM by 2020.⁴⁵ It is important that the connection framework is fit for purpose for these new connections.

Input from stakeholders indicated that connection costs account for roughly 10 per cent of a proponent's total project costs, and that total project costs are in the order of several hundred million dollars. Improvements to the way in which parties connect to the transmission network are therefore likely to have an impact on project costs and, ultimately, the costs that are passed on to consumers. For example, the connection costs for a project with total costs of \$300 million would be expected to be about \$30 million. A 10 per cent reduction in these connection costs equates to \$3 million in potential savings.

In its rule change request, the COAG Energy Council noted that the purpose of the connections framework in the NER is to deliver efficient connections to those parties seeking to connect to the transmission network. It presented the view that efficient outcomes are more likely to be delivered through the competitive delivery of connection services. However, in line with the Commission's conclusions in the *Transmission frameworks review*, it stressed the importance of there being clear accountability for the safe, reliable and secure supply of electricity across the shared network.⁴⁶

The intention of the connections aspects of the rule change request can therefore be summarised as:

To improve outcomes for connecting parties with regard to the transparency, timeliness, cost and complexity of connections to the transmission network; while maintaining clear, singular accountability for the safe, reliable and secure supply of electricity across the shared transmission network.

As set out in section 2.2.1, 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.⁴⁷ The Commission considers that achieving the intention of the connections aspects of the rule change request, as summarised above, will contribute to the achievement of the NEO. The final rule reflects this intention. Specifically, the final rule:

- clarifies many aspects of the NER connections framework, amends parts of the connection process and expands the scope of contestability for transmission connection services to improve the transparency, timeliness, cost and complexity of the connection process for both connecting parties and Primary TNSPs⁴⁸

⁴⁵ Clean Energy Council, submission on discussion paper, p. 1.

⁴⁶ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, pp. 3-4.

⁴⁷ Section 88 of the NEL.

⁴⁸ Primary TNSP is a new term defined in the final rule as "The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system." This final determination uses the term incumbent TNSP to refer to this party under current

- maintains the accountability of the Primary TNSP for the safe, reliable and secure operation of the shared transmission network in its licensed area.

The Commission's approach to assessing this aspect of the rule change request against the NEO is set out in the sections below. This approach is consistent with that proposed by the Commission in chapter 2 of the discussion paper published in May 2016, the assessment framework set out in section 2.3 of the draft determination and section 2.3 of this final determination.⁴⁹

Submissions to the consultation paper, discussion paper and draft determination, as well as verbal input from stakeholders at the various workshops on this rule change request, indicated that stakeholders largely supported a more contestable approach to transmission connections than the model proposed in the rule change request. That is, many stakeholders were of the view that the majority of services required to connect to the transmission network should be fully contestable, including services for those assets required to facilitate a connection but which form part of the shared transmission network (termed identified user shared assets in the rule change request and in this final determination). Under such an approach, the connecting party (or a party of its choice) would provide services that have a direct impact on the shared network, such as the operation and maintenance of identified user shared assets.

While contestability for the provision of these services may improve the transparency, timeliness, cost and complexity of connections to the transmission network for the connecting party, such an approach blurs the incumbent TNSP's accountability for the operation of the shared network, potentially affecting end-use consumers. Inadequate provision of such services may have an impact on the safe, reliable and secure supply of electricity across the shared transmission network.

The risks of inadequate design, construction and operation of assets that are only used by one or more connecting parties and are able to be isolated from electricity flows on the shared transmission network (termed dedicated connection assets in this final determination) fall on these parties alone. In this case, the shared network can be protected if appropriate action is taken, such as isolating the connection. Consequently, the final rule clarifies that the design, construction, ownership, operation and maintenance of a dedicated connection asset are non-regulated transmission services and can be provided by any party on commercial terms, subject to registration and compliance with certain obligations.⁵⁰

However, because identified user shared assets form part of the shared transmission network, any new arrangements for these assets need to make sure that the safety, reliability and security of a transmission system can be maintained while enabling generators and loads to connect at efficient cost. As such, the incumbent TNSP should

arrangements, and the term Primary TNSP when referring to the arrangements for this party under the final rule.

⁴⁹ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

⁵⁰ The final rule as it relates to dedicated connection assets is described further in chapter 4 and appendix D.

remain accountable for the operation, maintenance and control of its transmission network, including identified user shared assets.

3.1 Transparency

Inefficiencies and inconsistencies in the connection process can result in information asymmetries between the connecting party and the incumbent TNSP, resulting in inefficient connections. The costs of inefficient connection outcomes are ultimately borne by consumers. A framework that provides for an efficient and transparent process to consider, develop and deliver connections to the shared transmission network benefits all parties, including, in the long-term, consumers.

The NER do not fully prescribe the connection process or particular connection outcomes for parties seeking a connection to the shared transmission network. This is because:

- connecting parties are considered to be sufficiently well-resourced and knowledgeable to negotiate their connection
- each connection to the shared network can be quite different, requiring a certain flexibility that is difficult to achieve with standardised terms or other outcomes in the NER.

However, given that the incumbent TNSP has a significant amount of control over connections to its network, and needs this control to help it maintain a safe, reliable and secure network, a fully unregulated approach is also not appropriate. Services required to connect a generator, load or MNSP or embedded network to the shared transmission network are therefore classified as negotiated transmission services for the purposes of economic regulation under the NER. The NER set out certain arrangements that apply to the provision of negotiated transmission services and, together with other arrangements in the NER, sets out how a connecting party can negotiate a connection to the shared transmission network.

Nevertheless, the Commission shared the view of some stakeholders that the incumbent TNSP has a greater degree of control over the connection process and its outcome than the connecting party. Connecting parties need access to clear, timely and accurate information to enable them to negotiate in a more informed manner and to address information asymmetries between themselves and the incumbent TNSP.

The introduction of competition for the provision of services to connect to the shared transmission network, where appropriate, may incentivise the incumbent TNSP to reveal more information if they are competing to provide those services. However, even if certain services are open to competition, connecting parties (and their chosen service providers) still need sufficient information from the incumbent TNSP - information that only it will hold - to enable them to procure these services on a contestable basis. As such, there is still likely to be a need to impose obligations on the incumbent TNSP to provide the connecting party with this information. In the absence of competition for these services, regulation may be required to incentivise the

incumbent TNSP to be more transparent in its process and decision-making for connections.

Making the NER clearer and simpler should also make it easier for connecting parties to know exactly what services they are negotiating for and which assets provide them, and enhance their ability to negotiate on equal terms with the incumbent TNSP.

3.2 Timeliness

Timeliness is a difficult metric to measure because it is subjective and will depend on how the connecting party and the incumbent TNSP prioritise a particular connection. It may also depend on how resourced each party is to process the connection. Further, the benefits of any new regulatory arrangements that seek to improve timeliness may easily be overridden by external factors, such as delays to project financing or planning approvals. These matters are not regulated by the NER but fall within the scope of influence of the energy sector more broadly. However, any arrangements in the NER that provide increased certainty about the timing of a particular connection are likely to improve the efficiency of the connection process, and the final connection outcome. Further, any arrangements that provide a connection applicant with the information it needs as early as possible in the process are also likely to improve the timeliness of a connection.

The introduction of competition for the provision of services to connect to the shared transmission network, where appropriate, is likely to encourage timely investment in, and operation of, connection services. This is because it would give connecting parties a greater ability to manage the timing of their connection, and would place competitive pressure on the incumbent TNSP to improve its service offerings.

Arrangements that require parties to enter into complex contractual arrangements may also affect the timeliness of a connection. That is, the incremental impact on timeliness of introducing contestability for a particular service could be outweighed by the time it takes to negotiate contractual arrangements with the third party provider of that service, particularly if the incumbent TNSP needs to be involved to allow it to manage its accountability for shared network outcomes.

There are also additional processes at the outset, including provision of information and specification of requirements in a more robust manner that will impact timeframes but are not directly tied to negotiation of the arrangements.

3.3 Cost

Connecting parties should be able to connect to the transmission network at an efficient cost, while meeting relevant standards to maintain the safety, reliability and security of the shared transmission network. The introduction of competition for the provision of services to connect to the shared transmission network, where appropriate, is likely to encourage efficient investment in, and operation of that service if there is workable competition for it. This is because it would give connecting parties

a greater ability to manage the costs of their connection, and would place competitive pressure on the incumbent TNSP to improve its service offering. However, while competition for a particular service may lower the upfront costs of a connection, there is a risk that the ongoing costs to the connecting party could be higher. For example, a contestable provider may be able to construct certain assets at a lower cost than the incumbent TNSP, but it may not hold or be capable of arranging sufficient spares or other resources in a timely manner in the event that urgent repair or maintenance to the asset needs to take place.⁵¹

Different interpretations of the NER by TNSPs in different jurisdictions can create inefficiencies in the market generally, as well as for individual proponents. The lack of a consistent approach to process and interpretation of the NER connections framework across the NEM can create confusion for connecting parties, particularly those operating in more than one jurisdiction. A successful connection may rely on connecting parties learning and accommodating the specific interpretations of a particular TNSP, which can add time and cost to the connection process. Further, connecting parties consider a range of factors when deciding where to locate a project, for example fuel costs and proximity to existing transmission infrastructure. If the interpretation of the NER connections framework is very different between incumbent TNSPs, connection costs may be significantly higher in one jurisdiction over another. If this is the case, connection costs may start to comprise a far higher proportion of total project costs in that jurisdiction, potentially causing connecting parties to make sub-optimal decisions about where to locate their project since connection costs provide some locational signals about where generators should locate. Investment in generation should occur where it is most efficient, and should not be determined by differences in connection costs - caused by differing interpretations of the NER - across jurisdictions.

Arrangements that require parties to enter into complex contractual arrangements may also affect the cost of a connection. That is, the incremental impact on connection costs of introducing contestability for a particular service could be outweighed by the costs associated with negotiating contractual arrangements with the third party provider of that service, or managing additional costs and time delays referred to in the previous section, particularly if the incumbent TNSP needs to be involved to allow it to manage its accountability for shared network outcomes.

3.4 Unnecessary complexity

Inefficiencies and inconsistencies in the NER transmission connections framework can lead to misunderstandings and differing interpretations of the NER, resulting in unpredictable and inconsistent connection experiences between connections and across transmission network boundaries. This outcome is not in the long-term interests of the connecting party or consumers. A connections framework that makes roles,

⁵¹ It may therefore be prudent for the connecting party to address this risk by using the same equipment as the incumbent TNSP.

responsibilities and expectations clear will help connecting parties and TNSPs to have a consistent understanding of the NER when negotiating a connection.

The NER should also create confidence in the transmission connection process to encourage investment. Transmission connection arrangements should therefore be predictable and should not allow for interpretation that results in variations across transmission network boundaries.⁵²

Arrangements that require parties to enter into a number of contracts may also create additional complexity. For example, while contestability for particular services may bring benefits to the connecting party in terms of the timing and cost of their connection, complex contractual arrangements with multiple parties may be required to establish and maintain the integrity of that connection. The costs and benefits of this therefore need to be weighed up.

Changes to the arrangements by which parties connect to the transmission network are also likely to have implementation costs for connecting parties, TNSPs and other stakeholders. For example, parties may need to develop contracts, train staff and amend internal processes to comply with the new arrangements. There may also be time and cost involved for investors and lenders to become familiar with the new arrangements. The benefits of any new arrangements therefore need to be weighed up against the cost and complexity of implementing those arrangements.

3.5 Clear, singular accountability

This section sets out the Commission's reasoning for why the incumbent TNSP should continue to be singularly accountable for shared network outcomes in its licensed area.

Table 3.1 sets out who the incumbent TNSP is in the five jurisdictions of the NEM. In Queensland, New South Wales, South Australia and Tasmania, the incumbent TNSP plans, constructs and operates (in conjunction with AEMO, as power system operator) the transmission system, and arranges connections to it. In Victoria, the functions undertaken by TNSPs in other NEM jurisdictions are split between AEMO and DTSOs.⁵³ However, AEMO is ultimately accountable for the provision of shared transmission services in Victoria and manages its obligations by way of contracts with DTSOs.⁵⁴

⁵² This is consistent with the Commission's view of the arrangements for connecting to the distribution network.

⁵³ There are currently four DTSOs in Victoria: AusNet Services (registered as SPI PowerNet), NSW Electricity Networks Operations (formerly registered as TransGrid), Rowville Transmission Facility Pty Ltd, and Transmission Operations Australia.

⁵⁴ A more detailed description of AEMO's declared network functions in Victoria is set out in chapter 6.

Table 3.1 Incumbent TNSP in each NEM jurisdiction

State	Incumbent TNSP
Queensland	Powerlink
NSW	TransGrid
South Australia	ElectraNet
Tasmania	TasNetworks
Victoria	AEMO and DTSOs (including AusNet Services)

The regulatory framework must deliver a safe, reliable and secure shared transmission network

The existing regulatory framework established by the NEL, NER and jurisdictional licensing regimes does not contemplate an approach where responsibility for the shared network is split between multiple owners or operators. Compliance with the extensive nature of the obligations placed on TNSPs under the NEL, NER and jurisdictional electricity legislation has the resulting outcome that the safety, reliability and security of the shared transmission network is the responsibility of the incumbent TNSPs (i.e. one party - the incumbent TNSP in each NEM jurisdiction - is responsible for the shared transmission network).⁵⁵ However, under current arrangements, as under the final rule, nothing prevents the incumbent TNSP (Primary TNSP under the final rule) from subcontracting the provision of services to other parties to give effect to this responsibility.

If multiple parties were responsible for the operation of the shared network, or the provision of shared transmission services were to become unregulated, then the entirety of the current regulatory framework would need to be reviewed to consider whether the abovementioned outcome – a safe, reliable and secure shared transmission network – could still be achieved. Inevitably, given the current framework was not designed to accommodate multiple parties being accountable for a single shared transmission system, there would be regulatory gaps that would need to be addressed. For example:

- The schedules in Chapter 5 of the NER set out the planning, design and operating criteria that must be applied by TNSPs to the networks they own, operate or control. This includes requirements relating to frequency, system stability, power transfer capability, testing, voltage, credible contingency events, load shedding, protection systems and fault clearance times. Effectively this requires the incumbent TNSP to, among other things, make sure that equipment connected to its network meets appropriate performance standards.

⁵⁵ In Victoria, AEMO, under the NEL, is responsible for the provision of shared transmission network services.

- Reliability standards relate to how transmission and distribution networks can withstand risks without consequences for consumers, and guide the level of investment that network businesses undertake. Under the existing arrangements, reliability standards are set by each NEM jurisdiction. As the party responsible for the operation of the shared network in its licensed area, the incumbent TNSP is required to meet these reliability standards.
- Incumbent TNSPs have specific obligations under Chapter 4 of the NER regarding power system security. AEMO's powers in these matters have also been established on the assumption that incumbent TNSPs are responsible for their relevant networks.
- TNSPs are responsible for providing AEMO with information to facilitate the procurement of system restart ancillary services. They are also required to prepare and submit to AEMO local black start procedures that would be utilised during a black system event.
- Planning obligations imposed on incumbent TNSPs assume that the TNSP is responsible for all parts of its network.

The Commission therefore does not support a connections framework that would result in parties other than the incumbent TNSP being responsible for the operation of the shared transmission network. This view is consistent with the approach taken under the Victorian arrangements for connecting to the transmission network. In Victoria, one party - AEMO - is ultimately responsible for the provision of shared transmission services by means of, or in connection with, the declared shared network, and plans, authorises, contracts for and directs augmentation of the declared shared network.⁵⁶ This is discussed further below.

The Commission considered that any new arrangements to introduce contestability in connections should not exempt the incumbent TNSP from any of its obligations under the NER, or create uncertainty as to how these obligations apply, for example if there are two parties registered for the same asset.

There should be clear accountability for shared network outcomes

Given the criticality of system safety, reliability and security, accountability for outcomes on the shared transmission network should be clearly defined. This is best achieved when one party is singularly accountable for shared network outcomes. The incumbent TNSP is, relative to others, best placed to manage its obligations under the NEL, NER and jurisdictional electricity legislation with regard to the provision of a safe, reliable and secure transmission system.

⁵⁶ The legislative and regulatory framework gives AEMO tools to manage these responsibilities, given that it is not the 'owner' of the declared shared network.

As an incumbent operator of the shared transmission network:

- it has oversight over its entire transmission system, and therefore takes, in accordance with its regulatory obligations, a holistic view of network operations and transmission planning
- its size, expertise and reach gives it the information and ability to more effectively manage the risks associated with the provision of shared transmission services than other parties
- it has an incentive to manage its compliance with these obligations because it stands to lose (for example through rules-based penalties, incentive regimes or reputational losses) if those obligations are not met
- it has significant experience in managing the risks associated with the provision of shared transmission services, and has the ability to improve its risk management through its ongoing experience.

Because identified user shared assets form part of the shared transmission network, the risks of inadequate operation of those assets extend to users other than just the connecting party. Any new arrangements for these types of assets therefore need to make sure that the safety, reliability and security of the shared transmission network can be maintained while enabling parties to connect at efficient cost. As set out above, the Commission considered that the safety, reliability and security of the shared transmission network is best achieved when there is clear, singular accountability for these outcomes.

Clear, singular accountability means that there is no question as to:

- who is ultimately responsible for the safety, reliability and security of the shared transmission network, including who is responsible for resolving any issues
- who to contact in the event that there is an issue identified with certain assets, including who AEMO should direct if it needs to do so to support power system security
- who is responsible for mitigating particular risks, for example performance risks and any incentives or penalties that are applied through regulation or contracts.

In submissions to the draft determination, a number of stakeholders disagreed with the Commission's view that the safety, reliability and security of the shared transmission network can only be assured when there is clear, singular accountability for each transmission network. The comments were made in the context of support for a more contestable approach to the provision of services in relation to identified user shared assets under the draft rule. Specifically, these stakeholders considered that full contestability could be achieved and that accountability could be maintained by multiple TNSPs without compromising system safety, reliability or security, or impeding future third party access to the transmission network.

The three main arguments put forward by stakeholders for why singular accountability is not needed were that:

1. the arrangements in Victoria (summarised in chapter 6) demonstrate that competition can succeed and accountability can be maintained with multiple TNSPs without compromising system safety, reliability or security, or impeding future third party access, and therefore it does not follow that the incumbent TNSP must assume accountability for the entire transmission network within jurisdictional boundaries⁵⁷
2. the NEM has examples (outside of Victoria) where accountability is shared, and is allocated by contract and NER obligations⁵⁸
3. concerns can be addressed if contestable providers are subject to the same obligations as other TNSPs, for example the service target performance incentive scheme (STPIS).⁵⁹

The Commission did not consider that the first two points above were good comparisons to what was proposed under the draft rule, for the reasons set out below.

- As is set out in chapter 6, Victoria operates under a different regulatory structure to that in other NEM jurisdictions. In Victoria, AEMO is responsible for the provision of shared transmission services by means of, or in connection with, the declared shared network. It plans, authorises, contracts for and directs augmentation of the declared shared network, and provides a coordinating/oversight role for the declared shared network. The legislative and regulatory framework gives AEMO the necessary tools to manage these responsibilities, given that it is not the owner of the declared shared network. Although AEMO manages this responsibility through contracts, it remains accountable for the provision of shared transmission services. This is the case in other jurisdictions – there is no jurisdiction in Australia where one party is not ultimately responsible for the provision of shared transmission services. Further, in Victoria, AEMO is not bidding to provide contestable works.
- DC interconnectors and MNSPs, TNSP to TNSP, TNSP to DNSP and DNSP to DNSP connections are separated by a connection point. In contrast, identified user shared assets are embedded within, and operate in concert with, the overall shared transmission system. Identified user shared assets are comparatively small assets integrated within existing transmission systems, whereas interconnectors and entire transmission systems are large, distinct assets. It is therefore much more difficult to share accountability for these assets with the shared transmission network.

⁵⁷ Submissions on draft determination: AEMO, p. 1.

⁵⁸ Submissions on draft determination: AEMO, pp. 2-3; AusNet Services, pp. 2-3.

⁵⁹ Submissions on draft determination: AEMO, pp. 1, 3, 5; AusNet Services, p. 3.

- The Commission looked into the arrangements for contestability in other jurisdictions, including in Great Britain, which AusNet Services referred to in its submission to the draft determination as an example of how 'Model B' (the model of full contestability set out in the discussion paper) could work. The Commission concluded that there were a number of significant differences between 'Model B' and the approach being taken in other jurisdictions. For example, in Great Britain:
 - Parties other than the contestable TNSP equivalent (i.e. contestable providers) run the tender, with Ofgem determining which projects can be tendered and running the tender process itself. The system operator is also involved in determining which projects can be tendered.
 - The contestability arrangements cover augmentations to the transmission network more broadly, not just connections. In fact, the threshold for contestability - £100 million - is the point at which Ofgem considered the benefits would outweigh the costs, and therefore considered it unlikely that any projects to connect parties to the transmission network would meet this threshold, and would therefore continue to be developed under current processes.
 - Competitively appointed transmission owners are subject to the same regulatory framework as other transmission owners. They will receive a regulated revenue over the life of the project, and be subject to a range of other regulatory obligations currently imposed on other transmission owners, which is significantly more regulation than that envisaged under 'Model B'.

The third point above raised the question of whether the Commission should 'relax' its requirement for there to be clear, singular accountability for the shared transmission network by subjecting contestable TNSPs to all of the same obligations as incumbent TNSPs, and therefore requiring them to be accountable for the safety, reliability and security of their asset and its impact on the shared transmission network.

If the Commission were to enable such an approach, accountability would be shared via contracts. The Commission considered that allowing parties to allocate accountability through contracts would create regulatory uncertainty and possibly leave regulatory gaps, which it considered unacceptable in the context of the safety, security and reliability of electricity supply to consumers. If this accountability were to be set out explicitly in the NER, rather than through contracts, the rules would necessarily need to be quite prescriptive in order to have a clear, predictable and transparent connections framework. However, while the Commission has the power to amend the NER, it does not have the ability to force changes to the NEL or state-based regulatory instruments that may need to be amended to support such an approach.

Further, allowing the party overseeing the contestability arrangements (i.e. the Primary TNSP) to be able to also bid for the provision of contestable services raises competition concerns. As such, it would make sense to ring fence the Primary TNSP's planning and

network security functions from its operational functions so that it does not have a competitive advantage over other parties seeking to provide contestable services. This would be a significant change to the framework in the NER and the functions of TNSPs. The Commission concluded that such a change was not within the scope of this rule change request. Further, if it were in scope, it would make sense to consider whether this approach was suitable for more than just the connections aspects of the NER, by considering augmentations more generally, as in Victoria.

Conclusion

Therefore, given the criticality of system safety, reliability and security, accountability for outcomes on the shared transmission network should be clearly defined, and this is best achieved when one party is singularly accountable for shared network outcomes.

4 Overview of the connections aspects of the final rule

This chapter provides an overview of the final rule as it relates to the connections aspects of the rule change request. A more detailed explanation of these aspects of the final rule and the Commission's reasons are set out in appendices B to E of this final determination. This chapter should be read in conjunction with those appendices and the final rule itself.

The final rule is broadly consistent with the draft rule. A detailed description of the changes between the draft rule and final rule can be found in the relevant appendices.

Sections 4.1 to 4.4 of this chapter discuss the arrangements for connecting parties (including generators, loads, MNSPs and embedded networks) connecting to the transmission network under the final rule. Arrangements for DNSPs connecting to the transmission network under the final rule are summarised in section 4.5.

Transitional arrangements for the final rule are set out in detail in chapter 5.

The final rule does not affect the connection arrangements in declared network jurisdictions, i.e. Victoria. See chapter 6 for further information.

4.1 General clarifications to the NER

4.1.1 Deletion of rule 5.4A

The NEM operates under an open access regime in which parties have a right to negotiate a connection to the transmission network, but no right to the regional reference price, i.e. there is no firm access. The service that a connecting party is ultimately negotiating for with a TNSP is power transfer capability at the connection point.

This is confused by rule 5.4A of the existing NER, which implies that generators are able to negotiate a form of firm financial access with the incumbent TNSP and seek compensation from the incumbent TNSP in the event that it is constrained on or off, in return for an access charge. This rule is unworkable due to the fact that all generators have open access to the transmission network and that the scheme is not mandatory.⁶⁰ That is, even if a generator negotiated firm access, the incumbent TNSP could not prevent other generators from negotiating connection to the network and using capacity on the network if dispatched. Further, because the scheme is not mandatory, if new generators did not opt into the scheme, the TNSP would have no funding to further augment the network or pay compensation to the generator to whom it has provided firm financial access. Consistent with the draft rule, the final rule removes rule 5.4A of the NER to remove this confusion.

⁶⁰ This conclusion was drawn by the Commission in previous reviews, and in the draft determination on this rule change request. See AEMC, *Transmission Frameworks Review, final report*, April 2013, p. 98; AEMC, *Optional Firm Access, Design and Testing, final report*, volume 1, pp. 23-24.

In submissions to the draft determination, two stakeholders raised concerns with the proposal to delete rule 5.4A of the NER.

The Clean Energy Council argued that clauses (a) to (e) of rule 5.4A do not refer to financial implications of access, and so do not infer 'firmness' of network capability.⁶¹ That is, it considered that these clauses do not imply any obligation on the incumbent TNSP for firm access, nor do the definitions of 'power transfer capability' or 'user access arrangements' - only clauses (f) to (k) infer this. The Clean Energy Council submitted that these clauses are used 'materially' when negotiating a connection with an incumbent TNSP in that they define the obligation for an incumbent TNSP to provide information that supports an assessment of the possible non-firm user access arrangements, which is critical to assessing a project's viability through assessment of short- and medium-term access to the market.

The Clean Energy Council considered that these clauses provide the connection applicant with leverage to require the incumbent TNSP to inform the applicant of the network's capability and constraints such that the connection applicant can assess the extent to which these physical limitations affect the business case for their project (i.e. the commercial significance of the user access arrangements). It submitted that this information permits the connection applicant to make informed decisions about the costs and benefits of funding works to alleviate any constraints.⁶² The Clean Energy Council therefore considered that removing clauses (a) to (e) would be regressive, because doing so would remove the obligation on an incumbent TNSP to provide information that is critical to generator investment decisions. It also considered that the risk that the TNSP will not cooperate would increase if it is not asked to provide contestable works, and therefore retaining these clauses is increasingly important. The Clean Energy Council therefore asked that clauses (a) to (e) of rule 5.4A be retained.

AEMO submitted that other clauses in rule 5.4A, specifically clause (f)(3), have a role to play in establishing the terms and charges for connection and access to transmission services. AEMO considered that it was the only provision in the NER under which charges for any shared network augmentations could be determined. It submitted that rule 5.4A would be redundant and could be removed if the final rule provided an adequate alternative mechanism under which the costs of connection and related network augmentation can be determined and recovered.

Despite these views, the Commission concluded that rule 5.4A could be deleted in its entirety. This is for a number of reasons:

- Removal of rule 5.4A makes it clear that the NEM's regime is "open access": generators do not have a firm inherent right to be dispatched, nor do they have a right to be compensated when not dispatched. As noted above, the Commission

⁶¹ Clean Energy Council, submission on draft determination, p. 9.

⁶² Generators, either individually or in a group, can fund a transmission expansion to benefit from reduced congestion. These are called funded augmentations under the NER. With these investments there is no guarantee that a future generator will not connect and cause renewed congestion. The Commission understood that the provisions that enable this to occur are not used often because of this 'free rider' problem, but that some, mostly lower value projects, have done so.

has undertaken extensive work over the past decade to demonstrate and conclude that this is the case.

- Nothing is lost in deleting rule 5.4A in its entirety – power transfer capability is set out as something that connecting parties will negotiate with a TNSP for, and is referred to throughout the connection process rules.⁶³
- The Commission looked into whether it would be possible to delete some clauses of rule 5.4A and not others, as suggested by the Clean Energy Council. However, the Commission concluded that this was not workable because, while clauses 5.4A(a) to (e) do not refer to financial outcomes (for example "compensation" as referred to in clause 5.4A(h)) the rule was drafted as a whole, and therefore needs to be read in that context. Therefore, the reference to "commercial significance" in rule 5.4A(c)(2) should be read by reference to the later clauses.

The Commission explored whether some of the aspects of rule 5.4A (particularly the reference to information enabling the assessment of the commercial significance of constraints) could be incorporated into other clauses in Chapter 5 of the NER. For example, introducing an obligation on network service providers under clause 5.2.3 of the NER to provide more general constraint information, or an obligation under clause 5.3.3 of the NER to require TNSPs to provide more specific constraint information, where requested by a connection applicant. However, input from stakeholders indicated two things:

- TNSPs usually provide connection applicants with some indicative, high-level advice on thermal constraint issues during the connection enquiry/application stage, with this offered as a service for a fee. The Commission considered that this was appropriate because it will typically be information that the TNSP has on hand and will provide guidance to a connecting party about the appropriate place to connect (amongst other things) - information that would be useful when negotiating a connection agreement.
- TNSPs do not typically provide advice on constraints in the national electricity market dispatch engine, for example real-time operational constraints (including stability constraints), and they do not have an obligation under the NER to do so. This information is likely more relevant for connection applicants to have in order to assess the commercial viability of their investment. The Commission considered that the absence of such an obligation on TNSPs is appropriate because undertaking such a task would be large. Further, the Commission also understood that the information necessary to complete such a task is available to registered participants, including intending participants, and that consultancies can use this information to provide such a service to connecting parties.

The Commission therefore concluded that it would not be appropriate for a new requirement to be imposed on TNSPs through additional drafting in other clauses in Chapter 5 of the NER. If something is open to being contestable, such as the

⁶³ See for example clause 5.3.3(c), clause 5.3.6(d) and schedule 5.12(3) of the final rule.

commercial assessment of information, the Commission's preference is to make sure that it remains so. This means that the providers of that service (e.g. TNSPs or consultants) are not disadvantaged against other providers because the playing field to provide that service is level.

To address AEMO's concern, the Commission checked through all aspects of the connection process in the NER to make sure that those aspects that relate to negotiated transmission services are clearly identified as such. No changes were made because the Commission considered that this was clear under the final rule.

The final rule therefore deletes rule 5.4A in its entirety.

As is set out in chapter 6, the Commission concluded that the scope of this rule change request does not include consideration of applying any rules that relate to AEMO's declared network functions. The final rule therefore preserves the operation of rule 5.4A and its associated definitions in Victoria through a transitional arrangement. Therefore, rule 5.4A will continue to apply in Victoria.

The Commission was unaware of any connection agreements that had been entered into, or any payments made, on the basis of the provisions in rule 5.4A. However, as is set out in chapter 5, the final rule does not amend any of the terms of existing connection agreements. As such, any connection agreements that include arrangements relevant to rule 5.4A will continue to apply unaffected until there is a renegotiation of the service provided under those connection agreements.

4.1.2 Other clarifications

The classification of transmission services in the NER as either prescribed transmission services, negotiated transmission services or non-regulated transmission services should make it clear that:

- connecting parties (i.e. a generator, load, MNSP or embedded network) alone pay for the costs of the services provided to them by the TNSP to facilitate their connection to the transmission network, i.e. these services are classified as negotiated transmission services
- all end-use customers pay for the costs incurred by the TNSP in providing shared transmission services from which they benefit, and which the AER provides economic regulatory oversight, i.e. these services are classified as prescribed transmission services.

However, as noted in chapter 1, the existing NER do not make a clear distinction between assets that are required to connect the party and assets that are needed to facilitate that party's incorporation into the network, and how the provision of services for those types of assets is economically regulated. Therefore, the final rule clarifies many existing aspects of the connection process and the framework for economic regulation of services required to connect to the shared transmission network.

The final rule separately defines each of the assets and services associated with enabling a connection to the transmission network, and creates a stronger link between them, to provide greater clarity on how those services are to be provided - that is, whether a particular service is a prescribed transmission service, negotiated transmission service or non-regulated transmission service. These amendments are intended to make it clear which assets are required for a party's connection to the transmission network and which are provided to benefit all transmission customers.

The final rule therefore provides clarity that connecting parties are directly responsible for the payment of costs associated with any new apparatus, equipment, plant and buildings, or upgrades to existing apparatus, equipment, plant and buildings, to enable their connection to the transmission network and to meet their performance standards. But, they are not responsible for the payment of costs associated with any augmentations to the shared transmission network for reasons other than to facilitate their connection. For example, they are not responsible for costs to enable the TNSP to meet its reliability standards.

In particular, the final rule defines two types of assets that provide the services required to connect a party to the shared transmission network - identified user shared assets and dedicated connection assets:

- Identified user shared assets broadly describe the collection of components that are required to facilitate the connection of a connecting party to the shared transmission network and which, once commissioned, form part of the shared transmission network, for example parts of a substation.
- Dedicated connection assets describe the collection of components that are used to connect a connecting party to the shared transmission network and which, once commissioned, are able to be isolated from electricity flows on the transmission network, for example the power line that connects parts of a substation to a generating system.

The intention of defining these two terms is to establish a clear distinction between the way in which services provided by means of these assets are regulated and the obligations of the parties who own, control and operate them. The arrangements for identified user shared assets and dedicated connection assets under the final rule are summarised in sections 4.2 and 4.4 respectively.

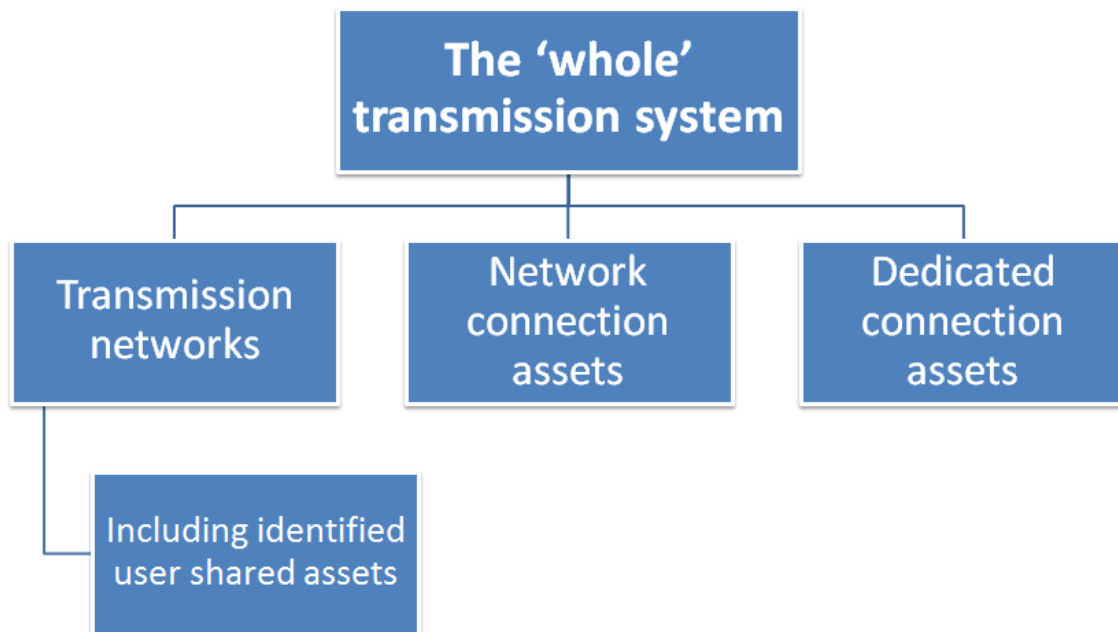
The final rule also amends the definition of connection point with respect to transmission connections to make it clear that it is the point at which a connecting party 'connects' to the shared transmission network - that is, the interface between shared transmission assets facilitating flows to end-use consumers (identified user shared assets) and assets that are only used by the parties (dedicated connection assets) connected at that connection point (identified user group).

Further, the final rule either amends the definitions of existing terms, or introduces new terms, to provide clarification on the components that make up a transmission system. Specifically, it clarifies that the 'whole' transmission system is comprised of:

- transmission networks - for example those owned, operated and controlled by Primary TNSPs, which include all shared network assets and identified user shared assets (regardless of whether or not the identified user shared assets are owned by the Primary TNSP)
- network connection assets - i.e. those assets that connect a network service provider to another network service provider⁶⁴
- dedicated connection assets - those assets that are owned, operated and controlled by either the Primary TNSP or a third party and which are used exclusively by one or more parties connected at the same, single connection point on the shared transmission network.

These concepts are represented in Figure 4.1 below.

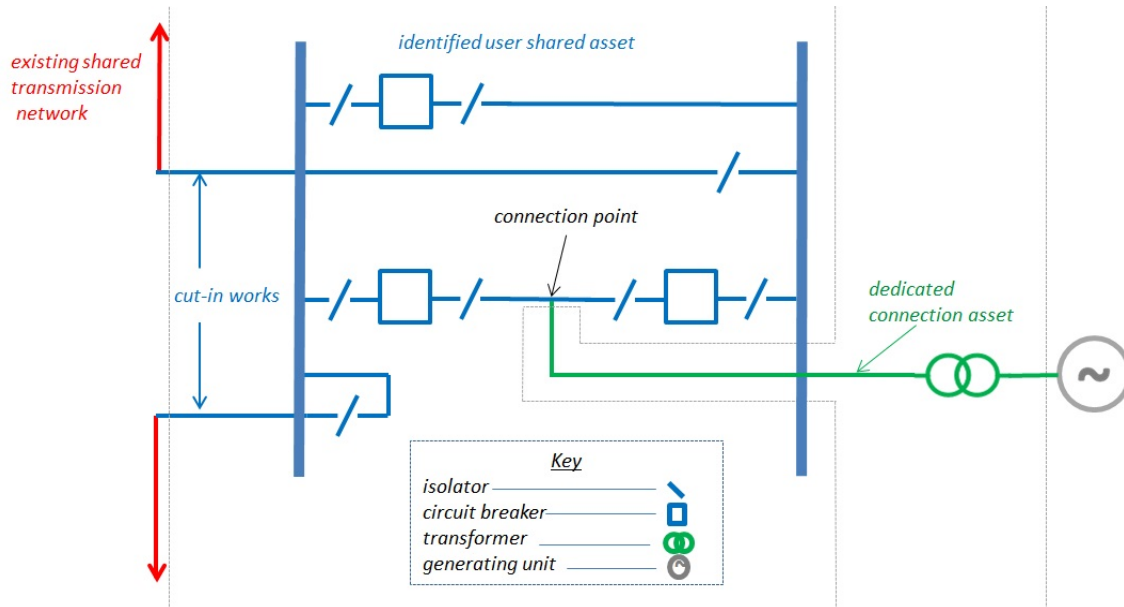
Figure 4.1 Key concepts and terms under the final rule



⁶⁴ Where that network service provider is not a Market Network Service Provider.

Figure 4.2 provides a simplified illustration of these key terms in the context of connections to the shared transmission network.

Figure 4.2 Illustration of key concepts and terms in the final rule and final determination



4.2 Arrangements for identified user shared assets

The final rule introduces the term identified user shared asset, sets out how the services provided for those assets are regulated and places certain obligations on the parties who own, control and operate them. These changes are summarised in the sections below, and set out in more detail in appendix B.

4.2.1 Contestability of services for identified user shared assets

The final rule:

- sets out a detailed description of the services required to connect to the transmission network via an identified user shared asset
- provides one or more examples of each service
- classifies each service as either a non-contestable service that the Primary TNSP has an exclusive right to provide and must negotiate to do so as a negotiated transmission service, or as a contestable service that can be provided by any party on commercial terms.

Detailed design, construction and ownership

The Commission considered that the benefits of allowing contestability in detailed design, construction and ownership would outweigh the costs. The final rule therefore provides that the Primary TNSP must provide the services of detailed design,

construction and ownership of an identified user shared asset as negotiated transmission services only if the capital cost of all the components that make up the identified user shared asset is reasonably expected to be \$10 million or less.⁶⁵ If the capital cost is reasonably expected by the Primary TNSP to be greater than \$10 million, the services of detailed design, construction and ownership of each component of the identified user shared asset are non-regulated transmission services and can be provided on a contestable basis to the extent that the components satisfy the following criteria:

- the components being constructed are new or a complete replacement of existing components (and does not involve the reconfiguration of existing components); and
- the detailed design and construction of the relevant component of the identified user shared asset is separable in that the new assets will be distinct and definable from the existing transmission network.

The Primary TNSP must determine whether each component of the identified user shared asset meets these two criteria. In the event that the parties do not agree on whether a particular component meets or does not meet these criteria, the final rule provides a means by which either party can engage an independent engineer to provide technical advice on the matter.

The Primary TNSP will be required to provide the services of detailed design, construction and ownership for those components of identified user shared assets that do not meet these two criteria as negotiated transmission services.

Arrangements for the provision of non-regulated transmission services are to be agreed between the connecting party and its chosen service provider on a purely commercial basis. However, the final rule adds a number of arrangements that must be included in connection agreements between a connecting party and the Primary TNSP to accommodate the fact that some services may be provided on a contestable basis, and to accommodate any transfer of assets that were provided on a contestable basis to the Primary TNSP.

Subject to meeting the two criteria described above, parties other than the Primary TNSP may retain ownership of contestable components of an identified user shared asset. However, the final rule requires a third party owner of an identified user shared asset to enter into a network operating agreement with the Primary TNSP. The network operating agreement will, among other things, provide for the Primary TNSP to have control of that asset, including to operate, maintain, augment, alter, replace and access the asset and to provide subsequent parties with access to the transmission network via that asset. The final rule also prohibits a person that is engaged in the activity of owning, controlling or operating a generating system or load that is connected to an identified user shared asset from owning that identified user shared asset.

⁶⁵ The rationale for this threshold is set out in appendix B.

Functional specification, cut-in works, operation and maintenance

The final rule provides that the services of setting the functional specification, providing cut-in works, and the operation and maintenance of identified user shared assets must be provided by the Primary TNSP as negotiated transmission services.

The final rule maintains that the Primary TNSP is accountable for outcomes on the shared transmission network, which includes identified user shared assets. The final rule clarifies that identified user shared assets are taken to form part of the Primary TNSP's broader transmission system for which it is already registered, and may be used by the Primary TNSP to provide shared transmission services to any transmission network user, for example, granting access to the transmission network.

4.2.2 Sizing of identified user shared assets

The final rule acknowledges that parties may seek to provide capacity over and above the immediate requirements of an identified user shared asset. For example, the Primary TNSP might seek to do so in anticipation of future connections to that asset, or a generator might seek to do so in order to accommodate a future second stage of its project. The final rule provides that where a Primary TNSP proposes to provide capacity over and above the immediate requirements of an asset, then the Primary TNSP is required to separately identify the additional requirements and - if the proposal is accepted by the connection applicant - to fund the additional works in relation to those requirements.

Under the final rule, the connection applicant can oversize an identified user shared asset by negotiating arrangements for the provision of the functional specification, cut-in works, and operation and maintenance services for the oversized asset with the Primary TNSP as a negotiated transmission service. If this occurs, the connecting party will pay the costs of this under the arrangements in the NER that relate to the provision of negotiated transmission services.⁶⁶

4.2.3 Cost sharing of identified user shared assets when subsequent parties connect

The final rule sets out a number of principles to provide guidance to connecting parties about how the costs of services for identified user shared assets are set, and how those costs are adjusted when there are subsequent connections to those assets where those services have been provided as part of a negotiated transmission service. For example, it includes a principle that a connection applicant should only be required to pay the costs directly incurred as a result of its connection, including its share of costs associated with an identified user shared asset, and that future connecting parties to the same identified user shared asset should pay a proportion of the costs of negotiated transmission services paid by the party/parties connected to that asset.

⁶⁶ This aspect of the final rule is discussed further in appendix B.

These principles only apply to the provision of negotiated transmission services by the TNSP, not to the provision of non-regulated transmission services. The final rule does not introduce a cost sharing framework for services that were provided as non-regulated transmission services (e.g. the construction of contestable components of an identified user shared asset).⁶⁷

4.3 Changes to the connection process

The final rule amends the existing process by which parties connect to a transmission network. These changes are summarised in the sections below, and set out in more detail in appendix C.

4.3.1 Introduction of an ability for parties to engage an independent engineer

The final rule introduces a process by which either the connecting party or the TNSP can engage an independent engineer to provide advice on technical issues relating to a connection to a transmission network. This process is intended to assist the TNSP and the connecting party when negotiating the technical aspects of a connection. The independent engineer process can be used where the services being provided by the TNSP are negotiated transmission services.

The final rule sets out the process to be followed to engage an independent engineer, including the selection of the engineer and the scope of the advice sought. The scope of the independent engineer's role will be limited to the provision of advice on technical issues only. The independent engineer will therefore not be able to be used to provide advice on the cost, commercial terms, process or timing of a connection.

The TNSP involved in the engagement of the independent engineer may amend the time period referred to in any stage of the connection process under the preliminary program to allow for any additional time reasonably required to accommodate the engagement of an independent engineer.

Under the final rule, the wholesale energy markets dispute resolution adviser will be responsible for some aspects of the process, specifically:

- establishing and maintaining a pool of firms from which independent engineers may be selected
- if requested by either party, selecting the independent engineer from the pool if the connecting party and the TNSP cannot agree on the independent engineer to be used
- if requested by either party, determining the scope of the advice to be considered by the independent engineer, which it must do in consultation with the parties.

⁶⁷ This is discussed further in appendix B.

The final rule allows the independent engineer to request documents and information from the parties that it reasonably considers to be required to provide its advice and parties must provide the information requested, subject to any confidentiality requirements of the parties. It also requires the independent engineer to have regard to a range of factors when providing its advice, such as the technical requirements of the connection as proposed by either of the parties.

The advice provided by the independent engineer is not binding on the parties.

The costs of the independent engineer, as well as any costs of the wholesale energy markets dispute resolution adviser in relation to the relevant technical matter, are to be borne equally by the parties. The final rule does not allow the TNSP to include the costs of an independent engineer in the connecting party's connection application fee. And, as the costs of the independent engineer will be associated with the provision of negotiated transmission services, they will not be costs the TNSP can seek allowance for in its revenue determination.

In addition to providing advice on technical aspects of a connection, under the final rule the independent engineer can also be called upon to provide advice on:

- whether a particular asset or component forms part of a dedicated connection asset or an identified user shared asset
- whether a particular component of an identified user shared asset⁶⁸ is contestable, that is whether it is:
 - new or a complete replacement of an existing component and does not involve reconfiguration of existing components
 - distinct and definable from the existing transmission network
- whether the detailed design of a contestable component of an identified user shared asset is consistent with the functional specification for that asset, as set by the Primary TNSP.

4.3.2 Updated negotiation frameworks

The final rule updates and expands the existing negotiating principles in Chapter 6A of the NER and moves them to Chapter 5 of the NER. They continue to apply to all negotiated transmission services. The revised principles are intended to require the TNSP and the connecting party to negotiate in good faith to agree the price, standard, conditions and timing of negotiated transmission services to be provided; and to improve the transparency of the negotiation process to enable both parties to understand each other's decisions and requirements. These principles do not apply to the provision of non-regulated transmission services under the final rule.

⁶⁸ Where the total value of the identified user shared asset is reasonably expected to be greater than \$10 million.

The final rule removes the requirement for TNSPs to prepare and submit to the AER negotiating frameworks as part of its regulatory proposal, and obliges them to comply with the updated negotiating principles when negotiating for the provision of negotiated transmission services with a connection applicant. The AER will therefore no longer need to approve the TNSPs' negotiated transmission service criteria and negotiating frameworks.

4.3.3 New transparency requirements

The final rule enhances the transparency of the connection process by requiring Primary TNSPs to publish certain information about connecting to their network on their websites and provide certain information to the connection applicant on request. Specifically, Primary TNSPs are required to provide information in relation to the following areas:

- the technical specification of identified user shared assets, including typical primary plant and design standards
- operation and maintenance arrangements, including typical operation and maintenance scheduling
- timescales, including for easement acquisition and commissioning
- legal arrangements, including standard connection agreements and network operating agreements
- financial arrangements, including the amount and terms of the connection enquiry charge and the connection application charge.

The final rule sets out what information is to be made available on the Primary TNSP's website, what is to be provided on request from the connecting party and whether the Primary TNSP is able to charge for the provision of that information.

These transparency requirements only relate to the services provided for identified user shared assets that are classified as negotiated transmission services.

4.3.4 Clarifications to the dispute resolution process

The final rule relocates the commercial arbitration process set out in Chapter 6A of the existing NER to Chapter 5. The final rule clarifies that this process applies to all disputes relating to the terms and conditions of access for the provision of:

- prescribed transmission services
- negotiated transmission services

- large DCA services.⁶⁹

The final Rule does this by including provisions in the negotiating principles for TNSPs and for large dedicated connection assets, and elsewhere where relevant to clarify that disputes relating to these services will be progressed through the commercial arbitration process set out in the NER.

The commercial arbitrator appointed under this process would make a binding determination on whether the price or other terms of any element of the provision of the above services are appropriate as required by the NER.

4.4 Arrangements for dedicated connection assets

The final rule introduces the term dedicated connection asset, sets out how services for those assets are regulated and places certain obligations on the parties who own, control and operate them. These changes are summarised in the sections below, and set out in more detail in appendix D.

4.4.1 Contestability of services for dedicated connection assets

The final rule clarifies that all services provided for new dedicated connection assets, including design, construction, ownership, operation and maintenance, are non-regulated transmission services and can be provided by any party on commercial terms. That is:

- there is no obligation on any party, including the Primary TNSP, to offer these services
- there is no regulated framework for the setting of price and non-price terms and conditions for the provision of these services.

Connecting parties will therefore be able to choose any party to provide these services for dedicated connection assets. It could choose to:

- provide the services itself
- have the Primary TNSP provide the services as non-regulated transmission services
- engage a third party to provide the services.

The arrangements by which that party is engaged will be agreed commercially between the connecting party and its chosen service provider.

⁶⁹ Defined in the final rule as a service provided by means of a large dedicated connection asset. This aspect of the final rule is discussed in section 4.4.3.

4.4.2 Requirement to register as a dedicated connection asset service provider

Because a dedicated connection asset is a transmission system under the final rule, any person who owns, operates or controls a dedicated connection asset will be required to register with AEMO as a TNSP, or be exempted by the AER.

Parties that are registered as a generator, customer or MNSP will be required to also register with respect to any dedicated connection assets that they intend to own, operate or control. Under the final rule, a person that is registered as a TNSP is taken to be a dedicated connection asset service provider only insofar as its activities relate to any of its dedicated connection assets. That is, the obligations imposed on dedicated connection asset service providers only apply to those parts of the TNSP's transmission system that are dedicated connection assets and not to the other parts of its transmission system that are not dedicated connection assets. That is, the obligations imposed on dedicated connection asset service providers only apply to those parts of the TNSP's transmission system that are dedicated connection assets and not to the other parts of its transmission system that are not dedicated connection assets.

The final rule requires a TNSP to classify those parts of its transmission system that are dedicated connection assets as large dedicated connection assets or small dedicated connection assets. A dedicated connection asset is required to be classified as a large dedicated connection asset if the total route length for any power lines forming part of it is 30 kilometres or longer. A small dedicated connection asset is one that falls below that threshold length. A TNSP will be required to classify its dedicated connection assets in its application for registration as a TNSP, or through a separate notice to AEMO. The TNSP must provide sufficient evidence to satisfy AEMO that the dedicated connection asset is appropriately classified. AEMO must approve the classification if it is satisfied, based on the evidence that is provided by the TNSP, that the part of the transmission system is a large or small dedicated connection asset (as applicable).

As registered participants, dedicated connection asset service providers will be subject to a range of existing obligations under the NER, including those that relate to AEMO's power to issue instructions to registered participants to maintain or re-establish power system security. However, these parties will only be required to comply with a rule that is expressed to apply to a network service provider or a TNSP if the rule specifies that it applies to a dedicated connection asset service provider.

4.4.3 Third party access to dedicated connection assets

The final rule sets up a framework by which parties can negotiate access to the service provided by means of a large dedicated connection asset. Specifically, it defines the service provided by means of a large dedicated connection asset as a 'large DCA service' that is subject to a regime for third party access. Small dedicated connection assets are not subject to this regime.

The final rule requires a dedicated connection asset service provider to prepare, maintain and publish an access policy for its large dedicated connection asset(s) on its website to provide a framework for applicants to obtain access to large DCA services. The final rule sets out the information that this policy is required to contain.

A dedicated connection asset service provider (including any TNSPs that own such assets) must lodge its access policy with the AER within 30 days of an asset being classified as a large dedicated connection asset. The AER is required to approve the access policy if it is reasonably satisfied that it complies with the requirements set in the final rule. The final rule sets out the course of action in the event that the AER does not approve an access policy. A dedicated connection asset service provider must comply with its access policy once it is approved by the AER. In addition, a dedicated connection asset service provider must report to the AER on requests for connection and access to a large dedicated connection asset when such requests are made and when an agreement for access is entered into, in the manner and form notified by the AER. A dedicated connection asset service provider is also required to make amendments as necessary to keep its access policy up to date.

The final rule sets out a number of principles that dedicated connection asset service providers for large dedicated connection assets will be subject to when negotiating access to the large DCA services provided by means of that asset to another party. Parties will also have access to the commercial arbitration process for any disputes in relation to the provision of large DCA services, as set out in section 4.3.4.

All other arrangements regarding that party's connection to the dedicated connection asset will need to be negotiated and addressed between the relevant parties on a commercial basis.

4.4.4 Transition of dedicated connection assets to the shared transmission network

The Commission has concluded that there are no fundamental limitations in the existing NER that prevent a TNSP transitioning a dedicated connection asset that it owns to form part of its transmission network if it demonstrates, through a relevant process (e.g. a RIT-T) that transition of the asset is the most efficient option to address the identified network need. The final rule therefore does not establish a separate mechanism by which this could or should occur, as was proposed in the rule change request.

However, this final determination sets out the circumstances where a dedicated connection asset will cease to be a dedicated connection asset as a result of a new party connecting to it. The final rule allows a dedicated connection asset service provider, through the access policy it is required to develop under the final rule, to refuse the connection of another party to its dedicated connection asset if that connection would result in a change in the regulatory treatment of that asset, for example, where the new connection would result in the dedicated connection asset becoming a distribution network.

4.5 Arrangements for DNSPs

The final rule does not change the process for connecting a DNSP to a transmission network under Chapter 5 of the NER. Since a DNSP connecting to a transmission network will only be provided with prescribed transmission services, not negotiated transmission services, none of the aspects of the final rule referred to in the sections above will apply to the services provided by a TNSP to connect a DNSP. As such, the arrangements for the connection of a DNSP to the transmission network will be slightly different to the arrangements by which load, generation, MNSPs and embedded networks connect under the final rule. The final rule contains minor amendments to reflect this, most notably the introduction of the term distribution connection assets.⁷⁰ It also clarifies which aspects of the connection process in Chapter 5 of the NER apply to the connection of a distribution network, including an embedded network, to a transmission or distribution system.

The final rule also maintains the existing arrangements by which the services provided by the TNSP to connect a DNSP are economically regulated. That is, if through planning and application of the RIT-T, if applicable, the TNSP determines that a new substation is needed to connect a DNSP to the transmission network, the TNSP will design, build, own, operate and control that substation. The TNSP will provide these services as prescribed transmission services and will recover the costs of doing so from transmission customers, which include DNSPs. The final rule does not provide for contestability in the provision of these services, as is the case under the final rule for generator, load, MNSP and embedded network connections.

The TNSP will continue to provide the physical link that connects a distribution network to its network as a prescribed transmission service that is paid for by the DNSP. Customers connected to that DNSP's network will pay those costs through distribution use of system charges. This will also be the case in the event that the DNSP connects to an existing substation that is already providing services to other connecting parties.

These arrangements are set out in more detail in appendix E.

A DNSP may also seek connection to the transmission network via a dedicated connection asset. While not addressed in the final rule, this final determination sets out scenarios where a dedicated connection asset will cease to be a dedicated connection asset under the final rule, including where a DNSP connects to a dedicated connection asset.⁷¹

⁷⁰ Defined in Chapter 10 of the final rule.

⁷¹ This aspect of the final rule is set out in appendix D.5.

5 Implementation of the connections aspects of the final rule

This chapter sets out the commencement date of the final rule and the interim steps that will need to be undertaken by market institutions and industry before the commencement of the new provisions of the final rule. It also sets out how the final rule will interact with connection enquiries that have been made prior to the commencement date of the final rule.

The savings and transitional amendments to the NER under the final rule are set out in schedule 7 of the final rule and commence operation on 30 May 2017.

As is set out in chapter 6 of this final determination, the connections aspects of the final rule will not apply in jurisdictions where AEMO is authorised to exercise declared network functions, i.e. Victoria. As such, the savings and transitional amendments to the NER preserve the application of the existing NER in declared network jurisdictions. This is discussed further in section 5.4 below.

The draft rule published by the Commission in November 2016 did not contain savings and transitional provisions. The Commission published a separate paper for consultation, containing a proposed savings and transitional rule, on 12 January 2017.⁷² Two stakeholders provided submissions on that paper, and their comments are addressed in the relevant sections below.⁷³ The Commission consulted with the AER and AEMO separately on the proposals put forward in that paper.

This chapter focuses on the implementation of the connections aspects of the final rule. Implementation of the planning aspects of the final rule is discussed in chapter 7.

5.1 Commencement date

5.1.1 Proposed savings and transitional rule

The draft determination proposed a commencement date of 1 January 2018 for the connections aspects of the final rule. This would have given parties approximately nine months after the publication of the final determination to put in place the necessary arrangements to comply with the final rule. However, feedback from market institutions indicated that nine months would be insufficient time for them to undertake the steps required under the proposed savings and transitional rule to prepare for the commencement of the final rule.

Accordingly, the proposed savings and transitional rule, published by the Commission in January 2017, proposed a commencement date for the connections aspects of the

⁷² See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

⁷³ These submissions are available on the AEMC website. See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

final rule that was not less than twelve months after the date the final rule and final determination is made. The Commission understood that the AER and AEMO were comfortable with this timing.

In its submission on the proposed savings and transitional rule, Energy Networks Australia did not comment explicitly on the commencement date, but recommended that the Commission avoid introducing the new framework until the practical effect of its application in key areas was sufficiently clear and understood by NEM participants.⁷⁴ ATCO Power's submission spoke more generally about the need to conduct broader consultation on reforms to the energy market arrangements to deliver long term value and energy security for consumers.⁷⁵

5.1.2 Final rule

In determining an appropriate date for the final rule to commence, the Commission considered the timeframes required for:

- TNSPs to develop and publish the information required by the new transparency provisions on their websites
- TNSPs to review and amend their internal systems, procedures and/or guidelines to reflect the new arrangements
- connecting parties to familiarise themselves with the new arrangements
- AEMO to amend relevant application forms and procedures regarding registration as a dedicated connection asset service provider with respect to the ownership, operation or control of a dedicated connection asset
- the AER to amend relevant guidelines and procedures regarding exemptions from the requirement to register as a dedicated connection asset service provider with respect to the ownership, operation or control of a dedicated connection asset, including to accommodate any conditions of exemption
- the AER to develop procedures relating to the approval of access policies for large dedicated connection assets
- the AER to make any changes needed in relation to its approach for negotiated transmission services
- the wholesale electricity market dispute resolution adviser to establish a pool of independent engineers.

⁷⁴ Energy Networks Australia, submission on consultation paper - proposed savings and transitional rule, p. 2.

⁷⁵ ATCO Power, submission on consultation paper - proposed savings and transitional rule, p. 4.

The final rule sets a commencement date of **1 July 2018** for the connections aspects of the final rule. Any parties seeking connection to the transmission network after this date will do so under the new rules.

This gives parties approximately 13 months after this final determination is made to undertake the steps set out above. The Commission concluded that this date appropriately balanced the needs of stakeholders to have sufficient time to prepare for the changes against the benefits of the final rule commencing immediately (i.e. on the date the final determination is made).

The three key aspects of the connections framework (i.e. changes to the connection process, arrangements for identified user shared assets, and arrangements for dedicated connection assets) were designed as an integrated, holistic package to improve transparency, contestability and clarity in the connections framework while maintaining clear accountability for shared network outcomes. Given this, the Commission concluded that all of these arrangements should be implemented at the same time.

Box 5.1 Impact on existing TNSP negotiating frameworks

Under the existing NER, TNSPs' negotiating frameworks are approved by the AER as part of their revenue determination.

As discussed in appendix C.2, the final rule removes the requirement for TNSPs to produce negotiating frameworks for approval by the AER, and for the AER to specify negotiated transmission service criteria that apply to TNSPs. Instead, the final rule updates and expands the existing negotiating principles in the NER, which cover the provision of negotiated transmission services.

When the final rule commences on 1 July 2018, TNSPs will be required to comply with the expanded negotiating principles contained in the final rule. The final rule simply elevates what is in the existing approved negotiating frameworks and negotiated transmission service criteria into the NER, and adds new principles in order to strengthen these arrangements. This means that there is a low risk of inconsistency between any negotiating frameworks and negotiated transmission service criteria in revenue determinations in place on the commencement date and the requirements in the final rule. Further, connecting parties should be advantaged by the final rule.

No stakeholder raised any concerns with this approach. The Commission also understood that the AER was comfortable with the above approach. This is the only component of TNSPs' revenue determinations that is affected by the final rule.

The alternative would have been to wait until each TNSP's revenue determination had ended in order to apply this aspect of the final rule to the relevant TNSP.

However, the Commission decided against this approach because:

- given that the recommendations are a 'package' and should be implemented as such, it would mean delaying the implementation of the connections framework for a number of years (in some cases to 2022)
- it would mean that the connections framework would start at different times in different jurisdictions, potentially creating distortions in investment between jurisdictions.

5.2 Implementation requirements for the final rule

Before the final rule commences, various parties must undertake a number of interim steps in order to be able to comply with the final rule.

The final rule requires the following steps to occur prior to 1 July 2018:

- By 1 March 2018, the AER must amend and publish the guidelines developed under clause 2.5.1(d) - i.e. the electricity network service provider registration exemption guideline - to take account of the amending rule.⁷⁶ These guidelines will need to reflect the conditions that apply to any exemptions granted from the requirement to register as a dedicated connection asset service provider with respect to the ownership, operation or control of a dedicated connection asset.
- By 1 April 2018, AEMO must develop an application form for registration of network service providers that takes account of the amending rule,⁷⁷ that is, to reflect the new sub-category of TNSP registration (the dedicated connection asset service provider). Because the timing of this requirement occurs prior to AEMO's annual budget and fee consultation process, specific allowance has been made to allow for AEMO to determine and recover fees for the registration of dedicated connection asset service providers before 1 July 2018.⁷⁸ The registration form will also need to allow a TNSP to classify those parts of its transmission system that are dedicated connection assets as large dedicated connection assets or small dedicated connection assets. AEMO will likely also need to put in place other arrangements to develop this new sub-category of TNSP registration.

While not set out as a requirement in the savings and transitional amendments to the NER under the final rule, there are a number of steps other parties will need to take before the commencement date in order to be able to comply with the final rule on and from the commencement date. For example, TNSPs will need to:

- develop, and publish on their websites, the information set out in Schedule 5.10 of the final rule

⁷⁶ Clause 11.98.3(a) of the final rule.

⁷⁷ Clause 11.98.3(c) of the final rule.

⁷⁸ Clause 11.98.4 of the final rule.

- modify their business processes to take account of the fact that connection applicants may request further information in relation to a particular connection under Schedule 5.10 of the final rule
- review and update their internal systems, procedures and/or guidelines to reflect the new arrangements, for example by amending standard form connection agreements to comply with the new inclusions for connection agreements.

The Commission also expected that the more resourced and experienced connecting parties will review and update their internal systems and procedures in order to take account of the new process for negotiating a connection to the transmission network.

The AER will need to put in place procedures relating to its function of approving and enforcing access policies for dedicated connection asset service providers with large dedicated connection assets, as per clause 5.2.7(c) and 5.2A.8 of the final rule.

The wholesale electricity market dispute resolution adviser will need to establish a pool of persons from which the independent engineer may be selected in accordance with rule 5.4 of the final rule.

As noted above, the Commission considered that the timeframe between the publication of this final determination and the commencement of 1 July 2018 gives the above parties sufficient time to undertake these steps.

5.3 Transition to the new arrangements

5.3.1 Connection agreements and enquiries

The Commission recognised that there will be a number of connection agreements already in place, and connection enquiries underway, when the final rule commences.

Existing connection agreements

The savings and transitional amendments to the NER under the final rule do not affect connection agreements entered into prior to 1 July 2018.⁷⁹ The arrangements that apply to connections under those agreements will therefore be unchanged by the final rule while those agreements are in place.

Amendments to existing connection agreements

If, after 1 July 2018, a transmission network user wishes to modify the connection service it receives under an existing connection agreement (i.e. one that was entered into prior to 1 July 2018) the final rule would apply to the modification of the

⁷⁹ Clause 11.98.5(a) of the final rule.

connection service under that connection agreement.⁸⁰ As such, the classification of services as either negotiated transmission services or non-regulated transmission services that is given effect through the final rule would apply to the provision of those new or altered services.

For example, connection agreements that were entered into after 2006 and before 1 July 2018 may cover the provision of both negotiated transmission services and non-regulated transmission services for a connection. If a connecting party seeks modification of such a connection agreement after the commencement date for the purposes of altering a service provided under that agreement, the arrangements under the final rule would apply to that modification.

If the modification involved a new identified user shared asset that met the contestability criteria set out in the final rule, then the detailed design, construction and ownership of that asset would be contestable, and the services provided as non-regulated transmission services.⁸¹ Under the existing NER, those services would have been provided by the incumbent TNSP as negotiated transmission services prior to the amendment of that connection agreement. Similarly, if the service modification involved a new dedicated connection asset, then all services for that asset would be contestable, non-regulated transmission services and the provisions regarding classification of, and access to, that asset under the final rule would apply.⁸²

Connection agreements entered into before 2006 are likely to cover the provision of prescribed transmission services for a connection, but may also include some non-regulated transmission services. Clause 11.6.11 of the NER sets out the effect of an amendment to a prescribed transmission service under such a connection agreement. As explained in Box 5.2, if the transmission network user who is party to such a connection agreement requests an amendment after 1 July 2018 for the purposes of altering a service under that agreement (for example providing increased power transfer capability at the connection point), then the final rule would apply to the provision of that altered service.

Box 5.2 Interaction between the final rule and clause 11.6.11 of the NER

Clause 11.6.11 of the NER grandfathers certain connection services (i.e. entry and exit services) that are being provided under certain connection agreements as prescribed transmission services.⁸³

⁸⁰ Clause 11.98.5(b) of the final rule.

⁸¹ See appendix B.

⁸² See appendix D.

⁸³ Clause 11.6.11 was implemented by two separate rule changes. The Economic regulation of transmission services rule change, made in 2006, introduced Chapter 6A of the NER. Clause 11.6.11 of the NER was introduced to grandfather existing connection services as prescribed transmission services to minimise the impact of that rule change on those existing arrangements. Clause 11.6.11 was amended in 2009 under the Cost allocation arrangements for transmission services rule

As set out above, the savings and transitional amendments to the NER under the final rule grandfather connection agreements entered into prior to 1 July 2018 from the application of this rule change. However, similar to the approach taken in clause 11.6.11, this grandfathering arrangement also ends if the transmission network user requests an amendment to the connection agreement for the purpose of altering a service under that agreement. If the amendment to the connection service involves the provision of new assets or changes to existing assets (for example to provide an upgraded service), the final rule would apply. That is, the classification of services as either negotiated transmission services or unregulated transmission services, which is given effect through the final rule, would apply to the provision of those new or altered services.

For example, if the new or altered service involved an identified user shared asset that met the contestability criteria set out in the final rule, then certain services for that asset would be contestable, non-regulated transmission services. Services that are provided as negotiated transmission services under the final rule would be subject to the revised process and principles for the provision of negotiated transmission services set out under the final rule.

The grandfathering arrangements under clause 11.6.11 end at the commencement of the relevant TNSP's next regulatory control period if the connection agreement has been amended at the request of the transmission network user for the purposes of altering a grandfathered connection service. If the negotiation of the request does not lead to a change to the connection service, clause 11.6.11 will continue to apply.

Therefore, the Commission concluded that the operation of clause 11.6.11 of the NER was separate to the changes resulting from this rule change request. Accordingly, amendments to clause 11.6.11 were not required to accommodate or reflect the final rule. The savings and transitional amendments to the NER under the final rule make it clear that the application of clause 11.6.11 of the NER is unchanged by the final rule in relation to connection services provided under a connection agreement entered into before 1 July 2018.⁸⁴ That is, there is no overriding of the grandfathering arrangements under clause 11.6.11.

In its submission to the consultation paper on the proposed savings and transitional rule, Energy Networks Australia asked that the Commission provide further clarification regarding transitional arrangements for dealing with amendments to connection agreements for unregulated services that were entered into prior to 2006.⁸⁵ The final rule makes clear that if the transmission network user who is party to such a connection agreement requests an amendment after 1 July 2018 for the purposes of altering a service under that agreement, then the final rule would apply to the

change, which clarified the scope and application of the grandfathering arrangements. Further information about these rule changes is available on the AEMC website.

⁸⁴ Clause 11.98.5(c) of the final rule.

⁸⁵ Energy Networks Australia, submission on consultation paper - proposed savings and transitional rule, pp. 2-3.

provision of that altered service. That is, the classification of services as either negotiated transmission services or non-regulated transmission services that is given effect through the final rule would apply to the provision of those new or altered services.

Connection enquiries underway

If a party makes an enquiry under clause 5.3.2 of the NER for a particular connection (a 'connection enquiry') before 1 July 2018, the existing rules would apply to the negotiation and provision of that connection. That is, the connection process and the negotiation of a connection agreement with the TNSP for that particular connection would be subject to the versions of Chapters 5 and 6A of the NER that are in force immediately prior to 1 July 2018.⁸⁶

The savings and transitional amendments to the NER under the final rule specify that a connection applicant who has made an enquiry under clause 5.3.2 of the NER for a particular connection before the commencement date is not prevented from withdrawing that connection enquiry and making a new connection enquiry for that connection on or after 1 July 2018.⁸⁷ If a connection applicant chooses to do this, the arrangements set out in the final rule would apply to that connection process and negotiation. Submitting a new connection enquiry may be beneficial to the connecting party because, under the final rule, it would have increased bargaining power when negotiating with the TNSP. This is because the final rule strengthens the principles and process by which connecting parties negotiate for the provision of negotiated transmission services, and allows for contestability in the provision of some services for a connection, provided that certain criteria are met.⁸⁸

In its submission to the consultation paper on the proposed savings and transitional rule, Energy Networks Australia expressed concern that a large number of connection enquiries would be withdrawn and resubmitted on, or soon after the commencement date, which would require TNSPs to respond to a large volume of enquiries within the existing timeframes set out in the NER.⁸⁹ It asked that the final rule include transitional arrangements that exempt TNSPs from compliance with these timeframes for a reasonable period immediately following the commencement of the final rule.

The final rule does not include such a 'grace period'. This is because the Commission did not expect that there would be significant numbers of enquiries being withdrawn and resubmitted as a result of this clause in the final rule, and not within such a short space of time as Energy Networks Australia considered. In deciding whether to withdraw its enquiry, a connection applicant would need to weigh up the costs and disadvantages of doing so against the benefits of being able to access the arrangements

⁸⁶ Clause 11.98.6(a) of the final rule.

⁸⁷ Clause 11.98.6(b) of the final rule.

⁸⁸ See appendix B.

⁸⁹ Energy Networks Australia, submission on consultation paper - proposed savings and transitional rule, p. 3.

under the final rule. It would also need to consider the effect of any contractual or other arrangements that were already in place in relation to that particular connection enquiry. Given the amount of work needed to put in place arrangements to connect to the transmission network, including the development of a connection enquiry, this is unlikely to be a decision that is made lightly or at short notice.

Further, the Commission expected that a Primary TNSP would be able to gauge a connection applicant's appetite for withdrawing its application in its ongoing conversations with that connection applicant about its enquiry. This should enable the TNSP to prepare for any expected increase in the amount of connection enquiries it receives following the commencement of the final rule. As a result of the amendments to the connection process under the final rule, the required period of time for a TNSP to respond to a connection enquiry has been increased to 30 business days, which is twice the amount of time under the existing NER.⁹⁰ While the amount of information that is required to be provided by the TNSP in response to a connection enquiry is greater under the final rule than under the existing NER, the Commission considered that this still provides sufficient time for TNSPs to provide the required information and deal with multiple enquiries at the one time.

5.3.2 Existing identified user shared assets

There are a number of existing assets that form part of the transmission network that would meet the definition of an identified user shared asset under the final rule, or that are currently being constructed, i.e. those connection assets that were provided, or are being provided, as negotiated transmission services by the TNSP under the existing transmission services framework (post-2006). The final rule does not address these assets. Therefore, the existing regulatory treatment of those assets and the contractual arrangements under which they were put in place are not affected.

The Commission considered that this approach was consistent with the approach taken at the time of the final determination on the Economic regulation of transmission services rule change in 2006, which introduced the existing transmission service arrangements, and grandfathered those connection assets that were provided as prescribed transmission services under clause 11.6.11 of the NER.⁹¹

There were no comments on this proposal in submissions to the consultation paper on the proposed savings and transitional rule.

5.3.3 Existing dedicated connection assets

There are a number of existing assets that would meet the definition of a dedicated connection asset under the final rule, or that would be constructed or contracted to be

⁹⁰ See appendix C.5.

⁹¹ See <http://www.aemc.gov.au/Rule-Changes/Economic-Regulation-of-Transmission-Services#>

constructed before 1 July 2018. As discussed in appendix D, stakeholders have different interpretations of the regulatory treatment of these assets under the existing NER.⁹²

As also discussed in that appendix, the Commission considered that it should be put beyond doubt that parties who own, operate or control dedicated connection assets are subject to the NEL and the NER in respect of those assets because they form part of the 'whole' transmission system.⁹³ The final rule makes it clear that, while new dedicated connection assets do not form part of the shared transmission network because they can be electrically isolated from it, they do form part of the 'whole' transmission system.

Given that the Commission wished to put beyond doubt that dedicated connection assets are subject to the NEL and the NER, it considered it important to have visibility of where and what these existing dedicated connection assets are, and which party is subject to the NEL and NER in respect of those assets. The final rule makes it clear that any party who owns, operates or controls a dedicated connection asset must be registered, or exempt from registration, with respect to that asset. However, the Commission recognised that existing dedicated connection assets, or those under development, were established under the existing regulatory arrangements, under which there is potentially scope for these assets to be treated as forming part of a connecting party's facility, part of the Primary TNSP's transmission network or something separate. As a result, it is potentially unclear which party is subject to the NEL and the NER in relation to some of those assets.

The savings and transitional amendments to the NER under the final rule therefore sets out a means by which parties who own, operate or control existing dedicated connection assets can have that asset 'grandfathered'. To give effect to this, the savings and transitional amendments to the NER under the final rule define the terms 'Existing DCA' and an 'Existing DCA Owner', as below.⁹⁴

Existing DCA means a *dedicated connection asset* which, before the commencement date:

- exists; or
- is contracted to be constructed under an Existing Connection Agreement; or
- a *Transmission Network Service Provider* has agreed to connect to a *transmission network* under an Existing Connection Agreement.

Existing DCA Owner means an owner, operator or controller of an Existing DCA.

⁹² As set out in appendix D, throughout the rule change process it became clear that some parties considered these to be covered by the NER term, 'extension'; some considered them to be covered by the NER term, 'connection assets'; some considered them to form part of the connecting party's facilities; and others did not consider that these assets were defined or covered by the NER at all. Therefore, there are a range of existing owners of such assets, ranging from the Primary TNSP, to a network service provider who has been granted an exemption by the AER, to a generator or load.

⁹³ Under the final rule, a dedicated connection asset is defined as a transmission system for the purposes of registration.

⁹⁴ Clause 11.98.1 of the final rule.

The savings and transitional amendments to the NER under the final rule require an Existing DCA Owner that is not already registered or exempt with respect to that asset to, by the commencement date, either:

- register as a network service provider for the Existing DCA; or
- seek an exemption from the requirement to register.⁹⁵

If an Existing DCA Owner is already registered (or exempt) with respect to that asset, then they will be required, by 1 May 2018, to notify the AER of:

- the identity of each owner, controller or operator of the Existing DCA
- the category of registered participant for which the owner, controller or operator of the Existing DCA is registered (or for which it has an exemption) for the Existing DCA
- whether the Existing DCA would be classified as a large dedicated connection asset or small dedicated connection asset if the Existing DCA Owner was to register as a network service provider for that asset
- the location and route of the Existing DCA.⁹⁶

The savings and transitional amendments to the NER under the final rule require the AER to, by the commencement date, establish and publish a register of Existing DCA Owners that have notified the AER under this clause.⁹⁷ The recording of Existing DCAs in the register will provide visibility to industry (including potential connection applicants) and market institutions of where these assets are, and who is registered (or exempt) with respect to those assets, and therefore subject to obligations under the NEL and NER, or the conditions of the exemption granted by the AER.

If an Existing DCA Owner is recorded by the AER in the register, the Existing DCA Owner:

- if recorded in a registration category other than a network service provider, or recorded as having an exemption (as applicable), for the Existing DCA, is not required to register as a network service provider for that Existing DCA
- if recorded as a network service provider for the Existing DCA, is not required to classify that Existing DCA as a large dedicated connection asset or small dedicated connection asset under the final rule
- is not taken to be a dedicated connection asset service provider in respect of that Existing DCA

⁹⁵ Clause 11.98.2(d) of the final rule.

⁹⁶ Clause 11.98.2(a) of the final rule.

⁹⁷ Clause 11.98.2(b) of the final rule.

- will continue to be registered (or exempted) in the category of registered participant for the Existing DCA that applied immediately before 1 July 2018 and recorded in the register by the AER and must, in relation to the Existing DCA, comply with all the obligations under the NER that apply from time to time to that category of registered participant, or the conditions of the exemption (as applicable).⁹⁸

There were no comments on this proposal in submissions to the consultation paper on the proposed savings and transitional rule.

5.4 Preservation of the existing NER for adoptive jurisdictions

As set out in chapter 6, the Commission concluded that the scope of the rule change request did not include consideration of applying the connections aspects of the final rule in any jurisdiction where AEMO is authorised to exercise declared network functions, i.e. Victoria.

To exclude the operation of the connections aspects of the final rule in Victoria:

- The final rule provides that the amendments to Chapters 2, 5, 8 and 10 under the final rule do not apply in relation to connection and access to a 'declared transmission system', i.e. the final rule sets out that the new provisions do not apply in respect of the declared transmission system and thus preserves the operation of those existing provisions as they relate to the declared transmission system.
- The savings and transitional amendments to the NER under the final rule preserve the operation of certain parts of the version of the NER that apply immediately before 1 July 2018 in Victoria, including Chapter 6A, and rule 5.4A and its associated definitions. It sets out that any amendments to these parts made by the final rule are of no effect.⁹⁹ This means that amendments would need to be made to the savings and transitional rule itself in order to apply any subsequent changes to these preserved parts of the rules in declared network jurisdictions after 1 July 2018.
- Certain clauses in Chapter 6 of the NER have been amended to preserve the operation of rule 5.4A, which has been deleted in the final rule¹⁰⁰

There were no comments on this proposal in submissions to the consultation paper on the proposed savings and transitional rule.

⁹⁸ Clause 11.98.2(c) of the final rule.

⁹⁹ Clause 11.98.8(a) of the final rule.

¹⁰⁰ The deletion of rule 5.4A is discussed in chapter 4.

6 Application of final rule in declared network jurisdictions

6.1 Introduction

The process for connecting to the transmission network under Chapter 5 of the NEL applies in all NEM jurisdictions. However, the transmission connection and planning arrangements are different in those jurisdictions where AEMO is authorised to exercise its declared network functions. As such, the rule change request seeks to isolate most of the proposed changes from any jurisdiction where AEMO is authorised to exercise those functions. Further, the rule change request submitted by the COAG Energy Council requested that the AEMC, in progressing the rule change request, provide advice on:

- where the changes cannot be adopted in jurisdictions for which AEMO is authorised to exercise its declared network functions and so should not apply at all
- where the changes could be adopted, but with some modifications.

This chapter sets out our views on the above.¹⁰¹

6.2 Background

6.2.1 AEMO's declared network functions

Under the NEL, jurisdictions can declare AEMO to have declared network functions.¹⁰² AEMO's declared network functions are:

- to plan, authorise, contract for, and direct augmentation of the declared shared network
- to provide information about the planning process for augmentation of the declared shared network
- to provide information and other services to facilitate decisions for investment and the use of resources in the adoptive jurisdiction's electricity industry

¹⁰¹ The Commission notes that AEMO is currently considering reforms to the Victorian connection process so that AEMO does not have to be a party to the connection agreements affecting a connection to the transmission system. The Commission agrees with AEMO's conclusions in that document regarding the rule change that is the subject of this final determination. That is, while the reforms being proposed are related to the matters being considered here, they are distinct from this rule change request. See: <http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Generator-Transmission-Connection-Reform>

¹⁰² Part 5, Division 2, Subdivision 3, section 50C.

- to provide shared transmission services by means of, or in connection with, the declared shared network
- any other functions, related to the declared transmission system or electricity network services provided by means of or in connection with the declared transmission system, conferred on it under the NEL or the NER
- any other functions, related to the declared transmission system or electricity network services provided by means of or in connection with the declared transmission system, conferred on it under a law of the adoptive jurisdiction.

Victoria is the only jurisdiction in the NEM where AEMO has declared network functions. In Victoria, the functions undertaken by TNSPs elsewhere are split between AEMO and declared transmission system operators (DTSOs).¹⁰³ AEMO is accountable for the provision of the shared network, procuring services from DTSOs (such as AusNet Services), who own and operate the shared network assets.

6.2.2 Transmission connections in Victoria

Given the above, in Victoria, the regulatory and legislative framework for how parties connect to the transmission network is different – it is regulated by provisions in the NEL, Chapters 5 and 8 of the NER. This means that the process for how parties connect to the transmission network is different to other jurisdictions, which just follow the process set out in Chapter 5 of the NER.

Broadly, AEMO is responsible for assessing all new generator, load, MNSP, embedded network and DNSP connections against the NER requirements, but it is *not* responsible for providing the assets associated with connection. For generators and large loads, generally the assets associated with connection are provided by a supplier of the connecting party's choice.

This translates to the following process being undertaken for connections in Victoria:

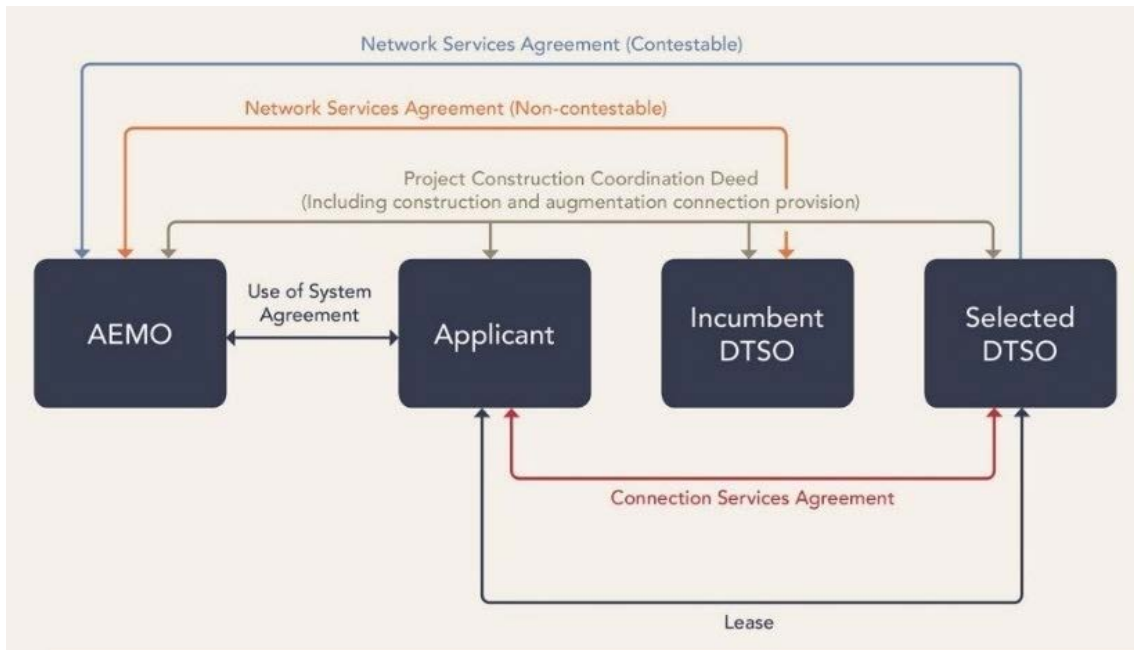
- If a connection requires an augmentation to the declared shared network (e.g. the construction of a new substation or terminal station as they are known in Victoria) – an “identified user shared asset”, AEMO will determine whether the augmentation is contestable, non-contestable, or some combination of both.
- If AEMO determines that the augmentation is contestable, then the connection applicant can either:
 - nominate a DTSO of its choice to build, own and operate the contestable assets (essentially it would conduct a private tender to determine who it wishes to appoint to provide these services); or

¹⁰³ There are currently four DTSOs in Victoria: AusNet Services (registered as SPI PowerNet), NSW Electricity Networks Operations (formerly registered as TransGrid), Rowville Transmission Facility Pty Ltd, and Transmission Operations Australia. The incumbent DTSO is AusNet Services.

- ask AEMO to select the DTSO, with AEMO running a tender process to select the most appropriate party.
- If AEMO determines that an augmentation is not contestable, the services will be provided by the incumbent DTSO, e.g. AusNet Services. Typically these are the interface works because they are considered “not separable” from the incumbent’s network.
- In deciding whether or not something is contestable, AEMO is required to follow a series of criteria set out in Part 8 of Chapter 8 of the NER. Specifically, the NER defines that an augmentation is a contestable augmentation if:
 - the capital cost of the augmentation is reasonably expected to exceed \$10 million; and
 - the augmentation is a separable augmentation, i.e. where the augmentation will result in a distinct and definable service to be provided by the contestable provider to AEMO; and the augmentation will not have a materially adverse effect on the incumbent DTSO’s (e.g. AusNet Services’) ability to provide services to AEMO under any relevant network agreement.
- Regardless of whether the augmentation is contestable or non-contestable, AEMO will provide the equivalent of a 'functional specification' that the provider of the assets must use.

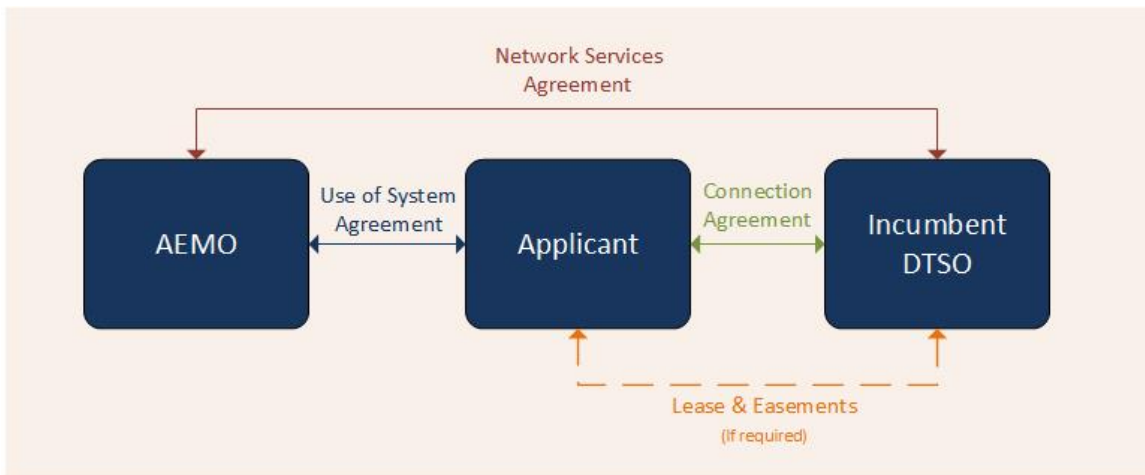
Given these differences, the contractual arrangements for a connection in Victoria are also different to other jurisdictions. Currently, in other jurisdictions, only one connection agreement or contract is likely to be required i.e. that between the connection applicant and the TNSP. However, because of the above framework, which means that more parties have roles in Victoria, there are also more parties required to be party to contracts, as well as more contracts generally required. It can be seen from the figures below that where the augmentation is non-contestable, or where the party selects the incumbent DTSO, the contractual arrangements are simpler. This is because there are fewer parties to allocate risks and accountability for the shared network between.

Figure 6.1 Contracts for a contestable augmentation in Victoria



Source:
<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/Victoria-transmission-connections---process-overview/Stage-4---Contracts>

Figure 6.2 Contracts for a non-contestable augmentation in Victoria, or where the incumbent DTSO has won the contestable augmentation bid



Source:
<https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/Victoria-transmission-connections---process-overview/Stage-4---Contracts>

6.3 Application of rule change in Victoria

6.3.1 Ability to make a rule in Victoria

Under the NEL, a request for a rule regulating AEMO's declared network functions may only be made by:

- AEMO;
- a DTSO that is a party to a network agreement with AEMO; or
- a Minister of an adoptive jurisdiction, i.e. the Victorian Minister.¹⁰⁴

The AEMC may only make a rule that has effect with respect to Victoria if it is satisfied that the proposed rule is compatible with the proper performance of AEMO's declared network functions.¹⁰⁵

Further, the AEMC may only make a rule that affects the allocation of powers, functions and duties between AEMO and a DTSO if:

- AEMO consents to the making of the rule; or
- the rule is requested by a Minister of an adoptive jurisdiction, i.e. the Victorian Minister.¹⁰⁶

6.3.2 Our conclusion on our ability to make rules in Victoria

In addition to these NEL requirements, the rule change request seeks to isolate most of the proposed changes to the connections framework from any jurisdiction where AEMO is authorised to exercise its declared network functions i.e. Victoria.

Given the above, the Commission is of the view that the scope of the rule change request does not include consideration of applying these rules to AEMO's declared network functions. However, the Energy Council has requested the AEMC to provide advice on whether the changes should, or should not be adopted, in declared network jurisdictions. The Commission's view on this is set out in section 6.4 below.

As noted above, the final rule is not intended to regulate AEMO's declared network functions in Victoria. The Commission has adopted the following drafting approach in the final rule in order to implement this position:

- The final rule provides that the amendments to relevant clauses in Chapters 2, 5, 8 and 10 do not apply in relation to connection and access to a "declared

¹⁰⁴ See section 91(7) of the NEL.

¹⁰⁵ See section 91(8) of the NEL.

¹⁰⁶ See section 91(9) of the NEL.

transmission system”¹⁰⁷ i.e. the final rule sets out that new provisions do not apply in respect of the declared transmission system and preserves the operation of existing provisions as they relate to the declared transmission system; while

- The final rule preserves the operation of Chapter 6A (as it applies immediately before the commencement date of the final rule, i.e. on 30 June 2018) in a transitional arrangement. This means that, in order to apply any subsequent changes to Chapter 6A to the declared transmission system after 1 July 2018, amendments will need to be made to the savings and transitional rule.
- The same approach is taken in relation to rule 5.4A and its associated definitions.

See chapter 5 for further information on the savings and transitional arrangements for Victoria under the final rule.

6.4 Advice on application to Victoria

6.4.1 Stakeholder comments

In submissions to both the consultation paper and discussion paper, stakeholders were generally of the view that there would be benefit in harmonising the transmission connection and planning arrangements across the NEM, for example:

- AGL suggested that the rule change presented an opportunity to streamline the Victorian arrangements;¹⁰⁸ and
- Energy Networks Australia agreed with AGL, suggesting that the Commission should use the rule change as an opportunity to better align the Victorian arrangements with the rest of the NEM.¹⁰⁹

The Clean Energy Council and Australian Energy Council also expressed similar sentiments.¹¹⁰

AEMO was the only stakeholder that commented on this aspect in the draft determination. AEMO noted that it has already begun a consultation process with industry to streamline the process for connecting new generation to the Victorian declared transmission system, by removing itself as party to the connection and

¹⁰⁷ The term “declared transmission system” is defined in the NEL as having the meaning given to it in the application Act of an adoptive jurisdiction (a jurisdiction that has authorised AEMO to exercise its declared network functions). Currently Victoria is the only adoptive jurisdiction in respect of AEMO’s declared network functions and the Victorian transmission system and any augmentations of that system is a “declared transmission system”.

¹⁰⁸ AGL, submission on consultation paper, p. 2.

¹⁰⁹ Energy Networks Australia, submission on discussion paper, p. 5.

¹¹⁰ Submissions on discussion paper: Clean Energy Council, p. 12; Australian Energy Council, p. 2.

augmentation contract(s) as far as possible.¹¹¹ It also provided more specific responses to our advice. The Commission addresses AEMO's views in the below section.

6.4.2 AEMC conclusions and advice

The Commission considers that the framework on which the Victorian connection processes is based is fundamentally different to the processes and principles underlying the connection model used in the rest of the NEM:

- In the other states, there is a single, for-profit entity as TNSP who is responsible for assessing and providing services (e.g. construction) associated with connections. A single entity trades off the relative costs and benefits of operational and investment decisions, and is subject to financial incentives under the regulatory regime.
- In Victoria, there is single not-for-profit entity who is responsible for assessing connections, but not for providing assets associated with connections. AEMO is responsible for determining what works are 'contestable' and so are procured through a competitive tender process, and what works are 'non-contestable' and so provided by the incumbent DTSO.

As noted above, this is also reflected in the different regulatory frameworks for transmission connections.¹¹² Given this, achieving alignment between the Victorian arrangements and arrangements elsewhere in the NEM is likely to be difficult due to the different underlying philosophies. However, the Commission does consider that with a number of changes, there could be more consistency in the approaches to connections between Victoria and the rest of the NEM.

However, in Victoria, AEMO is accountable for the provision of shared transmission services. Although, it carries out its functions by way of contracts with DTSOs in order to allocate responsibility, risk and liability, there is still clear, singular accountability for the provision of shared transmission services, with this set out in the NEL.¹¹³ This is consistent with the Commission's view that one party should be accountable for shared network outcomes in a particular jurisdiction.¹¹⁴

¹¹¹ AEMO, submission on draft determination, p. 8.

¹¹² Victorian arrangements are bounded by specific provisions set out in the NEL and Chapters 8 and 5 of the NER; whereas the arrangements in other jurisdictions are only bound by the NEL and Chapter 5 of the NER.

¹¹³ See section 50C(1)(d) of the NEL.

¹¹⁴ In its submission to the draft determination, AEMO questioned the need for a single party to be ultimately responsible for the provision of shared transmission services. The Commission does not share this view, and thinks that the current NEL and NER are clear that AEMO is accountable for the provision of shared transmission services in Victoria. See: AEMO, submission on draft determination, p. 9.

In order for the final rule to apply to declared network jurisdictions the Commission considers that there would need to be the following changes to the connections framework in declared network jurisdictions:

- There would no longer be a role for AEMO in running a tender process for contestable augmentations that are related to connection as the design, ownership and construction of identified user shared assets would be contestable.¹¹⁵ As noted above, under the current arrangements, connection applicants have a choice of nominating a DTSO of their choice (decided by running a private tender) or asking AEMO to select a DTSO. The Commission understands that no recent connecting parties in Victoria have asked AEMO to select a DTSO on their behalf, and so the Commission considers that this would in practice not be a significant change from the arrangements today.¹¹⁶
- There would need to be recognition of the existence of 'dedicated connection assets' i.e. assets that are used to connect a party to the shared network, which are paid for by that party, and which are only 'used' by that party. These could be provided by any party. Currently, there is not an equivalent concept in declared network jurisdictions (although typically all assets for connection are already provided 'contestably'). AEMO agrees that there is merit in making a clearer differentiation between dedicated connection assets and identified user shared assets, and allowing the potential for separate ownership and operation. It is also of the view that this would improve clarity and provide greater flexibility, and can be applied to the declared transmission system.^{117,118}
- Given that the Commission is preserving the operation of Chapter 6A and rule 5.4A and associated definitions in a savings arrangement for Victoria, it would result in a clearer, more consistent framework if Victoria adopted these changes as well, and so only one of Chapters 5 and 6A would apply across the NEM. Therefore, the arrangements regarding negotiating frameworks (see appendix C.2), and the arrangements facilitating the deleting of rule 5.4A could also be adopted in Victoria, with no impact on the declared network functions. AEMO expressed support for the changes to the negotiating frameworks applying in declared transmission systems.¹¹⁹ However, AEMO considered that some components of rule 5.4A are used in establishing the terms and charges for connection and access to transmission services.¹²⁰ As set out in chapter 4 of this

115 Although this function would need to be maintained for other augmentations of the shared network i.e. those that would provide a 'net market benefit' under the RIT-T.

116 In their proposals relating to Victorian Connections Reform, AEMO are also proposing that this obligation under the NER is removed. See: AEMO, Victorian Connections Reform, November 2016, p. 10. AEMO also noted in response to the draft determination that it supported this proposal. See: AEMO, submission on draft determination, p. 10.

117 Subject to AEMO's more detailed comments on the definitions themselves, which are discussed in appendices B and D respectively.

118 AEMO, submission on draft determination, p. 10.

119 Ibid.

120 Ibid., p. 11.

final determination, the Commission does not agree with this, and so still recommends removal of rule 5.4A in declared transmission systems.

If these changes were adopted, then the Commission considers that the frameworks between the various jurisdictions would be more consistent in relation to connections across the NEM, which would be beneficial for connecting parties since there would be two somewhat similar, transparent frameworks for connections.

In the draft determination, the Commission proposed that AEMO would play the role of the independent engineer in declared network jurisdictions. However, in response to this, AEMO set out that it considered that it would be inappropriate for AEMO to take on this role since it currently determines the functional specification, which is one aspect that could be subject to review by the independent engineer.¹²¹ The Commission agrees with this, and therefore removed this recommendation from its advice. However, the Commission still considers that there may be benefits in having the independent engineer framework apply in declared network jurisdictions.

There would, of course, be some differences between the various frameworks. For example, Section 50H of the NEL provides for how disputes arising from a party attempting to negotiate a network agreement or augmentation connection agreement in a declared network jurisdiction are resolved. This difference would need to be maintained, subject to changes to the NEL, but, if the changes flagged above were made the philosophies of the framework across the NEM would be much more aligned.

¹²¹ AEMO went on to note that in theory Victoria could have the same independent engineer framework as proposed for the rest of the NEM, but where AEMO was acting as the TNSP it would have no means of recovering the engineer's costs unless permitted to do so either through prescribed or negotiated transmission use of system charges. AEMO, submission on draft determination, p. 9.

7 Planning

The section concerns the planning aspect of the rule change request. The proposed changes to the planning arrangements can be split into three elements. These are:

1. Consideration of cross-regional investment options.
2. TNSP input into the National Transmission Network Development Plan.
3. Consistency of transmission annual planning reports.

This section will discuss each of the elements in turn, provide a summary of stakeholder feedback, outline the Commission's analysis and conclusions, and provide a summary of the final rule.

7.1 Consideration of cross regional investment options

7.1.1 Background

The final report of the *Transmission frameworks review* found that the existing regulatory framework does not explicitly allow TNSPs to fund investments in a different region to meet an identified need in the region in which it operates i.e. a "cross-regional" option. As a result, TNSPs have little or no incentive to consider such "cross-regional" investment options in other regions in determining their optimal investment. This finding motivated the proposed rule change to promote the identification and implementation of network investments that cross regional boundaries.

7.1.2 COAG Energy Council's view

The proposed changes to the NER to facilitate cross-regional investments reflect the recommendations made in the *Transmission frameworks review* and are related to two distinct parts of the NER, the economic regulation of transmission investments, under Chapter 6A of the NER and the transmission planning arrangements under Chapter 5 of the NER.

The COAG Energy Council stated in the rule change proposal that it is supportive of a "nationally coordinated planning approach that ensures both intra-regional and inter-regional options would be considered in determining the optimal investment."¹²²

To promote the identification and implementation of network investment options that cross regional boundaries, the rule change proposed to amend the planning process to introduce new requirements on TNSPs to:

¹²² COAG Energy Council, *Transmission Connection and Planning Arrangements*, rule change request, July 2015, p. 18.

- consider whether an option in another jurisdiction may also meet their investment needs in preparing their annual planning reports
- consult with other transmission businesses on the potential for inter-regional investment to deliver market and reliability benefits, and
- specifically consider investment in other regions as a credible option when undertaking a regulatory test for transmission.

An additional aspect of this proposal was to consider how viable cross-regional investment options should be identified and incorporated into the transmission planning process. This includes requirements that an analysis of cross-regional options be reported in annual planning reports and RIT-Ts. The rule change request suggested that AEMO (as national transmission planner) should develop guidelines on assessing whether an investment need could be met by an investment in another region.

With respect to the economic regulation of cross regional investments, the rule change request noted that, as part of the *Transmission frameworks review*, "[t]he Commission also recommended that the rules should be clarified to ensure that cross-regional investments are treated as regulated investments". The rule change request did not explicitly outline how the arrangements for the economic regulation of cross-regional investments should be clarified.

The intention of the rule change proposals regarding the consideration of cross regional options is that TNSPs are required to identify, consider, and report on potential cross-regional investments and, in the event that such an investment is shown to be efficient, that there are no regulatory obstacles to the investment going ahead. In short:

“The [COAG Energy] Council supports the provision of least cost investment to deliver market and reliability benefits and that, in a national market, exploration of inter-regional investment as an alternative to intra-regional investment should be explicitly considered in network planning and regulatory investment testing processes.¹²³”

7.1.3 Stakeholder views

Consultation paper and initial workshop

Submissions to the consultation paper agreed that there may be efficiency benefits to the consideration and selection of cross-regional investment options when it would be the most viable option to meet a network need. Energy Networks Australia stated that because of these potential efficiency gains TNSPs already actively undertake joint

¹²³ COAG Energy Council, *Transmission Connection and Planning Arrangements*, rule change request, July 2015, p. 19.

planning, when appropriate, to identify where solutions in another region may be suitable to address an identified local need.¹²⁴

Energy Networks Australia did not consider it necessary that AEMO develop guidelines to assess how an investment need in one region can be met by investment in another region. Requirements to consider cross-regional investments in annual planning reports and subsequent RIT-Ts and as part of the National Transmission Network Development Plan were considered to be sufficient to improve transparency and promote coordinated planning.¹²⁵

The issue of the economic regulation and cost allocation of cross-regional investments was also raised by Energy Networks Australia in their submission. Where joint planning aligns with the revenue determination process, Energy Networks Australia considered that the economic regulatory framework will support the implementation of cross-regional investment options. Additional arrangements may be required if a cross-regional investment has not been forecast in or included in the general revenue allowance for a TNSP.¹²⁶

Finally, Energy Networks Australia noted that the new arrangements for inter-regional transmission charging¹²⁷ should assist in allowing that those customers that benefit from the cross-regional investment contribute to its cost over time.¹²⁸

Draft determination

The draft determination set out how cross-regional investments could be undertaken under the current economic regulatory framework. This is discussed in more detail below.

For the purposes of this discussion, the term "home" TNSP refers to the TNSP with the originating need for investment who has identified an investment in another region as the most efficient option to meet that need. The "other" region TNSP refers to the TNSP in (most likely) a neighbouring jurisdiction where the investment to meet the need of the "home" TNSP will physically take place.

Energy Networks Australia's submission highlighted that there may be some issues with the incentives TNSPs have to pursue cross-regional investment options. The submission noted that the "other" region TNSP has no obligation to build the proposed solution. It also noted that the payment made by the "home" TNSP to the "other" region TNSP does not currently satisfy the criteria to be a network support payment. This means that unless the investment was contemplated at the time of the "home" TNSP's

124 Energy Networks Australia, submission to the consultation paper, p. 18.

125 Ibid.

126 Energy Networks Australia, submission to the consultation paper, p. 18.

127 The new rules were introduced in 2013 and introduced a new inter-regional transmission charge for consumers. The inter-regional transmission charge commenced on 1 July 2015 and is levied between transmission businesses in neighbouring regions.

128 Ibid., p. 19.

revenue determination it would not be included in the "home" TNSP's prescribed revenue allowance. This, according to Energy Networks Australia, could be ameliorated by amending the definition of network support payment so as not to limit this to payment to a generator and to the deferral of an augmentation.¹²⁹

AEMO considered that the requirements for reporting on joint planning on cross-regional investments will formalise the joint planning interaction that currently takes place between TNSPs and will establish consistency in reporting across the NEM. AEMO stated that it will continue to engage with TNSPs and consider cross-regional investment options as part of the National Transmission Network Development Plan process.¹³⁰

7.1.4 Commission's analysis

Changes between the draft and final rules

There were no changes between the draft and final rules on this aspect of the rule change request.

Incentives to undertake cross-regional investments under the current regulatory framework

In the draft determination, the Commission outlined how cross-regional investments could be accommodated under the current economic regulatory framework. The option for how cross-regional investments could currently be carried out is to treat the cross-regional investment as a credible option provided by another TNSP through any RIT-T process that is undertaken by the "home" TNSP- see Box 7.1.

Box 7.1 Explanation of how cross-regional investments could be carried out

Under the existing regulatory framework, the Commission considered that the investment could be treated in the following way:

- The "home" TNSP would foresee an identified need in its jurisdiction.
- Through joint planning with its neighbouring ("other") TNSP the "home" TNSP could identify that its identified need could be met by the "other" TNSP.
- In order to address the identified need, the "home" TNSP would run a RIT-T process on the identified need and potential options to meet that identified need.
- The "other" TNSP would signal through the RIT-T process that it could

¹²⁹ Energy Networks Australia, submission to the draft determination, pp.10-11.

¹³⁰ AEMO, submission to the draft determination, p.14.

meet the identified need with an investment in its region – in terms of the RIT-T this would be considered as a credible option, provided by the "other" TNSP.

- As part of the RIT-T process, the “other” TNSP would provide a value of its option to the “home” TNSP, with this option being assessed against other credible options through the RIT-T process.
- If the cross-regional investment option was chosen as the option that maximised the net market benefit, the “other” TNSP would have to agree to undertake the investment. The "other" TNSP would enter into a contract with the “home” TNSP. This contract would set out the obligations that the "other" TNSP would have to provide the service and how they would be paid for this service.
- The “other” TNSP would undertake this cross-regional investment as an unregulated transmission service to the "home" TNSP. The investment would therefore be funded through contract payments made by the “home” TNSP, and paid for out of the “home” TNSP’s operating expenditure. The investment would not be included in either the "home" or "other" TNSP's regulated asset base (RAB).
- It could be the case that the cross-regional investment, although originally motivated by an identified need in the "home" region, could, over time, start to provide prescribed transmission services within the "other" TNSP's network. If this were to occur, the “other” TNSP could transition some of the value of the asset into its RAB through the existing provisions in the NER.¹³¹ The amount of the asset that would be included in the "other" region TNSP's RAB would correspond to the value of the asset that is providing prescribed transmission services in the "other" region's network. The inclusion of this portion of the asset into the "other" TNSP's RAB would mean that the value of the services provided to the "other" region consumers are correctly apportioned to and paid for by these consumers.

Under this route, the "home" TNSP would identify a need that could potentially be met by an investment in the "other" region (the cross-regional investment). This cross-regional investment would be included as a credible option in the RIT-T run by the "home" TNSP. The "other" region TNSP would be the investment proponent for the cross-regional investment in the RIT-T. If selected as the chosen option the cross-regional investment would be undertaken by the "other" region TNSP and funded through contract payments from the "home" TNSP to the "other" TNSP. The investment would not be included in either TNSP's RAB.

Stakeholders noted that, in their opinion, there is a lack of incentives under the current regulatory framework for TNSPs to undertake cross regional investments using the

¹³¹ Clause 6A.19.2 of the NER.

approach described above and in the draft determination. This section considers these issues in more detail.¹³²

Stakeholders explained that there are a lack of incentives on both the "home" and "other" region TNSPs. The Commission's understanding of the perceived lack of incentives, as told by stakeholders, is given below:

- **"Home" region TNSP:** The TNSP with the originating need may not be willing to give due consideration to a cross-regional investment option, even if it is the most efficient way to meet an identified network need, because it would have to fund this asset through operating expenditure. The problem with this is that the operational expenditure would not meet the current criteria for a network support arrangement. The implication of this is that unless the operating expenditure was contemplated at the time of AER approval of the TNSP's prescribed revenue allowance it is not likely that a TNSP would consider a cross-regional investment funded through operating expenditure.
- **"Other" region TNSP:** There is no obligation on the "other" region TNSP to build the solution proposed by the "home" TNSP in order to meet an identified need in the "home" region. This means that the "other" region TNSP who does not wish to undertake such a cross-regional investment can choose not to contract with the "home" TNSP, even if it may provide the most efficient outcome for the NEM as a whole.

The Commission noted the concerns of stakeholders regarding the perceived lack of incentives to undertake cross-regional investments under the current NER. However, if the cross-regional investment is the most efficient way to meet an identified need, there should be no issue with using operational expenditure to address this need. Similarly, the Commission considered that TNSPs should have incentives to earn unregulated revenue, in the form of contract payments from the "home" TNSP, associated with a cross-regional investment.

Changes that could be considered to the current economic regulatory framework

In order to address the perceived incentive issues under the current NER, more fundamental changes to the economic regulatory framework could be considered. One of these changes was suggested by stakeholders, and the Commission has also considered other options to change the current economic regulatory framework. These options for changes to the NER are considered in more detail in this section.

Submissions to the draft determination suggest that TNSPs with an identified need that could be met by an investment in another region would be more likely to consider such an option if they were able to classify the associated payments to the "other" region

¹³² Energy Networks Australia, submission to the consultation paper, p. 18 and Energy Networks Australia, submission to the draft determination, pp. 10-11. Issues regarding incentives to undertake cross-regional investments have also been raised by stakeholders at a stakeholder workshop and in meetings with the Commission.

TNSP as network support payments. Being the subject of pass-through mechanisms, network support payments are thought to be more likely to incentivise consideration of cross-regional options.

In order to classify contract payments from the "home" TNSP to an "other" region TNSP for the purposes of a cross-regional investment as a network support payment, the definition of network support payments would need to be amended. The Commission concluded that this was out of the scope of this rule change, as changing the definition of network support payments could have wider implications for what is allowed to be classed as a network support payment than just cross-regional investments considered in this rule change.¹³³

In addition to the above suggestion from stakeholders, the Commission also contemplated other, more broad options that could resolve the issues with a lack of incentives under the current framework to consider and undertake cross-regional investments. For example, obligations could be imposed on TNSPs to be investment proponents under the RIT-T process.

However, the Commission did not consider such broader changes further, nor are these changes included in the final rule. The Commission considered that, given the limited scope for such investments to occur, the costs of implementing these changes to the economic regulation framework would outweigh the associated benefits at this time.

Inter-regional transmission charging

The draft determination also included a discussion of the arrangements for inter-regional transmission charging and how such arrangements would apply to cross-regional investment options. The Commission developed its thinking further on this issue since the time of the draft determination, with this thinking set out in this section.

Inter-regional transmission use of system arrangements would be relevant to the treatment of cross-regional investment options in the event that assets built for the purposes of a cross-regional investment were rolled into the "other" region TNSP's RAB. Inclusion in the "other" region TNSP's RAB would mean that the "other" region customers are paying for these assets and would need to be reimbursed this amount by the "home" region TNSP. This is necessary to allocate the costs of the cross-regional investment to the "home" region customers, who are benefitting from the investment.

The current inter-regional transmission charging arrangements introduced a mechanism for TNSPs to monetise the benefits to other regions that occur as a result of investments they have made. These new charging arrangements were introduced to

¹³³ Given the different nature of cross regional investment, it may not be appropriate to extend network support provisions and cost pass-through arrangements to cross-regional investments. This would require further consideration.

reflect the interconnected nature of the NEM and to provide efficient price signals for TNSPs to undertake investments where the benefits may extend to other regions.¹³⁴

The below discussion assumes that the cross-regional investment is in the "other" region TNSP's RAB and is therefore subject to the pricing arrangements for prescribed transmission services.¹³⁵

Under the current arrangements, TNSPs in each region levy a charge - a modified load export charge - on TNSPs in neighbouring inter-connected regions. Customers pay a share of the costs of transmission used to import electricity into their region from neighbouring regions. Given all regions import and export electricity, it would result in a net payment between TNSPs of neighbouring regions.

There are two key issues which mean that the customers of the "home" TNSP are not bearing the full costs or fully paying for the benefits of the cross-regional investment:

1. The modified load charge, as calculated under current arrangements, only recovers the locational component of transmission use of system charges. The locational component only covers half of the revenue required to recover the costs of prescribed transmission use of system charges. Thus, approximately half of the costs of cross-regional assets (or at least a significant proportion of them) is borne by the "other" region TNSP's customers. Customers in the "home" region do not bear any of the costs of the non-locational component of the assets built for the cross-regional investment. The operation of the modified load charge is described in more detail in the box below.
2. The utilisation risk of the cross-regional investment lies with the "other" region TNSP's customers. The application of the modified load export charge changes annually based on the utilisation of the assets. If the "home" TNSP's utilisation of the assets is less-than-expected, the "other" region TNSP's customers may bear a higher proportion of the locational costs of those assets or potentially all of those costs if the "home" region TNSP's customers do not use these assets at all.

This discussion highlights that further changes to the NER, in addition to those described above, may be necessary to fully address all the issues related to cross-regional investments. The extent of the changes required would need to be considered in the context that there is currently limited scope for such cross-regional investments to occur. It should also be noted that the current arrangements for calculating inter-regional transmission use of system charges were implemented

¹³⁴ The new rules were introduced in 2013 and introduced a new inter-regional transmission charge for consumers. The inter-regional transmission charge commenced on 1 July 2015 and is levied between transmission businesses in neighbouring regions. Transmission businesses will recover this charge from individual consumers through the locational component of their regulated (prescribed) transmission use of system charges.

¹³⁵ This assumption is made to illustrate some of the potential issues related to inter-regional transmission use of system. In reality, the Commission considered that a cross-regional investment would be unregulated revenue for the "other" region TNSP, as described in Box 7.1 and the draft determination.

relatively recently. Before any review of these arrangements it may be beneficial for these arrangements to be in place for a longer period of time so that a comprehensive assessment of their operation can be made. The required changes are also outside the scope of this rule change and would require a separate rule change process.

Box 7.2 The operation of the modified load export charge

This box provides additional detail on how the modified export charge is calculated for the purposes of inter-regional transmission charging.

Assuming that the "other" region TNSP system only has one interconnector with the "home" TNSP's system, the modified load export charge operates as follows:

1. **Determine the AARR** - The maximum allowable revenue for the investing TNSP is adjusted to determine the aggregate annual revenue requirement (AARR) being the revenue required for the provision of prescribed transmission services. That is, revenue for negotiated and non-regulated services is excluded.
2. **Split the AARR into the ASRR** - The AARR is split among four categories of prescribed transmission services – entry services, exit services, common services and transmission use of system services. The amount to be recovered for each category is called the annual service revenue requirement (ASRR). The inter-regional transmission use of system arrangements only apply to the transmission use of system category. The Commission expected most of the cross-regional investment would fall into this category.
3. **Split the ASRR for prescribed transmission use of system services** - The "other" region TNSP splits the ASRR for prescribed transmission use of system services on a 50/50 basis into a non-locational and locational component.¹³⁶
4. **Recovery of non-locational component** - The non-locational component is recovered on a postage stamp basis, being a charge that does not vary by location of the transmission customer or their level of utilisation of transmission assets.
5. **Allocating the locational component to determine the modified load export charge** - The locational component is then allocated to the connection points of transmission customers within the "other" region TNSP's transmission system plus the connection point between the "home" TNSP and the "other" TNSP's system ("home" region connection point) using the prescribed cost reflective network pricing (CRNP) methodology. The prescribed CRNP methodology attributes the cost of transmission

¹³⁶ The AER may approve an alternative method that better reflects future investment.

assets to the connection points based on their proportionate use of the investing TNSP's system.¹³⁷ This is done based on the level of peak utilisation of those assets by the transmission customers and the "home" TNSP over the past regulatory year.¹³⁸

6. **Modified load export charge** – The modified load export charge is the locational charge from step 5 for the "home" region connection point. The modified load export charge is trued up in subsequent years to reflect actual utilisation in the regulatory year.
7. **Billing** – The "home" TNSP will undertake the same process to determine the modified load export charge payable by the "other" TNSP. Each TNSP will bill each other the modified load export charge and ultimately there will be a net amount payable by one of the TNSPs. Receipt of the net payment flows through as a reduction to the intra-regional pricing for the transmission customers in the receiving region and vice versa.

Joint planning requirements

The Commission decided not to make a rule to change the economic regulatory framework to provide additional incentives for TNSPs to undertake cross-regional investments. This is because stakeholders advised that the scope for such cross-regional investments to occur is small. Therefore, given the large number of changes to the framework for economic regulation for what may only be limited benefit, the Commission considered that no changes to the current framework are needed at this time. However, to the extent that the scope for cross-regional investments to occur in the future increase, then a separate review or rule change process could be undertaken to investigate these issues further.

In the absence of changes to the economic regulatory framework, the Commission considered that incorporating a wider perspective in to TNSP planning processes is a useful addition to the planning framework. The new TNSP-TNSP planning requirements introduced by the final rule are the subject of this section.

In a national market of interconnected jurisdictions like the NEM, a wider perspective in the transmission planning process is important. The Commission considered that requiring cooperation between TNSPs in the NEM is appropriate. Incorporating the perspective of other TNSPs through joint planning would help identify potentially efficient investment opportunities that would increase the efficiency of the transmission system across the NEM as a whole.

¹³⁷ There are actually two allocations done by the "other" TNSP. The first allocation is done using a CRNP methodology (which does not need to be the prescribed methodology) but only for intra-regional customer connection points, i.e. excluding the "home" region CP. This allocation is used to determine prices for intra-regional customers. The second allocation which the Commission described is only for the purposes of determining the modified load export charge for the home region CP. For simplicity, the Commission did not consider the impact of settlement residues arising from regulated interconnectors.

¹³⁸ Generators do not pay prescribed transmission use of system charges.

The final rule specifies that joint planning should occur under certain circumstances, that is, where a possible credible option to address a constraint in a transmission network is an augmentation to the transmission network of another TNSP, and the constraint is not already being considered in other processes under the NER.¹³⁹ The final rule further requires that TNSPs should provide detail of this joint planning on such potential cross-regional projects or investments, in the event that such joint planning took place, in their annual planning reports.¹⁴⁰

The NER currently include requirements for DNSP-DNSP and TNSP-DNSP joint planning. There are currently no requirements in the NER for TNSPs to conduct joint planning with other TNSPs. The final rule is therefore consistent with other joint planning requirements that are already present in the NER.

AEMO is the National Transmission Planner and conducts long-term strategic planning across the NEM. This planning process results in the publication of the National Transmission Network Development Plan, which provides a holistic, independent and strategic vision of the transmission network over the next 20 years. The Commission understands that TNSPs do engage with AEMO in the process for developing the National Transmission Network Development Plan. The joint planning requirements in the final rule relate to shorter-term investment-specific planning, that may identify a cross-regional investment as a potentially viable option to meet an identified need.

The final rule makes it clear that the TNSP who should be responsible for this joint planning in Victoria is AEMO.¹⁴¹ This is consistent with its current role in preparing the annual planning reports for this jurisdiction.

The final rule does not require AEMO to produce guidelines on what cross-regional investments are, since the Commission considered that TNSPs have a good understanding of what these investments are. Further, the Commission considered that requiring AEMO to produce guidelines on this aspect could create a conflict between its role in making guidelines and its role in undertaking joint planning on these investments as the Victorian TNSP.

7.1.5 Conclusions

Economic regulation of cross-regional options

The Commission acknowledges stakeholders' view that there is limited scope for cross-regional investments to occur. The thin, long, low density structure of the Australian transmission network means that there is unlikely to be many practical opportunities to consider cross-regional investments as a viable alternative to an investment option within the TNSP's network. However, the Commission considers

¹³⁹ Clause 5.14.3 of the final rule.

¹⁴⁰ Clause 5.12.2(c)(12) of the final rule.

¹⁴¹ Clause 5.1A.1(f) of the draft rule.

that there are ways for these investments to occur under the current regulatory framework, through operational expenditure, as discussed above. The final rule, therefore, makes no changes to the framework for economic regulation to take account of cross-regional investments.

Stakeholders have provided feedback that there is a lack of incentives currently in place to encourage cross-regional investments to take place. The above discussion outlines some potential changes to the NER that could address these perceived incentive issues and provide greater opportunities for consideration of cross-regional investments. However, it should be noted that these changes, and their potential consequences for the framework for economic regulation, warrant further consideration. These potential changes to the NER are out of scope of this rule change. Further, as there is limited scope for such investments to occur, the benefits of changing the framework for economic regulation would not outweigh the costs at this time.

It may also be the case that the new requirements to report on joint planning undertaken by TNSPs reveals greater opportunities for cross-regional investments to occur in the future. If this occurs further consideration of potential changes to the NER may be warranted.

Joint planning requirements

The Commission considered that there is value in incorporating a wider perspective into the current transmission planning arrangements.

The Commission noted feedback from stakeholders that TNSPs already undertake planning with other TNSPs and DNSPs and encourage this continued coordination. The NER also requires that TNSPs engage with AEMO in the preparation of the National Transmission Network Development Plan. However, the Commission considered that there is value in requiring joint planning in the specific case where there is the potential for a cross-regional investment to occur to make sure that these investments are captured.

The final rule requires TNSPs to undertake joint planning with other TNSPs. The objective of the joint planning obligations is that a TNSP would engage in joint planning with its neighbouring TNSP(s) when there are potential opportunities for cross-regional coordination and investment in order to meet an identified need in its network.

TNSPs are required, under the final rule, to provide detail of any joint planning activities in relation to potential cross-regional projects or investments in their annual planning reports.

The Commission also determined not to include a requirement that TNSPs must consider cross-regional investment options in their annual planning reports or RIT-Ts in the final rule. As discussed above, there is limited scope for such cross-regional investments to occur and as such it would not be appropriate to include broad

requirements in the NER for TNSPs to consider cross-regional investment options in their annual planning reports or RIT-Ts. However, if a TNSP did consider a cross-regional investment option, it would be included and assessed in a RIT-T.

Similarly, the Commission determined not to include an obligation on AEMO to prepare a guideline on how to assess whether an investment in one region could meet an identified need in another region in the final rule.

7.2 TNSP input into the National Transmission Network Development Plan

7.2.1 Background

In the final report of the *Transmission frameworks review*, the Commission found that the current framework does not require that TNSPs formally comment on the National Transmission Network Development Plan. The Commission considered it appropriate that this occur.

The objective of requiring TNSPs to formally comment on the National Transmission Network Development Plan is that the different perspectives of parties involved in transmission planning are appropriately considered and incorporated into the National Transmission Network Development Plan. This process would facilitate a coordination of local and national issues at the outset of the planning process.

As a result of this finding, the Commission recommended that the NER be amended to establish a transmission working group and to set out the process for that working group to review and provide comments on the National Transmission Network Development Plan during the document development.

The Commission found that AEMO currently seeks TNSP input into the National Transmission Network Development Plan and that a working group, comprising of a wide variety of stakeholders, currently does exist. The proposal to include a formal transmission working group in the NER was therefore considered to be a formalisation of existing practice.

7.2.2 COAG Energy Council's view

In its rule change request, the COAG Energy Council stated that it was supportive of measures that would develop the National Transmission Network Development Plan and make it a more robust planning tool for industry. Specifically, it considered that:

“more active involvement of transmission businesses would contribute to the development of a [National Transmission Network Development Plan]

that reflects information that is currently only readily accessible for transmission businesses.¹⁴²

The rule change request proposed that the NER be amended to establish a committee, and set out the functions by which that committee would review and provide comments on the National Transmission Network Development Plan during the document's development. The committee would comprise of TNSP representatives from all jurisdictions. The role of the committee would be to comment on, and provide input to, the National Transmission Planner's development and preparation of the National Transmission Network Development Plan.

7.2.3 Stakeholder views

Consultation paper and initial workshop

No submissions to the consultation paper were supportive of the proposal to formally introduce a working group of TNSPs to provide input into the National Transmission Network Development Plan. The reasons given were that the process for seeking stakeholder feedback already works well and that the quality of stakeholder engagement with the National Transmission Network Development Plan would not be improved through the introduction of such a requirement.

Further, AEMO did not see the need for a formally prescribed working group to accommodate input from TNSPs in to the national planning exercise. This is because AEMO already has a process for seeking stakeholder feedback on the content of the National Transmission Network Development Plan. The submission added that, although their input is valued, TNSPs are only one of a range of stakeholders that contribute to this process. Other key stakeholders include proponents of non-network alternatives to network upgrades.¹⁴³

The submission from Energy Networks Australia gave some insight into the current situation with regard to stakeholder involvement in the National Transmission Network Development Plan process. It said that TNSPs are already significantly involved in the process as it is in their interests to make sure that there is consistency between the National Transmission Network Development Plan and their own plans. AEMO seeks feedback on proposals for the forthcoming National Transmission Network Development Plan and planning assumptions. This feedback is further supported by individual AEMO and TNSP Planning co-ordination meetings. The RIT-T process also provides opportunities for further engagement between TNSPs and AEMO as it includes consultation on scope, methodology and outcomes of the RIT-T assessment.¹⁴⁴

142 COAG Energy Council, Transmission Connections and Planning Arrangements, rule change request, July 2015, p. 19.

143 AEMO, submission to the consultation paper, p. 5.

144 Energy Networks Australia, submission to the consultation paper, p. 19-20.

Energy Networks Australia's submission reflected the opinion expressed by AEMO. Its submission stated that the level and credibility of the input and consultation between TNSPs and AEMO will remain the same irrespective of whether or not arrangements are formalised. Energy Networks Australia added that the AEMC should be cautious to ensure that formal arrangements do not impose unnecessary costs on parties. The submission further suggested that the AEMC give consideration to an additional requirement that AEMO demonstrates how it considered feedback from TNSPs in developing the National Transmission Network Development Plan. This requirement, the submission says, would provide confidence to stakeholders that AEMO has given proper consideration to all views.¹⁴⁵

Participants at the stakeholder workshop held on the planning arrangements aspect of this rule change agreed with the positions that were put forward in the submissions to the consultation paper. Stakeholders were satisfied with the process for and level of interaction with the National Transmission Network Development Plan process and there is no need for a formal role for a committee in the NER. Stakeholders questioned whether adding prescription to the NER to govern a process that already happens is necessary. Further, stakeholders considered that formal committee could reduce the flexibility that AEMO currently has when consulting, e.g. it could result in AEMO only consulting with a narrow group of stakeholders. Participants from generators and networks said they were comfortable with the level of and process for interaction with the National Transmission Network Development Plan.

Draft determination

No submissions to the draft determination explicitly commented on the proposal not to make a rule to require TNSP involvement in the National Transmission Network Development Plan. This likely reflects stakeholder satisfaction with the decision.

All stakeholder feedback in stakeholder meetings on this issue has indicated that a broad range of stakeholders were supportive of the decision not to make a rule.

7.2.4 Commission's analysis

Changes between the draft and final rules

There were no changes between the draft and final rules on this aspect of the rule change request.

Jurisdictional planning bodies¹⁴⁶ assist in the preparation of the National Transmission Network Development Plan by providing feedback to AEMO, although this involvement is not explicitly required in the NER. This involvement is done

¹⁴⁵ Ibid., p. 21.

¹⁴⁶ Jurisdictional planning bodies are, in most cases, the local TNSP except in Victoria. AEMO is the jurisdictional planning body in Victoria as part of its declared network functions under the NEL.

through participation in consultation conducted by AEMO in preparing the National Transmission Network Development Plan.

The Commission understood that AEMO had been engaged in a process to improve the process of consultation for the National Transmission Network Development Plan. There are two ways in which stakeholders can currently provide input to AEMO on the Plan:

1. through the formal consultation process, as outlined in the NER
2. through the National Transmission Network Development Plan Technical Working Group.

Clause 5.20.1 of the NER currently outlines the requirements on AEMO with respect to the preliminary consultation that must be completed in advance of the publication of the National Transmission Network Development Plan. AEMO must publish a document that outlines the inputs that it proposes to use in the National Transmission Network Development Plan as well as a statement of material issues that will be considered. Under the NER, AEMO must invite stakeholders to provide written comments on these inputs. This formal consultation is increasingly being used by stakeholders as a method of providing feedback to AEMO on the National Transmission Network Development Plan. In 2015 one written submission to consultation paper on the National Transmission Network Development Plan was received by AEMO. In 2016 the number of written submissions had increased to four.

In addition to the formal, rules-mandated, consultation it undertakes, AEMO has established the National Transmission Network Development Plan Technical Working Group. This formal working group replaced the informal group that previously existed to provide stakeholder feedback to AEMO in the development of the National Transmission Network Development Plan. The group has a formal terms of reference and includes representatives from AEMO, government officials, TNSPs, generators and other stakeholders. The aim of this group is to facilitate discussion on market modelling and strategic network planning. The outcomes of the technical discussions are used to develop the National Transmission Network Development Plan and deliver as much value as possible for all stakeholders.¹⁴⁷

Given that there is already a process in place for all stakeholders, including TNSPs, to provide comments on the National Transmission Network Development Plan, the Commission considered that amending the NER to establish a formal committee of TNSPs was unnecessary.

7.2.5 Conclusions

The Commission determined not to make a rule to formalise TNSP input into the development of the National Transmission Network Development Plan. The Commission considered that a rule requiring TNSP involvement in the National

¹⁴⁷ More information is available on the AEMO website. See www.aemo.gov.au

Transmission Network Development Plan was not necessary as the current process for incorporating stakeholder comments into the National Transmission Network Development Plan is working well and there is no issue to be resolved through regulation:

- There is general satisfaction from all stakeholders, including generators, networks and demand response providers, with AEMO's level of consultation and the process for preparing the National Transmission Network Development Plan.
- AEMO is required under the NER to engage in consultation in the preparation of the National Transmission Network Development Plan. While there is no explicit requirements on TNSPs to engage with this consultation, networks do contribute to the process. Therefore additional requirements would not be necessary for TNSPs to provide input into the National Transmission Network Development Plan.
- The proposed rule envisaged that only TNSPs would be required to participate in the group to provide input into the National Transmission Network Development Plan. In reality, all stakeholders that provided us with feedback on this issue, as well as the Commission, agreed that a wider group, including demand response and other providers of potential non-network solutions, should be involved in the National Transmission Network Development Plan. As such, the proposed rule may have actually had the effect of reducing the quality of stakeholder input into the National Transmission Network Development Plan by excluding some parties who may have valuable insights or ideas.
- A regulatory requirement may hinder the progress that is already being made by the industry. Improvements have been made in recent years to the process for incorporating stakeholder feedback into the National Transmission Network Development Plan. This progress has been acknowledged by stakeholders and the Commission regards AEMO's aims to continue to improve the consultation process for the National Transmission Network Development Plan as a positive step.
- The proposed rule requiring TNSPs to formally engage with the development of the National Transmission Network Development Plan was difficult to justify on a cost-benefit basis. There is general stakeholder agreement that the consultation process for the preparation of the Plan works well as it currently is. Additional requirements on TNSPs to form a working group would have imposed costs without any clear benefits in terms of improving the quality of engagement with AEMO in the preparation of the National Transmission Network Development Plan.

7.3 Consistency of transmission annual planning reports

7.3.1 Background

The rule change request proposed that transmission annual planning reports should be more consistent so that the information presented within them is easily comparable across jurisdictions.

Currently, the information in transmission annual planning reports is presented differently by each TNSP. This is because the existing requirements with respect to transmission annual planning reports are not prescriptive and as a result each TNSP has interpreted them differently. The result of this is that although requirements regarding the content of transmission annual planning reports do exist, the information provided is not easily comparable across TNSPs.

The *Transmission frameworks review* noted that the comparison of transmission annual planning reports could be facilitated by including, where possible:

- common project labels and constraint labels between TNSPs
- distinction of projects addressing intra- and inter-regional issues.

Since the *Transmission frameworks review* recommendations were published in 2013, the AER launched a strategic compliance project to engage with TNSPs to help to improve future transmission annual planning reports. As part of this process an “annual planning report improvement plan” was developed by the AER. TNSPs incorporated the suggested improvements from their improvement plans in their 2016 annual planning reports. The Commission understands that this work was focussed on improving the quality of individual TNSP’s annual planning reports, which is a welcome development, but did not attempt to address consistency or comparability across annual planning report documents. This process is discussed in more detail below.

The Commission considered that, although the quality of transmission annual planning reports has improved, there is still room for further improvement. In particular, the level of information provided may not be sufficiently detailed for a non-network service provider to identify potential commercial opportunities with the TNSP.

7.3.2 COAG Energy Council's view

This aspect of the rule change proposal relates specifically to requiring that the information presented by TNSPs is consistent and comparable.

“The [COAG Energy] Council supports measures to improve the consistency of the information presented in [annual planning reports]; this will increase the transparency of the planning process, facilitate

comparative analysis, and ultimately increase the predictability of the investment planning process.¹⁴⁸

The rule change request included amendments to the NER to introduce specific, minimum requirements for the information that TNSPs are to include in their annual planning reports. It also included requirements on AEMO, as National Transmission Planner, to report on the consistency of information presented in annual planning reports in the National Transmission Network Development Plan. The proposed rule contemplated that the AER should have a role in developing guidelines on the consistency of annual planning reports.

The proposed rule was proposed to improve the consistency of the transmission planning framework and allow for the more effective development of the transmission network on a national basis rather than within regions.

7.3.3 Stakeholder views

Consultation paper and initial workshop

Two submissions mentioned that there has already been work undertaken to improve the quality and consistency of annual planning reports. Energy Networks Australia stated that TNSPs have been working on this issue and that, with the support of the AER, substantial progress has been made.¹⁴⁹ TransGrid's submission commented on the fact that, since the *Transmission frameworks review*, they have actively improved their approach to engagement with prospective connecting parties, including through its annual planning reports and process improvements for connection enquiries.¹⁵⁰

Energy Networks Australia considered that consistency across annual planning reports should not mean uniformity and that there is no right way to present information. Consistency should therefore only extend to ensuring that the same type of information is included and that this information is easily identifiable.¹⁵¹

Two submissions provided an opinion on the role of the AER in ensuring consistency of annual planning reports. AEMO's submission was not in favour of prescribing minimum requirements but support an approach where the high-level objectives of annual planning reports are set out in the NER and the AER is responsible for developing and maintaining an annual planning report guideline.¹⁵² Energy Networks Australia considered that the formal role of the AER should be limited to confirming compliance with the rule requirements.¹⁵³

148 COAG Energy Council, *Transmission Connections and Planning Arrangements*, rule change request, July 2015, p. 20.

149 Energy Networks Australia, submission to the consultation paper, p. 21.

150 TransGrid, submission on consultation paper, p. 1.

151 Energy Networks Australia, submission to the consultation paper, p. 21.

152 AEMO, submission to the consultation paper, p. 5.

153 Energy Networks Australia, submission to the consultation paper, p. 21.

The stakeholder workshop provided some insights as to how generators and distribution networks use annual planning reports and the information that they value in these documents. In terms of information, stakeholders that use annual planning reports value detailed commentary on constraints and network demand. Many stakeholders also noted that commentary on what has changed since last year's annual planning report, why this change has occurred and the materiality of this change is also absent from current annual planning reports and should be required.

Draft determination

AEMO, in its submission to the draft determination, considered that the changes proposed in the draft rule would improve the quality of TNSPs' annual planning reports and provide a coherent continuum of information over time.¹⁵⁴

On the AER guideline on consistency of annual planning reports across TNSPs, Energy Networks Australia supported the intent of the draft rule. However, its submission stated that the AER guideline should only seek to achieve consistency where there is considerable value to the market and consistency should not preclude TNSPs from including other information it considers relevant to meet its own local stakeholder requirements.¹⁵⁵

Energy Networks Australia also provided feedback on the additional data requirements for annual planning reports in its submission. It states that it should be recognised that some TNSPs receive bulk supply forecasts from DNSPs, which are then published in their annual planning reports. Not all of these forecasts have high, medium and low scenarios for each bulk supply point. It considered that the draft rule should allow TNSPs to use these forecasts and not require that all TNSPs use forecasts with high, medium and low scenarios.¹⁵⁶

7.3.4 Commission's analysis

Changes between the draft and final rules

There were no changes between the draft and final rules on this aspect of the rule change request.

The transmission annual planning report is one element of the transmission planning framework as set out in Chapter 5 of the NER.¹⁵⁷ This framework is intended to promote economically efficient and transparent transmission network planning and investment.

¹⁵⁴ AEMO, submission to the draft determination, p. 14.

¹⁵⁵ Energy Networks Australia, submission to the draft determination, p. 9.

¹⁵⁶ Ibid. p.10.

¹⁵⁷ The other elements of the planning framework include the National Transmission Network Development Plan, the RIT-T and joint planning obligations.

Under the NER, TNSPs are required to provide information on the state of their network, in the form of their transmission annual planning report. This planning document includes a description of emerging network constraints and the potential solutions proposed to address these constraints. The NER require that the annual planning report also includes an outline of opportunities for non-network solutions and provide details of future network investment.

Developments and improvements in transmission annual planning reports

In response to an AEMO request to provide feedback on the Victorian annual planning report¹⁵⁸ the AER examined the most recent annual planning reports and found that all TNSPs' annual planning reports failed to completely satisfy the requirements in the NER in one way or another. As a result, a strategic compliance project was launched by the AER to comply with the transmission businesses and explore improvements that could be made to transmission annual planning reports in order to meet stakeholder expectations comply with the NER requirements.¹⁵⁹

As part of this work, a workshop with representatives from TNSPs was held in March 2014. The aim of this workshop was to understand how TNSPs approach the annual planning report process and to build consensus on what improvements could be made to the annual planning report. As a result of this workshop TNSPs agreed to develop annual planning report improvement plans and to incorporate the identified improvements in all future published annual planning reports.

Subsequent to the workshop, meetings were held with individual TNSPs and the AER. In these meetings, the AER outlined its specific concerns with respect to the annual planning report of each individual transmission business. These specific concerns, highlighted by the AER to each individual business, were also incorporated into the annual planning report improvement plans.¹⁶⁰

The AER transmission annual planning report improvement plans were taken into account in the 2016 annual planning reports, which were published on 30 June 2016. The Commission noted the following observations based on a high-level comparison of 2015 and 2016 transmission annual planning reports:

- there is a trend toward the provision of more data to accompany the annual planning report document
- there is a trend toward providing chapters of the annual planning report as separate documents (rather than the entire report in one document)

158 As part of its declared network functions, AEMO is the transmission planner for Victoria and therefore prepares the Victorian annual planning report. For all other NEM jurisdictions the jurisdictional planning body is the local TNSP.

159 AER, Quarterly Compliance Report, January-March 2014, p. 17.

160 AER, Quarterly Compliance Report, January-March 2014, p. 18.

- TNSPs are providing more information on the network capacity for new generation connections in the annual planning reports.¹⁶¹

The above improvements demonstrate the reasons why the Commission considered a more flexible approach to improving the consistency of annual planning reports was appropriate. There were industry-led initiatives to improve the content and structure of these planning documents that should be allowed to develop without rigid NER requirements. The Commission also noted feedback from stakeholders that TNSPs are, in recent years, more active in engaging with stakeholders on the form and content of their annual planning report documents.

Additional information requirements in transmission annual planning reports

The objective of a transmission annual planning report is to provide stakeholders with relevant information on the future of the transmission network in question. It is also a key tool for the AER. In order to maintain the usefulness and value of the annual planning report, the information included in the document should provide insights to stakeholders that can be used to inform potential non-network investments, to inform future connections and to provide detailed information on future constraints and proposed solutions. In addition, stakeholders that use annual planning reports should be able to understand how the planning was undertaken in terms of the forecasting methodology used and context on how forecasts may change over time.

In terms of information, the Commission understood that stakeholders that use annual planning reports value detailed commentary on constraints and network demand. Many stakeholders also indicated to us that commentary on what has changed since last year's annual planning report, why this change has occurred and the materiality of this change is also absent from current annual planning reports and should be required.

To address stakeholder's needs, the final rule requires that TNSPs include the following additional information in their annual planning report:

- a description of the forecasting methodology, sources of input information, and the assumptions applied in respect of the forecast loads;¹⁶²
- a description of high, most likely and low growth scenarios in respect of the forecast loads;¹⁶³

¹⁶¹ For example the 2016 annual planning report from Powerlink includes a new chapter providing information on network capacity for new generators and some details on how Powerlink intends to provide support for the development of renewable energy infrastructure. Powerlink state that the reason for the addition of the new chapter is "due to the recent volume of interest in solar development projects in Queensland, this is newly-developed chapter of Powerlink's 2016 annual planning report focuses on solar energy project development opportunities". See https://www.powerlink.com.au/About_Powerlink/Publications/Transmission_Annual_Planning_Reports/Transmission_Annual_Planning_Report_2016.aspx

¹⁶² Clause 5.12.2(c)(1)(i) of the final rule.

¹⁶³ Clause 5.12.2(c)(1)(ii) of the final rule.

- an analysis and explanation of any aspects of forecast loads provided in the annual planning report that have changed significantly from forecasts provided in the previous year's annual planning report;¹⁶⁴
- an analysis and explanation of any aspects of forecast loads provided in the annual planning report from the previous year, which are significantly different from the actual outcome;¹⁶⁵
- a forecast of constraints and inability to meet network performance requirements, including at least:¹⁶⁶
 - a description of the constraints and their causes;
 - the timing and likelihood of the constraints;
 - a brief discussion of the types of planned future projects that may address the constraints over the next five years, if such projects are required; and
 - sufficient information to enable an understanding of the constraints and how such forecasts were developed;
- an analysis and explanation of any other aspects of the annual planning report that have changed significantly from the preceding year's annual planning report, including the reasons why the changes have occurred;¹⁶⁷ and
- the results of joint planning (if any) undertaken under the draft rule clause 5.14.3 (discussed above) in the preceding year, including a summary of the process and methodology used by the TNSPs to undertake joint planning and the outcomes of that joint planning.¹⁶⁸

The final rule does not seek to specify how TNSPs conduct forecasting, this is a matter for individual businesses. The Commission considered stakeholder comments that some TNSPs use bulk supply point forecasts provided by DNSPs for the purposes of preparing their annual planning reports and that these forecasts may not include high, medium and low growth scenarios. The final rule does not require that a TNSP use a forecast that includes a high, medium and low growth scenario. The final rule intends that if such a forecast, with a range of growth scenarios, is used a description of such scenarios should be included in the annual planning report.

¹⁶⁴ Clause 5.12.2(c)(1)(iii) of the final rule.

¹⁶⁵ Clause 5.12.2(c)(1)(iv) of the final rule.

¹⁶⁶ Clause 5.12.2(c)(3) of the final rule.

¹⁶⁷ Clause 5.12.2(c)(11) of the final rule.

¹⁶⁸ Clause 5.12.2(c)(12) of the final rule.

AER guideline on the consistency of transmission annual planning reports

We noted stakeholder feedback that requirements regarding the structure of annual planning reports should not be overly prescriptive or rigid and that consistency across TNSP annual planning reports should not come at the expense of quality. Therefore, the final rule tasks the AER with the development of guideline on the consistency of transmission annual planning reports rather than prescribing detailed requirements in the NER.¹⁶⁹ This is a more flexible approach that is superior to placing rigid requirements regarding the consistency of annual planning reports in the NER. The final rule also notes that the transmission annual planning reports must be consistent with this guideline.¹⁷⁰

There are two advantages to the guideline approach. First, the AER will engage in a process of consultation with stakeholders in the development of the guideline, in accordance with the transmission consultation procedures. This will allow for stakeholder feedback and insight to be incorporated into the guideline. This will help to make any changes to improve the consistency of transmission annual planning reports useful and achievable.

Second, the guideline can be changed without the need for a formal rule change process. This will allow for the requirements surrounding the need for consistency across transmission annual planning reports to adapt more easily to changing circumstances. This is beneficial as a key objective of transmission annual planning reports is to provide useful information to stakeholders. In order to meet this objective, transmission annual planning reports should be able to adapt to provide information in a format that reflects the potential changing needs of market participants.

The proposed approach is also consistent with the annual planning report improvement work conducted by the AER.

7.3.5 Conclusions

The final rule will provide stakeholders with better quality information through the requirements to include additional information, as listed above, in transmission annual planning reports. The final rule will also promote consistency across TNSPs' annual planning reports by tasking the AER with developing a guideline on consistency of transmission annual planning reports. The guideline approach achieves consistency in a way that flexible and adaptable. Both of these changes will be required from the publication of TNSPs' 2018 annual planning reports, by 30 June 2018.

The final rule is also compatible with the approach taken by the AER in its recent work to improve TNSP annual planning reports. The Commission noted that, since the AER work to improve annual planning reports has begun, the structure and content of annual planning reports are changing and TNSPs are becoming more responsive to stakeholder feedback regarding their annual planning report documents.

¹⁶⁹ See clause 5.14B.1 of the final rule.

We note that NER requirements for distribution annual planning reports are more prescriptive than the current requirements for transmission annual planning reports. However, the Commission has not introduced the level of prescription that is in the NER with respect to distribution annual planning reports for transmission. The Commission considered that the final rule is more appropriate than prescriptive NER requirements for the following reasons:

- The requirements to include additional information, as listed above, in the final rule represent the main data gaps that stakeholders have identified with respect to current transmission annual planning reports. Therefore, the Commission considered that the final rule will improve the quality of transmission annual planning reports and largely address stakeholders' concerns.
- As described above, the content and format of annual planning reports are changing and the Commission was told that TNSPs are consulting with stakeholders more closely in order to increase the usefulness of their annual planning reports. The Commission considered that the rules should not be overly prescriptive as this may impede this industry-led process to improve annual planning reports.
- The rules with respect to the format of annual planning reports should be flexible. Stakeholders have cautioned against imposing requirements that may become obsolete. It is expected that the granularity of data that will become available as part of the annual planning report process will increase in the future in response to demands from non-network providers and other market participants.
- It is likely that providers of non-network options for transmission networks are larger, and more sophisticated than potential non-network options for distribution networks. Therefore, less detailed information is required to inform potential non-network providers.

7.4 Implementation of planning aspects of the final rule

The above amendments (i.e. joint planning between TNSPs, and amendments to the requirements for transmission annual planning reports) will commence on 30 May 2017 and TNSPs will be required to prepare their 2018 annual planning reports on the basis of the new rules.¹⁷¹ The timing of the changes to the annual planning report is consistent with the timing proposed in the draft determination of the *Replacement expenditure planning arrangements* draft determination, which was published in April 2017.¹⁷²

170 Clause 5.12.2(c) of the final rule.

171 See clause 11.98.7(b) of the final rule.

172 AEMC, *Replacement expenditure planning arrangements*, draft rule determination, April 2017, pp. 69-70.

In addition, the final rule requires the AER to develop and publish a guideline on the consistency of annual planning reports, in accordance with the transmission consultation procedures, by 31 December 2017.¹⁷³

The Commission considers that these timeframes provides sufficient time for the AER to prepare the guideline, and for TNSPs to incorporate their new obligations into the preparation of the 2018 annual planning reports.

¹⁷³ See clause 11.98.7(a) of the final rule.

A Legal requirements under the NEL

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

A.1 Final rule determination

In accordance with s. 102 of the NEL the Commission has made this final rule determination in relation to the rule proposed by the COAG Energy Council.

The Commission's reasons for making this final rule determination are summarised in section 2.4.

A copy of the more preferable final rule is attached to and published with this final rule determination. Its key features are described in section 2.4.

A.2 Power to make the rule

The Commission is satisfied that the more preferable final rule falls within the subject matter about which the Commission may make rules. The more preferable final rule falls within s. 34 of the NEL and as it relates to:

- the operation of the national electricity system for the purposes of the safety, reliability and security of that system
- 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 more preferable final rule falls within the matters set out in schedule 1 to the NEL as it relates to:

- the registration of persons as registered participants or otherwise for the purposes of the NEL and the NER, including the deregistration of such persons or suspension of such registrations
- the exemption of persons from the requirement to be registered participants
- the operation of generating systems, transmission systems, distribution systems or other facilities
- the augmentation of transmission systems and distribution systems
- access to electricity services provided by means of transmission systems and distribution systems

- the regulation of revenues earned or that may be earned by owners, controllers or operators of transmission systems from the provision by them of services that are the subject of transmission determination
- the assessment, or treatment, by the AER, of investment in transmission systems for the purposes of making a transmission determination
- terms and conditions for the provision of electricity network services, or any class of electricity network services (including shared transmission services)
- disputes under or in relation to the NER between persons
- the attainment of a national strategic perspective for transmission planning and coordination.

A.3 Commission's considerations

In assessing the rule change request the Commission considered:

- its powers under the NEL to make the rule
- the rule change request
- submissions received during the first, second and third rounds of consultation¹⁷⁴
- the Commission's analysis as to the ways in which the proposed rule will or is likely to, contribute to the NEO
- the form of regulation factors in making a rule that specifies an electricity network service as a negotiated network service.¹⁷⁵

The Commission did not consider the revenue and pricing principles.¹⁷⁶ This is because the Commission considered that these are not relevant to the final rule. While the final rule changes the process associated with a transmission determination (by removing the requirement for the AER to approve a negotiating framework and negotiated transmission service criteria as part of a determination), this does not directly affect, or change, regulated revenues or the provision of direct control services as discussed in these factors.

There are no current Ministerial Council on Energy statements of policy principles.¹⁷⁷

¹⁷⁴ That is, the consultation paper, discussion paper and draft determination, which can be found on our website. See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

¹⁷⁵ Part 1, s 2F and s 88A of the NEL.

¹⁷⁶ Part 1, s 7A and s 88B of the NEL.

¹⁷⁷ Under section 33 of the NEL, the AEMC must have regard to any relevant MCE statement of policy principles in making a rule. The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the federal, state and territory ministers responsible for energy.

A.3.1 Form of regulation factors

The Commission had regard to the form of regulation factors as set out in section 2F of the NEL. In particular, the analysis and conclusions set out in appendices B to D draw on the Commission's consideration of the form of regulation factors. In particular, the Commission considered:

- the presence and extent of any barriers to entry in a market for electricity network services¹⁷⁸ e.g. the Commission sought input from a number of generators and renewable energy developers to inform its understanding of whether introducing competition to the services provided in relation to identified user shared assets would be beneficial (see section B.2.4)
- the presence and extent of any network externalities (that is, interdependencies) between an electricity network service provided by a network service provider and any other electricity network service provided by the network service provider, as well as between an electricity network service provided by a network service provider and any other service provided by the network service provider in any other market,¹⁷⁹ e.g. the final rule places additional transparency requirements on TNSPs, which will provide connecting parties with more information, and so strengthen a connecting party's negotiating power with the TNSP (see section C.3.4)
- the extent to which any market power possessed by a network service provider is, or is likely to be, mitigated by any countervailing market power possessed by a network service user or prospective network service user,¹⁸⁰ e.g. the final rule elevates TNSP's existing negotiating frameworks to the NER in order to strengthen a connecting party's negotiating power with a TNSP (see section C.2.4)
- the presence and extent of any substitute, and the elasticity of demand, in a market for an electricity network service in which a network service provider provides that service, and in a market for electricity,¹⁸¹ e.g. the Commission considered that some services associated with connection can be provided on a contestable basis since a workably competitive market is likely to exist (see sections B.2.4 and D.2.4)
- the extent to which there is information available to a prospective network service user or network service user, and whether that information is adequate to enable the prospective network service user or network service user to negotiate on an informed basis with a network service provider for the provision of an

On 1 July 2011 the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated Council is now called the COAG Energy Council.

178 Part 1, s 2F(a) of the NEL.

179 Part 1, s 2F(b) and (c) of the NEL.

180 Part 1, s 2F(d) of the NEL.

181 Part 1, s 2F(e) and (f) of the NEL.

electricity network service to them by the network service provider,¹⁸² e.g. the final rule places additional transparency requirements on TNSPs, which will improve the understanding of the connections framework and so promote more efficient decisions being made by both established and new market participants (see section C.3.4).

A.3.2 Declared network functions

The Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of Australian Energy Market Operator (AEMO)'s declared network functions.¹⁸³ The final rule is compatible with the performance of those functions as it leaves those functions unchanged. Further detail on the Commission's assessment of this issue is set out in chapter 6.

A.3.3 Application to Northern Territory

The *National Electricity (Northern Territory) (National Uniform Legislation) Act 2015* allows for an expanded definition of the national electricity system in the context of the application of the NEO to rules made in respect of the Northern Territory, as well as providing the Commission with the ability to make a differential rule that varies in its terms between the national electricity system and the Northern Territory's local electricity system.

The Commission considered whether a differential rule is required for the Northern Territory electricity service providers and concluded that it was not required in this instance. This is because the provisions of the final rule either do not currently apply in the Northern Territory or have no practical application in the Northern Territory.

A.4 Civil penalties

A.4.1 Moved provisions

The Commission's more preferable final rule moves a number of provisions in Chapter 5 of the NEL that are currently classified as civil penalty provisions under Schedule 1 of the National Electricity (South Australia) Regulations to other locations in Chapter 5. These provisions are set out in Table A.1 below. The Commission considers that these clauses should continue to be classified as civil penalty provisions and therefore will recommend to the COAG Energy Council that the regulations are amended to reflect the new rule numbering.

¹⁸² Part 1, s 2F(g) of the NEL.

¹⁸³ Section 91(8) of the NEL.

Table A.1 Moved clauses that the Commission will recommend should continue to attract a civil penalty

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
5.3A.12(b)	5.4AA(b)	<i>Network Service Provider</i>	Retain
5.3AA(h)	5.5(h)	<i>Distribution Network Service Provider</i>	Retain
5.6.2(a)	5.4.2(a)	<i>Registered Participant</i> or the person intending to be registered as a <i>Generator</i>	Retain
5.6.2(b)	5.4.2(b)	<i>Registered Participant</i> or the person intending to be registered as a <i>Generator</i> and the <i>Network Service Provider</i>	Retain

A.4.2 Amended provisions

The Commission's more preferable final rule amends clauses of the existing NER (as set out in Table A.2 below) that are currently classified as civil penalty provisions under Schedule 1 of the National Electricity (South Australia) Regulations. The Commission considers that these clauses should continue to be classified as civil penalty provisions and therefore will not recommend any change to their classification to the COAG Energy Council.

Table A.2 Amended clauses that the Commission recommends should continue to attract a civil penalty

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
5.2.3(e)	N/A	<i>Network Service Provider</i> including <i>Dedicated Connection Asset Service Provider</i>	Retain
5.2.3(g)	N/A	<i>Network Service Provider</i>	Retain

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
5.3.3(b)	N/A ¹⁸⁴	<i>Network Service Provider</i>	Retain
5.3.3(c)	N/A ¹⁸⁵	<i>Network Service Provider</i>	Retain
5.3.6(b), (b2), (j)	N/A	<i>Network Service Provider</i>	Retain

A.4.3 New provisions

The Commission cannot create new civil penalty provisions. However, it may recommend to the COAG Energy Council that new or existing provisions of the NER be classified as civil penalty provisions. The new provisions that the Commission will recommend to the COAG Energy Council to be civil penalty provisions are set out below in Table A.3.¹⁸⁶ The Commission considers that the new provisions should be classified as civil penalty provisions for the reasons set out in the table.

Table A.3 New clauses that the Commission recommends should attract a civil penalty

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
2.5.1(d4)	N/A	A person granted an exemption under clause 2.5.1(d3)	This clause should be classified as a civil penalty provision because the obligation to comply with the deemed conditions on exemption from registration as a TNSP (i.e. those relating to access to those assets) is key to the effective operation of the NEM and the transparency and predictability of the exemptions framework.
5.2.7(b)	N/A	<i>Dedicated Connection Asset Service Provider</i>	This clause should be classified as a civil

¹⁸⁴ Amendment is in the body of the clause 5.3.3(b), imposing additional obligations and responsibilities on the network service provider which now also attracts a civil penalty.

¹⁸⁵ Amendment is in the body of the clause 5.3.3(c) which does not amend in a material way the obligations and responsibilities of the network service provider.

¹⁸⁶ Note that the draft rule recommended that clause 5.3.6(b4) be classified as a civil penalty provision. As a result of the amendments made to the connection process (set out in appendix C.5), this clause has moved and changed in the final rule. The Commission no longer recommends that it be classified as a civil penalty provision.

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
			penalty provision because the obligation imposed on the <i>Dedicated Connection Asset Service Provider</i> to ensure that the <i>dedicated connection asset</i> meets its performance and system standards and it complies with its <i>connection agreement</i> with the relevant TNSP is key to the effective operation of the NEM.
5.2A.6(c)	N/A	<i>Dedicated Connection Asset Service Provider</i>	This clause should be classified as a civil penalty provision because the obligations on dedicated connection asset service providers to comply with its access policy and those negotiating principles set out in schedule 5.12 are important to the transparency and predictability in the national transmission system for effective operation of the NEM.
5.2A.7(a)	N/A	A person who commissions, or permits the commissioning of, a <i>third party IUSA</i>	This clause should be classified as a civil penalty provision because a failure to enter into a network operating agreement will result in the Primary TNSP not having clear, singular accountability for outcomes on the shared transmission network.
5.2A.7(e)	N/A	Person who owns a <i>third party IUSA</i> and the <i>Primary Transmission Network Service Provider</i>	This clause should be classified as a civil penalty provision because the obligation to not own the identified user shared asset to which you, or a related party, is connected is key to preserving competitive neutrality between connecting parties and the principle of open access that underpins the effective operation of the NEM.

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
5.2A.8(d)	N/A	<i>Dedicated Connection Asset Service Provider</i>	This clause should be classified as a civil penalty provision because the obligation to produce an <i>access policy</i> is essential to providing third party access to <i>large dedicated connection assets</i> which is key to the effective operation of the NEM.

A.4.4 Deleted provisions

The Commission did not consider that any other provisions of the final rule should be classified as civil penalty provisions. However, the final rule deletes a clause that is currently a civil penalty provision. The Commission considered that this rule should no longer continue to be classified as a civil penalty provision because it is being deleted, and will therefore propose to the COAG Energy Council that its classification be changed. See Table A.4 for further details.

Table A.4 Deleted clauses that no longer attract a civil penalty

New clause reference	Old clause reference	Who the obligation is imposed upon	Recommendation
5.3.6(i)	Deleted	N/A	Delete

A.5 Conduct provisions

The Commission's final rule does not propose any changes to conduct provisions.

B Identified user shared assets

This appendix outlines the Commission's final rule in relation to the arrangements for identified user shared assets, a new term that is introduced under the final rule.¹⁸⁷ Specifically, it sets out the:

- current arrangements under the NER for these types of assets
- approach put forward by the COAG Energy Council for these assets
- views of stakeholders in submissions to the consultation paper, discussion paper and draft determination, as well as those expressed at the public forum, stakeholder workshops and in one-on-one meetings
- Commission's analysis of the rule change request and stakeholder views
- Commission's conclusions and a description of the final rule.

This appendix should be read in conjunction with chapter 3 of this final determination.

As set out in chapter 1 of this final determination, the existing NER set out whether the TNSP provides services related to a connection as prescribed transmission services or negotiated transmission services. However, the Commission is aware that there are different interpretations of how the services required to connect a load to the transmission network via assets that would fall within the definition of an identified user shared asset are economically regulated. That is, whether the TNSP provides these services as prescribed transmission services or as negotiated transmission services. To remove this ambiguity, the final rule makes it clear that the economic regulation of the services required to connect a load to the transmission network, and the process to be followed, is the same as for the connection of a generator, MNSP or embedded network.¹⁸⁸ The term 'connecting party' is therefore used in this appendix and throughout the rest of this determination to refer to either a generator, load, MNSP or embedded network connecting to a transmission network.¹⁸⁹ Arrangements for the connection of a distribution system to the transmission network are set out in appendix E.

¹⁸⁷ These arrangements will apply to generation, load, MNSPs and embedded networks seeking to connect to the transmission network.

¹⁸⁸ That is, the costs of connecting to the transmission network are borne by the connecting party itself - be they a load, generator, MNSP or embedded network - not through transmission use of system charges.

¹⁸⁹ However, the technical standards associated with a connection differ depending on whether the party connecting is a load, generator, MNSP or embedded network, as set out in the schedules to Chapter 5 of the NER.

B.1 Definition of identified user shared asset

B.1.1 Background

The term 'identified user shared asset' is not defined in the existing NER. However, under existing arrangements the Commission considered that it would broadly comprise those assets that are built to facilitate a party's connection to the 'shared' transmission network and which, once commissioned, form part of that network, for example, parts of a substation on a transmission network. These assets are often referred to as 'connection assets'.¹⁹⁰ Services provided in relation to these types of assets under the existing NER are typically provided by the incumbent TNSP as negotiated transmission services.¹⁹¹

B.1.2 COAG Energy Council's view

In the rule change request, the COAG Energy Council presented the view that making a clear distinction between services provided by those assets that form part of the shared transmission network and those provided by assets used exclusively by the connecting party or parties would help to:

- better link the NER service classifications with the assets that underpin their provision
- clearly define the transmission services to be provided by TNSPs
- clearly identify the connection point in each case
- clearly identify the different treatment of these assets.¹⁹²

The rule change request therefore proposed to introduce the following definitions into the NER:

identified user shared network asset

A shared transmission network asset:

1. designed and constructed to connect an *identified user group* to an existing *transmission system*; and
2. fully funded by the member or members or the *identified user group*.

¹⁹⁰ Defined in Chapter 10 of the existing NER as "those components of a *transmission or distribution system* which are used to provide *connection services*."

¹⁹¹ As defined in Chapter 10 of the existing NER, negotiated transmission services include those "connection services that are provided to serve a transmission network users, or group of transmission network users, at a single transmission network connection point, other than connection services that are provided by one NSP to another NSP". The existing arrangements for these services are set out in more detail in section 1.2.

¹⁹² COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, pp. 4-5.

transmission network asset

1. any component of the transmission lines (i.e. the high tension electrical conductors, insulators, supporting structures and appurtenant land); or
2. equipment associated with the operation of a transmission line or an associated substation or switchyard.

identified user group

One or more persons who generate or consume large quantities of electricity, and who are connected to the shared network at the same point.

The rule change request also proposed to define the term 'dedicated transmission connection asset' to describe those assets that are built to facilitate a party's connection to the transmission network but which, once commissioned, do not form part of the transmission network. These assets are discussed in appendix D.

The rule change request proposed to define the boundary between dedicated connection assets and identified user shared assets, specifically as the "first point at which power flow from the generator or to a major load customer can be isolated from the shared network".¹⁹³

These proposals are consistent with the approach recommended by the Commission in the *Transmission frameworks review*.¹⁹⁴

B.1.3 Stakeholder views

Submissions to the consultation paper

Definition of identified user shared asset

In submissions to the consultation paper, a number of stakeholders supported the proposal to separately define dedicated connection assets and identified user shared assets.¹⁹⁵

AusNet Services did not consider that there was any need to distinguish between dedicated connection assets and identified user shared assets. It suggested that a single definition covering both would simplify the rule change.¹⁹⁶ This position aligned with AusNet Service's view that all assets associated with a party's connection to the shared transmission network (that is, both identified user shared assets and dedicated connection assets) should be provided on a contestable basis.

¹⁹³ COAG Energy Council, *Transmission Connection and Planning Arrangements*, rule change request, July 2015, p. 7.

¹⁹⁴ See <http://www.aemc.gov.au/Markets-Reviews-Advice/Transmission-Frameworks-Review>

¹⁹⁵ Submissions on consultation paper: AGL, p. 5; GDF Suez, p. 2; Origin Energy, p. 1.

¹⁹⁶ AusNet Services, submission on consultation paper, p. 4.

Boundary between identified user shared assets and dedicated connection assets

GDF Suez (now Engie) considered that the proposed boundary between dedicated connection assets and identified user shared assets would provide a clear line of demarcation between the two asset types.¹⁹⁷ AGL was of the view that, conceptually, the proposed boundary was appropriate, but noted that sometimes this point of coupling may be best located at a circuit breaker or transformer that is part of an identified user shared asset. It therefore asked that the rule change provide flexibility for parties to negotiate the connection point and its location.¹⁹⁸

Energy Networks Australia contended that the boundary between different asset types does not necessarily define the connection point. It stressed the importance of defining the connection point, given certain obligations are dependent on its location, e.g. metering and performance standards.¹⁹⁹

The Clean Energy Council submitted that it is practical to locate the physical connection point as close as possible to the intersection between dedicated connection assets and identified user shared assets. It explained that access standards and power transfer capability are negotiated at the connection point, and that marginal loss factors are calculated there. The Clean Energy Council noted that the relationship between the connection point and the metering point is another complication, and asked that the NER not inadvertently reduce freedoms available to connecting parties to put in place arrangements that accommodate their specific connection.²⁰⁰

Submissions to the discussion paper

Definition of identified user shared asset and identified user group

In the discussion paper, the Commission expressed support for the arguments put forward in the rule change request for clarifying the assets and services that are required to facilitate a connection to the shared transmission network and to strengthen the link between the existing Chapters 5 and 6A of the NER so that the arrangements for economic regulation of those assets and services are clear.

The Commission also agreed that there was value in separately defining dedicated connection assets and identified user shared assets. Doing so would remove ambiguity and enable a clear distinction to be made between those assets and services that are unregulated, and those that must be provided by the incumbent TNSP as a negotiated transmission service under the NER.

The Commission therefore proposed to define the terms 'identified user shared assets' and 'identified user group' as below, subject to legal drafting.

¹⁹⁷ GDF Suez, submission on consultation paper, p. 2.

¹⁹⁸ AGL, submission on consultation paper, p. 4.

¹⁹⁹ Energy Networks Australia, submission on consultation paper, pp. 2,9.

²⁰⁰ Clean Energy Council, submission on consultation paper, p. 7.

identified user shared assets

Those transmission assets that:

- are developed and constructed for the purpose of connecting an identified user group to an existing transmission network (the "purpose limb")
- are not used exclusively by the relevant identified user group (the "use limb")
- for which the costs of designing, constructing, operating and maintaining are paid for by the identified user group (the "payment limb").

identified user group

A group of one or more specifically identified generators or large loads that are connected to transmission assets that are, in turn, connected to the shared transmission network at the same connection point.

Submissions to the discussion paper indicated that most stakeholders supported the proposal to separately define dedicated connection assets and identified user shared assets, and the proposed definitions.²⁰¹

Some stakeholders questioned the need to define the term, identified user group. The Clean Energy Council submitted that the term seemed to be a new definition for a generator or load that would be seeking connection, and may therefore be unnecessary.²⁰² AGL noted that, while it is possible that other users may want to access the same connection assets (as is implied in the definition of identified user group) this rarely, if ever, happens.²⁰³

Boundary between identified user shared assets and dedicated connection assets

In line with the proposal put forward in the rule change request, in the discussion paper the Commission proposed to define the boundary between identified user shared assets and dedicated connection assets as the first point at which power flows to or from the connecting party could be isolated from the shared network. The Commission suggested that, in practice, this boundary would most often be at an identifiable isolator or disconnecter.

In its submission to the discussion paper, Infigen stated that linking the definition of connection point to the boundary between the two assets could create confusion.²⁰⁴ No other stakeholder commented on this aspect of the discussion paper in their submission.

²⁰¹ Submissions on discussion paper: AGL, p. 3; AEMO, p. 5; Clean Energy Council, p. 4; Energy Networks Australia, p. 1; EnergyAustralia, p. 1; PIAC, p. 3; Transmission General Holdings Australia, p. 3.

²⁰² Clean Energy Council, submission on discussion paper, p. 4.

²⁰³ AGL, submission on discussion paper, p. 3.

²⁰⁴ Infigen, submission on discussion paper, p. 2.

Submissions to the draft determination

Definition of identified user shared asset and identified user group

The draft rule introduced the terms 'identified user shared asset' and 'identified user group', and defined them as below:

identified user shared asset

The apparatus, equipment, plant, and buildings that:

- (a) are used for the purpose of *connecting* one or more *identified user groups* to an existing *transmission network*;
- (b) are not used exclusively by the relevant *identified user groups*;
- (c) cannot be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the relevant *identified user groups*; and
- (d) are not part of the *declared transmission system* of an *adoptive jurisdiction*.

identified user group

One or more persons (other than a *Distribution Network Service Provider*) who are *connected* to a *transmission network* at the same single *connection point*.

In its submission to the draft determination, the Clean Energy Council sought clarity that the definition of identified user shared asset would cover the expansion of an existing asset to enable a connection.²⁰⁵

AEMO considered that the concept of identified user group was at odds with the concept of a connection point under the existing NER, which marks the interface of a transmission system with an individual user's facilities. It submitted that this situation (i.e. where multiple parties are connected behind the same connection point to the shared transmission network) is analogous to an embedded network, for which it is useful to note that the connection point from a user's perspective is the child connection point.²⁰⁶

There were no other specific comments on this aspect of the draft rule in submissions to the draft determination. However, a number of concerns were raised by stakeholders in workshops and in one-on-one meetings about the practical implications of the definition of identified user shared asset, including difficulties in distinguishing between an identified user shared asset and a dedicated connection asset.

²⁰⁵ Clean Energy Council, submission on draft determination, p. 4.

²⁰⁶ AEMO, submission on draft determination, p. 12.

B.1.4 Analysis and conclusions

Changes between the draft and final rule

There were several changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule includes:

- a minor amendment to the definition of identified user shared asset
- an amended definition of identified user group so that it does not include a network service provider (other than an MNSP)
- an amended definition of network so that it includes identified user shared assets owned, controlled or operated by the Primary TNSP,²⁰⁷ and identified user shared assets that are owned by a third party and controlled and operated by the Primary TNSP under a network operating agreement.

In developing the final rule, the Commission considered that it was important to clearly define what each of the assets and services associated with a connection to the transmission network are, and how they are regulated, if at all. This is because different interpretations of the NER by TNSPs in different jurisdictions can create inefficiencies in the market generally, as well as for individual connection applicants. Inconsistent interpretations of the NER relating to transmission connections across the NEM can create confusion for connecting parties, particularly those operating in more than one jurisdiction. A successful connection may rely on connecting parties learning and accommodating the specific interpretations of a particular TNSP, which can add time and cost to a connection process.

Further, connecting parties consider a range of factors when deciding where to locate a project, for example fuel costs and proximity to existing transmission infrastructure. If the interpretation of the connections framework is very different between TNSPs, connection costs may be significantly higher in one jurisdiction over another. If this is the case, connection costs may start to comprise a far higher proportion of total project costs in that jurisdiction, potentially causing connecting parties to make sub-optimal decisions about where to locate their project since connection costs provide some locational signals about where projects should locate. Investment in generation, and so a particular connection, should occur where it is most efficient, and should not be determined by differences in connection costs - caused by differing interpretations of the NER - across jurisdictions.

A common issue that emerged in discussions with stakeholders on this rule change request was a lack of clarity about the term connection point in the context of

²⁰⁷ Primary TNSP is a new term defined in the final rule as "The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system." This final determination uses the term incumbent TNSP to refer to this party under the existing NER, and the term Primary TNSP when referring to the arrangements for this party under the final rule.

connections to the shared transmission network. This lack of clarity appeared to stem from the ambiguity under the existing NER about how assets and services that are required to facilitate a connection to the shared transmission network are treated in the NER.²⁰⁸

Clearly defining what identified user shared assets and dedicated connection assets are establishes a clear distinction between the way in which the two types of assets are regulated and the obligations of the parties who own, operate and control them.²⁰⁹ This is particularly important under the final rule, where some of the services provided in relation to identified user shared assets are contestable and others are to be provided exclusively by the Primary TNSP as negotiated transmission services. Note that this appendix focuses on the arrangements for identified user shared assets only - the arrangements for dedicated connection assets are discussed in more detail in appendix D. Feedback from stakeholders throughout the rule change process indicated that there was general support for greater clarity on how these types of assets are treated under the NER.

The final rule also contains amendments to the definitions of a number of existing terms in the NER, such as transmission system and connection assets, and makes consequential changes, to provide increased clarity on the assets and services required to facilitate a connection to the transmission network.²¹⁰

The final rule introduces the term 'identified user shared asset' and defines it as below:

identified user shared asset

The apparatus, equipment, plant, and buildings that:

- (a) are used for the purpose of *connecting* one or more *identified user groups* to an existing *transmission network*;
- (b) are not used exclusively by the relevant *identified user groups*;
- (c) under normal operating conditions, cannot be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the relevant *identified user groups*; and
- (d) are not part of the *declared transmission system* of an *adoptive jurisdiction*.

The Commission's intention is for this definition to capture all the components that are used to connect a connecting party (i.e. a load, generator, MNSP or embedded network) to the shared transmission network and which, once commissioned, form part of the shared transmission network. An identified user shared asset may be comprised of a number of components, provided that the collection of all the

²⁰⁸ This ambiguity is discussed in further detail in section 1.3.1.

²⁰⁹ Note that the arrangements for the connection of a DNSP to the transmission network are different to the arrangements for the connection of other parties under the final rule. Arrangements for connection of DNSPs are set out in appendix E.

²¹⁰ Specifically, rule 5.2A.4 of the final rule sets out how the various services required to connect to the transmission network are classified under the final rule.

components meets the definition set out above. For example, an identified user shared asset may comprise an entirely new substation, or components that are needed to connect a new party to an existing substation.

This definition is different to that which was proposed in the discussion paper and the rule change request. The 'payment limb' that was proposed in the discussion paper was removed because the Commission considered that this principle was sufficiently covered off by the 'purpose limb' - that is, "used for the purpose of connecting one or more identified user groups to an existing transmission network" - and the associated changes to clarify how services provided by means of those assets are economically regulated. The words "cannot be electrically isolated from the transmission network without affecting the provision of shared transmission services to persons who are not members of the relevant identified user groups" were introduced to further clarify that these assets are not electrically separable from the transmission network used to provide shared transmission services.

The definition also differs slightly from that in the draft rule. Amendments were made to address a concern that an asset might be configured or operated in a way that meant it would not meet limb (c) of the definition and therefore would not meet the definition of identified user shared asset. The phrase "under normal operating conditions" was added to limb (c) of the definition to address this issue.

The Commission considered that this definition provided greater clarity around what identified user shared assets are and the purpose they serve than the definition proposed in the rule change request. The final rule also makes it clear that identified user shared assets form part of the Primary TNSP's transmission network for which it is already registered.

The term third party IUSA, defined below, was also introduced in the final rule to describe those identified user shared assets that are owned by a party other than the Primary TNSP. Ownership of identified user shared assets is discussed in section B.2.

third party IUSA

Those *contestable IUSA components of an identified user shared asset* that are not, or will not be, owned or leased by the *Primary Transmission Network Service Provider*.

The final rule amends the existing NER term transmission network, and defines it as follows:

transmission network

A *network* within any *participating jurisdiction* operating at nominal *voltages* of 220kV and above plus:

- any part of a *network* operating at nominal *voltages* between 66 kV and 220 kV that operates in parallel to and provides support to the higher voltage *transmission network*;
- any part of a *network* operating at nominal *voltages* between 66kV and 220 kV that is not referred to in paragraph (a) but is deemed by the *AER* to be part of the *transmission network*.

For a *participating jurisdiction* other than the State of Victoria, an *identified shared user asset* owned, controlled or operated by a *Primary Transmission Network Service Provider* (including a *third party IUSA* that is the subject of a *network operating agreement*) forms part of that *Primary Transmission Network Service Provider's transmission network*.

This definition was amended to give effect to the change in approach in the final rule from the draft rule relating to the arrangements for third party owners of identified user shared assets. This definition makes it clear that any identified user shared asset forms part of the Primary TNSP's transmission network, including those owned by a party other than the Primary TNSP (i.e. a third party IUSA). Ownership of identified user shared assets is discussed further in section B.2.

The final rule introduced the term Primary Transmission Network Service Provider, defined as follows:

Primary Transmission Network Service Provider

The *Transmission Network Service Provider* who operates the largest *transmission network* in each *participating jurisdiction* but does not include a *Transmission Network Service Provider* for a *declared transmission system*.

The final rule also introduced the term identified user group, defined as follows:

identified user group

One or more persons (other than a *Network Service Provider* who is not a *Market Network Service Provider*) who, from time to time, are *connected* to a *transmission network* at the same single *connection point*.

As noted in section B.1.3, a number of stakeholders queried the need to define this term, which was proposed in the rule change request. The final rule defines this term to reflect that more than one connecting party could share a connection point to the shared transmission network. For example, if a generator connects to an existing dedicated connection asset that was built to facilitate a load's connection and the load maintains its connection point with the shared transmission network and puts in place appropriate metering arrangements with the generator.

The definition differs from that in the draft rule. Amendments were made to make it clear that an identified user group does not include a network service provider (that is, a DNSP or a TNSP).²¹¹

The final rule does not include the proposed wording in the rule change request that the identified user group would be comprised of "specifically identified parties". The Commission considered that there was no need for these parties to be "specifically identified" by anyone, as it should be clear whether parties are using a common dedicated connection asset to connect to the transmission network.

Clarity on what identified user shared assets are, how they are regulated and how they are distinguished from other transmission assets will help support transparency and

²¹¹ The reason for this is set out in appendix D.

predictability in the NER connections framework. Making the NER clearer and simpler in this regard should make it easier for connecting parties to:

- know exactly what assets and services they are negotiating for when seeking a connection to the shared transmission network;
- enhance their ability to negotiate on more equal terms with TNSPs; and
- result in a more predictable connection experience across transmission network boundaries.

The Commission concluded that these definitions, combined with rule 5.2A of the final rule, provide greater clarity around what identified user shared assets are and what purpose they serve than the definition proposed in the rule change request.

Transitional arrangements for existing assets that would fall under the definition of identified user shared asset when the final rule commences are addressed in chapter 5.

Boundary between dedicated connection assets and identified user shared assets

The final rule does not explicitly define the boundary between dedicated connection assets and identified user shared assets. This is because not all assets that will fall under the definition of a dedicated connection asset or identified user shared asset will necessarily have a physical boundary with the other. Defining this boundary may therefore have practical limitations. Instead, the final rule relies on the definitions of these terms being sufficiently detailed so that it is clear what assets fall into which category, and therefore how they are treated under the NER. A party should be able to take an asset, assess it against the various limbs as set out in the definitions, and determine what type of asset it is. Another party should be able to assess it against those same definitions and get the same result.

The final rule does not specify which types of equipment would fall under each asset definition. Doing so would reduce the flexibility that parties have to design identified user shared assets and dedicated connection assets to meet their specific requirements, and may also not be suitable for all connection configurations. The Commission concluded that the asset's design and configuration should drive which assets fall under which definition, not the other way around. However, in general, the Commission expects that:

- cut in works (for example works to cut into the existing shared transmission network) and those parts of a new substation that facilitate shared transmission flows across the broader network, including isolators and circuit breakers up until the connection point, would likely fall under the definition of identified user shared asset, as shown in blue in Figure B.1
- new power lines and transformers to connect a generating system to that substation will likely fall under the definition of dedicated connection asset, as shown in green in Figure B.1.

Figure B.1 below provides a diagrammatic example of the Commission's views on the boundaries between the various types of assets, including dedicated connection assets and identified user shared assets.

The Commission considered that the existing definition of connection point should be amended to put beyond doubt that it is the point at which a connecting party connects to the shared transmission network - that is, the interface between assets that provide shared transmission services and assets that are only used by the connecting party. As several stakeholders noted throughout the rule change process, the connection point represents a physical boundary for where responsibilities between the TNSP and the connecting party start and finish. The connection point is where performance standards are set, metering occurs, transmission use of system charges are determined and frequency control ancillary service needs are calculated.²¹² The final rule modifies the existing definition of connection point as below to make this clear.

connection point

In relation to a *declared shared network* and a *distribution network* (other than an *embedded network*), the agreed point of supply established between *Network Service Provider(s)* and another *Registered Participant, Non-Registered Customer* or *franchise customer* and includes a *parent connection point*.

In relation to other *transmission networks*, the point at which power flows to or from the person or *identified user group* connected to the *transmission network* can be isolated from the *transmission network*. If there is more than one such point, the *Network Service Provider* and that person or *identified user group* will agree which point is the *connection point* in their *connection agreement*.

In relation to an *embedded network*, the *child connection point*, unless otherwise specified.

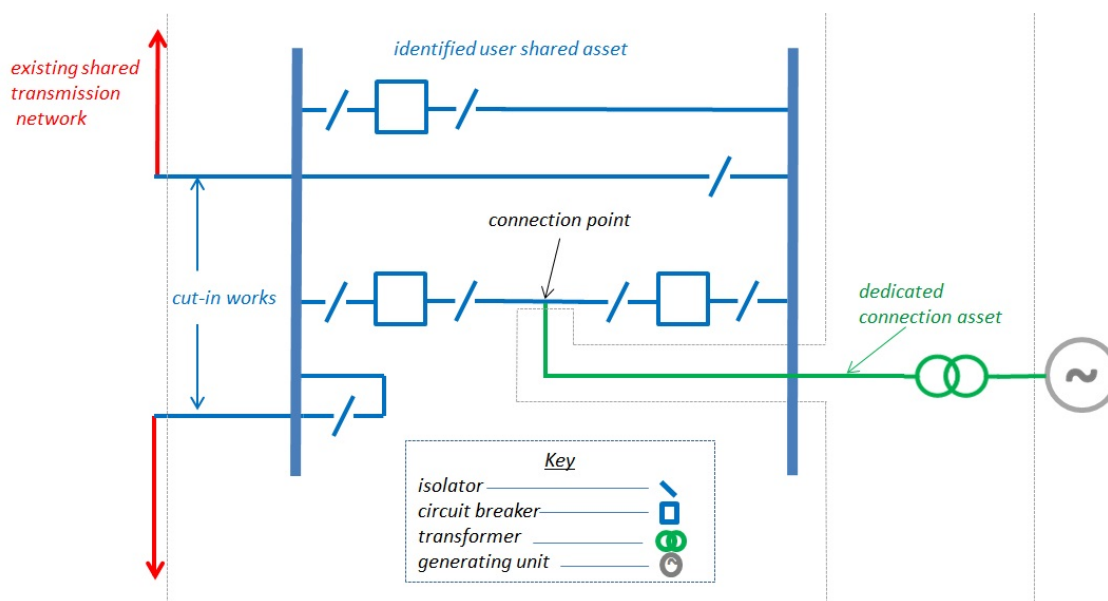
This definition was amended slightly from that in the draft rule to make clear that an identified user group, not just a single person, can be connected at a connection point.

This definition, alongside the definitions of identified user shared asset and dedicated connection asset, still affords connecting parties and TNSPs some flexibility in how identified user shared assets and dedicated connection assets are designed, and therefore where the connection point is located and relevant obligations are determined. Clarifying these terms establishes a clear distinction between the way in which the two types of assets are regulated and the obligations of the parties who own, control and operate them.

Figure B.1 provides a simplified illustration of the new asset terms in the final rule in the context of connections to the shared transmission network.

²¹² Although the Commission recognises that there are current examples in the NEM where this may not be the case.

Figure B.1 Illustration of key concepts and terms in the final rule



B.2 Contestability of services for identified user shared assets

B.2.1 Background

Table B.1 sets out the Commission's understanding of the services that are required to connect to the transmission network under the existing NER via what would be defined as an identified user shared asset under the final rule. These services, and their descriptions, were developed based on input from attendees at the stakeholder workshop on 9 March 2016 and the Commission's own analysis. These services are not distinguished in the existing NER.²¹³

Table B.1 Services provided in relation to an identified user shared asset

Service	Description
Functional specification	The setting of technical parameters for the assets' design (e.g. typical substation parameters, equipment rating, performance requirements, preferred equipment, voltage of connection and protection requirements), construction, operation, maintenance and interface with the shared network.
Detailed design	The layout and configuration of the assets to meet the functional specification.
Cut-in works	Works to cut into the existing shared transmission network (often called 'interface works').
Construction	Construction of the assets.
Ownership	Ownership of the assets.

²¹³ The final rule defines these in more detail. This is discussed further in section B.2.4.

Service	Description
Operation and maintenance (i.e. control)	Day to day operation of the assets, including decisions about when to undertake maintenance, and services required to keep the assets operational, e.g. replacement of parts.

Under the existing NER, generally all services for existing assets that would fall under the definition of identified user shared asset in the final rule are provided by the Primary TNSP as negotiated transmission services. This is on the basis that they are connection services that are provided to serve a Transmission Network User.^{214,215} Unless parties otherwise agree, the Primary TNSP provides the services set out in Table B.1. The terms and conditions, including price, of the provision of those services are, under the existing NER, negotiated between the connecting party and the TNSP under the negotiating framework and negotiated transmission service criteria that are approved by the AER at each TNSP's revenue determination (with this guided by requirements in the NER), and following the process set out in Chapter 5 of the NER.

A more detailed description of the existing arrangements for connecting to the shared transmission network is set out in chapter 1.2.1.

B.2.2 COAG Energy Council's view

The COAG Energy Council proposed that connecting parties would be able to choose who constructs the identified user shared assets required to facilitate their connection to the shared transmission network. That is, it proposed that the connecting party could either require the incumbent TNSP to construct these assets as a negotiated transmission service, or engage another party to do so on a non-regulated basis. This would effectively create a fall back option for the TNSP to provide these services if asked. The rule change request also proposed that the connecting party, or its chosen service provider, could retain ownership of the identified user shared assets if it can agree terms with the local TNSP to allow the TNSP full operation, control and maintenance rights over those assets, including the ability for the TNSP to facilitate future connections and network expansion where necessary.²¹⁶

²¹⁴ Limb (b) of the definition of negotiated transmission service in the existing NER states that negotiated transmission services include "Connection services that are provided to serve a Transmission Network User, or group of Transmission Network Users, at a single transmission network connection point, other than connection services that are provided by one Network Service Provider to another Network Service Provider to connect their networks where neither of the Network Service Providers is a Market Network Service Provider".

²¹⁵ This is not the case in Victoria, where the construction, ownership, operation and maintenance of an asset that would broadly be captured by the term 'identified user shared asset' can be provided by a party other than the incumbent DTSO, if AEMO has determined that the augmentation is contestable.

²¹⁶ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, 23 July 2015, p. 6.

B.2.3 Stakeholder views

Submissions to the consultation paper

Stakeholders largely supported increased contestability in the provision of services to connect to the shared transmission network, noting that significant cost and time savings can be achieved when a connecting party can contract with the service provider of its choice.²¹⁷

Energy Networks Australia noted that TNSPs already seek to capture the efficiency benefits of contestability by outsourcing construction and other services for negotiated transmission services, and therefore concluded that a large degree of the benefits of competition are already being achieved.²¹⁸ AEMO noted that asset transfers can be complex and costly, and so if only construction is contestable, the benefits of this could be negated.²¹⁹

Operation and maintenance services

TNSP providing operation and maintenance services

A number of parties expressed concern that the cost and complexity of connections may not be reduced if the incumbent TNSP imposes overly onerous operation and maintenance requirements, or over-specifies the asset's design.²²⁰ AEMO considered that giving the TNSP control over the design process could add costs and restrict innovation.²²¹ Origin Energy proposed that this issue be addressed by requiring the incumbent TNSP to justify its design philosophy.²²²

AGL was supportive of the proposal for the incumbent TNSP operating and maintaining identified user shared assets, but noted that it was unclear how the risks and costs of maintenance, operation and relative service priority would be allocated when the asset is shared with other users. It considered it appropriate to set regulatory obligations regarding the ownership, construction, maintenance and operation of identified user shared assets.²²³ The Major Energy Users questioned whether it could be assured that the costs of the incumbent TNSP operating, controlling and maintaining identified user shared assets would be lowest cost.²²⁴

Operation and maintenance services opened to contestability

217 Submissions on consultation paper: AGL, p. 1; EnergyAustralia, p. 1; GDF Suez, p. 2; Major Energy Users, pp. 1-2.

218 Energy Networks Australia, submission on consultation paper, p. 7.

219 AEMO, submission on consultation paper, p. 2.

220 Submissions on consultation paper: GDF Suez, p. 2; Origin Energy, p. 1; Major Energy Users, p. 3; Clean Energy Council, p. 5.

221 AEMO, submission on consultation paper, p. 2.

222 Origin Energy, submission on consultation paper, p. 1.

223 AGL, submission on consultation paper, pp. 2-3.

224 Major Energy Users, submission on consultation paper, p. 3.

Several generators were of the view that only allowing contestability in ownership and construction, and requiring the TNSP to take on all other service aspects, would limit the benefits that can be achieved from competition. For example, EnergyAustralia suggested that the benefits of competition would be maximised if third parties who own identified user shared assets could also provide operation and maintenance services for them. It noted that contestable construction, financing and ownership of a project was unlikely to be viable without control of these service aspects.²²⁵

Some considered it unreasonable to require the incumbent TNSP to assume responsibility for the operation and maintenance of identified user shared assets that they had not built, and proposed that the connecting party be responsible for all service aspects.²²⁶ Energy Networks Australia suggested that such an approach (i.e. restricting contestability) would involve coordination issues, the inappropriate allocation of risk to other parties (i.e. the incumbent TNSP), and more complex rules drafting in order to make sure that the connecting party takes into account the ongoing costs of assets when building them.²²⁷

AusNet Services explained that it needs to be assessed as to whether it is technically possible for a third party to construct, own, operate and control the assets, i.e. whether the asset is "separable". It explained that a technical assessment of separability would need to consider:

- whether the asset is physically separable from the shared network
- whether the asset is operationally separable from the shared network
- whether access to and operation of the asset can be carried out safely.

It concluded that, if these requirements can be satisfied, then the operation and maintenance of identified user shared assets should be opened to contestability.²²⁸

Ownership

GDF Suez submitted that the requirement for a connecting party wanting to retain ownership of the asset to agree terms with the TNSP to allow them full operation and maintenance rights could allow TNSPs to impose onerous requirements on connecting parties. To prevent this becoming a barrier to contestable ownership, it suggested that the NER include a negotiating framework that the TNSP and connecting party must adhere to when negotiating on ownership terms and conditions.²²⁹

²²⁵ EnergyAustralia, submission on consultation paper, pp. 1-2.

²²⁶ Submissions on consultation paper: AusGrid, p. 2; Energy Networks Australia, pp. 1, 7; Major Energy Users, p. 3; TransGrid, p. 2.

²²⁷ Energy Networks Australia, submission on consultation paper, pp. 1,7.

²²⁸ AusNet Services, submission on consultation paper, p. 3.

²²⁹ GDF Suez, submission on consultation paper, p. 2.

Requirement for the incumbent TNSP to provide ownership and construction services if asked

Several TNSPs proposed that there be no requirement for the incumbent TNSP to provide ownership and construction services as a negotiated transmission service if asked.²³⁰ AusNet Services submitted that there is already an active market for the provision of these services, which negates the need for the incumbent TNSP to provide a 'fall back' option.²³¹ Energy Networks Australia submitted that having regulation only apply to the incumbent TNSP would mean that:

- costs are imposed on one party, resulting in an uneven playing field
- only the incumbent TNSP would be required to follow the NER dispute resolution process, which might colour the offer or open the tool to abuse by the connecting party knowing that the incumbent TNSP is obliged to undertake the investment
- the cost transparency required of the incumbent TNSP might only be used to obtain better offers from other providers, which would be a waste of resources
- transparency obligations would constrain the ability for the incumbent TNSP to make an innovative offer that adds value because it is hard to objectively justify the cost of taking on a liability
- the incumbent TNSP is exposed to risks under the service target performance incentive scheme but others are not, the costs of which would be built into the incumbent TNSP's offer.²³²

Management of risks

AusNet Services was of the view that service reliability and allocation of risk can be adequately managed through contractual arrangements.²³³ The Clean Energy Council shared a similar view, submitting that the premise of a single TNSP being the only measure for retaining clear lines of accountability is not well demonstrated, and that alternative models of operating the shared network should be considered.²³⁴ Energy Networks Australia noted that TNSPs are responsible for the reliability of their licenced area, but expressed the view that this is more likely an approach centred on convenience and history than the long term interests of consumers. It therefore proposed that all service aspects be fully contestable, suggesting that such an approach would better promote system safety, reliability and security.²³⁵

²³⁰ Submissions on consultation paper: Energy Networks Australia, p. 6; TransGrid, p. 2.

²³¹ AusNet Services, submission on consultation paper, p. 2.

²³² Energy Networks Australia, submission on consultation paper, p. 8.

²³³ AusNet Services, submission on consultation paper, pp. 1,3.

²³⁴ Clean Energy Council, submission on consultation paper, p. 5.

²³⁵ Energy Networks Australia, submission on consultation paper, pp. 2,9.

AEMO acknowledged that accountability for outcomes on the shared network is necessary, but expressed the view that the incumbent TNSP is not the only party capable of providing certain network design. It noted that most TNSPs outsource construction, operation and maintenance work to engineering firms, using a range of techniques to manage the risks associated with that. It therefore supported a model under which all services for identified user shared assets are contestable, submitting that accountability can be maintained through minimum technical standards for protection and control systems, and provisions that allocate liability for outcomes on the 'shared' transmission network if that asset fails.²³⁶

Submissions to the discussion paper

Boundaries of contestability

As set out in chapter 3, the Commission concluded in the discussion paper and in the final determination that, under any approach to contestability for identified user shared assets, the incumbent TNSP should remain accountable for shared network outcomes in its licensed area.

Box B.1 describes what the Commission means when it refers to incumbent TNSPs being accountable for outcomes on the 'shared' transmission network, a concept that is referred to throughout this determination.

Box B.1 TNSP's accountability for outcomes on the shared transmission network

TNSPs are responsible for the safety, reliability and security of their transmission network. These responsibilities are a function of jurisdictional legislation as well as the NEL and NER. The trigger for imposition of jurisdictional obligations therefore varies by jurisdiction. For example, in NSW:

- transmission network safety is primarily a function of NSW legislation;
- transmission network reliability is primarily a function of jurisdictional reliability standards and licence conditions, although there are interactions with the national electricity framework, such as with Chapter 6A of the NER and the National Network Reliability Principles; and
- transmission network security - that is, performance within the technical envelope - is primarily a function of Chapter 4 of the NER.

²³⁶ AEMO, submission on consultation paper, p. 2.

Table B.2 sets out the two possible approaches to contestability for the services provided in relation to identified user shared assets put forward in the discussion paper.

Table B.2 Approaches to contestability for identified user shared assets in the discussion paper

Service	Model A	Model B
Setting the functional specification	Not contestable. Incumbent TNSP provides as a negotiated transmission service.	Not contestable. Incumbent TNSP provides as a negotiated transmission service.
High-level design		Contestable.
Cut-in works		Not contestable. Incumbent TNSP provides as a negotiated transmission service.
Construction	Contestable.	Contestable, but the incumbent TNSP accountable for the impact that the provision of these services has on the operation of the shared transmission network.
Ownership	Contestable, subject to the agreement of terms with the incumbent TNSP regarding operation and maintenance.	
Operation and maintenance (i.e. control)	Not contestable. Incumbent TNSP provides as a negotiated transmission service.	

Some stakeholders preferred Model A over B. The SA Department of State Development supported Model A because it was concerned that Model B would allow a contractual reallocation of compliance with the functional specification and performance standards away from the incumbent TNSP. It argued that it would be unclear who would be accountable if a problem arose, and considered that the model would add significant complexity to the connection process.²³⁷

While it preferred Model A over Model B, AGL considered that neither model presented an appropriate way forward. It proposed that contestability be limited to construction only because the bulk of potential savings in connection works are construction costs, which are generally a small fraction of total project costs.²³⁸

²³⁷ SA Department of State Development, submission on discussion paper, pp. 2-3.

²³⁸ AGL, submission on discussion paper, pp. 2,4.

A number of stakeholders expressed support for Model B over Model A, with reasons provided typically at a principles level:

- Model B would encourage the greatest level of competition while keeping overall accountability with the incumbent TNSP.²³⁹
- Competition has been delivering connections successfully in Victoria, and the wider market is ready for similar levels of contestability.²⁴⁰
- The complexity of Model B is not a significant barrier to effective competition - regulation should not be the default option.²⁴¹
- There would be fewer coordination issues under Model B, it would avoid any inappropriate allocation of risk and would make sure that the party who owns the asset takes into account whole of life costs during design and construction.²⁴²
- Model B allows contractual arrangements to ensure provision of services to the required level, and the appropriate allocation of risk.²⁴³

However, while these stakeholders expressed support for Model B over Model A, many acknowledged that they had concerns with how Model B would work in practice, such as:

- The contractual arrangements under Model B would likely be more complex than those in Victoria because parties will need to go through the learning curve that has already been addressed in Victoria.²⁴⁴ Such complex contractual arrangements may add time and cost to transmission connections for incremental benefit over Model A.²⁴⁵
- The level of risk attributed to the incumbent TNSP is likely to prompt TNSPs to behave in a way that undermines the potential benefits of contestability.²⁴⁶
- There is a risk that the incumbent TNSP will not cooperate to secure a connection agreement with the connecting party if it loses the bid to provide contestable services.²⁴⁷

239 Submissions on discussion paper: Infigen, p. 2; Australian Energy Council, p. 2.

240 Submissions on discussion paper: Clean Energy Council, p. 1; AEMO, p. 1.

241 EnergyAustralia, submission on discussion paper, p. 3.

242 Energy Networks Australia, submission on discussion paper, p. 2. Similar sentiments were expressed by EnergyAustralia who noted that third parties will only be competitive if they are able to offer an integrated and complete service. See: EnergyAustralia, submission on discussion paper, p. 3.

243 Transmission General Holdings Australia, submission on discussion paper, p. 2.

244 AEMO, submission on discussion paper, p. 2.

245 Clean Energy Council, submission on discussion paper, p. 9.

246 AEMO, submission on discussion paper, p. 1.

247 Clean Energy Council, submission on discussion paper, p. 9.

- Regardless of the extent of contestability that there might be under Model B, there remains a significant bias towards employing the services of the incumbent TNSP. If a connecting party cannot find sufficient competition for a service, they will have to deal with the incumbent TNSP without the protection of the negotiating rules.²⁴⁸

Few stakeholders provided detailed comments on how these issues could be addressed, or the arrangements that would need to be put in place to enable the incumbent TNSP to manage its accountability for outcomes for end-use consumers on its transmission network. Further, several stakeholders called for a detailed cost-benefit analysis to determine whether this complexity would outweigh the model's possible benefits.

A number of stakeholders asked the Commission to consider alternative models. The Commission's analysis of each model, including Model B, are set out in appendix F.

Submissions to the draft determination

This section provides only a summary of the draft rule. As the final rule on this aspect of the rule change request largely reflects the draft rule, a more thorough description of the reasoning behind the approach to contestability under the draft rule is set out in section B.2.4 below.

The Commission's draft determination concluded that there should always be clear, singular accountability for outcomes on the shared transmission network, given the criticality of system safety, reliability and security. This conclusion was supported by several stakeholders in submissions to the draft determination.²⁴⁹ However, the Commission recognised that increased competition for the services required to connect to the shared transmission network could improve outcomes for connecting parties, and ultimately consumers, with respect to the timeliness, cost and transparency of connections.

The draft rule therefore sought to strike a balance between increased contestability and making sure there remained clear, singular accountability for outcomes on the shared transmission network. Specifically, the draft rule:

- provided that the detailed design, construction and ownership of identified user shared assets were, subject to certain conditions,²⁵⁰ contestable services to be provided to the connecting party by a provider of its choice on commercial terms

²⁴⁸ Origin Energy, submission on discussion paper, p. 3.

²⁴⁹ Submissions on draft determination: ElectraNet, p. 2; Origin Energy, p. 1.

²⁵⁰ The draft rule stated that if the capital cost of all components of the identified user shared asset is reasonably expected to be greater than \$10 million, the services of detailed design, construction and ownership of each component of the identified user shared asset are non-regulated transmission services and can be provided on a contestable basis to the extent the relevant component satisfies the following criteria: the assets being constructed are new or a complete replacement of existing assets (and does not involve the reconfiguration of existing assets); and the detailed design and

- provided that any services associated with setting the functional specification and providing cut-in works for identified user shared assets are non-contestable services that the Primary TNSP has an exclusive right to provide, and that the Primary TNSP must negotiate to do so under the rules that relate to the provision of negotiated transmission services²⁵¹
- did not impose an obligation on the Primary TNSP to provide services for the detailed design, construction or ownership of identified user shared assets as negotiated transmission services where the asset service has met the contestability threshold, as was proposed in the rule change request
- required that any party who owned an identified user shared asset on a contestable basis (i.e. not the Primary TNSP in its regulated capacity) be registered as a TNSP or exempted, and that any exemption granted by the AER with respect to such a person be subject to the conditions that the person:
 - not engage in the activity of owning, controlling or operating a generating system that is connected to that identified user shared asset, or be a related entity of a person that is engaged in the activity of owning, controlling or operating a generating system that is connected to that identified user shared asset
 - must have entered into a network operating agreement for that identified user shared asset with the Primary TNSP to, among other things, allow the Primary TNSP to have operation and control of that asset, including the rights and obligations to maintain it and provide access to by other parties under Chapter 5 of the NER.

Boundaries of contestability for identified user shared assets

Consistent with feedback received earlier in the rule change process, several stakeholders expressed explicit support for contestability for identified user shared assets in their submissions to the draft determination.²⁵² However, submissions also indicated that many would have preferred a more contestable approach to services for identified user shared asset than that in the draft rule. Stakeholders raised four main points in support of a more contestable approach, summarised below.

1. There are already a number of parties operating the shared network in the NEM (e.g. in Victoria), and in other countries, with responsibilities and accountability allocated through contracts and direct regulatory obligations.²⁵³ AEMO was of the view that competition can succeed and accountability can be maintained with multiple TNSPs without compromising system security, reliability or impeding

construction of the identified user shared asset is separable in that the new assets will be distinct and definable from the existing transmission network.

²⁵¹ Arrangements for the provision of negotiated transmission services are discussed in appendix C.

²⁵² Submissions on draft determination: Ausgrid, p. 1; Clean Energy Council, p. 3.

²⁵³ Submissions on draft determination: AEMO, p1; AusNet Services, p. 3; Transmission General Holdings Australia, pp. 3-4.

future third party access, and therefore that it does not follow that the incumbent TNSP must assume that accountability for the entire transmission network within jurisdictional boundaries.²⁵⁴ AusNet Services considered that contestability for operation and maintenance of identified user shared assets could occur if certain aspects of the existing NER, for example the service target performance incentive scheme, was applied to contestable providers of these services.²⁵⁵ The Commission's views on this point are set out in detail in chapter 3.

2. Cost efficiency for the connecting party can only be achieved if all asset management elements are combined - that is, design, construction, operation and maintenance.²⁵⁶ AusNet Services considered that giving the Primary TNSP greater control over the specification of identified user shared assets, and full responsibility for control and operation would leave connecting parties with no option other than to engage the incumbent TNSP to provide all services, including contestable services, for identified user shared assets.²⁵⁷
3. The draft rule creates a misalignment of risk between the connecting party and the Primary TNSP by requiring contestably designed and constructed assets to be operated and maintained by the Primary TNSP, with significant responsibility and obligations placed on the incumbent TNSP.²⁵⁸ Ausgrid was of the view that the draft rule separated the ownership of identified user shared assets from their maintenance without providing appropriate controls to the Primary TNSP such as the specification of equipment design, or testing and commissioning, which increases risk of safety and reliability incidents.²⁵⁹ Origin Energy considered that there may be a divergence between the TNSP's functional specification and a connecting party's needs based purely on risk levels, due to the requirement for TNSPs to be responsible for setting the connection specifications and outcomes on the shared network.²⁶⁰
4. The long term benefit of full contestability for identified user shared asset services will outweigh the short term costs necessary to modify relevant legislation and regulation.²⁶¹

Some of these stakeholders were of the view that, as a result of the issues identified above, the draft rule would not promote the development of a market for contestable services. AEMO considered that any incentive contestable providers and investors

254 AEMO, submission on draft determination, p. 1.

255 AusNet Services, submission on draft determination, p. 3.

256 Submissions on draft determination: AEMO, p. ; AusNet Services, p. ; ElectraNet, p. ; EnergyAustralia, p. 2; Transmission General Holdings Australia, pp. 2-3.

257 AusNet Services, submission on draft determination, p. 3.

258 Submissions on draft determination: AEMO, p. 1; AusNet Services, p. 3; ElectraNet, p. 2; Transmission General Holdings Australia, p. 2.

259 Ausgrid, submission on draft determination, p. 1.

260 Origin Energy, submission on draft determination, p. 1.

261 Transmission General Holdings Australia, submission on draft determination, p. 4.

would have to take on connection projects would be significantly lower under the draft rule if they cannot control the performance of assets they continue to own after construction, and suggested that such parties may have difficulty financing such projects.²⁶² AusNet Services was of the view that requiring the operation and maintenance of identified user shared assets to be provided as non-contestable services would make the process unattractive to potential competitors as there would be too much control left with the Primary TNSP.²⁶³ Transmission General Holdings Australia submitted that it would not be viable to invest in a market where full accountability for the performance of the assets is not possible.²⁶⁴ However, ElectraNet considered that there was no reason that competitors would be dissuaded from participating in the market, and that even under the existing arrangements connecting parties have been able to find alternative providers to the incumbent TNSP to provide non-regulated connection services.²⁶⁵

Ausgrid considered that a connecting party's choice in equipment through its chosen detailed design may limit the TNSP's ability to operate its network, and may trigger early replacement of network assets, resulting in increased costs to the TNSP's customers. Ausgrid proposed that some aspects of the Accredited Service Provider contestability framework for connections to the distribution network in NSW could be adopted for transmission connections, including the DNSP's role in providing design information, design certification, inspections, access permits and asset commissioning on a regulated basis.²⁶⁶

Other comments on aspects of the draft rule

ElectraNet supported the Commission's approach to not require the Primary TNSP to be a 'backstop' provider of contestable services, indicating that removing the requirement for TNSPs to provide these as monopoly services under a negotiate / arbitrate regime in a competitive market ensures that TNSPs are not exposed to obligations that their competitors are not exposed to.²⁶⁷ There were no other comments on this aspect of the draft rule in submissions to the draft determination.

Several stakeholders commented on the criteria for determining whether the components of an identified user shared asset could be contestable. Origin Energy was of the view that the majority of connections that would fall under the definition of identified user shared asset in the draft rule would fall under the \$10 million contestability threshold. It submitted that those components that form part of dedicated connection assets are where the majority of connection costs lies. Energy Networks Australia submitted that the \$10 million threshold should be retained as a minimum, and suggested that the Commission consider indexing the threshold either

²⁶² AEMO, submission on draft determination, p. 5.

²⁶³ AusNet Services, submission on draft determination, p. 3.

²⁶⁴ Transmission General Holdings Australia, submission on draft determination, p. 2.

²⁶⁵ ElectraNet, submission on draft determination, p. 8.

²⁶⁶ Ausgrid, submission on draft determination, p. 7.

²⁶⁷ ElectraNet, submission on draft determination, p. 2.

each year or at regular intervals similar to the existing approach to escalation of thresholds under clause Schedule 6A.2.3 (a) (1) (ii) of the NER.²⁶⁸

Ausgrid and ElectraNet sought amendments to the draft rule to enable the Primary TNSP, in setting the functional specification, to place bounds around the connecting party's choice of equipment, for example through a list of approved materials and equipment for which asset management systems and processes are in place, and to provide information about how detailed design choices may affect the operation and maintenance costs of those assets.²⁶⁹ Ausgrid noted that a connecting party could use alternative equipment, but that such equipment must be tested and asset management systems and training developed to support it, all at the connecting party's cost.²⁷⁰

A number of stakeholders considered that the draft rule created uncertainty around distinctions between operation and maintenance for replacement purposes and spares, and whether the owner of the asset would have any role in those decisions.²⁷¹ Consistent with its arguments on the boundaries of contestability for identified user shared assets, AusNet Services considered that the provision of spares by the Primary TNSP would be excessive, as it would not want to reduce its holding for its own network but would not want to add any risk from the new, contestable identified user shared assets.²⁷² Ausgrid submitted that a lack of clarity regarding the obligations for maintaining equipment spares and undertaking replacement may affect network performance if not resolved prior to transfer of responsibility to the Primary TNSP, which may lead to disputes over accountability, liability and cost, and may pose safety risks.²⁷³ The Clean Energy Council considered that spare parts itineraries should be clearly articulated in the information provided by the Primary TNSP to enable tenderers to provide accurate tenders and remove overheads needed to manage uncertainty.²⁷⁴

Some network service providers considered that the arrangements for testing and commissioning of contestably-built identified user shared assets were not clearly identified in the draft determination or draft rule,²⁷⁵ and noted that these activities are an important part of the process for ensuring that identified user shared assets are free of defects and can interface with the broader shared transmission network.

AusNet Services and the Clean Energy Council raised confidentiality and competition concerns about the Primary TNSP having visibility of certain information from the tender outcome for contestable works, which it would necessarily need to provide

268 Energy Networks Australia, submission on draft determination, p. 6.

269 Submissions on draft determination: Ausgrid, p. 4; ElectraNet, p. 3.

270 Ausgrid, submission on draft determination, p. 4.

271 Submission on draft determination: ElectraNet, p. 2; Energy Networks Australia, p. 6.

272 AusNet Services, submission on draft determination, p. 4.

273 Ausgrid, submission on draft determination, p. 1.

274 Clean Energy Council, submission on draft determination, pp. 4-5.

275 Submissions on draft determination: Ausgrid, p. 4; Energy Networks Australia, p. 5.

negotiated services (i.e. operating and maintenance) in respect of identified user shared assets.²⁷⁶

Several stakeholders sought more clarity on the contractual arrangements that would underpin the approach to contestability under the draft rule.²⁷⁷

TNSPs considered that the draft determination did not consider how the contestability arrangements would interact with the ring-fencing arrangements for TNSPs.²⁷⁸ Specifically, ElectraNet sought assurance that any ring-fencing arrangements that are put in place by the AER are consistent with how the regulatory framework for connections and the broader shared network is intended to operate.²⁷⁹

B.2.4 Analysis and conclusions

Changes between the draft and final rule

There were several changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule:

- moves the provision of single line diagrams from an example of a service to be provided as part of the detailed design of identified user shared assets to an example of a service to be provided as part of the functional specification
- includes 'preferred equipment' and 'spare parts itineraries' as examples of services to be provided as part of a functional specification for identified user shared assets
- makes changes to the arrangements for third party owners of identified user shared assets, including a restriction on any party other than the Primary TNSP who owns an identified user shared asset from also owning, controlling or operating a generating system or load that is connected to that identified user shared asset
- makes other minor amendments for clarification.

The Commission's assessment framework

Given the criticality of system safety, reliability and security, accountability for outcomes on the shared transmission network should be clearly defined. As explained

²⁷⁶ Submissions on draft determination: AusNet Services, p. 3; Clean Energy Council, p. 4.

²⁷⁷ Submissions on draft determination: Clean Energy Council, p. 5; ElectraNet, p. 3; Energy Networks Australia, p. 12.

²⁷⁸ Submissions on draft determination: Clean Energy Council, p. 4; ElectraNet, pp. 4-8; Energy Networks Australia, p. 8.

²⁷⁹ ElectraNet, submission on draft determination, p. 6.

in detail in chapter 3, this is best achieved when one party is responsible for outcomes on the 'shared' transmission network. The Primary TNSP is, relative to others, best placed to manage its obligations under the NEL, the NER and jurisdictional electricity legislation with regard to the provision of a safe, reliable and secure transmission network for the reasons set out in chapter 3.

However, there are also a number of benefits of competition for the provision of services to connect to the shared transmission network. For example, competition, where appropriate, may:

- give connecting parties a greater ability to manage the timing and costs of their connection; and
- place competitive pressure on the TNSP to reveal more information or improve its service offerings if it is also competing to provide those services.

Considering whether competition for the provision of some services to connect to the transmission network should be permitted therefore requires thought about whether it allows the Primary TNSP to continue to manage its accountability for shared network outcomes. There are also trade-offs to be made between the benefits of increased competition and the complexity and prescription required in a regulatory framework to give effect to these benefits.

The Commission used the criteria described in chapter 3, and set out below, to determine whether a particular model would, or was likely to, meet the NEO:

1. transparency
2. timeliness
3. cost
4. unnecessary complexity
5. accountability.

The Commission's analysis of the various possible models sought to determine which model would have the greatest net benefits while maintaining clear accountability for outcomes on the shared transmission network. That is, the Commission considered that the approach to the provision of services for identified user shared assets (and the underlying regulatory framework) that has the greatest net benefits in terms of supporting a transparent, timely and cost reflective connection with no unnecessary complexity, while maintaining clear accountability, is the one that is most likely to achieve the NEO.

The Commission's conclusions and a summary of the final rule are set out in the next section. The Commission's assessment of the final rule against the above criteria is described in section B.5. Appendix F sets out the Commission's analysis of the alternative models proposed by various stakeholders compared to the approach set out in the final rule.

The Commission also reviewed the arrangements of other jurisdictions that were considering, or already had, arrangements that allow for contestability in services provided in relation to transmission or distribution infrastructure.²⁸⁰ The Commission's analysis of these models indicated that many largely reflect the model set out in the final rule in that they permit contestable construction for assets that form part of the shared network but require operation and maintenance services to be provided by the incumbent asset owner or operator. Other models involve far greater involvement from either the system operator or other party - for example the system operator undertakes planning and makes all investment decisions - than the approach set out in the final rule and those models considered in appendix F.²⁸¹

Stakeholder survey

In the development of the draft rule, the Commission sought input from a number of generators and renewable energy developers to inform its understanding of whether introducing competition to the services provided in relation to identified user shared assets would be beneficial. This analysis was also been used to inform the development of the final rule. Specifically, the Commission asked these stakeholders to provide their views on:

- the extent to which each service set out in Table B.1 drives total connection costs; and
- how much benefit they saw in contestability for each of these services, having regard to whether there is, or could be, a market for that service and whether there is much scope for parties other than the incumbent TNSP to provide that service.

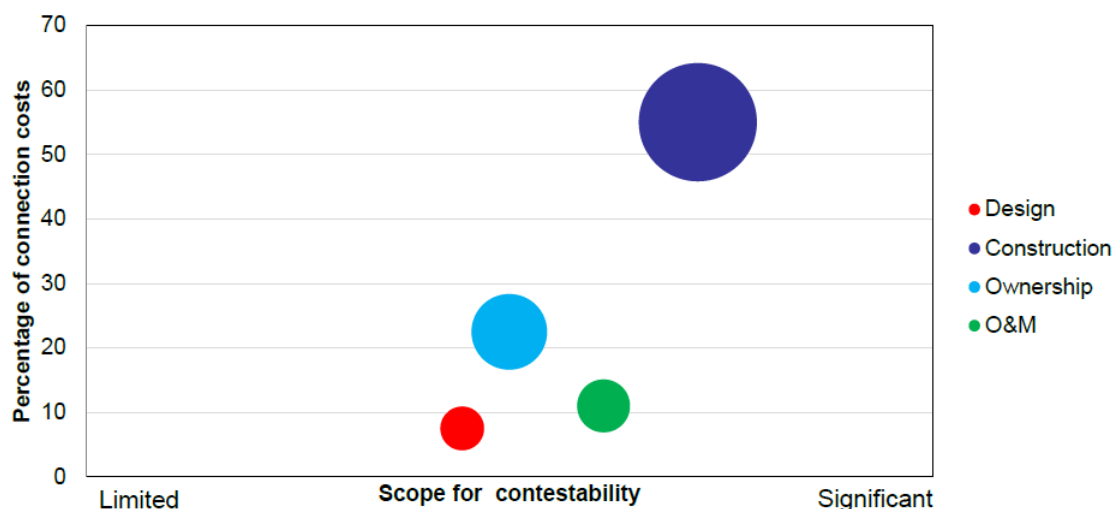
Respondents' answers to each of the above are summarised in Figure B.2 below.²⁸² The x-axis indicates the scope for contestability, ranging from limited to significant scope for contestability. The y-axis represents the extent to which each service drives total connection costs, and uses the mid-point of the range of responses. To help visualise the scale of potential savings of contestability for each service, the size of the bubbles reflects the proportion of the service in total connection costs.

280 For example, Great Britain, Ireland and Alberta. In Australia, NSW and South Australia have put in place arrangements that allow for contestability in design and construction of assets required to connect to the distribution network.

281 These can be considered more similar to the current Victorian model, which, as is set out in chapter 6, operates under a different regulatory framework.

282 Only seven stakeholders provided responses. Respondents were asked to provide approximate figures and qualitative responses. As such, these results should be taken as indicative only.

Figure B.2 Stakeholder survey - benefits of contestability



As the figure shows, respondents largely agreed that construction costs are the most significant contributor to total connection costs, and that there is the greatest scope for this service to be provided contestably. These responses informed the Commission's conclusions and final rule, as set out in the next section.

The final rule

Table B.3 sets out the services required to connect to the transmission network via an identified user shared asset under the final rule, provides an example of each service, classifies each service as either a negotiated transmission service that can be provided by the TNSP only, or a non-regulated transmission service that can be provided by any party. This replicates a table in the final rule.²⁸³ The purpose of separately defining these services in the final rule is so that there is a clear distinction between those services that are to be provided by the Primary TNSP as a negotiated transmission service and those that can be provided on a contestable basis. Consistent with the draft rule, the final rule requires that the provision of those services classified as non-contestable in the table below be subject to a 'contestability threshold', discussed later in this section.

²⁸³ Clause 5.2A.4(a) of the final rule.

Table B.3 Transmission service classification and contestability for identified user shared assets under the final rule

Asset	Service	Example of service	Classification
<i>transmission network including identified user shared asset</i>	Functional specification for identified user shared asset	Specification of: <ul style="list-style-type: none"> • preferred equipment suppliers; • preferred equipment; • land/access requirements; • design specifications; • single line diagrams; • remote monitoring and communication requirements; • protection, control and metering requirements; • minimum operating conditions; • supervisory control and data acquisition system interface requirements; • equipment ratings; • equipment protection ratings; and • spare parts itineraries. 	non-contestable
<i>identified user shared asset</i>	Detailed design for <i>identified user shared asset</i>	Provision of: <ul style="list-style-type: none"> • site plan; • asset layout and configuration; • the specification for vendor equipment; • civil, structural, mechanical and electrical detailed design; • issued for construction drawings; 	<i>contestable</i>

Asset	Service	Example of service	Classification
		<ul style="list-style-type: none"> • as built drawings; • tender specifications; • cable schedules; • protection settings; • applicable technical studies; • earthing design; • the design of lightning protection; and • the design of insulation co-ordination, consistent with the functional specification. 	
<i>transmission network</i>	Cut-in works	Interface works which cut into the existing shared transmission network, these may include tower realignment, protection control and communications requirements	non-contestable
<i>contestable IUSA components</i>	Construction / ownership of contestable identified user shared asset components	Construction and/or ownership of a substation	<i>contestable</i>
<i>non-contestable IUSA components</i>	Construction / ownership of non-contestable identified user shared asset components	Installation and ownership of supervisory control and data acquisition systems and cabling forming part of the <i>Primary Transmission Network Service Provider's</i> control system	non-contestable
<i>identified user shared asset owned by the Primary Transmission Network Service Provider</i>	Control, operation and maintenance	<i>Primary Transmission Network Service Provider</i> provides operation and maintenance services	non-contestable

Asset	Service	Example of service	Classification
<i>third party IUSA</i>	Control, operation and maintenance under a <i>network operating agreement</i>	See clause 5.2A.7	non-contestable
<i>dedicated connection assets</i>	All development aspects	Design, construction, maintenance and ownership of a power line connecting a <i>facility</i>	<i>contestable</i>

As discussed in section B.2.2, the rule change request proposed that a fall back option be established to require the Primary TNSP to provide construction and ownership services for identified user shared assets if asked by the connecting party to do so (i.e. as a provider of last resort). In that event, the NER provisions that underpin the Primary TNSP's provision of negotiated services would apply. A number of stakeholders argued against this fall back option on the basis that doing so would not create a level playing field for TNSPs, and that there is already competition for the provision of similar services in Victoria, and so a workably competitive market is likely to exist in other jurisdictions. The Commission supported these views.

Consistent with the draft rule, the final rule therefore does not impose an obligation on the Primary TNSP to provide detailed design, construction or ownership services for identified user shared assets as negotiated transmission services where the asset service is otherwise contestable (i.e. has met the contestability threshold). Under those circumstances, the Primary TNSP will be able to bid to provide contestable detailed design, construction and ownership services as non-regulated transmission services, provided that it complies with the requirements of its cost allocation methodology and transmission ring-fencing guideline.

The Commission concluded that defining the services outlined in Table B.3 maintains clear, singular accountability for the transmission network, and opens up contestability for services that stakeholder input and Commission analysis suggest have the greatest benefits in terms of reducing the costs of a connection and giving the connecting party more control over timing. The Commission therefore considered that the benefits of contestability under this approach would not be outweighed by its costs - both in terms of the costs of implementing these arrangements and the certainty that clear accountability for outcomes on the transmission network through the NER provides. This is discussed in further detail below.

Functional specification and cut-in works

Connections to the transmission network, regardless of whether some services are contestable or not, necessarily require the involvement of the relevant TNSP to determine the minimum technical parameters for a connection to its network to enable that TNSP to manage the safety, reliability and security of its transmission network. Similarly, a connecting TNSP is best placed to provide the cut-in (or interface) works required to facilitate the connection of new assets to its transmission network since it can manage the provision of these works in a way that will not affect the service that end-use customers receive. As such, consistent with the draft rule, the final rule provides that any services associated with setting the functional specification and providing cut-in works must be provided by the Primary TNSP as negotiated transmission services. As under the existing arrangements, nothing in the final rule will prevent the Primary TNSP from subcontracting the provision of these services to other parties.

As was the case under the draft rule, the final rule makes it clear that protection and control equipment for identified user shared assets cannot be provided as a contestable service, and are therefore listed as an example component of the 'cut-in works' service.

The purpose of a functional specification is for the Primary TNSP to set out the minimum service requirements that an identified user shared asset must meet. It is not intended to define specific assets, but rather the services and level of performance that an identified user shared asset needs to deliver and the network conditions that it will need to withstand. Although the final rule allows the Primary TNSP to set out, through the functional specification, its preferred equipment and preferred equipment suppliers, the connecting party is not required to take up these options. However, the Commission expects that it would be prudent for a connecting party to take up these options because doing so may result in lower operation and maintenance costs, for example if the Primary TNSP considered that the proposed suppliers or proposed equipment were less risky than the connecting party selecting other equipment or equipment suppliers.

Arrangements for the provision of these services will therefore be negotiated between the connecting party and the Primary TNSP under the NER provisions that relate to the provision of negotiated transmission services. The following aspects of the final rule will be relevant to the provision of functional specification and cut-in works: transparency requirements for Primary TNSPs, the ability to request the engagement of an independent engineer to provide advice on technical matters, the revised negotiating principles and the ability to access commercial arbitration.²⁸⁴

The draft rule set out that the provision of single line diagrams was an example of a 'detailed design' service. However, in response to stakeholder feedback,²⁸⁵ the final rule now includes this as an example service under the functional specification. The Commission agreed with this feedback, and noted that single line diagrams are a means to diagrammatically convey the intention of a new connection, and to highlight specific operational reasoning for particular configurations. There would be scope for the connection applicant and the Primary TNSP to discuss the single line diagram to allow for changes and innovation before it is agreed to and the connection applicant tenders for detailed design services. Given that the Primary TNSP will be required to operate and maintain the identified user shared asset, it is appropriate that the Primary TNSP provides it as part of the functional specification.

The final rule also includes 'preferred equipment' and 'spare parts itineraries' as examples of services to be provided as part of a functional specification for identified user shared assets in response to the concerns raised by stakeholders set out in the previous section.

²⁸⁴ These aspects of the final rule are discussed in appendix C.

²⁸⁵ See for example: Ausgrid, submission on draft determination, p. 4.

Detailed design and construction

The approach set out in the final rule for the construction of identified user shared assets is broadly similar to what was proposed in the rule change request and Model A in the Commission's discussion paper. However, consistent with the draft rule, the final rule expands the scope of services open to contestability to include 'detailed design'. The Commission considered that enabling competition for the provision of detailed design services was likely to encourage innovation in the way in which identified user shared assets, including primary plant and civil works, are built to meet the TNSP's functional specification.

Input from stakeholders throughout the rule change process, and the Commission's own analysis, indicated that there already is, or will be, a market for the provision of detailed design and construction services for identified user shared assets.²⁸⁶ The input and analysis set out above showed that construction costs are the largest driver of overall connection costs, and that contestability in both the detailed design and construction of identified user shared assets has significant potential to reduce these costs. Further, both of these services can be provided in a way that does not affect flows to end-use consumers on the transmission network because they are all carried out before the asset is commissioned and so forms part of the transmission network.

Under the final rule, the provision of detailed design and construction services for contestable components of identified user shared assets under the criteria in the NER can be provided on a non-regulated basis. Arrangements for the provision of these services are to be agreed between the connecting party and its chosen service provider on a purely commercial basis. The final rule therefore does not specifically address these arrangements.

The final rule makes it clear that a connection applicant's detailed design for contestable components of an identified user shared asset must be consistent with the Primary TNSP's functional specification,²⁸⁷ and must not unreasonably inhibit the capacity for future expansion of the identified user shared asset or preclude the possibility of future connections.²⁸⁸ Arrangements regarding the sizing of identified user shared assets to accommodate future connections or the additional needs of the connecting party are discussed in more detail in section B.3.

Schedule 5.6 of the existing NER sets out that connection agreements must contain the specific conditions that have been agreed to for connection and access to the transmission network. The final rule adds a number of new conditions that must be covered off in the connection agreement, including:

²⁸⁶ For example, AEMO publishes a list of service providers that have expressed interest in constructing contestable augmentations to the Victorian network. Five construction companies - in addition to a number of existing, registered TNSPs have expressed an interest. See: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/Victoria-transmission-connections---process-overview/Victoria-contractor-panel>

²⁸⁷ Clause 5.3.4(b1)(1) of the final rule.

²⁸⁸ Clause 5.3.4(b1)(2) of the final rule.

- the arrangements for the provision of services relating to non-contestable IUSA components²⁸⁹
- the functional specifications for the contestable IUSA components²⁹⁰
- if the Connection Applicant has obtained services related to a contestable IUSA components other than from the Primary TNSP and intends to transfer ownership of some or all of those components to the Primary TNSP, arrangements for the transfer of ownership of those components upon energisation of the identified user shared asset to the Primary Transmission Network Service Provider (if applicable) and how any defects liabilities will be managed.²⁹¹

The final rule also requires the owner of the identified user shared asset (if not the Primary TNSP) to have a network operating agreement with the Primary TNSP. This is discussed in the next section.

Before commissioning, the Primary TNSP must ensure that contestable IUSA components are built to the standards specified in the functional specification. The connection applicant must provide access to the Primary TNSP to make inspections, and agree to such tests, as is reasonably required for that purpose. The connection applicant must pay the reasonable costs of inspections and tests for the identified user shared asset which are reasonably required by the Primary TNSP.²⁹²

Ownership

Consistent with the draft rule, under the final rule the ownership of identified user shared assets is a non-regulated transmission service that can be provided to the connecting party by any party on commercial terms, if they meet the criteria set out in the final rule.

Section 11(2) of the NEL requires that:

“A person must not engage in the activity of owning, controlling or operating, in this jurisdiction, a transmission system or distribution system that forms part of the interconnected national electricity system unless:

- the person is a Registered participant in relation to that activity; or
- the person is the subject of a derogation that exempts the person, or is otherwise exempted by AER, from the requirement to be a Registered participant in relation to that activity under this Law and the Rules.”

289 Clause (m) of Schedule 5.6 of the final rule.

290 Clause (n) of Schedule 5.6 of the final rule.

291 Clause (o) of Schedule 5.6 of the final rule.

292 See clause 5.7.8 of the final rule.

Under the draft rule, the definition of transmission system included, amongst other assets, a third party IUSA. As set out in section B.1.4, a third party IUSA is those contestable components of an identified user shared asset that are not, or will not be, owned or leased by the Primary TNSP. As such, the requirement in the NEL for a person who owns, operates or controls a transmission system to be registered as a TNSP, or exempted, was triggered for third party owners of identified user shared assets.

The draft rule required that any exemption granted by the AER with respect to such a person be subject to the conditions that the person:

- not engage in the activity of owning, controlling or operating a generating system that is connected to that third party IUSA, or be a related entity of a person that is engaged in the activity of owning, controlling or operating a generating system that is connected to that third party IUSA
- must have entered into a network operating agreement for that third party IUSA.

The final rule however provides that an identified user shared asset is part of the Primary TNSP's transmission network, rather than being a transmission system in and of itself. This consequently removes the requirement for an owner of an identified user shared asset to be registered (or exempt) with respect to that asset. As a result, the final rule does not include the two mandatory conditions of exemption described above. Instead, it places certain obligations directly on any party (other than the Primary TNSP) who owns an identified user shared asset. Those obligations are:

1. a person who owns a third party IUSA must not own, operate or control a generating system or facility that uses electrical energy (i.e. a load) that is connected to that identified user shared asset, or be a related entity of a person who owns, operates or controls a generating system or load connected to that third party IUSA²⁹³ (discussed further under **ownership restriction** below)
2. a person must not commission, or permit the commissioning of, a third party IUSA unless there is a network operating agreement between the owner of that third party IUSA and the Primary TNSP²⁹⁴ (discussed further under **requirement to have a network operating agreement** below).

The term network operating agreement is introduced in the final rule and is described in clause 5.2A.7 of the final rule.

Ownership restriction

Regarding the first obligation, the Commission considers that allowing a generator or load, or a related entity of that generator or load, to own a transmission asset which connects it to the shared transmission network could raise competition concerns. For example, a generator who owned an identified user shared asset may have the ability

²⁹³ See clause 5.2A.7(e) of the final rule.

²⁹⁴ See clause 5.2A.7(a) of the final rule.

to exert influence over the Primary TNSP's granting of access to that asset to competing generators by contractual means (i.e. outside the NER framework), the veracity of which could not be tested given the confidential or private nature of such contracts.

If access to an identified user shared asset is frustrated, this may result in an inefficient duplication of assets to enable new parties to connect, which is likely to increase the costs of connection and, ultimately to consumers. It may also mean that a new connecting party is forced to connect at a location that is sub-optimal.

The purpose of this obligation is therefore to limit any incentive a generator or load connected to the identified user shared asset, or a related entity of that generator or load, may have to prevent or frustrate another party's access to the transmission network by way of that asset. Further, including this provision bolsters the current access regime as set out in the NER.

Under the draft rule, this obligation would have only applied to those parties who were exempt from the requirement to register as a TNSP with respect to an identified user shared asset, and would not have covered those parties who registered as a TNSP in respect of the identified user shared asset. However, under the final rule, the obligation to comply with the restriction is imposed on any third party owner of an identified user shared asset (i.e. any party who owns the identified user shared asset other than the Primary TNSP). The Commission will recommend to the COAG Energy Council that this clause be classified as a civil penalty provision to provide a more direct mechanism in the NER for the AER to enforce breaches of this obligation.²⁹⁵

Under the draft rule, this restriction only applied to generators and related entities of generators. The final rule extends this restriction to loads because, while the Commission considered that a load does not have as strong an incentive as a generator to exert influence over the Primary TNSP's granting access of access to the identified user shared asset to which it is connected, the Commission concluded that the purpose of applying this restriction to generators applies equally to loads - that is, to preserve competitive neutrality and the principles of an open access framework.

Requirement to have a network operating agreement

Regarding the second obligation, under the draft rule there was a requirement for a third party owner of an identified user shared asset to register as a TNSP, or seek an exemption, in respect of that asset.²⁹⁶ Under the draft rule, there was a mandatory condition of exemption for a third party owner of an identified user shared asset to negotiate a network operating agreement with the Primary TNSP. However, a third party owner who chose to register as a TNSP would not have needed to enter into a network operating agreement with the Primary TNSP.

²⁹⁵ See appendix A.

²⁹⁶ This is because the identified user shared asset was a transmission system and under section 11 of the NEL, a person must not engage in the activity of owning, controlling or operating a transmission system unless that person is a registered participant in relation to that activity or otherwise exempted by the AER from the requirement to be a registered participant

Under the final rule, an identified user shared asset is not a transmission system in and of itself, and so there is no requirement for the owner of that asset to register (or be exempted) in respect of that asset. Instead, the final rule makes clear that the third party IUSA forms part of the Primary TNSP's transmission network for which it is already registered.²⁹⁷ The Commission concluded that such an approach promoted clearer accountability for the shared transmission network than under the draft rule, which would have allowed for parties other than the Primary TNSP to be registered as a TNSP with respect to assets that form part of the shared transmission network.

A party other than the Primary TNSP may still own an identified user shared asset under the final rule. Although the requirement to be registered (or exempt) is removed, the final rule requires that any third party (i.e. any party other than the Primary TNSP) who owns an identified user shared asset must have a network operating agreement with the Primary TNSP.²⁹⁸ Specifically, the third party owner and the Primary TNSP are required to have the network operating agreement in place before commissioning of the identified user shared asset. Under the network operating agreement, the operation, maintenance and control of that identified user shared asset is provided by the Primary TNSP. This will enable a Primary TNSP to continue to have control over its whole transmission network, including the contestable components of the identified user shared assets that are embedded within it. In order for this to occur, any third party owner of an identified user shared asset is required to have a network operating agreement with the Primary TNSP.

The Commission will recommend to the COAG Energy Council that this clause be classified as a civil penalty provision to provide a more direct mechanism in the NER for the AER to enforce breaches of this obligation.²⁹⁹

As a result, the owner of an identified user shared asset (if not the Primary TNSP) will be largely passive with respect to that asset. That is, they will not have any role in making decisions about the operation, maintenance or control of that asset, as these responsibilities must lie with the Primary TNSP. For example, a contestable owner will not (under the NER) be required to agree to the replacement of assets before the Primary TNSP can carry that out.

Another option under the final rule is for the Primary TNSP to take on the ownership of a contestable identified user shared asset at some stage, such as when construction is complete. Such an approach is likely to result in more simple contractual arrangements, and there would be no need for a network operating agreement. Throughout the rule change process several stakeholders raised concerns about the possible implications of a transfer of ownership of an identified user shared asset to the Primary TNSP, including tax implications. These implications are a consequence of the service of ownership being contestable but are not insurmountable - for example, parties could seek to resolve the tax implications between them on a commercial basis.

²⁹⁷ See the definition of network in section B.1.4 and in Chapter 10 of the final rule.

²⁹⁸ See clause 5.2A.7(a)-(d) of the final rule.

²⁹⁹ See appendix A.

Table B.4 sets out the two possible options for ownership of identified user shared assets under the final rule, and who is responsible for providing services in relation to those assets in each scenario.

Table B.4 Service responsibility under contestable ownership of identified user shared assets

Service	Scenario 1: Primary TNSP owns and is registered with respect to the identified user shared asset	Scenario 2: Identified user shared asset owned by party other than the Primary TNSP, and enters into a network operating agreement with the Primary TNSP, who is registered with respect to the identified user shared asset
Ownership	Primary TNSP	Third party
Control (including providing access to that asset by other parties)	Primary TNSP, under access framework in Chapter 5 of the NER	Primary TNSP, through network operating agreement (in accordance with access framework set out in Chapter 5 of the NER)
Operation and maintenance	Primary TNSP, provided to connecting party as negotiated transmission service. Note: The Commission expects that parties would enter into an agreement, for example an operation and maintenance agreement (or incorporate the provision of this service into the connection agreement), but the NER do not require this.	Primary TNSP, provided to connecting party as negotiated transmission service, through network operating agreement

Arrangements for the provision of contestable ownership services are to be agreed between the connecting party and its chosen service provider on a purely commercial basis. Similarly, any transfer of ownership of the asset, including to the Primary TNSP, would be for those parties to agree on a purely commercial basis. The final rule therefore does not address these arrangements, and so leaves it up to the relevant parties to commercially negotiate an ownership option that is preferable to it. However, if a party other than the Primary TNSP owns the identified user shared asset, such ownership will always be subject to the requirement to have a network operating agreement with the Primary TNSP.

Operation and maintenance

Identified user shared assets form part of the transmission network to which they are connected and, by definition, are not able to be electrically isolated from it without affecting flows of electricity across the 'shared' transmission network. In order to meet the obligations in respect of the safety, reliability and security of the supply of electricity to the end-users connected to its network, the Primary TNSP must be able to control the operation and maintenance of, and access to, all assets that form part of that network. As such, consistent with the draft rule, the final rule provides that the operation and maintenance of identified user shared assets (regardless of whether they are third party IUSA or owned by the Primary TNSP) must be provided by the Primary TNSP as negotiated transmission services.³⁰⁰ However, as under existing arrangements, nothing in the final rule will prevent the Primary TNSP from subcontracting the provision of these services to other parties. The connecting party (or the owner of a third party IUSA) will pay the costs associated with the TNSP's provision of these services.

In its submission to the draft determination, EnergyAustralia noted that identified user shared assets and dedicated connection assets constructed together would have similar maintenance requirements due to their similar age, location, reliability requirements, outage schedules, and functional specifications. It considered that requiring the Primary TNSP to undertake maintenance for identified user shared assets while dedicated connection assets can be maintained contestably will require coordination with the Primary TNSP to ensure alignment of transmission, connection, and generation outages. It asked the Commission to consider whether shared network outcomes could be assured if maintenance of identified user shared assets were to be a contestable service.³⁰¹

The Commission explored this option, but concluded that the benefits of such an approach would unlikely outweigh the costs. This was for a number of reasons:

- There appeared to be limited scope for innovation in how an identified user shared asset is maintained once its functional specification and design has been set.
- Primary TNSPs have scale efficiencies that a contestable provider would not, i.e. staff, spares on hand and the ability to respond at short notice. It therefore has a significant competitive advantage in providing maintenance services that contestable providers are unlikely to be able to compete with. While the Primary TNSP's scale efficiencies would likely be of benefit to the connecting party, the Commission was of the view that this approach would not be more efficient overall.
- If maintenance were a contestable service, the Primary TNSP would likely need to have a contract with the contestable provider of maintenance services to

³⁰⁰ Clause 5.2A.4(a) of the final rule.

³⁰¹ EnergyAustralia, submission on draft determination, p. 2.

enable it to meet its obligations regarding the provision of a safe, reliable and secure transmission network. To manage the risk of needing to replace equipment at short notice, the contestable provider might choose to subcontract maintenance services to the Primary TNSP, which appeared to negate the objective of making the service contestable.

- Identified user shared assets are comparatively small assets that are embedded in and operate in concert with the overall shared transmission system. It is therefore unlikely that the possible benefits of competition for maintenance services (for example reduced costs) would be significant for such assets.

The Commission therefore concluded that decisions about the maintenance of identified user shared assets are most efficient when combined with decisions about the operation of those assets, and retained the approach set out in the draft rule - that is, the operation and maintenance of identified user shared assets are non-contestable services to be provided by the Primary TNSP.

Arrangements for the provision of these services will be negotiated between the connecting party (or the third party IUSA owner) and the Primary TNSP under the rules that relate to the provision of negotiated transmission services. As such, the following aspects of the final rule will be relevant to the provision of operation and maintenance services: transparency requirements for Primary TNSPs; the ability to request the engagement of an independent engineer to provide advice on technical matters; the revised negotiating principles; and access to commercial arbitration.³⁰²

The NEL requires any person who owns, controls or operates a transmission system to register or be exempt from the requirement to register. The Primary TNSP, as the party who is responsible for the operation and maintenance of identified user shared assets in its network under the final rule, will already be registered as a TNSP with respect to its transmission system.

As set out in the previous section, the ownership of identified user shared assets is, subject to the contestability threshold and criteria, a contestable service. It is therefore possible that parties other than the Primary TNSP will own identified user shared assets. The final rule makes it clear that an identified user shared asset owned by a person other than the Primary TNSP (i.e. a third party IUSA) forms part of the Primary TNSP's transmission network. Therefore, there is no separate obligation for the TNSP to register in relation to the control, operation and maintenance of identified user shared assets in its network. The final rule also requires a network operating agreement between the owner of the identified user shared asset and the Primary TNSP to be in place before the asset is commissioned.³⁰³

The final rule requires a third party owner of an identified user shared asset to have a network operating agreement with the Primary TNSP in relation to the third party IUSA, in accordance with the principles set out in Schedule 5.11 of the final rule (where

³⁰² These aspects of the final rule are discussed in appendix C.

³⁰³ See clause 5.2A.7(a) in the final rule.

each principle is applicable).³⁰⁴ The term of the network operating agreement must be for a period of time which is at least equal to the term of the longest connection agreement of a member of the initial identified user group for the third party IUSA.³⁰⁵ The agreement is also required to include the terms and conditions of the kind set out in Part B of schedule 5.6 of the NER³⁰⁶, and to provide for the Primary TNSP to:³⁰⁷

- have operation and control of the third party IUSA (including the rights and obligations to maintain that asset) for an agreed charge or charging methodology
- have an option to purchase the third party IUSA at fair market value at the expiry or early termination of the network operating agreement
- alter, replace or augment the third party IUSA
- have the right to connect other persons to the third party IUSA in accordance with the NER
- have unrestricted use of, and access to, the third party IUSA
- treat the third party IUSA as forming part of the Primary TNSP's transmission network in all material respects and provide transmission services to any Transmission Network User³⁰⁸ in accordance with the NER.

The Commission considered that these conditions would help to address the concerns raised by several TNSPs that they will be required to operate and maintain an asset that they did not design or build. Primary TNSPs will be responsible for setting the functional specification, and having these obligations provides a means by which Primary TNSPs can make sure that the identified user shared asset interfaces safely, reliably and securely with the rest of the transmission network. The Commission also considered it important that the Primary TNSP remain responsible for setting the functional specification and operating and maintaining identified user shared assets because doing so will support an efficient approach to the planning and operation of the transmission network.

Third party access

Under the final rule, the Primary TNSP is responsible for providing access to transmission network, including identified user shared assets owned by third parties. If the Primary TNSP owns a contestably built identified user shared asset, its

304 Clause 5.2A.7(b)(3) of the final rule.

305 Clause 5.2A.7(c) of the final rule.

306 Clause 5.2A.7(b)(2) of the final rule.

307 Clause 5.2A.7(d) of the final rule.

308 Transmission Network User is defined in the final rule as being: "in relation to a transmission network, a Transmission Customer and: (a) a Generator whose generating unit; (b) a Network Service Provider whose network; (c) to the extent that a dedicated connection asset service provider is not already one of the persons listed above, a dedicated connection asset service provider whose dedicated connection asset, is connected to the transmission network."

registration will cover that asset and it is clear that it will be responsible for providing access to the transmission network via that asset in accordance with the access framework in Chapter 5 of the NER.

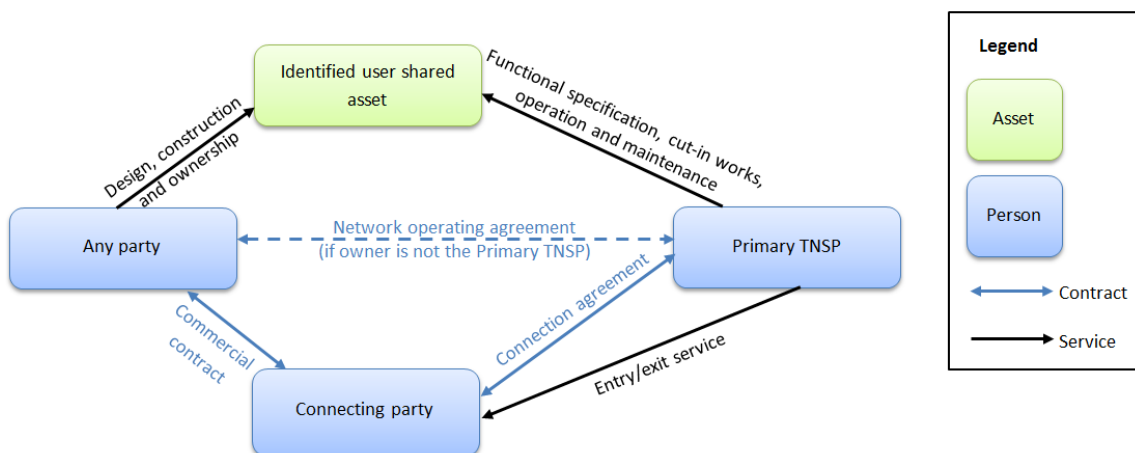
As set out above, if the identified user shared asset is owned by a party other than the Primary TNSP, that third party must have a network operating agreement with the Primary TNSP to, among other things, provide for the Primary TNSP to have the right to connect other persons to that identified user shared asset in accordance with the access framework set out in Chapter 5 of the NER.³⁰⁹ The final rule requires that the network operating agreement provide for the Primary TNSP to treat the third party IUSA as forming part of its transmission network in all material respects, and to provide transmission services to any transmission network user, for example, granting access to the transmission network.³¹⁰

Indicative contractual arrangements

With the exception of the requirements for a connection agreement and a network operating agreement to be in place in the circumstances described above, the final rule does not mandate the nature or structure of any other contractual arrangements that may be needed to give effect to the connections framework under the final rule. However, the Commission expected that parties might enter into other arrangements not required under the final rule to support the provision of services under the final rule, for example an operating and maintenance agreement between the Primary TNSP and the connecting party where the Primary TNSP owns the identified user shared asset.

Figure B.3 sets out the Commission's views on the indicative contractual arrangements that would be in place regarding the provision of contestable services for an identified user shared asset.

Figure B.3 Indicative contractual arrangements for identified user shared assets under the final rule



309 See clause 5.2A.7(d) of the final rule.

310 Clause 5.2A.7(d)(6) of the final rule.

The services provided by 'any party' could conceivably be carried out by multiple parties - that is, the connecting party could contract with one person to design and build the identified user shared asset, and another to own it. The dotted lines show that the network operating agreement would only need to be put in place if the connecting party chooses a person other than the Primary TNSP to own the identified user shared asset. These arrangements would be simpler if the ownership of identified user shared assets was not a contestable service. However, as set out in detail above, the Commission concluded that the benefits from having flexibility as a result of having contestable ownership outweighed the possible contractual complexity.

Contestability threshold

While the Commission considered that there would likely be workable competition for the provision of detailed design, construction and ownership services for identified user shared assets, there are many different assets that are needed to facilitate a connection to the shared transmission network, including:

- primary plant, e.g. transformers
- secondary systems, e.g. SCADA and communications systems
- civil works, e.g. earthgrid and benching.

For some of these assets, it would be neither feasible nor practicable for the services of detailed design, construction and ownership to be provided on a contestable basis. This is for several reasons.

The first is that the equipment may be embedded deep in the meshed network. For example, communications equipment may need to be upgraded or installed at a location that is some distance from the node at which a party is connecting. Such equipment needs to be able to interface with existing communications equipment, and needs to be installed in a controlled environment because it has implications for the safe, reliable and secure supply of electricity to end-use consumers. Access to the site at which that equipment is located may also be an issue, as could compatibility with that equipment if the upgrade or replacement is being undertaken by a party other than the party who originally arranged its installation.

Establishing a framework to enable such assets to be provided contestably would require a comprehensive set of arrangements in the NER. For example, an interface specification would need to be established to set out how the new assets were to interface with existing assets. This may also require long and complex negotiations between the Primary TNSP, the connecting party and the party undertaking the detailed design, construction and/or ownership of those assets. Such assets are non-contestable in Victoria, and therefore are provided by the incumbent DTSO. Enabling contestability for the provision of these services for such assets would impose additional risks on the Primary TNSPs, who are accountable for shared network outcomes, with limited means of managing these risks.

Another reason is that the costs and benefits of having some services opened to contestability may be relatively low. In some cases, for example if a connecting party is seeking connection to an existing substation, i.e. a brownfield connection, the costs of establishing new identified user shared assets to that substation would be relatively low compared to establishing a new substation, i.e. a greenfield connection. If that is the case, it is unlikely that many providers would see a strong benefit in providing detailed design, construction and ownership services for these assets. As such, there are likely to be limited benefits in allowing services for these types of assets to be provided contestably.

The final reason is that there may be interface issues at existing substations. Throughout the rule change process a number of stakeholders noted that parties are increasingly seeking connection to the transmission network via an existing substation, as opposed to building a new substation. Enabling the construction of new assets within an existing, live substation will have complications. This may mean interfacing with live transmission equipment that form part of the shared transmission network that supplies end-use consumers. Such an approach would increase risks for the Primary TNSP who, as the party with responsibility for operating the shared transmission network, is accountable for outcomes on that network. The presence of both the contestably-appointed service provider and the Primary TNSP would be an unnecessary duplication of resources, resulting in increased costs for connecting parties.

The Commission concluded that the costs of allowing contestability in the three scenarios described above would outweigh the benefits. Consistent with the draft rule, the final rule therefore provides that the Primary TNSP must provide the services of detailed design, construction and ownership as negotiated transmission services only if the capital cost of all components of the identified user shared asset is reasonably expected to be \$10 million or less.³¹¹

If the capital cost of all components of the identified user shared asset is reasonably expected to be greater than \$10 million, the services of detailed design, construction and ownership of each component of the identified user shared asset are non-regulated transmission services and can be provided on a contestable basis to the extent the relevant component satisfies the following criteria:

- the components being constructed are new or a complete replacement of existing components (and do not involve the reconfiguration of existing components)
- the detailed design and construction of the identified user shared asset is separable in that the new assets will be distinct and definable from the existing transmission network.³¹²

³¹¹ Clause 5.2A.4(b) of the final rule.

³¹² Clause 5.2A.4(c) of the final rule. These concepts are based on provisions in Chapter 8 of the NER that relate to how augmentations are deemed to be contestable in Victoria. See Box B.3.

The Primary TNSP must determine whether each component of the identified user shared asset meets these two criteria. In the event that the parties do not agree on whether the asset meets or does not meet the technical criteria set out above³¹³, the final rule provides a means by which either party can engage an independent engineer to provide technical advice on the matter.³¹⁴ The Commission considered that this was an appropriate role for the independent engineer to play since the criteria are technical in nature. Further, if parties do not agree on the Primary TNSP's assessment, either party could choose to raise a formal dispute under the commercial arbitration provisions set out in the NER.³¹⁵

If the asset does not meet the contestability criteria, all services provided in relation to that asset will be provided by the Primary TNSP as negotiated transmission services. All of the arrangements under the final rule that relate to the provision of negotiated transmission services, such as the negotiating rules, access to a commercial arbitration process and the independent engineer, will apply to the provision of these services.³¹⁶

As set out in the previous section, several stakeholders raised questions about the appropriateness of the \$10 million threshold. While EnergyAustralia considered that not many identified user shared assets would fall above this threshold, this view is contrary to views put forward by the majority of other stakeholders, who consider that most new connections to the transmission network would require identified user shared assets that would have a capital cost at least of \$10 million. The Commission therefore concluded that this threshold remains appropriate. This also supports consistency with the existing Victorian arrangements, which also use a \$10 million threshold for contestability.

Energy Networks Australia asked that the Commission consider indexing this threshold. The final rule does not require indexing of this threshold because the Commission considered that it was not needed. Energy Networks Australia did not provide strong justification for why this should occur, and therefore the Commission concluded that the administrative burden involved in doing so would outweigh any potential benefits. Note that stakeholders can ask the Commission to reconsider this threshold through a rule change request if they consider that it is not appropriate at a future time.

The Commission considered that setting out clear criteria in the NER for contestability was preferable to requiring parties to agree the contestability for such services for each individual connection. Doing so provides more clarity to connecting parties and Primary TNSPs, should limit disagreements between the connecting party and the

313 That is, clauses 5.4A.4(c) and (d) of the final rule, relating to whether the component is a new or a complete replacement of an existing component, or that the detailed design and construction of the identified user shared assets is separable in that the new assets will be distinct and definable from the existing transmission network.

314 Clause 5.4.1(b)(3) of the final rule.

315 Detailed arrangements on the appointment of an independent engineer and dispute resolution are discussed in appendix C.

316 These aspects of the final rule are discussed in appendix C.

Primary TNSP and should reduce the risk of costly negotiations. It is also a common approach to investments in transmission infrastructure in other jurisdictions, as explained in Box B.3.

Box B.2 Contestability thresholds in other jurisdictions

Victoria, Australia

Part H of Chapter 8 of the NER relates to augmentations in the declared transmission systems where AEMO exercises declared network functions. Specifically, the NER state that an augmentation is a contestable augmentation if:

- the capital cost of the augmentation is reasonably expected to exceed \$10 million
- the augmentation is a separable augmentation, i.e. where the augmentation will result in a distinct and definable service to be provided by the contestable provider to AEMO; and the augmentation will not have a material adverse effect on the incumbent declared transmission system operator's ability to provide services to AEMO under any relevant network agreement.³¹⁷

Great Britain

Ofgem, the government regulator for gas and electricity markets in Great Britain, is currently implementing a contestable approach to investments in transmission infrastructure. Ofgem has established the following criteria to determine what types of transmission investments are contestable:

- the value of the transmission investment must be £100 million or above³¹⁸
- the assets are completely new or are a complete replacement of existing transmission assets
- ownership between these assets and other (existing) assets can be clearly delineated.

Ireland

In Ireland, parties connecting to the shared transmission network have the right to construct part or all of their connection. However, certain activities, works and assets are determined to be non-contestable, including:

- certain limited works and assets due to the particular location that cannot be safely separated from existing 'live' transmission system
- works and assets that are required for system protection and communication
- deep reinforcement works and assets.

³¹⁷ Rule 8.11.6 of the NER.

³¹⁸ Ofgem determined that this was the level at which the benefits of competition would outweigh the costs, and would attract strong market interest.

Transmission ring-fencing

The NER requires the AER to develop transmission ring-fencing guidelines in consultation with each participating jurisdiction for the accounting and functional separation of the provision of prescribed transmission services by TNSPs from the provision of other services by TNSPs,³¹⁹ including negotiated transmission services, non-regulated transmission services and non-transmission services. The existing guidelines were published by the ACCC in 2002 and are now administered by the AER.³²⁰ These guidelines do not impose any restrictions on a TNSP that provides prescribed transmission services from also providing other (e.g. non-regulated) transmission services. The only restriction is on TNSPs carrying out generation, distribution or retail activities that attract revenue of more than five per cent of the TNSP's total annual revenue.³²¹

The AER recently amended and published the distribution ring-fencing guidelines. Throughout that process, the AER signalled its intention to also revise the transmission ring-fencing guidelines at some stage. Throughout this rule change process some stakeholders expressed concern that the AER would take a similar approach to transmission ring-fencing as it has done for distribution ring-fencing, under which a strict separation is imposed between the provision of direct control services and the provision of negotiated and non-regulated distribution services. These stakeholders considered that a similar approach for transmission would undermine the benefits of contestability for connection services under this rule change because negotiated transmission services (i.e. connection services) are services that must be provided exclusively by the Primary TNSP under the final rule, and may mean that Primary TNSPs could not, or would not, compete in such a market.

The final rule more explicitly defines which services provided in relation to a connection are to be provided as negotiated transmission services on an exclusive basis by the TNSP, and which can be provided on a contestable basis. These changes will therefore have an implication for a TNSP's compliance with the ring-fencing guidelines. While this is not a concern under the existing ring-fencing guideline, the Commission acknowledges that a more restrictive approach to ring-fencing for TNSPs may affect the ability and incentives for TNSPs to participate in a market for the provision of contestable connection services, and would likely affect the degree of competition for contestable services under the framework set out in this final determination.

The Commission considers that negotiated transmission services are more akin to alternative control services than negotiated distribution services. This is because, under the final rule, the Primary TNSP is required to provide certain negotiated transmission services (connection services) on an exclusive basis. This is not the case for negotiated

319 Clause 6A.21.2 of the NER.

320 See:
https://www.aer.gov.au/system/files/Ring-fencing%20guidelines%20only%20-%202015%20August%202002_1.pdf

321 Clause 7.1(a)(ii) of the transmission ring-fencing guidelines.

distribution services (where the DNSP is not required to provide the service). Imposing a form of separation at the transmission level similar to that imposed at the distribution level (i.e. between direct control services and other services) may therefore not be appropriate. The Commission is of the view that a more appropriate division would be between a TNSP's provision of prescribed transmission services and negotiated transmission services, and its non-transmission or other contestable transmission services.

The final rule does not amend those aspects of the NER that relate to transmission ring-fencing. Amendments to these aspects of the NER are not within scope of this rule change request, as such amendments would have broader implications for the provision of services by TNSPs, not just those services provided in relation to a connection. However, the Commission acknowledges TNSPs' concerns and will participate in the AER's consultation process on any revision of the transmission ring-fencing guideline in future. The Commission encourages TNSPs and connecting parties to do the same.

B.3 Asset sizing

B.3.1 Background

Under the existing NER, TNSPs set the functional specification for and design what would fall within the definition of identified user shared asset under the final rule.³²² Feedback from stakeholders throughout the rule change process indicated that some incumbent TNSPs seek to design substations that exceed the minimum requirements of a connecting party in order to accommodate future connections, or to meet broader reliability standards. In particular, some generators had a perception that TNSPs 'oversize' assets used for connection, which might involve requiring the connecting party to purchase additional land or provide room for additional bays, or specifying rating of equipment above the requirements of the connecting party.

The existing NER do not provide explicit clarity on how the costs of this sizing in addition to the minimum requirements of a connection is recovered - whether from the party that requires the asset to connect to the transmission network, or all transmission customers through transmission use of system charges. As a result, some TNSPs have sought to provide their own guidance on these matters.

The existing NER do not prohibit connecting parties from seeking capacity in addition to their minimum requirements themselves, for example in anticipation of connecting a second stage of a generation project, provided that this is funded by the connecting party itself.

³²² Existing arrangements are described in detail in section 1.2.

B.3.2 COAG Energy Council's view

The COAG Energy Council did not propose any arrangements for the sizing of identified user shared assets in its rule change request, but it did recognise the issue that some TNSPs may wish to specify assets that are beyond the connecting party's immediate requirements.³²³

B.3.3 Stakeholder views

Submissions on consultation paper

The Commission did not raise the issue of asset sizing in its consultation paper. However, in commenting on the proposal that the incumbent TNSP would design identified user shared assets, Origin Energy proposed that the connecting party should only bear the cost of the portion of the asset required for its connection if the incumbent TNSP deems it appropriate to design an asset beyond the specification needed for the connecting party.³²⁴

Submissions on discussion paper

In the discussion paper, the Commission noted that both TNSPs and connecting parties seek to design an identified user shared asset beyond the minimum specification needed. These scenarios, and the views put forward by the Commission on each, are summarised below.

- A TNSP may wish to design a larger identified user shared asset to help it meet its reliability standards or to maximise market benefits, and should not be prevented from doing so provided that it recovers difference between what is required for connection and what is to meet an identified need in the provision of prescribed transmission services in accordance with the cost allocation principles in the NER.
- A TNSP may wish to design a larger identified user shared asset if it considers that another party might connect to the transmission network via that asset in the future, and should not be prevented from doing so provided that it does not recover the costs of this oversizing from customers through transmission use of system charges.
- A connecting party may wish to design, or seek provision for the design of a larger identified user shared asset and should not be prevented from doing so, provided that it pays the costs of doing so.³²⁵

³²³ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 15.

³²⁴ Origin Energy, submission on consultation paper, p. 1.

³²⁵ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

The Clean Energy Council supported the Commission's approach to asset sizing. It agreed that connecting parties should not be burdened with the costs of sizing assets to allow for competing future connections, or risk a second mover taking the incumbent's reserved capacity.³²⁶

AEMO agreed that it would be helpful if the NER specified the extent to which TNSPs should seek substation designs that incorporate expected efficient network development. It noted that flexible substation designs can significantly reduce the costs of future connections and reduce system security risks, but can cause the original connecting party to bear unnecessary costs. AEMO considered that there was scope to set a monetary limit on the additional costs that an incumbent TNSP may require to allow for future development.³²⁷

Submissions on draft determination

In the draft determination, the Commission considered that the NER should provide connecting parties and transmission customers with further clarity about how the costs of a TNSP specifying requirements for an identified user shared asset that are greater than required for the immediate connection to be recovered. The draft rule sought to achieve this by setting out the following principle to provide guidance on how parties should approach and negotiate this issue,³²⁸ which broadly reflected the approach proposed by the Commission in its discussion paper:

“The Primary Transmission Network Service Provider should provide a Connection Applicant with a functional specification for an identified user shared asset that is no more than is required for the connection being sought by the Connection Applicant. The Primary Transmission Network Service Provider also has the option to provide a functional specification for an identified user shared asset above what is required for that connection where the Primary Transmission Network Service Provider will fund that proportion of the new identified user shared asset that is above what is required for the connection. The Connection Applicant must consider the Primary Transmission Network Service Provider’s preferred sizing in good faith, but is not required to accept the Primary Transmission Network Service Provider’s preferred sizing.”

The Commission considered that the connection applicant should not have to accept the TNSP's preferred sizing, because doing so may have an impact on the timeliness of its connection to the transmission network, for example if the TNSP has to undertake a RIT-T process to determine cost recovery arrangements for the additional requirements.

³²⁶ Clean Energy Council, submission on discussion paper, p. 11.

³²⁷ AEMO, submission on discussion paper, p. 5.

³²⁸ Principle 12 of Schedule 5.11 in the draft rule.

There were three comments on this aspect of the draft rule in submissions to the draft determination. While it noted that, in practice, it is difficult to deliver perfectly matched substation/connection components to a generation asset based purely on the variety and size of assets being built, Origin Energy welcomed specific wording that prevents over-sizing of assets, paid for by the connecting proponent, for a potential connection at a later date. It considered that any sizing of assets beyond the connecting party's minimum requirements by the Primary TNSP should be subject to the regulated revenue determination process undertaken by the AER.³²⁹

AEMO submitted that flexible substation designs can significantly reduce the cost of future connections and reduce risks to system security, and that upfront costs to include this flexibility can be minor compared to the overall cost of the connection, and avoid the costs of replacing insufficiently scaled assets prior to their end of life. It also noted that there are benefits to the initial connection applicant in creating availability for expansion where there is a reasonable prospect of future connections, including the potential for future cost savings through cost sharing, and reducing the likelihood of network constraints from future connections at additional terminal stations. AEMO asked that the NER clearly specify the extent to which TNSPs should seek substation designs that incorporate expected efficient network development, including future expansions, where this involves costs beyond what is required for to meet the needs of the relevant connection. It considered that the wording in the draft rule would encourage connection applicants to contest any proposal to 'oversize' identified user shared assets.³³⁰

Ausgrid submitted that a prudent TNSP will develop a functional specification that allows for likely future network configurations and noted that if it doesn't do so, major equipment (e.g. switchgear) may need to be replaced. It also considered that the independent engineer provisions in the draft rule and the asset sizing principle above contradicted each other - specifically that the negotiating principle assumes that the functional specification can be made with reference to the nature of the connection being sought. Ausgrid note that this is not always the case because certain specifications, for example fault level ratings, depend on how the network is configured.³³¹

B.3.4 Analysis and conclusions

Changes between the draft and final rule

There were several changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section.

Specifically, the final rule:

³²⁹ Origin Energy, submission on draft determination, p. 1.

³³⁰ AEMO, submission on draft determination, pp. 2, 5.

³³¹ Ausgrid, submission on draft determination, pp. 3-4.

- enables the Primary TNSP to, if the identified user shared asset is contestable, develop a functional specification that is above the connection applicant's minimum requirements if it separately identifies them and agrees to fund the additional works related to those requirements
- subject to the connection applicant considering those additional requirements, allows a connection applicant to develop a detailed design that is consistent with those additional requirements, but does not require it to.

These provisions were phrased as a negotiating principle in the draft rule but are specific provisions in the final rule.

The Commission considered that connecting parties should only bear the cost of the services reasonably required for their connection, unless they wish to do otherwise. This means they should not be required to pay for the specification of assets that are beyond their requirements as part of connection services. Connecting parties should only bear the risk of this if they are able to manage these risks. The Commission also considered that consumers should not bear this risk. The Commission did not agree that connecting parties should be required to pay for substation designs that incorporate expected network development(s). While the final rule requires a connection applicant to make sure the detailed design of a contestable identified user shared asset does not unreasonably inhibit the capacity for future expansion of that asset or preclude the possibility of future connections to that asset,³³² it would be inefficient to allow a party (e.g. the connecting party) to bear the risks of an asset being sized beyond their immediate requirements, if it is not able to manage those risks (i.e. when they would choose to do so).

As noted above, while the existing NER set out that the price for negotiated transmission services should be based on the costs of providing that service, the Commission considered that the NER could provide connecting parties or transmission customers with further clarity about how the costs of a TNSP seeking an asset specification beyond the immediate requirements of the connecting party are to be recovered. Consistent with the draft rule, the final rule aims to assist in this regard. However, while it was phrased as a negotiating principle in the draft rule, the final rule includes a specific requirement in the rules as part of the connection process to achieve this outcome.³³³ Specifically, under the final rule, if the identified user shared asset is contestable, in its response to a connection enquiry the Primary TNSP may develop a functional specification that is above the connection applicant's minimum requirements if it separately identifies them and agrees to fund the additional works related to those requirements.³³⁴

³³² Clause 5.3.4(b1)(2) of the final rule.

³³³ The Commission considered that this was better framed as an obligation in the NER than part of a negotiating principle. This is also discussed in appendix C.2.

³³⁴ See clause 5.3.3(b)(9)(iii) of the final rule.

Under the final rule, the Primary TNSP would not be prevented from developing a functional specification that sets out their preferred sizing (i.e. additional works that it would like to carry out that are above what is required for the connection applicant). However, it is required to signal to the connection applicant what would be required, and how much the TNSP would contribute in order for the assets to be oversized.³³⁵ The TNSP would be able to fund the assets depending on why it wishes to oversize:

- if it is to provide prescribed transmission services, then this part of the cost of the asset should be recovered from transmission customers in accordance with the existing cost allocation methodology; while
- if the TNSP wishes to oversize an asset in anticipation of future connections, it will not be entitled to seek a revenue allowance to fund this oversizing.

In this way, the connecting party only bears the cost of the portion of the asset that is reasonably required for its connection. The connection applicant does not have to accept this preferred sizing, but, as set out above, it does have to make sure that its detailed design is consistent with the minimum requirements set by the functional specification and does not unreasonably inhibit the capacity for future expansion or preclude the possibility of future connections. Subject to the connection applicant considering those additional requirements, a connection applicant's detailed design may be, but is not required to be, consistent with those additional requirements.³³⁶ These additional requirements 'above' the connection applicant's required functional specification could capture aspects of sizing other than just physical, for example higher equipment ratings.

A connecting party may also wish to oversize an identified user shared asset, for example, to accommodate the connection of a second stage of a generation project. It is within the connecting party's right to do so, provided that it pays for this and the identified user shared assets still meets the functional specification provided by the TNSP. Under the final rule, the connecting party would negotiate arrangements for the provision of the functional specification, cut-in works, and operation and maintenance services for the oversized asset with the Primary TNSP as a negotiated transmission service. The services of ownership and construction of those assets would be contestable, provided they meet the contestability threshold.

Clarity on this issue will provide greater transparency in the connections framework, and should allow for more efficient negotiations between connecting parties and

³³⁵ For example, additional works to identified user shared assets may be necessary in order for a direct connected load to receive the relevant reliability standard i.e. in addition to the negotiated and non-regulated transmission services that are provided to a party connecting. For example, static var compensation may need to be installed deeper in the network. In this case, modifications to the transmission network are to enable the TNSP to meet its reliability standard obligations, and so are to the benefit of all consumers in that region, so any such investments are for the purpose of providing prescribed transmission service and so paid for by consumers through transmission use of system charges.

³³⁶ Clause 5.3.4(b1)(3) of the final rule.

Primary TNSPs on their rights with regard to asset sizing, and consequently how the costs of doing so are to be recovered.

B.4 Cost sharing

B.4.1 Background

As explained in detail in section 1.2, the Commission considered that connecting parties should only pay for the minimum assets and services that are required to enable their connection to the transmission network. The Commission noted that it is becoming increasingly likely that connecting parties will seek connection to the transmission network via an existing identified user shared asset, i.e. a 'brownfield' connection, rather than building an entirely new identified user shared asset, i.e. a 'greenfield' connection. However, this can create a first mover disadvantage because the first connecting party will pay the full costs of the identified user shared asset needed to facilitate its connection, but subsequent connecting parties will only pay the incremental costs of connecting to that asset.

In developing the final rule, the Commission understood that some TNSPs have put in place informal arrangements to resolve this first-mover disadvantage. In Victoria, AEMO has developed a cost allocation policy for terminal stations, i.e. a substation, that is intended to result in several outcomes, including that "future applicants connecting to the same terminal station will pay their actual cost of connection to the terminal station and a share of the cost associated with the provision of negotiated transmission services paid by existing applicants."^{337,338}

B.4.2 COAG Energy Council's view

The COAG Energy Council did not propose any cost sharing arrangements for identified user shared assets in its rule change request.

B.4.3 Stakeholder views

In the discussion paper published on this rule change request the Commission proposed that the NER should set out a number of principles by which costs could be shared between parties connected to the same identified user shared asset to facilitate

³³⁷ See https://www.aemo.com.au/-/media/Files/PDF/Cost_allocation_policy_negotiated_transmission_services.ashx

³³⁸ At the time of publication, AEMO was consulting on proposed reforms to the Victorian connection process, including a proposal to put provisions into the NER to allow AEMO to apply its cost allocation policy in Victoria. See: <https://www.aemo.com.au/Stakeholder-Consultation/Consultations/Generator-Transmission-Connection-Reform>.

efficient connections to existing assets.³³⁹ There were no specific comments from stakeholders on this aspect of the discussion paper.

Submissions on draft determination

The draft rule contained a number of principles and obligations for how the costs of new identified user shared assets, and subsequent connections to those assets, should be recovered where those assets are provided as negotiated transmission services. These included:

- The price for a negotiated transmission 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 such adjustment should reflect the extent to which the costs of that asset is being recovered through charges to that other person.³⁴⁰
- The connection applicant should only be required to pay the costs directly incurred as a result of its connection.³⁴¹ That is, its proportion of any costs associated with new identified user shared assets required as a result of its connection.
- Subsequent connection to identified user shared assets by other connecting parties should not adversely affect the negotiated transmission services provided to the original identified user group for that identified user shared asset.³⁴²
- Subject to the above principle relating to paying costs directly incurred as a result of connection, future connecting parties to the same identified user shared asset should pay for a proportion of the costs paid by the identified user group for negotiated transmission services. The proportion of costs will be calculated with respect to: the relative capacity of the connection applicant's generating plant; or the relative number of bays; or respective bays in the identified user shared asset, with the applicable cost sharing methodology determined as appropriate by the nature of the negotiated transmission services.³⁴³

EnergyAustralia was the only stakeholder that commented on this aspect of the draft rule. It expressed support for principle 13 of the draft rule, i.e. that subsequent connections to identified user shared assets by other connecting parties should not adversely affect the negotiated transmission services provided to the original identified user group for that identified user shared asset. However, it questioned whether the power transfer provided by these assets can be easily delineated in practice from

³³⁹ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

³⁴⁰ Clause 6 of Schedule 5.11 of the draft rule. This is an existing provision that was previously in Clause 6A.9.1(6) of the NER.

³⁴¹ Clause 11 of Schedule 5.11 of the draft rule.

³⁴² Clause 13 of Schedule 5.11 of the draft rule.

³⁴³ Clause 14 of Schedule 5.11 of the draft rule.

greater shared network services and access to the regional reference price, so noted that it may be difficult to ensure that the power transfer capability is maintained.³⁴⁴

Following the publication of the draft determination, a number of stakeholders expressed concern that the cost sharing principle, specifically principle 6 of Schedule 5.11 of the draft rule, would only apply to the provision of negotiated transmission services by the TNSP. As such, any costs incurred by the connecting party to procure contestable services for identified user shared assets, such as the capital costs of those assets, would not be subject to cost sharing arrangements under the NER. While the draft rule would not prevent initial and subsequent connecting parties determining cost sharing arrangements between themselves outside of the NER framework, they would have no ability to enforce these under the NER, and no ability to require the Primary TNSP to coordinate or enforce them.

B.4.4 Analysis and conclusions

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

As explained in section B.2.4, under the final rule the Primary TNSP will have full control over the identified user shared assets in its network, even if those assets are owned by a third party.³⁴⁵ This includes the ability for the Primary TNSP to facilitate future connections to those identified user shared assets and network expansion where necessary in accordance with the transmission access arrangements in Chapter 5 of the NER.³⁴⁶

The Commission considered that the NER should promote a consistent approach to cost sharing between parties who connect to the same transmission network. Such arrangements are likely to provide a number of benefits, including:

- fewer 'cut-ins' to the transmission network, thereby improving the security of electricity flows in that network
- lower overall connection costs and better utilisation of existing identified user shared assets, which is expected, ultimately, to reduce costs to connection applicants and so consumers
- shorter lead times for applicants connecting to an existing identified user shared asset

³⁴⁴ EnergyAustralia, submission on draft determination, pp. 1-2.

³⁴⁵ This will occur through a third party IUSA owner entering into a network operating agreement with the Primary TNSP. See clause 5.2A.7 of the final rule.

³⁴⁶ See clause 5.2A.7(d)(4) of the final rule.

- increased likelihood of multi-connection identified user shared assets being connected to additional transmission lines in the future, reducing constraints for individual connections.

The final rule therefore contains a number of principles and obligations for how the costs of new identified user shared assets, and subsequent connections to those assets, should be recovered. That is:

- The price for a negotiated transmission 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 such adjustment should reflect the extent to which the costs of that asset is being recovered through charges to that other person.³⁴⁷
- The connection applicant should only be required to pay the costs directly incurred as a result of its connection.³⁴⁸ That is, its proportion of any costs associated with new identified user shared assets required as a result of its connection.
- Subsequent connection to identified user shared assets by other connecting parties should not adversely affect the negotiated transmission services provided to the original identified user group for that identified user shared asset.³⁴⁹
- Subject to the above principle relating to paying costs directly incurred as a result of connection, future connecting parties to the same identified user shared asset should pay for a proportion of the costs paid by the identified user group for negotiated transmission services. The proportion of costs will be calculated with respect to: the relative capacity of the connection applicant's generating plant; or the relative number of bays; or respective bays in the identified user shared asset, with the applicable cost sharing methodology determined as appropriate by the nature of the negotiated transmission services.³⁵⁰

A lack of a cost sharing framework in the NER for the costs incurred by a connecting party to procure contestable services may have the following outcomes:

1. It could create a first mover disadvantage for new connections to the transmission network. That is, the first party to develop a contestable identified user shared asset in a particular part of the transmission network would make an investment decision knowing that they may never get any reimbursement for /

³⁴⁷ Clause 6 of Schedule 5.11 of the final rule. This is an existing provision that was previously in clause 6A.9.1(6) of the NER.

³⁴⁸ Clause 11 of Schedule 5.11 of the final rule.

³⁴⁹ Clause 12 of Schedule 5.11 of the final rule.

³⁵⁰ Clause 13 of Schedule 5.11 of the final rule.

adjustment of the costs they incurred in procuring contestable services for that identified user shared asset in the event that a subsequent party connects to that identified user shared asset. In some ways, this is no different to the current arrangements: parties now still invest on the assumption that they will have to fund the entire cost themselves because they might never end up sharing their connection. The difference is that under the existing arrangements, if someone else did connect to the same substation, then they would share all of these costs. The exception to this is if that party is able to negotiate some sort of arrangement (outside the NER) to share costs directly with subsequent connecting parties or via the Primary TNSP. However, the likelihood that a subsequent party would agree to share in these costs is low – the Primary TNSP is the one who grants access to the transmission network, including to contestably constructed identified user shared assets, and access is not contingent on the subsequent connecting party negotiating cost sharing arrangements with the initial connecting party.

2. It may result in a windfall gain for subsequent connecting parties. Subsequent parties connecting to a contestably constructed identified user shared asset would not be required under the NER to share in the capital or other costs that the first connecting party incurred to procure contestable services. This is not a windfall gain as such, but rather avoided costs that a subsequent connecting party would not have to pay. Such an outcome possibly results in the subsequent connecting party having a competitive advantage over ‘first movers’. The combination of outcomes 1 and 2 means the initial connecting party could bear all capital costs of a contestable identified user shared asset while the subsequent connecting party could bear none of those original costs, and instead only the incremental capital costs for its connection. While you would expect the total cost of those two connections to be largely the same as when the costs are shared, this is quite different to the existing arrangements where the rules seek to drive a more equal sharing of costs on the basis of how you use the asset on an ongoing basis, not when you connected. The existing NER seek to do this to preserve competitive neutrality between all parties connecting to the transmission network so that no party has an advantage or disadvantage based on where, how or when they connected. Competitive neutrality supports efficient decision making about connections to the network.
3. It could create an incentive for connecting parties to seek connection to existing substations that were constructed contestably by a third party (i.e. not the Primary TNSP, unless the Primary TNSP does not /cannot enforce cost sharing), instead of building a new substation or connecting to one that was built as a negotiated transmission service (or contestably by the Primary TNSP, if it enforces cost sharing). Doing so would lower its own connection costs. A connecting party’s decision about where to locate should not be driven by whether it should be required to share costs or not, as doing so may result in inefficient location decisions.
4. It could create an incentive for connecting parties to engage the Primary TNSP to provide contestable services. If the identified user shared asset meets the

contestability criteria, the initial connecting party could have an incentive to nonetheless engage the Primary TNSP (on an unregulated basis) to provide the contestable services for that identified user shared asset if it considers that doing so is more likely to enable it to put cost sharing arrangements in place. For example, depending on the effect of ring-fencing arrangements, information about the costs paid by the connecting party for the contestable services could be passed between the 'contestable' arm of the Primary TNSP that provided those services and the 'regulated' arm of the Primary TNSP that provides access to the identified user shared asset by subsequent connecting parties. While there would be no NER requirement for the Primary TNSP to do so (and we note that some TNSPs already put cost sharing arrangements in connection agreements as a matter of course) the initial connecting party might be able to negotiate some arrangement for the Primary TNSP to use this information to enforce cost sharing with any subsequent connecting party. If initial connecting parties are incentivised to engage the Primary TNSP for the provision of all contestable services, competition is unlikely to be effective, which undermines the success of this rule change.

5. It could create an incentive for parties to build identified user shared assets that are not contestable. As noted above, the cost sharing principle will apply if the services for the identified user shared asset are not contestable (i.e. do not meet the contestability criteria) because the Primary TNSP will be required to provide those services as negotiated transmission services. If the first mover disadvantage is considered to be a significant concern for an initial connecting party, it may have an incentive to craft its connection in such a way that the identified user shared asset would not meet the contestability criteria (e.g. less than \$10 million). This is not necessarily a bad outcome, but it potentially undermines some of the objectives of this rule change, which are to improve outcomes for connecting parties, particularly with respect to cost, service quality and timeliness of connections to the transmission network. The Commission did not consider it very likely that many connections, particularly new connections, would be able to be provided at a cost less than \$10 million.

The points set out above summarise the Commission's views on possible outcomes. However, in the Commission's view, the likelihood of these outcomes eventuating is low, and the materiality of these outcomes is not significant enough to warrant the introduction of a cost sharing framework in the NER.

A cost sharing framework in the NER would need to determine:

- what the basis is for determining the costs of the contestable services
- how those costs should be shared
- how the sharing of those costs is enforced
- who is responsible for carrying out the above.

To determine these, a number of issues would need to be worked through, including:

- What the role of the Primary TNSP is to be. For example, if it was to be responsible for determining how cost sharing should occur, it would need to be given visibility of the costs paid by the initial connecting party for the contestable services. There may be competition concerns if the Primary TNSP did not provide those services but is given visibility of those costs because it might use this information to its advantage in subsequent bids to provide contestable services.
- It may be difficult to clearly separate out the costs of the contestable identified user shared asset services from other costs incurred by the initial connecting party, for example the costs in building the dedicated connection asset may have been bundled with the costs of the identified user shared asset as a total service.
- There are likely to be a number of legal implications that would arise as a result of a transfer of money through the Primary TNSP, including tax implications and creation of an agency relationship where the Primary TNSP could be receiving payment from, or making payment to, a party that it would not otherwise have a payment relationship with. Further, it raises questions about whether any change in ownership of the identified user shared asset should occur if subsequent parties are paying for part of it
- If the NER were to require initial and subsequent parties to put in place cost sharing arrangements directly between themselves (i.e. without the Primary TNSP's involvement), this would require these parties (e.g. two competing generators) to enter into a contractual relationship with each other. Further, this could lead to a series of bespoke, unique cost sharing arrangements being put in place depending on the circumstances, which would result in inconsistencies, and potentially impact on locational decisions by connecting parties.

Consistent with the draft rule, the final rule does not include a framework to require the sharing of costs incurred in the procurement of contestable services for identified user shared assets. The Commission concluded that it is not appropriate for the NER to contain obligations on parties regarding the provision of contestable services. This is because, by definition, the basis for determining the price of non-regulated services is not regulated under the NER. While a lack of a cost sharing framework in the NER has the potential to minimise some of the efficiencies that could be achieved with arrangements for cost sharing, it was not clear how material these inefficiencies would be, and a large number of issues of varying levels of complexity would need to be worked through if a cost sharing framework for contestable services were to be established through the NER. The Commission acknowledges that these outcomes are a consequence of contestability, that is, not having all services associated with a transmission connection being provided as negotiated transmission services.

B.5 Assessment of model for contestability set out in the final rule

This section sets out the Commission's assessment of the boundaries of contestability under the final rule against the criteria set out above and described in detail in chapter 3.

B.5.1 Transparency

In workably competitive markets, information required for parties to make efficient decisions is readily available. However, if there is a lack of competition, additional regulation may be required to require parties who hold certain information to reveal it.

The final rule relies on some information being revealed through competition, and other information being revealed by requirements on the Primary TNSP, specifically:

- allowing connecting parties to choose who designs, constructs and owns any assets associated with connection will reveal cost and timing information related to the provision of these assets i.e. this information will be revealed through the competitive market; while
- a connecting party (and its chosen service provider for services that are open to competition) will still need certain information from the Primary TNSP to enable its connection to the transmission network. No party knows the Primary TNSP's network as well as that Primary TNSP. This information might not be revealed in the absence of regulation.

The final rule therefore sets out obligations on the Primary TNSP to provide certain information that will help the connecting party to make informed decisions about the services that are to be provided by the Primary TNSP as negotiated transmission services, and those that can be provided by other parties. The Commission considers that the combination of these two paths for information being revealed will result in the most efficient information being obtained by connecting parties, and so, efficient connection and investment decisions being made.

The Commission concluded that this combination of competition and regulatory obligations to reveal information was likely to provide greater transparency than current arrangements and the model set out in the rule change request.

B.5.2 Timeliness

Having the services of detailed design, construction and ownership able to be provided on a non-regulated basis gives the connecting party with more control over the timing of its connection to the transmission network. That is, provided the identified user shared asset meets the contestability threshold, the connecting party will be able to select the contractor of its choice to design and build the asset at a commercially agreed timing and cost. Therefore, this addresses one of the major criticisms of the current connections framework i.e. that connecting parties do not have sufficient control over the timing of the process.

Under this model there is a risk that the Primary TNSP will delay or otherwise inhibit a party's connection if its bid to provide non-regulated transmission services to that party was unsuccessful. As such, connecting parties may be pressured into awarding the contract to the Primary TNSP, which would undermine the benefits of competition.³⁵¹

However, the Commission expected that such a scenario is unlikely to eventuate in practice. The final rule puts in place a set of revised negotiating principles to bolster a connecting party's bargaining power in negotiating the timeliness, cost and technical requirements of a connection. The final rule also sets out a fairly prescriptive connection process that requires the TNSP to provide a range of information (such as the functional specification) within set timeframes.³⁵² Further, parties will have the ability to request the engagement of an independent engineer to provide advice on the technical aspects of a connection.³⁵³

This model necessarily requires a handover from the party that constructed the identified user shared asset (provided that asset was constructed by a third party as a non-regulated transmission service) to the Primary TNSP for operation and maintenance once commissioned. While this may introduce a small time lag into the process, the final rule puts in place arrangements intended to make this as smooth a transition as possible.³⁵⁴ Connecting parties have an incentive to make sure that their asset meets the Primary TNSP's requirements because the Primary TNSP will not assume operation and maintenance responsibility for that asset until it does so.

The final rule includes an obligation for a connection applicant to provide access to the Primary TNSP to inspect and carry out testing of the contestable identified user shared assets before commissioning. The connection applicant is required to pay the reasonable costs of any such inspections and tests which are reasonably required by the Primary TNSP.³⁵⁵

The final rule also imposes a requirement on the connecting party and the Primary TNSP to have a network operating agreement in relation to contestable identified user shared asset components where the IUSA owner is a person other than the Primary TNSP. This agreement will set out terms and conditions relating to the handover of the asset, including the ongoing operation and maintenance of the assets by the Primary TNSP, and third party access to that asset.³⁵⁶ This agreement must be in place prior to the assets being commissioned, therefore minimising any potential disagreements at that stage.

³⁵¹ The Clean Energy Council raised this as a concern. See: Clean Energy Council, submission discussion paper, p. 9.

³⁵² See appendix C for a full description of the connection process under the final rule.

³⁵³ These aspects of the final rule are discussed in appendix C.

³⁵⁴ See section B.2.4.

³⁵⁵ See clause 5.7.8 of the final rule.

³⁵⁶ See clause 5.2A.7 of the final rule.

On balance, the Commission considered that the final rule will provide connecting parties with more certainty and control over the timeliness of their connection to the transmission network.

B.5.3 Cost

In theory, if there is competition in the various markets for these services, allowing as many services as possible to be provided on a contestable basis will reduce costs. This model allows for competition in the provision of services that stakeholders consider there already is, or will be, a market for. These are also the services that stakeholders largely consider will benefit connecting parties the most in terms of reducing the timing and costs of their connection.

The Commission recognised that requiring the Primary TNSP to provide operation and maintenance services for identified user shared assets, regardless of whether they built them, may not encourage the connecting party to consider the full costs associated with the services provided over the lifetime of the assets. Some stakeholders suggested that this may encourage connecting parties to choose a design and construction option that has the lowest upfront costs, but high ongoing operation and maintenance costs. However, the Commission concluded that this risk is small. Connecting parties have an incentive to make sure that the asset by which it connects to the transmission network is functional since these assets facilitate how the connecting party gets access to the wholesale market. A poorly constructed asset that requires significant augmentation or maintenance following commissioning is unlikely to be in the commercial interests of the connecting party, whose objective is presumably to access the wholesale market via that asset or to draw electricity from the transmission network via that asset to supply an industrial facility. Further, the connecting party will be paying the costs of the Primary TNSP operating and maintaining the asset for the life of the asset. Connecting parties therefore have an interest in finding ways to lower ongoing operation and maintenance costs by making the handover process as smooth as possible and building assets that the Primary TNSP will be able to operate and maintain.

There are fewer ongoing asset management risks under this model than there are if operation and maintenance services could be provided by a party other than the Primary TNSP. This is because the Primary TNSP can utilise its scale and scope efficiencies in responding to urgent repairs or maintenance of identified user shared assets. For example, the Primary TNSP is likely to hold an inventory of spares or have the capacity to arrange contingency resources at short notice, because it is required to operate and maintain the remainder of its transmission network. Third party providers of operation and maintenance services may not have these same capabilities. The costs and time taken to carry out urgent repairs and maintenance are therefore likely to be greater if a third party is responsible for providing these services.

Providing that the Primary TNSP is to have full operational control of the transmission network, including identified user shared assets, is also efficient in the context of

network planning.³⁵⁷ This supports a holistic approach to transmission planning as opposed to an approach that would allow third parties to control parts of the transmission network. A single party that considers the planning of the whole network it controls supports efficient decision-making, which is in the long-term interests of consumers.

This model also negates any need for lengthy, complex and costly contractual negotiations between the connecting party and the Primary TNSP in relation to operation and maintenance of identified user shared assets. Such arrangements would need to be in place if the connecting party or its selected provider was able to operate and maintain an identified user shared asset because the identified user shared asset is not electrically separable from the Primary TNSP's transmission network.

Overall, this model has the potential to significantly lower connection costs by enabling competition in the provision of services that have the greatest scope to do so.

B.5.4 Unnecessary complexity

This model potentially requires fewer complex contractual arrangements involving multiple parties than other models. The regulatory framework does not mandate complex arrangements. The relationships between parties and associated contractual arrangements that underpin this model are linear. The final rule only requires there to be one agreement between the connecting party and the Primary TNSP (i.e. the connection agreement), and one agreement in the event that a third party owns the identified user shared asset (i.e. the network operating agreement). The connecting party is likely to contract with its chosen service provider for any contestable elements, but this agreement is not subject to the NER.

Third party access is also clear under this model. As is explained in section B.2.4, the Primary TNSP's ability to provide access to its transmission network is extended to identified user shared assets under the final rule. The network operating agreement must provide the Primary TNSP with, among other things, the ability to operate, control, augment, access and provide access to the identified user shared asset. The model therefore does not need to regulate how other parties might seek access to an identified user shared asset that is owned by a party other than the Primary TNSP.

Therefore, the Commission considered that this model provides clearer arrangements than the approach proposed in the rule change request.

B.5.5 Accountability

Accountability is clear in this model because the final rule provides that identified user shared assets form part of the Primary TNSP's transmission network and, once commissioned, will be under the full operational control of the Primary TNSP. As such,

³⁵⁷ This will occur either through a third party IUSA owner entering into a network operating agreement with the Primary TNSP or by the Primary TNSP owning the IUSA itself.

the accountability for faults or any other issues with identified user shared assets is clearer than with the other models considered.

Under this model it is also clear that the Primary TNSP retains the obligations under jurisdictional electricity legislation that are imposed on operation and controllers of transmission networks.³⁵⁸

The Commission therefore concluded that the final rule makes it clear that the Primary TNSP has clear, singular accountability for its transmission network.

³⁵⁸ In its submission to the discussion paper, TasNetworks noted the system protection schemes it has in place to achieve transfers across Basslink and connect generation greater than the maximum generator contingency of 144MW in Tasmania. These schemes are provided by TasNetworks as unregulated transmission services when negotiating new connections to its network and are intended to maintain power system security. Under the model set out in the final rule, TasNetworks will retain responsibility for the operation and control of its transmission network, including identified user shared assets. As such, there should be no impact on TasNetworks' ability to provide these schemes.

C Improvements to the provision of negotiated transmission services

This appendix outlines the Commission's final rule in relation to the proposals to improve the connection process for the provision of negotiated transmission services. Specifically, it discusses how the final rule will:

- enable the connecting party or TNSP to engage an independent engineer for the provision of technical advice relating to connections to the transmission network
- improve the framework for negotiations between connecting parties and the TNSP when the TNSP provides negotiated transmission services
- improve the transparency of information relating to the connection process to assist those parties who wish to connect to the transmission network
- clarify the dispute resolution process that applies to the terms and conditions of access for the provision of negotiated transmissions services
- amend the connection process as set out in the NER to accommodate the Commission's conclusions in relation to identified user shared assets.³⁵⁹

For each of the areas outlined above, this appendix sets out the:

- current arrangements under the NER
- approach put forward by the COAG Energy Council
- views of stakeholders in submissions to the consultation paper, the discussion paper and the draft determination, as well as those expressed at the public forum, stakeholder workshops and in one-on-one meetings
- Commission's analysis of the rule change request and stakeholder views
- Commission's conclusions and final rule.

C.1 Independent engineer

C.1.1 Background

Under the current arrangements, connecting parties and TNSPs do not have a NER based mechanism to engage an independent engineer to provide advice on technical disagreements that may arise in the negotiation of connection services. There is nothing that prevents the connecting party and the TNSP agreeing to seek independent advice outside the NER, however, the TNSP:

³⁵⁹ For further information on the aspects of the final rule that relate to identified user shared assets, please refer to appendix B.

- faces little incentive to fund the independent advice
- is not obliged to share information with the adviser or have regard to their advice.

During the Transmission Frameworks Review, as well as this rule change, connecting parties have expressed frustration regarding a perceived over-specification of technical requirements by the TNSP in the negotiation of a connection to the transmission network. Connecting parties have indicated that they are hesitant to initiate the dispute resolution process in regard to these technical requirements due to the risk of increasing the costs and length of the connection process. Connecting parties are also wary of damaging their relationship with the TNSP as the TNSP is ultimately responsible for providing the connecting party with access to the 'shared' transmission network.

C.1.2 The independent engineer process

The concept of an independent engineer providing advice on technical matters that arise throughout the negotiation of connection services was supported by stakeholders throughout the consultation process. The Commission has made a rule which provides for a process under which an independent engineer can be appointed to provide advice. This advice pertains to technical issues related to connection where the services being provided by the TNSP are negotiated transmission services, for example, the specification of certain negotiated performance standards. Further detail on the final rule is provided below.

Objective of the independent engineer

Changes between draft and final rule

In the final rule, an independent engineer will also be able to provide advice on whether the detailed design of an identified user shared asset meets the functional specification. Otherwise, there were no changes between the draft and the final rule relating to the objective of the independent engineer.

COAG Energy Council's view

The COAG Energy Council's proposal to introduce the independent engineer was intended to improve negotiations between connecting parties and TNSPs in relation to negotiated transmission services, for example, connections.³⁶⁰

The COAG Energy Council proposed in its rule change request that where agreement cannot be reached between the TNSP and a connecting party, either party should have the option to call for the appointment of an independent engineering expert. This

³⁶⁰ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 14.

expert would be able to provide advice on the reasonableness of any technical requirements in the connection process. The COAG Energy Council considered that providing access to independent technical experts would allow for testing as to whether the technical specifications around the connection assets are appropriate for the service being provided and the level of risk to the shared network.³⁶¹

Stakeholder views

In its submission to the consultation paper, the Clean Energy Council supported having the ability to nominate an independent engineer since it considered it would be a helpful improvement for early resolution of any issues that could arise.³⁶² AEMO was not convinced that the proposal to prescribe a role for an independent engineer would be effective.³⁶³ It proposed an alternative approach where the connection applicant would be able to select who determines the technical requirements of the connection in the first instance, e.g. an approved independent expert instead of the TNSP.³⁶⁴ In its submission to the consultation paper, Energy Networks Australia also did not see value in introducing the ability to engage an independent engineer, arguing that previous disagreements relating to connections have historically not been about technical issues but related to a lack of clarity in the NER.³⁶⁵

However, in submissions to the discussion paper, stakeholders were more supportive of the proposal.³⁶⁶ The Australian Energy Council and the Energy Networks Australia both suggested that the presence of an independent engineer would provide comfort to both parties in the proposed negotiation.³⁶⁷ AGL believed that the introduction of an independent engineer would correct the power imbalance currently present in negotiations.³⁶⁸

In submissions to the draft determination, the stakeholders that commented on this aspect were largely supportive of the introduction of an independent engineer.³⁶⁹ In particular, the Clean Energy Council noted that the introduction of an independent engineer will greatly assist access and assessment of negotiated services.³⁷⁰ However, Transmission General Holdings Australia suggested that while the independent

361 Ibid, p. 17.

362 Clean Energy Council, submission on consultation paper, p. 16.

363 AEMO, submission to consultation paper, p. 4.

364 Ibid.

365 Energy Networks Australia, submission on consultation paper, p. 16.

366 Submissions on discussion paper: PIAC, p. 10; Australian Energy Council, p. 1; Infigen, p.2; Energy Networks Australia, p. 1; Clean Energy Council, p.6; EnergyAustralia, pp. 1-2; Origin Energy, p. 3.

367 Submissions on discussion paper: Australian Energy Council, p. 1; Energy Networks Australia, p. 1.

368 AGL, submission on discussion paper, p. 2.

369 Submissions on draft determination: Origin Energy, p. 1; ElectraNet, p. 7; Clean Energy Council, p. 5.

370 Clean Energy Council, submission on draft determination, p. 5.

engineer could assist with resolving issues that may arise, parties may hesitate to use the independent engineer process since it could cause delay to their connection.³⁷¹

Commission's analysis and conclusions

The final rule introduces a process by which an independent engineer can be engaged to provide independent advice on technical issues relating to a connection to the transmission network, for example, the provision of negotiated performance standards.

This process is intended to assist negotiations between the TNSP and the connecting party by allowing for the use of advice from an independent party in resolving technical issues relating to:

- provision of negotiated transmission services (e.g. negotiated services provided in respect of identified user shared assets)
- whether assets are dedicated connection assets or identified user shared assets
- whether assets meet technical criteria to be contestable identified user shared asset components
- whether a detailed design meets the functional specification.

In the final rule, the Commission has also made explicit that the independent engineer can provide advice on whether a detailed design of a contestable identified user shared asset component meets the functional specification provided for that identified user shared asset. A connection applicant must comply with the functional specification provided by the Primary TNSP in developing a detailed design. Accordingly, the Commission considered that it should be made explicit that the independent engineer can provide advice on any issues that may arise in relation to this.

The independent engineer framework provides parties with a timely and cost-effective mechanism for seeking advice on technical issues relating to a connection. The Commission has received feedback from numerous stakeholders that the introduction of an independent engineer will assist with resolving these technical issues.

Under the final rule the role of the independent engineer is limited to the provision of advice on technical matters. The following issues are not considered technical matters:

- the cost or commercial terms of the connection
- the process relating to the connection or
- the timing of the connection.

If the independent engineer was required to consider aspects such as costs, which can be unique to individual businesses and also commercial-in-confidence in relation to

³⁷¹ Transmission General Holdings Australia, submission on draft determination, pp. 2-3.

competitive businesses, it would reduce the ability of the independent engineer to provide advice in a timely manner. Further, the non-technical aspects would not typically fall within the independent engineer's expertise. Therefore, the Commission considered that asking the independent engineer to address such issues would reduce the likelihood of the advice being provided to actually assist with the resolution of the issue the independent engineer was engaged to advise upon.

Facilitation role

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

COAG Energy Council's view

For the independent engineer process to operate effectively, there is a role for a third party to facilitate the engagement of the independent engineer. In the rule change request, the COAG Energy Council proposed that this facilitation role would be undertaken by the AER in conjunction with advice provided by AEMO.

Stakeholder views

In its submission to the draft determination, Origin Energy was supportive of the AER being an appropriate body to appoint and administer suitable independent engineers.³⁷²

Commission's analysis and conclusions

A party should be responsible for facilitating the engagement of independent engineer when the connecting party or TNSP identifies a technical issue on which they require advice, and are unable to agree on which independent engineer to engage or on the scope of the advice required. The Commission considered that the wholesale energy market dispute resolution adviser is the appropriate body to facilitate such matters.

The wholesale energy market dispute resolution adviser's current role includes the establishment of a pool of persons to resolve disputes under the NER and the selection of appropriate consultants from a pool to constitute a dispute resolution panel when required. The wholesale energy market dispute resolution adviser therefore has the capability and the experience to establish a pool of independent engineers to provide technical advice in relation to connections and to appoint an independent engineer to provide advice where the parties cannot agree on an engineer.

³⁷² Origin Energy, submission on draft determination, p. 2.

Under the final rule, this "facilitation role" of the wholesale energy market dispute resolution adviser is separate and distinct from its role in relation to the dispute process set out in Chapter 8 of the NER.

In the final rule the wholesale energy market dispute resolution adviser is responsible for:

- establishing and maintaining a pool of firms from which independent engineers may be selected³⁷³
- if requested by either party, selecting the independent engineer if the connecting party and the TNSP cannot agree on the independent engineer to be used³⁷⁴
- if requested by either party, determining the scope of the advice to be considered by the independent engineer, which it must do in consultation with both of the parties.³⁷⁵

Establishing the pool of independent engineers

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

COAG Energy Council's view

In the rule change request the COAG Energy Council proposed that the AER would be able to advise whether the size of the pool should be adjusted in response to the demand for its services.³⁷⁶

Stakeholder views

In its submission to the consultation paper, the Clean Energy Council suggested allowing international engineering experts to be considered eligible for the pool as many of the parties in Australia with relevant experience may be already engaged in contracts or bidding for works and so may be conflicted.³⁷⁷ By contrast, in its submission, Energy Networks Australia considered that the parties must have experience in the NEM to be eligible.³⁷⁸

³⁷³ Clause 5.4.2(a) of the final rule.

³⁷⁴ Clause 5.4.4(a)(4) and (b) of the final rule.

³⁷⁵ Clause 5.4.4(a)(5) and (b) of the final rule.

³⁷⁶ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 17.

³⁷⁷ Clean Energy Council, submission on consultation paper, p. 16.

³⁷⁸ Energy Networks Australia, submission on consultation paper, p. 17.

Commission's analysis and conclusions

In the final rule the wholesale energy market dispute resolution adviser, in selecting engineers or other suitably qualified experts for the pool, will be required to have regard to the need for experts to have sufficient experience and expertise in technical matters involved in connections to the transmission network. The wholesale energy market dispute resolution adviser will also be required to review the experts in the pool every two years to maintain a sufficient size and make sure the composition is appropriate.

Creating a pool of firms from which independent engineers can be selected should allow parties to engage an engineer who has sufficient independence and is suitably experienced with the relevant various technical issues that can arise in the provision of negotiated transmission services. In addition, the wholesale energy market dispute resolution adviser should be afforded the flexibility to determine the size and experience of the pool that is sufficient to address the need for independent engineers. By requiring the wholesale energy market dispute resolution adviser to review the composition at least once every two years, it will make sure there is sufficient relevant expertise in the pool and provide the opportunity for new independent engineers to join.

Selecting the independent engineer and scope of advice

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request

COAG Energy Council's view

In the rule change request, the COAG Energy Council proposed that either party to a connection would have the option of calling for an independent engineer. In the instance where the two parties were unable to agree, the AER would be responsible for nominating an independent engineer.³⁷⁹

Stakeholder views

In Energy Networks Australia's submission to the consultation paper, it considered the following guidance for the scope of the independent engineer's advice would be appropriate:

- the TNSP's proposed technical specifications should be reasonable
- there should be regard to the need to reasonably facilitate future connection(s)

³⁷⁹ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 17.

- the TNSP's proposed technical specifications should be consistent with good industry practice.³⁸⁰

In its submission to the discussion paper, the Clean Energy Council suggested that if the two negotiating parties were not able to agree on an appropriate independent engineer, each party should present their reasons to the AER to assist them in selecting an appropriate choice.³⁸¹

In its submission to the discussion paper, Infigen considered that the independent engineer should be able to provide advice on the scope, terms, standards and quality of connections and that it should also be able to review the scope and costs for upgrades required to the shared network in order to connect.³⁸² Origin Energy suggested that guidelines could be developed to help the independent engineer in its deliberations and manage the expectations of both parties. Origin Energy also considered guidelines around expected timeframes, indicative costs, information requirements and access to key staff would be helpful in weighing up the commercial drivers apparent in any connection process.³⁸³ The Clean Energy Council agreed, arguing that there may be benefit in providing structure to the independent engineer process.³⁸⁴

Commission's analysis and conclusions

In the final rule, upon the connection applicant or TNSP deciding that they wish to engage an independent engineer, either party may serve a notice on the other party that it requires the appointment of an independent engineer and specifies the technical issue on which advice is required. After serving the notice on the other party, the two parties will attempt to both decide on the independent engineer that they would like to engage, and the scope of the advice sought.

If the technical issue raised relates to an AEMO advisory function, AEMO must also be served with the above notice.

If the parties are unable to agree on the independent engineer and the scope of the advice sought, either party would be able to issue a notice to the wholesale energy market dispute resolution adviser.³⁸⁵ This notice would contain:

- the names of the parties involved
- a statement setting out the technical issue

³⁸⁰ Energy Networks Australia, submission on consultation paper, p. 16.

³⁸¹ Clean Energy Council, submission on discussion paper, p. 6.

³⁸² Infigen, submission on discussion paper, p. 2.

³⁸³ Origin Energy, submission on discussion paper, p. 3.

³⁸⁴ Clean Energy Council, submission on discussion paper, p. 6.

³⁸⁵ If the parties agreed on the scope, and the choice of independent engineer, then they would not need to issue a notice to the wholesale energy market dispute resolution adviser.

- the name of the independent engineer if both parties have agreed, or in absence of this agreement, a request for the wholesale energy market dispute resolution adviser to select an independent engineer
- the scope of advice required in respect of the technical issue as agreed between both parties or in the absence of such agreement, a request for the wholesale energy market dispute resolution adviser to assist in determining the scope
- a time frame for the advice to be provided.

If the wholesale energy market dispute resolution adviser is required to select the independent engineer, the wholesale energy market dispute resolution adviser must:

- use reasonable endeavours to make sure the cost, availability, independence, expertise and experience of the selected independent engineer is appropriate to the technical matter
- consult with parties prior to appointment
- make the appointment within 15 business days of the matter being referred to it.

If the wholesale energy market dispute resolution adviser is requested to determine the scope of the advice to be provided by the independent engineer, this would be decided through consultation with both parties and the independent engineer once appointed. The Commission considered that it is necessary to afford the wholesale energy market dispute resolution adviser and the parties the flexibility in determining the scope of the technical advice required.

Independent engineer process

Changes between the draft and final rule

There were changes between the draft and final rule on this aspect of the rule change request. These are set out below and covered in more detail in this section.

Specifically, the final rule includes an amended principle relating to the independent engineer's advice. In the final rule, a principle is that the technical requirements of the connection **must** not preclude the possibility of future connection. In the draft rule, the principle was that the technical requirements of the connection **should** not preclude the possibility of future connections.

COAG Energy Council's view

The COAG Energy Council proposed that the parties to the connection should be obliged to provide the independent engineer with sensitive commercial information, as such information is necessary to perform the assessment.³⁸⁶

Stakeholder views

Energy Networks Australia, in its submission to the consultation paper, considered that the independent engineer should be able to access information that they consider to be reasonably required.³⁸⁷

In submissions to the discussion paper, Infigen, Energy Networks Australia, Clean Energy Council and Origin Energy all suggested that the independent engineer needs to have access to relevant information to provide informed independent engineering advice.³⁸⁸ The Clean Energy Council argued that both parties need to be open and transparent with the engineer and the NER should make clear that the confidentiality of the party's information is retained.³⁸⁹

In its submission to the draft determination, Origin Energy suggested that there should be a penalty for any attempts to impede the work of the independent engineer.³⁹⁰

Commission's analysis and conclusions

Under the final rule the independent engineer may request documents and information from the parties that it reasonably considers to be required to provide its advice and the parties involved must comply with the request. Parties may require the independent engineer to be bound by confidentiality obligations. The Commission considered that allowing the independent engineer to access this information would increase the timeliness of resolving technical issues. It is likely to increase the confidence of the parties to the process that the advice provided took all relevant matters into account, including information which may not have been made available to either party by the other during negotiations up until that point.

In providing its advice, it is important that the independent engineer has regard to the broader transmission system implications of the connection. The technical requirements of a connection should be set so that the most efficient decisions are made for the transmission system as a whole, since this is what the TNSP would take into account when assessing connections. It is important that a TNSP should be able to

³⁸⁶ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 17.

³⁸⁷ Energy Networks Australia, submission on consultation paper, p. 17.

³⁸⁸ Submissions on discussion paper: Infigen, p. 2; Energy Networks Australia, p. 1; Clean Energy Council, p. 6; Origin Energy, p. 3.

³⁸⁹ Clean Energy Council, submission on discussion paper, p. 6.

³⁹⁰ Origin Energy, submission on draft determination, p. 2.

consider broader system impacts when setting technical requirements of a connection as the TNSP is responsible for outcomes on the shared network. Factoring in system-wide implications into the technical requirements of a connection would result in more efficient transmission system investment and planning.

For these reasons, the final rule requires the independent engineer to have regard to the following when providing their advice:³⁹¹

- the technical requirements of the connection as proposed by either of the parties
- the requirement under clause 5.3.4(b1)(2) that the technical requirements of the connection must not preclude the possibility of future connections
- the technical requirements of the connection being consistent with good electricity industry practice and contributing to a safe, reliable and secure transmission system
- any relevant requirements and obligations under the applicable jurisdictional electricity legislation
- where relevant, any submission made by AEMO on AEMO's advisory matters.

The TNSP involved in the engagement of the independent engineer may amend the time period referred to in any stage of the connection process under the preliminary program to allow for any additional time reasonably required to accommodate the engagement of an independent engineer.³⁹²

Non-binding nature of independent engineer advice

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

Stakeholder views

In its submission to the consultation paper, Energy Networks Australia acknowledged that the current commercial arbitration arrangements provide for disputes on technical standards in which the arbitrator's decision is binding. Energy Networks Australia believed the independent engineer's role should not be to duplicate this.³⁹³ In Origin Energy's submission to the discussion paper, it considered the independent engineer's

³⁹¹ Clause 5.4.5(e) of the final rule.

³⁹² Clause 5.4.5(d) of the final rule.

³⁹³ Energy Networks Australia, submission on consultation paper, p. 17.

advice should be compulsorily admissible in any formal dispute resolution.³⁹⁴ Origin Energy reiterated this point in its submission to the draft determination.³⁹⁵

Commission's analysis and conclusions

Under the final rule the advice provided by the independent engineer is not binding on either party.³⁹⁶

It is important that the independent engineer process be accessible and timely. If the independent engineer's decision were to be binding, given the final nature of such a decision, the parties may treat the process as a more legal, dispute oriented one rather than a facilitative, technical one designed to aid any negotiation impasse. This could have the effect of substantially prolonging the process and, by extension, increasing the cost. Stakeholders would be unlikely to use the independent engineer if the process was prohibitively expensive or lengthy. Similar logic would also apply if the independent engineer's decision was to be compulsory admissible in any formal dispute.

If the issue that the independent engineer is advising on is not considered resolved by either party, then the dispute resolution process under Part K of Chapter 6A³⁹⁷ would be accessible for resolution.

Costs of independent engineer

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

COAG Energy Council's view

The COAG Energy Council proposed that once the independent engineer had been selected, the costs should be shared equally between both parties unless the independent engineer considered some other allocation of costs appropriate.³⁹⁸

³⁹⁴ Origin Energy, submission on discussion paper, p. 3.

³⁹⁵ Origin Energy, submission on draft determination, p. 2.

³⁹⁶ Clause 5.4.5(h) of the final rule.

³⁹⁷ Note that this has been relocated to rule 5.5 of the final rule. This is covered in greater detail in section C.4 of the final determination.

³⁹⁸ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 17.

Commission's analysis and conclusions

The costs of the independent engineer, as well as any costs of the wholesale energy market dispute resolution adviser (if applicable), would be borne equally by both parties. The Commission considered that this would incentivise the parties to assist the independent engineer in a timely manner in order to minimise costs. It would also incentivise both parties to provide the independent engineer with any requested information promptly. By having the costs borne equally by the parties, the independence of the engineer is clarified as they are not employed by a single party to the connection.

The final rule does not allow a TNSP to include the costs of an independent expert in the connecting party's application fee. In addition, as the costs of the independent engineer will be associated with the provision of negotiated transmission services, the TNSP will not be allowed to seek allowance for the costs of these services in its revenue determination.

C.1.3 Conclusions

The Commission considered introducing the ability to engage an independent engineer to provide technical advice on matters relating to the connection process would improve the timeliness of the process and help to address an imbalance of negotiating power in the provision of negotiated transmission services.

Currently, TNSPs hold significant power in negotiations in the current connection process since they have more information than the connecting party and connecting parties have limited opportunities to address any perceived over-specification of the technical requirements of a connection by the TNSP. The introduction of the independent engineer framework provides a mechanism that incentivises the connecting party and the TNSP to resolve technical disagreements in a timely and cost-effective manner.

C.2 Negotiating framework

C.2.1 Background

Currently, a TNSP must comply with its negotiating framework and negotiated transmission service criteria when negotiating the terms and conditions on which it will provide negotiated transmission services to a person.

Clause 6A.9.5 of the NER currently provides that TNSPs must prepare a document (a "negotiating framework") setting out the procedure to be followed during negotiations between that provider and any person who wishes to receive a negotiated transmission service as to the terms and conditions of access for the provision of the service. The TNSP must submit its proposed negotiating framework to the AER at the same time as its revenue proposal in relation to prescribed transmission services. As part of its final decision for a TNSP the AER must make a decision on whether or not to accept a

TNSP's negotiating framework and specify the negotiated transmission service criteria that apply to the TNSP.

The negotiated transmission service criteria must give effect to and be consistent with negotiating principles set out in clause 6A.9.1 of the NER.

C.2.2 COAG Energy Council's view

The COAG Energy Council agreed with previous Commission findings that the current negotiating principles and negotiating frameworks do not sufficiently address the asymmetry in negotiating power between TNSPs and connecting parties. The COAG Energy Council also agreed that the current negotiating principles "are focussed on cost and prices issues and do not adequately cover a number of the issues which are the sources of disagreement in connections negotiations in practice, for example perceived over-specification, timeliness and risk allocation."³⁹⁹

To address these issues, the COAG Energy Council proposed to update and extend the current negotiating principles and enshrine them within the NER. The updated principles would cover all aspects of the connection services provided by a transmission business. The COAG Energy Council also proposed to remove the requirement for TNSPs to produce individual negotiating frameworks.⁴⁰⁰

C.2.3 Stakeholder views

Consultation paper and initial workshop

In submissions to the consultation paper, the majority of stakeholders supported the proposal to remove the requirement for individual TNSP negotiating frameworks and introduce a single set of updated negotiating principles enshrined within the NER.⁴⁰¹ The Clean Energy Council suggested that the current arrangements act as a barrier to a flexible electricity market and suggested that a NER-based negotiating framework would allow the market to adapt more readily to changing market conditions.⁴⁰² GDF Suez did not consider that the current negotiating principles adequately cover issues such as perceived over-specification, timeliness and risk allocation. Both GDF Suez and Origin Energy indicated that single set of negotiating principles would result in greater clarity and minimise inconsistency between jurisdictions.⁴⁰³

Energy Networks Australia considered that fair regard should be given to the work that has gone into developing the current negotiating frameworks and noted that

³⁹⁹ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 15.

⁴⁰⁰ Ibid.

⁴⁰¹ Submissions on consultation paper: GDF Suez, p. 3; Origin Energy, p. 2; Clean Energy Council, p. 12.

⁴⁰² Clean Energy Council, submission on consultation paper, p. 12.

⁴⁰³ Clean Energy Council, submission on consultation paper, p. 5.

material changes to the negotiating principles would result in new costs being imposed on TNSPs. Energy Networks Australia also indicated that, in considering updated negotiating principles, sufficient flexibility should remain to allow TNSPs to apply approaches that best suit their individual circumstances.⁴⁰⁴

The Clean Energy Council argued that the proposed updated principles should make sure that the connection process is efficient for the connecting party and that the connecting party should not be burdened by the costs of future sizing.⁴⁰⁵ That is, the connecting party should not be required, in paying for their connection, to fund the development of assets intended for the future connection or for providing future transmission services to other parties.

Discussion paper

In the discussion paper, the Commission proposed to establish an amalgamated set of negotiating principles in the NER that apply directly to all TNSPs. The Commission also set out a revised set of negotiating principles for comment.

Stakeholders supported the proposed changes to the negotiating principles in submissions to the discussion paper.⁴⁰⁶ AEMO recommended that the AER develop and maintain a negotiating framework based on high level principles set out in the NER to mitigate the risk of a detailed set of negotiating principles within the NER becoming out-dated.⁴⁰⁷ The Clean Energy Council argued that the negotiating principles should include a provision to minimise reasonable costs to the connecting party. The Clean Energy Council also considered that the termination clauses should be clarified and suggested that termination of negotiations could require AER approval.⁴⁰⁸

Draft determination

Origin Energy reaffirmed its support for the updated negotiated principles in its submission to the draft determination.⁴⁰⁹

ElectraNet considered that the negotiating principles should clarify that ability of the TNSP to recover the actual prudent cost of operating and maintaining a third party's identified user shared asset.⁴¹⁰

404 Energy Networks Australia, submission on consultation paper, p. 14.

405 Clean Energy Council, submission on consultation paper, p. 5.

406 Submissions on discussion paper: PIAC, p. 9; Australian Energy Council, p. 1; Infigen, p. 1; Energy Networks Australia, p. 2; AEMO, p. 6; Clean Energy Council, pp. 4-5; EnergyAustralia, pp. 1-2; Origin Energy, p. 2

407 AEMO, submission on discussion paper, p. 6.

408 Clean Energy Council, submission on discussion paper, pp. 4-5.

409 Origin Energy, submission on draft determination, p. 1.

410 ElectraNet, submission on draft determination, p. 3.

C.2.4 Commission's analysis

Changes between the draft and final rule

There were changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section.

Specifically, in the final rule, one of the negotiating principles (clause 12) of Schedule 5.11 which related to the ability of the connecting party and/or TNSP to “oversize” the identified user shared assets has been moved to earlier in Chapter 5 of the NER. The policy intent has not changed, but these provisions are better located within the connection process than in the negotiating principles.

Elevation to the NER

The Commission has undertaken a review of the current negotiating frameworks and negotiated transmission service criteria developed by TNSPs and approved by the AER. The Commission has found that the content of TNSPs' existing negotiating frameworks do not vary significantly between businesses or regulatory periods. The negotiating frameworks also do not provide much additional information or guidance to the negotiation principles beyond what is set out in the NER.⁴¹¹

Further, the Commission considered that, in practice, the current negotiating frameworks appear inadequate for facilitating balanced negotiation between connecting parties and TNSPs.

The final rule therefore removes the requirement for TNSPs to produce negotiating frameworks for approval by the AER and for the AER to specify negotiated transmission service criteria that apply to TNSPs. It obliges TNSPs to comply with the updated negotiating principles when negotiating with a connection applicant. The implications of this for transitional arrangements are discussed in chapter 5.

The requirements for negotiating frameworks and negotiated transmission service criteria are currently contained in Chapter 6A of the NER. The final rule removes these provisions from Chapter 6A, and includes improved negotiating principles in Chapter 5 of the NER. This is the more appropriate location for the negotiating principles since Chapter 5 will cover the provision of negotiated transmission services, and so the link between the connection process and the negotiating process will be clearer.

Updated negotiating principles

The final rule updates and expands the existing negotiating principles. The negotiating principles have the following general aims:

⁴¹¹ Clause 6A.9.1 of the NER.

- to require the TNSP and the connecting party to negotiate in good faith to agree the price, standard, conditions and timing of services to be provided
- to improve the transparency of the negotiation process to enable both parties to understand each other's decisions and requirements.

The negotiating principles in the final rule that relate to the provision of negotiated transmission services (such as non-contestable components of identified user shared asset services) are set out in Schedule 5.11 of the final rule, with these principles applying to any negotiations between a connecting party and a TNSP for negotiated transmission services.⁴¹²

Clauses 1 to 10 of Schedule 5.11 in the final rule replicate the existing negotiated transmission service principles currently set out in clause 6A.9.1(1) to (7) and (9) to (11) of the NER. The principle contained in clause 6A.9.1(8) has been removed from the updated principles since it relates to rule 5.4A, which has been deleted under this final rule and so is no longer relevant.⁴¹³

In addition to the above, three other principles have been added in to clarify the arrangements relating to cost sharing and asset sizing for negotiated transmission services in respect of identified user shared assets. These additional principles are discussed in section B.⁴¹⁴

The final rule removes paragraphs 6A.9.5(a), (b)(1), (b)(2), (d) and (e) that relate to the preparation, content and application of negotiating frameworks which are no longer be required.

The Primary TNSP, when providing the connection applicant with a functional specification, may also provide the connection applicant with their preferred sizing (i.e. additional works that it would like to carry out that are above what is required for the connection applicant). The connection applicant does not have to accept this preferred sizing, but it does have to ensure that its detailed design is consistent with the minimum requirements set by the functional specification and does not unreasonably inhibit the capacity for future expansion or preclude the possibility of future connections.⁴¹⁵ This has been made clear in clauses 5.3.3 and 5.3.4 of the final rule as opposed to being included in Schedule 5.11. The Commission considered that these points were better framed as obligations in the NER than as part of the principle that was contained in clause 12 of Schedule 5.11.

The final rule also adds the following obligations to Chapter 5 of the NER:⁴¹⁶

⁴¹² The final rule also introduces Schedule 5.12, which set out principles that apply to parties negotiating access to a 'large DCA service'. These are discussed further in appendix D.

⁴¹³ See section 4.1 for more information on the deletion of 5.4A.

⁴¹⁴ See Schedule 5.11 of the final rule.

⁴¹⁵ This aspect of the final rule is also discussed in appendix B.3.

⁴¹⁶ The other process elements previously contained in clause 6A.9.5 are either redundant or are now covered in the connections process set out in Chapter 5 of the NER.

- a requirement for parties to provide information in a timely manner enabling both parties to understand each other's decisions and requirements⁴¹⁷
- arrangements to make it clear that the connecting party has a right to terminate the negotiations at any point. The TNSP can also terminate the negotiations but only if certain criteria are met.⁴¹⁸

These obligations are not housed alongside the negotiating principles in Schedule 5.11 because the Commission considered these are better framed as obligations rather than principles.

Application to non-regulated transmission services

The updated negotiating principles will not apply to the provision of non-regulated transmission services. This is the same as under existing arrangements, where the provision of contestable services is not covered by the negotiating framework. By definition non-regulated transmission services are not subject to any form of regulation regarding terms and condition of access.

C.2.5 Conclusion

The final rule enshrines an improved set of negotiating principles into the NER and removes the requirements for each TNSP to have its negotiating frameworks approved by the AER, and for the AER to specify each TNSP's negotiated transmission service criteria. By updating and expanding the principles and extending them to cover issues such as over-specification on technical issues, it will improve the balance of power for connecting parties in the provision of negotiated transmission services. This will improve outcomes for connecting parties and increase the efficiency of the connection process, particularly in conjunction with the introduction of the independent engineer process discussed in section C.1.

C.3 Transparency provisions

C.3.1 Background

Under the current arrangements, both the connecting party and the TNSP have obligations to provide information at various stages of the connection process. However, the information requirements that are currently in the NER for TNSPs typically only involve the TNSPs providing information in response to connection enquiries and connection applications. Further, the information requirements that fall on the connecting party are largely focussed on technical information about the plant that it wishes to connect, for example, the type of plant, maximum power generation or demand of plant, technology of plant. This information is shown in Table C.1.

⁴¹⁷ See clause 5.2A.5(c) of the final rule.

⁴¹⁸ See clause 5.2A.3(f) and (g) of the final rule.

Table C.1 Participant obligations in the current connection process

Participant	Connection enquiry	Connection application
TNSP	<p>In responding to the connection enquiry, the TNSP is required to provide:</p> <ul style="list-style-type: none"> • information to the connecting party if other parties are to be involved • requirements for a connection application • applicable access standards • a preliminary program • the contestability of assets. 	<p>In responding to a connection application, and when making an offer to connect, the TNSP is required to provide:</p> <ul style="list-style-type: none"> • a connection agreement • a construction agreement • land and easement requirements • project specific design standards • network plant and apparatus setting data • estimated costs, charges and program schedule • an offer to connect.
Connecting party	<p>In submitting the connection enquiry, the connecting party is required to provide:</p> <ul style="list-style-type: none"> • the type, magnitude and timing of the proposed connection • a site location map • maximum power generation or load demand • estimated energy production or consumption • a single line diagram • nature of any disturbing load or plant • a commissioning date • their details. 	<p>In submitting the connection application, the connecting party is required to provide:</p> <ul style="list-style-type: none"> • updated information from the connection enquiry stage • preliminary system planning data • access standards • system design data sheets • network and plant technical data sheets • load characteristics at the connection point.

As part of the connection process, the connecting party and the TNSP have opportunities to exchange additional information;⁴¹⁹ however, the connecting party currently has limited access to information before it begins the 'connection application' stage.

The Commission has undertaken a review of what information is currently published on TNSPs' websites to inform connecting parties. This has shown that there is substantial variation between TNSPs in the information published, and consequently what is readily available to parties considering establishing a connection to the transmission network.⁴²⁰ Further, some of the material that is available (e.g. Grid Australia's Transmission Network Connection Guidelines) is out of date.⁴²¹

In the Transmission Frameworks Review, the Commission noted that connection applicants do not generally receive the clarity from preliminary programs (i.e. the program to be prepared by a TNSP under clause 5.3.3(b)(6) of the NER showing proposed milestones for connection and access activities) that they should, because, in practice, TNSPs often include little meaningful detail about milestones, or their associated timeframes, in the program.⁴²²

In submissions to this review, stakeholders indicated that:⁴²³

- connecting parties receive limited indicative information early in the process regarding design standards and other aspects of the negotiation the connecting party will have to resolve with the TNSP
- when actually negotiating a connection, limited information from TNSPs is received about connection costs and the process by which these costs have been determined.

In 2011 the AER commenced its 'electricity transmission connections strategic compliance project'.⁴²⁴ While it was completed several years ago now, it still provides

⁴¹⁹ After the connection enquiry, the TNSP may request additional information within five business days (clause 5.3.2(b) of the NER). The connection applicant is also required to provide the TNSP with the information that the TNSP would reasonably require to enable the TNSP to prepare the offer to connect (clause 5.3.5(c) of the NER). There are also provisions later in the connection process for facilitating information exchange.

⁴²⁰ For example, see:
<https://www.transgrid.com.au/what-we-do/our-network/connections-and-modifications/connection-process/Pages/default.aspx> and see Powerlink's website,
https://www.powerlink.com.au/Network/Connection_and_pricing/Connecting_to_Powerlink_s_network.aspx.

⁴²¹ See:
https://www.powerlink.com.au/Network/Connection_and_pricing/Connecting_to_Powerlink_s_network.aspx.

⁴²² AEMC, Transmission Frameworks Review, Final Report, 11 April 2013, p. 166.

⁴²³ Submissions to Transmission Frameworks Review first interim report: Major Energy Users, p. 39; TRUenergy, p. 7; and submissions to Transmission Frameworks Review second interim report: AGL, p. 4; Major Energy Users, p. 18.

useful context to the Commission's analysis of this issue. The project included a survey of parties who have sought connection to the transmission network. In the report summarising the outcome of the project, the AER commented that there were instances where respondents indicated that the TNSP may not have complied with the requirements of the NER, primarily those relating to the provision of information within the timeframes specified in the NER. Some respondents noted that this led to delays for the project, while others considered the delay had no material effect.⁴²⁵

C.3.2 COAG Energy Council's view

The COAG Energy Council set out that the intention of the connections process is to deliver efficient connection services to parties seeking connection to the transmission network. In order to achieve this outcome, the COAG Energy Council proposed that the framework should, amongst other things, promote transparency in the connection process including providing information on standard designs and costs associated with the provision of connection assets and services. The COAG Energy Council proposed that the NER be amended to require TNSPs:

- to publish:
 - design standards and philosophies
 - standard form connection contracts
 - pro-forma preliminary programs, including relevant milestones and indicative timeframes.
- to provide the connection applicant with a range of options with a reasonable cost breakdown when providing a quote for connection services. These cost breakdowns would provide the connection applicant with sufficient information to enable the applicant to seek a second opinion on costs from a third party
- to include in the preliminary program for each connection application more specific detail about each aspect of the negotiation and construction processes.⁴²⁶

C.3.3 Stakeholder views

Consultation paper and initial workshop

In submissions to the consultation paper, generators were generally supportive of increased transparency in the connections process, indicating that the lack of

⁴²⁴ Australian Energy Regulator, Quarterly Compliance Report: National Electricity and Gas Laws January - March 2014, May 2014, pp. 12-13.

⁴²⁵ The survey was sent out to approximately 150 stakeholders and only received 15 responses. As a result, the AER was cautious about drawing any definitive conclusions from the results.

⁴²⁶ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 16.

information around costs of a connection is a key area of contention.⁴²⁷ Origin Energy suggested that TNSPs should be required to indicate as early as possible any potential future costs associated with the connection, and where any costs arise they must be justified.⁴²⁸

By contrast, TransGrid and Energy Networks Australia did not support the proposed transparency requirements. TransGrid believed that the proposed requirement for TNSPs to publish standard form contracts and indicative cost breakdowns would likely inhibit the TNSPs' ability to compete on a level playing field for contestable works.⁴²⁹ Energy Networks Australia considered that the proposed prescriptive transparency requirements are not needed if a fully contestable approach is implemented as in contestable markets there are incentives to provide desired information in order to win work. Energy Networks Australia was also concerned that the information provided by TNSPs could be abused by a connecting party and used as a negotiating tool with third parties. Energy Networks Australia argued that introducing the proposed transparency requirements was likely to be detrimental to connecting parties in that:

- the requirements would impose a cost on TNSPs that would ultimately be passed onto connecting parties
- TNSPs would be unlikely to make connection offers that include innovations or liabilities that are difficult to objectively quantify.⁴³⁰

Energy Networks Australia suggested that before the proposed transparency requirements were implemented, consideration should be given as to whether the benefits would outweigh the costs. They also pointed out that each connection is bespoke, indicating a one-size-fits-all approach is unlikely to improve outcomes for any party.⁴³¹

Discussion paper

In submissions to the discussion paper, generators, the SA Department of State Development and PIAC generally indicated support for the proposed transparency requirements.⁴³² PIAC suggested that providing greater access to information would enable connecting parties to better negotiate access arrangements. Infigen also considered increased levels of published information would allow proponents to make more informed decisions regarding connections at a lower cost resulting in more

⁴²⁷ Submissions on consultation paper: GDF Suez, p. 4; Origin Energy, p. 2; Clean Energy Council, p. 2.

⁴²⁸ Origin Energy, submission on consultation paper, p. 2.

⁴²⁹ TransGrid, submission on consultation paper, p. 3.

⁴³⁰ Energy Networks Australia, submission on consultation paper, p. 15.

⁴³¹ Ibid.

⁴³² Submissions on discussion paper: PIAC, p. 7; Infigen, p. 1; Clean Energy Council, p. 4; EnergyAustralia, p. 1; AGL, p. 4; South Australian Department of State Development, p. 1; Origin Energy, p. 1.

efficient connections.⁴³³ AGL indicated that TNSPs should be required to publish non-locality specific technical details and Origin Energy considered that TNSPs should not have the right to refuse a further breakdown of costs if the request is fair and reasonable.⁴³⁴

AEMO supported the obligations to publish minimum standards and cost-breakdowns for non-contestable services but consider that a flexible approach is needed as each generator connection is unique and will require a unique solution.⁴³⁵

TNSPs generally disagreed with the proposed transparency requirements.⁴³⁶ Energy Networks Australia expressed concern that the proposed requirements are inconsistent with a contestable framework. Energy Networks Australia also considered that there is a need for flexibility in relation to a connection.⁴³⁷ Transmission General Holdings Australia argued that location specific requirements would need to be determined for most connections and, in most cases, generic information would provide little value.⁴³⁸

Draft determination

In submissions to the draft determination, connecting parties reiterated support for the transparency requirements outlined in the draft determination.⁴³⁹

In contrast to connecting parties, Transmission General Holdings Australia and Energy Networks Australia considered that generic information provided through the transparency provisions would not be useful due to the bespoke nature of transmission connections.⁴⁴⁰

EnergyAustralia acknowledged this issue, and noted that some TNSPs may see generic information as being difficult to provide and potentially misleading due to the bespoke nature of some connections. In such situations, EnergyAustralia suggested that TNSPs could publish examples from past connections to provide connecting parties with better information regarding connections.⁴⁴¹

433 Infigen, submission on discussion paper, p. 1.

434 Submissions on discussion paper: AGL, p. 4; Origin Energy, p. 1.

435 AEMO, submission to discussion paper, p. 6.

436 Submissions on discussion paper: Energy Networks Australia, pp. 4-5; Transmission General Holdings Australia, p. 3.

437 Energy Networks Australia, submission on discussion paper, pp. 4-5.

438 Transmission General Holdings Australia, submission on discussion paper, p. 3.

439 Submissions on draft determination: Clean Energy Council, p. 10; Origin Energy, p. 1; EnergyAustralia, p. 2; ElectraNet, p. 7.

440 Submissions of draft determination: Transmission General Holdings Australia, p. 3; Energy Networks Australia, p. 9.

441 EnergyAustralia, submission on draft determination, p. 2.

In relation to the quality and types of information that is provided, Origin Energy considered that it is important that the TNSP respond to a connection request taking into account the specifics of a connection.⁴⁴²

The Clean Energy Council suggested that the fee that the TNSP is able to charge for the provision of certain information should be accompanied by sufficient evidence that such costs were reasonably required to provide the information.⁴⁴³

C.3.4 Commission's analysis

Changes between draft and final rule

There were several changes between the draft and the final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule includes:

- the typical operating and maintenance scheduling that must be published by a Primary TNSP now only covers equipment that the Primary TNSP typically operates and maintains
- the Primary TNSP is required to publish the amount and terms and conditions of the connection enquiry charge
- the Primary TNSP does not need to publish standard operation and maintenance agreements
- the Primary TNSP does not need to publish typical easement deeds
- minor wording amendments.

The Commission considered that amending the NER to introduce additional transparency requirements will improve the connections framework. The information provided by Primary TNSPs to parties intending to connect to the transmission network will increase both prior to the connection enquiry being submitted and during negotiations.

The Commission also considered that increasing the information available to all market participants will improve an understanding of the connections framework and so promote more efficient decisions being made by both established and new market participants.

The increased transparency requirements provide connecting parties with more information available upfront as well as access to information through a direct enquiry to the Primary TNSP. Under the final rule, the transparency requirements only apply to Primary TNSPs.

⁴⁴² Origin Energy, submission on draft determination, pp. 1-2.

⁴⁴³ Clean Energy Council, submission on draft determination, p. 5.

Generic upfront information

The provision of generic up-front information will not impose significant costs on Primary TNSPs, but it will assist the process of parties connecting to the transmission network, particularly those that are inexperienced. Feedback from connecting parties indicates that the current NER arrangements do not require or incentivise the TNSP to provide all necessary information, in a sufficient amount of detail, for the connecting party to make a properly informed decision about making a connection application. It also provides an opportunity for connecting parties to access information about jurisdictionally or regionally specific requirements for connecting to the transmission network.

This generic upfront information will not provide a significant level of detail; however, it will assist connecting parties in developing a connection application. It consists of information about generic interface works, generic substation layouts, design standards and standard connection agreements. For example, the design standards published by a Primary TNSP should provide the connecting party with an understanding of the individual Primary TNSP's design approach to aspects of transmission connections such as protection systems, but would not detail those aspects specific to a particular connection.

The final rule does not specify the form in which the information must be presented by the Primary TNSP. The information may be presented:

- as a collection of documents on the Primary TNSP's website
- as a single document on the Primary TNSP's website
- collectively where the information is consistent across network businesses.

Providing the information as a single document would provide prospective connecting parties with easy access to this information. If Primary TNSPs present this information collectively the information would need to make clear where any regional differences.

Detailed information

In addition to generic information published on the Primary TNSP's website, each connecting party will require detailed information specific to that party's connection. This detailed information will be provided to the connection applicant both throughout the connection process under rule 5.3 of the NER and through direct enquiry with the Primary TNSP in Schedule 5.10. This information is necessary for connecting parties to develop a connection to the transmission network beyond the connection application stage. The information provided by direct enquiry in Schedule 5.10 is not provided for in rule 5.3 (the process for connecting to the transmission network) since it may not be needed by every connecting party. For the provision of this information request through a direct enquiry, the Primary TNSP can charge a fee. This is because this information will be unique to a particular bespoke connection and will require the Primary TNSP to provide information specific to that connection. The amount charged

for the information must not be more than necessary to cover the reasonable costs of work required to prepare that information.⁴⁴⁴

The Commission considers that the information that is available through direct enquiry will assist connecting parties in receiving highly detailed information specific to aspects of its connection. The information made available includes timescales for site specific easement acquisition and site specific commissioning. This information will be provided as a negotiated transmission service, and as such the cost principles in Schedule 5.11 will apply.

In the final rule, the Commission has removed the requirement for Primary TNSPs to publish standard operation and maintenance agreements as the Commission considers the rights and obligations relating to operation and maintenance would likely be included under the connection agreement or the network operating agreement, rather than in a separate agreement. Additionally, when the Primary TNSP publishes typical operation and maintenance schedules, this will only cover plant that the Primary TNSP has had experience operating and maintaining. The Primary TNSP would not be able to easily provide information on schedules for plant that it has limited experience with.

The final rule also does not require the Primary TNSP to publish standard form easement deeds. The Commission understands that easements would typically be acquired over land on which a transmission line is located. Given transmission lines forming part of a connection are likely to constitute dedicated connection assets, which are contestable and not part of the identified user shared asset, any easements required for those dedicated connection assets will be the responsibility of the connecting party or dedicated connection asset owner.

Importantly, the transparency requirements are only related to those aspects of the identified user shared asset that are to be provided as a negotiated transmission service (i.e. not non-regulated services such as the construction of identified user shared asset where these components meet the criteria set out in the final rule for contestability).⁴⁴⁵ This therefore preserves the 'level-playing field' in the provision of non-regulated services.

In the provision of non-regulated transmission services, the competitive provider would face competitive pressures to provide the connecting party with the necessary information required in order to win the work, and so no regulation to reveal the information is required.

Under the final rule, Primary TNSPs are required to provide information in relation to the following areas:

- **Technical specification** - The Primary TNSP is accountable for the safe, reliable and secure operation of the transmission network. Therefore, it needs to be able to specify some basic parameters which the identified user shared assets that it

⁴⁴⁴ Clause 5.2A.5(b) of the final rule.

⁴⁴⁵ For further information see appendix B.

has control over are subject to e.g. typical secondary systems. Further, the connecting party needs to have sufficient information regarding the technical specification of a connection in order to be able to procure non-regulated services from a competitive provider. Information relating to the functional specification is therefore necessary in order to successfully set out a scope of these works. A detailed functional specification is provided to the connection applicant in the connection process in rule 5.3. The exchange of information between parties in the connection process is also discussed in section C.5.

- **Operation and maintenance** - As the operation and maintenance of identified user shared assets will be provided by Primary TNSPs on a non-contestable basis, regardless of which party constructs, designs and owns the assets, information should be provided to connecting parties so that they can make related decisions when designing and constructing the identified user shared assets. By providing typical operation and maintenance schedules for specific items of plant, connecting parties will be provided with greater insight into the operation and maintenance arrangements that will need to be agreed with a Primary TNSP following the construction of identified user shared assets.
- **Timescales** - The Primary TNSP is responsible for commissioning the identified user shared assets once constructed. As such, the final rule requires generic information relating to these timescales to be provided to connecting parties, which would assist in planning a connection. If the Primary TNSP is responsible for providing easements as part of a negotiated transmission service (i.e. for the non-contestable identified user shared asset components) it is required to provide site-specific easement acquisition timescales to connecting parties on request. Due to the highly bespoke nature of easements, the Commission does not consider a generic timescale for easement acquisition would assist connecting parties.
- **Legal** - Under the final rule connecting parties are required to enter into a connection agreement and where the owner of a third party identified user shared asset is exempt from registration, a network operating agreement to cover the ongoing operation and maintenance of the identified user shared asset. Publishing standard form versions of these agreements on the Primary TNSP's website will assist a connecting party's understanding of the obligations relating to connecting to the shared network, as well as likely operation and maintenance arrangements for identified user shared assets. In addition, the Primary TNSP will be responsible for constructing the cut-in works to connect the identified user shared assets to the shared network. The Primary TNSP may need to involve the connecting party in the related construction agreement and for this reason, the Primary TNSP is also required to make generic construction agreements for the interface works available on its website. Providing standard form versions of these types of agreements should assist connecting parties in planning a connection and facilitate more timely connections.
- **Financial** - TNSPs will continue to be responsible for processing connection applications. To reduce ambiguity relating to the charge for processing

connection enquiries and connection applications, the TNSP should make the structure of the charges publically available.⁴⁴⁶This will assist prospective connecting parties in understanding the connection process. In addition, connecting parties will be able to enquire about site specific issues relating to relocation of assets, since this is undertaken by the TNSP.

⁴⁴⁶ The draft rule did not require the TNSP to publish information regarding the structure of connection enquiry fees. The ability for the TNSP to charge a connection enquiry fee where relevant has been introduced in the final rule. The connection enquiry fee is discussed in more detail in appendix C.5.

Table C.2 Transparency requirements under the final rule to apply to Primary TNSPs⁴⁴⁷

Information	Via website or direct enquiry	Additional fee ⁴⁴⁸	Comments
Technical specification			
Generic interface works	Website	No	Typical standards and layouts must be published. This information: <ul style="list-style-type: none"> • may be generic but should provide a high level overview of the components of a connection • must provide connection applicants with a high level understanding of what a connection consists of. Primary TNSPs must provide the design standards which are specific to their network.
Generic substation layouts	Website	No	
Typical overhead line structures	Website	No	
Typical underground cable arrangements	Website	No	
Typical primary plant	Website	No	
Design standards	Website	No	
Typical secondary systems	Website	No	
Detailed technical requirements for a particular connection ⁴⁴⁹	Direct enquiry	No	Functional specification to describe the requirements that must be met by the detailed design. The functional specifications must include: <ul style="list-style-type: none"> • description of any proposed augmentation

⁴⁴⁷ This table replicates Schedule 5.10 of the final rule.

⁴⁴⁸ This refers to the right for the Primary TNSP to charge an additional fee for the provision of this information to the connection enquiry for or the connection application fee under clause 5.3.2 and 5.3.4 of the final rule.

⁴⁴⁹ This is provided to the connection applicant in the connection process. For more information see section C.5.

Information	Via website or direct enquiry	Additional fee ⁴⁴⁸	Comments
			<ul style="list-style-type: none"> references to typical plant including primary and secondary equipment so that the detailed design will interface to the existing network and be able to be adopted by the Primary TNSP.
Operation and maintenance			
Typical operation and maintenance scheduling	Website	No	Operation and maintenance intervals for specific items of plant utilised by the Primary TNSP in transmission connections must be published. These are routine activities irrespective of whether assets are unregulated or regulated and should be in line with good electricity industry practice.
Timescales			
Easement acquisition (site specific)	Direct enquiry	Yes	Site specific timescales may be discussed and negotiated on a project by project basis as part of the connection enquiry / connection application process if the connection applicant requests it at their election.
Commissioning (generic)	Website	No	Generic timescales must be published.
Commissioning (site specific)	Direct enquiry	Yes	Site specific timescales may be provided as part of the connection enquiry / connection application process if the connection applicant requests it at their election.
Legal			
Standard connection agreements	Website	No	Standard forms of these agreements and deeds to be published.
Standard network operating agreement	Website	No	The standard form construction agreement must cover the construction of any interface works.
Standard interface works	Website	No	The standard form connection agreement must cover the connection of the

Information	Via website or direct enquiry	Additional fee ⁴⁴⁸	Comments
construction agreements			asset to the shared network.
Standard relocation deeds	Website	No	The standard form network operating agreement must cover those aspects referred to in clause 5.2.7(b) of the final rule.
Environmental approvals (generic)	Website	No	Standard forms or lists of required approvals must be published.
Environmental approvals (site specific)	Direct enquiry	Yes	Site specific information may be provided as part of the connection enquiry / connection application process if connection applicant requests it at their election.
Development approvals (generic)	Website	No	
Development approvals (site specific)	Direct enquiry	Yes	
Financial			
Amount and terms and conditions of the connection enquiry charge ⁴⁵⁰	Website	No	A guide to the structure of the application fee under clause 5.3.2 of the final rule, and the terms and conditions under which the charge is paid, must be published.
Amount and terms and conditions of the connection application charge ⁴⁵¹	Website	No	A guide to the structure of the application fee under clause 5.3.4 of the final rule, and the terms and conditions under which the charge is paid, must be published.

⁴⁵⁰ For clarification, information about the structure, terms and conditions of the charge should be made available free of charge on the TNSP's website, but the connection applicant would still be required to pay the connection enquiry fee under clause 5.3.2 of the final rule itself.

⁴⁵¹ For clarification, information about the structure, terms and conditions of the charge should be made available free of charge on the TNSP's website, but the connection applicant would still be required to pay the connection application fee under clause 5.3.4 of the final rule itself.

Information	Via website or direct enquiry	Additional fee ⁴⁴⁸	Comments
Relocation of existing assets	Direct enquiry	Yes	<p>Specific information about relocation of existing assets may be provided by the Primary TNSP, if the connection applicant requests it at their election.</p> <p>The connection applicant would be required to pay for any costs associated with the relocation of assets.</p>

C.3.5 Conclusion

In order for the connection process to achieve efficient outcomes, connecting parties need sufficient information as part of the process to make properly informed decisions about contracting for negotiated transmission services. The introduction of increased transparency requirements under the final rule will provide connecting parties with increased access to information to assist them in connecting to the transmission network, as well as to procure providers of non-regulated services.

C.4 Clarifying the dispute resolution process

C.4.1 Background

The NER currently provide two different processes for dispute resolution regarding connections to the transmission network:

- Chapter 6A, Part K provides for commercial arbitration for disputes relating to “terms and conditions of access”, for the provision of prescribed transmission services or for the provision of negotiated transmission services (a transmission services access dispute).
- Chapter 8, Part B provides for a comparatively lengthy and prescriptive dispute resolution procedure relating to, amongst other things, “the proposed access arrangements or connection agreements of an Intending Participant or a connection applicant”. However, it is specifically stated that this process does not apply to a transmission services access dispute to which Part K of Chapter 6A applies.

During the Transmission Framework Review, the Commission considered these two processes and determined that it is unclear which process should be followed regarding a dispute arising in the connection process in relation to negotiated transmission services. It appeared to be at the discretion of the relevant parties, that is, it is likely to depend on whether both parties agree that the dispute would fall under the Chapter 8 arrangements. The Chapter 8 dispute resolution provisions do not apply to 'transmission service access disputes' under Part K of Chapter 6A.

C.4.2 COAG Energy Council's view

The COAG Energy Council proposed to clarify the approach to dispute resolution in relation to connections to the transmission network. It is proposed that the commercial arbitration process (i.e. Chapter 6A, Part K) should apply to all disputes arising during the negotiation of a connection service.

The COAG Energy Council proposed that the NER be amended to clarify that the price, terms and conditions of all negotiated services are subject to commercial arbitration processes. It also proposed that the NER should clarify that any decision

reached through commercial arbitration would be binding on the parties, including for example, any instruction to amend the terms of the connection agreement to make them fair and reasonable.⁴⁵²

C.4.3 Stakeholder views

Consultation paper and initial workshop

In its submission to the consultation paper, Energy Networks Australia suggested that the existing dispute resolution arrangements are robust and any changes to the dispute resolution process should bring about a material promotion of the national energy objective. Energy Networks Australia also noted that the fact that the current dispute resolution framework has never been used in regards to a dispute in relation to a negotiated connection indicates that the framework is successful.⁴⁵³

Conversely, the Clean Energy Council argued that the lack of use of the current dispute resolution framework indicates that the framework is not fit to manage risks associated with the connection process. The Clean Energy Council submitted that any greater contestability increases the need for binding decisions over disputes and argues that the framework should not create opportunity for TNSPs to use a challenging dispute resolution process to their advantage.⁴⁵⁴

Discussion paper and draft determination

In submissions to the discussion paper, stakeholders were generally supportive of clarifying which dispute resolution process would be used in relation to disagreements over negotiated services relating to connecting to the transmission connection.⁴⁵⁵ The Clean Energy Council reiterated this view in its submission to the draft determination.⁴⁵⁶

C.4.4 Commission's analysis

Changes between the draft and final rule

There were no changes between the draft and final rule on this aspect of the rule change request.

In the final rule, the commercial arbitration process, which is currently set out in Part K of Chapter 6A, applies to all disputes relating to the terms and conditions of access for

⁴⁵² COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 18.

⁴⁵³ Energy Networks Australia, submission on consultation paper, p. 18.

⁴⁵⁴ Clean Energy Council, submission on consultation paper, p. 16.

⁴⁵⁵ Submissions on discussion paper: PIAC, p. 10; Clean Energy Council, p. 5; Origin Energy, p. 3.

⁴⁵⁶ Clean Energy Council, submission on draft determination, p. 11.

the provision of negotiated transmission services and prescribed transmission services as well as disputes relating to the terms and conditions of access for the provision of services via a large dedicated connection asset.⁴⁵⁷ The final rule does this by including provisions in the negotiating principles for TNSPs, in the negotiating principles for dedicated connection assets, and elsewhere where relevant,⁴⁵⁸ to clarify that disputes relating to these services will be progressed through the commercial arbitration process set out in the NER.

The final rule has also relocated the commercial arbitration process from Chapter 6A to Chapter 5 of the NER. This is the more appropriate location for the commercial arbitration process as Chapter 5 deals with terms and conditions of access to the transmission network.

The commercial arbitration process does not apply to non-regulated services. This is because those services would be provided on a contestable basis and so the Commission considered the pressures faced by participants competing in a competitive market should preclude the need for the NER to provide for a commercial arbitration processes. Further, commercial arbitration does not make sense in the provision of non-regulated services, since there are no regulatory requirements on how parties are required to negotiate with each other. Any disagreements could also be resolved under commercial contracts between the parties.

The Commission considered that this commercial arbitration process is appropriate for disputes relating to terms and conditions of access for the provision of negotiated transmission services and prescribed transmission services. The Chapter 8 dispute resolution process provides stages for mediation and scoping of the dispute and is comparatively lengthy, and more prescriptive, than the commercial arbitration process. The Commission considered that parties involved in disputes arising from the provision of negotiated transmission services, prescribed transmission services and 'large DCA services' are likely to be larger and well-resourced and therefore do not require access to the prescriptive process set out in Chapter 8.

In addition, to avoid entering into disputes, the use of an independent engineer is available to provide advice on technical matters. The independent engineer process is more fit-for-purpose compared to the mediation and scoping stages provided for in the Chapter 8 process, since any disagreements are likely to be technical in nature.⁴⁵⁹

Therefore, the Commission did not consider stakeholders would be disadvantaged by being precluded from being able to use the dispute resolution process in Chapter 8 in relation to disputes arising from negotiated transmission services, prescribed transmission services and large dedicated connection asset services. Parties involved in a dispute, particularly the connecting party, would likely benefit from a more timely resolution of the issue as result of more immediate access to a commercial arbitrator for

⁴⁵⁷ More detail on 'large dedicated connection asset services' is set out in appendix D.4.

⁴⁵⁸ The final rule also amends clauses 8.2.1(a)(4) and 8.2.1(h)(3) of the NER to make this clear.

⁴⁵⁹ Alternatively, these could also be resolved by the commercial arbitrator through the scoping stage of this process.

disputes relating to terms and conditions of access for the provision of negotiated transmission, prescribed transmission and large dedicated connection asset services.

The commercial arbitrator appointed under this process would make a binding determination on whether the price or other terms of any element of a negotiated transmission, prescribed transmission or large dedicated connection asset services are appropriate as required by the NER.

By clarifying which process would apply to disputes arising from these services, the efficiency of the connections framework will be improved by facilitating a more transparent path to dispute resolution. This clarification will make it transparent to parties as to how to access dispute resolution, and the timeliness of accessing the resolution process.

Finally, the Commission considered the fact that the dispute process has not been used, despite the number of issues that have been raised by connecting parties through both the Transmission Frameworks Review and this rule change process, is not an indication that the current dispute resolution framework is fit for purpose. It is more likely that the process has not been used because connecting parties are unwilling to raise disputes because of the risk of delaying the connection process or damaging their relationship with the TNSP, the only party that can facilitate their connection. By making it clear which dispute resolution process is to be used, as well as introducing a package of measures to increase the ability of the connecting party to effectively negotiate with the TNSP without entering into a dispute (i.e. the introduction of the independent engineer, strengthening of the negotiating rules and increased transparency requirements on TNSPs), these concerns should be largely addressed.

C.4.5 Conclusions

The Commission considered the clarification that the NER commercial arbitration process would apply to any disputes relating to the terms and conditions of access for the provision of negotiated transmission, prescribed transmission and large dedicated connection asset services will improve the connections framework. The current arrangements for dispute resolution have been seldom used, and it is unclear which process (commercial arbitration or Chapter 8 dispute resolution process) parties should use. Removing ambiguity regarding the applicability of the commercial arbitration process will remove a barrier to its use. Removing this barrier should facilitate more efficient decisions on behalf of parties involved in these services. This in turn, will result in a more efficient connections framework overall.

C.5 Amendments to the connection process to accommodate the Commission's approach to identified user shared assets

C.5.1 Background

Under the existing arrangements, parties wishing to connect to the transmission network follow the process in rule 5.3 of the NER. The process for connection consists of:

- connection enquiry
- response to connection enquiry
- application for connection
- preparation of offer to connect
- offer to connect
- finalisation of connection agreements.

This process guides the development of a connection agreement between the connecting party and the TNSP.

C.5.2 COAG Energy Council's views

The COAG Energy Council did not outline specific changes to the connection process under rule 5.3. However, the COAG Energy Council did propose significant changes to the process of connecting to the transmission network, such as the introduction of identified user shared assets. In order to implement these changes, it would require changes to rule 5.3.

C.5.3 Stakeholder views

In submissions to the draft determination, a number of stakeholder raised concerns relating to the connection process as it was presented in the draft rule.

Two particular concerns that were raised were that, under the draft rule:

- a connection applicant would not have all the information it needs from the TNSP, at the right point in time in the connection process, to:
 - go out to tender for the design, construction and ownership of contestable identified user shared asset components⁴⁶⁰

⁴⁶⁰ Clean Energy Council, submission to draft determination, p. 5.

- understand the ‘whole of life’ costs (i.e. capital costs and operation and maintenance costs) of the identified user shared asset.⁴⁶¹
- competition would be discouraged as the TNSP would have increased bargaining power because the TNSP would:
 - have access to intellectual property relating to a contestable provider’s bid⁴⁶²
 - face limited pressure to provide parties wishing to provide contestable transmission services with quotes for operation and maintenance on competitive terms.⁴⁶³

C.5.4 Commission's analysis

Changes between the draft and final rule

There were several changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule includes certain amendments to:

- provide the connection applicant with sufficient information as needed earlier in the connection process so it can tender for contestable services and have an initial estimate of operation and maintenance costs
- permit the TNSP to recover the costs associated with providing information at various stages throughout the connection process
- provide the TNSP with additional time to prepare the required information
- reduce any competitive advantage the Primary TNSP might gain by accessing competing bids for contestable works.

The Commission made further amendments to the connection process as set out in NER rule 5.3 to address the concerns raised by stakeholders.

The revised connection process achieves a more effective exchange of information between parties at the appropriate stages of the connection process. This allows connecting parties to receive sufficient information from the TNSP to be able to run tenders for any contestable services. As a consequence, it also provides the TNSP with additional time to provide the connecting party with the required information at this earlier stage of the connection process. In addition, a new provision has been included to prevent the TNSP from using information it receives in relation to non-contestable

⁴⁶¹ Ibid, p. 4-5.

⁴⁶² Ibid, p. 4.

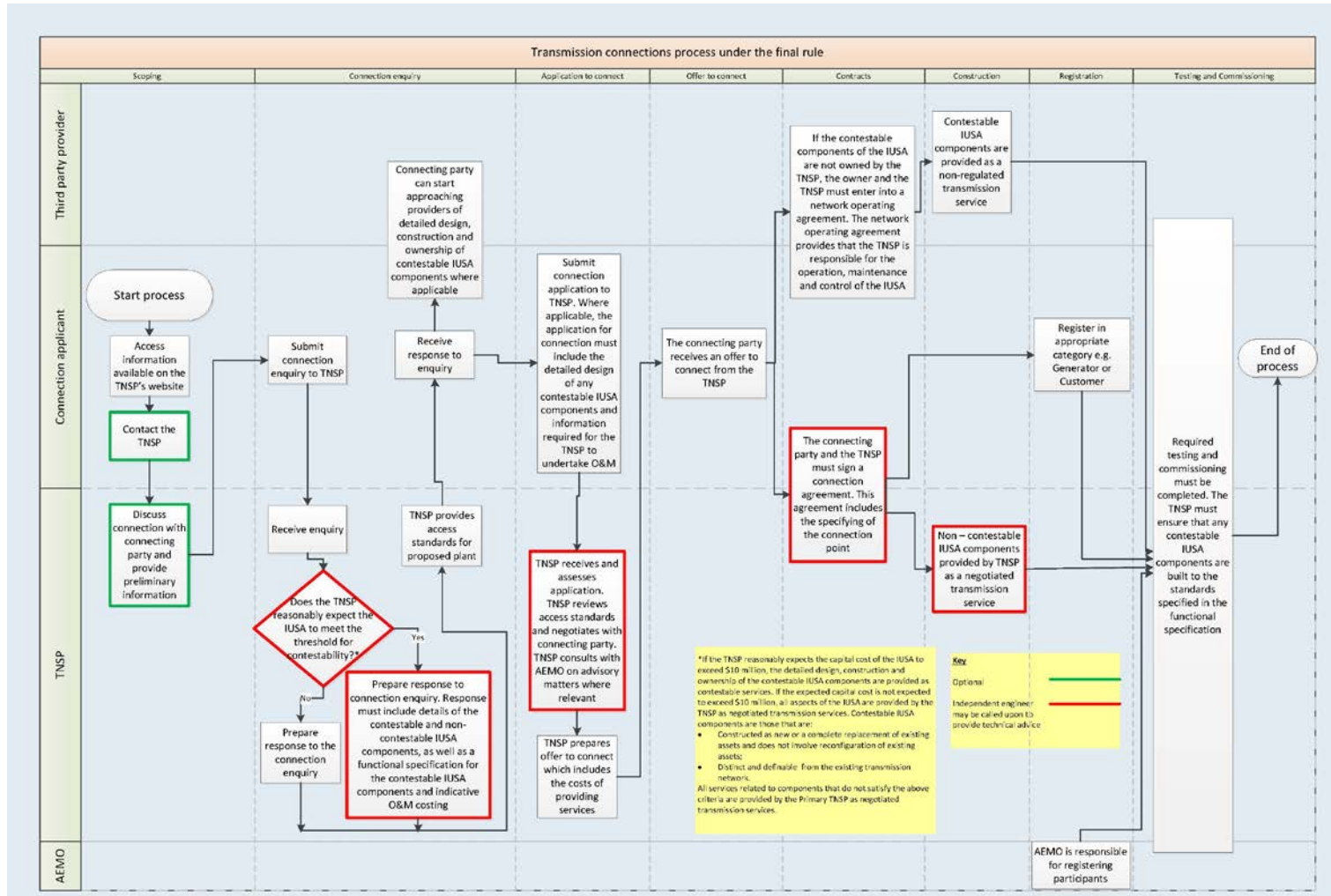
⁴⁶³ AusNet Services, submission to draft determination, p. 3.

services for any contestable services, including for any future contestable services that it may bid for.

Changes to the connection process

The connection process in rule 5.3 was amended to accommodate the changes introduced in the final rule. The final rule introduces contestability into transmission connections and as a result, amendments to the connection process have been made. These changes are summarised in Figure C.1.

Figure C.1 Summary of the connection process under the final rule



The changes to each of the stages of the connection process from the existing arrangements are provided in further detail below.

Connection enquiry

A connection applicant must submit a connection enquiry to start the process of connecting to the transmission network.⁴⁶⁴

The final rule now requires the TNSP to provide more information to the connection applicant when responding to the connection enquiry. This information is covered in more detail below.

In order for the TNSP to provide this information, the TNSP may, where necessary, charge the connection applicant a connection enquiry fee. This fee must not be more than necessary to cover the reasonable costs of work required to provide the information detailed below. The TNSP is required to publish a guide to the structure of the application fee and the terms and conditions under which the charge is paid on its website. The existing arrangements do not explicitly allow the TNSP to charge a connection enquiry fee; however, the Commission understands connecting parties are currently charged a connection enquiry fee. Further, the Commission considered that the introduction of the ability for a TNSP to charge a connection enquiry fee will not result in the additional fees to the connecting party, it will just alter when the TNSP is able to charge connecting parties for the provision of information to reflect the changes the Commission has made to the connection process.⁴⁶⁵

Response to connection enquiry

Following the receipt of a connection enquiry, a TNSP is required to respond within a specified timeframe.⁴⁶⁶ Under the existing arrangements, the response from the TNSP includes a preliminary program and information on access standards.

As the connecting party will need to consider the provision of contestable components of an identified user shared asset, the final rule has increased the scope of information that is provided by the TNSP at this stage in the connection process. This enables the connecting party to commence a tender before submitting its application to connect. It will be necessary for the connecting party to have conducted a tender and chosen its contestable service provider(s) before submitting its application to connect, due to the information that it is required to provide to the TNSP in its application to connect. The timeframe for the TNSP to respond to the connection enquiry has also been extended from 15 to 30 business days to account for the additional information it is now required to prepare at this stage of the connection process.

464 Clause 5.3.2 of the NER.

465 The draft rule did not allow the TNSP to charge a connection enquiry fee.

466 Clause 5.3.3 of the NER.

The final rule requires the TNSP's response to the connection enquiry to include:

- specifications relating to the interface between the identified user shared asset and the existing transmission network, and the interface between the dedicated connection asset and the identified user shared asset⁴⁶⁷
- the scope of work for any non-contestable services⁴⁶⁸
- a functional specification with sufficient detail to enable the connection applicant to obtain tenders from other persons for the provision of contestable transmission services⁴⁶⁹
- indicative costing for the operation and maintenance of the identified user shared assets, based on the functional specification.⁴⁷⁰

In responding to the connection enquiry, the TNSP may also charge the connection applicant with an enquiry fee where applicable.

The provision of this information at this stage in the connection process will allow the connecting party to run tenders for contestable components of the identified user shared asset concurrently with the provision of other negotiated transmission services provided by the TNSP.

Application for connection

After making a connection enquiry and receiving a response from the TNSP, a connection applicant may make an application to connect.⁴⁷¹ The application must set out proposed access standards and include payment of the connection application fee. This stage has also been altered to accommodate the provision of information about any contestable identified user shared asset components. This is necessary to provide the TNSP with the information it needs to provide ongoing operation and maintenance services for the identified user shared asset.

The final rule requires the connection applicant to provide the TNSP with:

- Information reasonably required for the Primary TNSP to undertake operation and maintenance of the identified user shared assets.⁴⁷²
- The detailed design for and a process for how the Primary TNSP will review the detailed design and inspect the construction of the contestable components of the

⁴⁶⁷ This was provided later in the connection process in the draft rule.

⁴⁶⁸ This was provided later in the connection process in the draft rule.

⁴⁶⁹ The draft rule had required the functional specification to be provided to the connection applicant with sufficient detail to obtain *indicative costings* as opposed to *tenders*.

⁴⁷⁰ The draft rule did not require the TNSP to provide the connection applicant with an indicative cost estimate for operation and maintenance services.

⁴⁷¹ Clause 5.3.4 of the NER.

⁴⁷² In the draft rule, this was provided to the Primary TNSP later in the connection process.

identified user shared asset - i.e. undertake due diligence associated with taking on responsibility for the operation, maintenance and control of the asset.

- Proposed changes to the standard form network operating agreement if the Primary TNSP will not own some or all of the contestable identified user shared assets components.

Offer to connect

Following the receipt of an application to connect, a TNSP must prepare an offer to connect.⁴⁷³

The final rule has made significant changes to the draft rule regarding to the offer to connect. In the final rule, information necessary to allow the connecting party to run tenders for contestable components of the identified user shared asset has been moved to the connection enquiry stage. Information relating to how the Primary TNSP will review contestable components of the identified user shared asset has been moved to the connection application stage. This information was necessary earlier in the process to allow the connection applicant to concurrently develop the contestable components of its connection.

As a result, there are only minor wording revisions to the provisions relating to the offer to connect in the final rule.

Finalisation of connection agreements

Under the existing arrangements, if the applicant accepts an offer to connect, the final stage of the connection process is the negotiation of a connection agreement.⁴⁷⁴

In the final rule, this continues; however, this stage of the connection process has also been amended to accommodate the finalisation of the network operating agreement. The Commission considered that the finalisation of this agreement also needs to be set out in the NER, and that this is the appropriate stage for finalisation of the network operating agreement as its negotiation would generally follow the same process as the connection agreement.

C.5.5 Conclusions

The final rule promotes effective competition in the provision of contestable transmission services. The timing of when information is exchanged at each stage of the connection process allows the connecting party to adequately source competitive tenders for contestable services. As a consequence, the connection process has also been revised to provide the TNSP with more time to accommodate the provision of more detailed information at earlier stages. Changes have also been made to address

⁴⁷³ Clause 5.3.6 of the NER.

⁴⁷⁴ Clause 5.3.7 of the NER.

stakeholders' concerns relating to a Primary TNSP's access to information provided from contestable tenders and its potential use of that information in bidding for subsequent contestable services. In the final rule, the Primary TNSP will only be able to access the final detailed design (after it has submitted its own design where it is bidding for contestable services), and cannot use any information it receives in relation to non-contestable services for any contestable services, including for any future contestable services that it may bid for.

These changes will create a level playing field for these services by addressing concerns that a Primary TNSP may have an advantage in the tender process for contestable services where it chooses to participate in such tenders. This should increase timeliness of the connection process for both parties.

D Dedicated connection assets

This appendix outlines the Commission's final rule in relation to the arrangements for dedicated connection assets, a new term that is introduced under the final rule.

Specifically, it sets out the:

- current arrangements under the NER for these types of assets
- approach put forward by the COAG Energy Council for these assets
- views of stakeholders in submissions to the consultation paper, discussion paper and draft determination, as well as those expressed at the public forum, stakeholder workshops and in one-on-one meetings
- Commission's analysis of the rule change request and stakeholder views
- Commission's conclusions and a description of the final rule.

D.1 Definition of dedicated connection asset

D.1.1 Background

The term 'dedicated connection asset' is not defined in the existing NER. However, the Commission considered that it would broadly comprise those assets that are used to connect a generator or load to the transmission network, but which are able to be isolated from electricity flows across the transmission network, i.e. electricity flows across these assets only affect those parties connected to them. For example, a 'dedicated connection asset' could comprise the line and other equipment between a generator's facility and a substation on the transmission network. Throughout the rule change process it became clear that stakeholders had different interpretations of how these assets were covered by the existing NER, if at all:

- some considered them to be covered by the existing NER term, *extension*⁴⁷⁵
- some considered them to be covered by the existing NER term, *connection assets*⁴⁷⁶
- some considered them to form part of the connecting party's *facilities*,⁴⁷⁷ i.e. not a separate asset

⁴⁷⁵ Defined in Chapter 10 of the NER as "an augmentation that requires the connection of a power line or facility outside the present boundaries of the transmission or distribution network owned, controlled or operated by a Network Service Provider."

⁴⁷⁶ Defined in Chapter 10 of the NER as "those components of a transmission or distribution system which are used to provide connection services."

⁴⁷⁷ Defined in Chapter 10 of the NER as "a generic term associated with the apparatus, equipment, buildings and necessary associated supporting resources provided at, typically: (a) a power station or generating unit; (b) a substation or power station switchyard; (c) a control centre (being a AEMO

- others did not consider that these assets were defined or covered by the existing NER at all.

D.1.2 COAG Energy Council's view

In the rule change request, the COAG Energy Council presented the view that making a clear distinction between services provided by those assets that form part of the shared transmission network and those provided by assets used exclusively by the connecting party or parties would help to:

- better link the NER transmission service classifications with the assets that underpin their provision
- clearly define the transmission services to be provided by TNSPs
- clearly identify the connection point in each case
- clearly identify the different treatment of these assets.⁴⁷⁸

The rule change request therefore proposed to introduce the following definitions into the NER:

dedicated transmission connection assets

These are transmission connection assets built and dedicated for the exclusive use of an identified user group, not including any assets for which the costs of design, construction, operation and maintenance are recoverable from customers as charges for prescribed transmission services.

identified user group

One or more persons who generate or consume large quantities of electricity, and who are connected to the shared network at the same point.

The rule change request also proposed to define the term 'identified user shared asset', which would broadly comprise those assets that are built for the purpose of connecting a particular party but which form part of the shared transmission network, e.g. parts of a substation.⁴⁷⁹ These assets are discussed in appendix B.

The rule change request also proposed to define the boundary between dedicated connection assets and identified user shared assets, specifically as the "first point at

control centre, or a distribution or transmission network control centre); (d) facilities providing an exit service

⁴⁷⁸ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, pp. 4-5.

⁴⁷⁹ The arrangements for these types of assets under the existing NER are described in more detail in section 1.2.

which power flow from the generator or to a major load customer can be isolated from the shared network".⁴⁸⁰

These proposals are consistent with the approach recommended by the AEMC in the Transmission Frameworks Review.⁴⁸¹

D.1.3 Stakeholder views

Submissions to the consultation paper

Definition of dedicated connection asset

In submissions to the consultation paper, a number of stakeholders supported the proposal to separately define dedicated connection assets and identified user shared assets.⁴⁸² AEMO expressed support for a simple definition based on whether an asset is used to support power flows solely to the connection applicant. It considered that it may also be necessary to clarify that land, as well as equipment, may form part of the assets, otherwise there may be cases where efficient access to the network is prevented because the connecting party has insufficient rights over the land.⁴⁸³

By contrast, AusNet Services did not consider that there was any need to distinguish between dedicated connection assets and identified user shared assets. It suggested that a single definition covering both would simplify the rule change.⁴⁸⁴ This position aligned with AusNet Services' view that all assets associated with a party's connection to the shared transmission network (that is, both identified user shared assets and dedicated connection assets) should be provided on a contestable basis.

Boundary between dedicated connection assets and identified user shared assets

GDF Suez (now Engie) considered that the proposed boundary between dedicated connection assets and identified user shared assets would provide a clear line of demarcation between the two asset types.⁴⁸⁵ AGL was of the view that, conceptually, the proposed boundary was appropriate, but noted that sometimes this point of coupling may be best located at a circuit breaker or transformer that is part of an identified user shared asset. It therefore asked that the rule change provide flexibility for parties to negotiate the connection point and its location.⁴⁸⁶

480 COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 7.

481 See: <http://www.aemc.gov.au/Markets-Reviews-Advice/Transmission-Frameworks-Review>

482 Submissions on consultation paper: AGL, p. 5; GDF Suez, p. 2; Origin Energy, p. 1.

483 AEMO, submission on consultation paper, p. 3.

484 AusNet Services, submission on consultation paper, p. 4.

485 GDF Suez, submission on consultation paper, p. 2.

486 AGL, submission on consultation paper, p. 4.

Energy Networks Australia contended that the boundary between different asset types does not necessarily define the connection point. It stressed the importance of defining the connection point, given certain obligations are dependent on its location, e.g. metering and performance standards.⁴⁸⁷

The Clean Energy Council submitted that it is practical to locate the physical connection point as close as possible to the intersection between dedicated connection assets and identified user shared assets. It explained that access standards and power transfer capability are negotiated at the connection point, and that marginal loss factors are calculated there. The Clean Energy Council noted that the relationship between the connection point and the metering point is another complication, and asked that the NER not inadvertently reduce freedoms available to connecting parties to put in place arrangements that accommodate their specific connection.⁴⁸⁸

Submissions to the discussion paper

Definition of dedicated connection asset and identified user group

In the discussion paper, the Commission set out its view that all equipment in participating jurisdictions that operates at transmission voltages and is connected to the shared transmission network should be subject to the provisions of the NEL and the NER. The introduction of dedicated connection assets as a defined term in the NER would remove any ambiguity about whether or not this is the case.

The Commission therefore proposed to define the terms 'dedicated connection assets' and 'identified user group' as below, subject to legal drafting.

dedicated connection assets

Those transmission assets that:

- are developed and constructed for the purpose of connecting an identified user group to an existing transmission network (the "purpose limb");
- are used exclusively by the relevant identified user group (the "use limb"); and
- for which the costs of designing, constructing, operating and maintaining are paid for by the identified user group (the "payment limb")

identified user group

A group of one or more specifically identified generators or large loads that are connected to transmission assets that are, in turn, connected to the shared transmission network at the same connection point.

⁴⁸⁷ Energy Networks Australia, submission on consultation paper, pp. 2,9.

⁴⁸⁸ Clean Energy Council, submission on consultation paper, p. 7.

Submissions to the discussion paper indicated that most stakeholders supported the proposal to separately define dedicated connection assets and identified user shared assets,⁴⁸⁹ and supported the proposed definition of dedicated connection asset.

Some stakeholders questioned the need to define the term 'identified user group'. The Clean Energy Council submitted that the term seemed to be a new definition for a generator or load that would be seeking connection, and may therefore be unnecessary.⁴⁹⁰ AGL noted that, while it is possible that other users may want to access the same connection assets (as is implied in the definition of identified user group) this rarely, if ever, happens.⁴⁹¹

Boundary between dedicated connection assets and identified user shared assets

In line with the proposal put forward in the rule change request, in the discussion paper the Commission proposed to define the boundary between identified user shared assets and dedicated connection assets as the first point at which power flows to or from the connecting party could be isolated from the shared transmission network. The Commission suggested that, in practice, this boundary would most often be at an identifiable isolator or disconnecter.

In its submission to the discussion paper, Infigen stated that linking the definition of connection point to the boundary between the two assets could create confusion.⁴⁹² No other stakeholder commented on this aspect of the discussion paper in their submission.

Submissions to the draft determination

Definition of dedicated connection asset and identified user group

The draft rule introduced the terms 'dedicated connection asset' and 'identified user group' and defined them as below:

dedicated connection asset

The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting an identified user group* to an existing *transmission network*;
- (b) are used exclusively by the *identified user group*;

⁴⁸⁹ Submissions on discussion paper: AGL, p. 3; AEMO, p. 5; Clean Energy Council, p. 4; Energy Networks Australia, p. 1; EnergyAustralia, p. 1; PIAC, p. 3; Transmission General Holdings Australia, p. 3.

⁴⁹⁰ Clean Energy Council, submission on discussion paper, p. 4.

⁴⁹¹ AGL, submission on discussion paper, p. 3.

⁴⁹² Infigen, submission on discussion paper, p. 2.

- (c) can be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the *identified user group*;
- (d) are not *network connection assets* or part of a *generating system*, a *distribution or transmission system* for which a *Market Network Service Provider* is registered under Chapter 2 or a *Transmission Customer's facility* that utilises electrical energy; and
- (e) are not part of a *declared transmission system* of an *adoptive jurisdiction*.

identified user group

One or more persons (other than a *Distribution Network Service Provider*) who are *connected to a transmission network* at the same single connection point.

In its submission to the draft determination, EnergyAustralia considered that the definition of dedicated connection asset required clarification to remove ambiguity about where the dedicated connection asset ends and where a generator's facility begins. It submitted that the definition in the draft rule would likely make it hard to demarcate dedicated connection assets from other assets for the purposes of registration and classification, and understanding which NEL and NER obligations apply. EnergyAustralia suggested that further guidance be provided in the NER about this boundary, possibly by using diagrammatic examples of typical dedicated connection assets for different types of generators.⁴⁹³

The Clean Energy Council raised similar views, and suggested that a dedicated connection asset would finish at the first isolation point in the generator's substation unless agreed otherwise by the generator and the party who owns, operates or controls the dedicated connection asset (if this is a third party). It proposed that a clause to this effect be included in the final rule.⁴⁹⁴

AEMO considered that the concept of identified user group was at odds with the concept of a connection point under the existing NER, which marks the interface of a transmission system with an individual user's facilities. It submitted that this situation (i.e. where multiple parties are connected behind the same connection point to the shared transmission network) is analogous to an embedded network, for which it is useful to note that the connection point from a user's perspective is the child connection point.⁴⁹⁵

There were no other specific comments on this aspect of the draft rule in submissions to the draft determination. However, a number of concerns were raised by stakeholders in workshops and in one-on-one meetings about the practical implications of the definition of identified user shared asset, including difficulties in distinguishing between an identified user shared asset and a dedicated connection asset.

⁴⁹³ EnergyAustralia, submission on draft determination, p. 1.

⁴⁹⁴ Clean Energy Council, submission on draft determination, p. 7.

⁴⁹⁵ AEMO, submission on draft determination, p. 12.

D.1.4 Analysis and conclusions

Changes between the draft and final rule

There were several changes between the draft and final rule relating to the definition of dedicated connection asset. These are summarised below and set out in more detail in this section. Specifically, the final rule includes:

- amendments to the definition of dedicated connection asset, including so that it does not include part of a distribution system
- an amended definition of identified user group so that it does not include a network service provider (other than an MNSP).

In developing the final rule, the Commission concluded that it was important to clearly define what each of the assets and services associated with a connection to the transmission network are, and how they are regulated, if at all. This is because different interpretations of the NER by TNSPs in different jurisdictions can create inefficiencies in the market generally, as well as for individual connecting parties. A lack of a consistent approach to transmission connections across the NEM can create confusion for connecting parties, particularly those operating in more than one jurisdiction. A successful connection may rely on connecting parties learning and accommodating the specific interpretations of a particular TNSP, which can add time and cost to a connection process.

Further, connecting parties consider a range of factors when deciding where to locate a project, for example fuel costs and proximity to existing transmission infrastructure. If the interpretation of the connections framework is very different between TNSPs, connection costs may be significantly higher in one jurisdiction over another. If this is the case, connection costs may start to comprise a far higher proportion of total project costs in that jurisdiction, causing connecting parties to make sub-optimal decisions about where to locate their project since connection costs provide some locational signals about where projects should locate. Investment in generation, and so a particular connection, should occur where it is most efficient and should not be determined by differences in connection costs across jurisdictions.

A common issue that emerged in discussions with stakeholders on this rule change request was a lack of clarity about the term connection point in the context of connections to the shared transmission network. This lack of clarity appeared to stem from the ambiguity under the existing NER about how assets and services that are required to facilitate a connection to the shared transmission network are treated in the NER.⁴⁹⁶

Clearly defining what identified user shared assets and dedicated connection assets are therefore establishes a clear distinction between the way in which the two types of assets are economically regulated and the obligations of the parties who own, operate

⁴⁹⁶ This ambiguity is discussed in further detail in section 1.3.1.

and control them.⁴⁹⁷ This is particularly important under the final rule, where some of the services provided in relation to identified user shared assets are contestable and others are to be provided exclusively by the Primary TNSP as negotiated transmission services.⁴⁹⁸

Note that this appendix focuses on the arrangements for dedicated connection assets only - identified user shared assets are discussed in more detail in appendix B. Feedback from stakeholders throughout the rule change process indicated that there was general support for greater clarity on how these sorts of assets are treated under the NER.

The final rule also contains amendments to the definitions of a number of existing terms in the NER, such as transmission system and connection assets, and makes consequential changes, to provide increased clarity on the assets and services required to facilitate a connection to the transmission network.⁴⁹⁹

The final rule introduces the term 'dedicated connection asset' and defines it as below:

dedicated connection asset

The apparatus, equipment, plant and buildings that:

- (a) are used for the purpose of *connecting an identified user group* to an existing *transmission network*;
- (b) are used exclusively by the *identified user group*;
- (c) can be electrically isolated from the *transmission network* without affecting the provision of *shared transmission services* to persons who are not members of the relevant *identified user group*; and
- (d) are not:
 - (i) *network connection assets*;
 - (ii) part of a *generating system*;
 - (iii) part of a *distribution system*;
 - (iv) part of a *transmission system* for which a *Market Network Service Provider* is registered under Chapter 2;

⁴⁹⁷ Note that the arrangements for the connection of a DNSP to the transmission network are different to the arrangements for the connection of load, generators, MNSPs and embedded networks under the final rule. Arrangements for connection of DNSPs are set out in appendix E.

⁴⁹⁸ Primary TNSP is a new term defined in the final rule as "The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system." This final determination uses the term 'incumbent TNSP' to refer to this party under current arrangements, and the term Primary TNSP when referring to the arrangements for this party under the final rule.

⁴⁹⁹ Specifically, rule 5.2A.4 of the final rule sets out how the various services required to connect to the transmission network are classified under the final rule.

- (v) part of a *Transmission Customer's facility* that utilises electrical energy; or
- (vi) part of a *declared transmission system* of an *adoptive jurisdiction*.

Note

Where a *Primary Transmission Network Service Provider* is registered in respect of a *dedicated connection asset* operating at distribution voltage, it will not be a *distribution system* and will constitute part of its *transmission system* for which it is registered. See definitions of *distribution system* and *transmission system*.

The Commission's intention was for this definition to capture all the components that are necessary to connect a connecting party (i.e. a generator, load, MNSP or embedded network) to the transmission network. That is, a dedicated connection asset may be comprised of a number of components, provided that the collection of all the components meets the definition set out above. In practice, there may also be number of assets (for example those assets required to facilitate a connection to an existing dedicated connection asset) that comprise one dedicated connection asset for the purposes of the NER.

This definition is different to that which was proposed in the discussion paper and the rule change request. The 'payment limb' that was proposed in the discussion paper was not included in the final rule because the Commission considered that this principle was sufficiently covered off by the 'purpose limb' - that is, "used exclusively by the identified user group". The intention of this limb is also addressed in clause 5.2A.4(a) of the final rule, which sets out that all development aspects of dedicated connection assets are contestable services that are to be procured and paid for by the connecting party on commercial terms.⁵⁰⁰ Limb (c) of the definition was introduced to further clarify that these assets can be electrically isolated from flows on the transmission network.

The definition also differs slightly from that in the draft rule. Amendments were made for clarity and to make it clear that a dedicated connection asset does not include a part of a distribution system. The reason for this change is set out in section D.3.4.

The definition does not include land, as was proposed by AEMO in its submission to the consultation paper. This is because the Commission understood that, in most cases, a connecting party will lease or obtain an easement over the land on which its assets are built, as opposed to buying the land. Including land in the definition of a dedicated connection asset would imply that the connecting party must own the land on which its asset is sited, and then include that land in any sale or subsequent use of the dedicated connection asset. While the final rule does not prevent a connecting party from owning the land on which the asset is sited, requiring that this be the case through the definition of dedicated connection asset would remove flexibility for the connecting party to determine the arrangements by which it obtains access to the land on which its asset is sited.

⁵⁰⁰ This aspect of the final rule is discussed further in section D.2.

The final rule defines the term identified user group as below.

identified user group

One or more persons (other than a *Network Service Provider* who is not a *Market Network Service Provider*) who, from time to time, are *connected* to a *transmission network* at the same single *connection point*.

As noted in section D.1.3, a number of stakeholders queried the need to define this term, which was proposed in the rule change request. The final rule defines this term to reflect that more than one party could share a connection point to the shared transmission network. For example, if a generator connects to an existing dedicated connection asset that was built to facilitate a load's connection and the load maintains its connection point with the shared transmission network and puts in place appropriate metering arrangements with the generator.

The definition differs from that in the draft rule. Amendments were made to make it clear that an identified user group does not include a network service provider (that is, a DNSP or a TNSP).⁵⁰¹

The final rule does not include the proposed wording in the rule change request that the identified user group would be comprised of "specifically identified parties". The Commission considered that there was no need for these parties to be "specifically identified" by anyone, as it should be clear whether parties are using a common dedicated connection asset to connect to the transmission network.

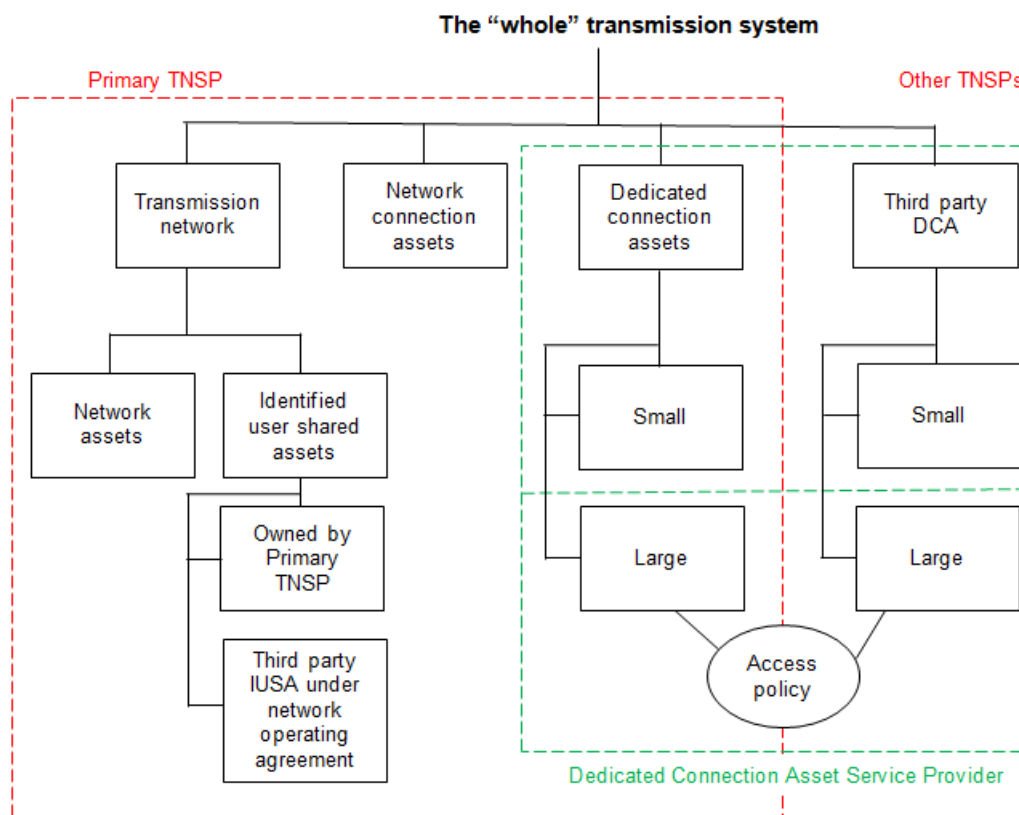
As set out at the beginning of this appendix, stakeholders had differing views about whether existing assets that meet the definition of dedicated connection asset under the final rule are subject to the NEL and the NER or not. The Commission considered that it should be put beyond doubt that parties who own, operate or control dedicated connection assets are subject to the NEL and the NER in respect of those assets. Parties that connect to the transmission network are explicitly covered by the existing NEL and NER. It therefore follows that the assets by which these parties connect (i.e. dedicated connection assets) are also covered by the NEL and the NER.

The final rule makes it clear that, while they do not form part of the shared transmission network because they can be electrically isolated from it, dedicated connection assets form part of the 'whole' transmission system, as discussed below. The 'whole' transmission system comprises all assets that either form part of the shared transmission network or are connected to it. Figure D.1 below conceptualises these different terms.⁵⁰²

501 The reason for this is set out in section D.3.4.

502 The distinction between large and small dedicated connection assets is set out in section D.3.

Figure D.1 Conceptual diagram of the 'whole' transmission system, and the assets that comprise it



* Network operating agreement between Primary TNSP and third party owner of IUSA.

The final rule removes any ambiguity about whether parties who own, operate or control a dedicated connection asset are covered by the NEL and the NER in respect of those assets by amending the definition of transmission system⁵⁰³ (as below) to clarify that a dedicated connection asset is, or forms part of, a transmission system. As a result, this triggers the NEL requirement for parties who own, operate or control a dedicated connection asset to register with AEMO unless they are exempted by the AER from the requirement to register.⁵⁰⁴

transmission system

A *transmission network*, together with the *connection assets* associated with the *transmission network*, which is connected to another *transmission* or *distribution system*.

For a *participating jurisdiction* other than the State of Victoria, a *transmission system* includes for the purposes of Chapter 2, a *third party DCA*, which is not a Notified Existing DCA within the meaning of clause 11.98.1.

503 Transmission system is defined in the existing NER as "a transmission network, together with the connection assets associated with the transmission network, which is connected to another transmission or distribution system."

504 Registration and exemption with respect to a dedicated connection asset is discussed further in section D.3.

Note

An *identified user shared asset* or a *dedicated connection asset* for which the *Primary Transmission Network Service Provider* is registered will form part of that provider's broader *transmission system* (even if the *dedicated connection asset* is operating at a distribution voltage) rather than constituting a separate *transmission system* requiring separate registration under Chapter 2. A person owning, controlling or operating a *third party DCA* is required to be registered under Chapter 2 as a *Transmission Network Service Provider*.

The term *third party DCA*, defined below, is introduced in the final rule to describe those dedicated connection assets that are owned, operated or controlled by a party other than the Primary TNSP.

Third party DCA

A *dedicated connection asset* for which a person other than the *Primary Transmission Network Service Provider* is registered under Chapter 2.

The final rule also introduces the term *Primary Transmission Network Service Provider*, defined as follows:

Primary Transmission Network Service Provider

The *Transmission Network Service Provider* who operates the largest *transmission network* in each *participating jurisdiction* but does not include a *Transmission Network Service Provider* for a *declared transmission system*.

Clarity on what dedicated connection assets are, how they are regulated and how they are distinguished from other transmission assets will help support transparency and predictability in the NER connections framework. Making the NER clearer in this regard should make it easier for connecting parties to:

- know what assets and services they are negotiating for when seeking a connection to the shared transmission network
- enhance their ability to negotiate on more equal terms with TNSPs
- result in a more predictable connection experience across transmission network boundaries.

The Commission concluded that these definitions, combined with rule 5.2A of the final rule, provide greater clarity around what dedicated connection assets are, what purpose they serve and how the costs of these assets are recovered, than the definition proposed in the rule change request.

Transitional arrangements for existing assets that will fall under the definition of dedicated connection asset when the final rule commences are addressed in chapter 5.

Boundary between dedicated connection assets and identified user shared assets

The final rule does not explicitly define the boundary between dedicated connection assets and identified user shared assets. This is because not all assets that will fall under the definition of a dedicated connection asset or identified user shared asset will necessarily have a physical boundary with the other. Defining this boundary may therefore have practical limitations. Instead, the final rule relies on the definitions of these terms being sufficiently detailed so that it is clear what assets fall into which category, and therefore how they are treated under the NER. A party should be able to take an asset, assess it against the various limbs as set out in the definitions, and determine what type of asset it is. Another party should be able to assess it against those same definitions and get the same result.

The final rule does not specify which types of equipment would fall under each asset definition. Doing so would reduce the flexibility that parties have to design identified user shared assets and dedicated connection assets to meet their specific requirements, and may also not be suitable for all connection configurations. The Commission concluded that the asset's design and configuration should drive which assets fall under which definition, not the other way around. However, in general, the Commission expected that:

- cut in works (for example works to cut into the existing shared transmission network) and those parts of a new substation that facilitate shared transmission flows across the broader network, including isolators and circuit breakers up until the connection point, would likely fall under the definition of identified user shared asset, as shown in blue in Figure D.2
- new power lines and transformers to connect a generating system to that substation will likely fall under the definition of dedicated connection asset, as shown in green in Figure D.2.

Figure D.2 below provides a diagrammatic example of the Commission's views on the boundaries between the various types of assets, including dedicated connection assets and identified user shared assets.

The final rule also provides parties with the ability to call for the engagement of an independent engineer to provide advice on whether a particular component forms part of an identified user shared asset or a dedicated connection asset.⁵⁰⁵

The Commission considered that the existing definition of connection point should be amended to put beyond doubt that it is the point at which a connecting party connects to the shared transmission network - that is, the interface between shared transmission assets and assets that are only used by the connecting party. As several stakeholders noted throughout the rule change process, the connection point represents a physical boundary for where responsibilities between the TNSP and the connecting party start

⁵⁰⁵ Clause 5.4.1(b)(2) of the final rule. Arrangements for the engagement of an independent engineer are set out in appendix C.

and finish. The connection point is where performance standards are set, metering occurs, transmission use of system charges are determined and frequency control ancillary service needs are calculated.⁵⁰⁶ The final rule modifies the existing definition of connection point as below to make this clear.

connection point

In relation to a *declared shared network* and a *distribution network* (other than an *embedded network*), the agreed point of supply established between *Network Service Provider(s)* and another *Registered Participant, Non-Registered Customer* or *franchise customer* and includes a *parent connection point*.

In relation to other *transmission networks*, the point at which power flows to or from the person or *identified user group* connected to the *transmission network* can be isolated from the *transmission network*. If there is more than one such point, the *Network Service Provider* and that person or *identified user group* will agree which point is the *connection point* in their *connection agreement*.

In relation to an *embedded network*, the *child connection point*, unless otherwise specified.

This definition, alongside the definitions of identified user shared asset and dedicated connection asset, still affords connecting parties and TNSPs some flexibility in how identified user shared assets and dedicated connection assets are designed, in order to reveal the point at which power flows can be isolated. However, while the asset's design may result in different locations of the connection point for different connections, the connection point itself will always be at such a point, and so the relevant obligations that flow from this will always be determined in a consistent manner. Clarifying these terms establishes a clear distinction between the way in which the two types of assets are regulated and the obligations of the parties who own, control and operate them.

Boundary between dedicated connection assets and the connecting party's facility

Given the differing interpretations of how existing 'dedicated connection assets' are defined and regulated under the existing NER, the Commission considered that it was important to make a clear distinction between dedicated connection assets and those assets that comprise the connecting party's facility, for example a generating system or customer's facility that uses electrical energy. In the Commission's view, the demarcation between what would fall under the definition of dedicated connection asset under the final rule and the proponent's facility would be at some point in the facility's incoming substation or equivalent assets. However, the Commission recognised that the exact location of this 'boundary' - for example, at the incoming switchgear, transformer or outgoing circuit breakers - would depend on how ownership of, and responsibility for, the different asset types is allocated.

As set out in the previous section, a number of stakeholders raised questions about this boundary, including concerns that some parts of a generating facility would be

⁵⁰⁶ The Commission recognised that there are current examples in the NEM where this may not be the case.

considered to be a dedicated connection asset and therefore subject to certain obligations under the final rule, e.g. third party access. The definition of dedicated connection asset in the draft rule specified that a dedicated connection asset is not part of a generating system. Under the existing NER, a generating system is defined as below.

generating system

- (a) Subject to paragraph (b), for the purposes of the *Rules*, a system comprising one or more *generating units*.
- (b) For the purposes of clause 2.2.1(e)(3), clause 4.9.2, Chapter 5 and a *jurisdictional derogation* from Chapter 5, a system comprising one or more *generating units* and includes auxiliary or *reactive plant* that is located on the *Generator’s side* of the *connection point* and is necessary for the *generating system* to meet its *performance standards*.

Generating unit is defined in the existing NER as below.

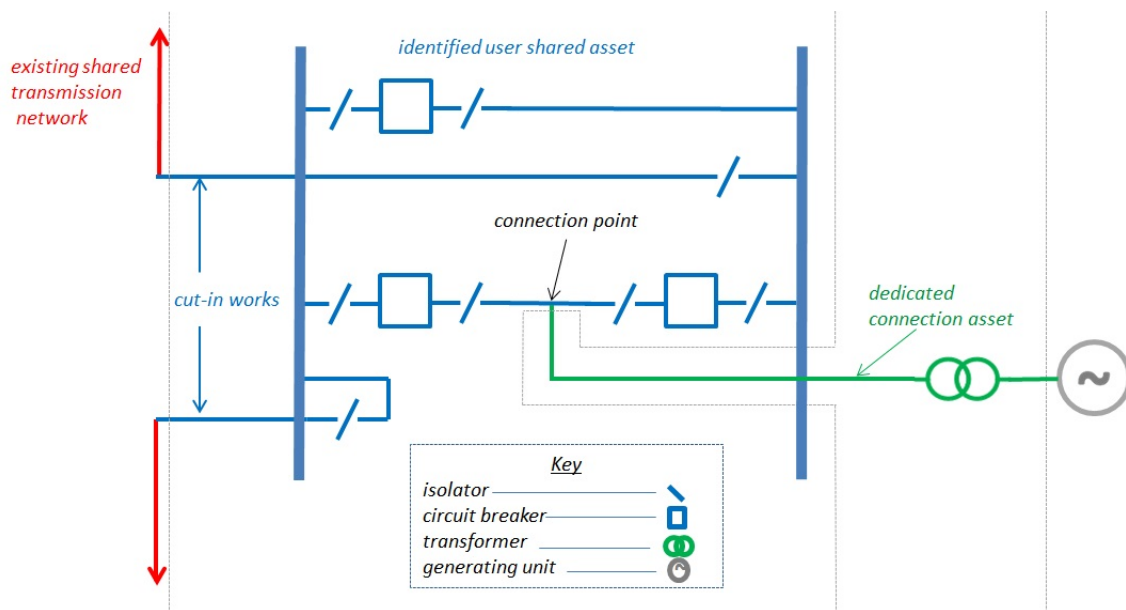
generating unit

The plant used in the production of electricity and all related equipment essential to its functioning as a single entity.

The Commission considered that, under these definitions, it is clear that any internal wiring between generating units, for example those between wind turbines, would not be captured by the definition of dedicated connection asset.

Figure D.2 provides a simplified illustration of the new asset terms in the final rule in the context of connections to the transmission network.

Figure D.2 Illustration of key concepts and terms in the final rule



D.2 Contestability of services for dedicated connection assets

D.2.1 Background

The Commission understood that some stakeholders considered that, under the existing NER, all services provided in relation to existing assets that would fall under the definition of dedicated connection asset can be provided to the connecting party on an economically unregulated basis. That is, a connecting party could engage any party of their choosing to design, build, own, operate and maintain the assets that connect their facility to the shared transmission network. However, the existing NER do not make this explicitly clear, nor is this understanding consistently applied across the NEM. Through consultation on the *Transmission frameworks review* and this rule change request, it became evident that there was no consistent understanding of who could, or was required to (if anyone), provide services for these types of assets, and whether the provision of these services was economically regulated or not.

D.2.2 COAG Energy Council's view

The rule change request proposed that the NER be amended to clarify that all services provided in relation to a dedicated connection asset are not price or revenue regulated under the NER⁵⁰⁷. The COAG Energy Council proposed that the NER make it clear that design, construction, ownership, operation and maintenance services for these assets can be provided by any party, and there is no obligation on the incumbent TNSP to provide these services. It proposed amendments to the NER to clarify that the costs of providing these services would be agreed between the connecting party and its chosen service provider (which could be the incumbent TNSP providing these as non-regulated transmission services) on a commercial basis. This proposal was consistent with the approach recommended by the AEMC in the *Transmission frameworks review*.

D.2.3 Stakeholder views

Submissions to the consultation paper

Submissions to the consultation paper indicated that stakeholders generally supported the fully contestable provision of all services for dedicated connection assets.⁵⁰⁸ Energy Networks Australia submitted that, as long as a dedicated connection asset's connection to the shared transmission network meets appropriate standards, there should be no concern with them being provided contestably.⁵⁰⁹ It also sought clarification that there would be no obligation for the incumbent TNSP to provide

⁵⁰⁷ COAG Energy Council, *Transmission Connection and Planning Arrangements*, rule change request, July 2015, p. 8.

⁵⁰⁸ Submissions on consultation paper: AGL, p. 4; AusNet Services, p. 2; Clean Energy Council, p. 6; EnergyAustralia, p. 1; Energy Networks Australia, p. 10; Major Energy Users, p. 5.

⁵⁰⁹ Energy Networks Australia, submission on consultation paper, p. 10.

dedicated connection assets, indicating that requiring them to do so would expose them to an unlimited investment requirement.⁵¹⁰

AEMO submitted that the perceived lack of clarity regarding the definitions of services and assets in the rules is symptomatic of problems associated with monopoly power, not a problem with the drafting of the NER. That is, while services for dedicated connection assets could be provided on a contestable basis, some connection applicants may feel pressure to procure all services from the TNSP to promote a timely, smooth connection process.⁵¹¹

Submissions to the discussion paper

In the discussion paper the Commission expressed support for the approach put forward in the rule change request, and proposed to amend the NER to clarify that all services for dedicated connection assets can be provided on a contestable basis. Most stakeholders who commented on this aspect of the discussion paper supported these proposed clarifications.⁵¹²

Submissions to the draft determination

The draft rule clarified that all development aspects of services provided for dedicated connection assets are non-regulated transmission services and can be provided by any party on commercial terms.⁵¹³ Parties that commented on this aspect of the draft rule in their submissions to the draft determination supported this approach.⁵¹⁴

AEMO submitted that practical issues may arise where the ownership and operation of dedicated connection assets is separate from the ownership and operation of identified user shared assets. It considered that, while there may be benefits in allowing separate ownership and operation, further consideration of consequential impacts, including things like shared site responsibilities, is warranted.⁵¹⁵

D.2.4 Analysis and conclusion

Changes between the draft and final rule

There were no changes between the draft rule and final rule on this aspect of the rule change request.

⁵¹⁰ Energy Networks Australia, submission on consultation paper, pp. 4,10.

⁵¹¹ AEMO, submission on consultation paper, p. 3.

⁵¹² Submissions on discussion paper: Australian Energy Council, p. 1; AGL, p. 1; Clean Energy Council, p. 7; Energy Networks Australia, p. 1; EnergyAustralia, p. 2; Origin Energy, p. 2.

⁵¹³ Clause 5.2A.4(a) of the draft rule.

⁵¹⁴ Submissions on draft determination: Ausgrid, p.1; Clean Energy Council, p. 6; ElectraNet, p. 8; Origin Energy, p. 2.

⁵¹⁵ AEMO, submission on draft determination, p. 5.

Input from stakeholders indicated that there are a sufficient number of alternative providers, and the barriers to entry are sufficiently low, for a connecting party to find an alternative provider to the incumbent TNSP for the provision of services for dedicated connection assets, for example design, construction, ownership, operation and maintenance. Since these assets do not form part of the shared transmission network, there are no material benefits to consumers in requiring the incumbent TNSP to provide services for these assets. Any risks of inadequate design, construction, ownership, maintenance or operation of a dedicated connection asset fall on the connecting party or parties (i.e. identified user group) alone, and do not affect flows to end-use consumers via the shared transmission network. Further, the benefits of a dedicated connection asset accrue only to the connecting party. It is therefore appropriate that this party bears the cost of designing, building, owning, operating and maintaining the asset.

The Commission agreed with the COAG Energy Council and the views of stakeholders that the connecting party should be able to make its own choices about such assets with minimal involvement from the TNSP, subject to meeting minimum technical standards at the connection point.

As such, the final rule clarifies that all services provided for new dedicated connection assets are non-regulated transmission services and can be provided by any party on commercial terms.⁵¹⁶ That is:

- there is no obligation on any party, including the Primary TNSP, to offer these services
- there is no regulated framework for the setting of price and non-price terms and conditions for the provision of those services.

The final rule removes clause 5.3.6(k) of the existing NER.⁵¹⁷ The Commission understood that this clause causes some confusion because, while there is no clear obligation on TNSPs to construct augmentations to the shared network, including extensions, it suggests that there is an obligation to provide an extension to facilitate a connection. However, the clause is not positively expressed - rather it is an exception to a non-obligation. The clause is deleted in the final rule to remove this confusion, and also because the Commission considered that it is clear under clause 5.2A.4(a) of the final rule that the construction of a dedicated connection asset is a non-regulated and so contestable service.

Under the final rule, connecting parties will be able to choose any party to provide services for dedicated connection assets. The connecting party could choose to:

⁵¹⁶ Clause 5.2A.4(a) of the final rule. Note that access to the services provided by means of large dedicated connection assets is regulated under the final rule. Third party access to large dedicated connection assets is discussed in section D.4.

⁵¹⁷ Clause 5.1.2(c) of the existing NER states that "nothing in the Rules is to be read or construed as imposing an obligation on a Network Service Provider to effect an extension of a network unless that extension is required to effect or facilitate the connection of a Connection Applicant and the connection is the subject of a connection agreement.."

- provide the services itself
- have the Primary TNSP provide the services as non-regulated transmission services
- engage a third party to provide the services.

Submissions on the consultation paper, discussion paper and draft determination on the rule change request indicated broad stakeholder support for this approach.

The arrangements by which that party is engaged will be agreed commercially between the connecting party and its chosen service provider. The final rule does not specify these arrangements or the arrangements that may need to be put in place to facilitate the connecting party's connection to the transmission network via a dedicated connection asset that is owned, operated and controlled by a third party.⁵¹⁸ The party that owns, operates or controls the dedicated connection asset will need to be registered as a dedicated connection asset service provider, or exempted by the AER.⁵¹⁹

Under the final rule, TNSPs will be able to compete to provide services for dedicated connection assets in all parts of the NEM as non-regulated transmission services, provided that they comply with their approved cost allocation methodology and the transmission ring-fencing guidelines.⁵²⁰ For the avoidance of doubt, the final rule does not require the Primary TNSP to offer to provide these services as a negotiated or prescribed transmission services. In other words, there is no 'backstop' provider of these services.

Clarifying that all services for new dedicated connection assets can be provided by any party reduces ambiguity and facilitates competition in the provision of these services. Competition for the provision of these services gives connecting parties a greater ability to manage the costs and timing of their connection to the shared transmission network, and is likely to result in more efficient investment in, and operation of, these services.

518 A connection agreement will be required; however, the final rule does not set out who the connection applicant will need to be.

519 This is discussed in section D.3 below.

520 Ring-fencing arrangements are discussed in further detail in appendix B.2.

D.3 Registration of parties who provide services by means of a dedicated connection asset

D.3.1 Background

Although there is no equivalent definition or common interpretation of a dedicated connection asset under the existing NER, the Commission's understanding was that existing assets that would fall under the definition of dedicated connection asset in the final rule are owned and operated by either:

- the connecting party itself, or through a contract with another party; or
- the incumbent TNSP.

In both cases, the Commission understood that AEMO assumes that these assets are 'registered' by means of the connecting party's registration (as either a Generator or Market Customer) or the TNSP's registration.⁵²¹ Under this interpretation, such assets are considered to be subject to some requirements under the NER, for example the provisions under Chapter 4 of the NER that require Registered Participants to follow AEMO's instructions for power system security purposes.

Some stakeholders noted to the Commission that AEMO places certain obligations on generators with regard to power system security in their connection agreements with the incumbent TNSP, which generally also account for the 'dedicated connection asset'. However, as there was no consistent understanding of how these assets are defined and who could provide them under the existing NER, there was a degree of ambiguity about whether these assets are covered by a participant's registration and therefore subject to some NER requirements. A range of jurisdictional obligations also apply to owners or operators of such assets under current arrangements, including licensing.

D.3.2 COAG Energy Council's view

The rule change request noted that the NEL prohibits a person from owning, operating or controlling a transmission or distribution system unless it is a registered network service provider or exempted from registration by the AER. The COAG Energy Council concluded that it would be inappropriate for a party owning dedicated connection assets to be required to register as a TNSP and so be subject to all of the obligations under the NER. It therefore proposed that owners of dedicated connection assets be automatically exempt from the requirement to register as a TNSP. However, it proposed that a condition of this exemption would be a requirement to negotiate access to the asset by other parties on reasonable terms (discussed in section D.4).⁵²²

⁵²¹ The Commission did not consider this interpretation to be correct. That is, transmission lines do not form part of a generator or load's facility.

⁵²² COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, pp. 9-10.

D.3.3 Stakeholder views

Submissions to the consultation paper

In submissions to the consultation paper, several generators supported the proposal that owners of dedicated connection assets would be automatically exempt from the requirement to register as a TNSP.⁵²³ The Clean Energy Council considered that these assets would be owned, operated and controlled by the generator, and therefore argued that anything other than an automatic exemption would result in unnecessary duplication of registration for a Generator. It therefore suggested that the proposed conditions of registration be incorporated into the registration requirements for a Generator or Market Customer.⁵²⁴

AEMO considered that any new registration category that would apply to owners of dedicated connection assets should require that the owners of these assets be subject to provisions in Chapter 4 of the NER that require Registered Participants to follow AEMO instructions for power system security purposes, and Chapter 5 of the NER in relation to performance standards. It also considered that the incumbent TNSP and AEMO should be informed about changes to dedicated connection assets that could affect power flows. It therefore proposed that owners of dedicated connection assets be required to register, but be exempted from certain chapters of the NER, namely Chapter 6A and parts of Chapter 5, subject to appropriate conditions to address future access requirements.⁵²⁵

Energy Networks Australia was of the view that there was no justification for these parties to be exempt from registration. It considered that these parties would be large companies, so the burden of registration would be low. It also submitted that owners of dedicated connection assets should be subject to the standards set out in Chapter 5 of the NER in order to maintain the integrity of the transmission system.⁵²⁶

AusNet Services expressed a similar view, submitting that it would not be appropriate to exempt parties that operate, control and maintain transmission assets from registration, as this requires specific expertise. It suggested that it may be appropriate for the original connecting party to be subject to economic regulation under the NER if another connecting party wants to use that dedicated connection asset.⁵²⁷

Submissions to the discussion paper

In the discussion paper, the Commission presented the view that all assets in participating jurisdictions that are operating at transmission voltages and are interconnected with the rest of the transmission system should be subject to the

⁵²³ Submissions on consultation paper: AGL, p. 5; GDF Suez, p. 3; Clean Energy Council, p. 8.

⁵²⁴ Clean Energy Council, submission on consultation paper, p. 8.

⁵²⁵ AEMO, submission on consultation paper, p. 3.

⁵²⁶ Energy Networks Australia, submission on consultation paper, p. 11.

⁵²⁷ AusNet Services, submission on consultation paper, p. 4.

provisions of the NEL and the NER.⁵²⁸ The Commission therefore considered it appropriate for parties that own such assets to be registered so that they are subject to provisions that enable the safety, reliability and security of the power system to be maintained. These provisions, among others, exist within the NER and currently apply to all Registered Participants, including TNSPs. However, the Commission acknowledged that not all of the requirements placed upon TNSPs under the NER would be applicable to owners of dedicated connection assets.

The NEL allows the AER to exempt a person from the requirement to register as a TNSP.⁵²⁹ The automatic exemption for owners of dedicated connection assets, as was proposed in the rule change request, would have the effect of constraining or regulating the AER's discretion in its granting of exemptions. That is, it would not allow the AER to exercise its discretion under the NEL on whether to grant an exemption or not, because such a rule would have had the effect of *requiring* the AER to grant an exemption. In the discussion paper the Commission therefore proposed to establish a sub-category of TNSP registration for owners of dedicated connection assets – the Dedicated Transmission Connection Asset Owner – to which a limited set of obligations would apply.

Stakeholders did not comment extensively on this proposal in their submissions to the discussion paper. However, those that did were largely supportive of the approach proposed by the AEMC. Specifically, EnergyAustralia and Origin Energy submitted that the case had been made for a new sub-category of registration to apply to owners of dedicated connection assets.⁵³⁰ The Clean Energy Council noted that the obligations AEMO puts on generators to manage power system security are already captured in connection agreements, which generally also account for the dedicated connection asset. However, it acknowledged that this may become less certain if the dedicated connection asset is owned by someone other than the connecting party, so agreed that a light-handed approach to registration that can be executed alongside registration as a Generator was appropriate.⁵³¹

Submissions to the draft determination

The language used in the rule change request and in the consultation paper to describe this aspect of the rule change request implied that only the owner of a dedicated connection asset would be required to register. This was reflected in the name of the Registered Participant category proposed by the Commission in its discussion paper – the Dedicated Transmission Connection Asset Owner. However, consistent with the conclusions drawn in section D.1.4, it was the Commission's intention that, to the extent an asset forms part of the 'whole' transmission system, a person is registered as a TNSP in respect of that asset, or exempt. This aligns with existing wording in the NEL and the NER that requires a person who owns, operates or controls a transmission

528 This is explained further in section D.1.4.

529 See sections 11(2) and 13 of Part 2 of the NEL.

530 Submissions on discussion paper: EnergyAustralia, p. 2; Origin Energy, p. 2.

531 Clean Energy Council, submission on discussion paper, p. 7.

system that forms part of the interconnected national electricity system to register or be exempt from registration.⁵³² It is also consistent with the use of the existing NER term network service provider.⁵³³

The draft rule did not affect the AER's ability to grant an exemption to any party from the requirement to register as a TNSP because this is a right that the AER has under the NEL. As a result, under the draft rule, any person who owned, operated or controlled a dedicated connection asset would be required to register with AEMO as a TNSP, be exempted by the AER from that requirement, or appoint an intermediary.⁵³⁴ The draft rule introduced the term dedicated connection asset service provider to refer to any party who was registered with respect to a dedicated connection asset.

ElectraNet expressed support for parties who own, operate or control dedicated connection assets being registered, indicating that this will assist with the robustness and integrity of the electricity system.⁵³⁵ The Clean Energy Council asked that the AER provide guidance on its proposed approach to exemptions in order to provide guidance to parties who own, operate or control dedicated connection assets.⁵³⁶

AEMO submitted that it would be concerned if the operators of dedicated connection assets (if not the Primary TNSP) were regularly exempted by the AER from the requirement to register as a TNSP, unless the dedicated connection asset:

- complies with minimum technical standards
- remains subject to Chapter 4 of the NER
- is below a suitable threshold indicating that the connected generation or load is unlikely to impact power system security or reliability.

AEMO also noted that clause 2.5.1(d) of the existing NER limits the AER's options to either exempt parties from Chapter 5 only, or impose a complete exemption from the requirement to register. AEMO considered that there will rarely, if ever, be a situation in which it is workable to exempt a transmission system operator from the operation of Chapter 5 but retain the application of Chapter 6A. As a result, in AEMO's view, the AER's decision is binary – full exemption or full regulation. As noted above, AEMO expressed concern about these sorts of parties regularly being exempted, and therefore

⁵³² Section 11(2) of Part 2 of the NEL, and clause 2.5.1(a) of the existing NER.

⁵³³ See Network Service Provider in Chapter 10 of the existing NER.

⁵³⁴ Clause 2.9.3 of the NER requires the AER to allow an exemption from the requirement to register if the applicant notifies the AER of the identity of a person (an "intermediary") to be registered instead of the applicant; the applicant provides the AER with the written consent of the intermediary to act as intermediary in a form reasonably acceptable to the AER; and the AER notifies the applicant that it approves of the intermediary. The AER must approve the intermediary if the applicant establishes that, from a technical perspective, the intermediary can be treated for the purpose of the NER as the applicant with respect to the relevant transmission system, with which the applicant is associated.

⁵³⁵ ElectraNet, submission on draft determination, p. 8.

⁵³⁶ Clean Energy Council, submission on draft determination, p. 7.

proposed that clause 2.5.1(d) of the NER be amended to allow the AER to provide for partial exemptions from obligations in Chapters 5, 6A and 7 of the NER that are more likely to be appropriate for a range of potential transmission assets. It also proposed that it be made clear that those exemptions can be limited to a specified transmission system or part of a transmission system operated by the applicant.⁵³⁷

AEMO also expressed concern about measurement and system operation issues that could arise if a large number of loads or generators connected to the same dedicated connection asset. It submitted that separation of such a dedicated connection asset from the remaining network could have significant adverse implications for the system strength of the shared network. It also expressed concern about settlements and potential retail contestability within such a network.⁵³⁸

The draft rule also required:

- a TNSP to classify those parts of its transmission system that are dedicated connection assets as large dedicated connection assets or small dedicated connection assets⁵³⁹
- a TNSP to classify a dedicated connection asset as a large dedicated connection asset if the total route length for any power lines forming part of it was 30km or longer⁵⁴⁰
- a TNSP to classify its dedicated connection assets in its application for registration as a TNSP, or through a separate notice to AEMO⁵⁴¹
- AEMO to approve that classification if it is satisfied that the part of the transmission system is a large or small dedicated connection asset (as applicable).⁵⁴²

The draft rule required parties to classify their dedicated connection assets as either large or small, and AEMO to approve that classification, in order to make sure that the obligations with respect to third party access apply only to large dedicated connection assets under the draft rule. The Commission considered that limiting access obligations to large dedicated connection assets is proportionate to the nature of the asset - that is, its significance and the potential for inefficiency if that asset is duplicated to facilitate the connection of a new party.⁵⁴³

537 AEMO, submission on draft determination, pp. 13-14.

538 Ibid.

539 Clause 2.5.1A(b) of the draft rule.

540 Clause 2.5.1A(c) of the draft rule.

541 Clause 2.5.1A(d) of the draft rule.

542 Clause 2.5.1A(e) of the draft rule.

543 The arrangements for third party access to large dedicated connection assets are discussed in further detail in section D.4.

In its submission to the draft determination, AEMO raised three main concerns with this aspect of the draft rule. First, AEMO indicated that it may not be in a position to independently verify that the physical configuration of the dedicated connection asset and the specified point of connection meet the requirements for classification as either a large dedicated connection asset or a small dedicated connection asset. It submitted that this exercise would need time and resources that must be funded by the applicant.⁵⁴⁴

Second, AEMO considered that the purpose of AEMO managing a new registration category and classification process for persons already required to register as a TNSP was unclear. It suggested that, if the purpose is solely to identify the access regime and obligations that apply to each type of dedicated connection asset (and distinguish them from other transmission system assets), this outcome may be more appropriately achieved by:

- removing the concept of dedicated connection asset service provider and provide that a person who owns/operates/controls a dedicated connection asset only has the obligations that expressly apply to dedicated connection assets
- redrafting the obligations that apply to dedicated connection asset service providers under the draft rule so they instead are expressed to apply to a TNSP in respect of a dedicated connection asset
- requiring the AER to maintain a register if it is necessary to record the assets for regulatory or enforcement purposes.⁵⁴⁵

Third, AEMO noted that TNSPs are not required to separately classify their assets under the existing NER, even though the services those assets provide may be subject to different forms of regulation. It stated that its primary concern in registration is to make sure that the assets are subject to enforceable technical performance requirements. AEMO submitted that the dedicated connection asset service provider registration and classification process under the draft rule did not provide a mechanism to do this.⁵⁴⁶

544 AEMO, submission on draft determination, p. 13.

545 Ibid.

546 Ibid.

D.3.4 Analysis and conclusion

Changes between the draft and final rule

There were several changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule:

- contains an amended definition of identified user group so that it does not include a network service provider or a person owning, controlling or operating an embedded network (an exempt network service provider)
- reduces the regulatory burden on AEMO with respect to the classification of dedicated connection assets by requiring the applicant to provide sufficient evidence to satisfy AEMO that the dedicated connection asset is appropriately classified as either large or small and providing that AEMO may make its classification decision based on the evidence provided by the applicant.

The Commission's understanding of the COAG Energy Council's proposal that owners of dedicated connection assets be registered as TNSPs is that doing so would:

- make clear that dedicated connection assets are transmission systems and so are covered by the NEL and the NER
- provide greater transparency about where and what these assets are, and who owns, operates and controls them
- mean that the clauses that currently apply to TNSPs regarding access could apply to these parties.

While the majority of existing power lines that form part of assets that would meet the definition of 'dedicated connection asset' under the final rule are relatively short, others could be, and some already are, quite long. The development of new sources of generation in remote locations, or new loads such as gas compressors near coal seam gas fields, may require the construction and operation of lengthy dedicated connection assets. Dedicated connection assets of significant length highlight the importance of greater visibility of all transmission assets that make up the whole transmission system to enable efficient investment decisions. It also raises questions about rights of users to access these assets if that is a more efficient option than constructing a duplicate connection to the shared transmission network.⁵⁴⁷ Efficient investment in, and operation of, the assets and services needed to connect to the shared transmission network is in the long-term interests of consumers.

As a result, it is the Commission's view that certain information about such assets should be recorded for transmission network planning and operation purposes, and

⁵⁴⁷ Access to dedicated connection assets is discussed further in section D.4.

that parties who own, operate and control them should be subject to certain obligations under the NER.

Requirement to register

Consistent with the conclusions drawn in section D.1.4, it was the Commission's intention that, to the extent an asset forms part of the 'whole' transmission system, a person is registered as a TNSP in respect of that asset, or exempt.

The final rule puts this beyond doubt by amending the definition of the term transmission system and clarifying that a dedicated connection asset is a transmission system.⁵⁴⁸ As a result, any person who owns, operates or controls a dedicated connection asset will be required to register with AEMO as a TNSP, be exempted by the AER from that requirement, or appoint an intermediary. Consistent with the draft rule, the final rule does not amend the AER's ability to grant an exemption to any party from the requirement to register as a TNSP. So, parties could apply to the AER to be exempted from this requirement with respect to dedicated connection assets, as they can with any other asset that is captured by the definition of transmission system. Through that exemption framework, the AER determines the appropriate exemption conditions for those parties, in addition to any mandatory conditions set out in the NER. There is an existing guideline, made by the AER, that provides guidance on the types of things it will take into account in processing exemptions and determining which exemption conditions should apply.⁵⁴⁹

As set out above, in its submission to the draft determination AEMO submitted that it would be concerned if the operators of dedicated connection assets (if not the Primary TNSP) were regularly exempted by the AER from the requirement to register as a TNSP, unless the assets comply with minimum technical standards; remain subject to Chapter 4 of the NER; and are below a suitable threshold indicating that the connected generation or load is unlikely to impact power system security or reliability. The Commission made no change to the rule to address this concern for two main reasons:

1. The Commission is unable to restrict the ability of a party who owns, operates or controls a transmission system to seek exemption from the requirement to register as a TNSP because this is a right set out in the NEL.
2. The Commission understood that the AER's approach under its network service provider registration exemption guideline is generally to treat exempt network service providers as though they are registered network service providers unless there is a good reason for them not to be. While the final rule does not require it,

⁵⁴⁸ A dedicated connection asset for which the Primary TNSP is registered will form part of that Primary TNSP's broader transmission system. A dedicated connection asset owned, operated or controlled by a party other than the Primary TNSP is a transmission system in its own right. See the definition of transmission system in section D.1.4 and in Chapter 10 of the final rule.

⁵⁴⁹ See <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/network-service-provider-registration-exemption-guideline-december-2016>

the Commission expected that the AER would have regard to the need for an exempt network service provider in respect of a dedicated connection asset to be subject to certain conditions that relate to power system security and reliability. Further, the final rule requires the AER to amend and publish the electricity network service provider registration guidelines to take account of the amending rule.

AEMO also proposed that clause 2.5.1(d) of the NER be amended to allow the AER to provide for partial exemptions from obligations in Chapters 5, 6A and 7 of the NER. This proposal raised broad issues with respect to the exemptions framework for network services providers, which the Commission concluded were out of the scope of this rule change request, and were therefore not addressed in the final rule.⁵⁵⁰

In its submission to the draft determination AEMO questioned the need to establish a separate sub-category of registration for persons already required to register as a TNSP. However, the Commission considered that doing so aids clarity and enables the specific set of obligations that only apply to dedicated connection asset service providers to be more explicitly defined.

Under the final rule, a party that is registered as a TNSP is a dedicated connection asset service provider in so far as its activities relate to any of its dedicated connection assets.⁵⁵¹ That is, a person that is already registered as a TNSP is not required to separately register as a dedicated connection asset service provider in respect of a dedicated connection asset. However, they are required to classify their dedicated connection assets (see section on classification below).

The policy intent of this requirement is to facilitate transparency of dedicated connection assets - where they are, who owns, operates or controls them, and how those assets are regulated. This policy intent would not be achieved under the approach proposed by AEMO.

Under the final rule, a party that is already registered as a Generator, Customer or MNSP will be required to also register (or be exempted from the requirement to register) as a TNSP if it intends to own, operate or control a dedicated connection asset. There is no restriction under the NEL or existing NER on a registered Generator or Customer carrying out other activities, i.e. activities other than buying or selling electricity. The existing NER state that a Registered Participant may act in more than one category of Registered Participant provided that it is registered by AEMO in relation to each of the relevant Registered Participant categories.⁵⁵²

Under these arrangements, a party will hold one registration with AEMO that covers each dedicated connection asset that it owns, operates or controls. This is similar to the

⁵⁵⁰ This issue may be appropriately considered through the AEMC's *Review of regulatory arrangements for embedded networks*. See <http://www.aemc.gov.au/Markets-Reviews-Advice/Review-of-regulatory-arrangements-for-embedded-net>

⁵⁵¹ Clause 2.5.1A(h) of the final rule.

⁵⁵² Existing clause 2.8.1(d) of the NER.

existing arrangements for other Registered Participants, for example Generators who own, operate or control more than one generating system.

Classification

The power lines that form part of assets that would meet the definition of dedicated connection asset carry electricity from a generator or load to the transmission network. They can vary greatly in length - some may be only 20m long while others can be 200km long. Under the final rule, the requirement to register as a TNSP in respect of dedicated connection assets is triggered regardless of the size of the asset. However, consistent with the draft rule, the final rule requires a TNSP to:

- classify those parts of its transmission system that are dedicated connection assets as large dedicated connection assets or small dedicated connection assets⁵⁵³
- classify a dedicated connection asset as a large dedicated connection asset if the total route length for any power lines forming part of it is 30km or longer⁵⁵⁴
- classify its dedicated connection assets in its application for registration as a TNSP, or through a separate notice to AEMO.⁵⁵⁵

Under the draft rule, AEMO was required to approve the classification of a dedicated connection asset if it is satisfied that the part of the transmission system is a large or small dedicated connection asset (as applicable).⁵⁵⁶ As set out in the previous section, AEMO raised a concern about its role in approving the classification of assets under the draft rule.

The Commission's objective of requiring parties to classify dedicated connection assets as small or large was to make sure that the obligations with respect to third party access under the final rule are proportionate to the nature of the asset - that is, its significance and the potential for inefficiency if that asset is duplicated to facilitate the connection of a new party.⁵⁵⁷ To do this, some party needs to have visibility of the process for determining whether the third party access obligations apply. The Commission remains of the view that the most appropriate party to do this is AEMO, and the most appropriate time for this to be done is upfront in the registration process. Such an approach supports an independent, consistent approach to the classification of dedicated connection assets, and early clarity about the obligations that apply to those assets. Further, AEMO would be receiving the applicant's registration request anyway, and currently maintains all participant registrations.

⁵⁵³ Clause 2.5.1A(b) of the final rule.

⁵⁵⁴ Clause 2.5.1A(c) of the final rule.

⁵⁵⁵ Clause 2.5.1A(d) of the final rule.

⁵⁵⁶ Clause 2.5.1A(e) of the draft rule.

⁵⁵⁷ The arrangements for third party access are discussed in further detail in section D.4.

The Commission acknowledged that, under the draft rule, AEMO would have been required to make an assessment of whether a dedicated connection asset is large or small, which could have required a physical audit of the asset. The costs of this assessment would be borne by the applicant and, ultimately, consumers. The final rule therefore seeks to reduce the regulatory burden on AEMO under the classification process by requiring the applicant to provide sufficient evidence to satisfy AEMO that the dedicated connection asset is appropriately classified as either large or small,⁵⁵⁸ and allowing AEMO to make approve or reject that classification decision based on the evidence provided to it by the TNSP.⁵⁵⁹

The Commission expected that, in most cases, it would be very clear whether the route length of a dedicated connection asset is less than or greater than 30km, and so should be relatively simple to verify. However, the additional drafting in the final rule will make clear that AEMO is not required to go beyond the supplied evidence in determining whether the asset is large or small, including in cases where the route length of the asset is *about* 30km and precise asset boundaries would make the difference between whether a dedicated connection asset is considered to be large or small.

The Commission expected that, in most cases, parties who own, operate or control a small dedicated connection asset would be exempted by the AER from the requirement to register as a TNSP. The AER's *Electricity network service provider registration exemption guideline* sets out the AER's approach to network exemptions.⁵⁶⁰ The guideline includes a list of the types of activities that are exempt from the requirement to register as a Network Service Provider, and the conditions imposed on parties under each exemption category.⁵⁶¹ Parties who own, operate or control a small dedicated connection asset may fall under one of these categories. However, the ultimate discretion to exempt parties from the requirement to register as a TNSP lies with the AER.

Under these arrangements, AEMO will maintain and publish a list of all parties registered as a TNSP with respect to a dedicated connection asset, and whether that asset is classified as large or small. The AER will maintain and publish a list of those parties that it has exempted from the requirement to register as a TNSP in respect of these assets. These lists will provide greater transparency for Registered Participants, market bodies and other interested parties as to what these assets are, where they are located, how long they are, who owns, operates and controls them and how they are regulated under the NER.

There are a number of existing assets that would be captured by the definition of dedicated connection asset when the rules commence. Transitional arrangements for these assets are discussed in chapter 5.

558 Clause 2.5.1A(d) of the final rule.

559 Clause 2.5.1A(e) of the final rule.

560 See <https://www.aer.gov.au/networks-pipelines/network-exemptions>

561 Note that the final rule imposes a mandatory condition on exemptions with respect to third party access to dedicated connection assets. This is discussed further in section D.4.

Obligations of dedicated connection asset service providers

As set out in section D.3.3, in its submission to the consultation paper AEMO considered that parties who own, operate or control dedicated connection assets should be subject to the provisions in Chapter 4 of the NER that require Registered Participants to follow AEMO instructions for power system security purposes, and Chapter 5 of the NER in relation to performance standards. It also considered that the incumbent TNSP and AEMO should be informed about changes to dedicated connection assets that could affect power flows.

In the draft determination, the Commission agreed with the COAG Energy Council that it is not appropriate to subject dedicated connection asset service providers to all of the obligations of a TNSP under the NER. The draft rule therefore only required these parties to comply with a rule applicable to a network service provider where the rule specified that it applies to a dedicated connection asset service provider.⁵⁶² The draft determination also set out that, as Registered Participants, dedicated connection asset service providers would be subject to a range of existing obligations under the NER, including those referred to by AEMO in its submission to the consultation paper.

In its submission to the draft determination, AEMO questioned the need to establish a separate registration category for parties who own, operate or control dedicated connection assets and suggested that the concept of dedicated connection asset service provider be removed. Instead, it proposed that the NER provide that a person who owns, operates or controls a dedicated connection asset only has the obligations that expressly apply to dedicated connection assets, and that the obligations that apply to dedicated connection asset service providers under the draft rule be expressed to apply to TNSPs in respect of a dedicated connection asset.

The Commission considered that the NER should contain the concept of dedicated connection asset service provider because it aids clarity and enables the specific set of obligations that only apply to dedicated connection asset service providers to be more explicitly defined.

The final rule therefore retains the approach set out in the draft rule. That is, as Registered Participants, dedicated connection asset service providers will be subject to a range of existing obligations under the NER. For example:

- AEMO may require a Registered Participant to do any act or thing if AEMO is satisfied that it is necessary to do so to maintain or re-establish the power system to a secure operating state, a satisfactory operating state, or a reliable operating state.⁵⁶³
- Registered Participants must maintain and operate (or ensure their authorised representatives maintain and operate) all equipment that is part of their facilities

⁵⁶² Clause 2.5.1A(g)(1) of the draft rule.

⁵⁶³ See clause 4.8.9(a)(1) of the existing NER.

in accordance with the relevant laws, the requirements of the NER and good electricity industry practice and relevant Australian Standards.⁵⁶⁴

- Registered Participants are subject to the confidentiality obligations in Part C of Chapter 8 of the NER.

In addition to being required to comply with all obligations imposed on Registered Participants generally, under the final rule dedicated connection asset service providers will be required to comply with a rule applicable to a network service provider where the rule specifies that it applies to a dedicated connection asset service provider.⁵⁶⁵

The final rule sets out obligations of dedicated connection asset service providers,⁵⁶⁶ including requirements to:

- plan and design their dedicated connection assets to ensure compliance with relevant performance standards, connection agreements and system standards
- permit and participate in inspection, testing and commissioning of facilities and equipment
- ensure there is a connection agreement between itself and the TNSP to which it is connected.⁵⁶⁷

Some stakeholders raised the question of who will be responsible for meeting performance standards if multiple parties are connected to the shared network via the same dedicated connection asset (i.e. an identified user group). The NER is clear that a connection agreement with a TNSP needs to contain performance standards. Under the final rule, the party who contracts with the Primary TNSP for the connection will be responsible for meeting the performance standards. The final rule does not specify who the connection applicant must be. This can be worked out commercially by the parties, having regard to the Primary TNSP's requirements. If the dedicated connection asset service provider has the connection agreement with the Primary TNSP, it would be responsible for meeting the performance standards, but would presumably mirror these obligations in arrangements with other parties connected to the dedicated connection asset.

The Commission expected that a material modification to a connection, for example a subsequent party connecting to that dedicated connection asset, will require a change

⁵⁶⁴ Clause 5.2.1 of the existing NER.

⁵⁶⁵ Clause 2.5.1A(g)(1) of the final rule.

⁵⁶⁶ See clause 5.2.7 of the final rule.

⁵⁶⁷ The final rule requires a dedicated connection asset service provider to have a connection agreement with the TNSP to which it is connected because the asset they own, control and operate will be physically connected to that TNSP's network. This agreement may take the form of a tripartite agreement with the connecting party if the connecting party is not the dedicated connection asset service provider.

to the original connection agreement with the Primary TNSP and a subsequent change in the performance standards for that connection point.

In its submission to the draft determination, AEMO expressed concern about measurement and system operation issues that could arise if a large number of loads or generators connect to the same dedicated connection asset, and that separation of such an asset from the remaining network could have significant adverse implications for the system strength of the shared network. Consistent with the conclusion above, whoever has a connection agreement with the Primary TNSP with respect to a dedicated connection asset is responsible for meeting the obligations set out in that agreement and others that relate to that connection point. If subsequent connections to that dedicated connection affect the ability for that party to meet those obligations, it will need to put in place arrangements to ensure that it can continue to meet them.

Further, the negotiating principles for large DCA services under the final rule include that a subsequent connecting party to a dedicated connection asset should not adversely affect:

- the access standards, including performance standards and power transfer capability of the existing connecting party at the time of the access application;⁵⁶⁸ or
- the contractual obligations of the existing connecting party with the dedicated connection asset service provider.⁵⁶⁹

The Commission expected that it would be unlikely for large numbers of loads or generators to connect to the same dedicated connection asset, given the likely costs that would be involved in meeting the above two obligations. The final rule also specifies that a dedicated connection asset does not include a distribution system. This is discussed in the next section.

The Commission did not consider it necessary to require the party who owns, operates or controls dedicated connection assets to inform the Primary TNSP and AEMO about changes to the assets that could affect power flows, as was proposed by AEMO. The requirement to provide such information should already be captured in connection agreements that relate to those assets and the parties connected to them, and so the TNSP should have obligations to pass this information on to AEMO. The final rule therefore does not introduce such a requirement.

Dedicated connection asset service providers and parties who are exempt from the requirement to register with respect to dedicated connection assets that they own, operate or control will also have obligations regarding third party access to their large dedicated connection assets. These arrangements are set out in section D.4 below.

⁵⁶⁸ Schedule 5.12(3) of the final rule.

⁵⁶⁹ Schedule 5.12(4) of the final rule.

Consistent regulation of distribution systems

As set out above, under the final rule dedicated connection assets are deemed to be transmission systems. However, under the draft rule, a dedicated connection asset owned, operated or controlled by a party other than the Primary TNSP could also fall under the definition of a distribution system. The term distribution system is defined in the NER as "a distribution network, together with the connection assets associated with the distribution network, which is connected to another transmission or distribution system". A dedicated connection asset will be a distribution system if it comprises a distribution network and connection assets. A network, under the NER, includes "the apparatus, equipment, plant and buildings used to convey, and control the conveyance of, electricity to customers (whether wholesale or retail) excluding any connection assets."

A dedicated connection asset will fall under the definition of distribution system if:

- it is operating at distribution voltages
- it includes connection assets
- it conveys electricity to customers - that is, at least one load that is owned, operated or controlled by a party other than the person who owns, operates or controls the dedicated connection asset is connected to the dedicated connection asset (i.e. the dedicated connection asset has a non-self supplied load connected to it).

Under the NEL, a party who owns, operates or controls a distribution system is required to register (i.e. as a DNSP) or be exempted from registration by the AER (i.e. an embedded network). Through that exemption framework, the AER determines the appropriate exemption conditions for those parties, in addition to mandatory conditions set out in the NER.

Given the nature of customers connected to a distribution system, the Commission considers that there should be a consistent regulatory treatment of parties who own, operate or control distribution systems. That is, to the extent that an asset constitutes a distribution system, it should be regulated as a distribution system, not as a dedicated connection asset.

One means to achieve this that the Commission considered was amending the definition of dedicated connection asset to cover only those assets that operate at transmission voltages. However, the Commission did not consider this to be an appropriate response to the issue because it understood that many assets that connect parties to the transmission system will be operating at distribution voltages and so would not be captured by the obligations that relate to dedicated connection assets if the definition were amended in this way. The Commission's intent was that, as far as possible, all assets that are used to connect a party to the transmission network are regulated consistently. As such, the Commission decided against this approach.

To achieve the objective set out above, the final rule amends the definition of dedicated connection asset that was set out in the draft rule so that an asset is not a dedicated connection asset if it is part of a distribution system. This means that:

- an asset operating at distribution voltages that conveys electricity to customers - that is, an asset that supplies electricity to a load that is owned, operated or controlled by a person other than the person who owns, operates or controls the distribution network (i.e. a self-supplied load) - will not be a dedicated connection asset
- the party who owns, operates or controls that asset cannot be registered as a dedicated connection asset service provider but must be registered as a DNSP or exempted from registration by the AER.

D.4 Third party access to dedicated connection assets

D.4.1 Background

As noted at the beginning of this appendix, under the existing NER there is no consistent interpretation of whether assets that would fall within the definition of dedicated connection asset under the final rule comprise or form part of a transmission system, and therefore what access provisions might apply to such assets.

D.4.2 COAG Energy Council's view

The COAG Energy Council proposed that, as a condition of automatic exemption from the requirement to register as a TNSP, an owner of a dedicated connection asset would be required to negotiate access to the asset by other parties on reasonable terms. It also proposed that a robust negotiation framework be established in the NER to apply to all parties negotiating access to a dedicated connection asset.⁵⁷⁰

D.4.3 Stakeholder views

Submissions to the consultation paper

Access as a condition of registration

The Clean Energy Council disagreed with the proposal that a condition of being exempt from the requirement to register as a TNSP would be a requirement to negotiate access to other parties on reasonable terms. It suggested that third party access to dedicated connection assets should be negotiated on a purely commercial basis between the asset owner and the access seeker.⁵⁷¹ The Clean Energy Council

⁵⁷⁰ COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, p. 10.

⁵⁷¹ Submissions on consultation paper: AGL, p. 2; Clean Energy Council, pp. 8-9.

submitted that there is nothing in the existing framework that prevents parties negotiating access on a commercial basis where parties see a benefit, and a lack of demonstration of this occurring is not evidence of a need for intervening rules.⁵⁷²

AEMO expressed support for a simplified access regime applying to dedicated connection assets and noted that, if there is robust competition for connection services, it may be unnecessary to develop a separate regime that applies only to dedicated connection assets.⁵⁷³

Principles of access

A number of generators considered that third party access should only be offered if there is spare capacity on the line - not including any reserve capacity envisaged by original proponent - and that the existing connecting party should not be compelled to accept terms that disadvantage it.⁵⁷⁴

AGL submitted that any rule on access should not automatically take precedence over terms and conditions of access negotiated in the connection agreement, subject to a normal dispute process if reasonable agreement cannot be reached. It argued that third party access to dedicated connection assets should be negotiated privately as long as the proponent complies with the connection agreement and performance standards required under the NER.⁵⁷⁵

Energy Networks Australia submitted that the conditions and principles for third party access should be the same regardless of who owns the line or facility. Specifically, that:

- the existing user should have its legitimate contractual and legal rights preserved so it is not disadvantaged by third party access (Energy Networks Australia notes that this is normally in a connection agreement)
- access should be provided on a non-discriminatory basis
- additional users should be required to pay the incremental costs of their connection and contribute to existing sunk costs.⁵⁷⁶

The Clean Energy Council made the following points in relation to the proposed conditions of access to dedicated connection assets:⁵⁷⁷

- Any framework for access must recognise that a dedicated connection asset is not monopoly-controlled open access network.

⁵⁷² Clean Energy Council, submission on consultation paper, p. 8.

⁵⁷³ AEMO, submission on consultation paper, p. 4.

⁵⁷⁴ Submissions on consultation paper: Origin Energy, p. 2; GDF Suez, p. 3; AGL, p. 5.

⁵⁷⁵ AGL, submission on consultation paper, p. 5.

⁵⁷⁶ Energy Networks Australia, submission on consultation paper, p. 12.

⁵⁷⁷ Clean Energy Council, submission on consultation paper, pp. 8-10, 13.

- Any conditions allowing third party access should make sure that the incumbent owner is not negatively affected.
- The NER should state the conditions of access are to be incorporated in AER guidelines.
- The impacts of third party access on existing standards and metering arrangements need to be considered further.
- The NER must not provide an assumed right to the 'reserved capacity' of a dedicated connection asset by a third party before the incumbent project's second stage progresses.
- Financing models for investment in new generation require certainty, currently achieved by providing the incumbent asset owner with control over the terms of access. The proposed arrangements leave the terms of an exemption up to the AER's determination of what is reasonable for the exemption guidelines, which would increase risk and financing costs.
- Jurisdictional arrangements for third party access as provided in generation and transmission licenses need to be investigated to avoid duplication of regimes.
- There is no indication in the rule change request that a request for third party access should be processed under Chapter 5 of the NER. While the interface with the TNSP would be treated as such, it is unclear whether the interface between the incumbent asset owner and the third party would be, or why.

The Clean Energy Council proposed that the NER incorporate provisions to:⁵⁷⁸

- enable the incumbent generator to establish a firm level of power transfer capability that the dedicated connection asset would be required to provide to its current and any future facilities
- enable the incumbent generator to place reasonable charges on the use of the shared dedicated connection asset once built
- require that the party seeking access:
 - takes full accountability for renegotiating the incumbent generator's access standards, or pay the generator to do so
 - makes best endeavours not to harm the incumbent generator's access standards, including performance standards and power transfer capability
 - compensates the owner for any material changes that result from this renegotiation, including impact to future revenue from changes to a connection point location or metering arrangement

⁵⁷⁸ Clean Energy Council, submission on consultation paper, pp. 8-10, 13.

- compensates the incumbent generator for any lost revenue incurred during and after construction as a result of the connection and operation of the third party's facilities.

Submissions to the discussion paper

In the discussion paper, the Commission proposed that the conditions of registration as a Dedicated Transmission Connection Asset Owner would be that:

- third party access to these assets would be explicitly contemplated, with this occurring through a negotiate/arbitrate framework
- the assets must enable the generator to meet any performance standard that must be met.

This proposal builds on the approach put forward by the Commission in the Transmission Frameworks Review. In the discussion paper, the Commission stated that setting out that third party access as a condition of registration would mean that there were arrangements in place to set out a process for both gaining third party access, and dealing with disputes that may arise in this context. The Commission proposed that:

- access should only be offered if the asset has spare capacity, or the new connecting party funds any upgrade that facilitates unconstrained operation of the asset
- access should only be provided if the existing connecting party's business interests⁵⁷⁹ would not be materially disadvantaged.

Submissions to the discussion paper indicated that many stakeholders, particularly generators, had concerns with this proposed approach, as explained below.

Access as a condition of registration

The Clean Energy Council submitted that there is no evidence that third party access to assets that would fall under the proposed definition of a dedicated connection asset is not possible or not occurring under current arrangements. It also noted that these assets are constructed to suit the connecting party's needs, so any new connection to these assets would almost certainly require significant augmentation.⁵⁸⁰

Consistent with the views presented at the stakeholder forum and in submissions to the discussion paper, most generators were of the view that access should be provided on a commercial basis only.⁵⁸¹ EnergyAustralia argued that over-regulation of access

579 Business interests excludes limiting or minimising competition from new entrants.

580 Clean Energy Council, submission on discussion paper, p. 7.

581 Submissions on discussion paper: AGL, p. 3; EnergyAustralia, p. 2; Infigen, p. 2; Origin Energy, p. 2.

may introduce unnecessary uncertainty to the business case of a new connection.⁵⁸² AGL submitted that it may not be worthwhile setting out a framework in anticipation of future access seekers given that this rarely, if ever, happens.⁵⁸³

Principles of access

Despite the above views, several generators commented on the proposed principles of access. Origin Energy welcomed the proposal to preserve capacity that has been reserved by the original connecting party, e.g. to facilitate the connection of a second stage of a project.⁵⁸⁴ The Australian Energy Council stated that it was unclear how third party access would be offered and how 'spare capacity' on the dedicated connection asset would be defined.⁵⁸⁵ The Clean Energy Council was of the view that the proposed principles provide sufficient prescription to avoid ambiguity while ensuring that the incumbent owner is not disadvantaged. It proposed that these principles be embedded into the terms of registration as a Dedicated Transmission Connection Asset Owner.⁵⁸⁶

AGL acknowledged that it may make sense to make sure that access is equitable and low cost, provided through light handed regulation that makes sure an access seeker has recourse to seek regulatory intervention if it thinks the incumbent is being anti-competitive.⁵⁸⁷

EnergyAustralia was concerned that the principle of 'no degradation of service' may be a low standard that still advantages second movers, for example through deteriorated loss factors or less firm access under conditions that were not envisaged. It considered that this could indirectly inhibit timely and efficient investment in generation.⁵⁸⁸

The Clean Energy Council asked that further consideration be given to the location of the connection point and metering point, and the possible economic impact that may occur if these points are changed when third party access is granted. It also noted that outages during the connection of a new party would lead to loss of revenue for the incumbent. It therefore suggested that the following access principle be added to address these concerns - "Access should only be offered if the connecting party compensates the initial party for the impact their connection has on revenues during construction and operation of the generator".⁵⁸⁹

582 EnergyAustralia, submission on discussion paper, p. 2.

583 AGL, submission on discussion paper, p. 3.

584 Origin Energy, submission on discussion paper, p. 2.

585 Australian Energy Council, submission on discussion paper, p. 1.

586 Clean Energy Council, submission on discussion paper, pp. 7-8.

587 AGL, submission on discussion paper, p. 3.

588 EnergyAustralia, submission on discussion paper, p. 2.

589 Clean Energy Council, submission on discussion paper, p. 8.

Energy Networks Australia reiterated the view it expressed in its submission to the consultation paper that third party access should be provided on a consistent basis.⁵⁹⁰

PIAC supported the proposal that owners of dedicated connection assets should be required to provide access to third parties where there is spare capacity and where it would not negatively affect the owner.⁵⁹¹

Submissions to the draft determination

The draft rule set out a framework by which access to the services provided by large dedicated connection assets could be negotiated. To do this, the draft rule, among other things:

- set out that the services provided by means of a large dedicated connection asset, once commissioned, is a large DCA service⁵⁹² that is subject to a regime for third party access⁵⁹³
- required the dedicated connection asset service provider for a large dedicated connection asset⁵⁹⁴ to prepare, maintain and publish an access policy on its website, containing certain minimum information⁵⁹⁵
- required the dedicated connection asset service provider to submit its access policy for approval by the AER within 30 days of an asset being classified as a large dedicated connection asset under Chapter 2 of the NER⁵⁹⁶
- required the AER to approve the access policy if it was reasonably satisfied that it complies with the specified requirements⁵⁹⁷
- required a dedicated connection asset service provider to comply with its access policy once it is approved,⁵⁹⁸ and report to the AER on requests for connection and access to a large dedicated connection asset when such requests are made and when an agreement for access is entered into.⁵⁹⁹

590 Energy Networks Australia, submission on discussion paper, p. 2.

591 PIAC, submission on discussion paper, p. 4.

592 Defined in the draft rule as a service provided by means of a large dedicated connection asset.

593 Clause 5.2A.8 of the draft rule.

594 This includes Primary TNSPs who own, operate or control a large dedicated connection asset. A Primary TNSP who owns, operates or controls a dedicated connection asset is taken to be a dedicated connection asset service provider only in so far as its activities relate to any of its dedicated connection assets. See clause 2.5.1A(g) of the final rule.

595 Clause 5.2A.8(b) of the draft rule.

596 Clause 5.2A.8(d) of the draft rule.

597 Clause 5.2A.8(f) of the draft rule.

598 Clause 5.2A.6(c) of the draft rule.

599 Clause 5.2A.8(k) of the draft rule.

There were few comments on these aspects of the draft rule in submissions to the draft determination. The Clean Energy Council noted that no guidance had been provided on the AER's views on what access policies it may approve or reject, and suggested that the final rule provide guidance on this matter.⁶⁰⁰

AEMO asked that the Commission provide further detailed analysis on the rationale for the 30km threshold for classification as a large dedicated connection asset and application of the access framework. It wanted to confirm that length should be the only consideration, and that 30km is the right number. AEMO also suggested that the phrase "total route length" be amended to clarify whether the measure is of geographical distance or the actual line length, as it considered that looping might make this measure complex under the draft rule.⁶⁰¹

Principles of access

The draft rule set out the principles that dedicated connection asset service providers for large dedicated connection assets would be subject to when negotiating access to the services provided by means of that asset to another party.⁶⁰² These principles were developed to address a range of matters, including:

- the contractual obligations of the party, or parties, that are already connected to the asset with the dedicated connection asset service provider
- who pays the costs of any upgrades or alterations to the asset that are necessary to facilitate access
- compensation to the dedicated connection asset service provider for any revenue lost during the required upgrades or alterations.

There were few comments on these principles in submissions to the draft determination. Origin Energy expressed support for those aspects of the principles that sought to maintain the rights of existing dedicated connection asset owners when allowing third party connections, noting that it is important that the existing asset owner is not disadvantaged by constraints caused by the third party, and that any additional works required for access are paid for by the third party.⁶⁰³ The Clean Energy Council considered that the principle that would require a new party to pay for the costs of any enlargement, increase in capacity or alterations to the dedicated connection asset to facilitate its connection should also refer to current and future power transfer capability.⁶⁰⁴

⁶⁰⁰ Clean Energy Council, submission on draft determination, p. 7.

⁶⁰¹ AEMO, submission on draft determination, p. 6.

⁶⁰² Schedule 5.12 of the draft rule.

⁶⁰³ Origin Energy, submission on draft determination, p. 2.

⁶⁰⁴ Clean Energy Council, submission on draft determination, p. 7.

D.4.4 Analysis and conclusion

Changes between the draft and final rule

There were a number of changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule:

- contains an explicit requirement for a dedicated connection asset service provider to keep its access policy for a dedicated connection asset up to date
- imposes a mandatory condition on the owner, operator or controller of an asset who seeks exemption from the requirement to register as a dedicated connection asset service provider for a large dedicated connection asset (if it were classified) to comply with the access provisions that apply under the NER to a registered dedicated connection asset service provider in respect of its large dedicated connection assets
- allows a dedicated connection asset service provider, through the access policy it is required to develop under the final rule, to refuse the connection of another party to its dedicated connection asset if that connection would result in a change in the regulatory treatment of that asset.

As is explained in section D.2, the final rule sets out that the design, construction, ownership, operation and maintenance of dedicated connection assets are non-regulated transmission services and can be provided by any party on commercial terms.⁶⁰⁵ That is, there is no obligation on any party, including the Primary TNSP, to offer these services and there is no regulated framework for the setting of price and non-price terms and conditions for the provision of those services.

This is because the Commission concluded that:

- there are a sufficient number of alternative providers,⁶⁰⁶ and the barriers to entry are sufficiently low, for a connecting party to find an alternative provider to the Primary TNSP for the provision of these services
- these assets are able to be electrically isolated from the shared transmission network, so any risk of inadequate design, construction, ownership, maintenance or operation of these assets fall on the connecting party, and do not affect electricity flows to end-use consumers across the shared transmission network

⁶⁰⁵ Clause 5.2A.4(a) of the final rule.

⁶⁰⁶ For example, AEMO publishes a list of service providers that have expressed interest in constructing contestable augmentations to the Victorian network. At at May 2017, five construction companies - in addition to a number of existing, registered TNSPs have expressed an interest. See: <http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/Victoria-transmission-connections---process-overview/Victoria-contractor-panel>

- the benefits of having dedicated connection assets in place accrue to the connecting party, so it is appropriate that this party bears the cost of designing, building, owning, operating and maintaining them.

However, as explained in section D.1.4, the Commission considered that there would be benefit in having greater visibility of what and where these assets are than is available under the current arrangements.

Dedicated connection assets are relevant to the efficient development of the 'whole' transmission system, a concept that was introduced in section D.1. That is, it would be inefficient for a new connecting party to build a duplicate dedicated connection asset to facilitate its connection to the shared transmission network where one already exists and that party is able to access the existing asset in such a way that the incumbent connecting party's legitimate business interests are not disadvantaged. Dedicated connection assets could be quite lengthy (e.g. several hundred kilometres) and therefore exhibit many of the characteristics of monopoly infrastructure.

However, the party that owns, operates or controls a lengthy dedicated connection asset may have little incentive to negotiate with another party to grant access to it, particularly if that party is a competitor. Providing access to the service provided by means of the dedicated connection asset would enable the competitor's participation in the wholesale market and so potentially affect the original party's revenue stream. Even if the asset owner is not the connecting party, it may still have an incentive to only grant access at an inflated price if the asset exhibits monopoly characteristics. Preventing or frustrating access to one of these assets may therefore result in an inefficient duplication of transmission infrastructure, and may increase the costs to the party trying to connect and, ultimately, to consumers.

Efficient development of the 'whole' transmission system (which includes dedicated connection assets) is in the long-term interests of consumers. It is therefore in line with this premise to provide a framework by which parties could negotiate access to the services provided by other transmission infrastructure, i.e. dedicated connection assets.

Throughout the rule change process a number of stakeholders indicated that dedicated connection assets are only built to accommodate the needs of the original connecting party. While the Commission accepts that this can be the case, there may still be circumstances where it is more efficient for the new connecting party to pay the costs of augmenting an existing dedicated connection asset or share easements to facilitate its connection to the transmission network, rather than building a duplicate dedicated connection asset.

Box D.3 sets out the Commission's conclusion that it is unlikely that access to dedicated connection assets would be granted under the *Competition and Consumer Act 2010*.

Box D.1 **Dedicated connection assets and the *Competition and Consumer Act 2010***

Part IIIA of the Competition and Consumer Act 2010 (CCA) contains a statutory regime for third party access to infrastructure. Under this regime, a third party can obtain access to services provided by infrastructure on a negotiate/arbitrate basis if the services are "declared" by the Minister on the recommendation of the National Competition Council based on a set of declaration criteria. While an access seeker could seek declaration of services provided by dedicated connection assets under Part IIIA of the CCA, it is unlikely that transmission services provided by dedicated connection assets would be declared under Part IIIA because it would be difficult for an access seeker to demonstrate that the services provided by the dedicated connection assets meet the declaration criteria, in particular:

- the criterion that the facility (the dedicated connection asset) is of national significance having regard to its size, importance to trade and commerce and its importance to the national economy
- the criterion that it would be uneconomical for anyone to develop another facility to provide the service.

In light of the Commission's view that a framework to provide access to large dedicated connection asset services will promote the efficient development of the transmission system and the conclusion in Box D.3, the Commission considered that it was appropriate to set out a clear framework in the NER by which access to the transmission service provided by these assets could be contemplated. While these assets may not be "nationally significant" as defined under Part IIIA (especially when considered as part of the 'whole' transmission system), the Commission considers that certain lengthy assets will be "significant" enough to warrant the introduction of a framework for third party access.

So, consistent with the draft rule, the final rule clarifies that the services of design, construction, ownership, operation and maintenance of dedicated connection assets are non-regulated transmission services but specifies that the services provided by means of a large dedicated connection asset once commissioned are 'large DCA services'⁶⁰⁷ that is subject to a regime for third party access.⁶⁰⁸

607 Defined in the final rule as a service provided by means of a large dedicated connection asset.

608 Clause 5.2A.8 of the final rule.

Threshold above which third party access framework applies

As explained in section D.3, the final rule requires a TNSP to classify those parts of its transmission system that are dedicated connection assets into large dedicated connection assets and small dedicated connection assets.⁶⁰⁹ It requires a TNSP to classify a dedicated connection asset as a large dedicated connection asset if the total route length for any power lines forming part of it is 30km or longer.⁶¹⁰ A TNSP will be required to classify its dedicated connection assets in its application for registration as a TNSP, or through a separate notice to AEMO.⁶¹¹ AEMO must approve the classification if it is satisfied, based on the evidence provided to it by the TNSP, that the part of the transmission system is a large or small dedicated connection asset.⁶¹²

The objective of introducing the terms large dedicated connection asset and small dedicated connection asset, and requiring parties to classify their dedicated connection assets as one or the other, is to give effect to an access framework that only applies to dedicated connection assets if the total route length for any power lines forming part of it is 30km or longer.

In the Transmission Frameworks Review, the Commission proposed a 2km route length threshold above which third party access obligations should apply. Consultation with stakeholders throughout this rule change process, and the Commission's own analysis, showed that the regulatory burden of complying with the requirements of the access framework for dedicated connection assets of less than 30km route length would likely have outweighed the benefits that the obligation is seeking to provide - efficient access to the shared transmission network. It is also unlikely that relatively short dedicated connection assets would be subject to a request for access because the costs of duplicating the assets are likely to outweigh the costs of negotiating access directly with the Primary TNSP.

The definition of large dedicated connection asset in the final rule therefore reflects a threshold of 30km route length. This length is based on the Commission's review of the current 'dedicated connection assets' in the NEM and indicative analysis on when it might be more cost effective to connect to the shared transmission network via existing assets that would fall under the definition of a dedicated connection asset as opposed to constructing a new dedicated connection asset. An objective threshold set out in the NER and confirmed by AEMO through the registration and classification process provides clarity to relevant parties about the obligations that will apply to them, including whether the access obligations apply.

Regarding AEMO's suggestion that the phrase "total route length" be amended to clarify whether the measure is of geographical distance or the actual line length, the Commission understands that this term is commonly used and well understood within

609 Clause 2.5.1A(b) of the final rule.

610 Clause 2.5.1A(c) of the final rule.

611 Clause 2.5.1A(d) of the final rule.

612 Clause 2.5.1A(e) of the final rule.

the industry, and therefore has not made any amendments to it.⁶¹³ The intention is for this term to support a measure of the geographical distance covered by the power lines forming part of a dedicated connection asset, from the start to the end of that asset.

The access framework

Consistent with the draft rule, the final rule requires the dedicated connection asset service provider for a large dedicated connection asset, including Primary TNSPs who own, operate or control a large dedicated connection asset, to prepare, maintain and publish an access policy on its website. This policy must include, as a minimum, the following information:⁶¹⁴

- a description of the routes, tenure arrangements and main components of the large dedicated connection asset and the facilities connected to it
- any material regulatory limitations relating to the development and operation of the large dedicated connection asset⁶¹⁵
- the pricing principles and the key terms which are proposed to apply to the provision of large DCA services by means of the large dedicated connection asset, where such principles and terms must be consistent with Schedule 5.12 of the final rule
- the process by which an applicant may seek access to large DCA services, which must include a right for an applicant to obtain sufficient information to enable it to prepare a request for the large DCA services it requires and contact details for access enquiries
- advice on the availability of commercial arbitration under rule 5.5 of the final rule in the case of a dispute.

The dedicated connection asset service provider must submit its access policy for approval by the AER within 30 days of an asset being classified as a large dedicated connection asset under Chapter 2 of the NER.⁶¹⁶ The final rule requires the AER to approve the access policy if it is reasonably satisfied that it complies with the requirements set out above.⁶¹⁷

In the event that the AER does not approve an access policy, it must notify the dedicated connection asset service provider of the changes required for it to be approved. If an access policy is not approved within six months of the AER's

⁶¹³ The Commission also considered that the definition of “route” is fairly well accepted. For example, the Macquarie Dictionary defines route as “a customary or regular line of passage or travel”.

⁶¹⁴ Clause 5.2A.8(b) of the final rule.

⁶¹⁵ For example, the conditions of environmental or planning approvals in place.

⁶¹⁶ Clause 5.2A.8(d) of the final rule.

⁶¹⁷ Clause 5.2A.8(f) of the final rule. The final rule also makes it clear that the approval of access policies is an AER function - see clause 5.2A.8(c) of the final rule.

notification of required changes, the AER may itself propose an access policy,⁶¹⁸ which it may, but is not obliged to, consult on.⁶¹⁹ The AER's proposal for an access policy in these circumstances must be formulated with regard to a range of factors, including the minimum requirements set out above, the dedicated connection asset service provider's proposed access policy and the AER's reasons for refusing to approve the proposed access policy.⁶²⁰ The AER's approved access policy must be provided to the relevant dedicated connection asset service provider and published on the AER website.⁶²¹

A dedicated connection asset service provider must comply with its access policy and the negotiating principles in schedule 5.12 if an applicant seeks access to large DCA services.⁶²² It must also report to the AER on requests for connection and access to a large dedicated connection asset when such requests are made and when an agreement for access is entered into.⁶²³ The final rule also allows commercial arbitration under rule 5.5 to apply to any disputes about access to large DCA services⁶²⁴

The final rule allows a dedicated connection asset service provider to seek approval of a variation to its policy from the AER at any time and makes it clearer that it must vary its access policy where required to keep the access policy up to date.⁶²⁵

Principles of access

Consistent with the draft rule, the final rule sets out the principles that dedicated connection asset service providers for large dedicated connection assets will be subject to when negotiating access to the services provided by means of that asset to another party.⁶²⁶ These principles address a range of matters, including:

- the contractual obligations of the party, or parties, that are already connected to the asset with the dedicated connection asset service provider
- who pays the costs of any upgrades or alterations to the asset that are necessary to facilitate access
- compensation to the dedicated connection asset service provider for any revenue lost during the required upgrades or alterations.

⁶¹⁸ Clause 5.2A.8(f) of the final rule.

⁶¹⁹ Clause 5.2A.8(h) of the final rule.

⁶²⁰ Clause 5.2A.8(g) of the final rule.

⁶²¹ Clause 5.2A.8(i) of the final rule.

⁶²² Clause 5.2A.6(c) of the final rule.

⁶²³ Clause 5.2A.8(k) of the final rule.

⁶²⁴ Clause 5.1.2(g) of the final rule.

⁶²⁵ Clause 5.2A.8(e) of the final rule.

⁶²⁶ Schedule 5.12 of the final rule.

The principle that requires a new party to pay for the costs of any enlargement, increase in capacity or alterations to the dedicated connection asset to facilitate its connection has not been amended in the final rule to refer to current and future power transfer capability, as was requested by the Clean Energy Council. The Commission does not consider that it is easy to determine what a future power transfer capability would be, when this is something that is subject to negotiation with the Primary TNSP. The Commission considers that the intention of the Clean Energy Council's proposal is already covered off by principle 6(a) in Schedule 5.12, which refers to the connecting party's 'future anticipated requirements'.

Dedicated connection asset service providers will also be subject to a number of the general principles for the provision of negotiated transmission services described in appendix C.2 and set out in Schedule 5.11 of the final rule.⁶²⁷

All other arrangements regarding an access seeker's connection to a dedicated connection asset will need to be negotiated and addressed between the relevant parties on a commercial basis. The final rule does not address these issues. For example, the access seeker may need to:

- enter into some form of agreement with the TNSP
- establish where its connection point and metering point will be
- address what happens in the event that the dedicated connection asset service provider or original connecting party becomes insolvent or leaves the NEM.

The original connecting party may also need to re-open its connection agreement with the TNSP, for example to renegotiate its performance standards.

Once connected, that part of the dedicated connection asset that now is now shared with the original connecting party to facilitate the flow of energy to/from the new connecting party does not become an identified user shared asset. However, the new connecting party will form part of the identified user group.

Application of access regime to exempt network service providers

Under the NEL, a party who owns, operates or controls a distribution system or transmission system is required to register as a network service provider or be exempted from registration by the AER. As set out in section D.3, under the final rule, dedicated connection assets owned by parties other than the Primary TNSP are deemed to be transmission systems for the purposes of requiring registration as a dedicated connection asset service provider (a sub-category of TNSP). If a party who owns, operates or controls a dedicated connection asset is exempted from registration by the AER, the rules that apply to dedicated connection assets (e.g. arrangements regarding access to large dedicated connection assets) would not apply to that person.

⁶²⁷ See clause 1, schedule 5.12 of the final rule.

The Commission cannot remove the ability of a person who owns, operates or controls a distribution system or transmission system to seek exemption from the requirement to register because this is set out in the NEL. However, the Commission considers that it is important to make sure that, where possible, there is transparency of all dedicated connection assets and that a consistent framework for access applies to all large dedicated connection assets, regardless of whether the party who owns, operates or controls the asset is registered network service provider or exempted.

The final rule therefore imposes a mandatory condition on the owner, operator or controller of a large dedicated connection who is granted exemption from the requirement to register as a network service provider with respect to that asset - specifically that the person is deemed to be subject to the condition that it must comply with the access provisions set out under the final rule as if it were a dedicated connection asset service provider.⁶²⁸

Conclusion

The access framework set out above does not necessarily mean that parties who own, operate or control large dedicated connection assets will be required to allow other parties access to their assets. Instead, it is intended to establish a means by which other parties can consider and negotiate access to these assets.⁶²⁹

The Commission acknowledged that this new framework has the effect of creating an additional access regime in the NEL. However, the Commission determined that a regime specific to the nature of large dedicated connection assets is more appropriate than applying the access regime that currently exists under Chapters 5 and 6A of the NEL to parties who own, operate and control dedicated connection assets.

The Commission also acknowledged that not all dedicated connection assets will have spare capacity or will be able to be augmented efficiently to facilitate third party access. However, the Commission expected that the burden of complying with this specific regime for large dedicated connection assets will not be significant for the types of parties who are expected to be owning, operating and controlling a large dedicated connection asset, for example the Primary TNSP providing prescribed transmission services for the shared transmission network in that area, or the generator connected to that asset. The preparation and publication of an access policy is a one-off exercise (except when varied to keep it up to date), and applies only to those who have dedicated connection assets that are equal to or greater than 30km in length. The Commission understood that most dedicated connection assets will fall below this threshold, so the number of parties who are required to comply with these obligations is unlikely to be many.

⁶²⁸ Clause 2.5.1(d3) of the final rule.

⁶²⁹ Note that the final rule provides an ability for a dedicated connection asset service provider, through its access policy, to refuse the connection of another party to its dedicated connection asset if that connection would result in a change in the regulatory treatment of that asset. This is discussed further in section D.5.

It is possible that this bespoke access regime that applies only to the transmission service provided by way of large dedicated connection assets will not be used often. However, introducing such a regime supports transparency and predictability of connections under the NER, and established a robust and complete framework for access to services provided by all large transmission assets. The final rule does not prevent parties from negotiating access to dedicated connection assets, including small dedicated connection assets, on commercial terms, i.e. outside of this access regime. However, the access regime provides a means by which parties (including generators, loads, MNSPs, DNSPs and embedded networks) will be able to explicitly consider large dedicated connection assets as a means to connect to the shared transmission network, and there will be a clear framework by which access to the services provided by means of that asset can be considered.

D.5 Transition of dedicated connection assets to the shared transmission network

D.5.1 Background

There are two recent examples of where existing assets that would fall under the final rule definition of dedicated connection asset were 'transitioned' to form part of the shared transmission network. Both of these occurred in Queensland, where Powerlink identified through either a Regulatory Test⁶³⁰ or RIT-T process that the inclusion of particular connection assets into its transmission network would enable it to meet a network need. However, in the first example, there was no change to the cost treatment of the assets. That is, the services provided by means of those assets remained non-regulated and the power station that owned the assets entered into an unregulated transmission agreement with Powerlink, under which Powerlink paid for the use of the asset. In the second example, the assets became part of Powerlink's transmission network and were included in its regulatory asset base. These examples are described in more detail in Box 4.1 of the discussion paper.⁶³¹

So, while it is possible under existing NER for such assets to transition to the shared transmission network, in practice the process for how these assets would transition, and the regulatory treatment of the assets after transition, is not clear.

D.5.2 COAG Energy Council's view

The COAG Energy Council proposed that an application could be made by any party (including potentially the incumbent TNSP) to have a dedicated connection asset transition to the shared transmission network. It proposed that the AER would assess

⁶³⁰ The Regulatory Test was used by the ACCC prior to the establishment of the RIT-T process.

⁶³¹ See <http://www.aemc.gov.au/Rule-Changes/Transmission-Connection-and-Planning-Arrangements>

such applications and make determinations about whether the asset should transition.⁶³²

D.5.3 Stakeholder views

Submissions to consultation paper

No stakeholder expressed full support for this aspect of the rule change request in their submission to the consultation paper.

The proposal itself

AGL expressed concern about the notion of transferring a dedicated connection asset to the shared transmission network, noting that these assets are privately funded, owned and operated by the proponent to participate in the NEM. It submitted that any decision on a potential lease or transfer of a dedicated connection asset should be made by the owner on a commercial basis.⁶³³ The Clean Energy Council shared this view, noting that each asset will hold unique application-specific attributes, so the transition of a dedicated connection asset to serve a new purpose is not trivial.⁶³⁴

The proposed transition process

While not supporting a regulated approach to the transition of dedicated connection assets, AGL considered that, if such an approach is taken, the process should be light handed, require the parties to negotiate in good faith and be assessed on a case-by-case basis. It proposed that the rule account for the circumstances that led to the investment in the original asset and accommodate any reasonable conditions of transition sought by the original proponent. It also proposed that there be an ability to appeal the determination.⁶³⁵ Origin Energy also supported a case by case approach.⁶³⁶

The Clean Energy Council submitted that the AER is not the appropriate body to determine whether a transition should occur. It also did not consider that the local TNSP should have powers to declare an assumed right over an asset it does not own or have oversight of. The Clean Energy Council posited that requests for transition would more likely be received from a TNSP or DNSP, but could come from new loads as well. Either way, it considered that the owner of the asset should receive the request so they can manage the associated risks.⁶³⁷

⁶³² COAG Energy Council, Transmission Connection and Planning Arrangements, rule change request, July 2015, pp. 13-14.

⁶³³ AGL, submission on consultation paper, p. 5.

⁶³⁴ Clean Energy Council, submission on consultation paper, p. 11.

⁶³⁵ AGL, submission on consultation paper, pp. 2,6.

⁶³⁶ Origin Energy, submission on consultation paper, p. 2.

⁶³⁷ Clean Energy Council, submission on consultation paper, p. 11.

Energy Networks Australia also agreed that the AER is not the appropriate body to determine whether a transition should occur. It submitted that having the AER do so would shift planning and investment responsibility to the AER, while the TNSP retains responsibility and liability for the performance of the network. It considered this to be inappropriate and inconsistent with the economic regulation framework by which the AER approves total revenue, rather than direct which investments should or should not proceed. It also suggested having the AER involved would be procedurally inefficient because it would be required to consult publically on the assessment. If the option was found to not be suitable the TNSP would need to commence a new process to identify alternatives, which would delay the process further.⁶³⁸

Energy Networks Australia submitted that it is unclear why ownership has any role in determining whether a particular option best meets a network need. It noted that consideration of ownership is inconsistent with the proposal to promote cross regional investment and could compromise promotion of the NEO. It presented the view that the existing RIT-T process is the best means of deciding whether assets should transition to the shared transmission network. It noted that this process is robust and well accepted, and has already been successfully used to transition the Kogan Creek substation to the shared transmission network. It also notes that RIT-T outcomes can be disputed, which would provide assurance that the test has been appropriately applied before any transition occurs.⁶³⁹

Origin Energy suggested that the NER contain a minimum set of requirements or criteria that the regulatory body should have to take into account when making its decision.⁶⁴⁰ The Clean Energy Council was of the view that the framework should set out a minimum set of protections for the incumbent asset owner, and that they be allowed access to the negotiation and dispute resolution procedures in the NER. It also suggested that the NER require the network service provider to notify the owner of a dedicated connection asset in its planning process if it identifies the transition as a credible investment option.⁶⁴¹

Cost and other implications

Several stakeholders agreed that the incumbent owner of the dedicated connection asset should not be disadvantaged by the transition.⁶⁴² The Clean Energy Council proposed that the incumbent must reserve the right to earn a reasonable return from the transition, and to retain ownership and control over the asset.⁶⁴³ GDF Suez was of the view that the incumbent TNSP should not be able to seek further funding through

⁶³⁸ Energy Networks Australia, submission on consultation paper, p. 13.

⁶³⁹ Energy Networks Australia, submission on consultation paper, pp. 12-13.

⁶⁴⁰ Origin Energy, submission on consultation paper, p. 2.

⁶⁴¹ Clean Energy Council, submission on consultation paper, p. 12.

⁶⁴² Submissions on consultation paper: AGL, p6; Origin Energy, p2; Clean Energy Council, p11; GDF Suez, p. 3.

⁶⁴³ Clean Energy Council, submission on consultation paper, p. 11.

transmission use of system charges for assets that have already been paid for by the connecting party.⁶⁴⁴

The MEU questioned whether the original owner gets reimbursed for its capital investment if its asset is transitioned. It also concluded that, if the owner does not gift the assets to the TNSP, then it would be required to be subject to regulation, the costs of which would be large relative to the value of the asset. So, it considered that there would be financial pressure to gift the asset to the TNSP or sell it at a low cost, which would be inequitable. The MEU also raised tax implications of gifting the assets to the TNSP.⁶⁴⁵

Energy Networks Australia considered that, irrespective of ownership, the economic regulation framework ensures that the price paid by customers, and the revenue earned by owners, reflects the efficient costs of supply. It questioned what contribution should be made to the recovery of sunk costs when assets transition to the shared transmission network, and what the opening value of the asset would be.⁶⁴⁶

Submissions to the discussion paper

In the discussion paper the Commission proposed to introduce two triggers in the NER where a dedicated connection asset could be transitioned to the shared transmission network:

1. where a DNSP connects to the dedicated connection asset; or
2. where a TNSP is augmenting its transmission network to facilitate additional capacity, and the most efficient option would be to utilise the dedicated connection asset (as identified in a RIT-T assessment).

This approach reflects what the AEMC recommended in the Transmission Frameworks Review. The Commission also proposed to include provisions in the NER to make sure that the original owner of the dedicated connection asset could negotiate a fair price and has access to dispute resolution. The Commission proposed this approach because the arrangements should be clear, transparent and predictable, with decisions about when assets should be transitioned made on a consistent basis, i.e. not case-by-case, as was proposed in the rule change request.

The proposal itself

No stakeholder expressed full support for this proposal in their submission to the discussion paper.

Transmission General Holdings Australia was of the view that dedicated connection assets should not be transitioned into the shared transmission network at all, arguing

⁶⁴⁴ GDF Suez, submission on consultation paper, p. 3.

⁶⁴⁵ Major Energy Users, submission on consultation paper, p. 3.

⁶⁴⁶ Energy Networks Australia, submission on consultation paper, pp. 13-14.

that the risk that this could occur would reduce certainty for financiers and therefore increase costs or limit financing options available to those providing services for the assets. It suggested that dedicated connection assets could be treated as a non-network option in any augmentation or connection assessment by TNSPs or DNSPs. That is, if the option that maximises the net economic benefit to address an identified need is to utilise the dedicated connection asset, the TNSP or DNSP could enter into commercial negotiations with the asset owner, which may involve a lease for capacity or shared use of a pole.⁶⁴⁷

The SA Department of State Development expressed concern with the proposed 'trigger' approach, arguing that there is a need for flexibility because different issues may be pertinent in each case. It suggested that a more flexible approach would enable owners to have input into any proposed asset transition.⁶⁴⁸

PIAC expressed concern that customers would end up paying for the asset if it ended up in the NSP's regulatory asset base. It proposed that the network service provider be required to commercially acquire the services provided by the asset, rather than purchasing the asset itself. However, it submitted that, if the network service provider is to acquire the asset, the AER should oversee the transfer and the asset should be valued correctly, through an appropriate depreciation method, to reduce the potential for the collection of inefficient revenue.⁶⁴⁹

The proposed transition process

The Clean Energy Council was of the view that any transition of a dedicated connection asset to the shared transmission network should be done on an entirely commercial basis, arguing that the assets were financed on commercial terms, so re-purchases should also be made on commercial terms. It proposed that commercial negotiations should prevail on a case by case basis where it is identified as the lowest cost option for consumers, but suggested that limited provisions could be put in place to guide a fair-priced transition, supported by dispute resolution. It also suggested that these matters be embedded into the terms of registration as a Dedication Transmission Connection Asset Owner.⁶⁵⁰

EnergyAustralia also considered that transition could be negotiated on a strictly commercial basis but, if not, then provisions should be made for connecting parties to be adequately compensated. It proposed that the original owner be compensated for any degradation of service, including during construction, and any additional expenses such as metering reconfiguration. It argued that not doing so might introduce unnecessary uncertainty to the business case of a new connection.⁶⁵¹

⁶⁴⁷ Transmission General Holdings Australia, submission on discussion paper, p. 2.

⁶⁴⁸ SA Department of State Development, submission on discussion paper, p. 4.

⁶⁴⁹ PIAC, submission on discussion paper, p. 4.

⁶⁵⁰ Clean Energy Council, submission on discussion paper, p. 8.

⁶⁵¹ EnergyAustralia, submission on discussion paper, p. 2.

Origin Energy was comfortable with the proposed process for the transition of dedicated connection assets, but reiterated that the existing asset owner's rights should not be impeded if transition occurs. It also submitted that dedicated connection assets might not meet the required performance standards of the shared transmission network, and therefore proposed that the TNSP be required to meet the costs of updating these standards.⁶⁵²

Infigen asked for further clarity on how the transition of a dedicated connection asset is to take place as part of a RIT-D or RIT-T process, including the involvement of the asset owner.⁶⁵³ The Clean Energy Council raised a similar point, arguing that the asset owner needs to be notified as soon as possible if its asset is identified as a potential alternative.⁶⁵⁴

Submissions to the draft determination

In the draft determination, the Commission considered that a dedicated connection asset could transition to the shared transmission network if doing so provided a means for a TNSP to meet an identified network need. The Commission set out its views on three possible scenarios for how this could occur. Each of these is described below.

Scenario 1

Under this scenario, the incumbent TNSP would be seeking to purchase the dedicated connection asset from the party who owns, operates and controls it for the purposes of using the asset to provide shared transmission services. If purchased, the asset would be rolled into the incumbent TNSP's regulatory asset base because the asset would be providing prescribed transmission services.

A transfer of this type would likely require the TNSP to undertake a RIT-T⁶⁵⁵ and through this determine that such a transfer would be the most efficient means to resolve an identified network need. This is a similar process to TNSPs' current consideration of non-network options, or options to augment the existing network. The TNSP and the party who owns, operates and controls the dedicated connection asset would negotiate the terms, conditions and price of the asset transfer on a commercial basis, and the TNSP would pay the costs of this purchase out of its capital expenditure. As is the case under the existing NER, the asset would roll into the TNSP's regulatory asset base at the start of the next regulatory control period, subject to the AER's approval.

⁶⁵² Origin Energy, submission on discussion paper, p. 2.

⁶⁵³ Infigen Energy, submission on discussion paper, p. 2.

⁶⁵⁴ Clean Energy Council, submission on discussion paper, p. 8.

⁶⁵⁵ If the threshold for consideration under a RIT-T process is met.

Scenario 2

Under this scenario, the incumbent TNSP would enter into a long-term contract with a dedicated connection asset service provider to obtain the use of the dedicated connection asset, and pay for this out of its operating expenditure. The Commission indicated that it did not consider this approach to be a workable option for two reasons, outlined below:

- The asset owner has little incentive to enter into such an arrangement. This is because the asset would now be providing prescribed transmission services and so the asset owner may be subject to the range of obligations that are imposed on TNSPs providing prescribed transmission services.⁶⁵⁶
- If the party who owns, operates and controls the dedicated connection asset was also the generator that is connected to that asset, it would not be appropriate for it to own assets that provide prescribed transmission services due to competition concerns.

Under the draft rule, parties could choose which of scenarios 1 and 2 is chosen - that is, whether the TNSP purchases the asset with capital expenditure, or enters into an agreement with the asset owner so that it can provide prescribed transmission services by means of that asset. However, in the draft determination the Commission explained that it expected that most parties would take option 1, given that any party who retains ownership of an asset that is providing prescribed transmission services would be regulated accordingly.⁶⁵⁷

Scenario 3

Under this scenario, the incumbent TNSP would be seeking to move the asset from its non-regulated transmission services asset base into its regulatory asset base for the purposes of now providing prescribed transmission services by means of that asset. Here, the TNSP would need to demonstrate, through a RIT-T process, that such a transfer would be the most efficient means to address an identified network need.

There is an existing framework in the NER that addresses how an NSP's regulatory asset base value is to be recalculated to include capital expenditure that was not included in the regulatory asset base value for the previous regulatory control period, to the extent that the asset now provides prescribed transmission services. As is the case under the existing NER, the asset would roll into the TNSP's regulatory asset base at the start of the next regulatory control period, subject to the AER's approval.

⁶⁵⁶ Or, the owner could instead choose to seek exemption from the requirement to register and appoint the Primary TNSP as the intermediary with respect to that asset.

⁶⁵⁷ It is possible that the connecting party (or other party) could retain ownership of the dedicated connection asset, but enter into an arrangement for the incumbent TNSP to operate and maintain it as an 'intermediary'. Such an approach may be workable if the AER is satisfied that operation and control of the dedicated connection asset lies with the incumbent TNSP, and consequently exempts the party who owns the dedicated connection asset from the requirement to register as a TNSP with respect to that asset. See clause 2.9.3 of the NER.

In light of the above, the Commission concluded in the draft determination that there was no need to create a separate framework by which assets should or could transition to the shared transmission network under any of the above options because there are existing arrangements that enable this to occur. However, the Commission concluded that it is important for the NER to provide clarity about the point at which a large dedicated connection asset is considered to be providing shared transmission services rather than connection services, the scenario that was contemplated in the rule change request. As such, the draft rule made it clear that if a DNSP connects to a large dedicated connection asset:⁶⁵⁸:

- The part of the asset used to convey electricity to the DNSP (i.e. provide a shared transmission service) ceases to be a dedicated connection asset and instead forms part of the transmission network of either:
 - the Primary TNSP (if the asset is owned by them); or
 - if prior to the DNSP connecting the asset was owned, controlled and operated by a dedicated connection asset service provider other than the Primary TNSP, that person.
- Because the part of the asset that is used to provide shared transmission services ceases to be a dedicated connection asset, the person that owns, operates or controls the asset will no longer be a dedicated connection asset service provider and will need to seek registration as a TNSP in respect of the relevant asset and comply with all the obligations of the TNSP in respect of that asset.⁶⁵⁹
- To the extent the shared transmission services provided by the asset are prescribed transmission services, the TNSP for that asset will be subject to regulation under Chapter 6A of the NER unless exempted by the AER from that requirement.

As set out in section A.7, the draft rule required dedicated connection asset service providers to report to the AER on requests for connection and access to a large dedicated connection asset when such requests are made and when an agreement for access is entered into, in a manner and form notified by the AER.⁶⁶⁰ This provision would allow the AER to determine whether it would need to make a transmission determination in respect of the prescribed transmission services being provided by means of that asset, and to monitor compliance with the obligations on TNSPs under the NER.

⁶⁵⁸ Clause 5.2A.8(m) of the draft rule.

⁶⁵⁹ If the Primary TNSP owns, operates and controls the asset, that part of the asset that provides shared transmission services will be taken to be part of its transmission network.

⁶⁶⁰ Clause 5.2A.8(k) of the draft rule. Note that this obligation is retained in the final rule.

In its submission to the draft determination, AEMO agreed with the Commission's proposal that a dedicated connection asset will become a shared network asset if a distribution network connects to it.⁶⁶¹

The Clean Energy Council submitted that the ability for a dedicated connection asset service provider to register as a 'full' TNSP (i.e. under option 2) is inconsistent with the Commission's reasoning to restrict the degree of contestability for identified user shared assets (that is, that there be clear, singular accountability for the shared transmission network). It asked that the NER clarify that there is no restriction on a dedicated connection asset service provider providing services to a DNSP or TNSP as a credible option through a RIT-D or RIT-T. The Clean Energy Council also sought clarity that the principles of access to large DCA services (as set out in section D.4.4) would apply to DNSP connections to a dedicated connection asset, not just load and generator connections.⁶⁶²

TNSPs raised a number of concerns with this aspect of the draft rule. Generally, Energy Networks Australia and ElectraNet asked that the Commission consult further on its proposed approach and improve the clarity of the draft rule to accommodate all possible scenarios, including in more complex, multi-party and staged connection scenarios.⁶⁶³

D.5.4 Analysis and conclusion

Changes between the draft and final rule

There are a number of changes between the draft and final rule on this aspect of the rule change request. These are summarised below and set out in more detail in this section. Specifically, the final rule:

- does not include clause 5.2A.8(m) from the draft rule, which contemplated what would occur if a DNSP connected to a dedicated connection asset that is operating at transmission voltages; but
- instead allows a dedicated connection asset service provider, through the access policy it is required to develop under the final rule, to refuse the connection of another party to its dedicated connection asset if that connection would result in a change in the regulatory treatment of that asset.

The Commission's understanding of the intention of this aspect of the rule change request was that the NER provide mechanisms to enable a dedicated connection asset to be transitioned to the shared transmission network where that transition is the most efficient option to address an identified need. It then follows that prescribed

⁶⁶¹ AEMO, submission on draft determination, p. 5.

⁶⁶² Clean Energy Council, submission on draft determination, p. 8.

⁶⁶³ Submissions on draft determination: Energy Networks Australia, pp. 6-7; ElectraNet, p. 8.

transmission services provided by means of that asset should be funded by transmission users through transmission use of system charges.

As concluded in the draft determination, the Commission saw no need to define a separate framework by which assets should or could transition to the shared transmission network under any of the options set out above because there are existing arrangements that enable this to occur. That is, there are no fundamental limitations in the NER that prevent a TNSP transitioning a dedicated connection asset to form part of its transmission network if it demonstrates, through a RIT-T or other process, that transition of the asset is the most efficient option to address an identified network need. As such, the final rule contains no triggers to force transition of the ownership of the dedicated connection asset to the incumbent TNSP. Instead, transitions will be assessed on a case by case basis through the existing processes.

Under the final rule, a DNSP, as with any other party, is not prevented from seeking access to a dedicated connection asset either on an entirely commercial basis or, if a large dedicated connection asset, through the access policy that the dedicated connection asset service provider is required to prepare under the final rule.⁶⁶⁴

As set out above, in its submission to the draft determination the Clean Energy Council submitted that the ability for a dedicated connection asset service provider to register as a 'full' TNSP (i.e. under scenario 2) was inconsistent with the Commission's reasoning to restrict the degree of contestability for identified user shared assets (that is, that there be clear, singular accountability for the shared transmission network). While this may be the case, the Commission cannot restrict the ability of a party who owns, operates or controls a distribution or transmission system to register as a network service provider with respect to that asset, and be regulated accordingly. Further, the Commission considered that the likelihood of the types of parties expected to own, operate and control dedicated connection assets wanting to register as a network service provider with respect to that asset, and be subject to all of the obligations on network service providers under the NER, is low.

As explained in the previous section, the draft rule sought to provide clarity about the point at which a dedicated connection asset is considered to be providing shared transmission services rather than connection services, and the regulatory treatment of that asset after transition when a DNSP connects to a dedicated connection asset. The Commission sought to address this scenario because it considered that this was a likely driver for the transition of a dedicated connection asset to the shared transmission network.

In such circumstances, the TNSP and DNSP would likely identify the most efficient means for the DNSP to connect, which could include connection via an existing large dedicated connection asset. To facilitate the connection, the TNSP may choose to purchase the dedicated connection asset outright from the party who owns, operates and controls it (option 1 above), enter into an arrangement with the asset owner/operator/controller to obtain the use of that asset (option 2) or, if it is already

⁶⁶⁴ Clause 5.2A.8 of the final rule.

the owner/operator/controller of that asset, move the asset into its regulatory asset base (option 3).

Under all options, if a DNSP connects to a dedicated connection asset, that asset would change its regulatory status. That is, it would no longer be a dedicated connection asset because it would be providing shared transmission services and, to the extent that it was providing prescribed transmission services, would need to be regulated as such. This raised two issues:

1. In submissions to the draft determination, a number of stakeholders asked the Commission to consider all possible scenarios where a dedicated connection asset would change its regulatory status, including where a TNSP connects to a dedicated connection asset.
2. As set out in section D.3.4, under the revised definition of dedicated connection asset in the final rule, an asset that forms part of a distribution system is not a dedicated connection asset. This means that if a load connects to a dedicated connection asset that is operating at distribution voltages, and the load connecting to it does not own, operate or control that dedicated connection asset (i.e. the dedicated connection asset is conveying electricity to customers), the dedicated connection asset will cease to be a dedicated connection asset and the party who owns, operates or controls it will be required to be registered as a DNSP (or exempted by the AER).

The Commission acknowledged that any forced change in the regulatory treatment of a dedicated connection asset potentially undermines the basis on which the original investment in that asset was made. The Commission worked through some example scenarios of different ways in which this might occur.

Table D.1 sets out the Commission's views on the scenarios where a dedicated connection asset will cease to be a dedicated connection asset as a result of someone new connecting to it.

Table D.1 Scenarios where a dedicated connection asset will cease to be a dedicated connection asset under the final rule

Voltage of dedicated connection asset	Second connected party	Implication for party who owns, operates or controls the dedicated connection asset
Transmission voltage	Any network service provider (i.e. a DNSP or a TNSP)	Asset is no longer a dedicated connection asset as it is not used exclusively by connected parties (identified user group). To the extent that the network provides shared transmission services that are prescribed services, the party who owns, operates or controls that network will need to be regulated as a TNSP, or gain exemption from the AER.
Distribution voltage	Non self-supplied load (that is, someone other than the party who owns, operates or controls the dedicated connection asset)	Asset is no longer a dedicated connection asset because it forms part of a distribution system. The party who owns, operates or controls that system will either need to register as a DNSP or gain exemption from the AER.
	DNSP	Dedicated connection asset becomes a distribution network. To the extent it provides direct control services, the party who owns, operates or controls that network will either need to register as a DNSP or gain exemption from the AER.
	TNSP	

The Commission considered that it was not practical for the NER to set out all the possible scenarios whereby an asset would change its regulatory status, including all scenarios in which a dedicated connection asset would cease to be a dedicated connection asset. The Commission concluded that the NER should not specify the consequences of a DNSP connection to a dedicated connection asset that is operating at transmission voltages and not other scenarios, including those set out above. The final rule therefore does not include clause 5.2A.8(m) from the draft rule, which contemplated what would occur if a DNSP connected to a dedicated connection asset that is operating at transmission voltages. There are also a range of ways in which the transition to a different type of asset under the NER could occur - it depends on many factors - so the Commission concluded that it would not be appropriate to specify particular transition paths (i.e. the point at which an asset is said to be providing a

different type of service, and the form of regulation that applies to the person who controls that asset afterward) in the NER.

The final rule does not prescribe the process by which an asset would transition from type to another in the event that the nature of the services it provides changes. Further, it does not explicitly set out the form of regulation that would apply to a person who owns, operates or controls an asset that ceases to be a dedicated connection asset. The Commission also expected that, if that asset were to start providing standard control services or prescribed transmission services, the party who owns, operates or controls it would have an incentive to discuss the changed regulatory treatment with the AER.

As a result, there are no explicit provisions in the final rule to protect the incumbent connecting party or the party who owns, operates or controls the dedicated connection asset with respect to the price to be paid for the asset or the ongoing quality of service to connecting parties once the asset is transitioned, as was proposed by some stakeholders. Nor does the final rule require the AER to oversee the transfer or make an assessment of the correct value of the asset. The Commission considered that such provisions were more appropriate under the 'trigger' approach to force transfer of ownership proposed in the discussion paper, and were not necessary where parties are negotiating arrangements commercially under the RIT-T process. Under the final rule the dedicated connection asset service provider would negotiate connection with the DNSP.

Similarly, the final rule does not require a network service provider to notify the party who owns, operate or controls the dedicated connection asset, or the parties that are connected to it, that the asset has been identified as a possible solution to address a network need. The Commission considered that the network service provider would reasonably already be in contact with those parties if it is proposing the transition of that asset as an option in a RIT-T process.

Arrangements regarding the original connecting party's (or parties') connection to the transmission network via that asset once it has transitioned to the shared transmission network - for example the location of the connection and metering points - will need to be addressed between that party and the relevant network service provider on a commercial basis. The final rule does not address these issues.

However, the Commission recognised that a change in the regulatory treatment of a dedicated connection asset to a distribution network could be quite substantial in those scenarios that are set out in Table D.1. For example, a generator might ordinarily have an incentive to facilitate the connection of a load to the dedicated connection asset by which it is connected to the shared transmission network, regardless of whether the generator is itself registered as the dedicated connection asset service provider with respect to that asset, or another party is under contract with the generator. It may no longer have such an incentive if allowing that connection would mean that they (or the party who is registered as the dedicated connection asset service provider) would no longer be a dedicated connection asset service provider and would instead have all the obligations of a TNSP in respect of the asset, or (if the asset is operating at distribution

voltage) must register as a DNSP or seek exemption and be subject to conditions imposed by the AER.

To protect the incumbent owner, operator or controller of a dedicated connection asset from a forced change in regulatory treatment, the final rule allows a dedicated connection asset service provider, through the access policy it is required to develop under clause 5.2A.8 of the final rule,⁶⁶⁵ to refuse the connection of another party to its dedicated connection asset if that connection would result in the asset no longer meeting the definition of a dedicated connection asset.⁶⁶⁶ Such an approach protects the basis on which parties made investments in such assets. It also provides greater certainty about what might occur if certain other parties connect, and what options are open to a dedicated connection asset service provider in the event that any of the scenarios set out in Table D.1 arise.

⁶⁶⁵ See section D.4.

⁶⁶⁶ Clause 5.2A.8(m) of the final rule.

E Arrangements for distribution systems connecting to the transmission network

This appendix outlines the Commission's final rule in relation to the arrangements for distribution networks connecting to a transmission network. Specifically, it sets out the:

- current arrangements under the NER
- approach put forward by the COAG Energy Council
- views of stakeholders in submissions to the consultation paper, discussion paper and draft determination, and those expressed at the public forum, stakeholder workshops and in one-on-one meetings
- Commission's analysis of the rule change request and stakeholder views
- Commission's conclusions and a description of the final rule.

E.1 Background

Chapter 1 sets out the Commission's understanding of the services required for a distribution network to connect to the transmission network, and how the costs of providing those services are recovered. Under the existing NER, the owner, operator or controller of a distribution system must either be registered by AEMO (i.e. as a DNSP) with respect to that system, or exempted by the AER (i.e. an embedded network). The arrangements for both types of parties are summarised below.

E.1.1 Connection of a DNSP to a transmission network

Under the NER, DNSPs and TNSPs must undertake a joint planning process that includes assessing the adequacy of existing transmission and distribution networks and the assets associated with transmission-distribution connection points over the next five years.⁶⁶⁷ Further, DNSPs and TNSPs must work together to ensure efficient planning outcomes, and to identify the most efficient options to address any identified needs.⁶⁶⁸ This process allows parties to jointly identify, and address, potential issues affecting both transmission and distribution networks in a timely manner, including connections between the two networks.

In terms of how the costs associated with a new TNSP-DNSP connection are recovered, if new assets (e.g. a substation) are required to be built on the TNSP's network in order to connect a DNSP to a transmission network, the TNSP will build, own and operate that substation as prescribed transmission services.⁶⁶⁹ The costs of providing these

⁶⁶⁷ Clause 5.14.1(1) of the existing NER.

⁶⁶⁸ Clause 5.1.4(2) of the existing NER.

⁶⁶⁹ Paragraph (c) of the definition of prescribed transmission service in Chapter 10 of the existing NER states that it includes "connection services that are provided by a Transmission Network Service

prescribed transmission services are recovered by the TNSP from transmission customers, which include the DNSPs. DNSPs who then recover these amounts from their customers through the transmission use of system component of their network charges.

In addition to the new assets on the TNSP's network to facilitate the connection, there will also need to be a 'physical link' that connects the distribution network to the transmission network. This cost is charged to DNSPs as a prescribed exit service,⁶⁷⁰ with the exact amount of the charge calculated by the relevant TNSP in accordance with its transmission pricing methodology. Customers connected to that DNSP's network will pay these costs through distribution use of system charges.

No other assets are required to connect the distribution network to the transmission network - the physical link connects the transmission network directly to the distribution network. Nevertheless the TNSP or the DNSP may need to augment their network in order to enable the connection. Such augmentations would be provided as prescribed transmission or standard control services by the relevant TNSP or DNSP (respectively), and so are subject to economic regulatory oversight by the AER.

Given these existing arrangements, the concepts of 'identified user shared assets' and 'dedicated connection assets' are not relevant to the connection of a DNSP to the transmission network.

The existing NER do not set out a specific process to be followed to enable the connection of a distribution network to a transmission network. The process and requirements set out in Chapter 5 of the existing NER apply to all parties seeking connection to a transmission network, including DNSPs. However, the Commission understands that DNSPs and TNSPs adapt this process in light of their obligations under Part D(planning and network expansion) of Chapter 5.

E.1.2 Connection of an embedded network to a transmission network

Embedded network is defined in the existing NER as follows:

embedded network

A distribution system, connected at a parent connection point to either a distribution system or transmission system that forms part of the national grid, and which is owned, controlled or operated by a person who is not a Network Service Provider.

An embedded network is a distribution system in relation to which the owner, operator or controller is exempted by the AER from registration as a DNSP. These exemptions are subject to certain conditions. Almost all of the regulation of these

Provider to another Network Service Provider to connect their networks where neither of the Network Service Providers is a Market Network Service Provider".

⁶⁷⁰ Defined in Chapter 10 of the existing NER as "A service provided to serve a Transmission Customer or Distribution Customer or a group of Transmission Customers or Distribution Customers, or a Network Service Provider or a group of Network Service Providers, at a single connection point)".

parties - termed exempt embedded network service providers - is through AER guidelines, not the NER.

The connection of an embedded network to a transmission network is treated as a load connection, and the arrangements relevant to the connection of loads under Chapter 5 of the NER apply. As set out in chapter 1, in considering this rule change request the Commission understood that:

- if a new substation is required to be built, the TNSP provides that as a negotiated transmission service and so paid for by the load
- the physical link or connection is provided by the TNSP as a negotiated transmission service and so paid for by the load
- any line required to connect the embedded network to that physical link or connection can be built by the connecting party itself, or it can ask the TNSP to provide this service as a non-regulated transmission service.

The existing NER do not set out a specific process to be followed to enable the connection of a distribution network to a transmission network. The process and requirements set out in Chapter 5 of the existing NER apply to all parties seeking connection to a transmission network, including embedded network service providers.

E.2 COAG Energy Council's view

The COAG Energy Council did not propose any specific arrangements for the connection of a distribution network to a transmission network. However, the rule change request sought to clarify the arrangements for all parties that could connect to the transmission network i.e. generators, load, distribution networks and transmission networks. The arrangements proposed in the rule change request would therefore apply equally to all of those parties that could connect to the transmission network.

The COAG Energy Council also proposed a means by which a dedicated connection asset could be transitioned to form part of the 'shared' transmission network, for example to facilitate the connection of a DNSP. This aspect of the rule change request is discussed in appendix D.5, and so is not considered further in this appendix.

E.3 Stakeholder views

E.3.1 Submissions to the consultation paper

In the consultation paper published on this rule change request, the Commission noted the differences in the arrangements to connect a DNSP to the transmission network, and welcomed any initial thoughts from stakeholders on what arrangements should apply under the rule change. In its submission to the consultation paper, Energy Networks Australia noted that the existing NER do not distinguish between different types of connecting parties, and that there was no reason to change. Specifically, it

argued that the current approach to connecting DNSPs should not change because it facilitates effective joint planning and, given the costs of any assets will be recovered from end-use consumers, it is important that they remain subject to the RIT-T and economic regulation.⁶⁷¹ EnergyAustralia also considered that similar arrangements should apply across generation, load and DNSP connections.⁶⁷²

The MEU argued that applying the same approach to DNSPs as proposed for load and generation would need to recognise that DNSPs will pass through any costs to consumers. It submitted that DNSPs tend to socialise the costs of their connection to a transmission network, rather than passing them on to specific end users, and suggested that the benefit of DNSPs getting competitive pricing for a new connection could be significant.⁶⁷³

AusNet Services considered that new assets required to connect a DNSP to the transmission network, for example a substation, could be contestable. It submitted that it could be appropriate to run a contestable process for the construction and ownership of these assets because of the likely high cost of the substation. It suggested that AEMO could administer the tender process if the local DNSP or TNSP was interested in supplying the service.⁶⁷⁴ AEMO shared a similar view, indicating that there is potential for contestability to drive cost reductions at distribution-transmission connection points. But, given both parties are regulated, AEMO suggested that consideration be given to the TNSP and DNSP's incentives to make the project contestable.⁶⁷⁵

E.3.2 Submissions to the discussion paper

In the discussion paper published on the connections aspects of this rule change request the Commission expressed the view that the existing arrangements for the connection of a DNSP to a transmission network do not need to change. These arrangements were therefore not explicitly discussed in the paper. As such, there were no specific comments on this issue in submissions to the discussion paper.

E.3.3 Submissions to the draft determination

Consistent with the view put forward in the discussion paper, the draft rule did not make any amendments to the process by which a distribution network connects to a transmission network.

No submissions specifically commented on this issue in response to the draft determination.

⁶⁷¹ Energy Networks Australia, submission on consultation paper, p. 11.

⁶⁷² EnergyAustralia, submission on consultation paper, p. 2.

⁶⁷³ MEU, submission on consultation paper, p. 4.

⁶⁷⁴ AusNet Services, submission on consultation paper, p. 4.

⁶⁷⁵ AEMO, submission on consultation paper, p. 3.

E.4 Analysis and conclusions

Changes between the draft and final rule

There were no changes between the draft and final rule regarding the process by which a DNSP connects to a transmission network under Chapter 5 of the NER. However, the final rule makes it clearer which aspects of the connection process apply to the connection of distribution networks to transmission networks.

The final rule provides clarity to all connecting parties about which parts of the connection process set out in Chapter 5 of the NER apply to them. This includes parties who own, operate or control a distribution network and will either be registered as a DNSP with respect to that network, or exempted by the AER (i.e. an embedded network). Specifically, the final rule sets out that rule 5.3 applies to a distribution network (including an embedded network) connecting to transmission network where the connection applicant is a registered participant, intending to become a registered participant or will obtain an exemption from registration.⁶⁷⁶

E.4.1 Connection of a DNSP to a transmission network

The final rule does not change the process for connecting a registered DNSP to a transmission network under Chapter 5 of the NER. This is because the Commission considered that the existing arrangements were appropriate and fit-for-purpose.

As discussed in appendices B through D, the final rule contains numerous other changes relating to how other parties connect to the transmission network, including:

- introducing the new terms 'identified user shared assets' and 'dedicated connection assets', defining which aspects of these services are negotiated transmission services or non-regulated transmission services and associated changes
- making a number of changes to the provision of negotiated transmission services, for example the revised negotiating principles and the ability to request the engagement of an independent engineer.

Since a DNSP connecting to a transmission network will only be provided with prescribed transmission services, not negotiated transmission services, none of the aspects of the final rule referred to above will apply to the services provided by a TNSP to connect a DNSP.

Definitions

In order to preserve the existing process for connection of a DNSP to the transmission network, distribution connection assets needed to be separately defined. In this way,

⁶⁷⁶ Clause 5.1.2(b) of the final rule.

the arrangements for the connection of a DNSP to the transmission network will be different to the arrangements by which load and generation connection under the final rule. The definition of 'connection assets' in the existing NER is amended through the final rule as follows:

connection assets

For the *declared transmission system* of an *adoptive jurisdiction*, and a *distribution system*, those components of a *transmission* or *distribution system* which are used to provide *connection services*.

For other *transmission systems*, *dedicated connection assets* and *network connection assets*.

Note:

A *third party DCA* is a *connection asset* but for the purpose of registration under Chapter 2 also constitutes a *transmission system*.

The final rule also introduces the term 'distribution connection assets', defined as follows:

distribution connection assets

Those components of the *distribution system* which are used to provide *connection services* to a *Distribution Network User* or a group of *Distribution Network Users* or a *Network Service Provider* or group of *Network Service Providers*.

Economic regulation of distribution connections

The final rule also maintains the existing arrangements by which the services provided by the TNSP to connect a DNSP are economically regulated, i.e. as prescribed transmission services. For example, if through planning and application of the RIT-T the TNSP determines that a new substation is needed to connect a DNSP to the transmission network, the TNSP will design, build, own, operate and control that substation for the purposes of providing prescribed transmission services and will recover the costs of doing so from transmission customers, which include DNSPs. The final rule does not provide for contestability in the provision of these services, as is the case under the final rule for other connecting parties,⁶⁷⁷ for the reasons outlined below:

- Stakeholders did not raise, nor was the Commission aware of, any particular issues with the existing arrangements by which DNSP-TNSP connections are made that may benefit from the introduction of contestability.⁶⁷⁸ Two objectives

⁶⁷⁷ Appendix B sets out the boundaries of contestability for services to connect a load, generator, MNSP or embedded network under the final rule.

⁶⁷⁸ The Commission was aware of the Deer Park terminal station, which is a connection asset between a distribution network and a transmission network in Victoria. The services to own, operate and maintain this terminal station were procured through a competitive tender process, managed by AEMO, consistent with the arrangements for competitive procurement in Victoria. The tender was won by TransGrid. This is consistent with the different regulatory arrangements that apply in that jurisdiction. See chapter 6 for further details.

of introducing contestability in the provision of certain services to connect other parties (including loads, generators, MNSPs and embedded networks) to the transmission network was to help address the information asymmetry typically experienced when seeking a connection to the transmission network, and to balance out the degree of control incumbent TNSPs have over the costs, timing and technical requirements of those parties' connections. DNSPs are unlikely to experience this same level of information asymmetry or monopoly power because their core business is very similar to that of a TNSP's. Further, the existing arrangements include a number of provisions setting out how DNSPs and TNSPs joint plan, which includes the scoping of potential DNSP-TNSP connections.

- The Commission considered that there were already appropriate arrangements in place under the framework for economic regulation in the NER that govern how DNSPs and TNSPs make investments and provide services to other parties, including to facilitate a connection to another network. The efficiency of these investments is tested like any other investment in assets that provide prescribed transmission services. As such, the Commission saw no clear benefit in putting in place additional arrangements to facilitate competition for the provision of these services.

The TNSP will continue, as under existing arrangements, to provide the physical link that connects a distribution network to its network as a prescribed transmission service that is paid for by the DNSP.⁶⁷⁹ Customers connected to that DNSP's network will pay the costs of receiving that service through distribution use of system charges. This will also be the case in the event that the DNSP connects to an existing substation that is already providing services to other connecting parties.

E.4.2 Connection of an embedded network to a transmission network

As discussed in appendices B through D, the final rule contains numerous changes relating to how parties other than a DNSP connect to the transmission network, including:

- introducing the new terms 'identified user shared asset' and 'dedicated connection asset', defining which aspects of these services are negotiated transmission services or non-regulated transmission services and associated changes
- making a number of changes to the provision of negotiated transmission services, for example the revised negotiating principles and the ability to request the engagement of an independent engineer.

These aspects of the final rule will apply to the services provided by a TNSP to connect an embedded network to a transmission network. Please refer to the relevant appendices for further detail on these aspects of the final rule.

⁶⁷⁹ These are prescribed exit services that the DNSP receives.

F Other identified user shared asset models considered

Throughout this rule change request process, the Commission considered a number of other possible models for the provision of services provided by identified user shared assets. The Commission did not consider that any of these other models would better promote the NEO than the model set out in the final rule.

The models set out and discussed in this appendix are:

1. a model for connection services where there is increased contestability with full TNSP accountability (i.e. Model B in the discussion paper)
2. introduction of a 'connection processing service'
3. provision of connection services at the regulated weighted average cost of capital (WACC)
4. a continuum of options for the provision of connection services.

For each of these alternative models, this appendix sets out:

- an overview of the model
- a detailed description of the model
- a discussion of how the characteristics of the model being considered compares to the characteristics of the final rule, having regard to the assessment criteria set out in chapter 3.
- a conclusion.

The models set out and discussed in this appendix incorporate:

- the views of stakeholders in submissions to the consultation paper, discussion paper and draft determination, as well as those expressed at the public forum, in stakeholder workshops and in one-on-one meetings
- the Commission's analysis of the models and stakeholder views.

F.1 Increased contestability with full TNSP accountability

This model is where the majority of services for identified user shared assets, including operation and maintenance, could be provided by parties *other* than the incumbent TNSP. However, the incumbent TNSP would remain ultimately accountable for any impact those assets have on the shared transmission network.⁶⁸⁰

⁶⁸⁰ This model was presented in the discussion paper as 'Model B'.

As set out in chapter 3, the regulatory framework established by the NEL, NER and jurisdictional licensing regimes does not contemplate an approach where responsibility for the shared network is split between multiple owners or operators. The Commission therefore considered that given the criticality of system safety, reliability and security, accountability for outcomes on the shared transmission network should be clearly defined, and that this is best achieved when one party is singularly accountable for shared network outcomes. Therefore, the Commission did not pursue a model where accountability is split between multiple parties.

F.1.1 Overview of the model

Table A.1 sets out what services for identified user shared assets would be provided on a contestable (i.e. non-regulated) basis under this model. Appendix B sets out a description of what each service in the table below entails. The only difference between this model and the model set out in the final rule is the contestability of operation and maintenance services.

Stakeholders also raised other models that may be considered similar to this, e.g. operation and maintenance being contestable, but obligations relating to access to identified user shared assets staying with the Primary TNSP. The Commission considered that these models all essentially collapse into, or are similar to, Model B and so has not discussed them separately here.

Table F.1 Boundaries of contestability for identified user shared assets

Service	Contestability
Setting the functional specification (including performance standards)	Not contestable. Incumbent TNSP provides as a negotiated service.
Detailed design	Contestable.
Cut-in works	Not contestable. Incumbent TNSP provides as a negotiated service.
Construction	Contestable, but incumbent TNSP is accountable for the impact that the provision of these services has on the operation of the shared transmission network, including by making decisions about operational matters.
Ownership	
Operation	
Maintenance	

F.1.2 Description of the model

Provision of services

Under this model, all service aspects relating to identified user shared assets, with the exception of setting the functional specification and providing cut-in works, would be

provided on a contestable basis i.e. these services could be provided on an unregulated basis by any party, including the incumbent TNSP.⁶⁸¹

However, connections to the transmission network necessarily still require the involvement of the incumbent TNSP for the:

- functional specification - to determine the minimum technical parameters for a connection to its network to enable the TNSP to manage the safety, reliability and security of its transmission network
- cut-in works - since the incumbent TNSP will need to be able to manage the provision of these works in such a way that will not affect the service end-user customers receive.

As with the model set out in the final rule, there would be no requirement for the incumbent TNSP to be a service provider of 'last resort' for any of the contestable services e.g. in the event that the connecting party could not find an appropriate provider for contestable services. Therefore, this model relies on there being a threat of competition to elicit more efficient outcomes than those provided by the incumbent TNSP. A number of stakeholders indicated that a market would exist for the provision of these services.⁶⁸²

Also similar to the model set out in the final rule, the NER would need to be amended in order to provide appropriate specification around the provision of these services so that there are appropriate mechanisms to allow the TNSP to meet its obligations. Since this model would have more components of the connection service contestable than the final rule model, there would need to be more specification in the NER to define roles and responsibilities.⁶⁸³ This guidance would need to include the following:

- An obligation on the incumbent TNSP to accept the connecting party's decision regarding the provision of contestable services and to assume responsibility for the performance of the identified user shared assets, even if they are not operating or maintaining them. Without such an obligation, the incumbent TNSP would be unlikely to accept responsibility for such assets, or, if it did so, it could veto the connecting party's decision to have the services provided contestably.

⁶⁸¹ Provided that the TNSP complies with the requirements of its cost allocation methodology and transmission ring-fencing guidelines.

⁶⁸² If no competitive market exists, there would be no threat of competition and the incumbent TNSP would be able to provide all contestable services on an unregulated basis and without constraints on its ability to exert market power. This may result in inefficient outcomes for the connecting party, and ultimately, consumers.

⁶⁸³ This point was raised by a number of parties in submissions to the discussion paper, including AusNet Services, AEMO, Australian Energy Council and Energy Networks Australia, and submissions to the draft determination, including AEMO and AusNet Services. For example, in its submission to the discussion paper, AEMO considered that the NER should set out the terms on which contestable and incumbent TNSPs coordinate and cooperate with each other such that the overall system performance is not compromised. AEMO also noted that there would need to be a set of principles in the NER allocating accountability between the incumbent TNSP and any other TNSP that designs, builds and operates connection assets.

This obligation would likely be difficult to implement given that TNSP responsibilities are contained in the regulatory framework as set out in the NEL, NER, jurisdictional arrangements (including licensing), and so the NER can only go so far in giving effect to this requirement.

- An allocation of the roles and responsibilities between the various parties i.e. the incumbent TNSP, connection applicant and the provider of contestable services. The purpose of this would be to minimise how many of these should be resolved via the commercial negotiation process, which could add time, and so cost, to the connection process.

Since the majority of services in this model would be contestable, none of the transparency obligations placed on TNSPs discussed in appendix C.3 would apply, aside from those relating to the functional specification and cut-in works. So, connecting parties would be reliant on competition to reveal the information they need to negotiate effectively for a connection to the transmission network.

Therefore, in essence, this is similar to the current Victorian arrangements but without AEMO involved and without accountability split between multiple parties.

Registration

Consistent with section 11(2) of the NEL, any party owning, operating or controlling identified user shared assets should be registered as a TNSP and be subject to the relevant obligations under the NER.⁶⁸⁴

However, consistent with the final rule, the Commission considered that allowing a generator or load connected via a identified user shared asset, or a related entity of a generator or load connected via a identified user shared asset, to own that asset could raise competition concerns. These concerns would be even greater than those under the final rule, since under this model, the operation and control of the shared transmission network (including the provision of access via the identified user shared asset) may also be with another party, e.g. a generator. If access to an identified user shared asset is frustrated, this may result in an inefficient duplication of assets to enable a new party to connect, which is, ultimately, likely to increase the costs of connection for consumers. It may also mean that a new connecting party is forced to connect at a location that is sub-optimal.

To address this, there would need to be a restriction imposed on a generator or load owning an identified user shared asset to which it is connected, as is the case under the

⁶⁸⁴ This view was shared by a number of stakeholders, including TNSPs (e.g. AusNet Services), who argued that anyone who operates infrastructure that forms part of the broader transmission system should be subject to the same NER obligations as they are. AEMO agreed that these parties should be registered because it is only able to issue directions to registered participants to maintain or re-establish a secure and reliable power system. See: Submissions on discussion paper: AusNet Services, p. 4.

final rule.⁶⁸⁵ Therefore, a generator or load would have to appoint a third party to own the identified user shared asset to which it is connected on its behalf.

Third party access

In submissions to the discussion paper, stakeholders indicated support for a model under which third party access to contestably owned and operated identified user shared assets would be determined on a commercial basis based on the costs and benefits of access being granted. However, as noted above, the Commission was concerned that allowing the person who gains from the use of those assets to make decisions about third party access in accordance with its own interests raises competition concerns. That is, these parties may have an incentive to prevent or frustrate another party's access to the transmission network by way of that asset. The potential for such behaviour may deter entry to, or limit competition in, electricity generation.

As noted above, all owners, operators and controllers of identified user shared assets under this model would need to be registered as a TNSP (or exempted). Therefore, the third party access provisions under the existing NER should apply. An additional principle would need to be inserted into the NER to guide how third party access to services provided by means of identified user shared assets should be granted: the party who necessitated the construction of the original identified user shared asset should not be able to decide whether or not another party can connect to that asset. If this was allowed this could be used to frustrate access e.g. an existing generator could prohibit a new generator from connecting in order to preserve competitive advantage in the wholesale market.

However, the arrangements for third party access to identified user shared assets may be confusing under this model. For example, what would happen if a new party wished to connect to the identified user shared asset provided by a third party in a particular jurisdiction? There are two options:

1. The incumbent TNSP would have an obligation to facilitate connections to the network, even if the connecting party wishes to connect to an identified user shared asset that is owned, built, operated and maintained by a party other than the incumbent TNSP. In this scenario, there would be questions about how the incumbent TNSP would have access to the information in order to facilitate the connection. Further, it would not be clear how the incumbent TNSP could give effect to access through a identified user shared asset controlled by another party, and so any negotiation to connect would need to involve the connecting party, the incumbent TNSP, the existing third party provider, and the connecting party's chosen provider of any new identified user shared assets. The contracts, and the associated negotiations, that sit behind this would be very complex and so lengthy and costly.

⁶⁸⁵ See clause 5.2A.7(e) of the final rule.

2. The alternative would be to have the connecting party approach all of the 'TNSPs' in a particular jurisdiction. This is not efficient since it would require a significant amount of time and resources from the connecting party in order to manage this process - again making the connection more lengthy and costly for the connecting party. The identified user shared asset operator would also presumably need to liaise with the incumbent TNSP on performance standards and so on, which have whole of network impacts.

Either of these options would also likely create a conflict of interest for the incumbent TNSP, who is also the owner of the shared transmission network. That is, the incumbent TNSP may have an incentive to either attempt to influence the connecting party to connect to its network, or to try and stall or frustrate the process of the connecting party connecting to a different TNSP's identified user shared asset.

Further, since the provision of many services for identified user shared assets would be non-regulated transmission services under this model, some existing TNSP obligations under the NER would not apply to the parties who are registered as a TNSP in respect of these assets, for example:

- TNSPs are required under the NER to submit a regulatory determination in respect of prescribed transmission services and negotiated transmission services. Because the services being provided are non-regulated transmission services, the requirement to submit a regulatory determination with respect to those services would not apply.
- The NER have provisions for commercial arbitration in relation to disputes about the terms and conditions of access to prescribed and negotiated transmission services only. Again, because the services being provided are non-regulated transmission services, these aspects of the NER would not apply.

These parties would also be required to comply with any relevant jurisdictional requirements, for example a requirement to obtain a transmission licence.

Contractual arrangements

There would likely need to be a number of contractual arrangements to support this model. As noted above, the NER would likely need to define the allocation of responsibility, risk and liability for the identified shared assets.

It would then be up to the incumbent TNSP as to whether it would also want contracts put in place with the connecting party and/or its chosen service provider, to manage the risks associated with accountability for the impact of contestably-provided services on the transmission network. Any such agreements would presumably also contain any additional requirements set by the incumbent TNSP to enable it to meet its obligations with regard to the safety, reliability and security of the shared network e.g. what would happen in the event that the owner or operator of the asset becomes insolvent or is otherwise unable to perform its obligations.

Contestability threshold

Similar to the model set out in the final rule, there will be times when it is neither feasible nor practicable for a service associated with connection to be provided on a contestable basis. Therefore, there would need to be clear criteria in the NER setting out when certain services should be provided on a contestable basis. It is likely that these criteria would be similar to those set out in the final rule, i.e. where the identified user shared asset is above a certain monetary threshold, and components of it are:

- new or a complete replacement of existing components, i.e. does not involve a reconfiguration of an existing asset
- distinct and definable from other transmission assets.

Under this model, the decision of whether an asset meets these criteria will be the responsibility of the incumbent TNSP. There may also be a role for an independent engineer, as under the final rule, who could provide advice on technical matters if required.

Asset sizing

Consistent with the final rule, this model could set out principles to provide guidance on how parties should approach and negotiate asset sizing.

Cost sharing

Consistent with the final rule, this model could contain a number of principles and obligations as to how the costs of new identified user shared assets, and subsequent connections to those assets, should be recovered.

F.1.3 Comparison of model to final rule

The final rule model makes it clear that the Primary TNSP⁶⁸⁶ has responsibility for the operation, maintenance and control of all identified user shared assets in its network. It is therefore clear that the Primary TNSP's registration includes those assets because the requirement to be registered arises from the ownership, control or operation of a transmission system. The Primary TNSP therefore has all the responsibilities of a TNSP in respect of identified user shared assets in the same way as the rest of its shared transmission network. The final rule model allows contestability for as many services as possible without reducing clarity on this issue.

⁶⁸⁶ Primary TNSP is a new term defined in the final rule as "The Transmission Network Service Provider who operates the largest transmission network in each participating jurisdiction but does not include a Transmission Network Service Provider for a declared transmission system." This final determination uses the term incumbent TNSP to refer to this party under the existing arrangements, and the term Primary TNSP when referring to the arrangements for this party under the final rule.

In contrast, under this model, there is a lack of clarity as to who has "end to end" accountability for outcomes on the shared network. The incumbent TNSP should not be required to be registered in respect of the identified user shared asset (as they will not own, control or operate it) yet they may not be able to meet their responsibilities for their parts of the shared network because of how the identified user shared asset is operated and controlled. The lack of clarity in the regulatory framework regarding this risk allocation between the TNSP and the identified user shared asset controller and operator will either need to be managed by the incumbent TNSP through interface and connection agreements, or through regulation that makes clear how those responsibilities are allocated. A lack of ongoing control over the assets may lead the incumbent TNSP to take very conservative positions on asset specifications and interface and connection arrangements. This has implications when we compare this model to the final rule, as set out further below.

Transparency

In workably competitive markets, information required for parties to make efficient decisions is readily available. However, if there is a lack of competition, additional regulation may be required so that parties who hold certain information reveal it.

This model, similar to the final rule, relies on some information being revealed through competition, and other information being revealed by requirements on the TNSP.

- Allowing connecting parties to have a service provider of their choice providing the connection service will reveal cost and timing information related to the provision of these assets, i.e. this information will be revealed through the competitive market.
- A connecting party (and its chosen service provider for services that are open to competition) will still need certain information from the incumbent TNSP to enable its connection to the transmission network. No party knows the incumbent TNSP's transmission network as well as the incumbent TNSP. This information is unlikely to be revealed in the absence of regulation.

The combination of these two paths for information being revealed will result in the most efficient information being obtained by connecting parties, and so, efficient connection and investment decisions being made. Since most services associated with connection would be provided on a contestable basis under this model, it relies on there being workable competition in this market in order for this information to be revealed.

Therefore, the combination of competition and regulatory obligations to reveal information is likely to provide similar transparency as to the model set out in the final rule.

Timeliness

Having the majority of services associated with connection being provided on a contestable basis would provide the connecting party with more control over the timing of its connection to the transmission network. That is, provided the identified user shared asset meets any contestability threshold, the connecting party will be able to select the contractor of its choice to design, build and operate the asset at a commercially agreed timing and cost.

As with the model under the final rule, there is a risk that the incumbent TNSP will delay or otherwise inhibit a party's connection if its bid to provide non-regulated transmission services to that party is unsuccessful.⁶⁸⁷ As such, connecting parties may be pressured into awarding the contract to the incumbent TNSP, which would undermine the benefits of competition. The Commission considered that this is not likely to eventuate under the final rule due to the introduction of a revised set of negotiating principles to bolster a connecting party's bargaining power in negotiating the timeliness, cost and technical requirements of a connection. However, under this model, the countervailing power of the connecting party may be diluted due to the fact that nearly all services associated with connection would be provided as non-regulated transmission services, and so not subject to the negotiating provisions in the NER.

Further, since more of the services associated with connection are contestable, it is likely that the contractual negotiations associated with this model would take longer than the model set out in the final rule. The need for a commercial contract that allocates the performance risk for the shared network is an intrinsic part of any model that involves contestability of transmission services that form part of the shared network, and so impact end-use consumers.

Indeed, this was recognised by AEMO who noted that there may be complex contractual negotiations given parties need to navigate the learning curve that has already been faced in Victoria where the contestable arrangements have been in place since the mid-1990s. Further, there may also be conflicts of interests faced by an incumbent TNSP who is also the owner of the shared transmission network, since the incumbent TNSP would have an incentive to bias the connection process in order to make it wins the work since it has the accountability.⁶⁸⁸

While the NER could set out some guidance on these matters, in reality, each connection is bespoke, and so the actual equipment and configuration changes the risk allocation, leading to specific negotiations in each case.

Therefore, on balance, the Commission did not consider that this model would provide connecting parties with more certainty and control over the timeliness of their connection to the transmission network compared to the model set out in the final rule.

⁶⁸⁷ The Clean Energy Council recognised that this risk increases under this model, i.e. the risk that, if a TNSP loses a commercial bid and the associated subsequent revenue, it may not act cooperatively to secure a connection agreement with the relevant party. See: Clean Energy Council, submission on discussion paper, p. 9.

Cost

In theory, if there is competition in the various markets for these services, allowing as many services as possible to be provided on a contestable basis should reduce costs. This model allows for competition in the provision of nearly all services associated with connection. However, based on responses from stakeholders, there may be limited competition for the provision of operation and maintenance services for identified user shared assets. In the absence of competition, the few parties that are willing to provide these services (i.e. incumbent TNSPs) would essentially have 'monopoly market power' and so may be able to charge inflated prices for these services.

Under this model there may be greater ongoing asset management risks, as well as inefficient network planning, compared to the model set out in the final rule:

- Incumbent TNSPs would generally have an advantage in providing operation and maintenance services associated with connection since they benefit from economies of scale and scope. The incumbent TNSP is likely to hold spares or have the capacity to arrange contingency resources at short notice, because it is required to operate and maintain the remainder of its transmission network. Therefore, the costs and time taken to carry out urgent repairs and maintenance are likely to be greater if a third party is responsible for providing these services.
- Transmission networks are natural monopolies, and so a single party that considers the planning of the whole network it controls supports efficient decision-making, which is in the long-term interests of consumers. It is not clear under this model what role other TNSPs in a jurisdiction (i.e. those that would own, operate, maintain and control identified user shared assets in this model) have in planning. It would be inefficient for each of these parties to produce transmission annual planning reports. However, if that function is left with the incumbent TNSP, the NER and any agreements would need to obligate the new provider to carry out further augmentation if deemed necessary by the incumbent TNSP as part of its planning obligations. These obligations would also need to cover a future need to facilitate access to these assets for further development. The absence of a single party considering the efficient planning of the network could result in inefficient planning and investment decisions being made, and so costs for consumers increasing. Further, there may be additional costs associated with mitigating risks associated with providing future investment with minimal certainty. All of these aspects would increase costs for consumers, and so would not be consistent with the NEO.

The lengthy contractual negotiations that were discussed above, may also increase costs. These negotiations are likely to be resource-intensive and may be particularly costly for new participants as they would likely not have the same capacity to pay substantial legal costs.

688 See: AEMO, submission on discussion paper, p. 2.

Therefore, the Commission did not consider that this model would lower costs when compared to the model set out in the final rule.

Unnecessary complexity

The Commission considered that the contractual arrangements associated with this model, likely involving multiple parties and back-to-back arrangements, would create a degree of unnecessary complexity that does not exist in the model set out in the final rule.⁶⁸⁹

There would also likely need to be extensive, prescriptive rules to set out who is responsible for various functions. For example, as discussed above, what would happen in relation to third party access? Other issues to be addressed include how power system security would be preserved e.g. specification as to how protection and control equipment would communicate with each other, and how relays would need to be able to work with each other.⁶⁹⁰

Therefore, the Commission considered that this model would add unnecessary complexity compared to the model set out in the final rule.

Accountability

This model differs from the final rule where full operational control clearly sits with the Primary TNSP. Instead, under this model there is a lack of clarity as to who has "end to end" accountability for outcomes on the shared network, as discussed above. While the accountabilities and risk attributable to each party could be set out in the regulatory framework, the exact operation of these would still be subject to a commercial negotiation and private contracts between the various parties.

It is also worth noting that jurisdictional obligations have an important role in the regulation of transmission assets and services e.g. licensing conditions relating to safety. The trigger for imposition of jurisdictional obligations will vary by jurisdiction i.e. the obligations will not automatically follow the registered status (or otherwise) of the relevant person for those assets under the NER. Therefore, even if the NER set out that certain accountabilities were clearly with a particular party, it cannot be assumed that the relevant obligations will automatically apply to the owner, operator or controller of the identified user shared asset (particularly if it is not the incumbent TNSP). Indeed, it could even be the case that both the TNSP and the owner would be subject to duplicating obligations - this would not be consistent with the Commission's principle of having clear, singular accountability for the shared transmission network.

⁶⁸⁹ This item was flagged by the members of the Clean Energy Council as a potential concern with this model, i.e. the contracts needed to support the 'constrained' full contestability for this option would be complex to the extent that it may create more time and cost to the process for incremental gains. See: Clean Energy Council, submission on discussion paper, p. 9. Similar sentiments were also expressed by the SA Department of State Development in its submission.

⁶⁹⁰ AEMO, submission on discussion paper, p. 2.

Therefore, in order to introduce this model, each jurisdiction would need to be reviewed on a case by case basis to determine whether the responsibilities for reliability and safety are appropriately imposed on the relevant person consistent with the intention of this model. If this is not the case, then it may not be within the control of the AEMC to make these changes, and so make this model effective i.e. changes to jurisdictional instruments may be required.

The accountabilities under this model are therefore not as clear as under the model set out in the final rule. As noted by the SA Department of State Development,⁶⁹¹ it would be more difficult to identify responsibility and liability for faults that occur under this model. It was noted that it would be undesirable for a situation where a fault on an identified user shared asset occurs resulting in a major disruption on the shared network, and both the TNSP and third party contractor are claiming that the fault is the responsibility of the other party, with liability not clearly identifiable. Or, this could lead to work being undertaken in an uncoordinated manner since responsibilities were not clear.

F.1.4 Conclusion

In summary, the Commission concluded that this model would not better meet the NEO than the model set out in the draft Rule for the reasons set out above.

Importantly, there are a number of 'gaps' that would need to be filled in this model in order to make it work e.g. if a new generator wanted to connect, who does it approach; how is an efficient network planned. While some of these gaps could be filled by prescriptive regulation, it would likely create confusion and costs that would not be offset by the benefits. This would also require both Rules and jurisdictional legislation changes to make obligations clear.

As set out in chapter 3, the Commission was of the view that the Victorian arrangements should not be read as similar to this Model B. The Victorian arrangements make it clear that AEMO is singularly accountable for the provision of shared transmission services. In model B, this principle is either not met, or could be met but without having appropriate measures for risks to be managed, as discussed above.

F.2 Introduction of a 'connection service'

This model was developed by Goldwind as an alternative connection model that would "maximise the level of contestability in a new connection".⁶⁹² Goldwind considered that allowing responsible, motivated network service providers to compete for connections should drive innovation and best meet the needs of the NEO.

⁶⁹¹ SA Department of State Development, submission on discussion paper, p. 2.

⁶⁹² See: Goldwind, submission on discussion paper, p. 2.

F.2.1 Overview of the model

This model builds on the model discussed above ("increased contestability with TNSP accountability") and introduces a new service of "connection processing" i.e. the service of accepting a connection application and negotiating with the proponent towards a connection offer and a connection agreement.

Table F.2 sets out the boundaries of contestability for identified user shared assets under this model.

Table F.2 Boundaries of contestability for identified user shared assets

Service	Contestability
Connection processing	Contestable
Setting the functional specification (including performance standards)	Not contestable. Incumbent TNSP provides as a negotiated service.
Detailed design	Contestable.
Cut-in works	Not contestable. Incumbent TNSP provides as a negotiated service.
Construction	Contestable, but incumbent TNSP is accountable for the impact that the provision of these services has on the operation of the shared transmission network, including by making decisions about operational matters such as switching.
Ownership	
Operation	
Maintenance	

F.2.2 Description of the model

Provision of services

This model builds on the model set out in section A.6, and so the discussion in that section can be taken to be relevant to here as well.

The main addition is the introduction of this new service of "connection processing". Goldwind considers this service is most likely to benefit from contestability, since it is heavily affected by the motivations (e.g. including resourcing, risk appetite and profitability) of the incumbent TNSP. In Goldwind's view, connection processing in the NEM can be opaque, slow, expensive and overly complicated. While it noted that the process is governed by an extensive set of rules, Goldwind considered that it is very easy for the incumbent TNSP to justify opacity, costs, delays and complication.

So, under this model, a party who wishes to connect to the transmission network could either engage a party to undertake the connection processing service on its behalf, or it could also choose to undertake the service itself (i.e. own, operate, maintain and

control identified user shared assets itself). The Commission considered that this service would be the act of negotiating a new connection agreement with the TNSP, including the negotiation of performance standards, as well as negotiating with any contestable provider of the connection services.

Registration

As discussed above, if a third party wishes to own, operate, and control the identified user shared assets they would have to be registered as a TNSP and so comply with the NER.

However, the Commission considered that if the party is only undertaking a connection processing service, and so is not "owning, controlling or operating" transmission infrastructure, then, consistent with the NER, this party should not have to be registered as a TNSP.⁶⁹³

Goldwind suggested a further clarification, that only the "registered TNSPs" should be able to provide this connection service. The Commission assumes that this is referring to incumbent TNSPs in the NEM i.e. those registered today. The Commission was concerned that such an assumption could restrict the market for competition and potentially result in market power being applied by these parties. For example, DNSPs may want to provide similar services. The Commission therefore considered provided that the party who wishes to provide the services registers as a TNSP (and so is subject to the relevant obligations under the NER and jurisdictional requirements), this should be sufficient protection for connecting parties. Not restricting the parties who can provide this service also promotes competition.

Third party access

As with the above model, since the party providing the identified user shared assets would either be the incumbent TNSP or a third party registered as a TNSP, the NER third party access provisions would apply, along with the additional principles that were set out above in section A.6.2.

Contractual arrangements

Under this model it was envisaged that there would only need to be two contractual relationships: a contract between the connecting party and the TNSP undertaking the connecting processing services; and a contract between the connection processing services TNSP and the incumbent TNSP. This would be perceived to be a benefit of this model i.e. that the contractual arrangements would be simpler.

However, the Commission was of the view that there would still need to be a connection agreement between the connecting party and the incumbent TNSP. Since

⁶⁹³ Goldwind did note it could be beneficial to create a new registration category for TNSPs providing this service, but the Commission did not consider that this would be necessary.

the incumbent TNSP is accountable for outcomes on the shared network, the incumbent TNSP would need some form of contractual arrangements to sit behind that, and it makes sense for this to be a connection agreement. In the absence of this, the incumbent TNSP would have no ability to enforce performance and it would have to rely on the connection processing TNSP to do this. This would change the risk profile for the incumbent TNSPs, which the Commission did not think was appropriate.

F.2.3 Comparison of model compared to final rule

Transparency

Our conclusions regarding transparency are the same as those discussed above i.e. the transparency would be the same as with the model set out in the final rule.

Timeliness

Our conclusions regarding timeliness are largely the same as those discussed above i.e. it is not clear that timeliness would be improved compared to the model set out in the final rule. There may be some additional benefits since the new TNSP is incentivised to focus on processing that connection only, and this may help the incumbent TNSP process delay if the new TNSP takes on more of their role. However, as noted above, the incumbent TNSP is likely to still want to undertake its own modelling studies and assurances, which may add time to the connection process if the new TNSP also does the same functions. Therefore, overall, we do not consider that timeliness would be improved compared to the model set out in the final rule.

Cost

Our conclusions regarding cost are largely the same as those discussed above i.e. it is not clear that costs would be lower compared to the model set out in the final rule. Further, it is likely that if the incumbent TNSP is still responsible for outcomes on the shared network, it would still need to do all of its modelling in order to determine what a particular generator's standards are, as well as the effects of the connection across its network. While it may be argued that this should be the role of the 'connection processing' TNSP, we consider it unlikely that the incumbent TNSP would cede its control over that. Therefore, this would likely result in duplication of some modelling and testing, resulting in inefficiencies and so increased costs compared to the model set out in the final rule.

Unnecessary complexity

While the contractual arrangements under this model may look simpler than the above model since they are just two back-to-back arrangements, it is likely that negotiating these contracts would take time. For example, connecting processing TNSPs would first have to talk to the connecting party about a particular performance standard, then

pass that feedback onto the incumbent TNSP, who, in turn would respond. The connecting processing TNSP would then have to pass the TNSP's feedback to the connecting party. This process would then occur over and over as the contracts were negotiated, likely adding time and cost to the connection negotiation.

Further, if the incumbent TNSP considered a connection agreement was still required with the connecting party, this would further increase the number of contracts to be negotiated.

Importantly, the incumbent TNSP would not have any visibility of the contracts between the connecting party and the connection processing TNSP. Therefore, the incumbent TNSP would likely feel that it had increased risk, without any ability to manage it. Therefore, this aspect would not be improved compared to the model set out in the final rule.

Accountability

As noted above, the incumbent TNSP would not have any visibility of the contracts between the connecting party and the connection processing TNSP, it is likely that the accountability would not be as clear as in the model set out in the final rule. The Commission considered that clear accountability occurs where one party is singularly accountable for shared network outcomes.

F.2.4 Conclusion

The Commission's view is that this model has similar limitations as the model discussed above in section A.6.

Further, there appears to be no restrictions under the existing NER for much of the "connection processing" service to be provided by a party other than the incumbent TNSP. Connecting parties could engage a third party consultant or adviser to undertake the negotiations with the incumbent TNSP on their behalf. However, in the absence of owning the assets, the Commission is unclear as to why this is a commercial role that a party would want to take on. Therefore, the outcomes, in practice, would be little different to the current outcomes, but would add unnecessary complexity through adding an extra party to this process.

F.3 Regulated WACC

AGL proposed that the incumbent TNSP should be required to build, own and operate identified user shared assets at the regulated weighted average cost of capital (WACC), if requested by the connecting party, as "an extension of their existing shared service". Alternatively, a connecting party could request the service to be provided as a negotiated service.⁶⁹⁴

⁶⁹⁴ AGL, submission on discussion paper, p. 2.

F.3.1 Overview of the model

AGL's rationale for this model was that as monopoly service providers, TNSPs already own and operate a large asset base under the NER to provide network services. AGL therefore considered that TNSPs should be obliged to provide the option of an identified user shared asset as an extension of their existing shared service.

F.3.2 Description of the model

Under AGL's proposal, connecting parties would be able to choose as to whether the connection service is provided contestably (i.e. as a non-regulated transmission service) or by the TNSP as a negotiated transmission service, subject to the regulated WACC. For example, in some instances (i.e. in far reaches of the network) the contestable price offered by a party to connect a party may be greater than a price that the regulated TNSP could offer. That is, in these situations the market is unlikely to be competitive, and so inflated prices may be charged. Therefore, in these instances the connecting party would require the TNSP to offer the service as a negotiated transmission service at the regulated WACC.

The regulated WACC would be the same as that approved by the AER during the TNSP's transmission revenue determination and would remain unchanged over the regulatory control period. This measure could also include some flexibility in its application to specific transmission services as it may not be appropriate for the regulated WACC to be the same for all transmission services, as the risks in providing some transmission services may differ. For example, it is reasonable to argue that the provision of some transmission services may attract a premium above the regulated WACC where the counter-party cannot secure payment with a bank guarantee or suitable parent company guarantee. However, since each connection is unique, it may be challenging to agree a WACC differential to cover all scenarios.

So that TNSPs are not unduly attaching a premium to some transmission services, the AER would be required to develop supporting guidelines to determine circumstances when the cost of capital for assets providing negotiated transmission services are higher than the regulated WACC. A TNSP would be required to demonstrate to a generator or other transmission user during negotiation that it has considered and met the guidelines for applying a premium to the WACC. Therefore, it would likely be necessary to mandate additional transparency measures so that TNSPs do not attempt to compensate for a potentially 'low' WACC by increasing other charges.

It is important to note that the inclusion of greater specification of the WACC does not mean that assets would eventually form part of the TNSP's regulated asset base. The capital and operating costs for the identified user shared asset would be fully funded by the connecting party under the connection agreement. This would simplify the economic regulatory process when future parties wish to connect to that identified user shared asset since that would then be provided at the same price.

F.3.3 Comparison of the model against the final rule

Transparency

Our assessment of transparency is the same as the models presented above i.e the transparency would be the same as the model set out in the final rule.

Timeliness

It is not clear that this model would affect the timeliness of a connection i.e. it does not improve timeliness of a connection relative to the model set out in the final rule.

Cost

The Commission acknowledged that the specification of a rate of return on the value of assets used to provide transmission services required for connection would support generators and transmission users' countervailing market power by constraining a TNSP's ability to charge for services above an efficient rate of return. However, where competition is effective, it would be better to leave this to the market, where there is workable competition, since competition should drive efficient prices without the need for regulation.

The proposal appears to be a means by which to protect the connecting party in the event that there is no competition for these services, and to utilise the incumbent's scale efficiencies where the connecting party considers this would be the cheaper option. This seems to allow the connecting party to essentially 'pick' what the preferable approach would be. The Commission did not consider this to be appropriate, since it would be requiring the TNSP to operate as a backstop provider, and the connecting party could essentially game the system. Therefore, to be workable, we considered that the connecting party would have to choose at the outset whether it wishes to have the connection assets constructed under this arrangement or not.

A further disadvantage of this approach is the regulatory risk associated with a changing WACC over the life of a connection agreement.⁶⁹⁵ If the WACC that is determined during transmission determinations was applied to connection and substation assets this would mean that, at each transmission revenue determination, the WACC applied to those assets would change. It was unclear to what extent connecting parties may be able to absorb and pass through any potential changes in transmission charges caused by a different WACC determined through a new revenue determination, but this would likely depend on the connecting party's risk appetite and how significantly they are exposed in the current market.

⁶⁹⁵ An alternative would be to consider locking in the WACC over the life of the connection agreement, but this would likely create uncertainty for the TNSP instead.

Unnecessary complexity

This model would likely add unnecessary complexity compared to the model set out in the final rule - it would not be clear whether a connecting party would choose to have the WACC applied, or whether the service would be contestable, until the connection enquiry was made.

Accountability

Due to the fact that what model the party was connecting under (i.e. negotiated WACC, or contestable) would not apply until the connection enquiry was made, the accountability would be different in each case and reflected in connection agreements. The Commission did not consider that this would result in the same level of accountability as the model set out in the final rule.

F.3.4 Conclusion

The Commission did not consider that this approach would promote the NEO more than the model set out in the final rule. In order to make this option viable we considered that all connections to the transmission network would have to be regulated i.e. provided as prescribed transmission services. There was little support for this proposal.

F.4 Continuum of options

F.4.1 Overview of the model

This model was proposed by the Clean Energy Council in its submission to the discussion paper, who requested that the NER not prohibit the connecting party from choosing from a 'continuum' of contestability options for the provision of connection services.

F.4.2 Description of the model

This model is intended to allow the connecting party to access the 'acceptable level of competitive services'.⁶⁹⁶ In some scenarios, the limitations from having more services contestable may mean that the incremental benefits of obtaining a competitive high-level design may be diminished. In these scenarios, the connecting party may wish to go to the incumbent TNSP for the service i.e. this may be the most efficient option for a particular scenario. However, this would require the TNSP to offer the service as a negotiated transmission service, but not on an exclusive basis. Essentially, the TNSP would be a 'fall back option', which would not create a level playing field being participants.

⁶⁹⁶ See: Clean Energy Council, submission on discussion paper, p. 10.

Having a range of competition options would seek to allow the market to determine the most efficient outcome, noting that this could also evolve with experience.

This model would likely require rules to be drafted that accommodated all 'options' of contestability.

F.4.3 Comparison of the model against the final rule

Transparency

The Commission did not consider that this model would better improve transparency than the model set out in the final rule since, essentially, the transparency requirements would be the same as under the final rule but potentially expanded to cover all contestable services.

Timeliness

The Commission does not consider that this model would better improve timeliness than the model set out in the final rule. Indeed the confusion created by the different options, and so the learning that would be required each time a new option was used, would likely increase the time associated with connection.

Cost

This model would have the effect of compromising the 'level playing field' for contestable services by requiring the TNSP to be a 'fall back' option. The connecting party would not be protected from the incumbent TNSP exercising market power if there is no competition for a particular service. Therefore, the Commission did not consider that this model would result in lower costs than the model set out in the final rule.

Unnecessary complexity

As noted above, the Commission was of the view that trying to accommodate all of the different spectrum of options in the NER, and making it clear what should happen under each scenario, would add unnecessary complexity.

Accountability

Related to the above point, the Commission did not consider this approach to be viable because it would be unclear how accountability for shared network outcomes would be allocated until the incumbent TNSP is chosen and/or contracts are signed. Therefore, accountability is not as clear as under the final rule.

F.4.4 Conclusion

The Commission did not consider that this approach would promote the NEO more than the model set out in the final rule. It seems to combine all of the limitations of all the options described above, while having a lot more complexity involved.

G Summary of other issues raised in submissions relating to connections

This appendix sets out the issues raised in the first, second and third rounds of consultation on this rule change request and the Commission's response to each issue. If an issue raised in a submission has been discussed in the main body of this document, it has not been included in this table.

Issue raised	Stakeholder	Commission's response
General		
<p>The Clean Energy Council noted that identified user shared assets could facilitate a shared connection between two parties that would look similar to the NER concept of a Scale Efficient Network Extension (SENE). As a result, it asked that the Commission review the SENE rules to make sure they are consistent with the revised rules.</p>	<p>Clean Energy Council, submission on discussion paper, p. 3; Clean Energy Council, submission on consultation paper, p. 4.</p>	<p>The Commission reviewed the clauses relating to SENE in Chapter 5 of the NER and concluded that these do not need amendment as a result of the final rule. Under the final rule, the Primary TNSP still has accountability for the shared network and so will still be responsible for SENE design and costing studies as under the existing NER. Under the final rule, this would not apply to the party registered for a dedicated connection asset unless that party was registered as a TNSP.</p> <p>The arrangements set out in the final rule (e.g. those relating to contestability) would apply to any identified user shared asset required following the completion of a SENE design and costing study.</p>
<p>The Clean Energy Council suggested all applicable aspects of this rule change should be applied to connections to distribution networks, especially the 'sub-transmission' network.</p>	<p>Clean Energy Council, submission on discussion paper, pp. 3, 15.</p>	<p>Changes to the framework for how parties connect to the distribution network is out of scope for this rule change. As such, the final rule does not change the arrangements for connections to the distribution network in Chapters 5 or 5A of the NER. More detail on the scope for the rule change is provided in chapter 1.</p>
<p>The Major Energy Users questioned whether the new approach was consistent with Chapter 5A. Chapter 5A recognises that new end users in a</p>	<p>Major Energy Users, submission on consultation paper, p. 4.</p>	<p>Chapter 5A applies to embedded generators under 5MW wishing to connect to electricity distribution networks. The Commission considered that, while the principles between different connection frameworks should be consistent, there are different considerations to take into account for</p>

Issue raised	Stakeholder	Commission's response
<p>distribution network get a reduced cost allocation of the new connection cost due to their contributions to distribution use of system charges. Similarly for a direct connection to the transmission network, the new load will contribute to transmission use of system charges and TNSP common services. Different rules between transmission and distribution connections will bias costs and potentially lead to less efficient outcomes. The approach in Chapter 5A is more appropriate than applying all of the costs of the identified user shared assets.</p>		<p>smaller generators e.g. the difference in bargaining power.</p> <p>To the extent that stakeholders consider some, or all, elements of the final rule should be applied to connections to the distribution network, those stakeholders are welcome to submit a rule change request to the Commission on such issues.</p> <p>The final rule applies equally to the connection of a generator, MNSP, load or embedded network to the transmission network. The Commission concluded that consistency between these processes is more important since all of these parties should be sufficiently large and well-resourced.</p>
<p>Ausgrid noted the recent changes regarding embedded generation connections, specifically the ability for eligible embedded generator proponents to choose to either negotiate a connection to the distribution network under Chapter 5 or 5A. As the rule change is seeking to make changes to Chapter 5, this may have consequences for other connection customers that interact with Chapter 5.3. The rule change request seeks to deal only with transmission connections, but Chapter 5 applies to registered and intending participants more broadly, including smaller embedded generator proponents. Access, charging and connection</p>	<p>Ausgrid, submission on consultation paper, p. 1.</p>	

Issue raised	Stakeholder	Commission's response
arrangements are likely to affect Ausgrid if large embedded generators connect to Ausgrid's dual function assets or distribution assets.		
<p>The Clean Energy Council considered that procedures for getting estimates and awarding a construction contract should not be linked to the offer to connect. Current drafting would possibly allow TNSP to use the expiration date for a connection offer to force a decision on awarding the construction contract. And, as detail of connection requirement may not be finalised until the connection agreement is signed, there may be a need to revisit quotes. The connection agreement is a design specification that needs to be used to inform construction quotes. Offer to connect should only rely on whether the connecting party is/is not going to get the TNSP to construct and own the assets. A later date for the decision on awarding the construction contract would be included in the terms of the connection agreement.</p>	<p>Clean Energy Council, submission on consultation paper, p. 6.</p>	<p>In the final rule, if an identified user shared asset meets the threshold for contestability, the detailed design, construction and ownership of certain components of the identified user shared asset are contestable and may be provided by the TNSP as non-regulated transmission services by the connecting party. It is important that, in the TNSP's response to a connection enquiry, the TNSP is required to provide the connecting party with a functional specification setting out the technical parameters for the components of the asset with sufficient detail to enable the Connection Applicant to obtain binding tenders from other persons for the provision of detailed design, construction and ownership services.⁶⁹⁷</p> <p>The offer to connect from the TNSP is not linked to the connecting party obtaining contracts for the provision of the detailed design, construction and ownership of the identified user shared asset.</p>
<p>Ausgrid and Energy Networks Australia sought clarity on whether the rule changes would apply to dual</p>	<p>Ausgrid, submission on draft determination, pp. 1,8; Energy Networks Australia, submission on draft</p>	<p>The final rule applies to TNSPs in relation to connection and access to the transmission network. Ausgrid is registered as a TNSP and its dual function assets are transmission network. While dual function assets can</p>

⁶⁹⁷ See clause 5.3.3(b)(9)(i) of the final rule.

Issue raised	Stakeholder	Commission's response
function assets in NSW.	determination, p. 11.	be treated as providing distribution services for the purposes of economic regulation under Chapter 6 of the NER, ⁶⁹⁸ this does not apply for the purposes of Chapter 5. As such, the final rule will apply to Ausgrid in its capacity as a TNSP for dual function assets.
TasNetworks, through Energy Networks Australia, sought clarity on what are deemed to be transmission assets in Tasmania, and asked that the Commission make sure that the rule change does not create any definitional issues with how transmission services are defined in Tasmania.	Energy Networks Australia, submission on draft determination, p. 11.	<p>Under the NER, a transmission network includes a network that operates at nominal voltages of 220kV and above.⁶⁹⁹ However, jurisdictions may choose to amend this level, and therefore the application of the relevant aspects of the NER, through their own jurisdictional arrangements. The Commission understands that is the case in Tasmania, where the threshold voltage for definition as a transmission system is much lower.</p> <p>The Commission does not have any control over how jurisdictions choose to amend this threshold and thereby the application of the NER. The Commission notes that the Tasmanian arrangements currently operate under the NER framework, and so the changes under the final rule should not create any concerns.</p>
Aurizon, as an exempt network service provider, raised a number of concerns with the application of the rule change. In summary, it asked that the Commission make amendments to the NER to provide a means by which Aurizon could be treated as a registered network service provider under the NER, and therefore receive connection services as prescribed transmission services, but continue to be exempt from the full suite of	Aurizon, submission on draft determination, pp. 3-5.	Consideration of whether services to connect exempt network service providers should be included in the definition of prescribed transmission services is out of scope of this rule change request. The final rule therefore does not include any amendments in relation to this issue.

⁶⁹⁸ See clause 6.24.2 of the NER.

⁶⁹⁹ See 'transmission network' in Chapter 10 of the NER.

Issue raised	Stakeholder	Commission's response
obligations that fall on a registered network service provider under the NER.		
AEMO recommended that the exceptions within the definition of dedicated connection asset be specified in individual sub-paragraphs, otherwise it is unclear which elements are separate, and which simply qualify others.	AEMO, submission on draft determination, p. 12.	The Commission agreed with AEMO's comment. The definition of dedicated connection asset has been revised in the final rule accordingly.
AEMO noted that services to a generator in respect of an identified user shared asset (including operation and maintenance) are not covered by the modified definition of "generator transmission use of system".	AEMO, submission on draft determination, p. 12.	The Commission has not made any changes to the final rule in relation to this comment. Generator transmission use of system services are services that relate to the existing rule 5.4A (which the Commission has concluded is not used, and which is deleted under the final rule) or investment in respect of an identified need – they do not relate to connection services.

Issue raised	Stakeholder	Commission's response
<p>AEMO noted that under the current rules, it is not possible for any shared transmission service or connection service to be 'non-regulated' in any circumstances (even if it is contestable in a particular jurisdiction), because the definitions of prescribed and negotiated transmission services exhaustively cover all such services and are mutually exclusive. AEMO noted that it understood the intent of the draft rule was for certain contestable services to be classified as non-regulated. This includes all services provided in respect of dedicated connection assets, which (as understood by AEMO) would comprise a connection service, but this is still included in the definition of a negotiated transmission service. AEMO considers a 'non-regulated' classification is not an appropriate outcome and in fact under the draft rule there is a material level of regulation in respect of those services – both technically and in terms of access. In reality, dedicated connection services are a class of negotiated transmission services that are only subject to a subset of the negotiating principles. AEMO considers they should be defined accordingly.</p>	<p>AEMO, submission on draft determination, pp. 12-13.</p>	<p>The Commission considered non-regulated as the appropriate classification for these services. The final rule makes it clear when certain services are provided as non-regulated transmission services or negotiated transmission services.</p>

Issue raised	Stakeholder	Commission's response
<p>Regarding the first two rows of 5.1.2, AEMO noted that 'person intending to become a Registered Participant' contrasts with 'Intending Participant' in other parts of the table. AEMO queried whether there was any reason why these were different. Further, an Intending Participant is by definition a Registered Participant so there is no need to list them separately.</p>	<p>AEMO, submission on draft determination, p. 15.</p>	<p>The Commission notes that AEMO is correct that, by definition, an intending participant is a registered participant. This was an inconsistency in the existing NER which the Commission did not seek to change in the draft rule. However, in the final rule, the Commission has amended the references to "Intending Participant" in the other rows to "a person intending to become a Registered Participant", so that the wording is consistent across each row.</p>
<p>Regarding clause 5.2A.2, AEMO asked the Commission to give consideration to the fact that AEMO can only deal with one Registered Participant in respect of the same transmission system, therefore if the Primary TNSP is registered then the third party IUSA owners must be required to obtain an exemption</p>	<p>AEMO, submission on draft determination, p. 15.</p>	<p>Under the final rule, ownership of an identified user shared asset remains contestable. However, the final rule changes the arrangements (from the draft rule) for third party owners of identified user shared assets so that identified user shared assets are no longer transmission systems. This means that a third party owner of an identified user shared asset is not required to register (or be exempt) in respect of that asset.⁷⁰⁰ Instead, the final rule makes it clear that the identified user shared asset forms part of the Primary TNSP's transmission network, for which it is already registered (even if it is owned by a third party), and the third party owner is required to have a network operating agreement with the Primary TNSP for the control, operation and maintenance of the identified user shared asset. As such, there will only be one party (i.e. the Primary TNSP) registered in respect of the same transmission system.</p>
<p>Regarding 5.2A.4, AEMO suggested that the examples of service given in the table should be more precise to avoid ambiguity. For example:</p> <ul style="list-style-type: none"> • The services in the first row 	<p>AEMO, submission on draft determination, p. 15.</p>	<p>The Commission has incorporated these comments into the final rule.</p>

⁷⁰⁰ See section B.3.4.

Issue raised	Stakeholder	Commission's response
<p>(transmission network) generally cover the “specification” of the requirements listed, not the “provision” of those things</p> <ul style="list-style-type: none"> In the second row (identified user shared asset), the service is not the “provision” of preferred vendor equipment, but the specification of it. Similarly, it is the “design” of lightning protection and insulation coordination that is provided. 		
<p>AEMO queried what “as applicable” signifies at the end of paragraph 5.2A.7(b)(3).</p>	<p>AEMO, submission on draft determination, p. 15.</p>	<p>The Commission agreed these words are not required, and this has been removed in the final rule.</p>
<p>Regarding the definition of Primary TNSP, AEMO recommends that, in the exception, refer to a declared transmission network rather than an adoptive jurisdiction – SA is an adoptive jurisdiction in relation to additional advisory functions.</p>	<p>AEMO, submission on draft determination, p. 15.</p>	<p>The Commission agreed, and the final rule incorporates this comment.</p>
<p>AEMO considers that the use of the term ‘assets’ within the criteria used to determine the contestability of an individual component of the overall asset is confusing.</p>	<p>AEMO, submission on draft determination, p, 12.</p>	<p>The Commission agreed and has made changes to the final rule in this regard.⁷⁰¹</p>

⁷⁰¹ See clause 5.2A.4(c)(1) of the final rule.

Issue raised	Stakeholder	Commission's response
<p>AEMO is concerned that altering the definition of a 'connection point' as proposed could have unintended consequences for the application of other rules. This should be subject to detailed analysis.</p>	<p>AEMO, submission on draft determination, p, 12.</p>	<p>While AEMO did not provide any detail as to any specific concern with the amended definition, the Commission is comfortable that there should not be any unintended consequences as a result of the changes to the definition of connection point. In particular, the Commission considers the words "If there is more than one such point, the Network Service Provider and that person or identified user group will agree which point is the connection point..."⁷⁰² mitigates any potential issues arising in the event multiple points exist as a result of the definition.</p> <p>In addition, in the final rule, the Commission has included a grandfathering arrangement for the location of a connection point in existing connection agreements.⁷⁰³</p> <p>In the final rule, the words "or identified user group" have also been included in the definition of connection point. Although this change does not relate to AEMO's submission, these words were added to reflect the fact that there can be more than one identified user group connected at the same identified user shared asset. However, the Commission notes that, by definition, there can only be one identified user group for a dedicated connection asset. That is, the purpose of a dedicated connection asset is to connect an identified user group to the transmission network; this is consistent with the principle that all persons connected to a dedicated connection asset are connected to the transmission network at the one single connection point.</p>

⁷⁰² See the definition of *connection point* in Chapter 10 of the final rule.

⁷⁰³ See clause 11.98.5(a)(1) of the final rule.

Issue raised	Stakeholder	Commission's response
Identified user shared assets		
<p>The Clean Energy Council suggested that owners of identified user shared assets should be able to freely transfer ownership to another party irrespective of the incumbent TNSP's operation and maintenance regimes. It therefore considered that contractual arrangements between the asset owner and the incumbent TNSP should not place terms on the ownership structure of these assets.</p>	<p>Clean Energy Council, submission on consultation paper, p. 15.</p>	<p>If the provision of an identified user shared asset meets the threshold for contestability, the ownership of the assets will be a contestable service. The connecting party can therefore arrange for ownership with a party of its choice. However, if ownership remains with a party other than the Primary TNSP, the owner will be required to have a network operating agreement for the Primary TNSP to have control, operation and maintenance of the asset. See section B.2.4.</p>
<p>Energy Networks Australia proposed that the AER should be required to have regard to the impact of third party supply of assets under the Service Target Performance Incentive Scheme (STPIS). AusNet Services asked the Commission to review whether the STPIS promotes a level playing field in contestability. It noted that the current scheme exposes the incumbent TNSP to penalties where its contestably-won assets lead to reliability incidents on the shared network, while assets won by other parties are exempt. AusNet Services argued that the STPIS should be neutral to asset ownership, either applying in all circumstances or none.</p>	<p>Energy Networks Australia, submission on consultation paper, p. 9; AusNet Services, submission on consultation paper, p. 5.</p>	<p>Under the final rule the Primary TNSP will be accountable for maintaining the safety, reliability and security of outcomes on the shared network. Therefore, there are no changes to the arrangements for STPIS.</p>

Issue raised	Stakeholder	Commission's response
<p>The Clean Energy Council considered that it is critical that the dedicated connection asset owner can access the substation or switching yard that forms the identified user shared asset. The owner of the dedicated connection asset should not be restricted to access property held within this site, or made subject to unreasonable monopoly pricing by the local TNSP to do so.</p>	<p>Clean Energy Council, submission on consultation paper, p. 4.</p>	<p>The Commission considered that such negotiations would occur between the connecting party and the TNSP as part of the negotiation of the connection agreement.</p> <p>Under the final rule, a dedicated connection asset owner must, in relation to any connection to an identified user shared asset, have a connection agreement between itself and the Primary TNSP.⁷⁰⁴ The negotiation of the connection is a negotiated transmission service that is subject to the negotiating principles in accordance with clause 5.2A.6 and under Schedule 5.12.</p>
<p>The Clean Energy Council suggested that it is unclear how owners of identified user shared assets, or the assets themselves, would be treated under current transmission licensing regimes. The Commission needs to consider this so that potential changes to state legislation or licensing arrangements are understood.</p>	<p>Clean Energy Council, submission on consultation paper, p. 6.</p>	<p>Jurisdictional licensing requirements, by definition, vary between jurisdictions. As is the case under the existing arrangements, the owners and operators of transmission assets will be responsible for meeting the relevant obligations in the jurisdiction in which they are operating.</p>

⁷⁰⁴ See clause 5.2.7(d)(4) of the final rule.

Issue raised	Stakeholder	Commission's response
<p>The Clean Energy Council suggested that definition of cut in works in clause 5.2A.4 of the draft rule would benefit from clarity that the non-contestable works are strictly limited to works on or associated with the existing assets, because the approach differs from that taken in Victoria where any new lines that extend the transmission network to the substation (i.e. an extension) would fall under the Primary TNSP's non-contestable works.</p>	<p>Clean Energy Council, submission on draft determination, p. 4.</p>	<p>The Commission understood that the intention of this proposed additional drafting would be to prevent the Primary TNSP from using the connection to build components that are surplus to the connecting party's requirements. The Commission concluded that this additional drafting was not necessary because this concern is sufficiently addressed by those aspects of the final rule that relate to the sizing of identified user shared assets. Specifically, a principle in the final rule sets out that the connection applicant should only be required to pay the costs directly incurred as a result of its connection, including its share of costs associated with an identified user shared asset.⁷⁰⁵</p> <p>The final rule allows a Primary TNSP to develop a functional specification for an identified user shared asset that is above the connection applicant's minimum requirements, but only if it separately identifies the additional requirements and agrees to fund the additional works related to those requirements.⁷⁰⁶ As such, a connecting party will not be required to fund any works in addition to what is required by the functional specification for that connection.</p> <p>Further, cut-in works are not explicitly defined in the final rule. Rather, examples of the service are provided. The example of services related to cut-in works under the final rule include interface works which cut into the existing shared transmission network, which could include something that is on or associated with existing assets.</p> <p>The components of an identified user shared asset that are provided on a contestable basis must meet the thresholds for contestability as set out in clause 5.2A.4(b) and 5.2A.4(c) on the final rule.</p>

⁷⁰⁵ Schedule 5.11(11) of the final rule. This aspect of the final rule is discussed in appendix C.5.

⁷⁰⁶ Clause 5.3.3(b)(9)(ii) of the final rule. This aspect of the final rule is discussed in appendix B.3.

Issue raised	Stakeholder	Commission's response
<p>Ausgrid asked that the final rule make it clearer that protection and control equipment is not contestable, because allowing a connecting party to undertake design of protection and control equipment is likely to prevent a TNSP's ability to control the operation and maintenance of its network.</p>	<p>Ausgrid, submission on draft determination, p. 5.</p>	<p>The Commission considered that the draft rule was sufficiently clear that protection and control equipment for identified user shared assets are not contestable as these are listed in the final rule as an example of a component of cut-in works. Additionally, these assets would not be contestable because they will not be distinct and definable from the existing shared transmission network.⁷⁰⁷ No changes were made to the final rule.</p>
<p>Origin Energy asked the Commission to undertake an assessment of the costs of the majority of connections given that, under the draft rule, if most identified user shared assets fell below this threshold, all services for them would need to be provided by the Primary TNSP as negotiated transmission services.</p>	<p>Origin Energy, submission on draft determination, p. 2.</p>	<p>The Commission did not undertake a detailed assessment of whether most identified user shared assets would fall above this threshold. This is because the Commission does not have access to, nor the means to require parties to provide, information in relation to the costs of their connections. However, most stakeholders indicated that the majority of connections requiring the construction of a new identified user shared asset, e.g. a substation, would fall over this threshold. The Commission therefore concluded that this threshold was appropriate, but noted that stakeholders could ask the Commission to review the threshold through a rule change process if it considered that it was not appropriate.</p>

⁷⁰⁷ See clause 5.2A.4(a) of the final rule.

Issue raised	Stakeholder	Commission's response
<p>AEMO considered that although clause 5.2A.4 does not use the italicised term 'contestable', the existing definition of 'contestable' appears to fit with the intended meaning in that clause. AEMO suggested that the Commission should consider modifying the defined term as necessary so it can be used consistently.</p> <p>AEMO also notes that a 'contestable augmentation' under rule 8.11 has a different meaning.</p>	<p>AEMO, submission on draft determination, p. 12.</p>	<p>The Commission agreed with AEMO. The final rule italicises the word contestable in clause 5.2A.4(a).</p>
Improvements to negotiated transmission services		
<p>AEMO noted that in Victoria, the issue of unbalanced negotiating power is mitigated to an extent by arrangements that give greater scope for competition and the presence of an independent planner.</p>	<p>AEMO, submission on consultation paper, p. 4.</p>	<p>As set out in chapter 6, the regulatory framework for connections in Victoria are different to the rest of the NEM.</p>
<p>Energy Networks Australia considered that AEMO was not the appropriate body for establishing a panel of independent engineers.</p>	<p>Energy Networks Australia, submission on consultation paper, p. 17.</p>	<p>The final rule provides that the wholesale energy market dispute resolution adviser is responsible for establishing and maintaining a pool of independent engineers for the reasons set out in section C.1.</p>

Issue raised	Stakeholder	Commission's response
<p>Energy Networks Australia considered that the independent engineer should be a low cost and timely process. To achieve this, Energy Networks Australia considered the independent engineer should not duplicate the role of the arbitrator. Conversely, Origin Energy considered future commercial arbitration should be legislated to consider any findings of the independent engineer.</p>	<p>Energy Networks Australia, submission on consultation paper, p. 17; Origin, Energy, submission on discussion paper, p. 3.</p>	<p>Under the final rule the advice provided by the independent engineer is not binding on either party. The Commission considered that it is important that the independent engineer process be accessible and timely. If the independent engineer's decision were to be binding, given the final nature of such a decision, the parties may treat the process as a more legal, dispute oriented one rather than a facilitative, technical one designed to aid any negotiation impasse. This could have the effect of substantially prolonging the process and, by extension, increasing the cost. Stakeholders would be unlikely to utilise the independent engineer if the process was prohibitively expensive or lengthy.</p>
<p>AEMO considered increased transparency is unlikely to have much impact if the applicant has no choice but to deal with the TNSP. In addition, the Clean Energy Council considered that the TNSP could delay negotiations due to their monopoly negotiating power. The Clean Energy Council suggested design standards and philosophies and proposed maintenance regimes should be approved by an independent engineer to ensure that the TNSP has created the opportunity for assets to be constructed contestably while balancing its Rules obligations.</p> <p>The Clean Energy Council considered that TNSPs have opportunity to use their competitive advantage. For example, the TNSP may delay the processing of a connection application.</p>	<p>AEMO, submission on consultation paper, p. 4; Clean Energy Council, submission on consultation paper, pp. 15-16.</p>	<p>The Commission considers that in the provision of negotiated transmission services where the connecting party may only procure these services from the TNSP, negotiations with the TNSP will be improved through the combination of the:</p> <ul style="list-style-type: none"> • transparency requirements for TNSPs; • addition of updated negotiating principles; • ability to call for an independent engineer to provide advice on technical disagreements; and • increased clarity regarding the definition of services relating to transmission connections. <p>The measures outlined above will address the monopoly negotiating power the TNSP has in the provision of negotiated services.</p> <p>The Commission does not consider the proposed transparency requirements should be approved by an independent engineer as this would introduce unnecessary costs that would be borne by consumers, as</p>

Issue raised	Stakeholder	Commission's response
Therefore, the negotiating framework will need to address this.		well as delaying the connection process.
Energy Networks Australia considered that the increased transparency requirements will impose significant costs on the TNSPs. In addition, AEMO considered standard agreements could be unnecessarily restrictive in bespoke projects such as transmission connections. To address this, AEMO suggested the transparency requirements applied to TNSPs explain the methodology as opposed to providing generic examples.	Energy Networks Australia, submission on consultation paper, p. 16; AEMO, submission on discussion paper, pp. 5-6.	<p>The final rule requires the TNSP to publically provide generic information about the connection process. As this information is high level, the Commission did not consider it will impose significant costs or be restrictive on the actions of TNSPs. The Commission also did not consider that requirement to publish generic agreements will be restrictive in transmission connections. The Commission acknowledged that the provision of standard form contracts to connecting parties as a relatively common occurrence. It would therefore be helpful for these to be published on the TNSP's website upfront.</p> <p>Where specified, the TNSP is allowed to charge an additional fee for the provision of more prescriptive information in order to recover the costs of providing such information.</p> <p>The amount charged for this additional fee must not be more than necessary to cover the reasonable costs of work required to prepare that information.</p>
AGL considered that the negotiation should take into account commercial and operational matters expressed through the legal and technical process at the time of the connection as well as prevalent conditions of the market.	AGL, submission on consultation paper, p. 4.	Negotiations between the connecting party and the TNSP are covered by the negotiating principles set out in Schedule 5.11 and Schedule 5.12 of the final rule. These are discussed further in section C.2.
Energy Networks Australia considered that where a connection does not rely on third party access to an existing connection, the need to consider what negotiating framework should apply to	Energy Networks Australia, submission on consultation paper, p. 9.	The ownership arrangements for an identified user shared asset (including lease or transfer where it occurs) is a contestable service in the final rule. The negotiating principles apply only to negotiated transmission services. This is discussed further in section C.2.

Issue raised	Stakeholder	Commission's response
<p>the lease or transfer of identified user shared assets is unnecessary if the party that builds the assets is responsible for their operation, control and maintenance. Even though a provider may decide to outsource this, or lease/transfer ownership to the TNSP, this is a commercial decision. It is no longer a rules requirement so any negotiating imbalance is removed.</p>		
<p>Energy Networks Australia considered that there is no reason for the negotiating principles to be different across load and generation, consistent with current arrangements.</p>	<p>Energy Networks Australia, submission on consultation paper, p. 15.</p>	<p>The Commission agreed with this comment as set out in section C.2.</p>
<p>The Clean Energy Council considered that the updated negotiating principles should consider the ongoing operation and maintenance.</p>	<p>Clean Energy Council, submission on consultation paper, p. 5.</p>	<p>The updated negotiating principles will apply to the provision of operation and maintenance of identified user shared assets as these are provided as negotiated transmission services as discussed in C.2.</p>

Issue raised	Stakeholder	Commission's response
<p>PIAC suggested that other services such as demand management and load control through grid level batteries may also be provided to a connection party, particularly large scale renewables that operate intermittently and require different services to ensure that they meet the standards and reliability required by the transmission system. The negotiation principles should be applied to the development of these services where they are required to meet the functional specification set by the TNSP.</p>	<p>PIAC, submission on discussion paper, pp. 8-9.</p>	<p>The negotiating principles cover the provision of negotiated transmission services. This includes the provision of the functional specification by the TNSP. As a result, all aspects of the functional specification provided to the connecting party will be subject to the negotiating principles.</p>
<p>EnergyAustralia supported the principle that services provided by shared network assets paid for by the original connecting party should not be degraded by subsequent connections. However, EnergyAustralia questioned whether the power transfer provided by the assets can be easily delineated in practice from greater shared network services.</p>	<p>EnergyAustralia, submission on draft determination, p. 1.</p>	<p>The connecting party and the TNSP will negotiate for services relating to the connection of that connecting party to the transmission network. The TNSP is likely to be able to guarantee a level and standard of power transfer capability at the connection point and may do so in the connection agreement. Due to the impact of broader network constraints, it would be difficult for the TNSP to maintain a guaranteed level of power transfer capability through the identified user shared asset. If the TNSP does provide a level of power transfer capability through the identified user shared asset as a negotiated transmission service to the connecting party, this must not be degraded by subsequent connections to that identified user shared asset.</p>
<p>ElectraNet noted that TNSPs will be required to publish a number of 'standard' versions of agreements, such as connection agreements or operation and maintenance agreements. However, the concept of there being a 'standard' agreement is</p>	<p>ElectraNet, submission on draft determination, p. 3.</p>	<p>The Commission considered the provision of standard form agreements will provide connecting parties will valuable information regarding the expected content of network operating agreements and connection agreements. The Commission acknowledged that connections to the transmission network are bespoke, and as a result the agreements for each connection will be unique. This may result in differences between the structure and content of the final agreements when compared to the</p>

Issue raised	Stakeholder	Commission's response
<p>inconsistent with the many scenarios for ownership and connection design of various aspects of a connection that are possible under the new framework. As such, it is not clear what the Commission actually expects to be published in this regard that will be of practical use to connecting parties for the purposes of contract negotiations.</p>		<p>standard agreements. However, the Commission considered that making standard form agreements available to prospective connecting parties will assist connecting parties in assessing a connection and preparing a connection application.</p>
<p>ElectraNet recommended strengthening the negotiating principles to clarify the ability of the TNSPs to recover the actual prudent cost of operating and maintaining a third party's identified user shared asset.</p>	<p>ElectraNet, submission on draft determination, p. 3.</p>	<p>The negotiating principles allow TNSPs to recover the efficient cost of complying with all regulatory obligations or requirements associated with the provision of negotiated transmission services. The Commission acknowledges that there are multiple ways in which charges for operation and maintenance could be structured. The Commission considers that the negotiating principles provide sufficient guidance on the costs that can be recovered. The approach to how these costs are recovered can be determined between the connecting party and the TNSP. The negotiating principles themselves are discussed in appendix C.2.</p>
<p>The Clean Energy Council noted that NER clause 5.3.6 (b2) requires the PTNSP to provide the full costs for negotiated services. However, the PTNSP would not be able to assess these costs without a view of the tender outcomes.</p>	<p>Clean Energy Council, submission on draft determination, p. 3.</p>	<p>The Commission considers that clause 5.3.6 (b2) will not apply to connections to the transmission network.</p> <p>The Commission does note that changes have been made to the final rule to address concerns relating to the timing of provision of information in the connection process with respect to having a view of the tender outcomes at the appropriate time in the connection process. These changes are detailed in appendix C.5.</p>
<p>The Clean Energy Council requested that the Commission clarify the process under which contestability would be occurring. To compare, the Victorian model assumes that the</p>	<p>Clean Energy Council, submission on draft determination, p. 3.</p>	<p>The Commission has revised the connection process in the final rule from what was proposed in the draft rule to clarify the process under which contestability will occur. The final rule has made changes to the existing NER rule 5.3 where appropriate to accommodate these changes. This</p>

Issue raised	Stakeholder	Commission's response
response to a connection application covers off all the information required to undertake a tender for the contestable works.		revised process is detailed in appendix C.5.
EnergyAustralia suggested that by not allowing an additional fee to be charged for detailed technical requirements, it doesn't allow this fee to be cost reflective and reduced for smaller, less complex connections.	EnergyAustralia, submission on draft determination, p. 2.	<p>The final rule requires a TNSP to provide certain information following a direct enquiry. A TNSP may receive a direct enquiry requesting more detailed information relating to the detailed technical requirements of a particular connection. In response to this direct enquiry, the Commission did not consider the TNSP should be able to charge a fee for this information in addition to the connection application fee. This is because as the application fee already covers the costs related to the provision of the functional specification of a particular connection. The final rule allows TNSPs to charge an additional fee to the connecting party to provide other information, where indicated in Table A.2.</p> <p>The amount charged for any additional fee must not be more than necessary to cover the reasonable costs of work required to prepare that information.</p>
The Clean Energy Council suggested that the NER need to be clear that the generator can simplify arrangements by remaining responsible for the dedicated connection asset, or by engaging the Primary TNSP to deliver the identified user shared asset (or both the dedicated connection asset and identified user shared asset).	Clean Energy Council, submission on draft determination, p. 6.	The Commission agrees that there may be circumstances in which the arrangements between the connecting party and the Primary TNSP may be simplified by the generator remaining responsible for the dedicated connection asset, or by engaging the Primary TNSP to deliver the identified user shared asset (or both the dedicated connection asset and identified user shared asset). However, the Commission did not consider that this needed to be explicitly conveyed in the NER since it will be in the interest of both parties to simplify arrangements where appropriate.
The Clean Energy Council considered that clause 5.3.6 of the NER should clearly state that an offer to connect can be structured at the discretion of	Clean Energy Council, submission on draft determination, p. 6.	The Primary TNSP is responsible for making an offer to connect to a connecting party. The Commission considered that the Primary TNSP should be responsible for making the offer to connect in the form it considers most appropriate. The connecting party will have access to

Issue raised	Stakeholder	Commission's response
<p>the connecting party. For example the generator should have the discretion to include both the dedicated connection agreement and generator connection in one connection agreement.</p>		<p>standard form connection agreements upfront on a Primary TNSP's website which may assist connecting parties with understanding how the connection agreement is likely to be structured.</p>
<p>Ausgrid noted that the draft rule in relation to independent engineer (Rule 5.4.5(e)(2) and (3)) and IUSA asset sizing (schedule 5.11, clause 12) appear to contradict each other. Negotiating principle assumes that the functional specification can be made with reference to the nature of the connection being sought, which is not always the case. Certain specifications (e.g. fault level ratings) depend on how the network is configured.</p>	<p>Ausgrid, submission on draft determination, p. 4.</p>	<p>The Commission does not consider that the two obligations are contradictory, although the final rule makes changes to these provisions to improve clarity.</p> <p>In the final rule, schedule 5.11, clause 12 has been removed from the negotiating principles and introduced in the connection process. More information on this is provided in appendix C.5.</p> <p>The final rule clarifies that the independent engineers are required to, in forming their advice, have regard to the requirement that the connection must not unreasonably inhibit the capacity for future expansion or preclude the possibility of future connections.⁷⁰⁸</p> <p>The Primary TNSP, when providing the connection applicant with a functional specification, may also provide the connection applicant with their preferred sizing (i.e. additional works that it would like to carry out that are above what is required for the connection applicant).</p> <p>The connection applicant does not have to accept this preferred sizing but it does have to make sure that its detailed design is consistent with the minimum requirements set by the functional specification and does not unreasonably inhibit the capacity for future expansion or preclude the possibility of future connections.⁷⁰⁹</p>

⁷⁰⁸ See clauses 5.4.5(e)(2) and 5.3.4(b1)(2) of the final rule.

⁷⁰⁹ See clause 5.3.4(b1) of the final rule.

Issue raised	Stakeholder	Commission's response
		The Primary TNSP's preferred sizing does not refer to specifications that are made based on the configuration of the network at a specific point (e.g. fault level ratings).
<p>Origin Energy considered that under 5.4.2(a) & (b) of the NER there are currently civil penalty provisions as they relate to inconsistencies between the proposed equipment, the connection agreement and the generator performance standards. There are already sufficient penalties or financial deterrents in place to warrant the removal of the civil penalty provision. Generators are required to meet their generator performance standards before being approved to operate within the NEM. This is undertaken as a final approval step by AEMO. It is in the connecting parties best interests to meet these standards as any deviation will result in both a time and cost penalty with works required to rectify and meet the GPS. A civil penalty in addition to the rectification works costs represents an unjust penalty as generators are financially incentivised to meet the GPS in the first instance.</p>	<p>Origin Energy, submission to draft determination, pp. 2-3.</p>	<p>The Commission has not made alterations to rule 5.4.2(a) and (b) of the existing NER. In the final rule, these provisions have been moved to rule 5.6. The Commission considers that the civil penalty provisions associated with these provisions are appropriate.</p>

Issue raised	Stakeholder	Commission's response
Application to Victoria		
<p>AusNet Services submitted that maintaining clear accountability for outcomes on the shared transmission network does not limit the scope of services that can be deemed contestable. It considered that clear accountability can be assured through contractual arrangements that allocate risks and responsibilities between parties, in the way that AEMO does in Victoria. AEMO shared a similar view, submitting that contracts can solve accountability requirements without compromising system security, reliability or impeding future third party access. It noted that it is already accustomed to working with multiple TNSPs in a region, and the NER already deals with it.</p>	<p>AusNet Services, submission on discussion paper, p. 2; AEMO, submission on discussion paper, p. 2.</p>	<p>The Commission considers that not all services required for a connection to the transmission network can be provided on a contestable basis while still maintaining clear accountability for outcomes on the shared network. The Commission's rationale for limiting the services that can be provided on a contestable basis is set out in more detail in chapter 3.</p>

H Summary of other issues raised in submissions relating to planning

This appendix sets out the issues raised in the first and second rounds of consultation on the planning aspects of the rule change request and the AEMC's response to each issue. If an issue raised in a submission has been discussed in the main body of this document, it has not been included in this table.

Issue raised	Stakeholder	AEMC response
<p>Standardisation of the information provided in annual planning reports can lead to a generic approach to connections, which could limit innovation. There is little benefit to connection applicants from the publication of generic information such as design standards and philosophies. Transmission General Holdings Australia has been able to innovate in design of its two projects in Victoria without relying on information provided by the incumbent TNSP.</p>	<p>Transmission General Holdings Australia, submission on draft determination, p. 3.</p>	<p>The final rule includes a requirement for the AER to prepare a guideline on consistency of the information presented in transmission annual planning reports. The objective of this guideline is to make it easier to compare the information presented by TNSPs in their transmission annual planning reports. It is not intended that improving the consistency of transmission annual planning reports across TNSPs would lead to generic information being presented. TNSPs would still be required to publish forecasts and other information that is relevant and specific to their network. The guideline does not preclude TNSPs from providing other relevant and useful information in their transmission annual planning reports. The Commission understands that many TNSPs are more active in their engagement with stakeholders in preparing their transmission annual planning reports and expect that this will continue.</p> <p>The Commission also notes that transmission annual planning reports are used for a number of purposes, not just to inform connections to the transmission network. The additional information requirements for transmission annual planning reports under the final rule addresses the main information gaps identified by a broad range of interested stakeholders, including generators who may wish to connect to the transmission network.</p>

Issue raised	Stakeholder	AEMC response
<p>In addition to consideration of cross-regional options the regulatory framework should allow for consideration of (and funding for) distribution-based solutions to issues on the transmission network and vice versa.</p>	<p>AEMO, submission on consultation paper, p. 4.</p>	<p>The Commission considers that the current regulatory framework does allow for the consideration of distribution-based solutions for the transmission network. The Commission considers that such investment should be considered and implemented if it is the most efficient option to meet an identified network need. The existing joint planning requirements for TNSPs and DNSPs are intended to facilitate these potential investment opportunities.</p>
<p>Ausgrid states that they have an obligation to prepare a transmission annual planning report since it has dual function assets, and so is registered as both a DNSP and TNSP. However, not all aspects common to transmission businesses apply to Ausgrid. For example, Ausgrid has no need to consult on inter-regional issues with TNSPs in Victoria or Queensland. If considering changes to transmission annual planning reports, DNSPs that are also TNSPs solely because they operate dual function assets should be made exempt from any requirements that would not be appropriate.</p>	<p>Ausgrid, submission on consultation paper, p. 2.</p>	<p>The changes set out in the final rule apply to all participants who produce transmission annual planning reports. However, the Commission understands that Ausgrid produces its transmission annual planning report, as part of its distribution annual planning report and expects that this will continue.</p> <p>Further, in relation to the joint planning requirements, the final rule requires TNSPs to undertake joint planning if a possible credible option to address a constraint in a transmission network is an augmentation to the transmission network of another TNSP; and that constraint is not already being considered under other processes under the NER. The Commission expects that constraints relating to dual function assets would most likely be considered through TNSP-DNSP joint planning, and so would not have to be considered under the TNSP-TNSP joint planning.</p>
<p>A key problem with the current annual planning report framework is that it tends to become out of date, particularly in the context of rapidly changing market conditions. For instance, NER clause 5.12.2 does not require TNSPs to report on IT and communications projects, even though these types of projects account for an increasing proportion of TNSP capital expenditure.</p>	<p>AEMO, submission on consultation paper, p. 4.</p>	<p>The final rule recognises the need for flexibility in the requirements regarding the format of transmission annual planning reports to ensure that they remain fit-for-purpose in a changing energy market environment. The additional information requirements in the final rule reflect stakeholder feedback on what information is currently missing from transmission annual planning reports. The final rule does not include specific requirements to report on IT and communications projects. The Commission notes the work that the AER and individual TNSPs have undertaken to</p>

Issue raised	Stakeholder	AEMC response
		improve the quality of transmission annual planning reports in recent years. The Commission also notes that it has published a draft determination on a rule change request from the AER relating to replacement expenditure planning arrangements. ⁷¹⁰

⁷¹⁰ See: <http://www.aemc.gov.au/Rule-Changes/Replacement-Expenditure-Planning-Arrangements>

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
DNSP	Distribution network service provider
DTSO	Declared transmission system operator
LRPP	Last resort planning power
MCE	Ministerial Council on Energy
MNSP	Market network service provider
NEL	National Electricity Law
NEM	National energy market
NEO	National electricity objective
NER	National Electricity Rules
RET	Renewable energy target
RIT-D	Regulatory investment test for distribution
RIT-T	Regulatory investment test for transmission
TNSP	Transmission network service provider