

Australian Energy Market Commission

RULE DETERMINATION

NATIONAL ELECTRICITY AMENDMENT (CONNECTION TO DEDICATED CONNECTION ASSETS) RULE 2021

PROPONENT

AEMO

08 JULY 2021

RULE

INQUIRIES

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ABOUT THE AEMC

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

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SUMMARY

- 1 The Australian Energy Market Commission (AEMC or Commission) has made a final rule amending the National Electricity Rules (NER) to create a new framework for 'designated network assets' (DNAs). This framework will replace the current arrangements for large dedicated connection assets (DCAs).
- 2 Unlike DCAs, DNAs will form part of the transmission network operated by a Primary Transmission Network Service Provider (TNSP). As such, each facility connected to a DNA will have its own transmission network connection point (TNCP). This will allow all key NER requirements to be applied directly to individual connected parties. This is not possible under the current framework for DCAs, which builds on a single TNCP where the DCA connects to a Primary TNSP's network, no matter how many parties are connected to one DCA.
- 3 These new arrangements will better facilitate efficient investment in, and use of, transmission assets built to connect generation to the 'shared network'. This will be achieved through more effective protections for parties funding investments in DNAs (e.g. generators, merchant investors, governments or TNSPs' ring-fenced affiliates) and clearer arrangements for sharing these assets. As a result, the new arrangements encourage efficient connection of new generation to the system.
- 4 Further, by treating these assets as part of the Primary TNSP's network and providing individual TNCPs, the new arrangements will enhance power system security and reliability.
- 5 With the large number of new generators currently seeking to connect to the transmission network the Commission considers that these changes come at an important time. The final rule includes implementation provisions to allow it to take effect quickly and therefore provide benefits in the short term to parties already assessing business cases including transmission assets to connect generation to the network.

Background

- 6 The framework for DCAs was established through the AEMC's 2017 Transmission Connection and Planning Arrangements (TCAPA) Rule. The framework applies throughout the national electricity market (NEM) except in Victoria, which is subject to different transmission arrangements.
- 7 A DCA is the collection of components that are used to connect an identified user group – one or more connecting parties – to the transmission network at a single TNCP (i.e. a DCA is always a radial asset). Once commissioned, the Primary TNSP can isolate a DCA from the transmission network through disconnection at that TNCP. DCAs can be provided on a competitive basis by any party (e.g. the Primary TNSP, a generator, a government or a firm looking to invest in renewable energy) that then registers as a Dedicated Connection Asset Service Provider (DCASP).
- 8 A DCASP must classify its DCA as either large (30km or longer) or small (shorter than 30km). Because DCAs are privately owned and operated connection assets that do not form part of a Primary TNSP's transmission network, they are not subject to the NEM's open access regime.

Rather, the DCASP for a large DCA must have an access policy in place to provide a framework for applicants who want to obtain access to large DCA services. There is no requirement for DCASPs to offer third-party access to small DCAs.

- 9 The connection of an identified user group to the transmission network will generally require a combination of a DCA and an Identified User Shared Asset (IUSA). An IUSA describes those components required to connect a party to the transmission network, e.g. parts of a substation. An IUSA forms part of the shared network as the electricity flows cannot be isolated from the shared network. As such, IUSAs must be operated and maintained by the Primary TNSP, but the design, construction and ownership of IUSAs can be undertaken on a competitive basis.

The rule change request

- 10 The Commission received a rule change request from the Australian Energy Market Operator (AEMO) on 3 January 2020 that seeks to clarify the application of key NER requirements where multiple proponents are connected to the same DCA. In AEMO's view, the DCA framework works well where there is a single proponent in the connecting identified user group, but is inappropriate where there are multiple proponents. This is because many NER obligations and processes are unable to work where a one-to-many relationship is required at a single connection point.

- 11 The rule change request seeks to address this issue by providing for there to be a separate connection point for each facility, located at the point where the facility connects to a DCA. This approach would allow existing NEM arrangements for metering, settlement, losses and performance standards to be applied to individual proponents connected to the same DCA.

- 12 As part of the rule change request, AEMO provided a proposed rule. The proposed rule amends the NER definition of 'transmission network connection point' to include references to the point where a facility would be connected to the DCA. It appears that the point where the DCA would connect to the transmission network would continue to also be a TNCP.

The Commission's final rule

- 13 The Commission's final rule is a more preferable final rule. It meets the intent of AEMO's rule change request, but departs in approach. In particular, as DCAs are not part of the transmission network, the Commission – in common with many stakeholders – is concerned that establishing TNCPs on a DCA would blur the boundary between network and connection assets. This could make it difficult to establish which party – the Primary TNSP or DCASP – has responsibility for the TNCPs on a DCA and who should have a contractual relationship with connecting parties.

- 14 The key features of the final rule are:

- **Replacement of the concept of 'large DCAs' with a framework for 'DNAs'** that treats material additions to the transmission system (i.e. those including transmission lines with a total route length of 30km or longer) as part of the transmission network, rather than as connection assets.

- **Establishment of individual TNCPs** where each facility connects to a DNA. This allows for the application of key NER requirements, e.g. settlement, establishment of performance standards and calculation of loss factors at a TNCP on a DNA, consistent with other connections to a Primary TNSP's transmission network.
- **Operation and maintenance of DNAs by the relevant Primary TNSP.** This provides a single point of accountability for power system security and ensures the Primary TNSP has visibility of all material additions to the network for planning and operation purposes.
- **Application of contestability arrangements to DNAs similar to those currently applying to third party IUSAs.** As DNAs form part of Primary TNSPs' networks, operation and maintenance and establishing the functional specifications of these assets is the responsibility of the relevant Primary TNSP. However, DNAs can be contestably designed, constructed and owned, as is the case for IUSAs.
- **Cut-in works and upgrades to DNAs are exclusively provided by DNA owners.** The DNA owner has the exclusive right to provide cut-in works, upgrades to and increasing the capacity of its DNA. The DNA owner has the exclusive right to make a decision on the party who provides detailed design and construction of any upgrades or capacity increase to the DNA.
- **No introduction of an ownership restriction for DNAs and removal of the ownership restrictions for IUSAs.** A party whose facility is connected to a DNA or an IUSA is not prevented from also owning that DNA or IUSA.
- **Application of a special third-party access regime to provide appropriate protections for the DNA owner and incumbent connected parties.** Accordingly, DNAs are not subject to the NEM open access regime. The DNA owner is responsible for administering third-party access to its DNA. To enable the application of such a special access regime, DNAs are limited to being radial assets from the existing transmission network. Similar to the existing large DCA special third-party access regime, the final rule includes a principles based framework to guide negotiations between DNA owners and access seekers (e.g. connecting generators).
- **Possibility to opt-in to the new framework for DNAs:** The framework allows connecting parties to treat transmission infrastructure as a DNA, even if it would not be classified as a DNA (e.g. if an asset does not meet the 30km length threshold). This possibility is open to new DCAs and existing ('grandfathered') DCAs.
- **Removal of the registered participant category of DCASP for DCAs.** The concept of 'DCAs' captures similar assets as the concept of 'small DCAs' (assets with a total route length of less than 30km). DCAs remain fully contestable but the party who owns or operates them is not required to register in respect of the DCA. DCASPs only continue to exist for 'grandfathered' large DCAs.
- **Possibility of multiple DNAs located behind a boundary point:** 'Daisy chaining' enables the connection of a facility to an existing DNA where the respective facility is located more than 30km from an existing DNA. Allowing for DNA to DNA connections thereby ensures a prospective connecting party does not need to duplicate an already

existing DNA in order to access the 'shared' network, but can connect to the existing DNA through an extension of the existing DNA. Based on the allocation of the responsibility for administering access to a DNA, each DNA owner behind a boundary point controls access to its DNA and enters into a network operating agreement (NOA) with the Primary TNSP.

- 15 Stakeholders provided strong support for the overarching DNA framework in the Commission's draft rule. However, the one element that was not supported was the administration of the special access framework by the Primary TNSP. The main change between the draft rule and the final rule is to address this concern by changing the responsibility for administration of the special access regime that applies to DNAs from the Primary TNSP to the DNA owner (i.e. the party that made the initial investment).
- 16 As a result of this major change, the Commission made the subsequent changes between the draft rule and final rule. Most importantly:
- Under the draft rule there could only be one DNA located behind a boundary point. Under the final rule multiple DNAs can be located behind one boundary point to ensure that every DNA owner can control access to its asset. The concept of a 'DNA boundary point' is introduced under the final rule for the purposes of delineating between different DNAs located behind a boundary point.
 - The timeframe for implementation of the final rule is reduced to two weeks, compared to six months under the draft rule. The existing rules theoretically allow, but practically make it too difficult, to connect multiple parties to the same large DCA. Given that the existing arrangements are largely 'unworkable', the Commission considers a commencement date for the more preferable final rule as soon as practicable is desirable. Furthermore, the allocation of the responsibility for DNA access to the DNA owner reduces the amount of preparation work network businesses will need to undertake prior to implementation of the new framework. Instead of the Primary TNSP having to develop a standard access policy for all DNAs that form part of its network prior to the new framework being implemented, under the final rule each DNA owner must develop an access policy for its DNA once a DNA is established.
- 17 To allow enough time for parties to comply with the new framework, especially for Primary TNSPs given their increased responsibilities in terms of setting the functional specification and operation and maintenance of DNAs, the final rule:
- provides for an additional allowance period of 60 business days from the commencement date for the Primary TNSP to respond to connection enquiries to establish new DNAs, and
 - extends the standard time for a network service provider to respond to a connection enquiry to establish a new DNA to 40 business days.

Benefits of the Commission's final rule

- 18 The Commission considers that the more preferable final rule is likely to better contribute to the achievement of the NEO than both the current arrangements and the proposed rule. The final rule will promote more efficient investment in, and use of, the transmission system by:

- providing for the application of a special access regime to assets that form part of the Primary TNSP's network, with the party making the initial investment controlling third-party access,
- facilitating the sharing of assets by connecting parties through reduced complexity by establishing individual TNCPs and, applying existing NEM arrangements for settlement, performance standards and system strength,
- increasing transparency by strengthening the role of the Primary TNSP (and removing the concept of the DCASP) and ensuring each connecting party has a direct contractual relationship with the Primary TNSP, and
- improving power system security and reliability by treating material additions (in terms of their length and size, e.g. capacity connected) to the network as 'network' rather than connection assets.

19 Through the establishment of individual TNCPs for each connecting party, the existing NEM arrangements are used in their current form, or with minor modifications, to allow each connecting party to be settled individually and for performance standards to be agreed and enforced at the facility level. The use of existing arrangements facilitates sharing of assets while minimising the amount of additional complexity introduced into the regulatory frameworks.

20 The application of a special access regime through the access policies to be put in place protects connecting parties' investments in DNAs, while facilitating efficient entry and third-party access. This avoids the free-rider issue that arises elsewhere in the shared transmission network, where participants are reluctant to fund network assets as there is no guarantee of their ability to use them or otherwise earn a return on them.

21 The Commission recognises that the contestability arrangements for DNAs represent a reduction in the number of services subject to competition as compared to the existing DCA framework. This is an inevitable consequence of facilitating the creation of TNCPs by treating the assets in question as part of the transmission network. The Commission considers the greatest benefits from allowing for competition in the provision of transmission network services are likely to arise during construction, which remains contestable.

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1 AEMO'S RULE CHANGE REQUEST

1.1 The rule change request

On 3 January 2020, the Australian Energy Market Operator (AEMO) submitted a rule change request seeking to clarify the application of National Electricity Rules (NER) requirements where multiple proponents are connected to the same dedicated connection asset (DCA).

A DCA connects an 'identified user group', which can include one or more generators and/or large loads, to a transmission network at a single connection point. In AEMO's view's, the DCA framework works well where there is a single proponent in the connecting identified user group, but is inappropriate where there are multiple proponents. This is because many NER obligations and processes are unable to work where a one-to-many relationship is required at a single connection point.¹

The rule change request seeks to address this issue by providing for there to be a separate connection point for each facility located at the point where the facility connects to a DCA, but to do so in a way that maintains the original policy intent of the DCA framework.²

1.2 Current arrangements

The DCA framework was established through the AEMC's 2017 *Transmission Connection and Planning Arrangements* (TCAPA) Rule. This section provides some background to transmission connections in the National Electricity Market (NEM). It then sets out the changes to connection arrangements made in TCAPA, including the introduction of DCAs.

1.2.1 The framework for transmission connections

The shared transmission network

The 'shared' transmission network describes the transmission network owned, operated or controlled by the incumbent TNSP within a region, i.e. the 'Primary TNSP'.³ It 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 (consumers). The shared transmission network is a meshed network, making it almost impossible to separate those assets that provide services to a particular party from those that provide services to all users of the network.

Connections

Generators, large load customers, market network service providers (MNSPs) and distribution systems need to connect to the shared transmission network in order to facilitate the flow of electricity to and from their facility or network to the transmission system. The need for, and ongoing use of, assets that are used to facilitate connections to the network can be attributed

¹ Rule change request, p. 6.

² Rule change request, pp. 1, 7.

³ The incumbent TNSPs in the jurisdictions of the NEM are: Powerlink (Queensland), TransGrid (NSW), ElectraNet (South Australia), TasNetworks (Tasmania), and AEMO and declared transmission system operators (DTSOs) (Victoria).

to the party that uses them to connect. The assets that are required to enable the connection of a party to the shared network are broadly described as 'connection assets'.

The terms and conditions of a connection are negotiated between the connecting party and the Primary TNSP through a connection process. If the negotiating parties come to an agreement, the terms and conditions of an individual connection are specified in a connection agreement between the Primary TNSP and the connecting party.⁴

The process for transmission connections

Part B of Chapter 5 of the NER sets out the connection process. It regulates aspects of the technical and contractual arrangements needed to connect, and sets out the obligations on parties throughout the connection process. The connection process broadly occurs as follows:⁵

- The connection applicant submits a *connection enquiry* to the TNSP
- The TNSP formulates a *response to the connection enquiry*, with the TNSP informing the connection applicant about the relevant information it must provide, the amount of the application fee and providing a preliminary program, including proposed milestones for the connection
- The connection applicant makes an *application for connection* to the TNSP's network and pays the application fee
- The TNSP makes an *offer to connect* to the connection applicant, including the commercial terms and engineering requirements for the connection
- The *finalisation of the connection agreement* is dependent upon the connection applicant's acceptance of the connection offer and establishing a connection agreement between the connection applicant and the TNSP.

This process is a staged negotiation with defined time frames for key steps in the process. The process is relatively prescriptive with regard to the TNSP's and the connection applicant's responsibilities. In practice, it is an iterative process whereby parties exchange information in order to come to an agreement on new connections and modifications to existing connections.

The negotiation of performance standards for a specific connection also occurs through the described connection process. Accordingly, the process for negotiating the services and assets that are required for connection to the shared transmission network occurs between the TNSP and a connection applicant concurrently with the process of negotiating performance standards for connecting equipment.⁶ Chapter 5 of the NER contains access standards for the required level of performance for the equipment that an applicant seeks to connect to the transmission system, e.g. a generating plant.

4 The Commission notes that Victoria has a different framework for how parties connect to the transmission network. The Victorian arrangements and the non-application of this rule in Victoria are described in further detail in Chapter 3 of this final rule determination.

5 See clauses 5.3.2 to 5.3.7 of the NER.

6 AEMO has an advisory function on some matters during the connection process, see clause 5.3.4A and the definition of 'AEMO advisory matter' in Chapter 10 of the NER.

The agreed levels of these access standards form part of the connecting party's connection agreement and become the relevant performance standards for the plant.⁷ Performance standards are essential for the secure and reliable operation of the power system. They address the needs of a stable power system through, for example, being a means to effectively ensure a generating system is capable of operating within certain frequency limits and can respond to voltage disturbances to prevent significant power system disruption. As such, performance standards are one of the principal tools AEMO uses to manage power system security.

Further, as part of the connection process, the Primary TNSP undertakes a system strength impact assessment for each proposed new connection (or proposed alteration) of a generating system. Depending on this assessment, the connection agreement between a generator and TNSP may also include a requirement for a generator to pay for system strength connection works or implement a system strength remediation scheme in order to remedy or avoid any adverse impacts on system strength.⁸ The AEMC is currently considering the frameworks for system strength and has recently published a draft rule in response to the *Efficient management of system strength on the power system* (ERC0300) rule change request.⁹

1.2.2

The AEMC's 2017 Transmission Connections and Planning Arrangements Rule

The current framework for transmission connections was established through the AEMC's 2017 TCAPA Rule, which:

1. clarified many aspects of the connection process and the framework for economic regulation of services required to connect to the shared transmission network, and
2. made as many connection services as possible contestable, while making it clear that the Primary TNSP remains accountable for outcomes on the 'shared' transmission network, including the operation and maintenance of that network and access to it.

In particular, the 2017 TCAPA Rule clarified the types of connection assets involved in connection to the transmission network by defining two types of assets that provide the services required to connect a party to the shared transmission network - DCAs and identified user shared assets (IUSA):

- A **DCA** is the collection of components that are used to connect an identified user group - one or more connecting parties - to the shared transmission network at a single transmission connection point (TNCP) and which, once commissioned, can be isolated from electricity flows on the shared transmission network. For example, the power line that connects parts of a substation to a generating system could be a DCA. For the purposes of registration, a DCA is defined as a transmission system. AEMO is responsible for assessing an application and registering a network service provider (NSP) who

⁷ See clause 5.3.4A(i) of the NER.

⁸ See section 5.3.4B of the NER on system strength remediation for new connections.

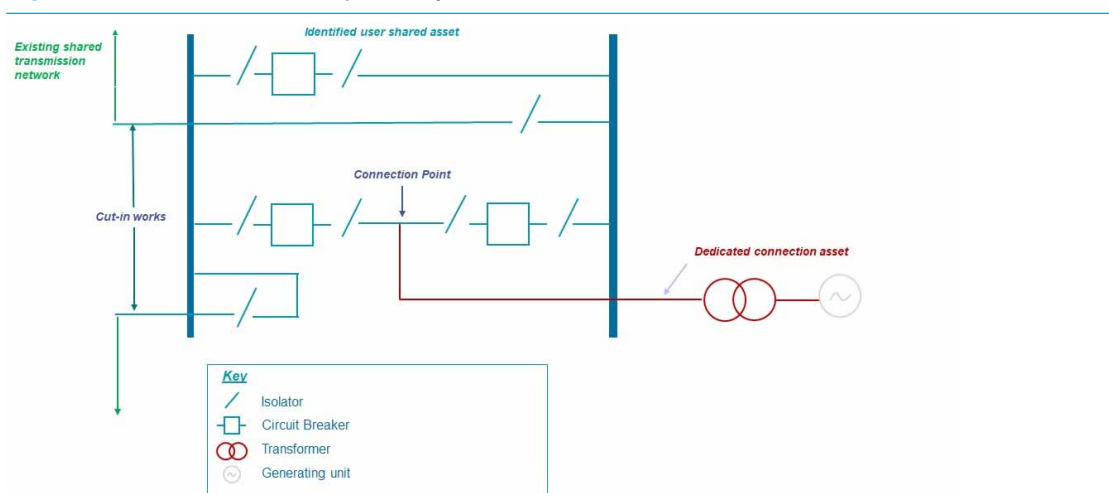
⁹ For further information, visit the project page on the AEMC's website: <https://www.aemc.gov.au/rule-changes/efficient-management-system-strength-power-system>.

classifies its transmission system as a DCA.¹⁰ The party who owns, operates or controls a DCA is defined as a DCASP, which is a sub-category of a TNSP. The Primary TNSP or a third party can be the DCASP.¹¹

- An **IUSA** is the collection of components that are used to connect a connecting party to the shared transmission network. Once commissioned, an IUSA forms part of the shared transmission network as electricity flows cannot be isolated from the shared network. An example of an IUSA would be parts of a substation.¹²

A combination of both a DCA and an IUSA is generally necessary to connect a generator or load customer to the transmission network. However, the relative size of these different asset types can vary widely depending on the configuration of a connecting party's particular connection. Figure 1.1 provides a simplified illustration of the interlinkages between the shared network, IUSA and DCA, as introduced through the 2017 TCAPA Rule:

Figure 1.1: Illustration of key concepts: Shared network, IUSA and DCA



Source: AEMC.

Contestability of connection services

Chapter 6A of the NER covers the economic regulation of the provision of prescribed transmission services. Access and connection to negotiated transmission services (and contestable transmission services) is governed by Chapter 5 of the NER:

10 DCAs are deemed to be transmission systems only for the purposes of requiring registration (or be exempted by the AER from the requirement to register) under Chapter 2 of the NER. DCAs do otherwise not meet the relevant requirements under the NER for a transmission system.

11 For a detailed overview of the arrangements for DCAs and the rationale behind the changes to the transmission connections framework that were introduced, see AEMC, *Transmission connection and planning arrangements*, Rule determination, 23 May 2017, chapter 4 and Appendix D.

12 For a detailed overview of the arrangements for IUSAs and the rationale behind the changes to the transmission connections framework that were introduced, see AEMC, *Transmission connection and planning arrangements*, Rule determination, 23 May 2017, chapter 4 and Appendix B.

- *Prescribed transmission services*: the costs for providing prescribed transmission services are recovered from transmission network users, with the revenue that a Primary TNSP can recover for these services regulated by the AER pursuant to the transmission determinations made for each Primary TNSP that provides these services under Chapter 6A of the NER.
- *Negotiated transmission services*: there is no regulation of the revenue that a Primary TNSP can earn for the provision of negotiated transmission services. The terms and conditions, including the price, of the provision of these services are negotiated between the Primary TNSP and the party who wishes to receive these services under a framework set out in Chapters 5 of the NER.
- *Non-regulated transmission services*: These services can be provided by any party, including by the Primary TNSP, outside the NER and are as such unregulated.

Under the NER, connecting parties are responsible for costs associated with any new apparatus, equipment, plant and buildings to enable their connection to the transmission network. Connecting parties must pay for the connection assets, regardless of how they are provided. Accordingly, the connection services that are required to connect a party to the transmission system, e.g. the services provided through an IUSA or a DCA, are negotiated or non-regulated transmission services. They are not a prescribed transmission service, and as such, they are not paid for by consumers via transmission use of system (TUOS) charges.

The 2017 TCAPA Rule clarified how services for DCAs and IUSAs are regulated.¹³ Clause 5.2A.4 of the NER sets out a summary of these different services and how they are regulated.

Contestability of services for DCAs

All aspects of a DCA are fully contestable. That means that all services provided for a new DCA, including its design, construction, ownership, operation and maintenance, are non-regulated transmission services. A connecting party can either provide the services itself, or choose its preferred service provider (e.g. the Primary TNSP, a generator, a government or a firm looking to invest in renewable energy) to construct, own and operate these assets on commercial terms. Consequently, there is:

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

Contestability of services for IUSA

Services provided by IUSAs are classified as either a non-contestable service that the Primary TNSP has an obligation 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.

Non-contestable services: functional specification, cut-in works, operation and maintenance

¹³ See AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, sections 4.2.1 and 4.4.1.

The services of setting the functional specification, providing cut-in works, and the operation and maintenance of an IUSA must be provided by the Primary TNSP as a negotiated transmission service. The Primary TNSP is accountable for any outcomes on the shared network, including IUSAs.

Contestable services: detailed design, construction and ownership

The Primary TNSP must provide the services of detailed design, construction and ownership of an IUSA as a negotiated transmission service only if it reasonably expects the capital cost of all components that make up the IUSA to be \$10 million or less ('monetary' limb of the contestability threshold). If the capital cost is reasonably expected to exceed \$10 million, then the design, construction and ownership of these assets are non-regulated transmission services and can be provided on a contestable basis to the extent that the components satisfy the following two criteria ('separability' limb of the contestability threshold):

- the components being constructed are new or a complete replacement of existing components (and do not involve the reconfiguration of existing components), and
- the detailed design and construction of the relevant component of the IUSA is separable as the new assets will be distinct and definable from the existing transmission network.

The Primary TNSP must determine whether each component of the IUSA meets these two criteria. If the two criteria are not met, the Primary TNSP is required to provide these services as negotiated transmission services.¹⁴ If the two criteria are met, the arrangements for the provision of non-regulated transmission services are agreed between the connecting party and its chosen service provider on a purely commercial basis.

Subject to meeting the above two criteria, parties other than the Primary TNSP may own an IUSA. If this is the case, the NER requires a third party owner of an IUSA to enter into a network operating agreement (NOA) with the Primary TNSP.¹⁵ The NOA must provide for the Primary TNSP to have control of the asset and provide subsequent parties with access to the transmission system via that asset. Further, a person that is engaged in the activity of owning, controlling or operating a generating system or load that is connected to an IUSA is prohibited from owning that IUSA (the so-called 'ownership' restriction).¹⁶

Third party access

Under the NEM access regime all registered participants should have the opportunity to negotiate and form a connection to a network and have access to the network services provided by the networks forming part of the national grid in accordance with the NER.¹⁷

Consequently, a Primary TNSP has to consider and respond to an applicant's connection enquiry. Provided that the connection applicant proceeds with the connection process and formulates a connection application (and pays the fees related to that), the Primary TNSP has

¹⁴ In the event that there is disagreement on whether a particular component meets or does not meet these criteria, either party can engage an independent engineer to provide technical advice on the matter, see rule 5.4 of the NER.

¹⁵ Clause 5.2A.7 of the NER.

¹⁶ Clause 5.2A.7(e) of the NER.

¹⁷ Clause 5.1A.2(a) of the NER.

to make an offer to connect. However, that being said, a connection to a Primary TNSP's network does not mean a connected party has firm access to the shared transmission network, as a connected party can still be affected by congestion on the transmission network.

Third party access to a DCA

Upon registration, a DCASP must classify its DCA as either 'large' (30km or longer) or 'small' (shorter than 30km). DCAs are always privately owned and operated connection assets that do not form part of the Primary TNSP's network, and as such, are not subject to the NEM's open access regime discussed above.

However, the 2017 TCAPA Rule set up a framework by which parties can negotiate access to the services provided by a large DCA. Small DCAs are not subject to this third party access regime. The DCASP of a large DCA is required to prepare, maintain and publish an access policy for its large DCA on its website to provide a framework for applicants who want to obtain access to large DCA services. A DCASP (including any Primary TNSP that owns such assets) must lodge its access policy with the AER within 30 days of an asset being classified as a large DCA. The AER is required to approve an access policy if it is reasonably satisfied that it complies with the requirements for an access policy set out in the NER.¹⁸ A DCASP must comply with its access policy once the AER has approved it. In addition, the NER set out a number of principles that a DCASP for a large DCA is subject to when negotiating access with another party.¹⁹ Further, a DCASP must report to the AER all requests for connection and access to a large DCA when such requests are made and when an agreement for access is entered into, in the manner and form notified by the AER.²⁰

Parties have access to the commercial arbitration process set out under Chapter 5 of the NER for any disputes in relation to the provision of large DCA services.²¹

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

Access to services provided by an IUSA

Once commissioned, a subsequent party can seek to connect to an existing IUSA, for example multiple DCAs could be connected to one IUSA. As an IUSA forms part of the shared network, the connection framework set out in Chapter 5 of the NER applies. In other words, the IUSA is subject to the NEM's open access regime.

Further, the 2017 TCAPA Rule set out a number of principles to provide guidance to connecting parties about how the costs of services for IUSA 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.²² In cases where connection

18 Clauses 5.2A.8(b) and 5.2A.8(c) of the NER.

19 Clause 5.2A.6(c) and Schedule 5.12 of the NER.

20 Clause 5.2A.8(k) of the NER.

21 Clause 5.2A.8(b)(5) of the NER.

22 See AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 2017, section 4.2.3 and appendix B.

services are provided as non-regulated transmission services (e.g. the construction of contestable components of an IUSA), no cost-sharing provisions apply.

1.3 Rationale for the rule change request

As noted, the DCA framework is based on the concept that a DCA connects an identified user group, which can be comprised of one or more generators or load customers, to a transmission network. AEMO considers that the DCA framework works where there is a single proponent in the identified user group.²³

However, AEMO considers the DCA framework under the existing NER to be 'unintentionally unworkable' in cases where multiple generators or market customers seek to connect to the same DCA, as the NER does not identify how key requirements would apply to more than one proponent in an identified user group connected to the same DCA.²⁴

The existing DCA framework requires a single (and, where there are multiple connecting proponents, shared) TNCP for the identified user group connecting to the 'shared' transmission network. This consequently requires there to be a single:²⁵

- performance standard to apply at the TNCP, reflecting the overall performance of all connected assets
- metering installation to record energy flows, with the meter data used for market settlement, including the application of transmission loss factors and the calculation of other fees and charges, such as transmission use of system (TUOS) charges.

In practice, this means that there is only one financially responsible market participant (FRMP) at the single TNCP, and this FRMP must comply with the relevant NER requirements. As DCA connections are largely unregulated, the contractual agreement between the party responsible for operating and maintaining a DCA, the DCASP, and a connecting party (i.e. a generator or customer) would need to assign responsibilities and obligations to the contractual parties.²⁶

While AEMO considers that the DCA framework works where there is only a single proponent in the connecting identified user group, it considers it to be ambiguous where there are multiple proponents connecting via the same DCA to the Primary TNSP's 'shared' network. AEMO is concerned that many of the relevant NER processes, procedures and systems would not work effectively where one FRMP essentially acts as an 'intermediary' for a number of proponents at one TNCP.

Figure 1.2 illustrates the current DCA arrangements in the case of multiple generators being connected to the same DCA.

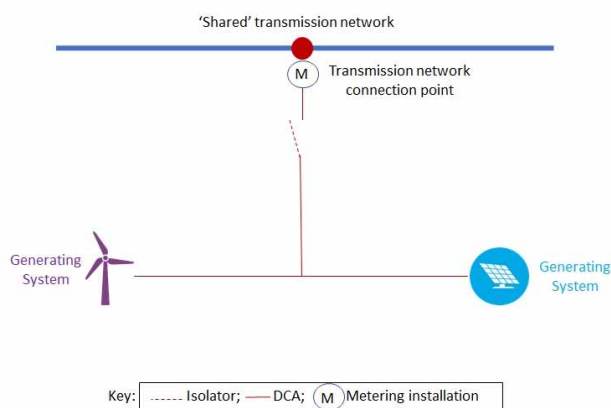
²³ Rule change request, p. 6.

²⁴ Rule change request, p. 2.

²⁵ Rule change request, p. 6.

²⁶ The Commission understands that, if the DCASP and connecting generator/customer are different parties, under the current arrangements, the generator/customer would normally be the FRMP (as opposed to the DCASP). This is due to the fact that the generator/customer would be the responsible party for negotiating and complying with the performance standards for the connected facility.

Figure 1.2: Current arrangements: connection of multiple proponents to the same DCA



Source: AEMC.

Against this background, AEMO has identified issues related to

- a single TNCP, and
- the DCA access framework.

1.3.1

Issues with a single TNCP

AEMO has identified operational implications with the current DCA framework, relating to DCAs having a single connection point to the shared transmission network. The NER and the relevant processes, procedures and systems build on the assumption that responsibilities and obligations can be allocated to a single FRMP at one connection point with a metering installation. AEMO has identified issues that emerge from the one-to-many relationship between one connection point and a single FRMP and potentially many parties connected to a DCA, including:²⁷

- **Performance standards:** AEMO considers that it is unclear how a TNSP would negotiate individual performance standards for each proponent with a generating system or load if there is only one FRMP at the TNCP. While a shared performance standard could be negotiated, it would be very difficult to identify individual plant non-performance and make an assessment whether this is causing any material impacts on the power system. A potential breach of performance standards may result in a disconnection at the single TNCP, which would affect multiple proponents and their facilities. AEMO's ability to monitor and the AER's ability to enforce compliance of performance standards is compromised and unnecessarily difficult.

²⁷ Rule change request, pp. 6-7.

- **Metering installation:** As the NER only requires a single metering installation at the TNCP (instead of individual metering installations for each connecting party), AEMO is unable to require each connecting generating system or load to have a NEM compliant metering installation. Consequently, parties' energy flows cannot be reliably established, creating difficulties for AEMO in terms of the settlement of individual registered participants for which individual metering data is required, e.g. TUOS calculations, non-energy cost recoveries and participant fees.
- **Transmission loss factors:** AEMO notes that it would be unable to determine a transmission loss factor for individual proponents where multiple proponents are connected to a single DCA. Instead, the loss factor calculation would be based on the combined energy profile of the identified user group at the TNCP. This may be a particular issue where there is plant with different fuel sources and technologies connected to the single TNCP.

AEMO argues that the above issues need to be resolved in order to meet the policy intent of the AEMC's 2017 TCAPA Rule in terms of clarifying the framework for connections to the transmission system and contributing to a more efficient utilisation of connection assets.

1.3.2 Issues with the DCA access framework

AEMO also questions in its rule change request whether having an access framework applying to large DCAs only remains appropriate, based on the submissions of various stakeholders to the AEMC's 2019 *Coordination of Generation and Transmission Investment (COGATI) Renewable Energy Zones* discussion paper.²⁸ AEMO suggests that, in the context of its proposal to modify the DCA framework to encourage better utilisation of DCAs, it may be appropriate to revisit the differentiation between small and large DCAs, including the difference in approach to access.²⁹

1.4 Solution proposed in the rule change request

In the rule change request, AEMO has put forward a proposed solution that seeks to resolve the issues it raised in relation to the connection of multiple parties to the same DCA.

AEMO proposes that the NER be amended so that each individual proponent in an identified user group would have a separate TNCP (and associated metering installation), which would be located at the point where each facility connects to the DCA. This approach would allow existing NEM arrangements - registration, metering, performance standards, settlement, non-energy cost recoveries, participant fees and loss factors - to be applied to individual proponents connected to the same DCA.³⁰

As part of the rule change request, AEMO has provided a proposed rule. The proposed rule amends the NER definitions of 'connection point' and 'transmission network connection point'

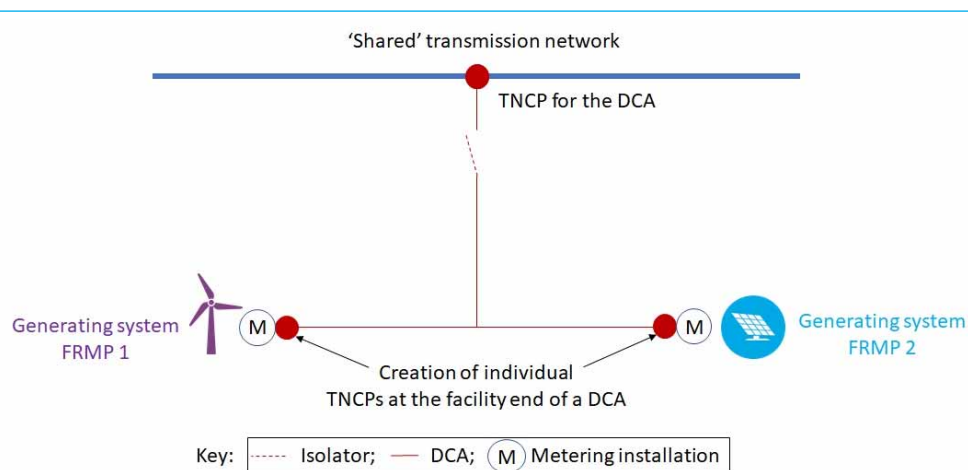
²⁸ See e.g. the submissions to the *COGATI Renewable Energy Zones* discussion paper from the Clean Energy Council, p. 2 and TransGrid, p. 5.

²⁹ Rule change request, p. 7.

³⁰ Rule change request, pp. 7-9.

to include references to the point where each facility would be connected to the DCA.³¹ AEMO notes that the DCA would itself also continue to have a connection point to the 'shared' transmission network,³² and refers to this as a 'DCA connection point' - but the proposed rule does not introduce this as a separately defined new term. Figure 1.3 illustrates AEMO's proposed solution under a scenario with multiple FRMPs connected.

Figure 1.3: AEMO's proposed solution: DCA with multiple FRMPs connected at individual TNCPs



Source: AEMC.

To ensure consistency with the policy intent of the 2017 TCAPA Rule, AEMO notes that its intention is to allow the following arrangements to continue to apply under a new framework for DCAs:³³

- A DCA can be electrically isolated from the 'shared' transmission network
- The quality of supply between the Primary TNSP and DCASP is consistent with network performance requirements under Chapter 5 of the NER
- A DCASP must continue to provide negotiated connection asset performance to an identified user group
- One DCA cannot connect to another DCA.

³¹ Rule change request, p. 12.

³² Rule change request, p. 7.

³³ Rule change request, p. 7.

2 SUMMARY OF THE FINAL RULE AND FINAL RULE DETERMINATION

This chapter provides an overview of the Commission's final determination and more preferable final rule. This includes the new framework for 'designated network assets' (DNAs) and the Commission's approach to implementation of the more preferable final rule.

2.1 The Commission's more preferable final rule

2.1.1 Key features of the more preferable final rule

The Commission's final rule determination is to make a more preferable final rule. The more preferable final rule introduces a new framework for DNAs. This is in contrast to the more limited amendments to the DCA framework contained in AEMO's proposed rule.

The more preferable final rule made by the Commission is published with this final rule determination. The key features of the more preferable final rule are:

- **Replacement of the concept of 'large DCAs' with a framework for 'DNAs'** that treats material additions to the transmission system (i.e. those including transmission lines with a total route length of 30km or longer) as part of the Primary TNSP's transmission network, rather than as connection assets.
- **Establishment of individual TNCPs** where each facility connects to a DNA. This allows for the application of key NER requirements, e.g. settlement, establishment of performance standards and calculation of loss factors at a TNCP on a DNA, consistent with other connections to a Primary TNSP's transmission network.
- **Operation and maintenance of DNAs by the relevant Primary TNSP.** This provides a single point of accountability for power system security and ensures the Primary TNSP has visibility of all material additions to the network for planning and operation purposes.
- **Application of contestability arrangements to DNAs similar to those currently applying to third party IUSAs.** As DNAs form part of Primary TNSPs' networks, operation and maintenance of these assets is the responsibility of the relevant Primary TNSP. However, DNAs can be contestably designed, constructed and owned, as is the case for IUSAs.
- **Cut-in works and upgrades to DNAs are exclusively provided by DNA owners.** The DNA owner has the exclusive right to provide cut-in works, upgrades to and increasing the capacity of its DNA. The DNA owner has the exclusive right to make a decision on the party who provides detailed design and construction of any upgrades or capacity increase to the DNA.
- **No introduction of an ownership restriction for DNAs and removal of the ownership restrictions for IUSAs.** A party whose facility is connected to a DNA or an IUSA is not prevented from also owning that DNA or IUSA.
- **Application of a special third-party access regime to provide appropriate protections for the DNA owner and incumbent connected parties.** Accordingly,

DNAs are not subject to the NEM open access regime. The DNA owner is responsible for administering third-party access to its DNA. To enable the application of such a special access regime, DNAs are limited to being radial assets from the existing transmission network. Similar to the existing large DCA special third-party access regime, the final rule includes a principles based framework to guide negotiations between DNA owners and access seekers (e.g. connecting generators).

- **Possibility to opt-in to the new framework for DNAs:** The framework allows connecting parties to treat transmission infrastructure as a DNA, even if it would not be classified as a DNA (e.g. if an asset does not meet the 30km length threshold). This possibility is open to new DCAs and existing ('grandfathered') DCAs.
- **Removal of the registered participant category of DCASP for DCAs.** The concept of 'DCAs' captures similar assets as the concept of 'small DCAs' (assets with a total route length of less than 30km). DCAs remain fully contestable but the party who owns or operates them is not required to register in respect of the DCA. DCASPs only continue to exist for 'grandfathered' large DCAs. If the DNA owner happens to own the DNA, i.e. transmission network, as well as the associated connection asset(s), i.e. DCAs connected to it, the final rule exempts the DNA owner from the requirement to register as a TNSP under Chapter 2 of the NER.
- **Possibility of multiple DNAs located behind a boundary point and DNA boundary point:** 'Daisy chaining' enables the connection of a facility to an existing DNA where the respective facility is located more than 30km from an existing DNA. Allowing for DNA to DNA connections thereby ensures a prospective connecting party does not need to duplicate an already existing DNA in order to access the 'shared' network, but can connect to the existing DNA through an extension of the existing DNA. Based on the allocation of the responsibility for administering access to a DNA, each DNA owner behind a boundary point controls access to its DNA and enters into a NOA with the Primary TNSP for its DNA. Accordingly, each DNA behind a boundary point has its own NOA with the Primary TNSP and a DNA boundary point is the point of demarcation between each DNA that is behind a single boundary point.

2.1.2 Changes between the draft and the final rule

The main change between the draft and the final rule is to change the responsibility for administration of the special access regime that applies to DNAs from the Primary TNSP to the DNA owner (i.e. the party that made the initial investment) under the final rule.

As a result of this major change, the Commission made the following subsequent changes between the draft and final rule:

- Under the draft rule there could have only ever been one DNA located behind a boundary point. Under the final rule multiple DNAs can be located behind one boundary point to ensure that every DNA owner can control access to its asset. The concept of a 'DNA boundary point' is introduced under the final rule for the purposes of delineating between different DNAs located behind a boundary point.

- The timeframe for implementation of the final rule is reduced to two weeks, compared to six months under the draft rule. The allocation of the responsibility for DNA access to the DNA owner reduces the amount of preparation work network businesses will need to undertake prior to implementation of the new framework. Instead of the Primary TNSP having to develop a standard access policy for all DNAs that form part of its network prior to the new framework being implemented, under the final rule each DNA owner must develop an access policy for its DNA once a DNA is established.

2.2 Treating material additions to the transmission system as 'transmission network'

Based on the issues raised by AEMO in its rule change request, the Commission made a decision to treat all material additions to the transmission system (i.e. those including transmission lines with a total route length of 30km or longer) as part of a Primary TNSP's transmission network. The Commission considers that this will allow for the most effective management of power system security and support the efficient development of the network over time.

Under the rules, a 'transmission system' comprises "a transmission network, together with the connection assets associated with the transmission network [...]".³⁴ In relation to transmission systems, connection assets are defined as comprising DCAs (i.e. those assets that facilitate the connection of a generator or load customer) or network connection assets (i.e. those assets that provide connection services between NSPs, excluding Market Network Service Providers).³⁵

The focus of this rule change is on connection assets in the form of DCAs. DCAs are paid for by the respective connecting party and the services that they provide are, in broad terms, unregulated, i.e. they can be provided on a fully contestable basis.³⁶ This means that DCAs can be built, owned and operated by any party, including by the Primary TNSP. It also means that DCASPs have few obligations under the rules, including in relation to power system security or network performance requirements.

Primary TNSPs, while responsible for power system security on their transmission networks, are not accountable for system security outcomes on DCAs connected to their networks. Rather, they have the ability to disconnect DCAs in response to any power system security issues arising.

Going forward, the Commission does not consider it appropriate for Primary TNSPs to be able to disconnect entire large DCAs, which would mean disconnection of all generators and loads connected. Since the introduction of the TCAPA arrangements, there has been increased interest in the sharing of DCAs, and the Commission agrees with AEMO that maintaining the ability of Primary TNSPs to disconnect entire large DCAs is likely to act as a disincentive to sharing.

³⁴ See definition of 'transmission system' in Chapter 10 of the NER.

³⁵ Note that a different definition applies in Victoria as an adoptive jurisdiction.

³⁶ Note that DCAs are subject to a registration requirement and large DCAs are subject to an access policy.

Further, and more generally, as DCAs increase in size and complexity, more robust arrangements for the management of power system security on these parts of the transmission system are required. Treating material additions to the transmission system as part of the transmission network, rather than as connection assets, ensures these assets are built and operated to the standard required for the 'network'. This allows for a more holistic development and safe and reliable operation of the transmission network as a whole.

Although operated in an integrated manner, transmission networks are composed of a variety of assets, that can be broadly categorised into two groups:

- **Consumer-funded assets:** Assets that are paid for by consumers through prescribed TUOS charges, with the TNSP providing the respective transmission services as a prescribed transmission service. These assets account for the majority of those forming most transmission networks.
- **Third party-funded assets:** Assets that are paid for by third parties (e.g. market participants, investors, or other) as a negotiated transmission service, including IUSAs and funded augmentations.

To give effect to the Commission's preferred approach requires treating certain assets that would, under the current rules, be connection assets as a type of third party-funded network asset instead.

2.3 New concept of 'DNAs' to replace 'large DCAs'

The more preferable final rule is based around the concept of DNAs, which is used to incorporate these material additions to the transmission system into the transmission network. As these assets continue to be funded by third parties, they will not provide prescribed transmission services, in contrast to the majority of a Primary TNSP's network.³⁷

One or more generators or large load customers could be connected to a DNA. To reflect this, the final rule links the concept of an 'identified user group' to the concept of 'designated network asset'. As a result, an 'identified user group' refers to one or more persons that are connected to a DNA.³⁸

Consequently, the concept of a DCA continues to apply to connection assets that facilitate the connection of a person to the transmission network at its own TNCP.³⁹ As now, a DCA would only be used for the purpose of forming a connection to a transmission network at a single TNCP. That is, a DCA could not connect to another DCA.

The Commission notes that providing any clear and unambiguous definition of what constitutes a 'material addition' to the transmission system is likely to involve a degree of arbitrariness. However, the Commission considers it unlikely that anything that would currently be covered by the definition of small DCA would be of sufficient size and complexity to be of concern.

³⁷ See limb (d)(1) of the definition of 'designated network asset' under Schedule 4 of the National Electricity Amendment (Connection to dedicated connection assets) Rule 2021 (**Amending Rule**).

³⁸ See definition of 'identified user group' under Schedule 4 of the Amending Rule.

³⁹ See definition of 'dedicated connection asset' under Schedule 4 of the Amending Rule.

On that basis, to distinguish between the concepts of a 'DCA' and a 'DNA', the Commission has used the existing 30km total route length threshold (with regard to any power lines that form the asset) that is used to differentiate between small DCAs and large DCAs. In essence, DNAs replace large DCAs as a concept in the rules. DCAs comprise only those assets that are small DCAs in the existing rules, resulting in the following outcomes under the final rule:⁴⁰

- **Dedicated connection asset:** assets including power lines that have a route length of less than 30km. However, a DCA can be a DNA if the owner decides to voluntarily opt-in the new framework and has chosen to enter into a NOA with the Primary TNSP.⁴¹
- **Designated network asset:** assets including power lines that have a route length of 30km or more, or less than 30km where the owner of those assets has chosen to have them treated as DNA.⁴²

2.4 The new framework for DNAs

When designing the new framework for DNAs, the Commission sought to answer the following questions:

- **Type of connection points:** Establishment of TNCPs or a different type of connection point?
- **Access regime:** Open access or a special access regime?
- **Contestability arrangements:** Full or limited contestability?

The following sections provide an overview of the Commission's design decisions when developing the framework for DNAs.

2.4.1 Type of connection points

A logical outworking of treating DNAs as part of the transmission network is that the connection points established where connection assets connect to the DNA can be TNCPs, in the same way that they would be anywhere else on a transmission network.

The establishment of TNCPs allows for the application of key NER requirements to parties connected to a DNA at their individual TNCPs consistent with the existing NER framework. This includes metering and settlement, as well as provisions for the negotiation and application of performance standards and the arrangements for system strength.

The Commission considered whether any changes to the existing NER arrangements are necessary in the context of TNCPs on a DNA and concluded that the following minor amendments are required. The more preferable final rule introduces:

- **Arrangements for recovery of TUOS charges:** TUOS charges are levied on load customers at TNCPs, consistent with the existing NEM arrangements. TNSPs' Cost Reflective Network Pricing (CRNP) models therefore need to include DNAs, but at zero

⁴⁰ See definitions of 'dedicated connection asset' and 'designated network asset' under Schedule 4 of the Amending Rule.

⁴¹ See limb (c)(2) of the definition of 'designated network asset' under Schedule 4 of the Amending Rule and Note in definition of 'dedicated connection asset' regarding conversion under clause 11.139.4.

⁴² See the definition of 'designated network asset' under Schedule 4 of the Amending Rule.

cost to ensure that a customer connected to a DNA is not charged TUOS for an asset it has funded.⁴³

- **Arrangements for loss factors:** A transmission loss factor is calculated for each facility connected to a DNA, consistent with the current NEM arrangements. However, the more preferable final rule includes a new requirement to calculate a loss factor at the boundary point⁴⁴ and a new mechanism to calculate the intra-regional settlement residues accruing from losses on DNAs and pass these on to DNA owners.⁴⁵

Appendix B provides further detail on the application of key NER arrangements at TNCPs on DNAs.

2.4.2

Access regime

Currently, the 'shared' transmission network is subject to an open access regime. This presents a free-rider problem. Generators are reluctant to fund network capacity when there is no guarantee of their ability to use this capacity and when their competitors can use these assets without having contributed to the cost of building, operating and maintaining them.

To address this issue in the context of the current rule change, the more preferable final rule provides that open access does not apply to DNAs. Instead, a special third party access regime, similar to the existing third party access regime that currently applies to large DCAs, applies to DNAs.⁴⁶ Access to DNAs will be managed by the party owning the DNA, i.e. the DNA owner. The more preferable final rule introduces a requirement on the DNA owner to put access policies in place for DNAs that provide guidance to access seekers. This special access regime thereby protects investment made by first movers, while also enabling efficient use of the network by facilitating subsequent connections to existing DNAs. To achieve these objectives, the DNA access regime in the final rule has three key features:

- **DNA owner to administer DNA access:** The DNA owner is required to provide third party access if an access seeker is complying with all requirements under the rules and willing to pay the price set by the DNA owner. Complying with its obligation to provide access may require the DNA owner to increase the capacity of the DNA to facilitate a new connection (if possible, but there is no requirement to replicate or extend the DNA if increasing its capacity is not possible),⁴⁷ with at least the cost of such an increase in capacity being able to be recovered from the access seeker.⁴⁸
- **'Negotiate-arbitrate' framework based on negotiating principles:** Negotiations between a DNA owner and an access seeker are based on S5.12 *Negotiating principles for DNA services* and clause 5.2A.8 *Access framework for designated network assets*. The negotiating principles regulate the rights and obligations of existing connected parties, the DNA owner and new connecting parties.

43 See S6A.3.2 under Schedule 3 of the Amending Rule.

44 See clause 3.6.2B under Schedule 1 of the Amending Rule.

45 See clause 5.2A.7(e)(7)(ii) under Schedule 2 of the Amending Rule.

46 See clause 5.2A.8 under Schedule 2 of the Amending Rule.

47 Principle 5(d) under S5.12 under Schedule 2 of the Amending Rule and the definition of DNA services, limb (a).

48 Clause 5.2A.8(l) and Principle 1(1) under S5.12 under Schedule 2 of the Amending Rule.

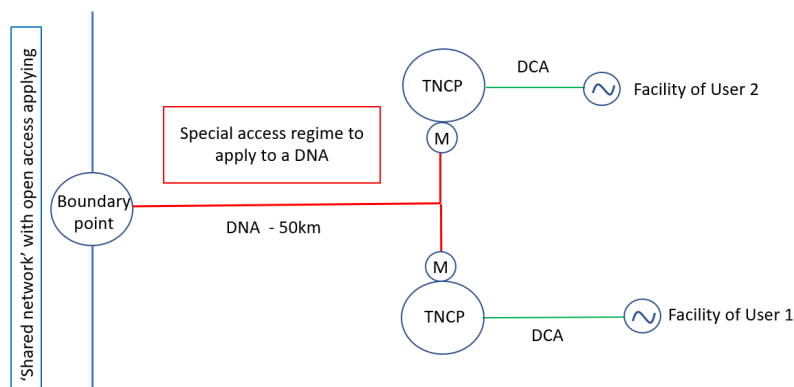
- **Access policy based on the negotiating principles:** To facilitate effective access negotiations, the DNA owner is required to develop and publish a DNA access policy, based on the negotiating principles for DNAs. The access policy, which provides essential information to access seekers, must be approved by the AER.⁴⁹

Until such time as broader access reforms are applied across the shared network as a whole, the Commission considers that the type of special access protections contemplated is only workable on radial transmission elements. If a DNA was looped or meshed into the wider network, electricity flows associated with generators connected outside of the DNA would flow across it. This would impact the amount of power transfer capacity on the DNA available to connected parties and make it impossible to robustly protect their access to the DNA. Therefore, the more preferable final rule limits DNAs to being radial assets.⁵⁰

The more preferable final rule also introduces the concept of a 'boundary point' to delineate between the application of different access regimes on specific parts of a Primary TNSP's network.⁵¹ That is, the concept is used to define the boundary between those assets that form part of the 'shared' network (which is subject to open access) and those assets which form part of the DNA (which is subject to the special access regime). If there are multiple DNAs located behind a boundary point, access to each DNA will be governed by the access policy of the respective DNA owner.

Figure 2.1 illustrates the proposed application of a special access regime on a DNA based on the definition of a 'boundary point':

Figure 2.1: Framework for DNAs with a special access regime



Source: AEMC.

Appendix C provides further detail on the third party access regime for DNAs.

⁴⁹ Clause 5.2A.8(c) under Schedule 2 of the Amending Rule.

⁵⁰ See limb (c)(2) of the definition of 'designated network asset' under Schedule 4 of the Amending Rule.

⁵¹ See definition of 'boundary point' under Schedule 4 of the Amending Rule.

2.4.3 Contestability arrangements

The AEMC's 2017 TCAPA Rule introduced a clear distinction between contestable and non-contestable transmission services relating to assets relevant to the connection of a connecting party:⁵²

- **Contestable:** Any party, including the Primary TNSP, can provide that service as a non-regulated transmission service on request from a connection applicant.
- **Non-contestable:** The Primary TNSP has the exclusive right to provide that service and must negotiate under Rule 5.3 of the NER to do so as a negotiated transmission service on request from a connection applicant.

Depending on the type of asset, i.e. network or connection asset, the respective transmission services that are required to facilitate a connection, e.g. construction, ownership and operation of an asset, can either be provided on a contestable or non-contestable basis. Currently, the provision of all services in relation to a DCA (small and large) can be provided on a fully contestable basis, that is to say that any party (including the Primary TNSP) can design, construct, own and operate/maintain a DCA on an unregulated basis.

In contrast, for an IUSA, only the services of detailed design, construction and ownership are contestable. The services of setting the functional specification, carrying out cut-in works, and operation and maintenance (O&M) are non-contestable transmission services. Accordingly, the Primary TNSP has to provide these services on a negotiated basis. This is due to the fact that an IUSA forms part of the Primary TNSP's network (i.e. it cannot be isolated from the electricity flows on the shared transmission network) and the Primary TNSP is accountable for outcomes on the shared transmission network.⁵³ Allowing for contestability in O&M of an IUSA would not be consistent with maintaining this single point of accountability for outcomes on the shared transmission network.

Under the new DNA framework the Primary TNSP is responsible for control, operation and maintenance of these assets as well as setting the functional specifications for DNAs.

This represents a change to the current contestability arrangements for large DCAs that were established by the TCAPA Rule, where all services are fully contestable. For the avoidance of doubt, DCAs - that is assets that would be currently classed as small DCAs - remain fully contestable under the final rule.

The current contestability arrangements for IUSA provide an existing framework that can be used to facilitate contestability in the detailed design, construction and ownership of DNA, whilst providing for O&M (and the setting of the functional specification) to be undertaken by the Primary TNSP.

Appendix D provides further detail on the contestability and contractual arrangements under the new framework for DNAs.

⁵² Clause 5.2A.4 of the NER.

⁵³ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. iv.

2.5 Approach to implementation of the new rule

The existing rules theoretically allow, but practically make it too difficult, to connect multiple parties to the same DCA. Given that the existing arrangements are largely 'unworkable', the Commission considers a commencement date for the more preferable final rule as soon as practicable is desirable. Consequently, the substantive parts of the new rule will commence 2 weeks after the final rule is published.

To allow for enough time for parties to comply with the new framework, especially for Primary TNSPs given their increased responsibilities in terms of setting the functional specification and O&M of DNAs, the final rule:

- provides for an additional allowance period of 60 business days from the commencement date for the Primary TNSP to respond to connection enquiries to establish new DNAs, and
- extends the standard time for an NSP to respond to a connection enquiry to establish a new DNA to 40 business days.

Appendix E provides further detail on implementation, savings and transitional arrangements.

3 THE RULE MAKING PROCESS AND THE COMMISSION'S CONSIDERATIONS IN MAKING THE FINAL RULE

This chapter outlines:

- the rule making process for this rule change
- the rule making test for changes to the NER and the more preferable rule test, as well as:
 - the Commission's considerations in deciding whether to make a uniform or differential rule in accordance with the Northern Territory legislation adopting the National Electricity Law (NEL),⁵⁴
 - the reasons the final rule does not apply in Victoria, and
 - the Commission's considerations with regard to the form of regulation factors and the revenue and pricing principles
- the Commission's assessment framework, and assessment of the final rule against the assessment framework for considering the rule change request against the national electricity objective (NEO), and
- the Commission's assessment of the proposed rule relative to the more preferable final rule against the NEO.

Further information on the legal requirements for making this more preferable final rule is set out in Appendix A. Further details and reasoning for the more preferable final rule are provided in Appendices B to F of this final rule determination.

3.1 The rule making process

On 5 March 2020, the Commission published a notice advising of its commencement of the rule making process and consultation in respect of the rule change request.⁵⁵ A consultation paper identifying specific issues for consultation was also published. Submissions closed on 2 April 2020.⁵⁶

The Commission received 17 submissions as part of the first round of consultation in response to the publication of the consultation paper. As part of the second round of consultation, the Commission received 23 submissions in response to the publication of its 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.⁵⁷

⁵⁴ National Electricity (Northern Territory)(National Uniform Legislation) Act 2015.

⁵⁵ This notice was published under s.95 of the NEL.

⁵⁶ The consultation paper is available on the AEMC's website.

⁵⁷ Appendix H discusses any outstanding issues raised in stakeholder submissions to the draft rule determination that are not discussed in Appendices B to G.

The AEMC held two stakeholder webinars following receipt of submissions to discuss the Commission's emerging thinking. The first stakeholder webinar was held on 7 July 2020 and the second was held on 6 October 2020.⁵⁸ Further, the AEMC held a stakeholder round table on 25 March 2021 to discuss the issue of the DNA access regime with TNSPs, renewable energy developers, generators, large load customers, and government bodies who have extensively participated throughout this rule change process.

3.2 Rule making test

3.2.1 Achieving the NEO

Under the NEL, the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO.⁵⁹ This is the decision-making framework that the Commission must apply.

The NEO is:⁶⁰

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

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

3.2.2 Making a more preferable rule

Under section 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.

In this instance, the Commission has made a more preferable final rule. The reasons are summarised below in Section 3.3 and detailed further in Appendices B to F.

3.2.3 Making a differential rule

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant Ministerial Council on Energy (MCE) statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:
 - the national electricity system, and
 - one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

⁵⁸ The slides presented at the AEMC's stakeholder webinars are available on the AEMC's website.

⁵⁹ Section 88 of the NEL.

⁶⁰ Section 7 of the NEL.

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

As the final rule relates to parts of the NEL that apply in the Northern Territory, the Commission has assessed the final rule against additional elements required by the Northern Territory legislation.⁶¹

The Commission has determined not to make a differential rule. However, as Chapters 5 and 10 of the NEL apply in the Northern Territory, the amendments made by this rule change will have some application in the Northern Territory. The Northern Territory modification regulations modify the application of these chapters in the Northern Territory, and therefore, further changes may be required to those regulations as a result of this rule change. The Commission will liaise with the Northern Territory in this regard.

3.2.4

Non-application of the final rule in Victoria

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 the Australian Energy Market Operator (AEMO) is authorised to exercise declared network functions in Victoria - currently the only NEM jurisdiction where AEMO is authorised to exercise these functions. Box 1 explains the arrangements that apply in Victoria.

BOX 1: TRANSMISSION CONNECTIONS IN VICTORIA

Victoria is the only jurisdiction in the NEM where AEMO has declared network functions.^[1] 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. 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 and certain provisions of Chapters 5 and 8 of the NEL. This means that the process for how parties connect to the transmission network is different to other jurisdictions, which only follow the process set out in Chapter 5 of the NEL.

Broadly, AEMO is responsible for assessing all new generator, load, MNSP, embedded network and Distribution Network Service Provider (DNSP) connections against the NEL requirements. However, AEMO is *not* responsible for providing the assets associated with connection. For generators and large loads, normally the assets associated with connection are provided by a supplier of the connecting party's choice.

As a result, the following process applies to transmission connections in Victoria:

⁶¹ From 1 July 2016, the NEL, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under NT legislation adopting the NEL. Under those regulations, only certain parts of the NEL have been adopted in the NT (see the AEMC website for the NEL that applies in the NT, National Electricity (Northern Territory) (National Uniform Legislation) Act 2015).

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- If a connection requires an augmentation to the declared shared network, e.g. the construction of a new substation, 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
 - ask AEMO to select the DTSO, with AEMO running a competitive 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.
- Regardless of whether the augmentation is contestable or not, AEMO provides the equivalent of a 'functional specification' that the provider of the assets must use.

As a result of these differences, the contractual agreements for a connection in Victoria also differ from other jurisdictions.

Source: AEMC.

Note: [1] See Part 5, Division 2 of the NEL on AEMO's declared network functions. For a comprehensive overview of the process for transmission connections in Victoria, see AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, chapter 6.

The NEL restricts the AEMC's ability to make rules in relation to AEMO's declared network functions. 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;⁶² or
- a Minister of an adoptive jurisdiction, i.e. the Victorian Minister.⁶³

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.⁶⁴

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, ie the Victorian Minister.⁶⁵

62 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.

63 See section 91(7) of the NEL.

64 See section 91(8) of the NEL.

65 See section 91(9) of the NEL.

The Commission considers that the scope of the rule change request sought changes to the connections framework in jurisdictions where AEMO does not exercise its declared network functions and therefore the rule change request does not include consideration of the application of the final rule to AEMO's declared network functions. Therefore, changes to the transmission connections framework under the final rule will not apply in Victoria. To reflect this, the final rule provides that amendments to relevant clauses in Chapters 2, 5, 8 and 10 do not apply in relation to connection and access to a 'declared transmission system'. The consequent implications of those concepts as they relate to the changes made by the final rule to Chapters 3 and 6A, therefore, similarly do not apply to Victoria.

Further, the rule change does not meet the requirements for the making of the rule regulating AEMO's declared network functions because the connections framework in Victoria and AEMO's declared network functions is so fundamentally different to other jurisdictions (i.e. connection process to transmission network, the nature of the contestable assets, the procurement model and AEMO's role). In this way, the final rule is not compatible with the proper performance of AEMO's declared network functions and accordingly the Commission has concluded that it does not have the power to make rules in relation to this final rule in Victoria.

3.2.5

Other requirements under the NEL

In making this final rule, the Commission has also had regard to:

- **The form of regulation factors:** Under section 88A of the NEL, the Commission must take into account the form of regulation factors when making a Rule that specifies an 'electricity network service' as a 'negotiated network service'.⁶⁶ Under the more preferable final rule, a Primary TNSP will be required to provide the services of setting the functional specification and control, operation and maintenance of a DNA that forms part of its network as a negotiated transmission service. In particular, the Commission considers that the countervailing market power of prospective network service users lends weight to the conclusion that the network service should be specified as a negotiated network service.⁶⁷
- **The revenue and pricing principles:** Under section 88B of the NEL, the Commission must take into account the revenue and pricing principles if the Rule being made relates to transmission system revenue and pricing, i.e. items 15 to 24 of Schedule 1 to the NEL. In broad terms, the principles relate only to services that are directly regulated by the AER, and so are therefore not very relevant to the more preferable final rule. However, the final rule makes very minor amendments to the process for the calculation of TUOS charges (which recover revenues directly regulated by the AER), to allow these to be levied directly on customers connected to DNAs. The Commission does not consider that these amendments have any material impact on the consistency of the NEL with the revenue and pricing principles.⁶⁸

⁶⁶ The form of regulation factors are set out in section 2F of the NEL.

⁶⁷ Section 2F(d) of the NEL.

⁶⁸ The revenue and pricing principles are set out in section 7A of the NEL.

Appendix A provides further detail on both of these requirements.

3.3 Summary of reasons for making the more preferable final rule

The Commission used an assessment framework to evaluate whether the more preferable final rule is likely to promote the NEO.

In assessing the more preferable final rule against the NEO the Commission has considered the following principles:

- **Ensuring power system security:** It is important that AEMO can maintain power system security by ensuring the system remains within a safe operating state and TNSPs have clear, singular accountability for the operation, control and maintenance of the transmission network within a region. To achieve this goal, NSPs and AEMO also need certainty that new transmission infrastructure and the equipment connected to the network allows them to operate the power system in accordance with the system standards and the relevant power system and market operation obligations.
- **Efficient investment, provision, and use of transmission services:**
 - *Efficient investment in transmission infrastructure:* The regulatory framework should promote efficient investment in transmission infrastructure. For this rule change it is important that the final rule provides a framework that facilitates merchant transmission infrastructure (e.g. "market driven" investment, with decisions to invest made by specific market participants).
 - *Efficient provision of transmission infrastructure:* As costs resulting from inefficiencies in the provision of transmission infrastructure are ultimately borne by consumers, changes that reduce inefficiencies in the provision of transmission services are in the long-term interests of consumers. In this case a key issue is whether the framework facilitates competition in the provision of transmission infrastructure through contestability of such services.
 - *Efficient use of transmission infrastructure by encouraging efficient connection of generation:* Regulation should facilitate an efficient use of transmission assets by connecting parties, which in turn also influences parties' decisions whether to connect and/or invest in particular transmission assets or equipment. A key consideration in this rule change is whether the framework facilitates multiple generators and/or large loads being able to efficiently use merchant transmission assets.
- **Promoting transparency and regulatory certainty:** Regulation should provide market participants with clarity and certainty regarding their respective roles and responsibilities. Connection applicants seeking to connect to the power system should have clarity regarding the connection process and what levels of performance they will be expected to meet. Parties should also have certainty regarding the legal frameworks which govern their interaction with one another to ensure fairness and effective market operation. Clarity and certainty is achieved through the adequate provision of information. Readily available information can support effective decision-making and the delivery of efficient outcomes. In relation to network 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 negotiating parties.

- **Appropriate allocation of risk:** The allocation of risks and the accountability for investment and operational decisions should rest with those parties best placed to manage them which ultimately leads to lower costs for consumers:
 - Connecting parties make investment decisions and are accountable for compliance with performance standards to ensure the safe operation of their equipment connected to the network.
 - AEMO is best placed to manage system security risks, which includes ensuring connected parties' compliance with their performance standards.
 - Transmission and distribution network businesses are best placed to make operational decisions to ensure their networks remains in a secure and reliable state and thereby guarantee quality of supply provided to network users.
- **Reducing complexity and administrative burden:** Regulatory arrangements should be as simple as practicable to achieve their intended objectives. Where regulation is unnecessarily complex it imposes risks and increased administrative costs for market participants. These costs may be passed through to consumers in the form of higher prices for electricity. Where possible, the regulatory framework should minimise additional regulatory burden and increases in administrative costs.

3.3.1 Ensuring power system security

By treating DNAs as part of the 'network' and establishing individual TNCPs at the facility end of a DNA, the more preferable final rule provides AEMO with increased visibility of these assets. Furthermore, it allocates accountability for operation and maintenance of these material additions to the network to the Primary TNSP. Although these assets are funded by third parties (and not consumers), it is important that material additions to the transmission network still meet the same standards as the rest of the network since these assets (if they are of a material size in terms of length or generation capacity/load connected) can affect system safety, reliability and security.

Further, the more preferable final rule ensures that the requirements for equipment connecting to the transmission network are the same for every connecting party at a TNCP. This means AEMO and NSPs can better identify non-compliance with individual performance standards and, if necessary, disconnect individual plant, in order to maintain power system security.

3.3.2 Efficient investment in, provision and use of transmission services

The more preferable final rule facilitates efficient investment in, provision and use of transmission services through the access and contestability arrangements that apply to DNAs under the more preferable final rule. In particular:

- **Efficient investment in transmission infrastructure:** The new framework for DNAs facilitates investment by a range of third parties in radial transmission infrastructure by providing for the application of a special access regime (instead of the access regime

which applies to the meshed shared transmission network), the establishment of individual TNCPs and the DNA owner controlling access to its asset:

- *Application of a special access regime for DNAs:* The new framework overcomes the free-rider problem where generators are reluctant to fund network capacity when there is no guarantee of their ability to use this capacity and when their competitors can use these assets without having contributed to the cost of them. Under the special access regime, connecting parties have the assurance that they can use the assets they have funded without other subsequently connecting parties having an impact on their use of these assets, i.e. in terms of their power transfer capability. A feature of the special access regime is that the responsibility for DNA access rests with the DNA owner, i.e. the party that made the investment in the asset, controls third party access under the special access regime. This also includes that the DNA owner can charge subsequent access seekers for access to the DNA. This overcomes the free-rider problem. Further, the new DNA regime has a large degree of inherent flexibility, based on negotiate-arbitrate regulation, with access negotiations being 'bound' by the access policy and the negotiating principles under S5.12 of the NER.
- *Establishment of individual TNCPs:* Through the establishment of individual TNCPs on DNAs the new framework allows for more efficient investment in transmission infrastructure as compared to the existing large DCA regime, which does not provide sufficient incentives for investors to build these assets due to the limitations to connect and recover the costs from multiple parties. The final rule promotes the scale efficient investment in lumpy transmission infrastructure to serve multiple connecting facilities.
- **Efficient provision of transmission infrastructure:**
 - Although the more preferable final rule reduces contestability compared to the existing arrangements for large DCAs, it allows contestable ownership, design and construction. In the final determination for the TCAPA Rule, the Commission presented analysis suggesting that construction costs are the largest driver of overall connection costs, and that contestability in both the detailed design and construction has significant potential to reduce these costs.⁶⁹ Likewise, competition for the provision of detailed design services has the potential encourage innovation in the way DNAs are built to meet the Primary TNSP's functional specification.
 - The Commission acknowledges that requiring the Primary TNSP to provide for the functional specification and O&M for DNAs represents a reduction in contestability compared with the existing framework for large DCAs. However, the Commission considers this reduction in contestability is necessary in order to facilitate the establishment of individual TNCPs on DNAs and apply the existing regime for power system security, which requires that DNAs form part of the Primary TNSP's network.
- **Efficient use of transmission infrastructure by encouraging efficient connection of generation:**

⁶⁹ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. 147.

- Treating DNAs as 'network' under the new framework allows for different parties to more effectively and efficiently share material additions to the transmission network than under the current large DCAs framework. The new framework thereby facilitates investment with the objective of 'sharing' network assets, for example in the form of Renewable Energy Zones (REZs), from a range of investors, e.g. third party investors and governments.
- The new DNA third party access regime also enhances the existing large DCA access framework to facilitate sharing of DNAs. It maintains the inherent flexibility, based on negotiate-arbitrate regulation, of the existing framework. It then enhances it through clarifications of existing principles and additional transparency measures to facilitate effective negotiations between connecting parties and DNA owners. Ultimately these improvements are likely to lead to a greater level of sharing of DNAs and more efficient use of transmission infrastructure.
- As noted above, under the special access regime, connecting parties have the assurance that they can use the assets they have funded without other subsequently connecting parties having an impact on their use of these assets. This promotes efficient investment in transmission infrastructure, but may come at the expense of the efficient utilisation of that infrastructure. For example, where another party may value use of the asset more highly but cannot due to the design of the access regime. The Commission considers that that special access regime strikes the appropriate balance for this important trade off.

3.3.3 Promoting transparency and regulatory certainty

The more preferable final rule improves transparency and regulatory certainty through the provision of relevant information to different parties:

- Information regarding non-compliance with performance standards to AEMO and TNSPs through the application of NEM arrangements as individual TNCPs
- Information to DNA access seekers through requiring the DNA owner to include in its access policy a pricing methodology, timeframes for negotiation and information regarding the possibility to increase the capacity of the DNA. Further, a DNA owner is also required to publish supporting information on its website regarding the current utilisation of the DNA, to facilitate more effective access negotiations.

3.3.4 Appropriate allocation of risk

Based on the establishment of individual TNCPs for each party connecting to a DNA, the final rule allocates responsibility for compliance with its individual performance standards to each connecting party, consistent with the existing arrangements at TNCPs elsewhere on the network. This removes the risks that currently exist under the arrangements for DCAs with regard to singular accountability for compliance with performance standards and thereby facilitates non-compliance identification and enforcement through NSPs, AEMO and the AER.

3.3.5 Reducing complexity and administrative burden

The treatment of DNAs as 'network' significantly reduces complexity and administrative burden through the following features of the new regime:

- The establishment of TNCPs at the facility end of DNAs under the new framework minimises complexity by facilitating the application of key NER requirements to parties connected to a DNA at their individual TNCPs consistent with the existing NER framework (or with minor amendments).
- The Commission considers the changed contestability arrangements and treatment of DNAs as 'network' is justified by the likely increased prevalence of multiple users on connection assets.
- The requirement for a person owning, controlling or operating a connection assets to register as a DCASP in respect of its asset is removed under the new framework.

3.4 Comparison of the more preferable final rule against the proposed and draft rules

The Commission has concluded that the Commission's more preferable rule better achieves the NEO than AEMO's proposed rule. The proposed rule would introduce a number of risks by:

- blurring the distinction between network and connection assets
- introducing ambiguity in relation to the allocation of responsibilities for the negotiation of performance standards and system strength, and
- driving increased complexity in the management of power system security.

The Commission's view is that, having regard to the issues raised in the rule change request, the more preferable final rule will, or is likely to, better contribute to the achievement of the NEO than the proposed rule, in that it allows for:

- reduced complexity by strengthening the role of the Primary TNSP (and removing the concept of a DCASP) and ensuring each connecting party has a direct contractual relationship with the Primary TNSP
- the continued application of a special third-party access regime for transmission assets funded by parties other than consumers, and
- contestability with regard to design, construction and ownership, whilst requiring the Primary TNSP to provide the functional specification in order to control, operate and maintain material additions to the network.

The more preferable final rule is also likely to better contribute to the achievement of the NEO than the more preferable draft rule. In particular, the final rule facilitates increased efficient investment in transmission infrastructure by allocating the responsibility for administering third party access to the DNA owner (instead of the Primary TNSP), ensuring that the party that made the investment in the asset controls access to it.

Each of these aspects is discussed in Appendices B to D.

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	Annual Service Revenue Requirement
COAG Energy Council	Council of Australian Governments Energy Council
Commission	See AEMC
CRNP	Cost Reflective Network Pricing
DCA	Dedicated Connection Asset
DCASP	Dedicated Connection Asset Service Provider
DNA	Designated Network Asset
DNSP	Distribution Network Service Provider
DTSO	Declared Transmission System Operator
ESB	Energy Security Board
FRMP	Financially Responsible Market Participant
FTR	Financial Transmission Rights
IBR	Inverter based resources
IRSR	Intra-Regional Settlement Residues
IUSA	Identified User Shared Asset
KW	Kilowatt
KWh	Kilowatt Hour
LNSP	Local Network Service Provider
MC	Metering Coordinator
MCE	Ministerial Council on Energy
MDP	Metering Data Provider
MLF	Marginal loss factor
MNSP	Market Network Service Provider
MW	Megawatt
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NMI	National Metering Identifier
NOA	Network Operating Agreement
NSP	Network Service Provider
PTNSP	Primary Transmission Network Service Provider
REZ	Renewable Energy Zone

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RRN	Regional Reference Node
RRP	Regional Reference Price
TCAPA	Transmission Connections and Planning Arrangements
TLF	Transmission Loss Factor
TNCP	Transmission Network Connection Point
TNSP	Transmission Network Service Provider
TUOS	Transmission Use of System

A LEGAL REQUIREMENTS UNDER THE NEL

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

A.1 Rule making test

Achieving the NEO

Under the NEL, the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).⁷⁰ This is the decision-making framework that the Commission must apply.

The NEO is:⁷¹

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

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

A.2 Final rule

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

The Commission's reasons for making this final rule determination are set out in Chapter 2 of this final rule determination.

A copy of the more preferable final rule (final rule) is attached to and published with this final rule determination. Its key features are summarised in Chapter 2 and described in further detail in the Appendices of this determination.

A.3 Power to make the rule

The Commission is satisfied that the final rule falls within the subject matter about which the Commission may make rules. The more final rule falls within s.34 of the NEL 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 final rule falls within matters set out in schedule 1 to the NEL as it relates to:

⁷⁰ Section 88 of the NEL.

⁷¹ Section 7 of the NEL.

- the registration of persons as registered participants or otherwise for the purposes of the NEL and the NER, including the de-registration 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
- 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.

A.4 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 first round consultation
- submissions received during second round consultation following the publication of the draft determination
- stakeholder feedback received during the round table discussion as well as numerous bilateral meetings
- 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 factors⁷²
- the revenue and pricing principles.⁷³

There is no relevant Ministerial Council on Energy (MCE) statement of policy principles for this rule change request.⁷⁴

The Commission may only make a rule that has effect with respect to an adoptive jurisdiction if satisfied that the proposed rule is compatible with the proper performance of AEMO's declared network functions.⁷⁵ The more preferable final rule is compatible with AEMO's declared network functions because it does not change those functions.

⁷² Part 1, section 2F and section 88A of the NEL.

⁷³ Part 1, section 7A and section 88B of the NEL.

⁷⁴ 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. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated council was called the COAG Energy Council and is now called the Energy Ministers Meeting.

⁷⁵ Section 91(8) of the NEL.

A.4.1 Form of regulation factors

Determining which form of economic regulation should apply to a network service (or no regulation at all) is a trade off between:

- the direct and indirect cost of regulation, and
- the effectiveness at limiting the exercise of market power held by the service provider of a network service provider.

All else equal, relatively heavy-handed regulation (such as direct revenue control) tends to come at a higher cost, but be more effective at limiting the exercise of market power, compared to less heavy-handed regulation such as negotiate-arbitrate regimes.

Under s.88A of the NEL, the Commission must take into account the form of regulation factors when making a rule that specifies an 'electricity network service' as a 'negotiated network service'. Under the final rule, the services of setting the functional specification and control, operation and maintenance of a DNA are classified as non-contestable transmission services, i.e. the Primary TNSP has the exclusive right to provide that service and must negotiate under rule 5.3 to do so as a negotiated transmission service.⁷⁶

The form of regulation factors assist in determining the extent of market power the service provider is likely to have, and hence whether the possible gains from limiting the market power are likely to be significant. If so, this implies that a more heavy-handed form of regulation may be appropriate, despite the costs. Conversely, if the extent of market power is likely to be limited, as determined by considering the form of regulation factors, then less heavy-handed regulation may be more appropriate.

The Commission had regard to the form of regulation factors as set out in s.2F of the NEL in determining that these services should be classified as negotiated transmission services. In particular, the Commission considers that market power possessed by a network service provider is, or is likely to be, mitigated by countervailing market power possessed by a network service user or prospective network service user,⁷⁷ This countervailing market power arises because the network service users are themselves likely to be companies that have significant resources to negotiate effectively. It is primarily for this reason that the Commission considers that the services of setting the functional specification and control, operation and maintenance of a DNA should be classified as negotiated services.

Additionally, the Commission considers that there is likely to be sufficient information available to a prospective network service user or network service user, and that this 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 services.⁷⁸ For example, and as discussed above, the Commission considers that on this basis the negotiating parties can effectively negotiate the exact terms and conditions of providing the services of operation and maintenance of a DNA in their network operating agreement for a specific asset.

⁷⁶ See clause 5.2A.4 under Schedule 2 of the Amending Rule.

⁷⁷ Part 1, section 2F(d) of the NEL.

⁷⁸ Part 1, section 2F(g) of the NEL.

Conversely, the Commission considers that there may be barriers to entry in the market for these electricity network services,⁷⁹ arising from interdependencies between the services and other electricity network service provided by the network service provider.⁸⁰ These findings suggest there is a requirement to constrain the market power of the network service provider in the provision of these services through the negotiate-arbitrate regime.

A.4.2 Revenue and pricing principles

Under s.88B of the NEL, the Commission must take into account the revenue and pricing principles if the Rule being made relates to transmission system revenue and pricing.⁸¹ In broad terms, the principles relate only to services that are directly regulated by the AER, and so are therefore not very relevant to the final rule (which, in general, relates to negotiated transmission services and services not subject to any form of economic regulation). However, the final rule makes very minor amendments to the process for the calculation of TUOS charges (which recover revenues directly regulated by the AER), to allow these to be levied directly on customers connected to DNAs. The Commission does not consider that these amendments have any material impact on the consistency of the NER with the revenue and pricing principles.⁸²

A.4.3 Application in Victoria

The Commission 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.⁸³

AEMO is authorised to exercise declared network functions in Victoria, currently the only NEM jurisdiction where AEMO is authorised to exercise these functions. As a result, 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.

Given the rule change does not meet the requirements for making a rule regulating AEMO's declared network functions, the Commission has concluded that it does not have the powers to make rules in relation to this rule change in Victoria.

A.4.4 Application to Northern Territory

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a differential rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:

79 Part 1, section 2F(a) of the NEL

80 Part 1, section 2F(b) of the NEL.

81 Principles 15 to 24 of Schedule 1 to the NEL.

82 The revenue and pricing principles are set out in section 7A of the NEL.

83 Section 91(8) of the NEL.

- the national electricity system, and
- one or more, or all, of the local electricity systems, or
- 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.

As the proposed rule related to parts of the NEL that apply in the Northern Territory (i.e. Chapters 5 and 10), the Commission has assessed the more preferable final rule against additional elements required by the Northern Territory legislation.⁸⁴

The Commission has determined not to make a differential rule. However, as Chapters 5 and 10 of the NEL apply in the Northern Territory, the amendments made by this rule change will have some application in the Northern Territory. The Northern Territory modification regulations modify the application of these chapters in the NT, and therefore, further changes may be required to those regulations as a result of this rule change. The Commission will liaise with the Northern Territory in this regard.

A.5 Civil penalties

The Commission cannot create new civil penalty provisions. However, it may, jointly with the AER, recommend to the Energy Ministers Meeting that new or existing provisions of the NEL be classified as civil penalty provisions. The NEL sets out a three-tier penalty structure for the NEL and NEL. A Decision Matrix and Concepts Table,⁸⁵ approved by Energy Ministers, provides a decision-making framework that the AEMC applies, in consultation with the AER, when undertaking the assessment of whether provisions of the Rules should be classified as civil penalties, and if so, under which tier. The AEMC makes the following recommendations. The AER has indicated it supports these recommendations.

A.5.1 Amended provisions

The Commission's final rule amends a number of clauses of the NEL that are currently classified as civil penalty provisions under Schedule 1 of the National Electricity (South Australia) Regulations (as set out in Table A.1 below). The Commission considers that these amended clauses should continue to be classified as civil penalty provisions and therefore will not recommend any change to their classification. While these clauses have been amended by the more preferable final rule, the content remains similar and therefore, they should continue to be classified as civil penalty provisions. The AER has indicated that it supports this recommendation.

⁸⁴ From 1 July 2016, the NEL, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL. Under those regulations, only certain parts of the NEL have been adopted in the NT. (See the AEMC website for the NEL that applies in the NT.) National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.

⁸⁵ <https://www.aemc.gov.au/regulation/energy-rules/civil-penalty-tools>

Table A.1: Amendments to existing civil penalty provisions

CLAUSE	NEW CLAUSE REFER- ENCE (WHERE APPLICA- BLE)	SUBJECT OF CLAUSE AND CHANGE
5.2.3(e)	N/A	A Network Service Provider must arrange for operation of that part of the national grid over which it has control in accordance with instructions given by AEMO. This clause is amended to remove DCASP.
5.2.7(b)	N/A	An owner of a designated network asset must plan, design and construct its designated network asset to comply with the applicable functional specifications (as specified by the Primary Transmission Network Service Provider) and the applicable network operating agreement. This clause is amended to replace DCASP and DCAs with designated network assets. The clause is also amended to take into account the compliance obligations under the new framework (namely, the requirement to comply with applicable performance and systems standards and the connection agreement is replaced with the requirement to comply with applicable functional specifications and the network operating agreement).
5.2A.6(c)	N/A	If an applicant seeks DNA services, the Transmission Network Service Provider must comply with its access policy and the negotiating principles in schedule 5.12. This clause is amended to replace large DCA services with DNA services and DCASP with Primary TNSP.
5.2A.7(a)	N/A	A person must not commission, or permit the commissioning of, a funded network asset unless there is a network operating agreement between the owner of that funded network asset and the Primary Transmission Network Service Provider. This clause is amended to replace third party IUSA with third party owned network asset.
5.2A.8(d)	N/A	Before a designated network asset is commissioned, the owner of a designated network asset must submit an access policy to the AER for approval. This clause is amended to replace large DCA and DCASP with designated network asset.
5.2A.8(l)	N/A	An owner of a designated network asset or a person who is provided DNA services must not engage in conduct for the purpose of preventing or hindering access to DNA services. This

CLAUSE	NEW CLAUSE REFER- ENCE (WHERE APPLICA- BLE)	SUBJECT OF CLAUSE AND CHANGE
		clause is amended to replace DCASP with designated network asset and large DCA services with DNA services.
5.3.3(b)	N/A	Response to a connection enquiry: the Network Service Provider must respond with specified information and perform certain actions in response to a connection enquiry. This clause is amended to replace IUSA concepts with designated network asset concepts.
5.3.6(a)	N/A	A Network Service Provider processing an application to connect must make an offer to connect the Connection Applicant's facilities to the network within certain timeframes. This clause is amended to make it subject to clause 5.3.6(a3) which requires a DNA owner to give notice to the Network Service Provider confirming access to DNA services has been agreed in accordance with the relevant access policy and providing any details on technical requirements or limitations that are relevant to the offer to connect.

Source: AEMC.

A.5.2

Deleted Provisions

The Commission's final rule removes two clauses from the NER (as set out in Table A.2 below) that are currently classified as civil penalty provisions. Therefore, the Commission will recommend these civil penalty provisions are changed. The AER has indicated that it supports this recommendation.

Table A.2: Deleted provisions that are currently classified as civil penalty provisions

CLAUSE	DELETED
2.5.1(d4)	This clause is removed from the NER and therefore the clause no longer needs to be classified as a civil penalty provision.
5.2A.7(e)	This clause is removed from the NER and therefore the clause no longer needs to be classified as a civil penalty provision.

Source: AEMC.

A.6 Conduct provisions

The Commission cannot create new conduct provisions. However, it may recommend that new or existing provisions of the NER be classified as conduct provisions.

The final rule does not amend any rules that are currently classified as conduct provisions under the NEL or National Electricity (South Australia) Regulations. The Commission does not propose to recommend to the Energy Ministers Meeting that any of the proposed amendments made by the final rule be classified as conduct provisions.

B TRANSMISSION NETWORK CONNECTION POINTS

This Appendix discusses the Commission's more preferable final rule in relation to the arrangements that will apply at individual TNCPs on a DNA. It provides a summary of the current arrangements, the draft rule and stakeholder views on the draft rule. It further discusses changes between the draft and the final rule, and reasons for these changes, in relation to the following issues:

- System and performance standards
- System strength
- Metering
- Recovering Transmission Use of System (TUOS) charges
- Transmission Losses.

B.1 System and performance standards

BOX 2: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There were no changes between the draft and final rule relating to the application of existing network and system standards to DNAs. There were also no changes to the application of performance standards at TNCPs on DNAs in line with the existing regulatory arrangements.

The DNA framework under the final rule builds on the creation of individual TNCPs at the facility end where a generator or large load customer connects to a DNA. To facilitate the establishment of individual TNCPs on DNAs requires these assets to be treated as 'network'.

Currently, DCAs are classified as 'connection assets',⁸⁶ which are separate from the Primary TNSP's network. Consequently, making DNAs form part of the 'network' represents a significant change in the regulatory treatment of these assets. As such, the Commission considers only material extensions of the network should be required to become 'network',⁸⁷ i.e. those assets that are currently captured by the concept of 'large DCAs' under the existing arrangements.⁸⁸

With regard to the relevant system and performance standards applying to DNAs and TNCPs located on DNAs, consistent with the draft rule, the Commission's final rule provides for the application of existing NER arrangements:

- **DNAs:** existing network and system standards will apply to these assets, and

⁸⁶ Except that they are treated as a 'transmission system' for the purposes of triggering registration under Chapter 2 of the NER.

⁸⁷ Treating DNAs as 'network' consequently requires changes to the contestability arrangements applying to these assets. Appendix D provides further detail on the contestability arrangements applying to DCAs and DNAs.

⁸⁸ However, assets that continue to be classified as 'DCAs' under the final rule and grandfathered assets can voluntarily opt-in the DNA framework.

- **TNCPs located on DNAs:** the existing arrangements for performance standards, system strength and metering will apply to TNCPs on DNAs.⁸⁹ The existing arrangements with small amendments will apply for transmission losses and recovery of TUOS charges.

B.1.1

Current Arrangements

Current arrangements for technical requirements and performance standards

Depending on the registration category, different conditions apply for the connection of a registered participant. Generators, customers and NSPs need to plan and design the equipment that they operate to comply with different sets of technical requirements as defined under the Rules. The following schedules in the NER contain relevant technical and performance requirements for registered participants:

- Schedule 5.1 — *Network Performance Requirements to be Provided or Coordinated by Network Service Providers*
- Schedule 5.2 — *Conditions for Connection of Generators*
- Schedule 5.3 — *Conditions for Connection of Customers*
- Schedule 5.3a — *Conditions for Connection of Market Network Services.*

In addition to the specific conditions that apply to the connection of different categories of registered participants, Schedule 5.1a of the NER defines system standards that are necessary or desirable for the safe and reliable operation of the facilities of all registered participants and equipment. A registered participant cannot rely on system standards being fully complied with at a connection point under all circumstances. However, a registered participant can expect to be informed of circumstances where the standard of supply at its connection point will not conform to the system standards. To achieve the system standards, technical requirements are placed on NSPs defining how they plan, design and operate their networks to deliver the system standards (through Schedules 5.1 and 5.3a).

Conditions for the connection of generators and large load customers

Chapter 5 of the NER provides the framework for connecting a generating system or large load customer to the grid. Generators and customers must plan, design and operate their facilities to comply with the performance standards applicable to their facilities, their connection agreement with the relevant NSP (i.e. a TNSP or distribution network service provider (DNSP)) and the system standards.

As part of negotiating a connection agreement with the relevant NSP, the NSP (who is advised on some matters by AEMO)⁹⁰ and the connection applicant agree on the level of performance for the equipment the applicant is seeking to connect to the power system. A key component of a connection agreement is the agreed performance standards that will apply to the connected equipment of a registered participant. For each technical requirement, the negotiation occurs within a range bounded by an automatic access standard (where a

⁸⁹ The arrangements for system strength are currently being considered by the AEMC through the rule change *Efficient management of system strength on the power system* (ERC0300). A draft rule determination was published on 29 April 2021.

⁹⁰ See definition of 'AEMO advisory matter' in Chapter 10 of the NER.

connection cannot be denied on the basis of that technical requirement) and a minimum access standard (below which a connection must be denied access) that are each set out in the NER. The negotiated performance standards become the relevant performance standards for a plant that is connected at a specific connection point.⁹¹

The connection point is where performance standards are established and monitored. Under the NER, a connecting party is responsible for complying with the performance standards for its facility. Further, under the NEL and NER, the AER is responsible for monitoring and enforcing compliance by registered participants, including in relation to compliance with their performance standards.⁹²

Chapter 4 of the NER sets out compliance obligations of registered participants and what happens in the event of a likely or actual breach of performance standards.⁹³

Negotiation of performance standards for generators and customers

Rule 5.3 specifies the process for establishing a connection for a generator or large load customer to a transmission network. It sets out the steps to be followed when negotiating a connection, including the negotiation of performance standards for a specific plant,⁹⁴ based on the technical requirements specified in the Rules.⁹⁵

In its response to a connection applicant's connection enquiry, the relevant TNSP provides certain information to the connection applicant, including written details of each of the technical requirements relevant to the proposed plant.⁹⁶ As part of its application for connection, for any technical requirement where the facility will not meet the automatic access standard, the applicant must submit a proposal for a negotiated access standard.⁹⁷ When proposing a negotiated access standard, a connection applicant is required to provide to the TNSP and AEMO reasons and evidence as to why the proposed negotiated access standard is appropriate (including power system conditions at the location of the proposed connection, commercial and technical feasibility of complying with the automatic access standard, and impact on quality of supply for other network users).⁹⁸ This initiates the following negotiation process under the NER.⁹⁹

- Following the receipt of a proposed negotiated access standard in an application for connection, a TNSP must consult AEMO as soon as practicable in relation to AEMO advisory matters.¹⁰⁰
- Within 20 business days following receipt of the proposed negotiated access standard and all information the connection applicant is required to provide, AEMO must advise the

91 See clauses 5.3.4A(i) and the definition of 'performance standard' in Chapter 10 of the NER.

92 Part 3, section 15 of the NEL.

93 Rule 4.15(f)-(q) of the NER.

94 In relation to a connection point, plant includes all equipment involved in generating, utilising or transmitting electrical energy.

95 As specified under Schedules 5.2-5.3a of the NER.

96 Clause 5.3.3 of the NER.

97 Clause 5.3.4A of the NER.

98 Clauses 5.3.4A(b1) and 5.3.4A(b2) of the NER.

99 Clause 5.3.4A of the NER.

100 Clause 5.3.4A(c) of the NER.

TNSP, in respect of the AEMO advisory matters, whether the proposed negotiated performance standard should be accepted or rejected.¹⁰¹

- Within 30 business days following receipt of the proposed negotiated access standard and all information the connection applicant is required to provide, the TNSP must accept or reject a proposed negotiated access standard (the TNSP must reject it if AEMO has advised the TNSP to reject the negotiated access standard).¹⁰²
- If the TNSP rejects a proposed negotiated access standard, the TNSP must ask the connection applicant for additional evidence to be able to continue assessing the proposed negotiated access standard (if applicable), provide the connection applicant with detailed reasons for the rejection, including the reasons and recommendation provided by AEMO, and advise the connection applicant of a negotiated performance standard that the TNSP considers would meet the relevant requirements.¹⁰³
- The connection applicant may, based on the TNSP's proposal for a negotiated access standard, either accept it, reject it, propose an alternative negotiated access standard to be further evaluated or elect to adopt the automatic access standard.¹⁰⁴

If the connection applicant proposes an alternative negotiated access standard, the negotiating process set out above would start again. In practice, this is an iterative process for the negotiation of multiple access standards, some of which will be more quickly negotiated and resolved than others.

After a successful negotiation, the TNSP makes an offer to connect to the connection applicant, which includes the automatic (or negotiated) access standard for each technical requirement. Upon the connection applicant's acceptance of the TNSP's connection offer, the agreed access standards form part of the terms and conditions of the connection agreement and are taken to be the performance standards applicable to the connected plant for the relevant technical requirements.¹⁰⁵

Monitoring and enforcement of performance standards

The process for monitoring compliance with and enforcement of registered participants' performance standards is set out under Chapter 4 of the NER. It sets out compliance obligations of registered participants and what happens in the event of a likely or actual breach of performance standards.¹⁰⁶ Under the NEL, the AER is responsible for monitoring compliance with, and enforcement of, registered participants' obligations, including technical performance requirements for generators, large load customers and NSPs.

101 Clause 5.3.4A(d) of the NER.

102 Clause 5.3.4A(e) and (f) of the NER.

103 Clause 5.3.4A(g) of the NER.

104 Clause 5.3.4A(h) of the NER.

105 Clause 5.3.7(b) of the NER.

106 Rule 4.15(f)-(q) of the NER.

Current arrangements for technical requirements and performance standards on DCAs

Under the current arrangements, a DCA is connected to a transmission network at a single TNCP. As a result, there can be only one FRMP and a single set of performance standards applying at the TNCP, even if multiple parties are connected to the same DCA.

Consequently, were multiple parties to connect to the same DCA, in practice they would be required to nominate one FRMP. The FRMP and the Primary TNSP would need to coordinate and negotiate a shared performance standard to apply at the TNCP, reflecting an overall performance standard for all connected facilities. Due to these issues, the AEMC is not aware of multiple parties being connected to the same DCA. Where subsequent parties seek to connect to a DCA, the connection agreement and the overall performance standards would need to be reopened and revised.

The Commission is not aware of any DCA that serves as a connection asset for multiple parties.¹⁰⁷ As such, there is no precedent for multiple parties connecting to one DCA under the framework established through the 2017 TCAPA Rule.

Further, under the current Rules, the DCASP is not an NSP for the purposes of the connection process, including the negotiation of performance standards under Chapter 5 of the NER. Likewise, the DCASP is not an NSP for the purposes of network performance and system standard requirements under Chapters 4 and 5 of the NER. The DCASP is only a NSP for the purposes of some limited obligations under Chapter 5 of the NER.¹⁰⁸

B.1.2

Draft Rule

The draft rule applied the existing arrangements for system and performance standards (as described in Appendix B.1.1) to DNAs.

Accordingly, the draft rule required generators and customers connected to a TNCP on a DNA, and a TNSP operating a DNA, to plan, design and operate their equipment so that they comply with the existing sets of technical requirements set out in the Rules.

System standards to apply across a DNA

Under the DNA framework established by the draft rule, the Commission considered the same technical requirements that apply across the Primary TNSP's transmission network should also apply across a DNA, given that a DNA forms part of the transmission network and therefore be operated by the Primary TNSP.

Consequently, under the draft rule, the Primary TNSP is responsible for compliance with the system standards under Schedule 5.1a *System standards* across a DNA that it operates. In line with the existing arrangements on other parts of the transmission network, a connecting party at a TNCP on a DNA could reasonably expect that the TNSP would operate a DNA consistent with the system standards. Likewise, a connecting party could reasonably expect

¹⁰⁷ The Commission is aware that a number of connection assets that connect multiple parties to the shared network and predate the 2017 TCAPA Rule exist, for example Powerlink's connection assets in the Surat Basin, connecting multiple load facilities with different ownership to the transmission network.

¹⁰⁸ For example, see clauses 5.2.3(e) and 5.2.7 of the NER.

the same level of performance at its TNCP as at any other TNCP across the TNSP's transmission network.

As DNAs form part of a Primary TNSP's transmission network under the draft rule, the Primary TNSP must comply with the technical requirements defined in Schedule 5.1 *Network Performance Requirements to be Provided or Coordinated by Network Service Providers*, in terms of how it plans, designs and operates its network to deliver the system standards.

The Commission did not consider there were any good reasons to allow variation in terms of the application of the system standards and compliance with Schedule 5.1 on DNAs. Although DNAs will be radial in nature, the Commission considered it would be undesirable for different system standards to apply to different parts of the Primary TNSP's network, as any variation could create complexity for connecting parties and the TNSP with regard to operation of its network.

Performance standards to apply at TNCPs on a DNA

Under the draft rule, a party seeking to connect at a TNCP on a DNA will negotiate a connection agreement with the Primary TNSP. As part of that connection agreement, the Primary TNSP and the connecting party negotiate performance standards in accordance with the process in rule 5.3 of the NER. Depending on whether the connecting party is a generator or large load customer, for the purposes of negotiating performance standards for the connecting plant, the existing Schedules 5.2 or 5.3 (as applicable) apply.

Similar to the Commission's approach to system and network performance standards, the Commission considered conditions for generators' or customers' connections to a DNA should not vary from the conditions for generators or customers connecting to other parts of the transmission network. The connection process and requirements under the current connection framework must be consistent across a TNSP's network, including for DNAs. Further, the Commission did not consider any changes are necessary as:

- These schedules specify performance standards that impact on network security and stability and, as such, should not be of a lower standard simply because the connection to the transmission network is to a radial DNA.
- The performance standards in these schedules are subject to negotiation between an automatic access standard and a minimum access standard, albeit that the facility should achieve a performance as close to the automatic access standard as possible.

Based on the application of the connection process under rule 5.3 in combination with the technical requirements in Schedules 5.2 and 5.3, AEMO would be involved and provide input into the process of negotiating a connection on a DNA in the same way that it does for a connection to any other part of a transmission network.

Further, by establishing TNCPs, the draft rule provided for application of the current arrangements for monitoring compliance with and enforcement of performance standards under Chapter 4 of the NER to TNCPs on DNAs.

B.1.3

Stakeholder Views

System standards applying to DNAs

Ausnet opposed the application of system standards to DNAs under the draft rule and questioned whether all DNAs should be required to meet shared network standards. AusNet suggested that enforcing shared network standards on all assets that will be DNAs under the new framework and are currently classified as large DCA reduces the solutions available to connecting parties. AusNet added that this is likely to increase their connection costs where a more efficient solution may be available that does not impact the secure operation of the shared network. Alternative standards to the shared network standard may be more likely under scenarios where third parties provide DNAs and where asset sharing and/or future incorporation into the shared network is unlikely or impractical.¹⁰⁹

Whilst RES Group generally supported the application of Schedule 5.1a on system standards, it also expressed concerns that Primary TNSPs could interpret the requirements under Schedule 5.1a conservatively and apply their own policies and standards when developing DNA functional specifications, which would increase costs. RES Group suggested the AEMC introduce some controls to make the Primary TNSP collaborate with funding parties to ensure that the system standards can be met at lowest possible cost without strict adherence to network standards.

Performance standards applying at individual TNCPs

Stakeholders expressed general support for the establishment of individual TNCPs and the application of key NER requirements at TNCPs on DNAs, including the application of performance standards, which will address the issues raised in AEMO's rule change request.¹¹⁰

Performance standards applying at the boundary point

In its submission and in further bilateral discussions with the AEMC, AEMO raised an issue that given the radial nature of a DNA, a registered participant's performance may degrade over the DNA from the TNCP to the shared transmission network. AEMO suggested this may result in a 'lower' performance standard, where the DNA joins the 'shared' transmission network at the IUSA.

Consequently, AEMO argued that the draft rule would result in an absence of obligations on registered participants to ensure sufficient reactive power capability is provided at the boundary point. Under the draft arrangements, generators are only required to meet performance obligations at the TNCP, which means their obligation to provide reactive power capability is moved to a point closer to where the facility is connected.

AEMO stated that this is likely to result in another party needing to provide reactive power capability, instead of the generator, as is required by the existing NER arrangements. This shifts the costs of providing reactive power from generators to another party (likely to be the

¹⁰⁹ AusNet submission to the draft determination: p. 4.

¹¹⁰ Submissions to the draft determination: CEIG, pp. 1, 3; ENA, p. 3; ERM Power, p. 1.

Primary TNSP) if there is a power system security issue associated with a lack of reactive power.

To address the issue raised, AEMO suggested that a new reactive power capability standard apply to the Primary TNSP at the boundary point. AEMO suggested the proposed additional performance standards to be complied with by TNSPs should be consistent with those applying to generators in respect of clause S5.2.5.1 (reactive power capability), clause S5.2.5.2 (harmonic distortion), clause S5.2.5.5 (reactive current injection) and clause S5.2.5.13 (voltage and reactive power control).¹¹¹ AEMO further suggested that Primary TNSPs should be able to recover the cost of meeting reactive power requirements from generators connected to a DNA, not consumers.

B.1.4

Final Rule

Increasing cost for DNAs to meet the system standards applying to the shared network

Requiring DNAs to meet the same system standards and technical requirements that apply to the 'shared' network is likely to increase the cost of DNAs compared to DCAs in order to meet those additional technical standards and requirements.

However, consistent with the draft rule, the Commission considers this is necessary because these assets are operated and maintained by TNSPs under the final rule as part of its transmission network. To allow for variation would impose undue risk on TNSPs, who are required to operate their network in accordance with Schedule 5.1. Different system standards applying to different parts of the Primary TNSP's network would also create risk for the secure and reliable operation of the network. This risk may be significant given that DNAs under the new framework may constitute material extensions of the transmission network. Furthermore, it would be inconsistent with the framework's objectives of consistency and minimised complexity to allow for different system standards to apply on DNAs.

Degradation of performance standard requirements between the TNCP and the DNA boundary point

The Commission acknowledges concerns that the radial nature of DNAs creates the potential for performance standards to degrade over the length of the DNA. In particular, a DNA may require additional reactive power capability to be provided elsewhere on the transmission network, even if the automatic access standard is met by connecting parties at their TNCPs on the DNA.

However, the Commission considers the current regulatory arrangements already address this issue, and to the extent that there is any shortcoming with the current arrangements, then that may require a broader solution than can be addressed through this rule change. The provision of reactive power for the management of voltage, stability and power transfer capability is a *shared* obligation between generators and TNSPs. Accordingly, TNSPs are required to plan, build, and operate their networks to meet the requirements of the system

¹¹¹ AEMO submission to the draft determination: p. 7.

standards for voltage, stability and power transfer. To comply with their obligations, under the current arrangements TNSPs install reactive power capability within their networks.

More specifically, TNSPs' existing obligations in relation to the provision of reactive power are based on provisions under existing Schedule 5.1 and Schedule 5.1a, including:

- Schedule 5.1, *Network performance requirements to be provided or coordinated by NSPs*, in particular clause S5.1.4 *Magnitude of power frequency voltage*, requires a TNSP to plan and design its transmission system and equipment for control of voltage such that the minimum steady state voltage magnitude, the maximum steady state voltage magnitude and variations in voltage magnitude are consistent with the levels stipulated in clause S5.1a.4 of the system standards. Further, clause S5.1.4 also requires the Primary TNSP to make reasonable endeavours to meet a request for the independent control of voltage at the connection point (which would require the installation of additional reactive equipment at the connection point). In addition, clause S5.1.6 requires the Primary TNSP to limit harmonic distortion with its network.
- Further, the system standards, which also set out TNSPs' obligations relevant to reactive power requirement capabilities, include the following existing provisions:
 - *S5.1a.3 – System stability* - requirement to ensure the power system should remain in synchronism and stable, which includes voltage stability.
 - *S5.1a.4 - Power frequency voltage* - requirement that the voltage of supply at a connection point should not vary by more than 10 percent above or below its normal voltage (except as a consequence of a contingency event), provided that the reactive power flow and the power factor at the connection point is within the corresponding limits set out in the connection agreement.
 - *S5.1a.6 - Voltage waveform distortion* - requirement to keep waveform distortion to levels specified in the relevant Australian Standard. TNSPs have obligations under clause S5.1.6 to meet system standards in clause S5.1a.6.

By making DNAs part of the Primary TNSP's network, and applying the system standards, the existing arrangements for reactive power would also apply to DNAs. As a result, the introduction of a new requirement on the TNSP to comply with a separate performance standard at the boundary point is not necessary and would effectively override TNSPs' existing responsibilities under the NER.

Cost recovery for additional reactive power capability provided in the context of DNAs

Consistent with the application of Schedule 5.2, a TNSP and a connecting generator would negotiate access standards, including reactive power capability requirements, the generating facility needs to meet.

Should the need for additional reactive power capability over a DNA arise *after* a party has connected to a DNA, it will be the responsibility of the Primary TNSP to comply with its existing obligations under Schedule 5.1 and Schedule 5.1a, which may require the Primary TNSP to install additional reactive power capability within the network to meet its requirements relating to the system standards for voltage, stability and power transfer. Consistent with the existing arrangements, the final rule leaves it to the discretion of the

TNSP as to which is the most efficient way to install additional reactive power capability. How the costs of that additional reactive power capability are recovered will depend on a number of factors, including the reasons for the need arising and where the investment is needed. For example, should the Primary TNSP need to install reactive power facilities on the DNA, the Primary TNSP is likely to pass on those costs to the DNA owner through the O&M charges under the NOA.

B.2 System strength

BOX 3: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There were no changes between the draft and final rule relating to the application of NER arrangements for system strength to DNAs.

B.2.1 Current arrangements

Current arrangements for system strength on the transmission network

An issue related to the specification of technical requirements for connections to the shared network is the impact a connecting generator may have on the system strength of the power system. System strength is a quality of the power system that is related to the overall stability of the voltage waveform, including its ability to return to a stable state after disturbance events like faults.¹¹² Essential levels of system strength are required to maintain a secure power system.

The AEMC's *Managing power system fault levels* Rule¹¹³ established two frameworks to address system strength issues, as discussed below. However, it should be noted that the Commission has recently published a draft rule that reforms these arrangements.¹¹⁴

The 'minimum level of system strength' framework – to address the decline in the amount of system strength in a region

AEMO determines¹¹⁵ the system strength requirements for each region by defining fault level nodes in a region, which are locations on the transmission network, and defining the minimum three-phase fault level for each fault level node.¹¹⁶

Based on its determination of system strength requirements for each region, AEMO undertakes an assessment of any fault level shortfall. If AEMO assesses that there is, or is likely to be a fault level shortfall, it publishes a notice and provides this to the System

¹¹² AEMC, *Investigation into effectiveness of system strength frameworks in the NEM*, Final report, 15 October 2020, p. i.

¹¹³ AEMC, *Managing power system fault levels*, Final rule, September 2017.

¹¹⁴ AEMC, *Efficient Management of System Strength on the Power System*, Draft rule, 29 April 2021.

¹¹⁵ Based on AEMO's *System strength requirements methodology*, see under https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/System-Security-Market-Frameworks-Review/2018/System_Strength_Requirements_Methodology_PUBLISHED.pdf.

¹¹⁶ Clause 5.20C.1(b) of the NER.

Strength Service Provider for its respective region. Following the receipt of such a notice, the relevant System Strength Service Provider must make system strength services available to AEMO to address the shortfall (within the time frame specified in the notice).¹¹⁷

The relevant System Strength Service Provider can either develop a non-network solution, for example contracting with synchronous generators, or a network solution, for example installing a fault level source (such as a synchronous condenser) on the network, or a combination of both. Once the TNSP has procured the necessary system strength services, AEMO obtains operational control over them to manage the security of the power system in a region.

As the obligation to make system strength services available is a regulatory obligation imposed on the relevant TNSP, the provision of system strength services is a prescribed transmission service. The TNSP is entitled to seek a revenue allowance that includes forecast operating or capital expenditure for its efficient costs of meeting these requirements.

The 'do no harm' framework – to address the impact of a new generator connection on system strength in a network

New connecting generators have an obligation to 'do no harm' to the security of the power system. This means new connecting generators should not adversely impact on the ability to maintain system stability or on a nearby generating system's ability to maintain stable operation. This requirement applies regardless of whether AEMO has declared a system strength shortfall in the region under the 'minimum level of system strength' framework.

AEMO publishes system strength impact assessment guidelines that set out a methodology to be used by NSPs when assessing the impact on system strength of a new connection (or proposed alteration) of a generating system.¹¹⁸ Depending on this assessment, the connection agreement between a generator and NSP may also include the requirement for a generator to pay for the necessary system strength connection works or implement a system strength remediation scheme in order to remedy or avoid any adverse impacts on system strength.¹¹⁹ It should be noted that the obligation on a new connecting generator only applies at the time the connection is negotiated, based on the information available at the time. The System Strength Service Provider is then responsible for maintaining system strength on an ongoing basis (as described through the 'minimum system strength' framework above).

In the context of a connection to the transmission network, as part of the connection process, the Primary TNSP undertakes a system strength impact assessment of a proposed connection to its network. Based on a generator's connection enquiry, the Primary TNSP would make a preliminary assessment and undertake a full assessment after receipt of an application to connect (unless the preliminary assessment indicates that the full assessment is not needed).¹²⁰ The Primary TNSP provides the connection applicant with the results of the preliminary and full assessment following consultation with AEMO.¹²¹

117 Clauses 5.20C.2 and 5.20C.3 of the NER.

118 Clause 4.6.6 of the NER.

119 Clause 5.3.4B of the NER.

120 Clause 5.3.4B(a) of the NER.

If the full assessment indicates that a new connection or alteration of an existing connection will have an adverse system strength impact, the TNSP must undertake system strength connection works at the cost of the connection applicant, unless the adverse system strength impact will be avoided or remedied by a system strength remediation scheme implemented by the connecting party in accordance with its connection agreement.¹²²

The connection applicant would include a proposal for a system strength remediation scheme in its application to connect and has to provide the TNSP and AEMO with all relevant information to assess the proposed system strength remediation scheme.¹²³

Following the receipt of a proposal for a system strength remediation scheme, the Primary TNSP needs to consult with AEMO and:

- AEMO must use reasonable endeavours to respond to the TNSP within 20 business days
- The TNSP must, within 10 business days following the receipt of a response from AEMO, accept or reject the proposal.

If a proposal for a system strength remediation scheme is rejected and cannot be resolved by negotiation between the connection applicant and the TNSP the dispute can be dealt with under commercial arbitration.¹²⁴

Current arrangements for system strength on DCAs

In the context of DCAs, the party that has a connection agreement with the Primary TNSP at the TNCP, where the DCA connects to the shared network, is the responsible party for complying with the 'do no harm' obligation. However, to the extent that the connecting party (e.g. generator) and the DCASP are different parties (and the DCASP is not the Primary TNSP) it may not be clear which party should be entering into the connection agreement and therefore responsible for complying with the 'do no harm' requirements.

With regard to the 'minimum system strength requirements' framework, AEMO determines the system strength requirements for each region based on the defined fault level nodes, which are locations on the transmission network. As DCAs are connection assets and not part of the transmission network, they currently sit outside of the existing 'minimum system strength requirements framework'.¹²⁵

B.2.2

Draft rule

Under the draft rule, the current arrangements for system strength (as described in the previous section) apply to DNAs without modification.

Application of the 'minimum level of system strength' framework

By making assets that are currently classified as large DCAs transmission network, the arrangements apply to the DNA in the same way that they apply to the rest of the

121 Clause 5.3.4B(b) of the NER.

122 Clauses 5.3.4B(e) and (f) of the NER.

123 Clauses 5.3.4B(g) and (h) of the NER.

124 Clause 5.3.4B(p)(1) and in accordance with Rule 5.5 of the NER.

125 Although a fault level node could be declared at the TNCP where the DCA connects to the transmission network.

transmission network. As previously discussed, the rationale for this change was that these DNAs are likely to represent material extensions to the network in terms of their length and size (generation capacity connected) and therefore, should be subject to the same requirements as the rest of the transmission network.

As such, these assets are also covered under the existing 'minimum system strength requirements' framework because they are 'transmission network'. This contrasts with DCAs, which are not 'transmission network' and as such, sit outside of the 'minimum system strength requirements' framework.

Application of the 'do no harm' framework

Similarly, under the draft rule, the existing 'do no harm' framework applies to connections made to DNAs because each party has its own transmission network connection point. Accordingly, the Primary TNSP undertakes system strength assessments and provides the results of these assessments (following consultation with AEMO) to connection applicants in the same way that it is required to for connections elsewhere on its transmission network.

Where an assessment indicates that a new connection, or alteration of existing connection, will have an adverse system strength impact, the Primary TNSP must undertake system strength connection works at the cost of the connection applicant, unless the adverse system strength impact will be avoided or remedied by a system strength remediation scheme implemented by the connecting party.

The responsibility under 'do no harm' lies with the individual generator, which is likely to result in a situation of multiple synchronous condensers being installed across the power system. This in turn can increase the costs for connection of new generators and can cause increased operational complexity, which may itself potentially create, rather than mitigate, system security risks.

However, the Commission noted in its DCA draft rule determination that nothing in the Rules prevents generators agreeing on coordinated system strength remediation works. But practically this would require coordination between competitors and the necessary coordination would have to occur at the same time, i.e. coordinating generators would need to negotiate their individual connection agreements with the Primary TNSP at the same time in order to coordinate remediation works. Therefore, in practice, coordinated system strength works are unlikely to occur (at least between unrelated parties).

The application of the current 'do no harm' arrangements to generators connecting to DNAs under the draft rule does not address these problems, but the Commission considered solving these issues and risks are out of scope of this rule change. The Commission noted that the *Investigation into system strength frameworks in the NEM Review*, as well as the *Efficient management of system strength on the power system* rule change both consider potential solutions to these problems.

B.2.3

Stakeholder views

Stakeholders did not express any objections to the application of the 'minimum level of system strength' and the 'do no harm' frameworks under the new DNA framework.

ENA expressed support in terms of applying existing NER arrangements at individual TNCPs on DNAs, which will enable TNSPs to maintain system strength.¹²⁶

The CEC acknowledged that the management of system strength on DNAs will be impacted by the outcomes of the AEMC's upcoming final rule on system strength. The CEC recommended the AEMC consider and describe, even at a high level, in its final rule determination the potential interactions of this rule change with the AEMC's current proposed direction in relation to the system strength frameworks. This would assist industry understanding of two fundamental proposed rule developments.¹²⁷

RES Group likewise noted that the system strength arrangements for DNAs will need to be considered as part of the broader system strength reform. Further, RES Group proposed to expand the definition of DNAs in the final rule to include equipment related to the provision of system strength so that solutions can be optimised across an identified user group, rather than for individual generating systems.¹²⁸

B.2.4

Final rule

Consistent with the draft rule, under the final rule, the NER arrangements for system strength that apply elsewhere on the transmission network will also apply to DNAs given it is defined as transmission network.

Impacts of the forthcoming system strength final rule determination

The AEMC has published a draft rule determination on its system strength rule change,¹²⁹ which sets out proposed changes the existing system strength frameworks.

Under this final rule, the NER arrangements for system strength that apply to the transmission network and parties' connection points apply to DNAs and those parties connected to DNAs via their own TNCP. Any changes that are introduced to the system strength frameworks for the TNSP's network under the system strength final rule determination will apply to the management of system strength on DNAs.

Expanding the definition of DNAs to include equipment related to the provision of system strength

The Commission recognises that there may have been potential benefits from RES Group's suggestion to expand the definition of DNAs to include equipment related to the provision of system strength, absent broader reforms in relation to the provision of system strength. However, in light of the broader reforms proposed by the Commission in the draft determination for the *Efficient management of system strength on the power system* rule change, expanding the definition of DNAs to include equipment related to the provision of system strength is unnecessary. This is because the Commission's proposal set out in the draft determination resolves the inefficiencies with current frameworks by:

¹²⁶ ENA submission to the draft determination, p. 3.

¹²⁷ CEC submission to the draft determination: p. 4.

¹²⁸ RES Group submission to the draft determination: p. 4.

¹²⁹ AEMC, *National Electricity Amendment (Efficient Management of System Strength on the Power System)*, Draft rule determination, 29 April 2021.

- introducing the 'supply side' arrangements, which enables a coordinated provision of system strength through a new system standard and transmission network standard for system strength under Schedule 5.1a and Schedule 5.1 of the NER, respectively. The standard in Schedule 5.1 requires a TNSP (who is a system strength service provider) to use reasonable endeavours to plan, design, operate and maintain its transmission network in order to meet network performance requirements at the locations on its network (known as system strength nodes) and the amounts as forecast by AEMO.¹³⁰
- introducing the 'coordination of the supply and demand sides' through the system strength mitigation requirement which evolves and expands the current 'do no harm' arrangements. It would allow a new connecting generator, inverter based load or MNSP to choose between paying a charge and remediating its impact.¹³¹

B.3 Metering

BOX 4: CHANGES BETWEEN THE DRAFT AND THE FINAL RULE

The final rule removes the obligation on the Primary TNSP to provide for a metering installation at a boundary point for the calculation of electrical energy losses over a DNA.

B.3.1 Current arrangements

Current metering arrangements on the transmission network

Chapter 7 of the NER specifies the metering arrangements in the NEM. The AEMC's 2015 *Expanding competition in metering and related services* Rule changed who has overall responsibility for the provision of metering services by establishing a new type of registered participant - a Metering Coordinator (MC). The Rule introduced the universal requirement to appoint an MC, who is the responsible person for metering services in relation to a connection point.

However, different arrangements apply in terms of who can be an MC for different types of connection points, such as metering at a connection point on the distribution network and at a connection point on the transmission network.¹³²

For a TNCP, the MC must be either the:

- Local Network Service Provider (LNSP), i.e. the TNSP, or
- The FRMP itself, i.e. the market generator or customer.¹³³

¹³⁰ This is discussed in section 3.1.1 and Appendix B of the system strength draft determination.

¹³¹ This is discussed in section 3.1.3 and Appendix D of the system strength draft determination.

¹³² For a connection point on the distribution network, any person can become an MC, subject to meeting the registration requirements. The FRMP for a connection point appoints an MC (who, if the FRMP is a market customer, cannot be the market customer itself). See clause 7.6.2(a)(2) of the NER.

¹³³ Clause 7.6.3 of the NER.

The FRMP must appoint the MC and the FRMP may request the TNSP to act as the MC at a TNCP.¹³⁴

The AEMC's 2015 *Expanding competition in metering and related services* Rule did not, in practice, change the preexisting arrangements regarding who can be the responsible person for metering at a TNCP (to fulfil the functions of an MC at a TNCP). For the reasons set out below, the Commission considered that the complexity and cost of permitting parties other than the TNSP or the FRMP to provide MC services at TNCPs would likely outweigh the benefits:

- The technology required for metering installations at TNCPs is highly specialised and often integrated into a substation with other TNSP assets that are used to operate the transmission network.
- There are relatively few TNCPs and, given the specialised nature of the metering required at these connection points, the market for metering services is likely to be small.
- The primary purpose of the AEMC's 2015 *Expanding competition in metering and related services* Rule was to promote competition in metering services in the small customer market. Although, prior to the Rule change, the FRMP could already elect to be the responsible person to provide metering services, at the majority of TNCPs it generally used to be, and continues to be, the TNSP that performs this role.¹³⁵

The following sections provide a summary of the responsibilities of the different parties that play a role in the context of metering under the NER: the TNSP, the FRMP, the MC and AEMO.

Obligation of the TNSP to act as an MC if requested by the FRMP

At a TNCP, only the TNSP or the FRMP may be appointed to be the MC. In practice, the Commission understands that at TNCPs where distribution networks connect to the transmission network, the MC is generally the TNSP and not the FRMP (the local retailer). Similarly, where there is no FRMP at a TNCP (for instance, at connection points between transmission networks), the TNSP will be the MC.

The FRMP at a TNCP may request in writing an offer from the TNSP to act as the MC in respect of a TNCP. If the TNSP receives such a request, the TNSP:

- Must offer to act as the MC in respect of that TNCP
- Provide the FRMP with the name of the Metering Provider and the Metering Data Provider (MDP) that would be appointed under clauses 7.3.2(a)(1) and 7.3.2(d), if requested by the FRMP
- Provide the FRMP with the terms and conditions (including as to price) relating to that offer no later than 15 business days after the TNSP receives a written request from the FRMP.¹³⁶

¹³⁴ Clause 7.6.2(a)(1) of the NER.

¹³⁵ AEMC, *Expanding competition in metering and related services*, Final determination, 26 November 2015, p. 127.

¹³⁶ Clause 7.6.3(c) of the NER.

Where the MC at a TNCP is the TNSP, AEMO is responsible for the collection, processing and delivery of metering data to the metering database and for the appointment of the MDP.¹³⁷ Where there is a FRMP, AEMO must allow the FRMP to appoint an MDP of its choice, subject to that MDP being able to meet AEMO's requirements in relation to any special site or technology related conditions.¹³⁸ If the FRMP does not appoint an MDP, AEMO must appoint the MDP.¹³⁹ The Commission understands that, in practice, at TNCPs where there is no FRMP, AEMO will also appoint the MDP.

It should be noted that under the NER, AEMO can exempt a TNSP from satisfying one or more of the registration requirements when the TNSP is registering as an MC for TNCPs on its transmission network.¹⁴⁰ This exemption power is appropriate because:

- A TNSP that becomes the MC for a TNCP in its network is only responsible for the provision, installation and maintenance of the metering installation, with AEMO being responsible for collection of metering data from that metering installation, the processing of that data and the delivery of the processed data.¹⁴¹
- The TNSP would already need to be a registered participant by virtue of being registered as a TNSP.

Obligation of the FRMP to establish metering installations

Under the Rules, a FRMP has several obligations relating to the establishment of metering installations. Prior to participating in the market, the FRMP at a connection point must ensure that:¹⁴²

- An MC is appointed in respect of its connection point (whether this is a connection point on a distribution network or transmission network)
- The connection point has a metering installation and the metering installation is registered with AEMO, and
- Prior to registration, the FRMP has obtained a National Metering Identifier (NMI) from the LNSP for the connection point.¹⁴³

The LNSP, i.e. TNSP on the transmission network must issue a unique NMI for each metering installation on its network to the FRMP at a specific connection point and register the NMI with AEMO.¹⁴⁴

Metering Coordinator: coordination and provision of metering services

The MC's key responsibilities are detailed in clause 7.3.1 of the NER, including provision, installation and maintenance of a metering installation; collection, processing, retention and

137 Clause 7.5.1(a) of the NER.

138 Clause 7.5.1(b)(1) of the NER.

139 Clause 7.5.1(b)(2) of the NER.

140 Clause 2.4A.1(b) of the NER.

141 See these responsibilities in clauses 7.5.1(a) and 7.2.1(c) of the NER.

142 Clause 7.2.1 of the NER.

143 Clause 7.8.2(c)(1) of the NER.

144 Clauses 7.8.2(d)(1) and (2) of the NER.

delivery of metering data; and management of access to and security of the metering installation.

Generally, for connection points on a distribution network and for TNCPs where the FRMP is the MC, the MC at a connection point must appoint:¹⁴⁵

- A Metering Provider for the provision, installation and maintenance of the metering installation, and
- An MDP for the collection, processing and delivery of metering data.

However, where a FRMP is the MC at a TNCP it must:

- Appoint an MDP of its choice, but it can only appoint an MDP who can fully accommodate any special site or technology related conditions described in a document published by AEMO under clause 7.8.12(c)(1)¹⁴⁶; and
- Clarify any matters with AEMO in order to choose an MDP for that metering installation that is mutually suitable to all parties.¹⁴⁷

As noted, the above provisions only apply to a connection point where the MC is not the TNSP, i.e. TNCPs where the MC is the FRMP. As discussed above, clause 7.5.1(a), specifies that where the TNSP is the MC at a TNCP, then AEMO is responsible for the collection, processing and delivery of the processed data to the metering database and the provision of metering data in accordance with the Rules and procedures authorised under the Rules.

Table B.1 summarises the current metering arrangements in relation to TNCPs.

Table B.1: Summary of current metering arrangements in relation to TNCPs

	TRANSMISSION NETWORK CONNECTION POINTS
FRMP	Appoints an MC for its TNCP <ul style="list-style-type: none"> • TNCP has a metering installation that is registered with AEMO • Obtains a NMI
Metering Coordinator	Must be <ul style="list-style-type: none"> • TNSP or • FRMP itself
Metering Provider and Metering Data Provider	At a TNCP where FRMP is the MC, it can appoint an MDP of choice, but only if the MDP can accommodate any special site or technology related conditions described in a document published by AEMO

¹⁴⁵ Clauses 7.3.2(a)-(d) of the NER.

¹⁴⁶ Clause 7.5.1(d) of the NER.

¹⁴⁷ Based on clause 7.8.12(a)(1) on 'Special site or technology related conditions', AEMO can determine that special arrangements are required to support the integrity of the collection and processing of metering data from nominated metering installations. These conditions include a connection point or proposed connection point on a transmission network, where the metering data collection and/or processing arrangements from metering installations require a single MDP.

	TRANSMISSION NETWORK CONNECTION POINTS
	At a TNCP where TNSP is the MC, AEMO is responsible for the collection, processing and delivery of metering data to the metering database, and appoints the MDP of the FRMP's choice (if the FRMP so chooses), subject to the MDP being able to accommodate any special site or technology related conditions described in a document published by AEMO
LNSP	TNSP must issue a NMI for each metering installation on its network and register the NMI with AEMO

Source: AEMC.

Current metering arrangements for DCAs

Under the current DCA arrangements, a DCA is connected at a single TNCP, with one FRMP and metering installation. The FRMP at the TNCP and the TNSP will have the responsibilities described above under Chapter 7 of the NER in relation to metering at a TNCP on the transmission network. Given the single connection point to the transmission network, only one MC at the TNCP would need to be appointed.

If multiple parties were to be connected to the same DCA under the current framework, the contractual agreement between a DCASP and the connecting parties would determine what type of metering arrangements would apply at the facilities connected to the DCA.

B.3.2

Draft rule

The draft rule applied the existing metering arrangements for the transmission network to DNAs given DNAs were defined to be transmission networks.

Metering arrangements at TNCPs on a DNA

Under the draft rule, each connecting party is the FRMP at its individual TNCP. As such, the existing metering arrangements for connection points on the transmission network extend to TNCPs on a DNA in their current form:

- The FRMP at the TNCP (a generator or market customer) must appoint an MC at the TNCP, ensuring that the TNCP has a metering installation which is registered with AEMO, and apply to the Primary TNSP for a NMI.
- Consistent with the current arrangements, at a TNCP, only the Primary TNSP or the FRMP itself may be appointed as MC.
 - At a TNCP where the FRMP itself is the MC, it can appoint an MDP of choice, but only if the MDP can accommodate any special site or technology related conditions described in a document published by AEMO.
 - At a TNCP where the Primary TNSP is the MC, AEMO is responsible for the collection, processing and delivery of metering data to the metering database, and will appoint an MDP of the FRMP's choice, providing the MDP can accommodate the special site or technology related conditions.

- The Primary TNSP must issue a unique NMI for each metering installation on its network to the FRMP and register the NMI with AEMO.

Metering arrangements at the boundary point

Further, a Primary TNSP is required to provide for a metering installation¹⁴⁸ at a boundary point for the calculation of losses over a DNA.¹⁴⁹

B.3.3 Stakeholder views

Stakeholders did not raise any objections to the application of existing metering arrangements in the context of DNAs.

In support of the application of current metering arrangements under the NER, CEIG noted that doing so would ensure continuity and stability for ongoing operations.¹⁵⁰

RES group likewise supported the application of current arrangements, specifically where each connecting party acts as the FRMP at its own TNCP. RES Group further noted that it has not yet anticipated any issues associated with the Primary TNSP providing a metering installation at the DNA boundary point to allow for the calculation of losses.¹⁵¹

B.3.4 Final rule

Metering arrangements at TNCPs on a DNA

Consistent with the draft rule, under the final rule, the current metering arrangements apply at individual TNCPs on DNAs.

Metering arrangements at the boundary point

In contrast to the draft rule, which required the Primary TNSP to provide for a metering installation at a boundary point for the calculation of settlements residue over a DNA,¹⁵² this obligation on TNSPs is removed under the final rule.

Discussions with AEMO have revealed that AEMO would not require explicit metering data to calculate boundary point loss factors. Instead, AEMO would determine boundary point loss factor values based on information (MLF and energy flows) derived from its existing market MLF processes.

Likewise, the Commission considers the Primary TNSP could, based on other available information, estimate the settlements residue that accrues on a DNA. However, if a DNA owner wishes that metering data is used for the purpose of isolating settlements residue, the DNA owner could negotiate under its NOA with the Primary TNSP that a meter be installed at the boundary point and/or the DNA boundary point. Although the rules would not prescribe

148 The Commission notes that the metering installation could be a physical meter or a virtual meter in accordance with AEMO's *Special site or technology related conditions within the NEM* guideline.

149 Clause 7.5B.1(a) under the draft rule.

150 CEIG submission to the draft determination: p. 3.

151 Res Group submission to the draft determination: p. 3.

152 Clause 7.5B.1 under the draft rule.

the need for a metering installation at the boundary point, nothing in the rules would prevent this from happening.

Given that no boundary point metering is required in respect to calculating boundary point loss factors and isolating the settlements residue that accrues on a DNA, the final rule removes the obligation on Primary TNSPs to provide for a metering installation at the boundary point for the purposes of calculating losses.

B.4 Recovery of TUOS

BOX 5: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There were no changes between the draft and final rule relating to the arrangements for recovery of TUOS charges from DNA connected parties.

B.4.1 Current arrangements

Current arrangements for recovery of TUOS charges on the transmission network

All parties connected to a transmission network by connection assets pay for connection services provided by these connection assets. These transmission services are regulated as negotiated transmission services or prescribed transmission services.

Negotiated transmission services are usually provided to a single customer or small group of customers that directly connect to the transmission network, for example generators and large load customers. The cost for these services is negotiated between the TNSP and the connecting party in accordance with the negotiating principles for negotiated transmission services contained in Schedule 5.11 of the NER.¹⁵³

Prescribed transmission services are subject to revenue regulation under the NER, and TNSPs provide these services under their revenue allowance set by the AER in accordance with Chapter 6A of the NER. Prescribed transmission services include shared transmission services to large load customers, as well as connection services provided to DNSPs. TUOS charges are the prices set by a TNSP for recovering the costs for shared transmission services (prescribed TUOS services) and are paid for by connecting parties that generally take load from the network.

The prices for shared transmission services are determined by a TNSP for specific customer connection points on the TNSP's network (i.e. TNCPs). A transmission network user will pay a TNSP TUOS charges for shared transmission services in accordance with the Rules.

Each TNSP is required to develop a pricing methodology (approved by the AER), based on the principles for the allocation of the annual service revenue requirement to connection points.¹⁵⁴ A TNSP's pricing methodology determines the exact pricing structure for the

¹⁵³ Clause 5.2A.6 of the NER.

¹⁵⁴ Clause 6A.23.3 of the NER.

recovery of costs for prescribed TUOS services. Based on its pricing methodology, a TNSP translates its revenue allowance into prices for customers. TUOS charges are generally composed of a 50 per cent allocation to each of a locational component and a non-locational component as follows:¹⁵⁵

- *A locational component:* Locational charges reflect the cost of utilising the network at various locations, i.e. specific connection points. Prices are based on a measure set by the TNSP, for example agreed contract maximum demand (\$/MW per month) or average maximum demand over the 10 peak demand days in the previous year.
- *A non-locational component:* Non-locational charges are set on 'postage stamp' basis, i.e. are the same for all connection points on the network and all customers and are not related to location.¹⁵⁶

Billing arrangements for prescribed TUOS charges

The process and requirements for billing TUOS charges is set out under rule 6A.27 of the Rules. These billing arrangements provide that, where charges are determined for prescribed transmission services from metering data, these charges will be based on kW or kWh obtained from the metering data managed by AEMO.¹⁵⁷

On this basis, the TNSP issues bills to transmission network users for prescribed transmission services at a specific connection point. At a minimum, the bill must contain the information set out in clause 6A.27.2 of the NER. In practice, the Commission understand that TNSPs issue bills on a monthly basis or as specified in the transmission connection agreement.¹⁵⁸ The transmission network user must pay TUOS charges by the date specified in the bill.¹⁵⁹

Current arrangements for recovery of TUOS charges in the context of DCAs

Under the current arrangements for DCAs, TUOS charges would only be recovered at a TNCP if a large load customer were connected at a TNCP via a DCA. Based on the metered energy at the TNCP, the TNSP would charge a large load customer TUOS, based on the arrangements described above. AEMO's registration and exemption list currently lists two load customers - one connected via a small DCA and one connected via a large DCA - to the shared transmission network.¹⁶⁰

In situations where multiple parties are connected to the same DCA, the Commission understand that the TNSP would charge the TUOS to the FRMP at the TNCP, based on the metered energy at the TNCP. On this basis, the FRMP at the TNCP would subsequently pass on TUOS charges to individual load customers connected to the DCA, with the method

¹⁵⁵ Clause 6A.23.3(a)(2) allows for an alternative allocation to each component, locational and non-locational, based on a reasonable estimate based on a reasonable estimate of future network utilisation and the likely need for future transmission investment, with the objective of providing more efficient locational signals to market participants, intending participants and end users.

¹⁵⁶ There is another revenue requirement, the common service revenue requirement, which is also levied on a postage-stamp basis and includes network switching and operations, administration and management, network planning and development and general overheads.

¹⁵⁷ Clause 6A.27.1 of the NER.

¹⁵⁸ See for example, TransGrid Pricing Methodology – 2018/19 – 2022/23, p. 17.

¹⁵⁹ Clause 6A.27.3 of the NER.

¹⁶⁰ AEMO's registration and exemption list at 20 June 2021. The small DCA is owned and operated by TransGrid, the large DCA is owned and operated by ElectraNet.

determining the amount a connected party must pay specified through their contractual agreements.

B.4.2

Draft rule

Under the draft rule, the NEM arrangements for the recovery of TUOS charges (as described in Appendix B.4.1) applied to TNCPs on DNAs, with minor modifications introduced by the draft rule.

The draft rule introduced a requirement for TUOS charges to be levied on loads at TNCPs, with DNAs included in TNSPs' CRNP models at zero cost.¹⁶¹ This allows TUOS charges to be levied directly on customers connected to a DNA but also ensure that they are not charged TUOS for an asset that has not been paid for by consumers through prescribed TUOS charges. As mentioned under Appendix B.4.1, TUOS charges are the prices set by a TNSP for recovering the costs for shared transmission services (prescribed TUOS services) and are paid for by connecting parties that generally take load from the network. As a DNA does not form part of the 'shared' network and the Primary TNSP does not provide any prescribed services in the context of a DNA, the Primary TNSP should also not levy TUOS charges on an asset that is not funded through prescribed TUOS charges.

As market metering would exist at each TNCP, in line with the existing NEM arrangements for TUOS recovery, the Primary TNSP would be able to determine TUOS charges at an individual TNCP based on kW or kWh obtained from the metering data managed by AEMO and issue a bill to the connecting party at a specific TNCP.

The TNSP's Annual Service Revenue Requirement (ASRR) for prescribed TUOS charges sets the amount that a TNSP can recover from customers through prescribed TUOS charges. Clause 6A.23.3(a)(1) requires that 50 per cent of the ASRR for prescribed TUOS services is to be allocated between the locational and the non-locational component (unless different allocation shares can be justified).

To determine the prices for the recovery of the locational component of prescribed TUOS services, TNSPs use the CRNP methodology. The CRNP determines the locational component of prescribed TUOS services on the basis of the estimated proportionate use of the relevant transmission system assets by each customer at a connection point.

While this is appropriate for TNCPs on the shared network, which is funded by all customers, the situation is different for DNAs, i.e. assets that are entirely funded by an identified user group. Based on the fact that a connecting party has funded the asset in its entirety (or partly if more than one party is connected), a connecting party should not be required to pay for its use of the asset.

However, this is easily resolved by TNSPs including DNAs in their CRNP models but at zero cost. This means that these assets would not attract a share of the TUOS ASRR when the locational components are calculated. In this way, a connected party would still need to pay

¹⁶¹ Clause S6A.3.2 of the draft rule.

for its estimated proportional use of other transmission assets that form part of the TNSP's network, but not for its use of the DNA.

The Commission does not consider that any changes would be required with regard to the determination of the prices for the recovery of the non-locational component of prescribed TUOS services, which are set on a 'postage stamp' basis.

To give effect to the above, the draft rule amended Chapter 6A of the NER as follows:

- Clause 6A.23.3(c) — a customer's proportionate use of the "relevant transmission assets" would exclude designated network assets. A TNSP would calculate the locational component of prescribed TUOS services based on the CRNP methodology with allocating zero cost to a customer's proportionate use of a DNA.¹⁶²
- Schedule 6A.3 — the "locational network asset costs" of a DNA is zero.¹⁶³

The Commission noted that representing DNAs in TNSPs' CRNP methodologies may need to be reflected in TNSPs' pricing methodologies. However, the Commission considered this approach be consistent with the approach applying to funded network augmentations currently. On that basis, the Commission did not consider that it would be necessary to provide a mechanism for pricing methodologies to be updated in advance of each TNSP's next revenue reset.

B.4.3 Stakeholder views

Stakeholders largely did not comment on the modified arrangements applying to the recovery of TUOS charges on DNAs, as set out by the draft rule.

Only RES group stated that avoiding double charging load customers connected to DNAs is important because energy storage and new industrial loads are increasingly likely to be co-located with renewable generation projects.¹⁶⁴

B.4.4 Final rule

Consistent with the draft rule, under the final rule the current NEM arrangements for the recovery of TUOS charges apply to TNCPs on DNAs, with only very minor modifications.

The final rule introduces a requirement for TUOS charges to be levied on loads at TNCPs, with DNAs included in TNSPs' CRNP models but at zero cost.¹⁶⁵ This allows TUOS charges to be levied directly on customers connected to a DNA but also ensure that they are not charged TUOS for an asset that has not been paid for by consumers through prescribed TUOS charges, but by the connected parties themselves.

¹⁶² Clause 6A.23.3(c) of the draft rule.

¹⁶³ Clauses S6A.3.2(1) and (4) and S6A.3.3(1) of the draft rule.

¹⁶⁴ RES group submission to the draft determination, p. 3.

¹⁶⁵ Clauses S6.A.3.2(1) and (4) and S6.A.3.3(1) under Schedule 3 of the Amending Rule.

B.5 Transmission losses

BOX 6: CHANGES BETWEEN DRAFT AND FINAL RULE

There were minor changes between the draft and final rule relating to the issue of calculating losses and distributing intra-regional settlements residue accruing on DNAs to DNA funding parties. These adjustments are necessary due to the possibility of 'growing' DNAs, i.e. multiple DNAs being located behind a boundary point, under the final rule. This requires the following changes:

- AEMO is also responsible for calculating boundary point loss factors for DNA boundary points, where applicable.
- The Primary TNSP must calculate the settlements residue that accrues on a DNA and distribute or recover the settlements residue to or from each owner of each DNA in accordance with the methodology developed by the Primary TNSP as set out in the relevant NOA for that DNA.

B.5.1 Current arrangements

Current arrangements for determining loss factors and allocating settlements residue on the transmission network

Losses (in the form of heat) occur when electricity is transported across a transmission network. TLFs are calculated to reflect this loss of energy. Under the current arrangements, TLFs in the NEM are calculated on a marginal basis.¹⁶⁶

The marginal approach over-recovers total settlements used to pay generators.¹⁶⁷ This systematic over-recovery is the source of intra-regional settlements residue (IRSRs). IRSRs are currently allocated to transmission customers through reducing the non-locational component of TUOS charges. Under the existing NER arrangements, the process for determining network loss factors and allocating settlements residue occurs as follows:

- By 1 April each year, AEMO determines intra-regional loss factors (on a marginal basis) for each of the load and generation TNCPs (as a single value which is applied to all metered data and used in dispatch and settlement) which apply the following financial year.¹⁶⁸
- AEMO carries out settlement, making use of these intra-regional loss factors.¹⁶⁹
- In settlement, marginal loss factors are used to adjust prices paid for electricity sold by generators and purchased by customers. The use of the marginal methodology tends to recover more from customers than what is required to pay generators for the electricity

¹⁶⁶ For further background on transmission losses in the NEM see: AEMC, *Transmission loss factors*, Rule determination, 27 February 2020.

¹⁶⁷ AEMC, *Transmission loss factors*, Rule determination, 27 February 2020, p. 2.

¹⁶⁸ Clause 3.6.2(f) of the NER.

¹⁶⁹ Clause 3.15.6 of the NER.

generated. In addition, some metering inaccuracies arise in the measurement of electrical flows. The difference arising results in IRSRs (which are usually positive but can sometimes be negative).

- AEMO determines the residues in each region separately (but not for each transmission network within a region where there is more than one TNSP) and distributes these to the Primary TNSPs in their role as coordinating Network Service Provider.¹⁷⁰
- The coordinating TNSP for the region uses the IRSR to reduce the non-locational component of TUOS charges that are ultimately paid by electricity customers.¹⁷¹

Current arrangements for determining loss factors and allocating settlements residue on DCAs

In relation to a DCA, AEMO currently calculates one MLF for the TNCP (the connection point of the DCA to the transmission network), which is applied to all the metered energy for the DCA. In the absence of a regulatory framework for determining a loss factor for each party connected to a DCA, the DCASP that is responsible for the TNCP would need to have settlement arrangements in place through its contractual agreements with connecting parties.

B.5.2

Draft rule

The draft rule applied the existing methodology for calculating loss factors at TNCPs on a DNA, consistent with the existing arrangements that apply to TNCPs elsewhere on the network.¹⁷²

However, the Commission noted that maintaining the current approach for the allocation of intra-regional settlements residue would mean the parties funding the DNA will not receive the residues. Instead, it would simply be allocated to transmission customers within a region by offsetting prescribed TUOS charges. As market participants will have funded a DNA (and not customers within a region through prescribed TUOS charges).¹⁷³ Under the draft rule intra-regional settlements residue that accrue on a DNA are distributed to DNA owners who have funded the asset.

For this purpose, the draft rule included a mechanism to isolate the intra-regional settlements residue that accrue on a DNA. These residues could then be allocated to the funding parties rather than being used to offset TUOS charges within that region.

Mechanism to isolate the settlements residue that accrue on a DNA

To isolate the settlements residue that accrue on a DNA, under the draft rule AEMO:

- determines a loss factor at the boundary point,¹⁷⁴ and

¹⁷⁰ The coordinating TNSP for each relevant region (excluding Victoria as an adoptive jurisdiction) is also the Primary TNSP.

¹⁷¹ Clause 3.6.5(a)(3) and (4B) of the NER.

¹⁷² See section 3.6.2 of the NER.

¹⁷³ See 6A.23.3(e)(2) of the NER.

¹⁷⁴ Clause 3.6.2B(c) of the draft rule.

- publishes the boundary point loss factor by 1 April each year, which is the same time it calculates the intra-regional loss factors at TNCPs.¹⁷⁵

The Commission considered it unnecessary for a revenue meter to be located at the boundary point for this purpose.

Mechanism for the Primary TNSP to allocate residue to those who funded the DNA

Under the draft rule, it was necessary for the Primary TNSP to isolate the residue associated with DNAs from the total payment of intra-regional settlements residue received from AEMO. Under the draft rule, TNSPs would use the boundary point loss factors determined by AEMO,¹⁷⁶ the RRP and metering data from TNCPs to determine the residue accruing over DNAs, which TNSPs can separate from the pool of intra-regional residue they receive from AEMO.

For the purpose of allocating the residues, the draft rule required the Primary TNSP to develop an agreed 'residue allocation methodology' under its standard NOA to distribute any residues accruing on a DNA to DNA owners. Therefore, the draft rule included this as a requirement of the NOA.¹⁷⁷ The draft rule provided for compensation of the Primary TNSP for the administration of these monetary flows, consistent with Principle 2 of Schedule 5.12 (i.e. as a negotiated service).¹⁷⁸

The Commission further assumed that where the Primary TNSP:

- is the DNA owner and not the funding party, the Primary TNSP distributes the residue to the funding parties of a DNA through its connection agreement(s).
- is *not* the DNA owner, the Primary TNSP allocates settlements residue as a condition of its NOA with the DNA owner.¹⁷⁹ The extent to which the residue was used to offset payments made by connecting parties to the DNA owner would depend on the agreement in place between the DNA owner and connecting parties.

B.5.3

Stakeholder views

Calculating marginal loss factors at TNCPs based on the marginal methodology

Stakeholders largely agreed with the Commission's draft rule position to calculate an individual MLF at each TNCP on the DNA in line with existing arrangements at TNCPs elsewhere on the TNSP's network.

AEMO's responsibility to calculate boundary point loss factors

AEMO did not support the obligation established through the draft rule for AEMO to calculate boundary point loss factors. AEMO questioned whether the materiality of residues accruing on DNAs would warrant this new mechanism because it would require significant

¹⁷⁵ Clause 3.6.2B(d) of the draft rule.

¹⁷⁶ See 3.6.2B(c)(2) of the draft rule

¹⁷⁷ See Schedule 5.6, Part B, paragraph (h) of the draft rule.

¹⁷⁸ See Principle 2 in Schedule 5.12 under Schedule 2 of the draft rule.

¹⁷⁹ Clause 5.2A.7(e)(7)(ii) of the draft rule.

implementation and operational costs given that it does not sit within its core dispatch and settlement functions.¹⁸⁰

According to AEMO, boundary point metering would comprise a significant component of implementation costs. Boundary point meters, installed and maintained under the draft rule, would not be used for settlement purposes and therefore require AEMO to change its systems, processes and methodologies to accommodate boundary point metering loss calculations.¹⁸¹

Should the residue accruing on DNAs be found to be material, AEMO suggested that Primary TNSPs be given the responsibility to calculate boundary point loss factors, as DNAs form part of their network. Alternatively, AEMO suggested that the coordinating Network Service Provider in a region should be responsible for calculating a boundary point loss factor instead of AEMO given that it is already tasked with calculating settlements residue and some aggregate annual revenue requirement (AARR) allocations on behalf of TNSPs within a region.¹⁸²

AEMO further recommended that the rules include some level of prescription for calculating boundary point loss factors to ensure that the approach is consistent within and across regions, and therefore equitably distributed to DNA funding participants.¹⁸³

Primary TNSPs' obligation to allocate settlements residue to DNA owners

TNSPs disagreed with the draft rule requiring them to allocate settlements residue to DNA owners. TNSPs instead proposed AEMO undertake this role. TNSPs suggested that AEMO should distribute DNA settlements residue to the DNA owner because DNAs do not provide prescribed transmissions services. TNSPs argued that there is no substantive reason to place a new obligation on them to allocate residues where it could be done via contractual agreements between DNA owners and the connected parties.¹⁸⁴

Powerlink questioned whether residue accruing on DNAs were material enough to warrant a separate process to calculate and allocate losses accruing on DNAs. Instead, settlements residue on DNAs should be administered using a consistent process with the rest of the network.¹⁸⁵ TransGrid suggested AEMO, rather than TNSPs, should calculate loss factors and allocate settlements residue accruing on DNAs due to the existing obligations of AEMO in this context.¹⁸⁶

RES Group and the CEC expressed concerns with the lack of clarity provided by the draft rule regarding the mechanism by which residues would be allocated to parties funding DNAs.¹⁸⁷ The CEC further raised issues with regard to the lack of clarity around how additional

180 AEMO submission to the draft determination: p. 6.

181 AEMO submission to the draft determination: p. 6.

182 AEMO submission to the draft determination: p. 6.

183 AEMO submission to the draft determination: p. 6-7.

184 ENA submission to the draft determination: pp. 14-15.

185 Powerlink submission to the draft determination: p. 2.

186 TransGrid submission to the draft determination: p. 3.

187 Submissions to the draft determination: RES group, p. 4; CEC, p. 4.

generators connecting to DNAs would have access to residue without contractual agreements with DNA owners.¹⁸⁸

B.5.4

Final rule

Having considered comments made by stakeholders in their submissions to the draft rule determination, the Commission considers that its draft decision remains suitable.

However, as the final rule allows for 'growing DNAs', i.e. multiple DNAs behind a boundary point, under the final rule AEMO is also responsible for calculating boundary point loss factors for DNA boundary points. This is necessary to facilitate the isolation of residue accruing on each DNA behind a boundary point.¹⁸⁹

Under the more preferable final rule, AEMO calculates boundary point loss factors and publishes boundary point loss factors by 1 April each year.¹⁹⁰ However, if:

- a new boundary point or DNA boundary point is established during the financial year,¹⁹¹ or
- a TNCP located behind the boundary point is established or modified in accordance with rule 5.3, that in AEMO's reasonable opinion results in a material change to the boundary point losses,¹⁹²

then AEMO must determine and publish the boundary point loss factor that applies that financial year for that boundary point and any DNA boundary point behind that boundary point.¹⁹³

AEMO distributes intra-regional settlements residue to Primary TNSPs, who isolate the DNA residue and allocate it to the DNA owner under the NOA.¹⁹⁴ The DNA owner may distribute the DNA residues to funding parties, if contracted to do so.

Calculation of a boundary point loss factors by AEMO

Following further bilateral consultation, AEMO undertook a preliminary assessment of boundary point loss factor implementation options and identified an approach that would avoid the need to use explicit metering data. Hence, no further additional meters or changes to current metering systems would need to occur. Using this approach, AEMO would determine boundary point loss factor values based on information (MLF and energy flows) derived from its existing market MLF process.¹⁹⁵ AEMO's forward-looking loss factor methodology would explain how boundary point loss factor weighting factors are derived by monitoring model flows. Each boundary point and DNA boundary point¹⁹⁶ would be identified as a monitoring point in the MLF study to allow the determination of projected energy flows.

¹⁸⁸ CEC submission to the draft determination, p. 4.

¹⁸⁹ Clause 3.6.2B(c) under Schedule 1 of the Amending Rule.

¹⁹⁰ Clauses 3.6.2B(c) and (d) under Schedule 1 of the Amending Rule.

¹⁹¹ Clause 3.6.2B(e)(1) under Schedule 1 of the Amending Rule.

¹⁹² Clause 3.6.2B(e)(2) under Schedule 1 of the Amending Rule.

¹⁹³ Clause 3.6.2B(e) under Schedule 1 of the Amending Rule.

¹⁹⁴ Clauses 3.6.2(f) and 3.6.5(c) under Schedule 1 and Clause 5.2A.7(d)(7) under Schedule 2 of the Amending Rule.

¹⁹⁵ Clause 3.6.2B(c) under Schedule 1 of the Amending Rule.

¹⁹⁶ See section F.2 in Appendix F for more information on DNA to DNA connections

AEMO estimated that the costs of implementing this option would not exceed \$100,000 and operational expenditure would be approximately \$10,000-20,000 per annum .

AEMO currently determines MLFs for the transmission network for each financial year. Loss factor calculations therefore form part of AEMO's core obligations, whereas TNSPs have no experience in calculating loss factors. As such, the Commission considers it appropriate to extend AEMO's existing obligations to include the calculation of boundary point loss factors, rather than introducing a new obligation for Primary TNSPs, who currently have no obligations relating to loss factor calculations.

BOX 7: MATERIALITY OF RESIDUES ACCRUING ON DNAS

The Commission undertook analysis on the materiality of residue expected to accrue on DNAs. A model simulating the value of residue accruing on a DNA under changing variables was built based on data from expected DNA projects.

The following assumptions were applied:

- 330 KV line
- 1000 MW peak generation (generation during peak periods when prices are high)
- 0.037 ohms/km resistance
- Double circuit
- Dispatch consistent with current trends.

Results:

- A 50km DNA with 1000MW of wind generation connected to it is expected to accrue a residue of approximately 0.43% of generator revenue pa.
- A 200km DNA is expected to accrue a residue of approximately 1.73% of generator revenue pa.
- Under a single circuit model, the residue accruing is expected to be double compared to the residue accruing on a double circuit line.

Analysis:

The results show a direct relationship between residue accrued and the length of the DNA. Settlements residue accruing on longer DNAs is likely to be material enough to have a significant impact on a DNA owner's investment decisions. If the DNA owner were also a generator, that generator would see an increase of 1-2% in their annual revenue. Based on information from stakeholders and the Commission's own analysis, new DNAs will tend to be on the longer end of the spectrum. It can therefore be expected, given greater expected length of future DNA lines, that most residue would be material for parties funding DNA assets (e.g. generators).

The Commission expects that the distribution of settlements residue to DNA owners is likely to translate into an economic benefit for the market in the form of greater investment in DNAs because of material increases in their revenues. Given the relatively low cost estimate

submitted by AEMO, it is expected that the economic benefits arising from increased generator revenue will be greater than these costs.

Conclusion:

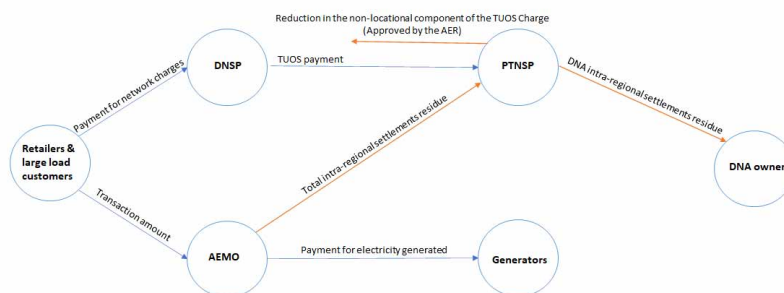
The Commission concludes that isolating and distributing residue accruing on DNAs is justified because the residue is material enough to be beneficial to the market and outweigh the costs associated with the implementation and administration of separate calculation and distribution mechanisms.

Distribution of residues accruing on a DNA

The Commission considers the distribution of settlements residue that accrue on a DNA is an appropriate extension of Primary TNSPs' existing responsibilities. Primary TNSPs already receive settlements residue accruing on the transmission network from AEMO and distribute them to funding parties of the shared network (customers) through reducing the non-locational component of TUOS charges.¹⁹⁷ Extending this obligation to DNAs is thus consistent with the Primary TNSPs' existing obligations. Accordingly, under the final rule the Primary TNSP is responsible for isolating and allocating the settlements residue that accrues on a DNA to the appropriate DNA owners under its NOA(s) with the DNA owner(s) (which would also provide for recovery of costs relating to this new obligation of Primary TNSPs).¹⁹⁸

Figure B.1 illustrates the process for the allocation of intra-regional settlements residue under the final rule.

Figure B.1: Allocation of intra-regional settlements residue accruing on a DNA



Source: AEMC.

¹⁹⁷ Clause 3.6.5(a)(3) of the NER

¹⁹⁸ Clauses 3.6.2(f) and 3.6.5(c) under Schedule 1 and Clause 5.2A.7(d)(7) under Schedule 1 of the Amending Rule.

As DNA owners are not registered participants under the NER and do not participate in the settlement process (in the capacity as a DNA owner), AEMO has no relationship with DNA owners. Hence, there are no direct monetary flows between AEMO and DNA owners and assigning this function to AEMO would require the creation of these relationships, which is unlikely to be efficient.

Consistent with the draft rule, the final rule provides for sufficient flexibility with regard to the process for distribution or recovery of settlements residue to or from parties funding the DNA:

- For third party owned DNAs, arrangements for the onward distribution of the residues by the Primary TNSP to the DNA owner are provided for under the NOA.¹⁹⁹ If the DNA owner is a different party than the party funding the DNA, the DNA owner can then distribute the residue in accordance with the contracts it has in place with funding parties. The final rule thus provides flexibility by allowing the allocation of DNA residue to be negotiated between parties through contractual arrangements.
- For Primary TNSP owned DNAs, where the Primary TNSP is not the funding party of the DNA, the Primary TNSP may distribute the residue accruing on a DNA directly to funding parties based on agreed arrangements (e.g. through the connection agreement) between the Primary TNSP and a funding/connecting party.
- Where the Primary TNSP is liable to AEMO in the event of negative settlements residue, the Primary TNSP can recover the cost attributable to the DNA from the DNA owner under their NOA.²⁰⁰

¹⁹⁹ Clause 3.6.2(f) under Schedule 1 and Clause 5.2A.7(d)(7) under Schedule 1 of the Amending Rule.

²⁰⁰ Clause 5.2A.7(d)(7) under Schedule 2 of the Amending Rule.

C ACCESS FRAMEWORK FOR DESIGNATED NETWORK ASSETS

A feature of the DNA framework put in place by the final rule is a 'special' access regime for DNAs. Its main objective is to facilitate third party transmission investment by providing access protections for funding parties to avoid the free-rider issues that stifle transmission investment by third parties (i.e. parties other than the TSNP) under the access regime that applies to the meshed, shared network. This special access regime protects investment made by first movers, while also enabling efficient use of the network by facilitating subsequent connections to existing DNAs. To achieve these objectives, the DNA access regime in the final rule has three key features:

- **DNA owner to administer DNA access:** The DNA owner is required to provide third party access if an access seeker is complying with all requirements under the rules and willing to pay the price set by the DNA owner. Complying with its obligation to provide access may require the DNA owner to increase the capacity of the DNA to facilitate a new connection (if possible, but there is no requirement to replicate or extend the DNA if increasing its capacity is not possible),²⁰¹ with at least the cost of such an increase in capacity being able to be recovered from the access seeker.²⁰²
- **'Negotiate-arbitrate' framework based on negotiating principles:** Negotiations between a DNA owner and an access seeker are based on Schedule 5.12 *Negotiating principles for DNA services* and clause 5.2A.8 *Access framework for designated network assets*. The negotiating principles regulate the rights and obligations of existing connected parties, the DNA owner and new connecting parties.
- **Access policy based on the negotiating principles:** To facilitate effective access negotiations, the DNA owner is required to develop and publish a DNA access policy, based on the negotiating principles for DNAs. The access policy, which provides essential information to access seekers, must be approved by the AER.²⁰³

To enable the application of such an access regime, DNAs need to be limited to radial configurations from the existing transmission network. This is because, if a DNA was looped or meshed, power from generators located outside of the DNA, who are subject to the open access regime and are paid a regional price, would flow across it. This would impact the amount of power transfer capability available to parties connected to the DNA.

The Commission does not change the access arrangements for small DCAs (although these simply become 'DCAs' under the new framework), which are **not** subject to any prescribed access regime. To the extent that third party access to a DCA is provided, this would be dependent on negotiations between the parties involved without any framework specified in the NER to guide that negotiation. However, under the new DNA framework, DCA owners

²⁰¹ Principle 5(d) in Schedule 5.12 under Schedule 2 of the Amending Rule.

²⁰² Clause 5.2A.8(l) and Principle 1(1) in Schedule 5.12 under Schedule 2 of the Amending Rule.

²⁰³ Clause 5.2A.8(c) under Schedule 2 of the Amending Rule.

may choose to 'opt-in' to the DNA framework.²⁰⁴ This would then trigger the application of the access regime for DNAs.

This Appendix outlines the Commission's final decision in relation to the access framework for DNAs. For this purpose, the Appendix provides a summary of the current arrangements, the draft rule, stakeholder views on the draft rule and the final rule position on the following issues:

- DNA owner to administer special access regime
- Negotiate-arbitrate regime based on negotiating principles
- Information to be included in DNA access policies
- Approval of DNA access policies
- Dispute resolution process
- Other issues considered in the context of a special access regime.

C.1 DNA owner to administer third party DNA access

BOX 8: CHANGES BETWEEN THE DRAFT AND THE FINAL RULE

The final rule departs from the draft rule by requiring the DNA owner to administer third party access to the DNA instead of the Primary TNSP.

C.1.1 Draft rule

The draft rule allocated the responsibility for administering DNA access to the Primary TNSP. To discharge this responsibility, under the draft rule each Primary TNSP was required to develop a standard access policy to apply to all DNAs that form part of its network, to ensure consistency across DNAs and create transparency and certainty, allowing access seekers to make informed investment decisions.

The Commission's rationale for allocating the responsibility for administering DNA access to the Primary TNSP was to mitigate the risk of access frustration that may arise if the DNA owner is vertically integrated. When the DNA owner and the foundation user are the same party, i.e. where a party is vertically integrated, this party may have an incentive to not provide access to its DNA. For example, this risk may arise where a subsequent generator would seek access to an existing DNA, for which the DNA owner is a competing generator. In this situation the DNA owner may have an incentive to frustrate access to derive a competitive advantage in the energy market.

The Commission considered this risk is likely to be more material under the DNA regime than under the large DCA framework. DNAs are no longer 'pure' connection assets, which have traditionally been built to facilitate the connection of *one* party to the grid. The purpose of establishing individual TNCPs through this rule change is to facilitate sharing of these assets,

²⁰⁴ Clause 11.139.4 under Schedule 5 of the Amending Rule.

which increasingly look like networks in their own right, in terms of their length and size (generation or load capacity connected).

C.1.2 Stakeholder views

Stakeholder submissions to the draft determination

The vast majority of stakeholders who commented on the issue of DNA access advocated for moving the responsibility for access administration from the Primary TNSP to the DNA owner.

Renewable energy developers argued that the funding party would be best placed to control third party access as it may have made the investment for their own planned future developments or future stages.²⁰⁵ ERM noted that only non-allocated transfer capacity, based on the agreement of the DNA owner, should be available for contract to a third party.²⁰⁶ Likewise, Tilt Renewables emphasised that developers need a mechanism to secure access for all stages of their project and the final rule should clarify the rights of the DNA owner to encourage investment in DNAs.²⁰⁷

Similarly, Reach Solar added that recourse to the TNSP is likely to complicate the commercial arrangements.²⁰⁸

Whilst ERM Power supported greater involvement of the DNA owner in administering access to its DNA, it added that this should occur on the provision that the DNA owner could not refuse access, cause unreasonable delays, or charge unreasonable fees to the third party if their connection would otherwise comply with draft Schedule 5.12.²⁰⁹

TNSPs also supported moving access administration to the DNA owner. ENA noted in its submission that this would be consistent with the existing arrangements for large DCAs and that the DNA owner would be best placed to administer access arrangements for the asset it owns, especially with regard to allocating 'spare' capacity.²¹⁰

Only RES Group explicitly supported the draft rule. RES Group considered the Primary TNSP administering access would improve the accessibility of DNAs for subsequent generators. However, RES Group also considered that the final rule should provide further clarification regarding the role of the DNA owner in the administration of access.²¹¹ Similarly, Terrain Solar noted that the final rule should allow for competition and prevent a situation whereby vertical integration, i.e. the DNA owner and the first connecting party being the same entity, can exert monopoly powers.²¹²

Other points raised in submissions included:

205 Submissions to the draft determination: Tilt Renewables, p. 1; WalchaEnergy, p. 2.

206 ERM Power submission to the draft determination, p. 3.

207 Tilt Renewables submission to the draft determination, p. 1.

208 Reach Solar submission to the draft determination, p. 4.

209 ERM Power submission to the draft determination, p. 3.

210 ENA submission to the draft determination, p. 6.

211 RES Group submission to the draft determination, p. 5.

212 Terrain Solar submission to the draft determination, p. 2.

- **Bespoke pricing and cost sharing arrangements to support the individual investment case:** The pricing and cost sharing arrangements likely need to be tailored to the individual DNA to support the DNA owner's investment case.²¹³ The CEFC and the CEC stated that the investment proposition would also be enhanced as the DNA owner could tailor the access policy to support its individual investment case²¹⁴ and incentivise further generators to connect.²¹⁵ The CEFC provided the following examples to support this view:²¹⁶
 - If the DNA owner is also a foundation generator, it may be able to absorb a higher connection charge at the outset (in its capacity as a generator) by taking a view on the additional return from further generators connecting and paying connection fees. The investor would require flexibility to enable such a 'blending' of returns to work practically.
 - The DNA owner may also require a more flexible methodology for cost allocation amongst DNA connected parties, e.g. to incentivise more foundation generators to connect earlier because the DNA owner may want to charge these generators a lower connection fee.
- **Availability of the relevant commercially sensitive information to administer cost sharing arrangements for capex:** If a party other than the Primary TNSP has constructed the asset, only the DNA owner will have the relevant commercially sensitive information to administer cost sharing arrangements for capex.²¹⁷ Stakeholders argued that information on the actual cost of constructing a DNA should not be provided to the Primary TNSP as this could provide it with a competitive advantage when tendering for future projects. Even if this information could be provided to the Primary TNSP on a ring-fenced basis (to address the competition concern), the Primary TNSP would still be unable to verify the accuracy of the cost information provided.²¹⁸
- **Allocation of unused DNA capacity to subsequent parties:** The DNA owner would be best placed to define and allocate unused DNA capacity to a subsequent party seeking access to an existing DNA whilst ensuring the DNA owner can guarantee access protections for its own multi-staged developments.²¹⁹

Stakeholder roundtable on DNA access

The AEMC also held a stakeholder roundtable on 25 March 2021 to discuss the issue of the DNA access regime with TNSPs, renewable energy developers, generators, large load customers, and government bodies who have extensively participated throughout this rule change process. Stakeholders represented at the roundtable almost unanimously expressed support for allocating the responsibility for a DNA access to the DNA owner instead of the Primary TNSP.

213 Submissions to the draft determination: CEC, p. 2-3; CEFC, p. 2.

214 CEC submission to the draft determination, p. 2-3

215 CEFC submission to the draft determination, p. 2.

216 CEFC submission to the draft determination, p. 2.

217 Submissions to the draft determination: ENA, p. 6; TransGrid, p. 3.

218 ENA submission to the draft determination, p. 7.

219 Submissions to the draft determination: ERM Power, p. 3; Tilt Renewables, p. 1; WalchaEnergy, p. 2.

C.1.3

Final rule

Under the final rule the DNA owner is responsible for administering access to its DNA.²²⁰ The Commission agrees with stakeholders that the benefits of facilitating bespoke pricing arrangements for DNAs, access to relevant commercially sensitive information, and allocation of unused capacity that arise under the DNA owner administering access justify a departure from the draft rule.

The change to the DNA owner administering access however raises issues in relation to

- vertical integration
- hindering of access
- separation of connection and access services, and
- contractual arrangements.

Vertical integration

Under the draft rule, the Commission's rationale for removing the ownership restriction for IUSAs and not introducing an ownership restriction for DNAs was based on the Primary TNSP administering access to these assets. As such, under the draft rule a founding party would have never administered access to its asset.

However, stakeholders argued that the DNA owner would be best placed to administer DNA access. They argued that only the DNA would have the relevant information to determine the availability of 'spare' capacity and set connection charges to support its individual investment case. This argument implicitly assumes the DNA owner is the same party as the foundation user, i.e. the party connecting to the transmission network.

Accordingly, making the DNA owner responsible for DNA access seeks to facilitate investment by connecting parties in transmission assets, which allows the foundation user to control third party access and pricing to their assets. This position is also consistent with the existing arrangements for DCAs, which do not prevent the foundation user owning, operating and controlling a large DCA, including negotiating access with subsequent parties.

The Commission considers the risks related to vertical integration, i.e. access frustration, to be potentially more material under a regime where the DNA owner controls access. Although this risk currently exists under the large DCA regime, the objective of the DNA framework is to facilitate multiple parties connecting to a DNA. Accordingly, the Commission considers the risk of access frustration is greater for DNAs than under the regime for large DCAs.

Introducing an ownership restriction may, however, stifle efficient investment in transmission infrastructure if the party that makes the investment is not allowed to own the asset and control access to the assets.

Accordingly, through further changes between the draft and the final rule (in relation to the negotiating principles and the DNA access policy as described throughout this Appendix in further detail), the Commission aims to balance the bargaining power of the DNA owner during negotiations with an access seeker.

²²⁰ Clauses 5.2A.2(b)(7) and 5.2A.3(d1)(2) under Schedule 2 of the Amending Rule.

Obligation on the DNA owner to not prevent or hinder DNA access

A DNA owner must not engage in conduct for the purpose of preventing or hindering access to DNA services, if an access seeker is complying with all requirements under the rules and willing to pay the price set by the DNA owner.²²¹ Complying with its obligation to provide access may require the DNA owner to upgrade or increase the capacity of its DNA to facilitate a new connection, with the access seeker having to pay for such an upgrade or increase in capacity to facilitate its connection.²²² This could, for example, take the form of upgrading switchgear.

If such an increase in capacity is not possible, the DNA owner has no obligation to replicate the existing DNA to facilitate a connection or geographically extend its DNA,²²³ given that the new regime will allow for geographically 'growing' DNAs (See section F.2 in Appendix F for further detail).²²⁴ Existing principle 2 under Schedule 5.12 effectively puts an obligation on the DCASP to also *enlarge* its existing large DCA. Under the new DNA framework, which allows for DNA to DNA connections, the Commission considers such an obligation on the DNA owner to enlarge its DNA to facilitate a third party connection, which could be interpreted in terms of an obligation to extend the DNA, is not necessary.

Further, a DNA owner is not required to give access to an applicant for DNA services if doing so would mean the DNA would no longer constitute a DNA, e.g. if as a result of the new connection the DNA would constitute a network loop.²²⁵

Separation of 'connection services' provided by the Primary TNSP and 'access services' provided by the DNA owner

The final rule introduces new obligations and restrictions on the DNA owner and the Primary TNSP due to the separation of 'access services' from 'connection services':

- Obligation on the DNA owner to provide the Primary TNSP with any information it needs to take into account when making an offer to connect such as the power transfer capability.²²⁶
- Obligation on the Primary TNSP to not make an offer to connect without having received written confirmation from a DNA owner that access to the DNA has been granted by the DNA owner.²²⁷

Contractual arrangements to support the separation of 'connection services' and 'access services'

Depending on which party the DNA owner is (e.g. whether the DNA owner is the Primary TNSP or another party), the contractual agreement that governs the relationship between the connecting party and DNA owner may take different forms, for example:

221 Clause 5.2A.8(l) under Schedule 2 of the Amending Rule.

222 Principle 1(1) in Schedule 5.12 under Schedule 2 of the Amending Rule.

223 Principle 5(d) in Schedule 5.12 under Schedule 2 of the Amending Rule.

224 Clause 5.2A.2(a1)(4) under Schedule 2 of the Amending Rule.

225 Clause 5.2A.8(m) under Schedule 2 of the Amending Rule.

226 Clause 5.3.6(a3)(2) under Schedule 2 of the Amending Rule.

227 Clause 5.3.6(a3)(1) under Schedule 2 of the Amending Rule.

- if the DNA owner is not the Primary TNSP (e.g. a foundation load or generator, or a third party service provider) the agreement may take the form of a commercial contract between the DNA owner and a subsequent connecting party.
- if the DNA owner is the Primary TNSP, the agreement may form part of the connection agreement between the Primary TNSP as the DNA owner and a subsequent connecting party rather than a separate contractual agreement.

The Rules do not prescribe the need for, or form of, this contractual relationship because:

- they might be the same party and then would not necessarily have a contract,
- if they are different parties, the final rule does not prescribe the type of contract and what it needs to contain.

C.2 'Negotiate-arbitrate' regime based on negotiating principles

BOX 9: CHANGES BETWEEN THE DRAFT AND THE FINAL RULE

There were several changes between the draft and the final rule relating to the aspect of negotiating principles for access to DNA services. Specifically, the final rule:

- Provides further specification regarding the concept of 'avoided costs'
- Allows for price discrimination between different DNA connecting parties by ensuring the DNA owner can flexibly charge access seekers a price for DNA access between avoided and standalone costs.

C.2.1 Current arrangements

'Negotiate-arbitrate' framework

The existing large DCA regime is a 'negotiate-arbitrate' framework, whereby the large DCA negotiating principles under existing Schedule 5.12 define the 'boundaries' for large DCA access negotiations.

Negotiate-arbitrate regulation is a relatively light-handed form of regulation. Under the existing access regime for large DCAs, the DCASP for a large DCA and an access seeker are able to negotiate specific, bespoke services that best suit their investment case, needs and risk appetites. This contrasts and sits in between, for example, revenue cap regulation and an unregulated framework.

If the negotiation process fails to lead to an agreed outcome, binding arbitration can be used under rule 5.5 of the NER.

As a result, the existing large DCA negotiate-arbitrate regulation provides negotiating parties with flexibility and substantial regulatory costs are only incurred if a large DCA access matter is taken to arbitration.

Negotiating principles for access to large DCA services

The *Negotiating principles for large DCA services* under Schedule 5.12 define the rights of existing connected parties and the DCASP as well as obligations of new connecting parties. They seek to ensure that a new connection to a large DCA does not occur to the detriment of existing parties, including the DCASP and connected generators or customers through the following principles:

- An applicant for large DCA services should pay for the cost of any enlargement or increase in capacity of, or alterations to, the DCA that are required to provide it with large DCA services. This may include the moving of metering and other related equipment necessary to enable the applicant's connection.²²⁸
- The connection of an applicant to the DCA and access to large DCA services must not adversely affect the access standards, including performance standards and power transfer capability, of an existing connecting party at the time of the access application by the applicant.²²⁹
- The connection of an applicant to the DCA and access to large DCA services must not adversely affect contractual obligations of an existing connecting party with the relevant DCASP.²³⁰
- An applicant must compensate the DCASP and any existing connecting party for any lost revenue incurred during an upgrade of, or alterations to, an existing large DCA, including moving metering and other related equipment to enable the connection and operation of an applicant's facility and access to large DCA services.²³¹
- The connection of an applicant to a large DCA and access to large DCA services must not:²³²
 - prevent an existing connecting party from obtaining a sufficient amount of large DCA services to meet that person's reasonably anticipated requirements, measured at the time of the access application
 - result in the applicant becoming the owner (or one of the owners) of any part of the existing large DCA or upgrade of that asset without the consent of the existing owner
 - require an existing connecting party or the owner of the large DCA to bear all or some of the costs of an upgrade of the large DCA
 - require an existing connecting party to the large DCA to bear all or some of the costs of an interconnection to the large DCA or maintaining an interconnection.²³³

228 Principle 2 of Schedule 5.12 of the NER.

229 Principle 3 of Schedule 5.12 of the NER.

230 Principle 4 of Schedule 5.12 of the NER.

231 Principle 5 of Schedule 5.12 of the NER.

232 Principle 6 of Schedule 5.12 of the NER.

233 The term 'interconnection' refers to connection in the context of a 'connection asset'.

Pricing and cost sharing provisions for large DCA services

Principle 1 of Schedule 5.12 applies a number of principles contained in Schedule 5.11 *Negotiating principles for negotiated transmission services* for the purposes of regulating the pricing and cost sharing for third parties seeking access to large DCA services.

As a result, these negotiating principles apply in the same way they would for services provided as negotiated transmission services.

Of particular relevance are Principles 2 and 5-7 of Schedule 5.11 on pricing and cost-sharing:²³⁴

- Principle 2 of Schedule 5.11 requires that the price for a large DCA service should be at least equal to the avoided cost of providing it but no more than the cost of providing it on a stand-alone basis.
- Principle 5 of Schedule 5.11 requires that the price for a large DCA service must be the same for all transmission network users unless there is a material difference in the costs of providing the large DCA service to different transmission network users.
- Principle 6 of Schedule 5.11 requires the price for a large DCA 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.
- Principle 7 of Schedule 5.11 requires the price for a large DCA service should be such as to enable the DCASP to recover the efficient costs of complying with all regulatory obligations or requirements associated with the provision of the large DCA service.

C.2.2

Draft rule

The third-party access regime for DNAs under the draft rule was based on a number of negotiating principles that are similar, in large part, to those that apply in the current arrangements for large DCAs. However, some changes were necessary to reflect the allocation of the responsibility for third party DNA access to the Primary TNSP under the draft rule.

Negotiating principles for access to DNA services

The draft rule integrated the principles incorporated by reference from Schedule 5.11 in the current arrangements directly into this new Schedule 5.12, to the extent the Commission considered these to be relevant.

Under the draft rule, the following principles in the new Schedule 5.12 underpinned access policies and access negotiations:²³⁵

1. The price for a DNA service should be at least equal to the avoided cost of providing it but no more than the cost of providing it on a stand-alone basis.

²³⁴ Principles 3 and 4 of Schedule 5.11 have proven to be difficult to apply in instances where no shared transmission service, i.e. only a large DCA service, is being provided.

²³⁵ See Schedule 5.12 under Schedule 2 of the Draft Rule.

2. The price for a DNA service should be such as to enable the Primary TNSP to recover the efficient costs of complying with all regulatory obligations or requirements associated with the provision of the DNA service.
3. An applicant for DNA services should pay for the cost of any enlargement or increase in capacity of, or alterations to, a designated network asset that are required to provide it with DNA services. This may include the moving of metering and other related equipment necessary to enable the applicant's connection.
4. The connection of an applicant to a DNA and access to DNA services must not adversely affect the access standards, including performance standards and power transfer capability, of an existing connecting party at the time of the access application by the applicant.
5. The connection of an applicant to a DNA and access to DNA services must not adversely affect contractual obligations of an existing connecting party with the relevant Primary TNSP.
6. To the extent that the applicant's subsequent connection adversely impacts the access standards, performance standards, power transfer capability or contractual obligations of an existing connecting party, then an applicant for DNA services to an existing DNA must provide reasonable compensation to an existing connecting party to that DNA.
7. An applicant must compensate the owner of the DNA, the Primary TNSP and any existing connecting party for any lost revenue incurred during an upgrade of, or alterations to, an existing DNA, including moving metering and other related equipment to enable the connection and operation of the applicant's facility and access to DNA services.
8. The connection of an applicant to a DNA and access to DNA services must not:
 - prevent an existing connecting party from obtaining a sufficient amount of DNA services to meet that person's reasonably anticipated requirements, measured at the time of the access application by the applicant
 - result in the applicant becoming the owner (or one of the owners) of any part of the DNA or upgrade of that asset without the consent of the existing owner
 - require an existing connecting party or the owner of the DNA to bear all or some of the costs of an upgrade of the DNA or maintaining an upgrade
 - require an existing connecting party to the DNA to bear all or some of the costs of a connection to the DNA or maintaining a connection.

Addition of 'compensation principle' under the draft rule

The main difference compared to the existing large DCA framework was the addition of principle 6 under the draft rule. Principle 6 recognised that access provided by the Primary TNSP to each generator by way of the power transfer capability of the DNA may be affected by unforeseen impacts. Therefore, to the extent that the power transfer capability of an existing party would be adversely affected by a subsequent party, principle 6 required that reasonable compensation must be provided.

The draft determination stated that examples of such situations might involve intermittent renewable generation, particularly where this has been supplemented by storage. Given the

diversity in their output, such generators may be able to share transmission capacity, but there may be rare occasions when there is an impact on the power transfer capability of the DNA that was not foreseen at the time of connection. The draft determination further noted that connecting parties may wish to enter into agreements to formalise the sharing of access (for instance, if they are likely to generate at different times), and nothing in the principles under the draft rule precluded this.

Cost sharing to be dealt with by a Primary TNSP's access policy

Under the draft rule, a Primary TNSP's standard access policy for DNAs needed to contemplate cost sharing arrangements. This requirement resulted from the change in the party administering access. Under the DCA framework, it was anticipated that the party administering access - the DCASP - and the first connected party would likely be the same entity or would be related parties. Under the draft rule, the Primary TNSP took on the role previously performed by the DCASP. Consequently, the draft rule included an additional requirement on the Primary TNSP to include in its access policy information about the processes and mechanisms the Primary TNSP would implement in relation to the protection of users' rights and the sharing of costs, given that it may not otherwise have the same incentives to do so as a DCASP integrated with a connected party.

C.2.3

Stakeholder views

Stakeholder submissions to the draft rule determination

The Commission notes that stakeholder comments in relation to the negotiating principles for DNA access were made in the context of the Primary TNSP being responsible for administering DNA access. The following issues may have not been raised by stakeholders to the same extent if the DNA owner were responsible for administering access under the draft rule, as is now the case under the final rule.

Comments made in relation to the negotiating principles for DNA access

A number of stakeholders made specific comments in relation to the draft negotiating principles under Schedule 5.12.

RES Group proposed amendments to draft principles 5 and 6 to allow for protection of generators' obligations under their whole suite of contractual obligations with different parties and compensation in case of degradation of MLFs as a result of a new connection to a DNA:

- With regard to draft negotiating principle 5 under Schedule 5.12, RES Group noted that generators have a complicated suite of contractual obligations with landowners, planning permits, lenders and offtakers via power purchase agreements (PPAs). PPAs typically place obligations on generators for seasonal minimum generation levels. RES Group suggested the introduction of a mechanism to ensure future connections do not negatively impact the ability of the funding party to meet its contractual obligations beyond those with the TNSP, e.g. under PPAs.
- With regard to draft negotiating principle 6 under Schedule 5.12, RES Group suggested the negotiating principle should be extended to allow for compensation if a subsequent

connection leads to a reduction in MLF caused by the subsequent increase in power flow across the DNA.

Similarly, ERM Power requested that draft principle 6 under Schedule 5.12 should be strengthened so that a new connecting party is required to take action, e.g. restricting generation output, not just provide economic compensation, such that the access standards, performance standards, power transfer capability or contractual obligations of an existing connecting party are not adversely impacted. In considering compensation for economic loss under draft principle 6 under Schedule 5.12, ERM Power suggested the final rule must state this is based on the economic loss to an existing connecting party or the owner of the DNA for the duration that this economic loss is continued.²³⁶

Lack of detail provided by the draft rule on cost sharing arrangements

Stakeholders who commented on the issue of cost sharing pointed to the lack of detail provided by the draft rule.

TNSPs commented that the final rule should clearly define the cost sharing arrangements between the DNA owner and connecting parties and not require the TNSP to manage the transfer of funds between these parties.²³⁷ More specifically, TNSPs stated the aspect of how contestable costs for the construction of the asset would be allocated to subsequent connecting parties remains unclear.²³⁸

Likewise, generators/retailers, large load customers and renewable energy developers commented on the lack of detail provided by the draft access framework for DNAs and also noted that further work is necessary to clarify how the cost sharing arrangements are intended to work.²³⁹ OzMinerals, added that the final rule should expressly include provisions equivalent to those contained in principles 5 and 6 of the current Schedule 5.11.²⁴⁰

The CEC summarised this concern as follows:²⁴¹

"It is confusing as to whether the AEMC intends that the DNA cost sharing arrangements would be outlined in the access policy or in a separate agreement or document that would sit alongside the access policy. The draft determination states that the access policy 'may contemplate cost sharing from subsequent applicants who are seeking DNA services from that asset' but this does not make it clear how the cost sharing arrangements will be actioned through the access policy. This should be clarified in the final rule."

236 ERM Power submission to the draft determination, p. 4.

237 ENA submission to the draft determination, p. 3-4.

238 Submissions to the draft determination: ENA, p. 4, 6, 8; Powerlink, p. 1; TransGrid, p. 2.

239 See for example the submissions to the draft determination from Origin, p. 1; OzMinerals, pp. 9-13; RES Group, p. 2, 5; Tilt Renewables, p. 1.

240 OzMinerals submission to the draft determination, p. 12.

241 CEC submission to the draft rule, p. 2-3.

DNA owner to be responsible for administering cost sharing arrangements

The CEC further added that a standard access policy could not appropriately incorporate costs sharing arrangements as these are likely to be bespoke to the individual DNA and the DNA owner should maintain control over the cost sharing arrangements.²⁴²

Similarly, TNSPs mentioned that it would not be appropriate for the Primary TNSP to administer cost-sharing arrangements where a third party has constructed the asset due the Primary TNSP not having the relevant commercially sensitive information.²⁴³

Cost sharing arrangements need to address the free-rider problem

OzMinerals noted that where the costs of constructing a DNA have been underwritten by a connecting party, it is important that the rights and interests of the foundation user are protected by ensuring that the costs of such assets (i.e. capital and O&M charges) are equitably shared between the foundation user and all future users.²⁴⁴

Likewise, Tilt Renewables, Origin and ERM Power stated that the draft rule does not successfully address the 'free-rider problem' by not providing for a cost sharing framework for capital costs, which could prevent a business model whereby the party providing the funding would 'oversize' a DNA with the option to use or sell the spare capacity in the future.²⁴⁵ Based on the current wording of the negotiating principles under the draft rule, ERM Power argued that if there was spare, non-allocated capacity, then a third party seeking access could do so without having contributed to the capital cost when they connect, as long as it didn't adversely impact existing connecting parties. To address this issue, ERM Power suggested adding a principle to draft Schedule 5.12 that would allow the DNA owner (or the Primary TNSP if acting as their agent) to charge an additional fee to applicants seeking to connect to an existing DNA, proportional to the capacity they would use.²⁴⁶ Likewise, Tilt Renewables emphasised that such costs sharing should even apply when there is no impact on existing generators using the DNA when using 'spare' capacity.²⁴⁷

Stakeholder roundtable on DNA access

Stakeholders at the roundtable also expressed difficulties with regard to interpreting the draft pricing principle under Schedule 5.12, based on the concepts of 'avoided costs' and 'standalone costs' and asked the AEMC to provide further clarification regarding these concepts that define the lower and upper bound of the range for pricing DNA access.

Further, these stakeholders also requested that the AEMC clarify the extent to which a DNA owner can use a flexible methodology for cost allocation amongst DNA connected parties to support its individual investment case, e.g. to incentivise more foundation generators to connect earlier to its DNA.

242 CEC submission to the draft determination, p. 3.

243 Submissions to the draft determination: ENA, p. 3, 6; TransGrid, p. 3.

244 Oz Minerals submission to the draft determination, pp. 9, 11-13.

245 Submissions to the draft determination: ERM Power, p. 3; Origin, p. 1; Tilt Renewables, p. 1.

246 ERM Power submission to the draft determination, p. 3.

247 Tilt Renewables submission to the draft determination, p. 1.

C.2.4

Final rule

Negotiating principles for access to DNA services

The DNA access framework in the final rule is largely based on the existing large DCA negotiating principles. The Commission considers, and stakeholders have also expressed support for, the existing large DCA negotiating principles representing an appropriate starting point for defining negotiating principles under the new DNA framework. It also includes changes compared to the draft rule as a result of allocating the responsibility for DNA access to the DNA owner (instead of the Primary TNSP).

In particular, the *Negotiating principles for access to DNA services* seek to ensure that a new connection to a DNA does not occur to the detriment of existing parties, including the DNA owner and connected generators or customers. While the Commission considers the existing framework is a good basis for the new framework, the final rule improves Schedule 5.12 by including changes to clarify, simplify and remove inconsistencies in the existing large DCA principles.

Further, consistent with the draft rule, Schedule 5.12 under the final rule integrates the principles incorporated by reference from Schedule 5.11 in the current arrangements directly into new Schedule 5.12, to the extent these are relevant.

Price for DNA access can be set between 'avoided' and 'standalone' costs

The Commission considers the economic principles underpinning existing pricing principle 2 in Schedule 5.11 are largely fit for purpose. These principles require the price range for access to DNA services to fall between an upper bound (standalone costs) and a lower bound (avoided costs). Within this range the DCASP can set prices for access to the large DCA.

Allocative efficiency requires that the quantity of the good/service that is produced is the amount at which the marginal social benefit of the good/service is equal to the marginal social cost. While marginal cost refers to the costs caused by a small and permanent increase of a cost driver on total costs, in practice measuring marginal costs is difficult. Avoidable costs are commonly used to approximate the marginal cost. Avoidable costs are all those costs that can be avoided by a change in demand, where the change in demand is an incremental change.

The rationale for the principle that prices for DNA services should be above avoidable costs is that prices below the avoidable costs incentivise consumers of the service (another generator, say) to use the DNA service even if their own value of the service is below the cost of its provision, which is inefficient.

In practice, the avoidable cost of DNA services may often be very low if there is spare capacity on the DNA, potentially only reflecting the marginal effect on losses. However, if there is little spare capacity then the avoidable cost may be material, including:

- the net present value of avoided future investment that would otherwise be made to expand capacity to accommodate future generators or load

- the costs associated with congestion (e.g. the cost of dispatching a more expensive generator elsewhere on the grid to meet demand, instead of a constrained generator on a DNA).

DNAs, like other transmission infrastructure, have technical characteristics that are consistent with those of a natural monopoly. Natural monopolies exhibit economies of scale and hence declining average costs over the range of all the demand in the market. If average costs are declining, this means that the marginal/avoidable cost (i.e., the cost of meeting the next unit of demand) must be less than the average cost. This means that marginal/avoidable cost-based pricing will not allow the service provider to recover all efficiently incurred costs, leaving potentially material residual costs to be recovered.

Recognising this issue, and the importance of allowing investors in natural monopoly infrastructure to earn revenue to recover their efficient costs (including an appropriate rate of return) to incentivise investment, the pricing principle allows for prices to be above marginal costs, despite pricing above marginal costs disincentivising consumption even when that consumption would have been efficient .

Instead, prices are capped at the standalone costs, which represent the costs that would be incurred to replicate or bypass the infrastructure used to provide a service. Accordingly, a DNA owner cannot charge a subsequent connecting party more than the cost of establishing a new DNA sized for the respective new connection. For example, if the existing DNA has a capacity of 200MW and is 50km long and the subsequent connection would require 50MW of transmission capacity and would be located 30km away from the existing transmission network, the DNA owner could not charge the subsequent connecting party more than it would cost to build a new DNA to facilitate this new connection.

At prices above this level, profit maximising parties (in this case, this would likely be subsequent generators) would rationally replicate or bypass the service provided by the DNA owner (e.g. duplicate the assets), resulting in productive inefficiency.

Due to the economies of scale in the provision of DNA services, it may be that standalone costs are material. This may leave a very large window between which prices can be set – above potentially very low avoidable costs and below potentially very high standalone costs.

Given these economies of scale, it may be that a DNA owner is able to earn significantly above the costs of building the DNA. Nothing in the final rule would prevent that. Indeed, to the extent that this provides certainty to investors, this may have benefits in terms of facilitating efficient transmission investment in a timely manner.

Further specification of the concept of avoided costs

The Commission's discussions with stakeholders have revealed that stakeholders have difficulty interpreting the concept of 'avoided costs'. To create improved understanding amongst access providers and seekers, the final rule provides further specification of the principle by providing a non-exhaustive list of potential examples of avoided costs. The final

rule states that avoided costs may include the following costs that would be incurred by the existing connected party and the owner of the DNA:²⁴⁸

- capital costs incurred by the existing owner of the DNA for the increase in the capacity or alteration to that existing DNA including the moving of metering and other related equipment, to provide the DNA service;
- any lost revenue incurred by the owner of the DNA or existing connected parties during an upgrade of, or alteration to, that existing DNA;
- any lost revenue incurred by the existing connected parties resulting from changes to its MLF caused by the subsequent connection to the DNA;
- any increase in operation and maintenance costs incurred by the owner of the DNA caused by the subsequent connection to the DNA;
- any increase in the costs of any charges for use of system services incurred by existing connected parties caused by the subsequent connection to the DNA.

Avoided costs to whom?

The final rule clarifies that the concept of avoided costs used in the context of Schedule 5.12 encompasses avoided cost to the DNA owner *and* existing connected parties.²⁴⁹ Given the negotiating principles aim to protect the rights of the DNA owner and connected parties, prices based on avoided costs seek to signal to the connecting party the costs to the DNA owner and existing connected parties. It is not attempting to internalise into the access price all social costs that might arise from the connection of new parties.

New principle to account for avoided costs being above the standalone costs

There may be instances where the avoided costs could be higher than the standalone cost of providing the service, e.g. if an existing connected party would be unable to participate in the spot market during the time the DNA is being upgraded to facilitate a new connection because the DNA is out of service for the upgrade, resulting in a material decrease in revenue. In this case, the final rule specifies that a DNA owner can charge the avoided cost if those costs exceed the standalone cost, i.e. charge higher than the upper price bound defined in principle 1 under Schedule 5.12 under the final rule.²⁵⁰ The Commission expects that this in turn would incentivise a connecting party to either build a new DNA rather than connect to the existing DNA (which would be an efficient outcome given that this would be lower cost), or find a connection configuration that results in lower costs to existing connected parties.

Interaction of the concept of standalone cost and staging of projects

One issue raised by stakeholders in submissions and at the stakeholder roundtable was that the DNA access regime should allow for a DNA owner (or the foundation user if they are

²⁴⁸ See Principle 1 of Schedule 5.12 under Schedule 2 of the Amending Rule. The subsets of avoided costs are currently partly captured by other principles under existing Schedule 5.12 on *Negotiating principles for large DCA services*, which are under the final rule subsumed under Principle 1, Schedule 5.12.

²⁴⁹ Principle 1 in Schedule 5.12 under Schedule 2 of the Amending Rule.

²⁵⁰ Principle 2 in Schedule 5.12 under Schedule 2 of the Amending Rule.

different parties) to effectively 'reserve' spare DNA capacity in case the party that made the initial investment is planning a staged development.

The Commission considers the issue of staging of projects and the DNA owner (or the foundation user) essentially 'reserving' unused DNA capacity is addressed well by the application of the standalone-avoidable cost bounds.

For example, if a DNA owner wants to reserve capacity for its future generation stages, it will choose to set the price of access for a connecting party that would use that capacity at the stand-alone cost of providing access services to that party (i.e. likely a very high price). In all likelihood this will deter a potential connecting party from seeking to connect. If it does not, it will leave the DNA owner better off (likely materially so), as illustrated by the example in Box 10 below.

BOX 10: INTERACTION BETWEEN THE CONCEPT OF STANDALONE COSTS AND STAGING OF PROJECTS

The interaction between the concept of standalone costs and staging of projects can be illustrated by the following example: A DNA with a total capacity of 200MW is built at a cost of \$20m and initially only 100MW are connected in stage 1, however, the intention of the DNA owner is to connect another 100MW in stage 2. Prior to starting the development of stage 2, a third party seeks access to the existing DNA to connect its 100MW facility.

Based on the definition of the upper price bound for pricing DNA access through the concept of standalone cost, the DNA owner could charge the access seeker a dollar less (e.g. \$15m) than what it would cost to build a new DNA with a capacity of 100MW. As transmission is 'lumpy', charging the standalone cost of building a new DNA would most likely result in much higher costs than charging what it would cost to augment (e.g. \$3m) the existing DNA to facilitate the new connection. The outcomes of pricing DNA access just below the standalone cost would be the following:

- **DNA owner could effectively reserve DNA capacity through pricing:** the DNA owner can effectively reserve the existing unused DNA capacity for its planned stage 2 if the existing DNA is built out to facilitate the new connection, and
- **DNA owner would possibly make a significant financial gain:** the access seeker can be charged just below the standalone cost (e.g. \$15 million) to facilitate its connection. This would mean the DNA owner would still be able to develop stage 2 of its own project by augmenting the DNA at a cost likely considerably less (e.g. \$3 million) than the price charged to the third party access seeker, thereby likely making a significant financial gain (if charging access just below the upper bound of the price range).

Given the stand alone-avoidable cost bounds already sufficiently provides for staging of projects, the Commission does not consider changes to specifically allow reserving of capacity for staged projects is necessary.

DNA owner can use a flexible methodology for cost allocation

Under the final rule, there is no prescription on how the DNA owner allocates costs to different connecting parties other than the standalone-avoidable cost bound.

This is different from the draft rule (and the existing large DCA regime), which provided that the price for O&M and capital costs should be the same for all transmission network users unless there are material differences.²⁵¹ An example of this could be where one transmission network user uses more transfer capacity or length of the asset than another transmission network user.

The Commission interprets this existing principle as effectively requiring a particular pricing structure. This does not align with the objective of providing a flexible framework to DNA owners to facilitate investment in DNAs. By removing the requirement from the draft rule that all connecting parties are charged the same price (unless there is a material difference in services), the final rule provides flexibility for DNA investors to:

- offer foundational users lower prices than subsequent users
- apply different prices for technology types
- apply different prices based on agreements for types of use, e.g. different times of day.

The Commission also notes that allowing for price discrimination makes the DNA access regime more consistent with the national third-party access regime under Part IIIA of the Competition and Consumer Act 2010, which expressly allows for price discrimination.²⁵²

No application of a cost sharing principle but access policy may consider cost sharing

Consistent with the draft rule, under the final rule the existing cost sharing principle that applies in the context of large DCAs²⁵³ is not carried over into new Schedule 5.12 *Negotiating principles for DNA services*. The existing cost sharing principle states:

"The price for a large DCA 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."

The Commission interprets this clause as mandating that when a subsequent party connects to a DNA, existing connected parties' access prices must decrease in line with the revenue being earned from the subsequent connecting party by the DNA owner. This effectively places a cap on the maximum revenue that a DNA owner can earn. The Commission considers such a cap is contrary to the intention of the light handed regulatory framework for DNAs and would significantly limit the incentives to invest in DNAs.

Many stakeholders favoured reinstating the principle on the grounds that they see cost sharing arrangements as desirable. However, the Commission considers that removing the principle does not in any way restrict DNA owners and connecting parties from including cost

²⁵¹ Principle 5 in Schedule 5.15 of the NER.

²⁵² Section 44ZZCA(b)(i) under Part IIIA of the CCA.

²⁵³ Principle 6, Schedule 5.11 of the NER.

sharing arrangements in their access agreements. Instead, it simply does not mandate this to be the case. To make this clear, the final rule provides for an access policy to consider cost sharing arrangements between applicants who seek access to DNA services and existing parties connected to the DNA.²⁵⁴ Accordingly, when negotiating parties consider these arrangements are beneficial they will be able to include them, but when they are not (for example, when a subsequent connecting party is the staged development of the DNA owner), there is no requirement to do so.

Introduction of new obligations on the DNA owner and connecting parties

In addition to the changes in relation to the existing large DCA negotiating principles, the final rule introduces new obligations on the negotiating parties which aim to facilitate effective negotiations and thereby seek to reduce the potential for arbitration in case of unsuccessful access negotiations. These are:

- **Obligation to negotiate in good faith:** Both parties, the DNA owner and an access seeker, must negotiate in good faith.²⁵⁵
- **Obligation to follow timeframes for negotiation:** Negotiating parties must comply with the timeframes for negotiation set out in the access policy for a DNA (see C.3.4 in this Appendix for further detail on the proposed new obligation of the DNA owner to include timeframes for negotiation in its access policy).²⁵⁶
- **Obligation to comply with the pricing methodology:** The DNA owner must comply with the method for calculating the price for access set out in the pricing methodology in its access policy (see section C.3.4 in this Appendix for further detail on the proposed new obligation of the DNA owner to include a pricing methodology in its access policy).²⁵⁷

254 See clause 5.2A.8(b2) under Schedule 2 of the Amending Rule.

255 Clause 5.2A.8(b3) under Schedule 2 of the Amending Rule.

256 Clause 5.2A.8(b3) under Schedule 2 of the Amending Rule.

257 Clauses 5.2A.8 (b3) and (b4) under Schedule 2 of the Amending Rule.

C.3 Information to be included in DNA access policies

BOX 11: CHANGES BETWEEN THE DRAFT AND THE FINAL RULE

The Commission has made several changes between the draft and the final rule relating to the content of DNA access policies. Specifically, the final rule:

- Introduces a new obligation on the DNA owner to publish a pricing methodology and state in its access policy whether the capacity of its DNA cannot be increased. Further, the DNA owner must update information on its website regarding the current 'utilisation' of the DNA, in terms of total DNA capacity and the capacity of existing connections to its DNA. This will help to inform potential access seekers on prices for DNA access as set out in the pricing methodology.
- Introduces a new obligation on the DNA owner to specify the process for access negotiations, including the timeframes, in its access policy.

C.3.1 Current arrangements

A large DCA access policy needs to be consistent with the negotiating principles under Schedule 5.12 (and the ones included by reference to Schedule 5.11) and the rules further specify the information that a large DCA access policy is required to contain.

Access framework for large DCAs - NER clause 5.2A.8(b)

An access policy must include, as a minimum, the following information:

- a description of the routes, tenure arrangements and main components of the large DCA and the facilities connected to it;
- any material regulatory limitations relating to the development and operation of the large DCA;
- the pricing principles and the key terms which are proposed to apply to the provision of large DCA services where such principles and terms must be consistent with schedule 5.12;
- 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 in the case of a dispute.

C.3.2 Draft rule

Under the draft rule, the Primary TNSP was responsible for administering access to all DNAs that form part of its transmission network. To discharge this responsibility, each Primary TNSP was required to develop a standard access policy that would apply to all DNAs that

form part of its network, consistent with draft rule Schedule 5.12 on *Negotiating principles for DNA services*.

Standard access policy for designated network assets

Under the draft rule, a Primary TNSP's standard access policy for DNAs needed to include the following information:²⁵⁸

- the pricing principles and the key terms proposed to apply to the provision of DNA services where such principles and terms are consistent with Schedule 5.12
- the extent to which the connection processes in rule 5.3 was supplemented or modified by the access policy
- advice on the availability of commercial arbitration under rule 5.5 in the case of a dispute
- the processes and mechanisms that the Primary TNSP was to implement to protect the rights of existing users of a DNA (including cost sharing from subsequent applicants seeking DNA services from that asset)
- the process by which a Primary TNSP notified existing persons with a connection agreement in respect of that DNA of new applicants seeking DNA services from that asset.

The first three of these requirements represent provisions carried over from the existing rules relating to DCASP access policies, whereas the latter two requirements stem from the change in the party administering access under the draft rule. Under the DCA framework, it was anticipated that the party administering access - the DCASP - and the first connected party would likely be the same entity or would be related parties. This would have not been the case for DNAs under the draft rule, where the Primary TNSP was to take on the role previously performed by the DCASP.

Accordingly, the draft rule provided for some changes to the information to be included in a standard access policy, due to the Primary TNSP administering access to DNAs. However, the draft rule did not provide for any further specification in relation to the scope of information to be provided by an access policy in terms of additional pricing information and timeframes for negotiation.

C.3.3

Stakeholder views

In response to stakeholder submissions, the Commission decided to allocate the responsibility for administering DNA access to the DNA owner, including the responsibility to develop and publish an individual DNA access policy. As such, stakeholder comments in relation to the issue of a Primary TNSP's standard access policy versus a DNA owners' individual access policies are not considered here in further detail.²⁵⁹

²⁵⁸ Clauses 5.2A.8(c)(1)-(5) of the draft rule.

²⁵⁹ See, for example, submissions to the draft determination from the CEC, p. 2-3; ERM Power, p. 3; Origin, p. 1.

Stakeholder submissions to the draft rule determination

RES Group stated that TNSPs' standard access policies should include a transparent cost allocation methodology so that developers can accurately determine the financial viability of projects connecting to DNAs at the earliest possible stage. The methodology must accurately specify how costs are allocated based on power transfer capability, energy throughput, length of line or any other relevant metrics.²⁶⁰

The CEFC noted that the new framework should allow for the establishment of scale efficient network solutions. According to the CEFC this requires review of the access policy requirements to allow a DNA owner to tailor the access policy to support its individual investment case and incentivise further generators to connect.²⁶¹

The CEFC noted that a DNA owner's access policy could set the parameters for a scale efficient solution, such as caps on capacity and cost allocation principles that it considers necessary to maximise demand from generators. The DNA owner would then disclose the parameters set by reference to the scaled solution to all interested parties and this information forms the basis of their due diligence (grid studies, transmission loss factor forecasts, etc.). The CEFC further argued that consequently subsequent generators would not need to compensate foundation generators due to the deterioration of the latter's project (if within the DNA's access policy parameters) because the basis of their investment was with full knowledge that capacity up to a cap was permitted.²⁶²

Stakeholder roundtable on DNA access

Discussions with stakeholders at the AEMC's stakeholder roundtable on DNA access have revealed that DNA access policies would not provide any benefit if they do not provide further specification on pricing and negotiation timeframes beyond what is already included under the negotiating principles under Schedule 5.12 (and the principles included by reference under Schedule 5.11).

C.3.4

Final rule

Individual access policies for each DNA

As set out previously, responsibility for administering DNA access rests with the DNA owner under the final rule.²⁶³ Due to this change, under the final rule, each DNA owner is responsible for developing and publishing an individual DNA access policy for its DNA.²⁶⁴

Additional information to be included in a DNA access policy

The Commission considers a DNA access policy could provide significant benefit to access seekers if it would provide additional information on pricing and timing for DNA access.

²⁶⁰ RES Group submission to the draft determination, p. 5.

²⁶¹ CEFC submission to the draft determination, p. 3.

²⁶² CEFC submission to the draft determination, p. 3.

²⁶³ Clauses 5.2A.2(b)(7) and 5.2A.3(d1)(2) under Schedule 2 of the Amending Rule.

²⁶⁴ Clause 5.2A.8(b) of Schedule 2 of the Amending Rule.

However, the Commission's analysis has revealed that currently a large DCA access policy may fail to provide this information because:

- the framework for access to large DCA services builds on a negotiate-arbitrate framework, whose objective is to facilitate negotiations between parties to come up with an individual access agreement, whereby connection charges are determined on a case-by-case basis, and
- there is no requirement under the rules that an access policy should include:
 - a. **Additional pricing information** – Existing NER clause 5.2A.8(b)(3) only states that the access policy should include information on *the pricing principles and the key terms which are proposed to apply to the provision of large DCA services where such principles and terms must be consistent with schedule 5.12.*
 - b. **Additional information on timing of access negotiations** – Existing NER clause 5.2A.8(b)(4) only states that the access policy should include information on *the process by which an applicant may seek access to large DCA services.*

The Commission considers that information beyond what is covered in the negotiation principles in the NER needs to be included in DNA access policies to facilitate efficient connection negotiations. To address this issue the final rule introduces an obligation on the DNA owner to provide more specific information through the access policy and on its website in relation to the application of its access policy.

The final rule therefore amends to the existing access policy provisions as follows:

- **Obligation on the DNA owner to publish a pricing methodology and supporting information on connections to its DNA:** Introduction of a new obligation on the DNA owner to publish a pricing methodology²⁶⁵ and state in its access policy if the capacity of the DNA cannot be increased²⁶⁶ (noting that it will not have an obligation to replicate the existing DNA to facilitate a new connection if increasing the capacity of the DNA is not possible).²⁶⁷ Further, the DNA owner must update information on its website regarding the current 'utilisation' of the DNA.²⁶⁸ This will help to inform potential access seekers on prices for DNA access as set out in the pricing methodology.
- **Obligation of the DNA owner to publish timeframes for negotiation:** Introduction of a new obligation on the DNA owner to specify the process for access negotiations.²⁶⁹

The subsequent sections provide further detail on the proposed amendments to the existing access policy provisions.

Pricing methodology

The pricing methodology to be included in the DNA owner's access policy must be consistent with Schedule 5.12 of the final rule on *Negotiating principles for DNA services*. The pricing

²⁶⁵ Clause 5.2A.8(b1)(4) under Schedule 2 of the Amending Rule.

²⁶⁶ Clause 5.2A.8(b1)(2) under Schedule 2 of the Amending Rule

²⁶⁷ Principle 5(d) in Schedule 5.12 under Schedule 2 of the Amending Rule.

²⁶⁸ Clause 5.2A.8(n) under Schedule 2 of the Amending Rule.

²⁶⁹ Clause 5.2A.8(b1)(5) under Schedule 2 of the Amending Rule.

methodology would effectively set out a 'plan' for charging access seekers over the lifetime of the DNA in terms of specifying the cost allocation amongst DNA connected parties. The Commission expects that this 'plan' could set different prices for DNA access based on different factors, e.g. whether an access seeker wants to connect generation or load, the connection of different technology types, and 'early' and 'late' connections.

The pricing methodology must include information for access seekers on:²⁷⁰

- how prices for DNA access will be calculated
- indications of likely charges for:
 - different types of connecting parties, e.g. load, type of generation, and storage
 - access seekers connecting to the DNA at different times, i.e. DNA access prices could vary between 'early' and 'late' connecting parties in terms of the availability of unused DNA transmission capacity.

By only requiring the pricing methodology to be consistent with Schedule 5.12, the final rule provides significant flexibility to a DNA owner to tailor the pricing methodology to support its individual investment case. This element of the final rule therefore places requirements on the DNA to inform potential connecting parties of what likely prices will be. This is distinct from regulating what those prices can be.

For example, if the DNA owner was not the foundation generator but a third party investor or the Primary TNSP, the DNA owner could (through its pricing methodology) incentivise more foundation generators to connect earlier to the DNA through lower prices for those generators which commit early. Subsequent generators would then be charged higher prices once the DNA becomes more utilised, i.e. less and less unused DNA capacity is available.

BOX 12: CONTENT OF PRICING METHODOLOGIES

A pricing methodology is 'bound' by the *Negotiating principles for DNA services* under Schedule 5.12. Under principle 1 of Schedule 5.12 the price for DNA services must be set between a lower bound of 'avoided cost' and an upper bound of 'standalone cost' (other than in the case where the avoided cost is above the standalone cost). Based on this defined price range, the pricing methodology from different DNA owners - e.g. a vertically integrated party or a third party investor - may look very different, as illustrated below.

To illustrate, a simple stylised example is provided below. In this example, the following costs (capex and opex) in relation to a DNA are assumed to be:

- 300MW DNA - \$30m (ie, \$0.1m per MW)
- Augmenting the 300MW DNA to 450MW - \$10m (ie, \$0.07m per MW)
- Stand-alone \$150MW DNA - \$25m (ie 0.17m per MW).

That is, there is a degree of scale economy: it is cheaper on a \$/MW basis to provide

²⁷⁰ Clause 5.2A.8(b1)(4) under Schedule 2 of the Amending Rule.

incremental capacity.

The Commission notes that in practice prices are likely to be charged over the life of assets connected to DNAs and therefore incorporate appropriate time value of money. However, for simplicity, these examples provide upfront pricing.

Scenario 1: Vertically integrated DNA owner who overbuilds its DNA

A generator (wind farm, G1) - who is also the DNA owner - builds a DNA with a total capacity of 300MW, which is 150MW more than needed for its 150MW wind farm. Reasons for 'oversizing' the DNA could be:

- Significant economies of scale in the transmission built
- Area with likely future wind generation connecting.

The DNA owner submits an access policy to the AER. It proposes the following as its pricing methodology and indicative charges for subsequent access seekers:

•**G2 - First additional 150MW wind generation:** The DNA owner benefits from having an extra 150MW of generation connect to the DNA as it could share costs (O&M and capital) with G2. It is therefore willing to set prices around the average cost of providing DNA services on a MW basis. This may result in indicative prices of \$0.1m per MW.

•**G3 - Any subsequent wind generation above 150MW:** The DNA owner does not want further connection (e.g. due to the risk of constraints). The pricing methodology therefore sets the price for subsequent wind generation (after the 150MW 'spare' capacity has been used) just below the standalone cost of providing DNA services, i.e. at \$24.99m.

•**G4 - Subsequent solar or storage:** The DNA owner is likely to require bespoke pricing arrangements for solar or storage which result in total generation capacity above 300MW. The method for this calculation may be based on the average cost of providing DNA services (\$0.1m per MW) plus a forecast of foregone revenue that the DNA owner and other existing connected parties are likely to incur for times when there is congestion on the DNA. The pricing methodology may set out how the price is calculated, e.g. based on likely generation profiles and past spot prices.

•**L1 - Load:** The DNA owner recognises benefits if load connects to the DNA in terms of both improving loss factors for its generation and potentially reducing congestion. The pricing methodology therefore may set prices only slightly above avoidable cost.

Scenario 2: Vertically integrated DNA owner with staged generation built

A generator - who is also the DNA owner - builds a DNA with a total capacity of 300MW. It plans a staged development in terms of connecting a 150MW wind farm (G1) in stage 1 and another 150MW wind farm (G2) in stage 2.

The DNA owner submits an access policy to the AER before commissioning. It proposes the following as its pricing methodology and indicative charges:

•**G3 - Any wind generation seeking to connect:** The DNA owner does not want further

connection (e.g. due to the risk of constraints). It therefore sets the prices for subsequent generation connecting to the DNA just below the standalone cost of providing DNA services to such connecting parties, i.e. \$24.99m.

•**G4 - Subsequent solar or storage:** See scenario 1.

•**L1 - Load:** See scenario 1.

Scenario 3: Investor building a DNA and selling off transmission capacity

An investor may build a DNA with 300MW. It 'auctions off' the 300MW capacity to foundation users. The pricing methodology simply states with regard to the price for DNA services provided to foundation users that these prices will be determined by a competitive tender process. This might have a reserve price set at the avoided costs, and a price cap at the standalone costs (although it seems unlikely that a connecting party would choose to bid at a price above the standalone costs, given that by definition they could instead replicate or bypass the infrastructure used to provide a service at that price).

For subsequent generators/large load customers seeking to connect to the DNA the pricing methodology may set out prices similar to those for subsequent generation/load connecting under scenario 1 and 2.

As stated above, the DNA owner also needs to indicate in its access policy if the capacity of the DNA cannot be increased.²⁷¹ Further, the DNA owner has an obligation to provide supporting information on its website on utilisation of the DNA, including:²⁷²

- the current transmission capacity of the DNA, and
- the capacity of the generating plants and loads currently connected to the DNA.

This supporting information provides potential access seekers with guidance on:

- **Access to DNA services:** If the capacity of a DNA cannot be increased, an access seeker knows based on the information provided in the access policy that an access request is likely to be unsuccessful
- **Prices for DNA access:** Based on the information regarding the existing utilisation of the DNA, an access seeker has the relevant information to interpret the pricing methodology included in the access policy.

The Commission considers this new obligation on the DNA owner will increase transparency for access seekers considering connection to a specific DNA. It will also protect:

- DNA owners from having to spend time and resources on responding to access requests where no unused DNA transmission capacity is available and it is impossible to increase the capacity of a DNA - as in this case the DNA owner can simply respond with 'no' to an

²⁷¹ Clause 5.2A.8(b1)(2) under Schedule 2 of the Amending Rule.

²⁷² Clause 5.2A.8(n) under Schedule 2 of the Amending Rule.

access request without having to provide any further reasons for rejection to an access seeker, and

- Access seekers from making futile access requests.

Timeframes for negotiation

A DNA owner must set out the timeframes for DNA access negotiations in its access policy. This information will allocate specific timeframes to the stages of an access negotiation, e.g. the timeframe within which the DNA owner must respond to an access request or make an access offer. This additional information will provide more planning certainty to access seekers and create transparency on the timeframes within which an access seeker can reasonably expect an offer for DNA access in the case of successful access negotiations.

C.4 Approval of DNA access policies

BOX 13: CHANGES BETWEEN THE DRAFT AND THE FINAL RULE

The Commission has made several changes between the draft and the final rule relating to approval of DNA access policies. These are largely due to allocating the responsibility for DNA access to the DNA owner under the final rule. Specifically, the final rule:

- Removes the responsibility from the Primary TNSP to develop and publish a standard DNA access policy. Instead, the DNA owner is required to submit an individual access policy for its DNA to the AER for approval prior to the DNA being commissioned.
- Requires the AER to either approve a DNA access policy within 60 business days of receiving a proposed draft access policy or variations or request further information from a DNA owner or notify the DNA owner of the reasons for why a proposed access policy cannot be approved. If an access policy cannot be approved within 60 business days, the AER must within 6 months from the date of submission of the access policy, develop its own access policy. The 6 months can be extended if the AER requests further information, requests changes to the access policy or decides to consult on an access policy.
- Creates a new obligation on the AER to publish a register of DNAs on its website, including a copy of the approved access policy for each DNA.
- Creates a new obligation on the DNA owner to report to the AER on requests for connection and access to a DNA, when such requests are made in writing, and when an agreement for access is entered into.
- Creates a new obligation on the DNA owner to respond to AER requests for further information or changes to the access policy as soon as reasonably practicable, in any case within 30 business days of the AER's notification or request.

C.4.1 Current arrangements

Under the existing DCA access arrangements, a person who is registered in respect of a large DCA (i.e. the DCASP) is required to have an access policy in place. This provides a framework for applicants who want to obtain access to large DCA services to do so.

The DCASP for a large DCA is required to prepare, maintain and publish an access policy for its large DCA on its website to provide guidance to applicants who want to obtain large DCA services (i.e. access to the large DCA). The Rules specify the information that this policy is required to contain (see for further detail on this aspect section XX).²⁷³

A DCASP (including any Primary TNSP that owns or operates such assets) must submit its access policy to the AER within 30 days of an asset being classified as a large DCA.²⁷⁴ The AER is required to approve an access policy if it is reasonably satisfied that it complies with the requirements for an access policy set out in the NER.²⁷⁵ A DCASP must comply with its access policy once the AER has approved it.²⁷⁶

Following approval of its access policy, a DCASP must report to the AER all requests for connection and access to a large DCA, when such requests are made, and when an agreement for access is entered into, in the manner and form notified by the AER.²⁷⁷

C.4.2 Draft rule

Under the draft rule, the Primary TNSP was required to develop a standard access policy that would apply to all DNAs that form part of its network, and publish its standard DNA access policy on its website.²⁷⁸

The draft rule allowed a Primary TNSP's access policy to apply different terms to different DNA services or to different components of a DNA.²⁷⁹ If a connection enquiry had been submitted that related to part of its transmission network that is a DNA, under the draft arrangements the Primary TNSP would have advised the applicant of the specific terms of the access policy that applied to that part of the DNA.²⁸⁰

The Commission considered that the Primary TNSP's costs of developing its access policy would be recouped over time through the charges levied for the administration of access to DNAs.²⁸¹

Process for preparing, publishing and approval of a standard DNA access policy

Within four months of the final rule being made, each Primary TNSP must have submitted its access policy to the AER for approval, after having developed and consulted on it publicly for

²⁷³ Clause 5.2A.8(b) of the NER.

²⁷⁴ Clause 5.2A.8(d) of the NER.

²⁷⁵ Clause 5.2A.8(f) of the NER.

²⁷⁶ Since the connections elements of the TCAPA Rule commenced on 1 July 2018, one large DCA has been registered. Therefore, to date, only one large DCA access policy has been submitted to the AER for approval.

²⁷⁷ Clause 5.2A.8(k) of the NER.

²⁷⁸ Clause 5.2A.8(b) of the draft rule.

²⁷⁹ Clause 5.2A.8(b) of the draft rule.

²⁸⁰ Clause 5.3.3(5B) of the draft rule.

²⁸¹ Principle 2 in Schedule 5.12 under the draft rule.

at least 30 days.²⁸² Consistent with the current arrangements for large DCA access policies, under the draft arrangements the AER had the responsibility for approving a Primary TNSP's access policy and variations to it, and enforcing compliance with an access policy.²⁸³

Prior to submitting its access policy for AER approval, under the draft rule the Primary TNSP needed to consult on its access policy for at least 30 days.²⁸⁴ Once it had received submissions on the access policy, the Primary TNSP was required to prepare and publish a report that summarised the submissions received, sets out its response to the submissions and describes the amendments made to the access policy in response to submissions.²⁸⁵ Following consultation, the Primary TNSP was required to submit its amended access policy to the AER for approval (along with the submissions received).²⁸⁶ Under the draft rule, the AER was required to approve an access policy within 60 days of receiving it if it was reasonably satisfied that it is consistent with the minimum requirements for an access policy.²⁸⁷ This allowed the AER to discuss and clarify any remaining open questions with the Primary TNSP.

If, under the draft arrangements, the AER did not approve an access policy submitted to it, it was required to notify the Primary TNSP of the changes required for it to be approved. If the AER and the Primary TNSP were unable to agree on the terms of the access policy within 60 days of notification, the AER had the power to make changes to a Primary TNSP's access policy to ensure it is consistent with the minimum requirements for an access policy.²⁸⁸

The AER was also required to give a copy of its decision to the Primary TNSP and:

- if the AER approves an access policy submitted by a Primary TNSP, it must provide the Primary TNSP with a copy of the decision stating that the AER made no changes to the access policy,²⁸⁹ or
- if the AER does not approve an access policy submitted by a Primary TNSP and proposes an alternative access policy, it must provide the Primary TNSP with a copy of that decision, outlining the changes, and reasons for those changes, to the access policy.²⁹⁰

Within 7 days after the AER provided the Primary TNSP with its decision of approval or proposed amendments to an access policy, the Primary TNSP was required to publish the following documents on its website:²⁹¹

- a copy of the approved access policy
- a copy of the AER's decision for that access policy

²⁸² See clause 5.2A.8(e) of the draft rule and clause 11.xxx.5(b) of the draft rule.

²⁸³ Clause 5.2A.8(d) of the draft rule.

²⁸⁴ Clause 5.2A.8(e)(1) of the draft rule.

²⁸⁵ Clause 5.2A.8(e)(2)(i)-(iii) of the draft rule.

²⁸⁶ Clause 5.2A.8(g) of the draft rule and clause 11.xxx.5(c) of the draft rule.

²⁸⁷ Clause 5.2A.8(i) of the draft rule.

²⁸⁸ Clause 5.2A.8(i) of the draft rule.

²⁸⁹ Clause 5.2A.8(k)(1) of the draft rule.

²⁹⁰ Clause 5.2A.8(k)(2) of the draft rule.

²⁹¹ Clause 5.2A.8(l)(1)-(3) of the draft rule and clause 11.xxx.5(d) of the draft rule.

- a copy of the submissions between the Primary TNSP and the AER on the access policy (as relevant).

Under the draft arrangements, a Primary TNSP's access policy (or variation thereof) took effect on a date fixed in the AER's decision document to approve it.²⁹²

Ongoing process for varying a DNA access policy

Under the draft rule, the Primary TNSP was responsible for maintaining, and seeking approval for variations to its access policy for DNAs.²⁹³

To vary its access policy, the Primary TNSP was required to follow the standard process for consultation and approval set out above. By following the standard process, including consultation and AER approval, the process was likely to take between 4 and 5 months for any changes coming into effect (as the timetable started when the Primary TNSP proposed the specific changes, rather than with the time required to develop the access policy).

The Primary TNSP was allowed to make minor and administrative amendments (e.g. correction of minor or typographical errors) to the access policy without consultation.²⁹⁴ However, any substantive changes affecting any obligations of connected parties or the Primary TNSP itself required the Primary TNSP to follow the standard process.

C.4.3

Stakeholder views

Stakeholder submissions to the draft rule determination

Only the AER commented on the process for approval of DNA access policies. Regarding the timeframe for approval of DNA standard access policies, the AER sought flexibility around the time allowed to approve the standard access policies for DNAs. For this purpose, the AER proposed that the AEMC does not prescribe a specific timeframe in the rules for the AER's decision. Instead, the rules should be drafted to reflect that the AER will approve each access policy as soon as practicable, but to the extent that the AER needs to resolve and consult on any substantive issues, it is allowed the time to do so. The AER argued that given that a standard access policy would apply to all DNAs in a jurisdiction it is important that the AER has sufficient time to properly consider and consult on the DNA access policies where needed.²⁹⁵

Further, the AER commented on the issue of consultation on DNA access policies. Under the draft rule, the AER is not required to consult on an access policy as the TNSP is required to consult in developing the access policy. However, the AER expressed concerns that it may consider it necessary to consult again to resolve any substantive or complex issues that it identifies with an access policy. The AER noted that it is important that it has the flexibility to

²⁹² Clause 5.2A.8(m) of the draft rule.

²⁹³ Clause 5.2A.8(h) of the draft rule.

²⁹⁴ Clause 5.2A.8(f) of the draft rule.

²⁹⁵ AER submission to the draft determination, p. 1-2.

consult given the high levels of stakeholder interest, as reflected by the increasing number, and size, of DCAs being developed.²⁹⁶

Stakeholder roundtable on DNA access

Stakeholders attending the AEMC's roundtable discussion on the DNA access regime expressed the view that DNA access policies would not provide any benefit if they do not provide further specification on access pricing and negotiation timeframes beyond what is already included under the negotiating principles under Schedule 5.12 (and the principles included by reference under Schedule 5.11).

C.4.4

Final rule

Requirement to have submitted an access policy at the time of commissioning

Under the final rule, the DNA owner must submit its access policy to the AER for approval prior to the DNA being commissioned.²⁹⁷

The Commission also notes that given there is no requirement to classify a DNA with AEMO under the final rule, the trigger under the existing requirements relating to classification is not a viable option for DNAs.²⁹⁸

DNA owner to report on requests for connection and access to a DNA to the AER

With the DNA owner responsible for administering access, the final rule also re-instates the reporting obligation that currently exists with regard to a DCASP and puts this obligation on the DNA owner to report on requests for connection and access to a DNA to the AER. The DNA owner must do this when such a request is made in writing and when an agreement for access is entered into, in the manner and form notified by the AER.²⁹⁹ The Commission considers it is important to re-instate this provision (which currently exists under the framework for large DCAs) and require a request to be in writing in order to provide the AER with a means to enforce a DNA owner's compliance with its access policy. For example, if an access seeker submits a complaint to the AER with regard to a DNA owner's compliance with regard to its pricing methodology and negotiating timeframes specified in its access policy, having information relating to other access requests and access agreements entered into provides the AER with the possibility to contact other DNA access seekers.

Process for AER approval

In contrast to the draft rule, the final rule is a two stage process for AER approval of an access policy. The rationale for breaking the process up into a two stage process (stage 1: 60 business days and stage 2: 6 months overall) is to ensure that if an access policy complies with all requirements under the rules it can be approved within less than 6 months (i.e.

²⁹⁶ AER submission to the draft determination, p. 1.

²⁹⁷ Clause 5.2A.8(d) under Schedule 2 of the Amending Rule.

²⁹⁸ See clause 5.2A.8(d) of the NER.

²⁹⁹ Clause 5.2A.8(k) under Schedule 2 of the Amending Rule.

within 60 business days). The 6 months (which can be extended as discussed below) should only be necessary if the AER identifies issues with a submitted access policy.

Stage 1: 60 business days

Within the first 60 business days after a DNA owner has submitted its access policy to the AER for approval. The AER must either:³⁰⁰

- approve an access policy
- request further information from the DNA owner to enable the AER to approve an access policy, or
- notify the DNA owner of the reasons for why the proposed access policy cannot be approved.

Stage 2: 6 months overall

The AER must approve an access policy within 6 months (including the 60 business days) from the date the DNA owner has submitted its access policy to the AER if it is reasonably satisfied that it complies with the *Negotiating principles for DNA services* under Schedule 5.12. If an access policy still cannot be approved (after the AER has notified the DNA owner of the reasons for why the proposed access policy cannot be approved) due to non-compliance with Schedule 5.12, the AER must itself develop an access policy for the DNA that complies with Schedule 5.12.³⁰¹

Although the AER is required to approve (or develop) an access policy within 6 months from the date of submission, the new framework includes a 'stop the clock' mechanism, which, if enacted, would automatically extend the 6 months for AER approval:³⁰²

- If the AER requests further information from the DNA owner, this request for further information would 'stop the clock' until the relevant information is provided as soon as reasonably practicable to the AER by the DNA owner, in any case within 30 business days of the AER's notification or request.³⁰³
- If the AER provides the DNA owner with reasons for why the submitted access policy cannot be approved and requests the DNA owner to change the access policy in order to comply with Schedule 5.12, this request will likewise 'stop the clock', until the relevant changes to the access policy are made by the DNA owner and submitted to the AER (as soon as reasonably practicable and in any case within 30 business days of the AER's notification or request).³⁰⁴ If the DNA owner has not addressed the AER's reasons and the access policy still does not comply with Schedule 5.12 (this can include multiple rounds 'back and forth' between the DNA owner and the AER, which would 'stop the clock' each time), the AER must itself develop an access policy that complies with Schedule 5.12.³⁰⁵

300 Clause 5.2A.8(f) under Schedule 2 of the Amending Rule.

301 Clause 5.2A.8(f2) under Schedule 2 of the Amending Rule.

302 Clause 5.2A.8(f2) under Schedule 2 of the Amending Rule.

303 Clause 5.2A.8(f1) under Schedule 2 of the Amending Rule.

304 Clause 5.2A.8(f1) under Schedule 2 of the Amending Rule.

305 Clauses 5.2A.8(f2) and (g) under Schedule 2 of the Amending Rule.

- The AER may decide to consult on a DNA access policy. If the AER does consult on an access policy this will 'stop the clock' and the day submissions are due will 'restart the clock'.³⁰⁶

The Commission considers that in the majority of circumstances it is unlikely consultation on DNA access policies will be necessary. This is because:

1. The AER's only role in approving access policies is to check that the access policy complies with the negotiating principles for DNA services
2. Unlike under the draft rule, access policies are specific to the individual DNA and are therefore apply on a much smaller scale than the one policy the Primary TNSP would have submitted under the draft rule for all DNAs connected to their networks.

However, as mentioned above, there may be cases (e.g. a 'significant' DNA in terms of its length or other features) where the AER may determine consultation is beneficial.

If the AER decides to approve a submitted access policy or an AER developed access policy, within 7 days after the AER provides the DNA owner with its decision, the DNA owner must publish on its website:

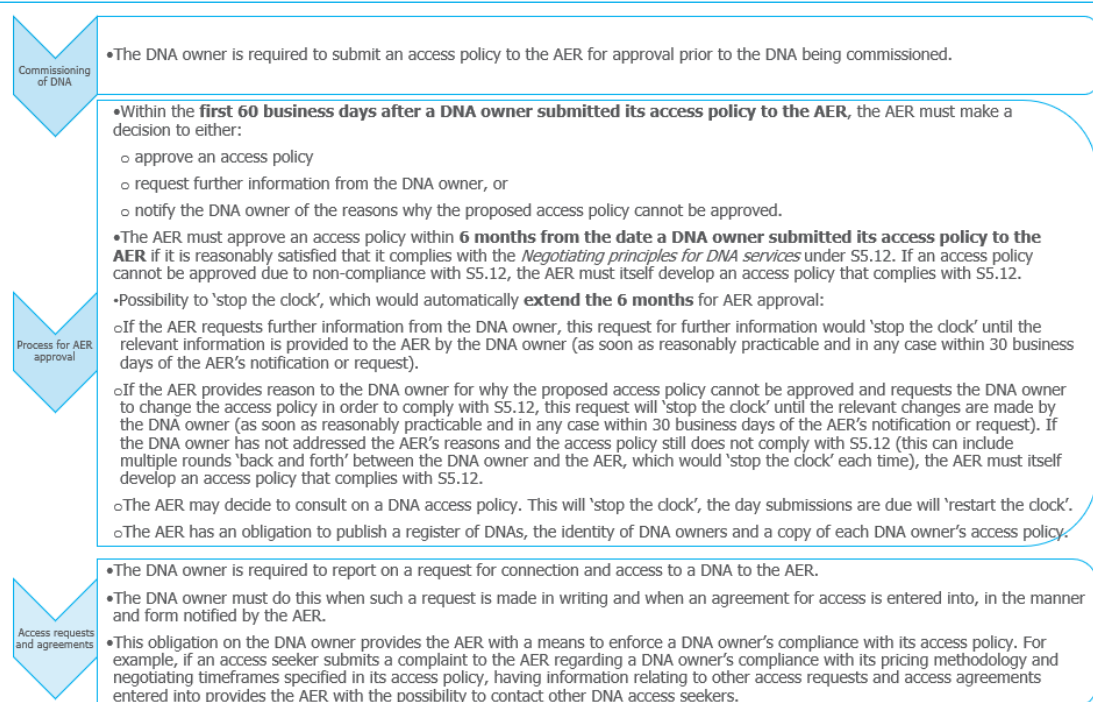
- the approved access policy or the AER developed access policy, and
- the AER's decision for that access policy.³⁰⁷

Figure C.1 below illustrates the process for AER approval of a DNA access policy.

³⁰⁶ Clauses 5.2A.8(h) and (f2) under Schedule 2 of the Amending Rule.

³⁰⁷ Clause 5.2A.8(i1) under Schedule 2 of the Amending Rule.

Figure C.1: Process for DNA access policy approval



Source: AEMC.

Basis for AER approval - compliance of the access policy with Schedule 5.12

When approving an access policy, including the pricing methodology and timeframes for negotiation, the AER must have regard to:³⁰⁸

- whether the pricing methodology is consistent with new Schedule 5.12 on *Negotiating principles for DNA services*, including compliance with the defined lower and upper price bounds for charging access, and
- whether the specified timeframes facilitate reasonable access negotiations.

The Commission considers AER approval of the pricing methodology is likely to reduce the negotiation costs and create transparency for both the DNA owner and the access seeker. By having general, AER approved pricing information in the access policy available, the access seeker can make an assessment upfront in terms of whether it would be willing to pay the indicative prices for DNA access. This will also assist DNA owners because approval by the AER will mean less risk for arbitration, assuming that the DNA owner sets the specific prices for DNA access in accordance with the DNA access policy.

Consistent with the approach for AER approval of the pricing methodology, the Commission also considers the need for AER approval will provide an incentive to a DNA owner to specify

³⁰⁸ Clause 5.2A.8(b1) under Schedule 2 of the Amending Rule.

negotiation timeframes that facilitate efficient and reasonable access negotiations. Similar to the rationale provided in relation to the pricing methodology, AER approval of timeframes for negotiation is also likely to reduce negotiation costs and create transparency for both parties, the DNA owner and the access seeker alike, and could reduce the potential for arbitration.

New obligation on the AER and the Primary TNSPs to publish information on DNAs

The final rule creates a new obligation on the AER to publish a register of DNAs, the identity of DNA owners and a copy of each DNA owner's access policy.³⁰⁹ This provides a source of information on all DNAs, to assist access seekers.

Further, the final rule also creates a new obligation on the Primary TNSP to publish in its Transmission Annual Planning Report (TAPR):

- information about which parts of its transmission network are DNAs, and
- the identity of the DNA owner.³¹⁰

Ongoing process for varying a DNA access policy

Under the final rule the DNA owner is responsible for maintaining, and seeking approval for variations to, its access policy for DNAs.³¹¹

The DNA owner can make minor and administrative amendments (e.g. correction of minor or typographical errors) to the access policy without seeking AER approval.³¹² However, to vary its access policy in terms of substantive changes that would affect any obligations of connected parties or the DNA owner itself requires the DNA owner to follow the standard process for AER approval outlined above. The Commission considers the standard process for AER approval must apply in case of any substantive changes, which may, for example, include changes to the pricing methodology. In this case, the Commission considers it is important that the AER reviews an access policy, having regard to whether the pricing methodology is consistent with new Schedule 5.12 on *Negotiating principles for DNA services*, including compliance with the defined lower and upper price bounds for charging access.

C.5 Dispute resolution

BOX 14: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There are no changes between the draft and final rule relating to the application of the commercial arbitration process to DNA access disputes. However, the party to the dispute in respect of access to a DNA will be the DNA owner under the final rule, as opposed to the Primary TNSP under the draft rule.

309 Clause 5.2A.8(o) under Schedule 2 of the Amending Rule.

310 Clause 5.12.2(6B) under Schedule 2 of the Amending Rule.

311 Clause 5.2A.8(e) under Schedule 2 of the Amending Rule.

312 Clause 5.2A.8(e) under Schedule 2 of the Amending Rule.

C.5.1 Current arrangements

Parties have access to the commercial arbitration process set out under rule 5.5 of the NER for any disputes in relation to the provision of large DCA services.³¹³ All other arrangements regarding a third party's connection to the DCA would need to be negotiated and addressed between the relevant parties on a commercial basis.

C.5.2 Draft rule

Under the draft rule, disputes relating to DNA services are subject to commercial arbitration under Rule 5.5 of the NER. The draft rule thereby created consistency with the current approach for large DCA services, although under the draft rule the 'provider' of the service (as defined in Rule 5.5) that is party to the dispute would be the Primary TNSP, as opposed to the DCASP, and the services provided would be DNA services, as opposed to large DCA services.

The only other substantive amendments to rule 5.5 under the draft rule were:

- the terms and conditions of access in relation to DNA services include those determined under Chapters 4 and 5 of the Rules, in addition to the access policy³¹⁴
- the commercial arbitrator must have regard to the legitimate business interests of both the Primary TNSP and any owner of the designated network asset, given the potential for these to be different parties.³¹⁵

C.5.3 Stakeholder views

The AER expressed support for the application of the commercial arbitration process set out in rule 5.5 of the NER to disputes relating to DNA services.³¹⁶

Further, based on the model under the draft rule whereby TNSPs were responsible for access administration, TNSP noted that they would become part in the negotiations and also disputes between connecting parties and the DNA owner, e.g. in relation to disputes on available DNA capacity. TNSPs questioned why they should be a party to these negotiations and whether they would have access to the information required to engage in those negotiations or meaningfully participate in the dispute resolution process.³¹⁷

C.5.4 Final rule

Under the final rule, disputes relating to DNA services are subject to commercial arbitration under rule 5.5 of the NER. The 'provider' of the service (as defined in rule 5.5) that is party to the dispute is the DNA owner, as opposed to the Primary TNSP under the draft rule, in respect of access to DNA services.³¹⁸

313 Clause 5.2A.8(b)(5) and definition of 'large DCA services access dispute' under Chapter 10 of the NER.

314 Clause 5.5.1(c)(1) under the draft rule.

315 Clause 5.5.5(c)(3) under the draft rule.

316 AER submission to the draft determination, p. 2.

317 ENA submission to the draft determination, p. 6.

318 Clause 5.5.1(b) under Schedule 2 of the Amending Rule.

C.6 Other issues considered in the context of a special access regime

Stakeholders have raised a number of issues in their submissions and the Commission has considered further issues related to the allocation of the responsibility for DNA access to the DNA owner under the final rule. This section analyses the following issues that had not been considered in detail in the draft rule determination:

- Definition of DNA services
- Interaction of DNA ownership with registration requirements under the NEL and NER.

C.6.1 Definition of DNA services

Draft rule position

The draft rule defined DNA services as :*"A service provided by means of a designated network asset."*³¹⁹

Stakeholder comments

Only ENA commented on this issue and stated in its submission that the draft rule "has significant gaps in terms of identifying the appropriate roles and responsibilities of the relevant parties" and "these gaps are also reflected in a lack of clarity regarding the services that are being provided and the associated flow of funds".³²⁰

Based on the draft arrangements, under which the Primary TNSP was given full operational control of a DNA, including administration of access to the DNA, ENA suggested that the NOA between the Primary TNSP and the DNA owner would define:³²¹

- DNA services (e.g. routine maintenance, operation consistent with shared transmission network, maintenance of spares, emergency asset step in and replacement, standard of care to apply to Primary TNSP in providing operation and maintenance services) and conditions to transfer operational control of the DNA to Primary TNSP
- Scope of obligations and carve outs relating to DNA service
- Charges payable by DNA owner for DNA services and adjustments for subsequent connecting parties, noting that the Primary TNSP has no involvement in the flow of funds between connecting party and a DNA owner.

The Commission notes that the above list does not include DNA access administration through the Primary TNSP.

Final rule position

Under the final rule, the DNA owner is responsible for providing DNA services. This includes the following:³²²

319 Definition of DNA service under Chapter 10 of the draft rule.

320 ENA submission to the draft determination, p. 9.

321 ENA submission to the draft determination, p. 20.

322 See definition of 'DNA services' under Schedule 4 of the Amending Rule.

- **Providing DNA access:** The DNA owner is responsible for providing access to the DNA, which may require the DNA owner to increase the capacity of the DNA to facilitate a connection (provided that the access seeker pays for the upgrade), but does not require that the owner of the to extend or replicate the DNA.³²³
- **Information provision:** To facilitate more effective negotiations the DNA owner must provide more specific information to access seekers.³²⁴ The DNA owner must provide this information through the access policy (which must include a pricing methodology,³²⁵ state whether the capacity of a DNA cannot be increased³²⁶ and timeframes for negotiation³²⁷) and on its website (information on the current 'utilisation' of the DNA, in terms of existing connections to a DNA, to inform potential access seekers on prices for DNA access as set out in the pricing methodology).³²⁸
- **Undertaking cut-in works to the DNA:** In relation to cut-in works to a DNA, the final rule gives the DNA owner the exclusive right to provide the services as a DNA service in accordance with its access policy.³²⁹
- **Increasing the capacity of an existing DNA:** The DNA owner has the exclusive right undertake upgrades or increase the capacity of its DNA (or make a decision on which party provides the services of detailed design and construction of such a modification of an existing DNA). Further, ownership of the modification, e.g. upgrading switchgear, must remain with the DNA owner to ensure the same access arrangements apply to the entire DNA.³³⁰

With regard to the obligation of the DNA owner to provide DNA services, the Commission notes that under the final rule, the DNA owner has an obligation to increase the capacity of its DNA, if required, to connect a third party. This obligation is a result of the DNA owner's obligation to not engage in conduct for the purpose of preventing or hindering access to DNA services, which requires, if necessary, the DNA owner to upgrade or increase the capacity of the DNA to facilitate the connection of a third party to its DNA. However, given that the DNA regime allows for 'growing DNAs', i.e. DNA to DNA connections, a DNA owner has no obligation to extend or replicate its DNA, if upgrading or increasing the capacity of the DNA is not possible.³³¹

With regard to the contestability arrangements that would apply to such an upgrade or increase in capacity of an existing DNA (e.g. through upgrading switchgear), Appendix D provides further detail. The Commission considers it is appropriate that slightly different contestability arrangements apply to such a modification of an existing DNA, in contrast to the contestability arrangements applying to the establishment of a new DNA.

323 Limb (a) of the definition of 'DNA services' under Schedule 4 and Principles 1(1) and 5(d) in Schedule 5.12 under Schedule 2 of the Amending Rule.

324 Limb (b) of the definition of 'DNA services' under Schedule 4 of the Amending Rule.

325 Clause 5.2A.8 (b1)(4) under Schedule 2 of the Amending Rule.

326 Clause 5.2A.8(b1)(2) under Schedule 2 of the Amending Rule.

327 Clause 5.2A.8(b1)(5) under Schedule 2 of the Amending Rule.

328 Clause 5.2A.8(n) under Schedule 2 of the Amending Rule.

329 Limb (c) of the definition of 'DNA services' under Schedule 4 and Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

330 Limb (d) of the definition of 'DNA services' under Schedule 4 and Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

331 Principle 5(d) in Schedule 5.12 under Schedule 2 of the Amending Rule.

Consistent with the 'separability' criteria that applies under the contestability threshold for IUSAs, transmission services can only be provided on a contestable basis to the extent that the relevant component satisfies the following criteria:

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

Given that a modification, i.e. an upgrade or increase of capacity of an existing DNA would not meet the separability criteria, the Commission considers in the context of DNAs a similar rationale applies as in the context of IUSA, that is, the services related to modification of an existing DNA (except for functional specification and O&M of the modification) must be provided by the existing DNA owner.³³² Accordingly, under the final rule the DNA owner has an exclusive right to provide the services of detailed design, construction and ownership or can elect to engage a third party service provider to provide these services. In other words, the access seeker cannot choose the party that provides the service as the provision of these services is in relation to modification of an existing DNA.

Consistent with the contestability arrangements that apply in the context of establishing a 'new' DNA, the Primary TNSP is responsible for providing the services of functional specification and O&M in relation to modification of an existing DNA.³³³ This is because the asset continues to form part of the Primary TNSP's transmission network.

C.6.2

No requirement for the DNA owner to be a registered participant

Under the existing rules, a person must not engage in the activity of owning, controlling or operating a transmission or distribution system unless that person is registered by AEMO as a NSP.³³⁴ A transmission system is defined in the Rules as 'transmission network' together with the associated 'connection assets'. A DNA itself is only transmission network, and accordingly, ownership of a DNA would not automatically trigger registration of a DNA owner as a registered participant. However, if the DNA owner would own the DNA, i.e. transmission network, as well as the associated connection asset(s), i.e. DCAs connected to it, this could trigger the requirement for the DNA owner to register under Chapter 2 as a TNSP.³³⁵

The Commission does not consider it essential for a third party DNA owner to be a registered participant based on ownership of a DNA. As ownership of the DNA alone would not automatically trigger a requirement to register under Chapter 2 of the Rules, it would be necessary to create a new category of registered participant in order to make DNA owners registered participants. The Commission considers this would unnecessarily add complexity to the Rules without providing any substantive benefits. This is because the Primary TNSP, who

³³² Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

³³³ Clause 5.2A.4 under Schedule 2 of the Amending Rule.

³³⁴ Clause 2.5.1(a) of the NER.

³³⁵ There is also the intermediary framework under clause 2.9.3 of the NER, which allows a person to apply to the AER for an exemption from registration as a NSP where another person (an "intermediary") will be registered instead of that person. However, the Commission considers it unlikely that the Primary TNSP would want to agree to be an intermediary on behalf of an unrelated DNA owner.

is already registered in respect of its transmission system, will operate and control the third party DNA as part of its transmission network under the terms of the NOA. In this way, there will be someone registered in respect of the asset. In addition, the final rule clearly defines the rights, responsibilities and obligations of the DNA owner and ensures the AER has sufficient oversight to enforce compliance of the DNA owner with its regulatory obligations under the NER. For example, the DNA owner must report on requests for connection and access to a large DCA to the AER when such requests are made in writing and when an agreement for access is entered into.³³⁶ This clause provides information to the AER that it can use for compliance and enforcement purposes. As a result, the Commission considers there is no immediate need to require the DNA owner to become a registered participant.

In the event that registration is triggered, if a DNA owner not only owns a DNA but also the connection assets connected to it, which would form a transmission system, the AER must exempt a DNA owner from the requirement to register as a TNSP. The DNA owner must in any case comply with clause 5.2A.6(c), clause 5.2A.7, clause 5.2A.8 and rule 5.5.³³⁷

³³⁶ Clause 5.2A.8(k) under Schedule 2 of the Amending Rule.

³³⁷ Clause 2.5.1(d3) under Schedule 1 of the Amending Rule.

D CONTESTABILITY AND CONTRACTUAL ARRANGEMENTS

This Appendix outlines the Commission's final decision in relation to contestability and contractual arrangements. For this purpose, the Appendix provides a summary of the current arrangements, the draft rule, stakeholder views on the draft rule and the final rule position on the following issues:

- Contestability of services for third party owned network assets
- \$10 million monetary threshold for IUSA contestability
- No ownership restriction for IUSAs and DNAs
- Maintaining the 30km length threshold for DNAs, and
- Contractual arrangements.

D.1 Contestability of services for DNAs and IUSAs

BOX 15: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There were no changes between the draft and the final rule relating to the contestability of services for DNAs and IUSAs.

However, the final rule does not maintain the concept of 'funded network assets' that was introduced under the draft rule. The final rule uses the terms DNAs and IUSAs and, where applicable, the term 'third party owned network assets' to refer to a DNA and third party IUSA for ease of drafting.

The Commission considers there is limited value in maintaining the umbrella concept of 'funded network assets' due to the differences between DNAs and IUSAs under the final rule. This is because of the differences in:

- the contestability arrangements applying to these assets based on the final rule re-instating the \$10m contestability threshold for IUSAs (see appendix D.2 for further detail)
- the access arrangements applying to DNAs and IUSAs (see appendix D.5.4 for further detail).

Under the Commission's final rule, DNAs form part of the Primary TNSP's transmission network based on the establishment of TNCPs on transmission assets that represent material additions to the transmission network.³³⁸ This requires changes to the current contestability arrangements for the provision of transmission services. Making DNAs part of the transmission network requires the Primary TNSP to be responsible for providing functional specification services, and operating and maintaining DNAs.³³⁹ However, consistent with the

³³⁸ Clause 5.2A.2(b)(2) under Schedule 2 of the Amending Rule.

³³⁹ Clauses 5.2A.2 (b)(5) and (7) under Schedule 2 of the Amending Rule.

existing arrangements for IUSAs, DNAs can be designed, constructed and owned on a competitive basis.³⁴⁰

The new DNA framework is an overall reduction in contestability compared with the existing framework for large DCAs. This outcome is an inevitable consequence of creating individual TNCPs on DNAs, as this requires making these assets part of the transmission network. The Commission explained why creating individual TNCPs would require making assets part of the transmission network in the draft determination, in its exploration of the strawman model.³⁴¹ Under the strawman model, the Primary TNSP would have had a right to issue instructions to the DCASP to disconnect an individual connected party under certain circumstances, e.g. if that party posed a risk to power system security. The disconnection of one party would not have affected other parties connected to the DCA.

To give effect to the strawman model would have required incorporating DCAs and DCASPs into the sections of the rules governing power system security, i.e. primarily Chapter 4 of the NER. These are substantial and highly complex sections of the NER. The Commission's assessment of the extent to which DCAs and DCASPs would have needed to be covered (and a review of the relevant sections by our technical consultant GHD) revealed that, with only a few exceptions, the rules governing power system security must apply to DCAs, and thus DCASPs, to ensure power system security.

To extend these rules would have essentially meant creating a new, parallel regime for power system security in addition to the regime that already exists for the transmission network and for TNSPs. This would have significantly increased the complexity of the NER and would have imposed significant new obligations on DCASPs, similar to those applying to System Operators in Chapter 4 of the NER. The Commission therefore decided against the strawman model in the draft determination.

D.1.1

Current arrangements

Contestability of services for DCAs

Currently, all activities associated with the provision of DCAs are fully contestable, including design, construction, ownership, and operation and maintenance.³⁴² A connecting party can either provide the services itself, or choose its preferred service provider (e.g. the Primary TNSP, a generator, a government or a firm looking to invest in renewable energy) to construct, own and operate these assets on commercial terms. Consequently, there is:

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

³⁴⁰ Clauses 5.2A.2(b)(3) and 5.2A.4 under Schedule 2 of the Amending Rule.

³⁴¹ See section 3.3.1 of the DCA draft determination.

³⁴² Clause 5.2A.4 of the NER.

Contestability of services for IUSAs

Services provided by IUSAs are classified as either a non-contestable service that the Primary TNSP has an obligation 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.³⁴³

The services of detailed design, construction and ownership are contestable transmission services. The services of setting the functional specification, providing cut-in works as well as operation and maintenance (O&M) are non-contestable transmission services.

Table D.1 provides an overview of the transmission service classification and contestability set out in clause 5.2A.4 of the NER. Each of these services are discussed in further detail in the sub-sections below.

Table D.1: Transmission service classification and contestability for IUSAs

ASSET	SERVICE	EXAMPLE OF SERVICE	CLASSIFICATION
Transmission network including IUSA	Functional specification	Specification of: <ul style="list-style-type: none"> • Preferred equipment supplier • Preferred equipment • Land/access requirements • Design specifications • Single line diagram • Remote monitoring and communication requirement • Protection, control and metering requirements • Minimum operating conditions • Supervisory control and data acquisition system interface requirements • Equipment ratings • Equipment protection ratings • Spare part itineraries 	Non-contestable
IUSA	Detailed design	Provision of: <ul style="list-style-type: none"> • Site plan • Asset layout and configuration • The specification of vendor equipment 	Contestable

³⁴³ See clause 5.2A.4(a) of the NER.

ASSET	SERVICE	EXAMPLE OF SERVICE	CLASSIFICATION
		<ul style="list-style-type: none"> Civil, structural, mechanical and electrical detailed design Issued for construction drawings as built drawings Tender specifications Cable schedules Protection settings Applicable technical studies Earthing design The design of lightning protection The design of insulation co-ordination <p>Consistent with the functional specification.</p>	
Transmission network	Cut-in works	Interface works which cut into the existing shared transmission network, these may include tower realignment, protection control and communication requirements	Non-contestable
Contestable IUSA components	Construction/ownership of contestable IUSA components	Construction and/or ownership of a substation	Contestable
Non-contestable IUSA components	Construction/ownership of non-contestable IUSA components	Installation and ownership of supervisory control and data acquisition systems and cabling forming part of the Primary TNSP's control system	Non-contestable
IUSA owned by the Primary TNSP	Control, maintenance and operation	Primary TNSP provides operation and maintenance services	Non-contestable
Third party IUSA	Control, operation and maintenance under a NOA	See Clause 5.2A.7	Non-contestable
DCA	All development aspects	Design, construction, maintenance and ownership of a power line connecting a facility	Contestable

Source: Clause 5.2A.4 of the NER.

Functional specification and cut-in works – non-contestable

The current arrangements for IUSAs require 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.³⁴⁴ This is because the Primary TNSP is best placed to provide the cut-in (or interface) works required to facilitate the connection of new assets to its transmission network, as it can manage the provision of these works in a way that will not affect the service that end-use customers receive.

Functional specification refers to setting the minimum technical parameters for a connection to the network, which enables the Primary TNSP to manage the safety, reliability and security of its transmission network. The purpose of a functional specification is for the Primary TNSP to set out the minimum service requirements that an IUSA must meet. It is not intended to define specific assets, but rather the services and level of performance that an IUSA needs to deliver and the network conditions that it will need to withstand.

By means of functional specification, the Primary TNSP can specify its preferred equipment and preferred equipment suppliers, but the connecting party is not required to take up these options. However, 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.

Detailed design and construction – contestable

In the final determination for the TCAPA Rule, the Commission presented analysis suggesting that construction costs are the largest driver of overall connection costs, and that contestability in both the detailed design and construction of IUSAs has significant potential to reduce these costs.³⁴⁵ Likewise, competition for the provision of detailed design services has the potential encourage innovation in the way IUSAs are built to meet the Primary TNSP's functional specification.

Arrangements for providing detailed design and construction services are to be agreed between the connecting party and its chosen service provider on a purely commercial basis. The Rules do not provide any specification regarding these commercial arrangements. However, the Rules do specify that a connection applicant's detailed design for contestable components of an IUSA must be consistent with the Primary TNSP's functional specification,³⁴⁶ and must not unreasonably inhibit the capacity of future expansion of the IUSA or preclude the possibility of future connections.³⁴⁷

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 also provide access to the Primary TNSP to make inspections, and agree to such tests, as reasonably required for that purpose. The connection applicant must pay the reasonable

³⁴⁴ Nothing in the Rules prevents the Primary TNSP from using sub-contractors to provide these services.

³⁴⁵ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. 147.

³⁴⁶ Clause 5.3.4(b1)(1) of the NER.

³⁴⁷ Clause 5.3.4(b1)(2) of the NER.

costs of inspections and tests for the IUSA which are reasonably required by the Primary TNSP.³⁴⁸

Ownership – contestable

Ownership of an IUSA is a non-regulated transmission service. Under the NER, an IUSA forms part of the Primary TNSP's transmission network rather than being a transmission system itself (unlike DCAs, which are defined as transmission systems for the purposes of registration under Chapter 2 of the NER). As a consequence, the owner of an IUSA is not required to be registered (or exempt) with respect to that asset.

Operation and maintenance – non-contestable

The Rules require the Primary TNSP to operate and maintain an IUSA (whether this is a third party IUSA or owned by the Primary TNSP).

Operation and maintenance of third party IUSAs - requirement to have a NOA

If the owner of an IUSA is not the Primary TNSP, that third party owner is required to have a NOA with the Primary TNSP, negotiated in accordance with the principles set out in Schedule 5.11 *Negotiating principles for negotiated transmission services* of the NER.³⁴⁹ The term of the NOA must be for a 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.³⁵⁰ The NOA also needs to include the terms and conditions set out in Part B of Schedule 5.6 *Terms and Conditions of Connection agreements and network operating agreements* of the NER and provide for the Primary TNSP to:³⁵¹

- Have operation and control of the third party IUSA (including the rights and obligations to maintain the asset) for an agreed charge or based on an agreed charging methodology
- Have an option to purchase the third party IUSA at fair market value at the expiry or early termination of the NOA
- 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 party of the Primary TNSP's transmission network in all material respects and provide transmission services to any transmission network user in accordance with the NER.³⁵²

These conditions aim to ensure the Primary TNSP can operate and maintain an asset that it did not design or build. By setting the functional specification and being responsible for

348 Clause 5.7.8 of the NER.

349 Clause 5.2A.7(b)(3) of the NER.

350 Clause 5.2A.7(c) of the NER.

351 Clause 5.2A.7(d) of the NER.

352 'Transmission network user' is defined under Chapter 10 of the NER "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 also one of the persons listed above, a Dedicated Connection Asset Service Provider whose dedicated connection asset, is connected to the transmission network."

operation and maintenance of any IUSA, the Primary TNSP can ensure that an IUSA interfaces safely, reliably and securely with the rest of the transmission network.

The Rules require a connection agreement and a NOA to be in place, with the latter only being required if the IUSA is contestably owned. The Rules do not contain any further specification regarding any other contractual arrangements that may be needed, e.g. in the context of contestable construction of the IUSA or with regard to the relationship between the owner of the IUSA and a connecting party.

Recovery of the costs related to operation and maintenance of an IUSA

Depending on whether an IUSA is owned by the Primary TNSP or by a third party, differences exist in relation to who pays the costs for operation and maintenance services for the assets.

TNSPs' standard generator connection agreements generally refer to charges for services to be provided by the TNSP, called 'entry services'.³⁵³ These 'entry services' broadly refer to:³⁵⁴

- The provision of capability at connection points to enable transmission network users to:
 - deliver electricity to the TNSP's transmission network at the connection point, and
 - take delivery of electricity from the TNSP's transmission network at the connection point up to the agreed maximum capability.
- The management, maintenance and operation of the TNSP's assets (and any third party IUSA) associated with each connection point to provide the capability under (1).³⁵⁵

The Rules require that, under a NOA, the owner of a third party IUSA must provide for the Primary TNSP to have operation and control of that IUSA (including rights to maintain that asset) for an agreed charge or based on an agreed charging methodology.³⁵⁶

The cost-sharing provisions under Schedule 5.11 *Negotiating principles for negotiated transmission services* of the NER allow for an adjustment of costs related to the provision of a negotiated service, e.g. operation and maintenance through the Primary TNSP, if the asset is used to provide services to another network user. The adjustment of costs for operation and maintenance paid for by the first connecting party (in the case of a TNSP owned IUSA) or the IUSA owner (in the case of a third party IUSA) should reflect the extent to which the costs of that asset are being recovered through charges to a subsequent network user.³⁵⁷

The Rules do not provide a cost-sharing framework for contestable services. At the time of the TCAPA final rule determination, the Commission's view was that, as the basis for determining the price of a non-regulated, (i.e. contestable) service is not regulated by the

³⁵³ For a load connection the charges for services to be provided by the TNSP are referred to as 'exit services'.

³⁵⁴ See, for example, the standard transmission connection agreements from ElectraNet (Schedule 3, item 2), TasNetworks (Schedule 2) and TransGrid (clause 2.3).

³⁵⁵ A connecting party would, by means of the connection agreement with the Primary TNSP, also agree to pay other charges for services provided by the Primary TNSP, e.g. metering services.

³⁵⁶ Clause 5.2A.7(d)(1) of the NER.

³⁵⁷ Principle 6 of Schedule 5.11 of the NER.

NER, it would also not be appropriate for the NER to contain obligations on parties regarding the provision of contestable services.³⁵⁸

D.1.2

Draft rule

Primary TNSP was required to set the functional specification for, and operate and maintain, funded network assets as a negotiated service

Under the draft rule, the Primary TNSP was required to control, operate and maintain all assets that formed part of its network. By making DNAs part of the Primary TNSP's transmission network, the transmission network would have consisted of assets paid for by:

- Consumers through prescribed TUOS charges, and
- Third parties, with the respective assets being defined as 'funded network assets'.

The draft rule's concept of funded network assets captured third party IUSAs and DNAs and applied the same contestability arrangements to these assets.³⁵⁹ As a result, the Primary TNSP was required to set the functional specification and provide O&M services (including control and data acquisition systems) for funded network assets as a negotiated service.³⁶⁰ If a funded network asset was owned by a party other than the Primary TNSP, the Primary TNSP would have been required to operate the asset under a NOA.

Detailed design, construction, and ownership could have been provided by any party on a contestable basis

Under the draft rule, detailed design, construction and ownership services could have been provided by any party on a contestable basis (including by the Primary TNSP), provided the asset met the 'separability' limb of the current contestability threshold. That is, the asset is separable, distinct and definable from the existing transmission network.³⁶¹ This approach was consistent with the existing TCAPA framework for large DCAs and aligned with the Commission's broader objective of providing as much contestability as possible under the new DNA framework.

Existing cost-sharing arrangements for negotiated services continued to apply

The draft rule did not change existing cost-sharing arrangements for providing negotiated transmission services. The draft rule provided for the application of the existing cost-sharing arrangements to all funded network assets, including to DNAs.

In the draft determination, the Commission concluded that the complexities related to the design and application of a cost-sharing framework for costs resulting from the provision of

358 The Commission acknowledged that the lack of a cost sharing framework could lead to some unintended outcomes, e.g. create a first mover disadvantage, provide an incentive for connecting parties to connect to existing substations that were constructed contestably by a third party, or create an incentive for parties to build IUSAs that are not contestable. However, the Commission considered the complexity of the issues that would need to be resolved in the context of developing a costsharing framework for contestable services would outweigh the benefits. For a detailed discussion of the issues identified see: AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, pp. 177-180.

359 See the definition of 'funded network asset' in the Draft Rule.

360 See clause 5.2A.4(a) of the Draft Rule.

361 See clauses 5.2A.4(b) and (c) of the Draft Rule; for example, a separable transmission asset would not result in interface issues at existing substations.

contestable services, as identified in the TCAPA Rule determination, were still valid,³⁶² Consequently, the draft rule did not provide for a cost-sharing framework in relation to the contestable components of funded network assets.

D.1.3

Stakeholder views

Primary TNSP setting the functional specification for funded network assets as a negotiated service

Several stakeholders expressed concern about the proposed reduction in contestability in the provision of transmission services under the draft rule.

AusNet and CEIG expressed a preference for greater contestability in the provision of transmission services. Both were concerned that requiring the Primary TNSP to provide the functional specification and O&M of DNAs as a negotiated service could reduce innovation and increase costs compared with the existing large DCA regime. AusNet raised concerns that the Primary TNSP does not always offer low cost or innovative O&M services compared with third party service providers.³⁶³

Stakeholders also commented more specifically on the Primary TNSP providing the functional specification as a negotiated service. RES Group expressed concern that the provision of functional specification services through the Primary TNSP will add significant additional costs to DNAs.³⁶⁴ While ERM Power supported the final rule applying existing system and performance standards to DNAs, it also wanted to ensure that under the new framework the Primary TNSP, in setting functional specification for DNAs:³⁶⁵

"cannot over specify requirements above that it would reasonably impose on itself for another party's construction of a DNA".

To address the reduction in contestability, RES Group suggested the Commission consider introducing controls in the final rule to ensure the Primary TNSP and funding parties collaborate to deliver DNAs at least cost rather than strictly complying with existing network standards.³⁶⁶ RES Group also recommended the Commission consider introducing a provision under the final rule restricting the ability of the Primary TNSP to revise functional specifications after agreements have been executed. RES Group cited the ability of the Primary TNSP, under the existing framework for designing and constructing IUSAs, to unilaterally vary functional specifications, which it said can result in cost increases and project delays.³⁶⁷ CEIG likewise suggested ensuring functional specification provisions do not result in commissioning delays where the DNA is owned by a third party and allow for an efficient transfer of ownership between third parties and the Primary TNSP if required.³⁶⁸

³⁶² AEMC, *Transmission Connections and Planning Arrangements*, Rule determination, 2017, see discussion on p. 179-180.

³⁶³ AusNet submission to the draft determination, p. 3.

³⁶⁴ RES Group submission to the draft determination, p. 2.

³⁶⁵ ERM Power submission to the draft determination, p. 4.

³⁶⁶ RES Group submission to the draft determination, p. 3.

³⁶⁷ RES Group submission to the draft determination, p. 6.

³⁶⁸ CEIG submission to the draft determination, p. 3.

Primary TNSP operating and maintaining funded network assets as a negotiated service

A number of stakeholders opposed O&M of funded network assets being provided by the Primary TNSP.

AusNet was concerned that:³⁶⁹

"having control of the asset removed from the ownership may be perceived by financiers as adding risk to the owner, and increase the connecting parties cost of finance and/or insurance."

Similarly, Walcha Energy questioned whether maintenance by the Primary TNSP, for which the DNA owner would be charged, should be non-contestable for the life of the asset. It also asked if maintenance, as a negotiated service, would be subject to the dispute resolution provisions under NER rule 5.5.³⁷⁰ ERM Power suggested the Primary TNSP should simply coordinate DNA maintenance in consultation with the asset owner, similar to arrangements for MNSPs and generators connecting to the transmission network.³⁷¹

TNSPs expressed concern that the draft rule did not explicitly clarify the Primary TNSP's role with respect to providing O&M only. That is, whether the Primary TNSP would be responsible for DNA performance under the draft rule where the asset has been constructed by a third party. To address this issue, network businesses suggested that connection agreements should make it clear the Primary TNSP is not liable for any failure in relation to the DNA or the failure of the asset owner to comply with its obligations.³⁷²

Further, ENA commented the final rule should also clarify the ownership and payment arrangements in relation to secondary assets, including communication and system protection. ENA noted these assets need to integrate and inter-operate with the 'shared' transmission network and will need to be specified and operated by the Primary TNSP and the associated costs will need to be recovered through charges for DNA services.³⁷³

Network businesses were also concerned about the draft rule's lack of clarity about what happens if the DNA owner defaults on its O&M payments to the Primary TNSP. They considered the main problem was that while the Primary TNSP would no longer receive the necessary funds, the Primary TNSP would continue to face contractual obligations to provide O&M services to any third-party generators or load connected to the DNA. ENA stated that the problem derives from a lack of clarity regarding the services that are being provided and the associated flow of funds.³⁷⁴ As a result, ENA stated that;

"The Primary TNSP is exposed to significant risks in relation to connections to DNAs, as these depend on the performance of a third party's assets. The connection agreements should make it clear that the Primary TNSP is not liable for any failure in relation to the

369 AusNet submission to the draft determination, p. 3.

370 Walcha Energy submission to the draft determination, p. 2.

371 ERM Power submission to the draft determination, p. 5.

372 ENA submission to the draft determination, p. 8.

373 ENA submission to the draft determination, p. 12.

374 ENA submission to the draft determination, p. 9.

DNA or the failure of the asset owner to comply with its obligations."

ENA further added that the failure of the DNA owner to comply with its obligation would importantly also include ongoing payment of O&M charges to the TNSP.³⁷⁵

Powerlink added that given the Primary TNSP's requirement under the new framework to operate and maintain DNA assets that it may not necessarily own:³⁷⁶:

"the final rule must provide greater clarity on roles, responsibilities, flow of funds for services and cost recovery arrangements to address the significant increase in a Primary TNSP's risks and liabilities"

Contestability of detailed design, construction and ownership services

While stakeholders generally supported contestability of DNA design, construction, and ownership, submissions nevertheless raised some concerns.

Terrain Solar argued for greater contestability by suggesting design and construction of switching stations cutting into existing network infrastructure should also be contestable.³⁷⁷ AusNet argued that connecting parties would have no choice but to rely on the Primary TNSP to design and construct assets due to the complexity of working with third-party service providers.³⁷⁸

D.1.4

Final rule

Primary TNSP to set the functional specification for DNAs as a negotiated service

The final rule maintains the position from the draft rule that the Primary TNSP must provide the functional specification for DNAs as a negotiated service.³⁷⁹

The Commission acknowledges stakeholder concerns about the reduction in contestability compared with the existing regime for large DCAs. It agrees that by requiring the Primary TNSP to provide functional specification as a negotiated service, there may be reduced opportunities for cost-saving and innovation. However, the Commission considers the reduction in contestability a necessary downside to maintain system security and performance with increased investment in radial assets. It is only by the Primary TNSP providing the functional specification for a DNA that the Primary TNSP can operate and maintain DNAs in accordance with the system standards that also apply to other parts of its network.³⁸⁰

The Commission also notes that:

375 ENA submission to the draft determination, p. 8.

376 Powerlink submission to the draft determination, p. 2.

377 Terrain Solar submission to the draft determination, p. 2.

378 AusNet submission to the draft determination, p. 3.

379 Clause 5.2A.4(2) under Schedule 2 of the Amending Rule.

380 Clause 5.2A.7(d)(6) under Schedule 2 of the Amending Rule.

- By requiring DNAs to meet the same network standards as other parts of the Primary TNSP's transmission network, the Primary TNSP cannot impose higher network standards on third parties than it would otherwise apply to the rest of its network.
- Where the funding party wants to exceed minimum standards, potentially to facilitate future connections or upgrades, the Commission's view is that nothing in the final rule would preclude this from occurring through the negotiation for functional specification services.
- The functional specification is provided by the Primary TNSP in response to a connection enquiry and is based upon the information provided by the applicant at that time.³⁸¹ Where there is no change in project information provided by the connecting party between the connection enquiry and the connection application (or later stages), then the Primary TNSP is not able to vary the terms or requirements of the project's functional specification. However, if new information is provided by the applicant to the Primary TNSP after the functional specification has been provided, then there may be circumstances in which changes to the functional specification are necessary to ensure the DNA is built to meet the technical requirements of the NER. However, where such updates to the functional specification are necessary, the Commission expects that any changes should be limited to extent necessary for the Primary TNSP to meet its obligations under the NER relating to system performance and network standards.³⁸²
- It does not consider there is anything in the final rule regarding functional specification that would impede efficient ownership transfer, as mentioned by CEIG.

Primary TNSP to operate and maintain DNAs as a negotiated service

The final rule maintains the position from the draft rule requiring the Primary TNSP to provide O&M services to third party owned network assets, which will form part of its transmission network, as a negotiated service.³⁸³

The Commission acknowledges this represents a reduction in contestability compared with the existing framework for large DCAs. However, as with functional specification, this reduction in contestability is necessary in order to facilitate the establishment of individual TNCPs on DNAs, which requires that DNAs form part of the Primary TNSP's network.

Considering DNAs will likely become increasingly material extensions of the existing transmission system as DNAs, with more generation capacity being connected to these assets, the Commission considers there are system wide benefits from providing the Primary TNSP greater operational control over DNAs, to promote improved reliability and power system security across the transmission network.

The Commission does not consider any new provisions are necessary under the final rule to address stakeholders' further comments with regard to:

- TNSPs' limited responsibility for O&M, which does not include performance of the DNA,

³⁸¹ Clause 5.3.2(a) of the NER.

³⁸² See Schedule 5.1a of the NER.

³⁸³ Clause 5.2A.2(b)(5) and (7) and 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

- the need for secondary assets to be integrated and inter-operated with the shared network, and
- contestable provision of maintenance and application of the dispute resolution process to disputes relating to DNA O&M charges.

Primary TNSP to be responsible for performance of DNAs

As part of its responsibility to provide the services of operation and maintenance for DNAs, and treating the DNA as 'network', the Primary TNSP will be responsible for operating a DNA in line with the system standards under Schedule 5.1a of the Rules.³⁸⁴ Consistent with the existing arrangements on other parts of the transmission network, a connecting party at a TNCP on a DNA could reasonably expect that the TNSP operates a DNA consistent with the system standards.³⁸⁵ Likewise, a connecting party could reasonably expect the same level of performance at its TNCP as at any other TNCP on the TNSP's transmission network. The connection agreement between the TNSP and a connecting party at a TNCP on a DNA will further define the level of performance the connecting party can reasonably expect.³⁸⁶

Regarding TNSPs' concerns relating to the Primary TNSP's responsibility for O&M for a DNA potentially designed and constructed by a third party, the Commission considers the Primary TNSP can ensure its operation of a DNA complies with the system standards by providing the functional specification for a DNA.³⁸⁷

Need for secondary assets to be integrated and inter-operated with the shared network

Concerning the need for secondary assets (including communication and system protection) to be integrated and inter-operated with the 'shared' transmission network, the Commission does not consider any changes between the draft and final rule are necessary. Consistent with the draft rule, the final rule requires the Primary TNSP to provide functional specification for DNAs non-contestably as a negotiated service.³⁸⁸ The table in clause 5.2A.4 of the final rule states the Primary TNSP has the obligation and right to provide specification of, amongst other things:³⁸⁹

- remote monitoring and communication requirements
- protection, control and metering requirements, and
- supervisory control and data acquisition.³⁹⁰

Therefore, the Primary TNSP could through its functional specification of a third party DNA specify the need for secondary assets to be compliant with its systems in order to ensure the Primary TNSP can operate and control a DNA in line with other parts of its network.

384 Clause 5.2A.7(d)(6) under Schedule 2 of the Amending Rule.

385 See Schedule 5.1a of the NER.

386 See Clause 5.2.3 of the NER.

387 Clause 5.2A.4(2) under Schedule 2 of the Amending Rule.

388 Clauses 5.2A.2 (b)(7) and 5.2.4A(a)(2) under Schedule 2 of the Amending Rule.

389 The Commission notes that the examples of services in the table under clause 5.2A.4 are not an exhaustive list, but can also include specification of other things.

390 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

Contestable provision of maintenance and application of the dispute resolution process to disputes relating to DNA O&M charges

The Commission has decided not to adopt stakeholder suggestions to separate O&M to allow for contestable maintenance services. The Commission considers that operation and maintenance services are inseparable. The main reason O&M are inseparable is the difficulty categorising activities as either operation or maintenance services. The feasibility of separately providing operation and maintenance services was considered by the Commission at length in the TCAPA final rule determination in the context of IUSAs. In TCAPA, the Commission determined that separating O&M was not practical because:

- There appeared to be limited scope for innovation in how an IUSA is maintained once its functional specification and design has been set.
- Primary TNSPs have scale efficiencies that a contestable service 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 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.
- IUSAs 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.³⁹¹

The Commission considers these reasons still apply in the context of IUSAs and DNAs. Consistent with the draft rule, the final rule therefore requires the Primary TNSP to be responsible for day to day operation of third party owned network assets, including decisions about when to undertake maintenance, and services required to keep the assets operational, e.g. replacement of parts.³⁹²

Stakeholders also requested clarification whether the dispute resolution process under rule 5.5 of the NER would apply to disputes relating to costs for DNA O&M.³⁹³ Rule 5.5 includes commercial arbitration for negotiated transmission services and NER clause 5.5.1(b) further states that the rule applies to a dispute between a TNSP and a Connection Applicant. Under the final rule, the definition of 'Connection Applicant' is amended to include 'a person seeking to negotiate a network operating agreement for a designated network asset'. Based on the definition of Connection Applicant under the final rule, rule 5.5 will consequently also apply to

³⁹¹ See AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, pp. 159-160.

³⁹² Clause 5.2A.7(d)(1) and (3) under Schedule 2 of the Amending Rule.

³⁹³ Clause 5.5 of the NER.

disputes between a TNSP and a Connection Applicant (a person negotiating a NOA for a DNA) relating to costs for DNA O&M.³⁹⁴

Contestability of detailed design, construction and ownership services

Consistent with the draft rule, the final rule allows for contestable provision of detailed design, construction, and ownership services for IUSAs (which pass the monetary limb of the contestability threshold) and DNAs.³⁹⁵

The Commission does not consider it feasible to extend contestability to switching stations cutting into existing network infrastructure, as this would not be consistent with the separability limb of the contestability threshold. The Commission considers the 'separability' limb remains appropriate because it is important that the Primary TNSP continues to have singular accountability for outcomes on the shared transmission network.³⁹⁶

The Commission acknowledges concerns that the complexity of interacting with third parties may, in practice, limit opportunities for connecting parties to rely on contestable service provision. However, these concerns apply to third party provision of transmission services in general and as such the Commission considers these issues are outside the scope of the present rule change.

Further, the Commission intends to commence a broader review, together with the other market bodies, to consider options to support the timely and efficient delivery of large transmission projects that are in the long-term interests of consumers, recognising that the nature of transmission investment is invariably changing. The scope of the AEMC's *Transmission Investment and Planning Review* will include matters such as transmission financing, regulation, and governance in the context of the overall economic regulatory framework for network businesses.

394 See Clause 5.5 of the NER.

395 Clause 5.2A.4(a) under Schedule 2 of the Amending Rule.

396 Clause 5.2A.4(c)(1)(2) under Schedule 2 of the Amending Rule.

D.2 \$10m contestability threshold for IUSAs

BOX 16: CHANGES BETWEEN DRAFT AND FINAL RULE

The monetary limb of the contestability threshold is reinstated for IUSAs under the final rule. Consequently, under the final rule different contestability arrangements will apply to DNAs and IUSAs based on the value of an IUSA:

- if the capital cost of an IUSA is reasonably expected to be greater than \$10 million, the same contestability arrangement will apply to IUSAs and DNAs (i.e. the services of detailed design, construction and ownership are non-regulated transmission services and can be provided on a contestable basis)
- if the capital cost of an IUSA is reasonably expected to be \$10 million or less, different contestability arrangements will apply (i.e. the services of detailed design, construction and ownership must be provided by the Primary TNSP as a negotiated transmission service), and
- consistent with the draft rule, the services of detailed design, construction and ownership for a DNA are provided on a contestable basis, regardless of the asset's estimated capital expenditure.

D.2.1 Current arrangements

'Monetary' and 'separability' limb of the contestability threshold

In the context of IUSAs, a contestability threshold of \$10 million exists under current arrangements.³⁹⁷ This means the Primary TNSP *must* provide the services of detailed design, construction and ownership as a negotiated transmission service only if the capital cost of all components of the IUSA is reasonably expected to be \$10 million or less. If the capital cost of all components of the IUSA is reasonably expected to be greater than \$10 million, the services of detailed design, construction and ownership of each component of the IUSA are non-regulated transmission services and can be provided on a contestable basis to the extent the relevant component satisfies the following criteria:

- components being constructed are *new or a complete replacement of existing assets* (and do not involve the reconfiguration of existing assets), and
- detailed design and construction of the relevant component of the IUSA is *separable* in that the new component will be distinct and definable from the existing transmission network.

Under current arrangements the Primary TNSP is required to determine whether each component of the IUSA meets the two criteria listed above. In the event that the parties do not agree on whether the asset meets or does not meet the criteria, the Rules provide for

³⁹⁷ Clauses 5.2A.4 (b)-(d) of the NER.

either party to engage an independent engineer to provide technical advice on the matter.³⁹⁸ Further, if parties do not agree with the Primary TNSP's assessment, it is possible to raise a formal dispute under the commercial arbitration provisions set out in the NER.³⁹⁹

Application of cost-sharing arrangements to negotiated transmission services only

Further, a cost-sharing framework applies only for costs that occur through the provision of a negotiated transmission service. Accordingly, where the total cost of an IUSA is:

- \$10 million or less, the service must be provided as a negotiated transmission service. Consequently, all costs related to that asset, including the costs for detailed design, construction and ownership could be shared when a subsequent party seeks to connect to the asset.
- greater than \$10 million, the services of detailed design, construction and ownership are non-regulated transmission services and can be provided on a contestable basis. Consequently, only the costs for cut-in works, functional specification and operation and maintenance could be shared when a subsequent party seeks to connect to the IUSA.

Rationale for the contestability threshold under the 2017 TCAPA Rule

In the final determination for the TCAPA Rule, the Commission noted that in some circumstances it is neither feasible nor practicable for the services of detailed design, construction and ownership to be provided on a contestable basis:⁴⁰⁰

- **Interface issues may arise at existing substations** if a connection to the transmission network occurs via an existing substation rather than building a new substation. At the time, stakeholders suggested that connecting parties are increasingly seeking connection to the transmission network via an existing substation, as opposed to building a new substation. However, the construction of new assets within an existing substation is complicated as this may mean interfacing with live transmission equipment that forms part of the shared transmission network. Such an approach would increase risks for the Primary TNSP, which is accountable for outcomes on that network. The presence of both a contestably-appointed service provider and the Primary TNSP would be an unnecessary duplication of resources, potentially resulting in increased costs.
- **The costs and benefits of having some services opened to contestability may be relatively low** in some cases, such as connection to an existing substation, i.e. a brownfield connection. The costs of establishing a new IUSA at that substation would be relatively low compared to establishing a new substation, i.e. a greenfield connection. On this basis, the Commission considered it unlikely that many providers would have a strong incentive to provide the detailed design, construction and ownership for these assets, and that there may be limited benefits in allowing contestability in the provision of these services for these types of assets.

³⁹⁸ Clause 5.4.1(b)(3) of the NER.

³⁹⁹ Clause 5.1.2(f)(3) of the NER.

⁴⁰⁰ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, pp. 163-164.

- **If equipment is embedded deep in the meshed network**, e.g. communication equipment may need to be upgraded or installed at a location that is located some distance away from the point where a party is connecting. Such equipment needs to be able to interface with existing communication 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.

Further, both the 'monetary' limb and 'separability' limb are consistent with the existing Victorian arrangements for transmission investment, which also use a \$10 million threshold and 'separable augmentation' criterion for contestability.⁴⁰¹

D.2.2

Draft rule

The draft rule removed the \$10 million 'monetary' limb from the contestability threshold for IUSAs.

The Commission's main justification for removing the monetary limb for IUSAs in the draft rule was:

- aligning the contestability arrangements that apply to IUSAs and DNAs as much as possible and also align the cost-sharing arrangements that apply to low cost IUSAs and high cost IUSAs to ensure simplicity and less complexity, and
- allowing for contestability to the extent this was likely. The Commission questioned whether the assumption that parties are increasingly seeking to connect to the transmission network via an existing substation, which may not have created strong financial incentives on potential third party providers due to the low cost nature of these assets, justified limiting contestability for low cost IUSAs.

The draft rule therefore maintained the 'separability' limb for both IUSAs and DNAs. The Commission considered it appropriate for the Primary TNSP to continue having singular accountability for outcomes in the shared network. This required only assets that were separable, distinct, and definable from the existing transmission to be open for contestable provision.

D.2.3

Stakeholder views

Investors and project developers partly supported removing the monetary threshold for contestability. CEIG suggested the reform will provide greater opportunities for private investment in transmission.⁴⁰² RES Group also supported removing the threshold for IUSAs. However, it noted that in practice it was not aware of any third party IUSAs.⁴⁰³

⁴⁰¹ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. 165.

⁴⁰² CEIG submission to the draft determination, p. 3.

⁴⁰³ RES Group submission to the draft determination, p. 5.

In contrast, network businesses generally opposed removing the \$10 million threshold for IUSAs. According to ENA, the \$10 million threshold should be reinstated as connection applicants are highly unlikely to seek competitive tenders for small value projects and removal of the monetary threshold would mean increased costs for connection applicants.⁴⁰⁴ This is due to the information a TNSP is required to provide to connecting parties in relation to a contestable IUSA based on NER clause 5.3.3(b)(9)(i), which requires the TNSP to provide the technical parameters for that asset with sufficient detail to enable the connection applicant to obtain binding tenders for the provision of detailed design, construction and ownership services. Removing the \$10 million threshold would require the Primary TNSP to provide this extensive information to a much greater number of connection applicants. This would mean that for connection applicants who are unlikely to seek competitive tenders for low costs projects, and would obtain no benefit from the information provided, the costs for a connection enquiry would increase. All connection applicants would also have experienced the inconvenience of the TNSPs' additional time in preparing it.⁴⁰⁵

Powerlink recognised the benefits the Commission was seeking to achieve under the draft rule by achieving greater consistency between contestability arrangements for IUSAs and DNAs. However, it questioned whether removing the \$10 million threshold for IUSAs would lead to net benefits for connecting parties:⁴⁰⁶

"The substantial increase in work required by TNSPs to process connection enquiries for contestable IUSAs will require a material increase in connection enquiry fees and complexity in contractual negotiations that we expect will not be proportionate for all connection enquiries. In the past year, half of our 34 connection enquiry responses were non-contestable."

TransGrid also questioned the net benefits of removing the \$10 million contestability threshold for IUSAs and noted that it will require substantially more information to be prepared for the connection applicant, at the applicant's cost, in circumstances where there may be no value of providing this additional information.⁴⁰⁷

Stakeholders did not directly comment on the issue of maintaining the separability limb under the contestability threshold.

D.2.4

Final rule

The final rule reinstates the \$10 million threshold for IUSAs.⁴⁰⁸ Accordingly, different contestability provisions will apply to DNAs and IUSAs based on an IUSA's estimated value under the final rule.

There are two main reasons for reinstating the \$10 million threshold for IUSAs:

⁴⁰⁴ ENA submission to the draft determination, p. 13.

⁴⁰⁵ ENA submission to the draft determination, p. 13.

⁴⁰⁶ Powerlink submission to the draft determination, p. 2.

⁴⁰⁷ TransGrid, submission to the draft determination, p. 3.

⁴⁰⁸ Clause 5.2A.4(b) under Schedule 2 of the Amending Rule.

- **Costs would likely increase for connecting parties (where asset less than \$10 million):** If detailed design, construction and ownership services for all IUSAs was contestable under the final rule, the Primary TNSP would be required to prepare a functional specification for each connection enquiry. Specification would need to be sufficiently detailed to allow the prospective connecting party to seek binding tenders from third party service providers, even if the connecting party did not want to seek third party services.
- **Lack of contestable IUSAs above \$10 million under current arrangements:** As highlighted in stakeholder submissions to the draft determination, there are few IUSAs provided contestably under current arrangements.⁴⁰⁹ It is likely IUSAs with an estimate capital cost less than \$10 million would derive even less benefits from contestable service provision.

The Commission therefore concludes that, on balance, the cost of removing the monetary limb of the IUSA contestability threshold would likely outweigh the benefits.

In addition, the draft determination emphasised the importance of achieving greater consistency between IUSAs and DNAs when proposing removal of the monetary limb of the contestability threshold for IUSAs. However, under the final rule, access arrangements result in a considerably more active role for the DNA owner than IUSA owners.⁴¹⁰ This results in substantially more divergence between IUSAs and DNAs under the final rule than originally envisaged. Accordingly, there are reduced benefits from achieving consistency between IUSAs and DNAs in the context of the contestability threshold, based on differences in the arrangements for IUSAs and DNAs, which are no longer subsumed under the umbrella concept of 'funded network assets' for this purpose.

The final rule maintains the separability requirement for IUSAs.⁴¹¹ This is consistent with the draft rule and the existing arrangements and reflects the lack stakeholder concerns in response to this aspect of the draft rule.

D.3 No ownership restriction for IUSAs and DNAs

BOX 17: CHANGES BETWEEN DRAFT AND FINAL RULE

There were no changes between the draft and final rule relating to the removal of the ownership restriction for IUSAs and no introduction of an ownership restriction for DNAs. As a result, no ownership restriction will apply to IUSAs and DNAs under the final rule.

⁴⁰⁹ RES Group submission to the draft determination, p. 5.

⁴¹⁰ See Clause 5.2A.8 under Schedule 2 of the Amending Rule.

⁴¹¹ Clauses 5.2A.4(c) (1) and (2) under Schedule 2 of the Amending Rule.

D.3.1 Current arrangements

No ownership restriction applying to DCAs

No ownership restriction applies under the current framework for DCAs, i.e. a connecting party can also own the DCA that facilitates its connection.

Ownership restriction applying to IUSAs

IUSA ownership is contestable under current arrangements. However, a party (other than the Primary TNSP) who owns an IUSA (referred to as a 'third party IUSA') is subject to an ownership restriction under the current arrangements. This means that 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. load) that is connected to that IUSA, or be a related entity of a person who owns, operates or controls a generating system or load connected to that third party IUSA.⁴¹²

In the final determination for the TCAPA Rule, the Commission considered 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 IUSA may have the ability 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), which could not be tested or be required to be made public due to the confidential and private nature of such contracts.⁴¹³

The rationale underlying this obligation was to preserve competitive neutrality and the principles of an open access framework by limiting any incentive a generator or load connected to an IUSA, or a related entity of that generator or load, may have to prevent or frustrate another party's access to the transmission network through ownership of an IUSA.

D.3.2 Draft rule

Removal of the ownership restriction for IUSAs

The draft rule removed the ownership restriction for IUSAs. Consequently, a person who owned a third party IUSA could have also owned, operated, or controlled a generation system or facility that utilised electricity and was connected to that third party IUSA.

No ownership restriction applying to DNAs

DNA ownership would have been passive in nature under the draft rule. This was because the Primary TNSP would have had full control over the asset by operating it under an NOA, including administering access to the asset through its access policy.

As a result, under the draft rule only the funding party, i.e. the 'foundation user' would have had a direct contractual relationship with the owner of the asset. This commercially

⁴¹² Clause 5.2A.7(e) of the NER.

⁴¹³ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, pp. 155-156.

negotiated contract would have provided for and outlined the build and technical envelope of the DNA, and all associated time frames for constructing the asset.

Given the passive DNA ownership structure proposed under the draft rule, the Commission considered there was a low risk of a party owning a DNA being able to exert influence over the Primary TNSP's ability to grant access to competing parties. By allocating the responsibility for access administration to the Primary TNSP, the draft rule posed little risk of vertical integration and potential access frustration.

Further, preventing the connecting party from owning the asset would have effectively restricted the pool for potential DNA providers to TNSPs' affiliates, i.e. the 'contestable arm' of TNSPs' businesses, unless a market for DNA providers would develop. The Commission therefore considered that having no ownership restriction was likely to have materially increased the competitive pressure on Primary TNSPs for the provision of the services that are contestable.

As a result, in the draft rule the Commission considered that the existing ownership restriction for IUSAs was likely to have been disproportionate, and that there was therefore a good case for no ownership restriction for IUSAs. In addition, the Commission concluded removing the ownership restriction for IUSAs would have created consistency between the different types of assets that are operated by the Primary TNSP – IUSAs and DNAs – and thereby ensured less complexity and more clarity for connecting parties.

D.3.3 Stakeholder views

Investors and project developers generally supported removing the ownership restriction for IUSAs and not introducing an ownership restriction for DNAs.⁴¹⁴ CEIG highlighted the removal of the existing ownership restriction for IUSAs would provide more opportunities for private transmission investment in the NEM.⁴¹⁵

D.3.4 Final rule

Consistent with the draft rule, under the final rule no ownership restriction applies to DNAs and IUSAs.⁴¹⁶

That is, the final rule does not introduce an ownership restriction for DNAs and removes the existing ownership restriction for IUSAs.

However, the Commission notes that between the draft and final rule there has been a significant change to the proposed access arrangements for DNAs (as set out in Appendix C). Under the draft rule, DNA access would have been controlled by the Primary TNSP, whereas under the final rule, the DNA owner will be responsible for controlling DNA access. As a result, DNA ownership will not be of a passive nature with regard to administering access to a DNA.

414 Submissions to the draft determination: ATCO, p. 1; CEIG, p. 1; RES Group, p. 6.

415 CEIG submission to the draft determination, p. 1.

416 See the table under Clause 5.2A.4(a) under Schedule 2 of the Amending Rule.

The new DNA access regime will thereby allow for vertical integration without introducing an ownership restriction. The risks related to vertical integration – access frustration and monopoly pricing – are potentially more material under a regime where the DNA owner controls access.

However, introducing an ownership restriction may stifle efficient investment in transmission infrastructure if the party that makes the investment is not allowed to own and administer access to the assets. By limiting the number of parties potentially eligible to own these assets, an ownership restriction could increase financing costs or otherwise deter investment in new transmission infrastructure.

There are two main reasons an ownership restriction on DNAs may stifle investment under the final rule:

- **Reduced investor certainty:** If a connecting party cannot own the DNA that facilitates its connection to the shared network, it would have less certainty about controlling access, which would impact its ability to derive commercial returns from its investment in new transmission infrastructure.
- **Limited number of potential asset owners:** Imposing an ownership restriction would further limit the number of parties eligible to own these assets, which could potentially increase financing costs or otherwise deter investment in new transmission infrastructure.

In not introducing an ownership restriction, the Commission is mindful of the need to strike a balance between the interests of first-mover investors in new DNA infrastructure and subsequent access seekers. The Commission designed the new DNA framework to provide sufficient investment certainty to first-mover investors to ensure the new framework is utilised - that is, the new framework encourages construction of new radial transmission infrastructure. However, through other design features of the new DNA framework, the Commission provides access seekers with increased transparency through information the DNA owner has to provide (on pricing, negotiating timeframes and current utilisation of the DNA) to balance the negotiating power of the DNA owner during access negotiations. The existing framework for large DCAs provides considerable protections for first-mover investors. The new DNA framework maintains these protections for first-mover investors whilst also ensuring access seekers can effectively negotiate access with a DNA owner.⁴¹⁷

Establishing an ownership restriction for DNAs does therefore not align with the Commission's objectives for the new DNA framework to facilitate efficient investment in transmission infrastructure.

⁴¹⁷ For further detail on this aspect of the new framework see Appendix C.

D.4 30km length threshold for DNAs

BOX 18: CHANGES BETWEEN DRAFT AND FINAL RULE

There were no changes between the draft and final rule relating to the existing 30km threshold to differentiate between DCAs and DNAs.

D.4.1 Current arrangements

Under current arrangements for DCAs, a DCASP must classify its DCA as either 'large' (30km or longer) or 'small' (shorter than 30km).⁴¹⁸ Currently all DCAs – small and large, i.e. with a length of less than 30km and with a length of 30km and more – are fully contestable assets. Further, only large DCAs, i.e. assets with a total route length of 30km or more, attract access obligations.

The Commission's analysis at the time of the TCAPA Rule change demonstrated:

- the regulatory burden of complying with the requirements of the access framework for DCAs 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, and
- a low likelihood that relatively short DCAs 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.

D.4.2 Draft rule

The draft rule maintained the existing 30km threshold to differentiate between DNAs and DCAs:

- **DNAs:** Assets with transmission lines with a total route length of 30km or more were subject to the new DNA framework.
- **DCAs:** Assets with transmission lines with a total route length of less than 30km were governed by the existing rules for small DCAs.

As a result of the draft rule's changed contestability arrangements:

- **DNAs** formed part of the Primary TNSP's transmission network and as such would have needed to be operated and maintained by the Primary TNSP, whereas
- **DCAs** remained fully contestable, private connection assets.

D.4.3 Stakeholder views

The South Australian Department of Energy and Mining supported maintaining the 30km length threshold for DNAs.⁴¹⁹

⁴¹⁸ Clause 2.5.1A(b) of the NER.

⁴¹⁹ SA Department of Energy and Mining submission to the draft determination, p. 2.

However, several stakeholders opposed maintaining the existing 30km threshold to differentiate between DCAs and DNAs, with some stakeholders proposing alternative approaches.

Powerlink and Terrain Solar considered the threshold arbitrary. Powerlink cited general examples of DCAs on its network which are less than 30km in length, but would nevertheless benefit from the new DNA framework.⁴²⁰ Terrain Solar sought further information on the origins of the 30km threshold, its supporting logic and work demonstrating why it was chosen. It expressed concerns that:⁴²¹

1. "This sets a high, and costly bar, to be achieved before the proponent/s is afforded the access rights protections proposed under the Draft Rule Change.
2. This places smaller proponents such as Terrain, without the deep pockets of the "big boys" at a considerable competitive disadvantage.
3. By affording similar access rights protections to ANY proponent who funds the construction of network assets, so that they can defray costs for any other projects connecting to that infrastructure as well, the playing field would become much more level."

RES Group also opposed the 30km threshold for DNAs.⁴²² According to RES Group, the new DNA framework is essential to facilitate the delivery of complex projects such as staged projects, projects with multiple technology types, or separate projects with shared connection assets. Conversely, for 'simple' projects with a single stage, single technology type or single owner but with a connection asset, the draft rule unnecessarily limits contestability. Consequently RES Group proposed that instead of length of the asset, the threshold distinguishing between DNAs and DCAs should be based on the number of connecting parties:

- **Small DCAs** are retained for connections involving single generating systems with power lines less than 30km in length
- **Large DCAs** are retained for connections involving single generating systems with power lines longer than 30km
- **DNAs** are established for connections involving multiple generating systems (connecting parties).⁴²³

AusNet similarly suggested that the number of connected parties could be an alternative to the 30km length threshold. According to AusNet, this would increase the new framework's overall contestability. AusNet mentioned that there may be circumstances where asset sharing and/or future incorporation into the shared network is unlikely or impractical. For example, where connecting parties developing large renewable projects (e.g. onshore and offshore wind farms or pumped hydro projects) can support a DCA for their use only, the

⁴²⁰ Powerlink submission to draft determination, p. 2.

⁴²¹ Terrain Solar submission to the draft determination, p. 2.

⁴²² RES Group submission to the draft determination, p. 2-3.

⁴²³ RES Group submission to the draft determination, p. 3.

draft DNA framework is unnecessarily limiting contestability and opportunities for third parties to provide innovative solutions. On this basis AusNet suggested that an alternative to the draft rule could be to provide connecting parties with the option to choose whether transmission services related to connection are provided under the new DNA or the existing large DCA framework, regardless of the line length.⁴²⁴

D.4.4

Final rule

The Commission maintains its position from the draft rule that the new DNA framework applies to transmission assets with a total route length of 30km or longer.⁴²⁵ Assets with a total route length less than 30km will continue to be classified as DCAs.⁴²⁶ This is consistent with existing arrangements for small DCAs established by the TCAPA Rule.

The Commission recognises the merits of stakeholder concerns about the 30km threshold. However, on balance, the Commission considers the 30km threshold is the best available solution because of the:

- limitations of alternative approaches proposed by stakeholders, and
- continued relevance of the Commission's analysis informing the 30km threshold under the TCAPA framework.

One of the alternative approaches stakeholders suggested was to rely on the number of connecting parties, rather than length of the power lines forming the transmission asset, to distinguish between DCAs and DNAs. Under this approach, assets with a single connecting party behind the boundary point would be subject to the existing framework for DCAs. Assets with multiple connecting parties would be subject to the new DNA framework.

The Commission considers the main problem with this approach is its temporal nature. At any given point in time, the number of parties connected to a specific transmission asset could change. For example, there could only be one connecting party when the asset is commissioned, which would mean the asset would be classified as a DCA. But if a subsequent party seeks to connect to the asset at a later date, the asset would need to transition to the DNA framework. This is one of the key issues that this rule change seeks to resolve.

The Commission further considers:

- By creating individual TNCPs on DNAs, an increased number of new generators may seek to connect to existing assets. Under alternative approaches to the 30km threshold proposed by stakeholders, there could be a significant risk of single-user DNAs eventually needing to transfer to new arrangements. This could require complex transitional arrangements
- It is essential to ensure any material extensions of the transmission network comply with existing system security and performance standards. Under the proposed alternative

⁴²⁴ AusNet submission to the draft determination, p. 4.

⁴²⁵ See definition of 'dedicated network asset' under Schedule 4 of the Amending Rule.

⁴²⁶ See definition of 'dedicated connection asset' under Schedule 4 of the Amending Rule.

approaches, projects 'opting out' of the new DNA framework could undermine this objective

- There is benefit from promoting investor certainty by avoiding ambiguity regarding the distinct access obligations for DNAs and DCAs.

The Commission notes that stakeholder concerns that assets less than 30km will not be able to gain the benefits of the new DNA framework are addressed under the final rule. Project proponents less than 30km can voluntarily opt into the new DNA framework.⁴²⁷

D.5 Contractual arrangements

BOX 19: CHANGES BETWEEN DRAFT AND FINAL RULE

There were several changes between the draft and final rule relating to the aspect of contractual arrangements. These changes are necessary because the final rule allocates responsibility for administering DNA access to the DNA owner. The final rule therefore:

- Removes the obligation on the Primary TNSP to distribute to the owner of a DNA through the NOA any relevant amounts that the Primary TNSP has collected from connection applicants for connection to the DNA in accordance with its access policy.
- Maintains the right of the Primary TNSP under the NOA to alter, replace or augment a third party DNA if necessary in order for the Primary TNSP to operate and maintain the asset in line with network standards. However, only the DNA owner will have the right to alter, replace or augment a third party DNA in order to facilitate third party access or connect a 'daisy chained' DNA to an existing DNA.
- Maintains the right of the Primary TNSP under the NOA to connect other persons to a DNA. However, connection of another person to a DNA will be subject to an access agreement between the DNA owner and the connecting party - this is a consequence of allocating the responsibility to provide 'access services' to the DNA owner and allocating the responsibility to provide 'connection services' to the Primary TNSP.

Consequently, the scope of TNSPs' rights and obligations under a NOA will be narrower for DNAs than for IUSAs.

D.5.1 Current arrangements

Requirement to have a NOA for third party IUSAs

If a party (other than the Primary TNSP) owns an IUSA (referred to as a 'third party IUSA') it is required to have a NOA in place with the Primary TNSP.⁴²⁸

As an IUSA is not a transmission system in or of itself, there is consequently no requirement for the asset owner to register (or be exempted) in respect of that asset. This is because a

⁴²⁷ Clause 11.139.4 under Schedule 5 of the Amending Rule.

⁴²⁸ Clause 5.2A.7(a) of the NER.

third party IUSA forms part of the Primary TNSP's transmission network, for which the Primary TNSP is already registered.⁴²⁹

If a party other than the Primary TNSP owns an IUSA, any third party (i.e. any party other than the Primary TNSP) who owns an IUSA must have a NOA with the Primary TNSP.⁴³⁰ The NOA needs to be in place before the IUSA is commissioned.⁴³¹ Under the NOA operation, maintenance and control of the IUSA is provided by the Primary TNSP. This enables the Primary TNSP to continue to have control over its whole transmission network, including the contestable components of the IUSA that form part of its network.

Accordingly, third party ownership of an IUSA is passive in nature under current arrangements. A third party owner does not have any role in making decisions about operation, maintenance or control of the asset, as these responsibilities lie with the Primary TNSP. For example, under the NER, a contestable owner is required to agree to the replacement of assets before this is undertaken by the Primary TNSP. Further, the Primary TNSP administers access to the IUSA in line with the open access regime and the connections process set out in rule 5.3 of the NER.

D.5.2

Draft rule

Requirement to have a NOA

To facilitate contestable ownership, the draft rule required the DNA owner to enter into a NOA with the Primary TNSP if the DNA was owned by a third party. This is consistent with current arrangements for IUSAs. Under the draft rule the Primary TNSP would have been required to prepare, maintain, and publish a standard NOA for funded network assets. Alternatively, the Primary TNSP could have prepared, maintained, and published multiple standard NOAs for different types of funded network assets (IUSAs and DNAs) to account for differences in the types of assets.

Under the draft rule the standard NOA would have needed to be:

- negotiated in accordance with the negotiating principles
- consistent with Part B of Schedule 5.6 (*Terms and conditions of connection agreements and network operating agreements*) of the NER
- set for a period at least equal to the term of the longest connection agreement of a member of the initial identified user group for the funded network asset.

In addition, the NOA must have provided for the Primary TNSP to:

- operate and control the funded network asset (including rights and obligations to maintain the asset) for an agreed charge or charging methodology
- have an option to purchase the funded network asset at fair market value at the expiry or early termination of the NOA

⁴²⁹ See definition of 'transmission network' under Chapter 10 of the NER.

⁴³⁰ Clauses 5.2A.7(a)-(d) of the NER.

⁴³¹ Clause 5.2A.7(a) of the NER.

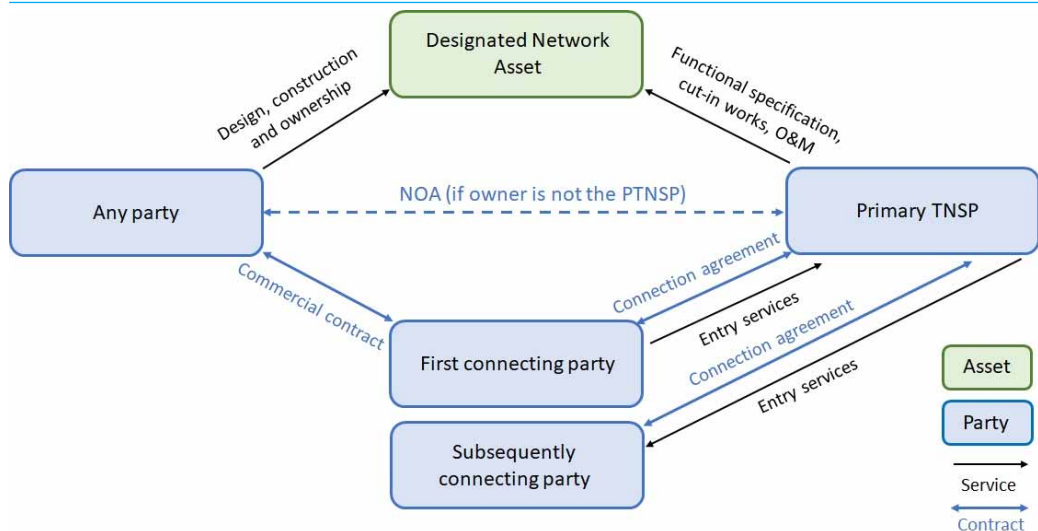
- alter, replace or augment the funded network asset
- have the right to connect other persons to the funded network asset in accordance with the NER, i.e. in the case of a designated network asset in line with the special access regime for designated network assets
- have unrestricted use of, and access to, the funded designated network asset
- treat the funded network asset as forming part of the Primary TNSP’s transmission network in all material respects.

The draft rule added two further requirements on the NOA for a DNA associated with access and allocation of settlement residues. Accordingly, the NOA for a DNA was required to provide for the Primary TNSP distributing, in accordance with methodologies developed by the Primary TNSP, to the DNA owner any:

- relevant amounts that the Primary TNSP has collected from connection applicants for connection to the DNA in accordance with the access policy, based on the fact that the Primary TNSP would have been responsible for administering DNA access
- settlement residues accrued on the DNA.

Figure D.1 illustrates the contractual arrangements under the framework for DNAs as established under the draft rule.

Figure D.1: Indicative contractual arrangements for DNAs



Source: AEMC.

Multiple asset owners

Under the draft rule, there would have only ever been one DNA behind a boundary point. However, there could have still been multiple asset owners of a single DNA behind the boundary point. The intention of allowing multiple asset owners behind the boundary point

was to facilitate DNA development over time, with appropriate contestability arrangements at each stage of development. The Commission did not intend to determine or prevent any specific DNA configurations by allowing the Primary TNSP to operate a DNA under one or multiple NOAs.

One possible way DNAs could have developed under the draft rule was by physically 'expanding' the footprint of an existing DNA where a party seeking to connect to a DNA is located more than 30km away. As any connection asset with power lines longer than 30km could no longer have been classified as a DCA, the asset must have instead been classified as a DNA. Another way of expanding was by upgrading or increasing the capacity of a DNA without expanding its physical footprint. Such an upgrade might have been provided by upgrading switchgear in a substation or by the duplication of an overhead line.

Under the draft rule, the standard DNA contestability arrangements would have applied to expansions and increases in DNA capacity. That is, the Primary TNSP, the original contestable asset owner, or any other party could have designed, constructed, and owned the contestable components of the additional assets. Such modifications of the original DNA, e.g. upgrading switchgear, would have been contestable to the extent that they were separable from the existing asset in line with contestability threshold. Under the draft rule, the original DNA owner would have already entered a NOA with the Primary TNSP. If the assets forming the expansion or used to increase the capacity of the DNA were owned by a different party, the owner of those assets was also required to enter into a NOA with the Primary TNSP.

D.5.3

Stakeholder views

Investors, project developers, and network businesses commented on the contractual arrangements that would apply in the context of DNAs.

Investors and project developers expressed concerns regarding the scope of power the Primary TNSP could exercise through the NOA and this may deter third party ownership of funded network assets and asked the final rule provide greater clarification in this regard.

The CEC requested more information on how the proposed negotiating principles will ensure NOA fees are kept efficient in a noncompetitive negotiation between the DNA owner and the Primary TNSP.⁴³²

ERM Power expressed concerns about the NOA giving the Primary TNSP the right to:

- alter, replace, or augment DNAs
- have unrestricted use of, and access to, DNAs, and
- treat DNAs as part of the Primary TNSPs network in all material respects.⁴³³

Instead, ERM Power recommended the above rights being negotiated by parties to the NOA. Otherwise, it was concerned the new framework would represent a barrier to efficient investment in DNAs by any party other than the Primary TNSP.⁴³⁴

⁴³² CEC submission to the draft determination, p. 4.

⁴³³ ERM Power submission to the draft determination, p. 4-5.

⁴³⁴ ERM Power submission to the draft determination, p. 5.

Terrain Solar suggested the standard NOA to include a transparent charging methodology for O&M services provided by the Primary TNSP.⁴³⁵

In contrast, TNSPs identified the need for additional contractual arrangements beyond the NOA under the new framework for DNAs. ENA expressed concerns the contractual arrangements proposed under the draft would leave gaps in terms of identifying the appropriate roles and responsibilities of the Primary TNSP, the DNA owner, and connecting parties.⁴³⁶ To address these gaps, ENA recommended the establishment of a "DNA access management deed", which would establish a contractual relationship between the Primary TNSP, the DNA owner, the first connecting party and any subsequent connecting party.⁴³⁷ ENA suggested that the DNA access management deed would address liability arrangements and default and step in arrangements.⁴³⁸

D.5.4

Final rule

The Commission considers there is no need for changes between the draft and final rule with regard to the necessary contractual arrangements for DNAs. However, due to the changed access arrangements for DNAs under the final rule, the Commission considers changes with regard to the scope and terms and conditions of the NOA are necessary under the final rule to account for the DNA owner instead of the Primary TNSP controlling third party access to the DNA. The relevant changes are discussed in further detail below.

Consistent with the draft rule, the final rule sets out minimum contractual arrangements for DNAs. These include::

- a third party DNA owner is required to enter into a NOA with the Primary TNSP.⁴³⁹
- a TNSP negotiates and enters into a connection agreement consistent with rule 5.3 with a party connecting at a TNCP on a DNA.⁴⁴⁰

The Commission considers there is no need to prescribe the existence of contractual arrangements beyond the NOA and the connection agreement in the NER. However, it acknowledges that parties may nonetheless agree to additional contractual arrangements that are necessary for the parties to put in place their commercial arrangements. For example, this could include:

- a contract between the DNA owner and the foundation user that establishes the DNA
- a contract between the DNA owner and each party it provides DNA services to in the form of an access agreement

435 Terrain Solar submission to the draft determination, p. 3.

436 ENA submission to the draft determination, p. 9.

437 ENA submission to the draft determination, p. 10 and Attachment 1 to the submission.

438 ENA submission to the draft determination, p. 20.

439 Clause 5.2A.7(a) under Schedule 2 of the Amending Rule.

440 Appendix C on access clarifies the interaction between 'access', for which the DNA owner is responsible under the new framework, and 'connection' for which the Primary TNSP is responsible under the new framework. Where the DNA owner is responsible for granting DNA access, the final rule has a restriction on the Primary TNSP providing an offer to connect unless it has received written confirmation from the DNA owner that access to the DNA has been granted.

- a tripartite agreement between the DNA owner, the Primary TNSP and a connecting party (or more parties depending on the number of connected parties).

Contractual relationship between the DNA owner and a connecting party

As the DNA owner is responsible for granting third party access to its DNA under the final rule, the DNA owner and a connecting party are likely to enter a contractual agreement setting out the terms and conditions of DNA access.

Depending on which party owns the DNA (i.e. the Primary TNSP or another party), the contractual agreement governing the relationship between connecting parties and the DNA owner may take different forms. For example:

- If the DNA owner is not the Primary TNSP, but either the same party as the foundation user or a third party service provider, the agreement may take the form of a commercial contract between the DNA owner and a connecting party.
- If the DNA owner is the Primary TNSP, the agreement may form part of the connection agreement between the Primary TNSP (who is also the DNA owner) and a connecting party rather than a separate contractual agreement.

The final rule does not prescribe the need for, or form of, such contractual relationships between the relevant parties as the Commission considers that commercial parties are best placed to develop the appropriate contractual arrangements for their given circumstances, which may include a variety of connection configurations and business models.

Tripartite agreement between the DNA owner, the Primary TNSP and a connecting party

Consistent with the draft rule, the final rule does not require connecting parties, the DNA owner, and the Primary TNSP to enter into a tripartite contractual agreement. However, the parties may choose to do so, and the rules do not prevent this from happening.⁴⁴¹ The Commission's view is that liability and default arrangements can sufficiently be addressed under the existing contractual arrangements:

- Currently, a Primary TNSP provides for any liability arrangements through its connection agreement with a connecting party at a TNCP.⁴⁴² For a DNA connecting party, the connection agreement with a connecting party could further specify what would happen in the case of the DNA owner defaulting, e.g. the connecting party may be required to pay O&M directly to the Primary TNSP.
- Likewise, the NOA and the contract between the DNA owner and a DNA connecting party would also speak to liability in case of the DNA owner defaulting.⁴⁴³
- In addition, the NER would not prevent the involved parties to enter into additional contractual arrangements to deal with issues relating to liability and the DNA owner defaulting, e.g. a tripartite contract between the Primary TNSP, the DNA owner and a connecting party, but the final rule does not require the existence of a such a contract as

⁴⁴¹ Clause 5.3.7(f1) under Schedule 2 of the Amending Rule.

⁴⁴² Clause 5.2.3(d)(1) of the NER.

⁴⁴³ See with regard to the NOA Paragraph (e) in Part B of Schedule 5.6 of the NER.

the Commission considers the parties capable of addressing liability arrangements with respect to the DNA owner defaulting through commercial negotiations.

The Commission also notes there are existing requirements in the NER for the NOA to contain default provisions.⁴⁴⁴

Accordingly, the Commission does not consider there is a need to prescribe the existence of any other contractual arrangements to allocate and manage risk between the parties. Rather, the Commission considers it is important to provide parties with maximum possible flexibility under the new framework when negotiating their contractual agreements, including how those arrangements allocate and manage risk. The Primary TNSP, DNA owner and connecting parties are sophisticated, well advised parties that are capable of reaching legal and commercial outcomes suitable to their circumstances.

Scope and terms and conditions of the NOA

In relation to stakeholder concerns regarding the scope of power the Primary TNSP could exercise on a third party DNA owner through the NOA, the Commission does not consider any changes are necessary under the final rule.

As a Primary TNSP takes over full operational control over a DNA, the Commission considers it as necessary that a NOA (largely consistent with the draft rule) gives the Primary TNSP the right to:

- have unrestricted use of, and access to, DNAs in accordance with the Rules, and⁴⁴⁵
- treat DNAs as part of the Primary TNSPs network in all material respects.⁴⁴⁶

However, given that under the final rule the Primary TNSP is no longer be responsible for administering access to a DNA, the Primary TNSP has limited rights with regard to:

- **Altering, replacing or augmenting a third party DNA.**⁴⁴⁷ The Primary TNSP has, under the NOA for a DNA, the right to alter, replace or augment a third party DNA if necessary in order for the Primary TNSP to operate and maintain the asset in line with its obligations in respect of the standards for operating the transmission network under the NER. However, only the DNA owner has the right to alter, replace or augment a third party DNA for the purposes of proving DNA access to a third party. Further, if a new/subsequent DNA seeks to connect to an existing DNA, i.e. a 'daisy chained' DNA, the owner of the original DNA has the right to undertake the cut-in works to facilitate the connection of a 'daisy chained' DNA. As a result, under the final rule slightly different contestability arrangements apply to such an alteration of an existing DNA, which could take the form of 1) upgrading or increasing the capacity of the existing DNA for the purposes of connecting a third party to the DNA, and 2) cutting-in to the existing DNA for the purposes of connecting another DNA to the existing DNA

Further, the Commission notes that under the final rule:

⁴⁴⁴ Paragraph (e) in Part B of Schedule 5.6 of the NER.

⁴⁴⁵ Clause 5.2A.7(d)(5) under Schedule 2 of the Amending Rule.

⁴⁴⁶ Clause 5.2A.7(d)(6) under Schedule 2 of the Amending Rule.

⁴⁴⁷ Clause 5.2A.7(d)(3) under Schedule 2 of the Amending Rule.

- The DNA owner has the exclusive right to provide the services of detailed design and construction of such a modification of an existing DNA.⁴⁴⁸
- Ownership of the modification, e.g. upgraded switchgear, must remain with the DNA owner to ensure the same access arrangements apply to the entire DNA.⁴⁴⁹
- For cut-in works, i.e. interface works that cut into an existing DNA for the purposes of connecting another DNA to an existing DNA, the DNA owner has the exclusive right to provide the service.⁴⁵⁰
- The Primary TNSP retains responsibility for providing functional specification and O&M as a negotiated service.⁴⁵¹
- **Connecting other persons to a DNA.**⁴⁵² However, the Primary TNSP's right to connect other persons to the DNA is subject to confirmation from the DNA owner that access to the DNA has been granted.⁴⁵³ The Commission notes that under the final rule the responsibility to provide 'access services' is with the DNA owner whereas the responsibility to provide 'connection services' will lie with the Primary TNSP.⁴⁵⁴

However, as IUSAs will remain subject to open access and the Primary TNSP will continue to be responsible for controlling access to IUSAs, the Primary TNSP will continue to have the rights to 1) alter, replace or increase the capacity of the IUSA, and 2) grant access and connect other persons to the IUSA.⁴⁵⁵ Accordingly, these differences require that the NOA for a DNA and IUSA be different in terms of the scope of the rights and obligations of the Primary TNSP in relation to operation of these different assets.

Further, consistent with the draft rule, the final rule sets out terms and conditions of NOAs.⁴⁵⁶ According to the final rule, a NOA between the Primary TNSP and the owner of a contestable IUSA or DNA must include provisions relating to:⁴⁵⁷

- agreed boundaries and physical connection obligations and interface between the IUSA, DNA and the rest of the transmission network⁴⁵⁸
- conditions to transfer operational control of the asset to the Primary TNSP⁴⁵⁹
- the standard of care to apply to the Primary TNSP in providing O&M services⁴⁶⁰
- insurance obligations⁴⁶¹

448 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

449 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

450 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

451 Clause 5.2A.4(2) under Schedule 2 of the Amending Rule.

452 Clause 5.2A.7(d)(4) under Schedule 2 of the Amending Rule.

453 Clause 5.3.6(a3) under Schedule 2 of the Amending Rule.

454 Appendix C on access provides further detail in this regard.

455 Clause 5.2A.7(d)(3) under Schedule 2 of the Amending Rule.

456 See Schedule 5.6, Part B under Schedule 2 of the Amending Rule.

457 See Schedule 5.6, Part B under Schedule 2 of the Amending Rule.

458 See Schedule 5.6, Part B, paragraph (a) under Schedule 2 of the Amending Rule.

459 See Schedule 5.6, Part B, paragraph (b) under Schedule 2 of the Amending Rule.

460 See Schedule 5.6, Part B, paragraph (c) under Schedule 2 of the Amending Rule.

461 See Schedule 5.6, Part B, paragraph (d) under Schedule 2 of the Amending Rule.

- termination, events of default and force majeure regime⁴⁶²
- liability and indemnity⁴⁶³, and
- defect warranties.⁴⁶⁴

The Commission's view is that the regulatory framework leaves sufficient flexibility for the Primary TNSP and a third party DNA owner to negotiate the exact terms and conditions of a NOA, which will be a bespoke contractual arrangement between a third party DNA owner and the Primary TNSP.

Regarding stakeholder concern the NOA should include a clear and transparent charging methodology for O&M services, the Commission notes that the price for a negotiated service needs to be set in accordance with the requirements formulated under existing Schedule 5.11 *Negotiating principles for negotiated transmission services*.⁴⁶⁵ The Commission considers the existing negotiating principles provide for effective cost bounds by ensuring, amongst other things, that the price for a negotiated transmission service should:

- be based on the costs incurred in providing that service⁴⁶⁶
- enable the Primary TNSP to recover the efficient costs of complying with all regulatory obligations associated with the provision of the negotiated transmission service, and⁴⁶⁷
- be fair and reasonable and consistent with the safe and reliable operation of the power system.⁴⁶⁸

Within these cost bounds, the price of O&M services would be negotiated between the Primary TNSP and the DNA owner on a bespoke basis. To maintain a consistent and flexible framework that applies to prices for a negotiated service in general, the Commission considers O&M for DNA should not be treated any differently than any other negotiated service provided by the Primary TNSP.

Considering broader stakeholder concerns on negotiating imbalances between the parties, the Commission considers the risk of such imbalances would potentially extend to all negotiations for prospective connections, including the prices for negotiated services in general. As such, making changes to the broader regulatory framework for negotiated transmission services is beyond the scope of this rule change.

462 See Schedule 5.6, Part B, paragraph (e) under Schedule 2 of the Amending Rule.

463 See Schedule 5.6, Part B, paragraph (f) under Schedule 2 of the Amending Rule.

464 See Schedule 5.6, Part B, paragraph (g) under Schedule 2 of the Amending Rule.

465 See Schedule 5.11 under Schedule 2 of the Amending Rule.

466 Principle 1 in Schedule 5.11 under Schedule 2 of the Amending Rule..

467 Principle 7 in Schedule 5.11 P under Schedule 2 of the Amending Rule.

468 Principle 8 in Schedule 5.11 under Schedule 2 of the Amending Rule.

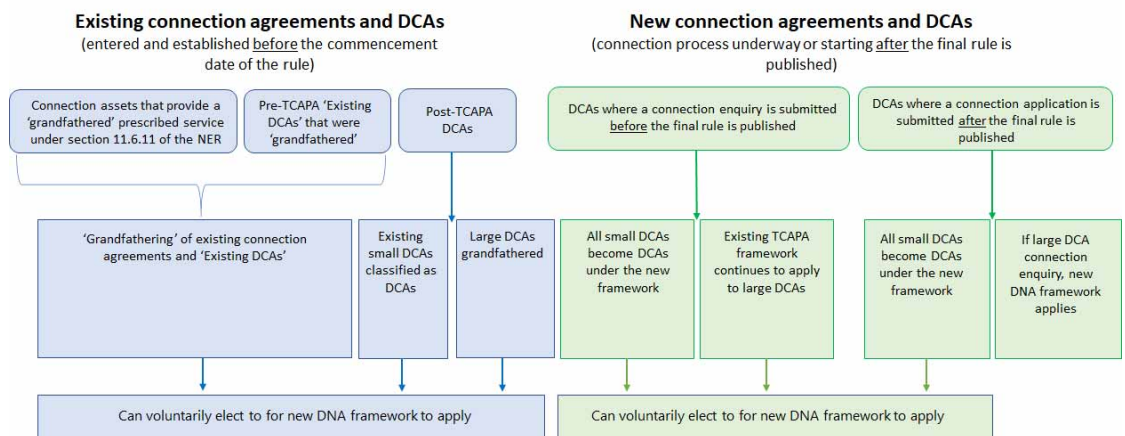
E IMPLEMENTATION, SAVINGS AND TRANSITIONAL ARRANGEMENTS

This Appendix outlines the Commission's final decision in relation to implementation, savings and transitional arrangements. For this purpose, the Appendix provides a summary of the draft rule, stakeholder views on the draft rule, and the final rule position on the following issues:

- commencement date for the new rule, including the steps that will need to be undertaken by industry and market bodies prior to commencement of the rule, and
- savings provisions for existing DCAs and connection agreements.

Figure E.1 below provides an overview of the Commission's approach to implementation, savings and transitional arrangements.

Figure E.1: Implementation, savings and transitional arrangements



Source: AEMC.

E.1 Commencement date, implementation and transitional arrangements

BOX 20: CHANGES BETWEEN THE DRAFT RULE AND THE FINAL

There were several changes between the draft and final rule relating to the commencement and implementation of the new framework. Specifically, the final rule:

- Introduces an implementation period of two weeks between the final rule's publication and commencement
- Provides for an 'allowance period' of 60 business days from the commencement date for the Primary TNSP to respond to connection enquiries to establish new DNAs
- Extends the time for an NSP to respond to a connection enquiry to establish a new DNA to 40 business days, and
- Requires NSPs to notify connection applicants about the application of the old or the new framework, as the case may be.

E.1.1 Draft rule

Commencement date

Under the draft rule, savings and transitional provisions for the new DNA framework were to commence on or about the day the final rule was to be made ("publication date"). Substantive parts of the rule were to commence approximately six months after that date ("commencement date").

The draft rule provided this six month transitional period to enable several parties to undertake a number of steps to ensure readiness and compliance with the new requirements upon commencement:

- Connecting parties needed to become familiar with the new arrangements
- Primary TNSPs needed to:
 - review and update internal systems, procedures and/or standard documentation to reflect the new arrangements.
 - amend the standard NOA to account for the new arrangements for funded network assets owned by a party other than the Primary TNSP (or create separate standard NOAs for DNAs and IUSAs), and
 - develop an access policy that could apply to any DNA that forms part of their network.
- AEMO needed to amend its *NEM Dedicated Connection Asset Classification Guide* regarding DCASP registration requirements to reflect that only small DCAs (with a length

of less than 30km) are captured by the concept of DCAs and there was no longer a registered participant category for DCASPs.⁴⁶⁹

- AER needed to:
 - amend and publish the *Electricity Network Service Provider Registration Exemption Guideline* to account for the draft rule.⁴⁷⁰
 - under the TCAPA Rule, DCAs were defined as ‘transmission systems’ for registration purposes. This led to the creation of the registered participant category DCASP
 - by contrast, under the draft rule DCAs were no longer defined as ‘transmission systems’ for registration purposes.
 - amend its existing procedures for approving access policies. Instead of approving access policies for large DCAs, under the draft rule the AER was responsible for approving Primary TNSPs’ standard access policies for DNAs.

The most significant stakeholder action needed to be undertaken to implement the draft rule was the Primary TNSP developing a standard access policy for any DNA forming part of its network.

The Commission concluded that approximately six months between publication and the commencement date were necessary to provide TNSPs with enough time to undertake this obligation. The Commission also considered the feasibility of staged implementation, but considered it impractical to require Primary TNSPs to respond to connection enquiries and applications before finalising access policies.

Existing connection processes

Under the draft rule, connection enquiries made to a Primary TNSP in respect of a small DCA prior to the commencement date would have been assessed under the framework established by this rule (that is, the NER as it would have been in force on and from the commencement date). In practice, this would not have required a connection applicant to recommence its connection process. However, it may have required additional or alternative information to be provided before any offer to connect could be issued.

The draft rule did not provide transitional provisions for connection applications underway in respect of large DCAs. The Commission recognised in the draft determination that some proponents may have commenced the connection process for connection to a transmission network via a large DCA, and if so, those proponents would have already made some financial investment in preparing a connection enquiry. However, it considered that the costs for making a new enquiry would have likely been smaller than the benefits of using the new framework.

469 AEMO, *NEM Dedicated Connection Asset Classification Guide*, April 2018. Available under: <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/participate-in-the-market/information-for-current-participants/classify-a-dedicated-connection-asset>.

470 Developed under clause 2.5.1(d). See AER, *Electricity Network Service Provider Registration Exemption Guideline*, March 2018. Available under: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/network-service-provider-registration-exemption-guideline-march-2018>.

Transitional arrangements for existing small DCAs

The draft rule provided transitional arrangements for small DCAs established under the TCAPA framework, with these assets deemed to be a DCA under the draft rule.⁴⁷¹

Under the draft rule, connection enquiries made to a Primary TNSP, in respect of a small DCA, prior to the commencement date of the new rule would have been assessed under the framework established by this rule (that is, the NER as it will be in force on and from the commencement date). In practice, this would not have required a connection applicant to recommence its connection process, but may have required additional or alternative information to be provided before any offer to connect was issued.

According to AEMO's Registration and Exemption List, when the draft rule determination was published there were four small DCAs, all operated by TransGrid (i.e. TransGrid is the DCASP for these small DCAs).⁴⁷²

NER obligations for a small DCA under the existing TCAPA framework were relatively insubstantial. The main obligation on the owner, operator or controller of a small DCA was registering as a DCASP under Chapter 2 of the NER, classifying its DCA as a small DCA with AEMO and complying with the obligations in clause 5.2.7. Given the draft rule removed these obligations, and did not place any additional obligations on the owners or operators of 'dedicated connection assets' (which replaced small DCAs), the Commission did not consider it necessary to grandfather the four existing DCASPs and this category of assets.

As a result, the savings and transitional provisions under the draft rule provided for those DCASPs that had registered with AEMO in respect of a small DCA prior to the commencement date to cease being a DCASP in respect of that small DCA, and under the draft rule the small DCA was instead deemed a 'dedicated connection asset' (as defined under the new rules), on and from the commencement date.⁴⁷³

Therefore, the Commission determined that, on and from the commencement date the owners or operators of small DCAs would only face obligations applying to DCAs under the draft rule.

The parties to a connection agreement, in respect of a small DCA, would have been subject to the new framework if the connected party requested an alteration to its connection service. Otherwise, the draft rule was not intended to alter the terms or contractual rights or obligations of the parties to such an agreement.

In addition, under the draft rule existing small DCAs could have voluntarily converted to the new DNA framework if mutually agreed by all relevant parties, including the asset owner and the Primary TNSP.

471 See clause 11.xxx.2(a)(2) of the draft rule.

472 See <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/participate-in-the-market/registration>.

473 Clause 11.[xxx].2(a) of the draft rule.

E.1.2

Stakeholder Views

Commencement date

Stakeholder views on the proposed implementation period varied.

Project proponents argued for the new rule coming into effect as soon as possible and suggested flexible mechanisms for allowing earlier implementation on a voluntary basis.⁴⁷⁴

By contrast, TNSPs argued for at least six months between the final rule's publication and commencement date to give them time to prepare the internal systems, processes, and documentation needed to start responding to connection enquiries under the new framework. AEMO also argued for a longer implementation period, suggesting at least 12 months between publication and the commencement date. AEMO's concern was based on internal work needed to calculate MLFs at the boundary point between DNAs and the shared network.

Six month implementation timeframe

CleanCo submitted that six months should be the 'outer bound' for the new rule's implementation period. RES Group supported the six-month implementation period proposed under the draft rule, but nevertheless emphasised that a significant number of projects would benefit when the new framework is implemented.⁴⁷⁵ Acciona added that:⁴⁷⁶

"The existing DCA regime and the issues identified with it create significant impediments to new generation projects. It is effectively not possible to stage projects or to effectively share dedicated connection assets between projects or stages. As a result, many projects are either not possible or would not be financially viable, and will be unable to proceed until the commencement date."

In contrast, network businesses argued that six months was the minimum acceptable timeframe to implement the new framework after the final rule is published.⁴⁷⁷ Network businesses maintained that a six-month implementation period would be necessary even if the Primary TNSP was no longer required to administer DNA access under the final rule, due to the need to:

- review and update internal systems, procedures, and standard documentation, and
- update NOAs.⁴⁷⁸

AEMO requested more than six months, and possibly as long as a year, to implement the final rule. It was concerned that the draft rule may not have provided sufficient time to update its processes, systems and documentation, given the high volume of competing priorities and regulatory change likely to fall in the same period.⁴⁷⁹

474 Submissions to the draft determination: Acciona, p. 1 ; CleanCo Queensland, p. 1 ; CEC, p. 2.

475 RES Group submission to the draft determination, p. 7.

476 Acciona submission to the draft determination, p. 1.

477 ENA submission to the draft determination, p. 16.

478 ENA submission to the draft determination, p. 15.

479 AEMO submission to the draft determination, p. 8.

- AEMO anticipated the final rule commencing in August 2021, at which time it was also expecting to be implementing a number of other significant change programs which will impact on its capacity for implementing this rule change. These included five minute settlement, wholesale demand response mechanism, customer switching, electricity and gas B2B changes, and measures to improve transparency in the gas market.⁴⁸⁰
- AEMO anticipated significant implementation burden from boundary point metering, on the understanding that metering equipment capable of supporting financial settlement would need to be installed. This would require significant changes to AEMO systems, processes, and methodologies including for loss factor calculations and market system.⁴⁸¹

Flexible approach to implementation of the new rule

A number of project proponents suggested a flexible approach to implementation to allow parties to apply the new framework earlier than foreseen by the draft rule, if mutually agreed by all relevant parties. For example, the AEC, Acciona, and CleanCo Queensland asked the Commission to consider shortening the six-month implementation period by allowing projects to voluntarily opt into the new framework ahead of the commencement date.⁴⁸²

Existing connection processes

Project developers and investors recommended transitional arrangements for projects part way through the connection process when the new framework commences. For example:

- Acciona Energy recommended a voluntary mechanism to opt into the new framework earlier (that is, before the commencement date) should be offered where the project proponent and the Primary TNSP have entered into a connection agreement between the final rule's publication and commencement date.⁴⁸³ Acciona's approach was explicitly supported by CleanCo Queensland.⁴⁸⁴
- The CEC recommended an implementation pathway that would allow connections already underway when the final rule is published to be governed by the new framework ahead of the commencement date.⁴⁸⁵
- Terrain Solar proposed that connections underway at the commencement date should not incur additional charges from TNSPs associated with complying with changes to the information project developers need to provide to comply with the new framework.⁴⁸⁶

Network businesses sought greater clarity in the final rule on transitional arrangements for any connections already underway when the final rule is published. For example, TransGrid and ENA requested the final rule provide transitional arrangements for large DCAs which

480 AEMO submission to the draft determination, p. 8.

481 AEMO submission to the draft determination, p. 7.

482 Submissions to the draft determination: AEC, p. 1; Acciona Energy, p. 2.

483 Acciona Energy submission to the draft determination, p. 1.

484 CEC submission to the draft determination, p. 2.

485 CEC submission to the draft determination, p. 2.

486 Terrain Solar submission to the draft determination, p. 3.

would become DNAs under the new framework, including large DCAs at the early stages of construction.⁴⁸⁷

Network businesses were also concerned the draft rule did not provide the Primary TNSP with enough time to respond to connection enquiries. This concern was exacerbated by the increased complexity of responding to connection enquiries with respect to DNAs. Under contestability provisions in the draft rule, the Primary TNSP was required to prepare functional specifications of sufficient detail to allow the prospective project proponent to seek binding tenders from third-party providers of detailed design and construction services.⁴⁸⁸

The problem raised by network businesses was that the existing timeframe of 30 business days for responding to a connection enquiry may not be long enough to provide sufficiently detailed responses to connection enquiries for establishing DNAs under the new framework.⁴⁸⁹ For example, according to Powerlink, responding to each connection enquiry for a DNA could take as long as six months, on the basis each response is largely bespoke in terms of the functional specification that needs to be provided for the relevant asset.⁴⁹⁰

Transitional arrangements for existing small DCAs

Stakeholders did not raise concerns about the draft rule transitioning small DCAs to the new framework for DCAs.

However, ENA raised several concerns about the draft rule allowing small DCAs to voluntarily transition to the new DNA framework, where mutually agreed by all relevant parties including the asset owner, connected parties, and the Primary TNSP. ENA was concerned the draft rule did not provide enough information about:

- how an existing DCA would convert to the new framework for DNAs, and
- what happens if an existing DCA seeking to convert does not meet transmission network standards.⁴⁹¹

According to ENA, there are potential benefits but also complexities from assets converting from the existing DCA framework to the new DNA framework. For this reason the final rule should provide stakeholders with guidance on the steps involved in the conversion process. ENA further recommended that the Primary TNSP should have the right to refuse to convert a DCA if the asset does not meet transmission network standards.

The Commission also received feedback from Powerlink that the pathway to opt-in to the DNA framework is helpful given that there are examples of DCAs that are less than 30km in length, which would benefit from DNA provisions. However, Powerlink suggested that the final rule should ensure a clear and transparent process if the DCA owner voluntarily seeks to convert the asset after it has been designed and built.⁴⁹² Powerlink also emphasised the need

487 Submissions to the draft determination: TransGrid , p. 4; ENA , p. 16.

488 Consultations with network businesses following publication of the draft rule determination.

489 Clause 5.3.3(b) of the NER.

490 Consultations between the Commission and Powerlink.

491 ENA submission to the draft determination, p. 16.

492 Powerlink submission to the draft determination, p. 2.

for appropriate protections for TNSPs and subsequent connecting parties regarding the quality of the assets that form the DNA if the DNA owner seeks to convert the asset from the DCA to DNA framework.⁴⁹³

Reach Solar also requested the final rule to clarify that a small DCA could opt into the new DNA framework.⁴⁹⁴

E.1.3

Final Rule

Commencement date

In contrast to the draft rule, the final rule commences two weeks after its publication.⁴⁹⁵ This means that under the final rule, the implementation period (the period between the final rule being published and its commencement date) is reduced from six months to two weeks.

The first reason for reducing the implementation period is that the final rule allocates responsibility for administering access to the DNA owner, rather than the Primary TNSP. This reduces the amount of preparation work network businesses will need to undertake prior to implementation of the new framework. Instead of the Primary TNSP having to develop a standard access policy for all DNAs that form part of its network prior to the new framework being implemented, under the final rule each DNA owner must develop an access policy for its DNA.⁴⁹⁶

The second reason for reducing the implementation period is that under the final rule, AEMO's determination of transmission losses at the boundary point will be based on estimates of power flows.⁴⁹⁷ AEMO's concern with the draft rule was that boundary point meters would not be used for settlement purposes. This would have required changes to AEMO systems, processes and methodologies to accommodate the boundary point meter and calculate the losses. In discussions with AEMO following the publication of the draft rule determination, the Commission clarified that AEMO can determine boundary point loss factors based on estimates of power flows rather than boundary point metering data.⁴⁹⁸

Further, regarding other preparatory steps, under the final rule the AER must amend and issue an updated version of the *Electricity Network Service Provider Registration Exemption Guideline* to account for the final rule.⁴⁹⁹ The AER must do so as soon as reasonably practicable following the commencement date and is not required to consult on these changes.⁵⁰⁰

⁴⁹³ Powerlink submission to the draft determination, p. 2.

⁴⁹⁴ Reach Solar submission to the draft determination, p. 2.

⁴⁹⁵ See definition of 'commencement date' under Schedule 5 of the Amending Rule.

⁴⁹⁶ For more information see Appendix C on access arrangements for DNAs.

⁴⁹⁷ Clause 3.6.2B(c) under Schedule 1 of the Amending Rule.

⁴⁹⁸ For more information see Appendix B on TNCPs.

⁴⁹⁹ Developed under clause 2.5.1(d). See AER, *Electricity Network Service Provider Registration Exemption Guideline*, March 2018. Available under: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/network-service-provider-registration-exemption-guideline-march-2018>.

⁵⁰⁰ Clause 11.139.10 under Schedule 5 of the Amending Rule.

Accordingly, the Commission considers an implementation time frame of six months prior to the new DNA framework commencing is no longer required.

Allowance period

Nevertheless, the Commission recognises that network businesses will need sufficient time to prepare for commencement of the new framework. In particular, network businesses will need to be ready to respond to connection enquiries that involve establishment of a DNA potentially as early as the first day of the new rule coming into effect. Conversely, where all relevant parties are ready and willing to submit and assess a connection enquiry under the new framework, the Commission considers parties should not be required to wait several months during an implementation period in order to progress a connection.

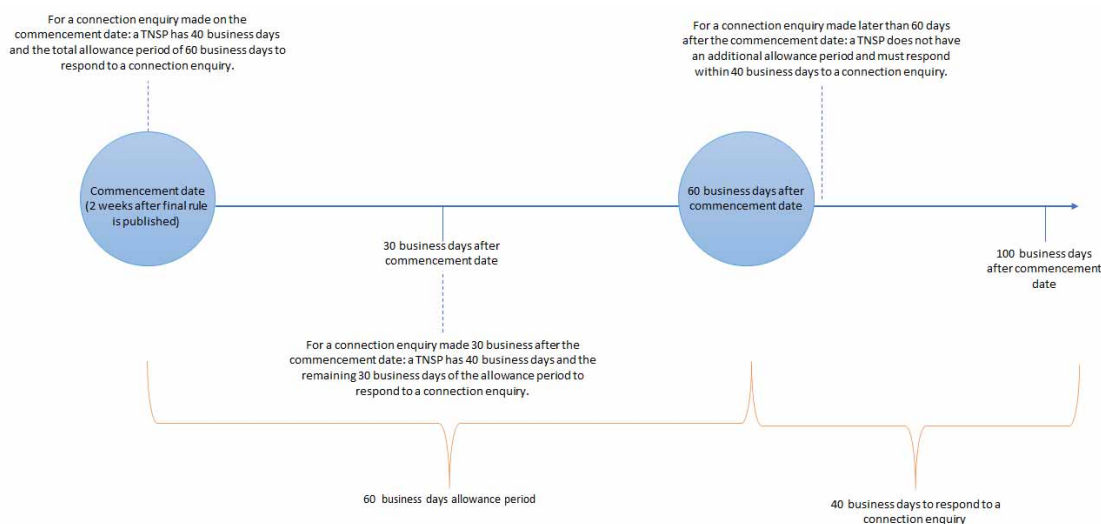
The final rule therefore provides the Primary TNSP with an 'allowance period' of 60 business days to respond to connection enquiries which require the establishment of a DNA, starting on the commencement date of the final rule.⁵⁰¹

For example, this means that if a project proponent submits a connection enquiry:

- on the first day of the new framework being in effect, the Primary TNSP has an additional 60 business days to respond to a connection enquiry that involves a DNA in addition to the standard time allocated for responding to a connection enquiry
- 30 business days after the new framework commences, the Primary TNSP has an additional 30 business days to respond to a connection enquiry that involves a DNA in addition to the standard time allocated for responding to a connection enquiry
- 61 business days after the new framework commences - that is, after the allowance period has finished, the Primary TNSP must respond to a connection enquiry that involves a DNA within the standard time frame for connection enquiries, without any additional allowance for implementing the new framework.

⁵⁰¹ Clause 11.139.9(b) under Schedule 5 of Amending Rule.

Figure E.2: Implementation timeline



Source: AEMC.

The additional allowance period of 60 business days is designed to meet the need for a flexible process for project proponents and network businesses needing time to be ready to respond to connection enquiries. By providing the allowance period at the outset of the new framework, the final rule allows network businesses to put in place the internal procedures and documentation that will allow them to respond to connection enquiries potentially as early as the new framework's first day. This preparatory work is necessary because the new framework requires network businesses to, among other things, provide functional specifications for DNAs, which can be complex for such assets.

The Commission notes that the allowance period is not intended to restrict network businesses and project proponents from working together to reduce the overall response time throughout the connection process.

Additional time to respond to connection enquiries

The Commission also considered the appropriateness of time periods which NSPs must respond to connection enquiries for a DNA under the new framework more generally.

The draft rule did not amend the NER's existing time frames within which network businesses must respond to a connection enquiry, which is currently 30 business days.⁵⁰² However, recognising the potential for increased complexity associated with responding to connection enquiries under the new framework, the final rule extends this time to 40 business days, where the NSP is a Primary TNSP and the connection enquiry requires the establishment of a new DNA.⁵⁰³ This increased complexity arises from the more detailed nature of a functional

⁵⁰² Clause 5.3.3(b)(1) and (2) of the NER.

⁵⁰³ Clause 5.3.3(b)(1) under Schedule 2 of the Amending Rule.

specification required for DNAs, which include 30km or more of transmission lines, compared with IUSAs which the Commission understands are less bespoke.

The Commission considers this change as striking the right balance between the need for network businesses to provide sufficiently detailed responses to enable third party service provision, and the interest of project developers and investors in a timely and responsive connection process. The Commission also emphasises that the additional response time allowed under the final rule represents a maximum, rather than minimum, response time. Again, the additional time is not intended to restrict network businesses and project proponents from working together to reduce the overall response time throughout the connection process.

Final rule will not apply in Victoria

The final rule will not apply in Victoria.⁵⁰⁴

Existing connection processes

Pre-connection enquiry for large DCAs

Project proponents that have not yet submitted a connection enquiry at the final rule's commencement date will be subject to the new rules.⁵⁰⁵ This is due to the:

- more limited amount of resources that project proponents and the Primary TNSP will have committed to projects at this earlier stage
- importance of maximising the number of new investments and connections that will benefit from the new DNA framework, and
- length of time this rule change has been underway, with extensive industry consultation and indications of a new DNA framework.

This approach recognises AEMO's interest in maximising the application of the DNA framework to new projects.

If a large DCA has submitted a connection enquiry after the final rule is published, but before the commencement date, the connection enquiry is taken to have been made under the new DNA framework.⁵⁰⁶

Connection enquiry for large DCAs

Savings provisions apply to projects that have already submitted a connection enquiry when the final rule is published.⁵⁰⁷ This means that existing connection processes in train when the final rule is published and relating to the establishment of a large DCA (as well as already existing large DCAs) will be subject to the connection rules established under the TCAPA framework for large DCAs.

504 See Chapter 3 of this final determination for more information on the transmission arrangements applying in Victoria.

505 Clause 11.139.8 under Schedule 5 of the Amending Rule

506 Clause 11.139.8(a) under Schedule 5 of the Amending Rule.

507 See Clause 11.139.6 under Schedule 5 of the Amending Rule.

Extending savings provisions to projects which have already submitted a connection enquiry when the final rule is published recognises the new framework's impact on the investment case for such projects. In particular:

- **Reduced contestability:** The new framework removes the asset owner's ability to seek third-party service provision of O&M, and requires the asset to be built according to functional specifications prepared by the Primary TNSP. This may change the business model and investment case of projects part way through the connection process.
- **Different access arrangements:** The new framework's access arrangements may also impact the business model and investment case of projects part way through the connection process.

Notwithstanding, the Commission recognises that parties may wish to use the new framework instead of remaining under the previous framework. Therefore, where mutually agreed by all relevant parties, they could choose to use the new DNA framework.⁵⁰⁸ However, this would require complying with relevant obligations introduced by the final rule, such as the requirement for the DNA to meet the same technical standards and requirements for 'transmission networks' under Chapter 5 of the Rules and for the Primary TNSP to operate and maintain the asset.⁵⁰⁹ This may require connecting parties to provide additional information to the Primary TNSP to assess the connection and to pay additional costs for the time required for the Primary TNSP to provide new information.⁵¹⁰

For projects which have submitted a connection enquiry before the final rule is published:

- the NSP must provide written notification to the connection applicant as soon as reasonable practicable, that notwithstanding commencement of the new rule, the former rules apply to its connection application.⁵¹¹
- the connection applicant may, in response to the NSP's written notification, provide its own written notification that it elects for the new framework to apply to its existing connection application instead.⁵¹² If so, the NSP:
 - must use reasonable endeavours to respond to the connection applicant's written notification as soon as practical and provide the applicant any further necessary information for the applicant to prepare its offer in accordance with the new framework. To the extent that the information relates to an AEMO advisory matter, the Primary TNSP must consult with AEMO with respect to responding with that information.⁵¹³
 - must not charge any additional fees or charges in respect of the existing connection application, except to the extent necessary to cover the reasonable cost of works

508 Clause 11.139.6(b) under Schedule 5 of the Amending Rule.

509 Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

510 Clause 11.139.9(a)(1) under Schedule 5 of the Amending Rule.

511 Clause 11.139.6(a) under Schedule 5 of the Amending Rule.

512 Clause 11.139.6(b) under Schedule 5 of the Amending Rule.

513 Clause 11.139.6(b) under Schedule 5 of the Amending Rule.

required for the Primary TNSP to prepare an offer to connect under the new framework and provide any necessary further information,⁵¹⁴ and

- may extend its response time by a reasonable period of time (but not more than 60 business days in aggregate) to account for differences between the existing TCAPA framework and the new DNA framework.⁵¹⁵

Small DCAs in the connection process

Connection processes that involve the establishment of a small DCA will be governed by the new DCA framework established by the final rule. That is:

- If a connection enquiry is made to a Primary TNSP by a connection applicant in respect of a small DCA before the effective date, the asset will be governed by the new framework for DCAs.⁵¹⁶ This is based on the new DCA framework maintaining all key features of the existing framework for small DCAs, including contestability arrangements, arrangements at the single TNCP and access arrangements.
- If a connection enquiry is made to the Primary TNSP under clause 5.3.2 in respect of a small DCA after the effective date but before the commencement date, the connection enquiry is taken to have been made under new Chapter 5, on the commencement date, and new Chapter 5 applies to the connection process.⁵¹⁷
- However, a connection applicant may elect that its connection enquiry be assessed under the new DNA framework after the commencement date of the final rule. This would however require that the asset meets the relevant technical standards and requirements for 'network' under Chapter 5 of the NER.⁵¹⁸ If the connection applicant notifies the Primary TNSP in this regard, then the Primary TNSP must use reasonable endeavours to respond to the connection applicant's written notification as soon as practical and provide the applicant any further necessary information for the applicant to prepare its offer in accordance with the new framework. To the extent that the information relates to an AEMO advisory matter, the Primary TNSP must consult with AEMO with respect to responding with that information.⁵¹⁹

For small DCAs in the connection process when the final rule is published, the NSP:

- must provide written notification to the connection applicant, as soon as reasonably practicable, that the new framework for DCAs will apply to its connection application.⁵²⁰
- must use reasonable endeavours to provide the connection applicant with any further necessary information to assist the applicant progress its connection enquiry under new Chapter 5.⁵²¹

514 See Clause 11.139.9(a)(1) under Schedule 5 of the Amending Rule.

515 Clause 11.139.9(a)(2) under Schedule 5 of the Amending Rule.

516 See Clause 11.139.7 under Schedule 5 of the Amending Rule.

517 Clause 11.139.8 under Schedule 5 of the Amending Rule.

518 Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

519 Clause 11.139.7(b) under Schedule 4 of the Amending Rule.

520 Clause 11.139.7(a)(1) under Schedule 5 of the Amending Rule.

521 Clause 11.139.7(a)(2) under Schedule 5 of the Amending Rule.

- must not charge any additional fees or charges in respect of the existing connection application, except to the extent necessary to cover the reasonable cost of works required for the Primary TNSP to prepare an offer to connect under the new framework, and⁵²²
- may extend its response time by a reasonable period of time (but not more than 60 business days in aggregate) to account for differences between the existing TCAPA framework for small DCAs and the new DCA framework.⁵²³

If a small DCA has submitted a connection enquiry after the final rule is published, but before the commencement date, the connection enquiry is taken to have been made under the new DCA framework.⁵²⁴

Transitional arrangements for existing small DCAs

The final rule requires all existing small DCAs to transition to the new DCA framework established by this rule change.⁵²⁵ This is consistent with the Commission's position in the draft rule and reflects the lack of stakeholder feedback on this issue.

Possibility to voluntarily opt-in the new arrangements for DNAs

The Commission also maintains its position under the final rule that after the commencement date:

- a pre-TCAPA DCA
- an existing large DCA
- a DCA (including an asset that was a small DCA before the commencement date)

can opt-in to the new DNA framework

- if mutually agreed by all relevant parties,⁵²⁶ and
- the asset meets the relevant technical standards and requirements for 'network' as set out under Schedules 5.1a and 5.1 of the NER.⁵²⁷

The Commission considers ENA's concern, that the Primary TNSP may be required to transition assets which have not been built to the network specifications required by Chapter 5 of the Rules, are addressed by the final rule given:

- existing DCAs can only convert to the new framework where the asset complies with the new DNA framework. This requires the asset to comply with the the relevant technical standards and requirements as set out under Schedules 5.1a and 5.1 for transmission network infrastructure,⁵²⁸ and

522 Clause 11.139.9(a)(1) under Schedule 5 of the Amending Rule.

523 Clause 11.139.9(a)(2).

524 Clause 11.139.8(a) under Schedule 5 of the Amending Rule.

525 Clause 11.139.2(a) under Schedule 5 of the Amending Rule.

526 Clause 11.139.4(b)(2) under Schedule 5 of the Amending Rule.

527 Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

528 Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

- any conversion would require the mutual agreement of all relevant parties, including the Primary TNSP.⁵²⁹ If the Primary TNSP has any concerns about the DCA not meeting existing standards for transmission network infrastructure, nothing in the final rule would oblige the Primary TNSP to agree to such a conversion.

The Commission acknowledges ENA's interest in greater clarity under the new framework. However, given existing assets involve existing contractual arrangements among a host of parties, it would be difficult to develop a singular regulatory approach that applies to all such assets without significant risk of unintended consequences. The Commission has therefore decided to maintain its reliance on mutual agreement between the parties regarding whether, and if so how, any conversion to the new DNA framework occurs.

E.2 Savings provisions

BOX 21: CHANGES BETWEEN THE DRAFT AND FINAL RULE

- Post-TCAPA large DCAs are grandfathered, meaning that the existing TCAPA framework for contestability, a single TNCP and access arrangements will continue to apply.
- If all the relevant parties agree, the large DCA can transfer to the new DNA framework.

E.2.1 Draft rule

The draft rule provided savings arrangements for three types of existing assets:

- connection assets that provide a 'grandfathered' prescribed service under clause 11.6.11 of the NER, and
- pre-TCAPA 'existing DCAs'.

Connection asset that provides a 'grandfathered' prescribed service under clause 11.6.11 of the NER

Interaction between the AEMC's 2017 TCAPA Rule and clause 11.6.11 of the NER

The savings and transitional provisions under the 2017 TCAPA rule 'grandfathered' connection agreements entered into before 2006.⁵³⁰

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 'grandfathers' certain connection services

⁵²⁹ Clause 11.139.4(b)(2) under Schedule 5 of the Amending Rule.

⁵³⁰ See AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. 73.

(such as entry and exit services) that are being provided under certain connection agreements as prescribed transmission services.⁵³¹ Clause 11.6.11 of the NER sets out the effect of an amendment to a prescribed transmission service under such a connection agreement.

However, the TCAPA Rule introduced a requirement whereby if a transmission network user who is party to such a connection agreement requests an amendment after 1 July 2018, the date when the connections aspect of the 2017 TCAPA Rule came into effect, for the purposes of altering a service under that connection agreement (e.g. providing increased power transfer capability at the connection point), the arrangements established under TCAPA would apply to the provision of that altered service.⁵³² For example, if the new or altered service would involve an IUSA that met the contestability criteria set out in the 2017 TCAPA Rule, then certain services for that asset would be contestable, non-regulated transmission services.⁵³³ Services that are provided as negotiated transmission services would be subject to the revised process and principles for the provision of negotiated transmission services under the 2017 TCAPA Rule.⁵³⁴

The Commission therefore concluded in the TCAPA final determination that the operation of clause 11.6.11 of the NER was separate to the changes resulting from the TCAPA rule change request.⁵³⁵ Accordingly, amendments to clause 11.6.11 were not required to accommodate or reflect the TCAPA Rule. The savings and transitional amendments to the NER under the TCAPA Rule made it clear that the application of clause 11.6.11 of the NER was unchanged by the TCAPA Rule in relation to connection services provided under a connection agreement entered before 1 July 2018. That is, there was no overriding of the grandfathering arrangements under clause 11.6.11 through the TCAPA rule, as the TCAPA rule would only apply to any new or altered services.⁵³⁶

One of the objectives of the AEMC's 2017 TCAPA Rule was to provide connecting parties with increased choice by allowing for a contestable provision of transmission services related to assets relevant for the connection of a connecting party.⁵³⁷ With regard to DCAs, all services can be provided on a contestable basis. For IUSAs, the services of detailed design, construction and ownership were introduced to be contestable transmission services.⁵³⁸ Accordingly, any party, including the Primary TNSP, can provide that service as a non-

⁵³¹ 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 change, which clarified the scope and application of the grandfathering arrangements. Further information about these rule changes is available on the AEMC website.

⁵³² 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.

⁵³³ Clause 5.2A.4(b) and (c) of the NER.

⁵³⁴ AEMC, *Transmission Connection and Planning Arrangements*, 23 May 2017, pp. 69-70.

⁵³⁵ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, p. 70.

⁵³⁶ Clause 11.98.5(c) of the NER.

⁵³⁷ Clause 5.2A.4 of the NER.

⁵³⁸ If the \$10 million contestability threshold is met.

regulated transmission service on request from a connection applicant. In contrast, the services of functional specification, cut-in works as well as operation and maintenance were made non-contestable transmission services (which would be provided by the Primary TNSP as a negotiated service). As such, application of the 2017 TCAPA Rule provided the relevant transmission network user with increased level of choice.

Proposed interaction between the proposed new framework for designated network assets and clause 11.6.11 of the NER

The savings and transitional provisions under the draft rule did not override clause 11.6.11 grandfathering arrangements.

Further, the Commission did not consider it appropriate to provide for a similar application of the new arrangements for DNAs where an existing transmission network user requested an amendment to its existing connection agreement (that was grandfathered under clause 11.6.11 of the NER) for the provision of new assets or changes to existing assets, e.g. to provide an upgraded service.

Unlike the AEMC's 2017 TCAPA Rule, the draft rule did not necessarily provide a transmission network user with an increased level of choice in the case of amendments to a grandfathered connection agreement under clause 11.6.11 of the NER. Depending on the contractual arrangements of those connections, the draft rule may have provided for reduced contestability compared to the arrangements established under TCAPA, and therefore less choice. Therefore, the Commission did not consider it appropriate that the draft arrangements for DNAs should apply in the event a party requests an amendment to its connection service.

Pre-TCAPA 'Existing DCAs'

Grandfathering 'Existing DCAs' under the TCAPA Rule

When the TCAPA Rule was made there were several existing, contracted to be constructed or agreed to connect assets that would have met the definition of a DCA introduced by the TCAPA Rule. The savings and transitional amendments to the NER under the TCAPA Rule set out a means by which parties that owned, operated or controlled an 'Existing DCA' were grandfathered.⁵³⁹ Consequently, the arrangements established under the TCAPA Rule do not apply to these 'Existing DCAs'.

In the TCAPA final determination the Commission recognised⁵⁴⁰

"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."

⁵³⁹ Clause 11.98.1(a) of the NER. 'Existing DCA' means a dedicated connection asset which, before the commencement date: (1) exists; or (2) is contracted to be constructed under an existing connection agreement; or (3) a TNSP has agreed to connect to a transmission network under an existing connection agreement.

⁵⁴⁰ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017, p. 73.

Although these assets were grandfathered, the Commission considered it important to have visibility of these assets. As a result, if the owner of such an 'Existing DCA' was not already registered or exempt with respect to that asset, that person was, by the commencement date of the TCAPA Rule (1 July 2018), required to either:

- register as a DCASP for the existing DCA, or
- seek an exemption from the requirement to register.⁵⁴¹

If the owner of an 'Existing DCA' was already registered (or exempt) with respect to a specific asset, it was required to provide the AER with further information on the 'Existing DCA' (e.g. identity of owner/operator, registration category of the owner/operator of the existing DCA, classification of the existing DCA as either small or large DCA, location and route of the existing DCA).

The savings and transitional provisions under the TCAPA Rule required the AER to then establish and publish a register of Existing DCA owners that notified the AER.⁵⁴²

In accordance with the AER's register of '*Existing DCAs owned, operated or controlled by registered participants*', four registrations were received by the 1 May 2018 cut-off date specified in clause 11.98.2(a). The four Primary TNSPs – ElectraNet, Powerlink, TasNetworks and TransGrid – are recorded as 'Existing DCA owners'.⁵⁴³

Further, consistent with the approach taken with regard to connection assets that provide a 'grandfathered' prescribed service under clause 11.6.11 of the NER, under the draft rule if a transmission network user requested any changes to the respective connection agreement for the purposes of altering a connection service provided under that agreement, then the arrangements as established under the TCAPA Rule would have applied to that request.⁵⁴⁴

Grandfathering pre-TCAPA 'Existing DCAs' under the DNA framework

Under the draft rule, 'Existing DCAs' recorded in the AER's register at 1 July 2018 continued to be grandfathered under the draft savings and transitional provisions. This was consistent with the Commission's approach in the TCAPA Rule.

Connection agreements entered into prior to the commencement date of the TCAPA Rule (i.e. 1 July 2018) would not have been subject to the new rules, and instead would have been 'grandfathered'. Under current arrangements, if a connected party requests an amendment to a connection agreement entered into prior to 1 July 2018, then the Rules as amended by the TCAPA Rule will apply. However, in the draft rule determination, the Commission considered the TCAPA framework should not apply to a request for an altered connection service following the introduction of this rule. Given there were no known large DCAs under at the time of writing the draft rule determination, and small DCAs were not grandfathered, the Commission concluded there was no regulatory need to preserve the TCAPA framework.

⁵⁴¹ Clause 11.98.2(d) of the NER.

⁵⁴² Clause 11.98.2(b) of the NER.

⁵⁴³ ElectraNet has registered 67 'Existing DCAs', Powerlink has registered 22 'Existing DCAs', TasNetworks has registered 41 'Existing DCAs', TransGrid has registered 10 'Existing DCAs'. See under: <https://www.aer.gov.au/networks-pipelines/network-exemptions/register-of-existing-dedicated-connection-assets>.

⁵⁴⁴ Clause 11.98.5(b) of the NER.

However, given the package of provisions contained in the draft rule reduced contestability and provided for the application of a specific access regime, the Commission concluded that requiring the application of the provisions contained in the draft rule when a party requested an amendment to its connection agreement had the potential to create significant issues. For example, if a transmission network user connected through an 'Existing DCA' with a total route length of more than 30km sought to amend its connection agreement, to upgrade its line capacity, applying the draft rule would impose new obligations for the relevant transmission network user.

Furthermore, because no access regime applied to such a grandfathered 'Existing DCA', under the draft rule an upgrade of the asset would have required applying the draft access regime for DNAs to an 'Existing DCA'. In addition, compliance with the draft DNA framework could have required the connected party to relocate its connection point or require the asset to meet the technical requirements applying to transmission networks in order to be compliant with the draft rules. The Commission wanted to avoid such outcomes under the draft rule.

The savings and transitional provisions in the draft rule therefore overrode existing NER clause 11.98.5. This clause provides the basis for the application of the arrangements established under the TCAPA Rule to apply in the event there is a request to alter the connection service. Instead, the savings and transitional provisions 'grandfather' those connection agreements entered into before the commencement of the TCAPA Rule (i.e. 1 July 2018) so that neither the TCAPA Rule nor the Rules as amended by the draft rule apply.

In summary, if a party to a connection agreement that was entered into prior to 1 July 2018 requests an amendment to their connection service under that connection agreement, neither the TCAPA Rule nor the draft rule would have applied under the draft rule.

Possibility to voluntarily convert to the new DNA framework

The draft rule did not preclude an 'Existing DCA' from voluntarily converting to the new framework, if mutually agreed by the Primary TNSP and connecting parties. However, it also did not set out a process for how such a conversion would occur. The Commission stated in its draft determination that converting to the new arrangements would have likely required moving the existing TNCP, which would in turn have required re-opening the connection agreement between the connecting party and the Primary TNSP in order to agree new terms and conditions and performance standards.

Assuming both parties could have agreed amendments to their existing connection agreement, the Commission stated in the draft rule determination that the following issues nonetheless may still have complicated the conversion of an 'Existing DCA' into the new DNA framework:

- The DCA would have needed to comply with network performance requirements under Schedule 5.1 in order for the Primary TNSP to be able to operate the asset as part of its 'transmission network'. Consequently, it is unlikely that a Primary TNSP would agree to a

conversion of assets unless an existing DCA is 'upgraded' to comply with the standards, or already meets those standards.⁵⁴⁵

- Moving the TNCP to the facility end of the transmission line would have required re-opening an existing connection agreement, including performance standards. Negotiating a new set of performance standards and the required physical changes to equipment may involve significant costs for a connecting party.
- The relevant connection services may have needed to be re-classified. O&M would have needed to change to non-contestable operation and maintenance provided by the Primary TNSP as a negotiated transmission service under a NOA. This would have further required the owner of the DCA to negotiate a NOA to provide for operation and maintenance by the Primary TNSP. This may have been easier if the connected party and asset owner were the same party, but may have been more complicated if these were not the same or related parties, where a third-party owner would not have had any existing contractual relationship with the Primary TNSP.

Post-TCAPA large DCAs

The draft rule did not provide transitional arrangements for post-TCAPA large DCAs. When the draft determination was published, there were no registered large DCAs. It instead determined to consider any arising issues on a case by case basis.

E.2.2

Stakeholder views

Connection asset that provides a 'grandfathered' prescribed service under clause 11.6.11 of the NER

Stakeholders did not provide feedback on the draft rule's approach to grandfathered assets under clause 11.6.11 of the NER.

Pre-TCAPA 'Existing DCAs'

AEMO was concerned that under the draft rule's proposed grandfathering provisions, the new framework would not apply to DCA assets under a Pre-TCAPA connection agreement should an amendment to that connection agreement be sought by a Transmission Network User.⁵⁴⁶

AEMO considered that this would undermine the rule change's objectives, particularly where new facilities connect to pre-TCAPA connection agreement, and asked the Commission to give this issue further consideration. The main reason for AEMO's concern was that the significant number of connection assets meeting the proposed definitions for DNAs and DCAs established under pre-TCAPA connection agreements. AEMO cited 140 existing DCAs registered with the AER at the commencement of the TCAPA rule.⁵⁴⁷ AEMO therefore requested the Commission ensure the new framework address these issues in the context of

⁵⁴⁵ Even if the Primary TNSP was a DCASP, the DCA may not necessarily be built to meet the requirements under Schedule 5.1 of the Rules.

⁵⁴⁶ AEMO submission to the draft determination, p. 4.

⁵⁴⁷ AEMO submission to the draft determination, p. 4.

existing connection assets, not just future assets, to achieve the final rule's overall objectives in as many circumstances as possible.⁵⁴⁸

Post-TCAPA large DCAs

The main stakeholder feedback about post-TCAPA DCAs was to highlight the lack of provisions addressing the grandfathering of post-TCAPA large DCAs under the new framework.

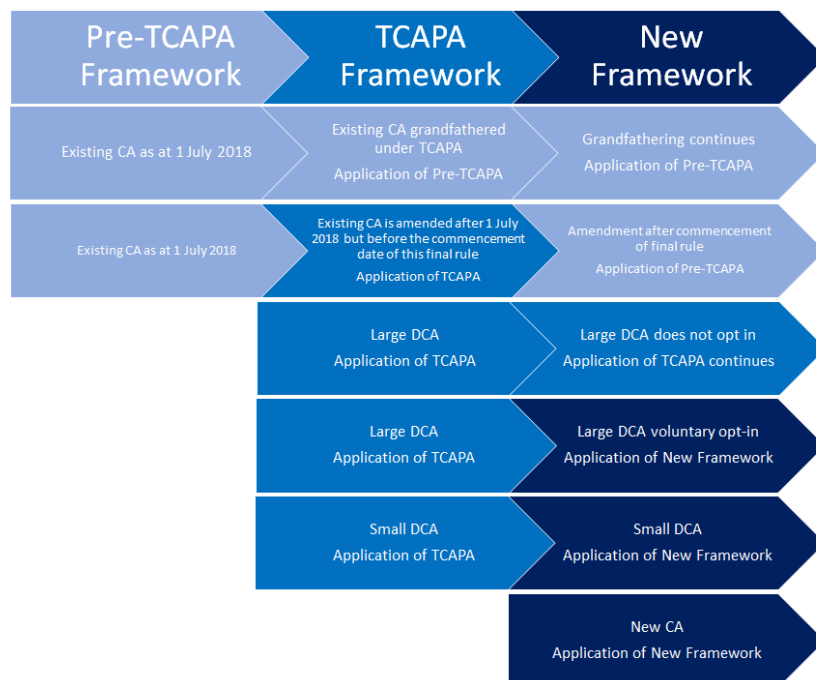
There were no post-TCAPA large DCAs when the draft rule was prepared. However, as multiple stakeholders highlighted in submissions to the draft determination, OZ Minerals' Hill-to-Hill large DCA has subsequently been registered with AEMO.⁵⁴⁹ Stakeholders also informed the Commission about a number of large DCAs in various stages of development or planning. TransGrid also asked for transitional arrangements to recognise existing large DCAs.⁵⁵⁰

E.2.3

Final rule

Figure E.3 outlines how various categories of connection assets are grandfathered under the final rule.

Figure E.3: Grandfathering arrangements under the final rule



Source: AEMC.

548 AEMO submission to the draft determination, p. 4.

549 For example, the Hill-to-Hill project was raised in stakeholder submissions on the draft determination from OzMinerals, AEMO, and ENA.

550 TransGrid submission to the draft determination, p. 3

Connection asset that provides a 'grandfathered' prescribed service under clause 11.6.11 of the NER

Consistent with the draft rule, the final rule does not override clause 11.6.11 grandfathering provisions.⁵⁵¹

Pre-TCAPA 'Existing DCAs'

Consistent with the draft rule, the final rule continues grandfathering arrangements for pre-TCAPA 'Existing DCAs'.⁵⁵²

The Commission acknowledges AEMO's interest in maximising application of the new DNA framework, particularly where a new generator or load would seek to connect to an 'Existing DCA' covered by TCAPA grandfathering provisions. However, the Commission considers these grandfathering rights are necessary to:

- protect property rights for investors in those existing assets,
- promote regulatory stability among investors, and
- maintain consistency with the approach to grandfathering taken in the TCAPA rule change.

This aligns with the Commission's reasoning in the draft rule determination.

Furthermore, while AEMO was concerned about maximising application of the new framework, it is important to note that AEMO considers significant new investment in radial transmission infrastructure will occur as the energy transition accelerates. With the new framework applying to all of this new investment, the framework will apply to an increasingly significant proportion of transmission assets over time.

The Commission similarly maintains, in the final rule, its position in the draft rule on grandfathering arrangements for pre-TCAPA 'Existing DCAs'. This position is based on the importance of recognising existing contractual arrangements between relevant parties.

However, as stated above, pre-TCAPA 'Existing DCAs' can voluntarily convert to the new DNA framework at any time after the commencement date.⁵⁵³ Any converting asset would need to obtain the consent of the Primary TNSP and all parties connected to the asset,⁵⁵⁴ and the person owning the asset would need to ensure that the asset meets the relevant technical standards and requirements for 'network' under Chapter 5 of the NER.⁵⁵⁵

Further, with regard to amendments to pre-TCAPA 'Existing DCAs' the following applies:

- If a transmission network user made an amendment to that pre-TCAPA connection agreement *after the commencement date of the TCAPA Amending Rule, but before the commencement date of the final rule* and to which clause 11.98.5 applied, request an amendment to that connection agreement after the commencement date for the

⁵⁵¹ Clause 11.139.5(d) under Schedule 5 of the Amending Rule.

⁵⁵² Clause 11.139.5(a) under Schedule 5 of the Amending Rule.

⁵⁵³ Clause 11.139.4(a)(1) under Schedule 5 of the Amending Rule.

⁵⁵⁴ Clause 11.139.4(b)(2) under Schedule 5 of the Amending Rule.

⁵⁵⁵ Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

purposes of altering a connection service provided under that agreement, then the former Chapter 5 applies to that request.⁵⁵⁶

- If a transmission network user under a pre-TCAPA connection agreement requests and amendment to that connection agreement *after the commencement date* for the purposes of altering a connection service provided under that agreement, then clause 11.98.5 does not apply and the Rules as amended by the Amending Rule and the TCAPA Amending Rule do not apply to that request.⁵⁵⁷

Post-TCAPA large DCAs

Under the final rule, post-TCAPA large DCAs are grandfathered on or from the final rule's commencement date.⁵⁵⁸ Any large DCA for which a connection enquiry was submitted prior to the final rule's publication date continues to be governed by the existing TCAPA framework.⁵⁵⁹

When the draft rule was prepared, there were no known post-TCAPA large DCAs. However, since then, there is now one known large DCA as highlighted by stakeholders. Given the existence of a large DCA, the final rule provides for grandfathering provisions for large DCAs. These apply to any large DCAs which have already submitted a connection enquiry prior to the publication date of the final rule.

By grandfathering post-TCAPA large DCAs the final rule allows for the continuation of the existing framework,⁵⁶⁰ including:

- full contestability of operation and maintenance services
- applying the existing access arrangements for large DCAs, and
- only facilitating creation of a single TNCP where the large DCA connects to the shared network at the IUSA, with no individual TNCPs created where subsequent load or generation may connect to the large DCA.

Notwithstanding, if parties can mutually agree for these assets to instead use the new DNA framework implemented by the final rule, then voluntary converting to the new DNA framework at any time after the commencement date is permitted.⁵⁶¹ The final rule does not prescribe a process for this to occur.⁵⁶² Any converting asset would need to obtain the consent of the Primary TNSP and all parties connected to the asset.⁵⁶³ Further, the person owning the asset would need to ensure that the asset meets the relevant technical standards and requirements as set out under Schedules 5.1a and 5.1 of the NER.⁵⁶⁴

⁵⁵⁶ Clause 11.139.5(b) under Schedule 5 of the Amending Rule.

⁵⁵⁷ Clause 11.139.5(c) under Schedule 5 of the Amending Rule.

⁵⁵⁸ See Clause 11.139.3 under Schedule 5 of the Amending Rule.

⁵⁵⁹ Clause 11.139.6(a) under Schedule 5 of the Amending Rule.

⁵⁶⁰ Clause 11.139.3(b) under Schedule 5 of the Amending Rule.

⁵⁶¹ Clause 11.139.4(a)(2) under Schedule 5 of the Amending Rule.

⁵⁶² See Appendix F on 'Other issues raised by stakeholders', where the Commission explains similar difficulties associated with providing detailed arrangements for potential voluntary conversion of a DNA to the 'shared' network.

⁵⁶³ Clause 11.139.4(b)(2) under Schedule 5 of the Amending Rule.

⁵⁶⁴ Clause 11.139.4(b)(1) under Schedule 5 of the Amending Rule.

If a transmission network user under a TCAPA connection agreement for a facility connected to an existing large DCA requests an amendment to that agreement after the commencement date for the purposes of altering a connection service provided under that agreement, then the former Chapter 5 applies to that request.⁵⁶⁵

⁵⁶⁵ Clause 11.139.5(b)(1) under Schedule 5 of the Amending Rule.

F OTHER ISSUES RAISED BY STAKEHOLDERS

In response to the draft rule determination, stakeholders requested clarity on several other issues arising under the new DNA framework. These include:

- converting DNAs to the 'shared' network
- DNA to DNA connections (i.e. 'growing' DNAs)
- interaction between DNAs and the existing transmission planning framework, and
- interaction between DNAs and Renewable Energy Zones (REZs).

F.1 Converting DNAs to the shared network

BOX 22: CHANGES BETWEEN THE DRAFT AND FINAL RULE

There were no changes between the draft and final rule. The final rule does not prescribe a mechanism for converting DNAs to the 'shared' network.

F.1.1 Draft rule

The draft rule did not directly address whether DNAs can convert to become part of the 'shared' network, i.e. the part of a Primary TNSP's network that is paid for by customers through prescribed TUOS charges. Conversely, the draft rule did not prevent such a conversion from occurring.

F.1.2 Stakeholder views

Stakeholders mentioned that such a conversion may be likely where future transmission network development could more efficiently meet future consumer needs by integrating DNAs with the 'shared' transmission network rather than continuing the DNA as a radial network asset.

Network and generation businesses requested more clarity about:⁵⁶⁶

- whether DNAs could convert to the 'shared' network, and if so
- how this conversion would occur.

ENA was concerned the draft rule did not provide enough guidance for converting DNAs to the 'shared' network and considered it likely that in some cases such a reclassification would provide the most efficient option for meeting demand for prescribed transmission services.⁵⁶⁷ ENA recommended clarifying the conversion process, including the responsibilities and obligations of each party involved in this process. Furthermore, ENA considered that the final rule should ensure that where a DNA converts to the shared network, the price paid by the Primary TNSP for the DNA should be 'fair and reasonable.'⁵⁶⁸

⁵⁶⁶ Stakeholders included ENA, ERM Power, Origin Energy and Tilt Renewables.

⁵⁶⁷ ENA submission to the draft determination, p. 16.

Generation businesses raised the prospect of radial assets eventually joining other transmission infrastructure, which could lead to a looped or meshed configuration.

For example, ERM summarised its concerns as follows:⁵⁶⁹

"It is unclear what would happen if a future proponent (or TNSP) wanted to connect a DNA to a second boundary point with the shared transmission network (or a second DNA that had a different boundary point) such that it formed a network loop or mesh. It is possible to envisage a scenario where doing so could be physically beneficial for the broader system but result in an economic disbenefit to the party(s) that funded the DNA. This eventuality may bring a range of regulatory challenges if it is not considered as part of this rule change process. The AEMC should ensure that the NER:

- provide a mechanism for a DNA to be subsumed into a network mesh or loop (without economically disadvantaging the DNA owners) if this is to the advantage of the broader system, and
- protect the rights (and/or provide for economic compensation) of DNA owners if a primary TNSP chose to subsume a DNA into a network mesh or loop (e.g. if the ISP identifies this action along its optimal path).

In considering the level of economic compensation payable, the rules should require the Primary TNSP to procure the DNA on "just terms" to reflect the loss of economic property right as opposed to the construction (market) costs only of the DNA. Ensuring this outcome in the rules would remove a significant barrier to private funding of transmission assets."

Origin Energy was similarly unclear if the draft rule would allow for future extensions of a radial line into a looped, or meshed, network. It asked the Commission to address how would the:

- Regulatory Investment Test for Transmission (RIT-T) account for the existing asset?
- DNA be integrated into the shared network?
- DNA owner be compensated?⁵⁷⁰

Origin Energy further recommended the Commission consider how to capture the potential system benefits from converting DNAs to the shared network.⁵⁷¹

Similarly, Tilt Renewables asked that any mechanism for converting DNAs to shared network fully protect the rights of DNA owners and connected parties.⁵⁷²

F.1.3

Final rule

As stakeholders highlighted, it is possible to envisage future scenarios where the interests of consumers would be better served by integrating existing DNAs with the broader 'shared'

⁵⁶⁸ ENA submission to the draft determination, p. 17.

⁵⁶⁹ ERM Power submission to the draft determination, p. 2.

⁵⁷⁰ Origin Energy submission to the draft determination, p. 1.

⁵⁷¹ Origin Energy submission to the draft determination, p. 1.

⁵⁷² Tilt Renewables submission to the draft determination, p. 2.

network. For example, future transmission network investment near the existing DNA could eventually mean consumer needs are more efficiently met by the radial DNA being integrated into the meshed network.

The Commission confirms that nothing under the final rule prevents a DNA from converting to become part of the Primary TNSP's 'shared' network, i.e. the part of its network that is paid for by customers through prescribed TUOS charges. However, the Commission continues to consider that the process for this conversion needs to be determined on a case by case basis, with the consent of all relevant stakeholders. Relevant stakeholders will likely include the Primary TNSP, the DNA owner, connected parties, and the AER.

Reasons for converting assets on case-by-case basis

There are three main reasons DNAs converting to the 'shared' network should be assessed on a case-by-case basis without the Rules prescribing a specific process for conversion are:

- **Recognising property rights:** Any conversion would need to be supported by all relevant stakeholders. These include the DNA owner, the Primary TNSP, and any connected parties. This recognises the property rights accruing to the DNA owner, in particular, when making the initial investment. The Commission acknowledges network business concerns about the level of compensation that may be required to obtain a DNA owner's agreement to converting the asset to the 'shared' network. However, it considers the requirement to obtain this agreement a necessary trade-off against investment certainty objectives. That is, if the new framework does not provide investors with enough certainty about their ability to earn risk-commensurate returns, the asset may not even be built in the first place. Conversely, by recognising the property rights of DNA owners the new framework ensures investors will be able to negotiate compensation where the Primary TNSP seeks to integrate a DNA into the 'shared' network - the conversion would only occur with the asset owner's agreement.
- **Special access rights:** If an existing DNA converts to the 'shared' network, connected parties would need to forego special access arrangements agreed with the DNA owner.⁵⁷³ This is because, under the DNA framework, connected parties will have negotiated special access rights with the DNA owner under the new framework's bespoke access arrangements.⁵⁷⁴ The connected party will have paid for this access.⁵⁷⁵ However, once a transmission asset converts to the shared network the prevailing open access regime will apply, regardless of any payments the connected party may have previously made to the DNA owner when negotiating its access to the asset.
- **Maximising future innovation:** Retaining flexibility in the new framework will allow for a wide range of potential solutions to asset conversion problems. In this way, the Commission is providing sophisticated market participants and investors with scope to develop bespoke arrangements that best suit individual project needs and interests. If the final rule had instead prescribed the process for converting, the Commission would risk

⁵⁷³ Clause 5.1A.2(a) under Schedule 2 of the Amending Rule.

⁵⁷⁴ Clause 5.2A.2(b)(7) under Schedule 2 of the Amending Rule.

⁵⁷⁵ Schedule 5.12 under Schedule 2 of the Amending Rule.

inadvertently precluding innovative arrangements or commercial structures leading to better outcomes for consumers and market participants.

As stated above, all parties, including the Primary TNSP, would need to agree any conversion from the DNA framework to the shared network. The Primary TNSP would need to be satisfied, amongst other things, that the asset can seamlessly integrate with its broader shared network. However, such agreement from the Primary TNSP may be facilitated by several features of the new DNA framework. These include the new DNA framework already requiring assets to be built according to network standards under Chapter 5 of the Rules, and the Primary TNSP already providing operating and maintenance services under the new DNA framework.⁵⁷⁶

As described below, there is also historical precedent suggesting such a case-by-case conversion can occur under the existing Rules.

Historical precedent for converting unregulated assets to the 'shared' network on a case-by-case basis

The Commission understands that the AER has discretion to approve existing transmission assets being converted to the shared network under existing NER provisions.

In discussions with the Commission, the AER has conveyed its understanding that existing clause S6A.2.1(f)(8) of the Rules gives it sufficient discretion to approve converting assets, including DNAs. Accordingly, the existing NER framework would not prevent DNAs converting to the 'shared' network.

There is historical precedent for the AER approving unregulated transmission network assets converting to the shared network.⁵⁷⁷ In such instances the AER's asset valuation has relied on, amongst other things, the amount of capital expenditure the owner had already recovered at conversion. The AER valued the transferring assets using the objectives and criteria in Chapter 6A of the Rules, on the basis the assets would provide prescribed transmission services upon conversion.

The existing Rules do not provide an assessment framework to determine the need and process for conversion and valuation of privately funded assets. Consistent with this approach, the final rule does not specify a:

- trigger that would require such a conversion (beyond the requirement that a DNA must be a radial asset, i.e. can only be connected to the 'shared' network at one boundary point), or
- mechanism for how such a conversion would need to occur.

⁵⁷⁶ Clauses 5.2.7(b)(1) and 5.2A.2(b)(5) under Schedule 2 of the Amending Rule.

⁵⁷⁷ For example, converting economically unregulated transmission assets into TransGrid's RAB in its 2013-2023 revenue determination (<https://www.aer.gov.au/system/files/D16-11901%20AER%20-%20Final%20decision%20-%20TransGrid%20transmission%20determination%20-%20May%202018%202.pdf>).

F.2 DNA to DNA connections

BOX 23: CHANGES BETWEEN THE DRAFT AND FINAL RULE

Based on allocating the responsibility for administering third party access to a DNA to the DNA owner, the final rule facilitates DNA to DNA connections. Accordingly, the final rule:

- Allows for more than one DNA behind each boundary point
- Introduces a new concept of 'DNA boundary point' to define the interface between two DNAs
- Requires connecting parties to negotiate access with all DNA owners necessary on the 'daisy chain' to access the 'shared' network, and
- Provides the respective DNA owner with the exclusive right to undertake cut-in works on its DNA in order to facilitate another DNA connecting to it.

F.2.1

Draft rule

The draft rule allowed for the 'expansion' of an existing DNA, including where the party seeking to connect was located more than 30km away from the existing DNA. The Commission considered this position a necessary consequence of requiring assets with power lines longer than 30km to be classified as DNAs rather than DCAs.

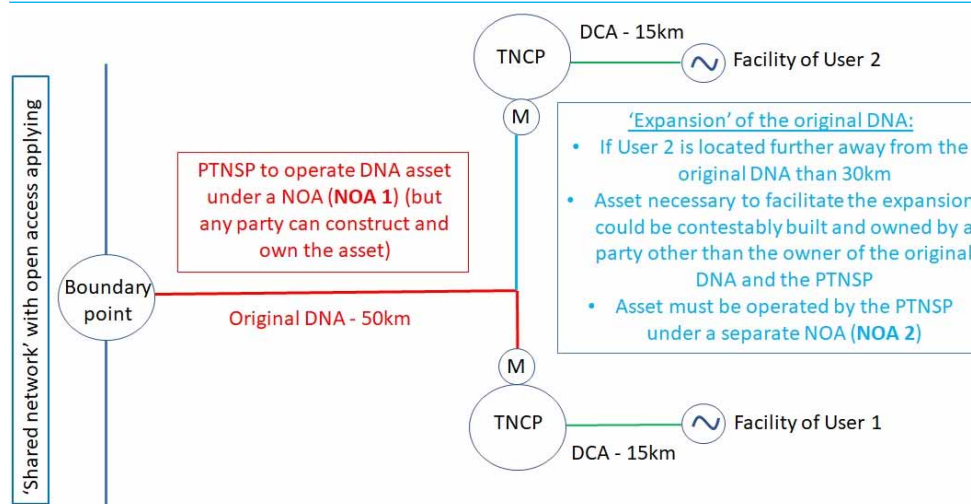
Under the draft rule there could only ever be *one* DNA behind a boundary point. This draft rule position was based on the fact that the Primary TNSP would administer access (and publish one access policy) to a DNA and a connecting party would have no contractual relationship (under the rules) with the DNA owner. An access seeker to a DNA would only negotiate access/a connection agreement with the Primary TNSP.

Although there would have only been one DNA, the draft rule still allowed for there to be multiple asset owners, so that the DNA could develop over time and contestability would have been facilitated at each stage of the development. The Commission envisaged that the original asset owner would already have a NOA with the Primary TNSP (i.e. NOA 1). If the assets forming the expansion were owned by a different party, the owner of those assets would also be required to enter a NOA with the Primary TNSP (i.e. NOA 2). This would have allowed the DNA to develop over time, with the draft rule's contestability arrangements applying to each stage of the development.⁵⁷⁸ By allowing Primary TNSPs to operate a DNA under one or multiple NOA(s), the Commission's intention was not to determine or prevent any specific configurations of DNAs.

Figure F.1 illustrates the framework for a DNA 'expansion' under the draft rule.

⁵⁷⁸ See Chapter 7 of the draft determination.

Figure F.1: Expansion owned by a different party than the original owner



Source: AEMC.

F.2.2

Stakeholder views

The CEC asked the Commission to clarify what would happen in the event of the extension of a DNA, with two separate asset owners owning each DNA. CEC raised this concern on the understanding the Primary TNSP would be controlling access to the entire DNA. In particular, the CEC asked the Commission to clarify:⁵⁷⁹

- What arrangements would be in place for the access policy and cost sharing arrangements in this instance?
- How would the access policy treat the DNAs separately for the purposes of access charges and settlement residue distribution when the DNA will be treated as the same DNA?

F.2.3

Final rule

The final rule allows multiple DNAs behind a boundary point.⁵⁸⁰ The main reasons for allowing daisy chain DNAs under the new framework are:

- **DNA owner to control access to its DNA:** By shifting responsibility for DNA access administration to the asset owner, each DNA owner behind the boundary point controls access to its DNA. This requires separate DNAs, with separate DNA access policies.⁵⁸¹ This

⁵⁷⁹ CEC submission to the draft determination, p. 5.

⁵⁸⁰ Clause 5.2.A.2(b)(4) under Schedule 2 of the Amending Rule.

⁵⁸¹ Clause 5.2.A.2(b)(4) under Schedule 2 of the Amending Rule.

may help create investment certainty by allowing the DNA owner to set the terms and conditions, including price, for third party access.⁵⁸²

- **More efficient use of transmission infrastructure:** Daisy chaining enables the connection of a facility to an existing DNA where the respective facility is located more than 30km from an existing DNA. Allowing for DNA to DNA connections thereby ensures the prospective connecting party does not need to duplicate the already existing DNA in order to access the 'shared' network, but can connect to the existing DNA through an extension of the existing DNA.

The Commission also notes that nothing in the final rule limits the 'length' of a DNA 'daisy chain', i.e. there could be an indefinite number of DNAs connected to each other with separate asset owners.

Below, the Commission explains:

- how the new DNA framework will apply to DNA daisy chains
- the new concept of 'DNA boundary point', and
- the roles and responsibilities at the interface between two DNAs, including:
 - boundary point loss factors and allocation of settlements residue
 - metering at a DNA boundary point
 - contestability and contractual arrangements, and
 - access arrangements.

How will the new DNA framework apply to DNA daisy chains?

The Commission considers the broader DNA framework can largely apply to 'daisy chained' DNAs, i.e. DNA 2, in the same way it applies to singular DNAs, i.e. DNA 1.⁵⁸³ This means that the vast majority of new provisions under the final rule will apply equally to DNA 2 forming part of a DNA daisy chain behind the boundary point where DNA 1 joins the shared network. The point where ownership between DNAs changes, i.e. the 'interface' between two DNAs, is defined as a 'DNA boundary point' under the final rule.⁵⁸⁴

New concept of 'DNA boundary point'

To further facilitate DNA to DNA connections, the final rule introduces the concept of a 'DNA boundary point'.⁵⁸⁵ The DNA boundary point largely mirrors the existing definition for 'boundary point' under the new DNA framework. That is, the DNA boundary point delineates between:

- different DNA owners' property rights⁵⁸⁶

582 Clause 5.2A.8 under Schedule 2 of the Amending Rule.

583 For the rest of this Appendix 'DNA 2' is used to refer to any DNA behind DNA 1, i.e. DNA 3, DNA 4, etc. In other words, the arrangements described here that apply to DNA 2 would likewise apply to DNA 3, etc.

584 See definition of 'DNA boundary point' under Schedule 4 of the Amending Rule.

585 See definition of 'DNA boundary point' under Schedule 4 of the Amending Rule.

586 See definition of 'DNA boundary point' under Schedule 4 of the Amending Rule.

- access policies established by different DNA owners,⁵⁸⁷ and
- power flows on the individual DNAs for the purpose of estimating transmission losses and allocating any residue payments to the respective DNA owners.⁵⁸⁸

Roles and responsibilities at the interface between two DNAs

Under the final rule, different stakeholders have a number of responsibilities at the interface between two DNAs with respect to:

- DNA boundary point related arrangements
- contestability and contractual arrangements, and
- access arrangements.

Where relevant, the description below in Table F.1 identifies what activity will be required from DNA owners, connecting parties, the Primary TNSP, and AEMO in the context of DNA to DNA connections.

Table F.1: Roles and responsibilities of stakeholders at DNA to DNA interface

ISSUE	PRIMARY TNSP	DNA OWNER 1	DNA OWNER 2	CONNECTING PARTY	AEMO
Determine a DNA boundary point loss factor					x
Allocate settlement residue accruing on DNA 2	x				
Voluntarily pay to install meter at a DNA boundary point			x		
Provide functional specification for DNA 2	x				
Contract/tend			x		

⁵⁸⁷ Clause 5.2A.2(b)(4) under Schedule 2 of the Amending Rule.

⁵⁸⁸ Clause 3.6.2B(a) under Schedule 1 of the Amending Rule

ISSUE	PRIMARY TNSP	DNA OWNER 1	DNA OWNER 2	CONNECTING PARTY	AEMO
er out detailed design and construction of DNA 2					
Cut-in works into DNA 1 (exclusive right) to connect DNA 2		x			
O&M of DNA 2	x				
Negotiate access to DNA 2				x	
Negotiate access to DNA 1				x	
Confirm with PTNSP that access to DNA 2 has been granted			x		
Confirm with PTNSP that access to DNA 1 has been granted		x			
Submit access policy for DNA 2 to AER for approval			x		
Publish information about utilisation of DNA 2 on website			x		

Source: AEMC.

Boundary point loss factors and allocation of settlements residue

Under the final rule, AEMO is responsible for determining a transmission loss factor at a DNA boundary point.⁵⁸⁹ This is consistent with AEMO's responsibility for determining a transmission loss factor at a boundary point between a DNA and the shared network under the final rule.⁵⁹⁰ AEMO has communicated to the Commission that it will base its determination of boundary point loss factors on estimates of generation and load power flows, which can likewise be done for determining a DNA boundary point loss factor.

AEMO determining a DNA boundary point loss factor subsequently allows the Primary TNSP to calculate any settlements residue (or impose payment obligations for negative residue) owed to each DNA owner in the 'daisy chain'.⁵⁹¹ This is consistent with the Commission's reason for allocating settlement residue to DNA owners, given that consumers within each region have not funded the DNA. Accordingly, in DNA daisy chains, each DNA owner will be allocated its proportion of any residue accruing over the entire radial asset under its respective NOA with the Primary TNSP.⁵⁹²

Metering at a DNA boundary point

The owner of DNA 2 may choose to install a meter at the DNA boundary point, which would require the DNA owner to bear the costs for the metering installation. This approach is consistent with the broader framework allowing for DNA owner 1 to install a meter at the boundary point where the DNA joins the 'shared' network. Such an installation of a meter at the DNA boundary point may allow the Primary TNSP to obtain more accurate data to calculate settlements residue accruing on its asset.

Contestability and contractual arrangements

Consistent with the arrangements for DNA 1, the Primary TNSP is responsible for providing the services of functional specification, operation and maintenance for DNA 2 as a negotiated service.⁵⁹³ Based on the Primary TNSP's functional specification DNA owner 2 can procure detailed design and construction services from any service provider, including the Primary TNSP.⁵⁹⁴

The Commission's main reason for retaining the Primary TNSP's role in providing functional specification and O&M services to DNA 2 is to ensure power system security and the application of 'shared' network standards to such material extensions of the network, consistent with the underlying objective of the broader rule change.

However, the Commission considers the contestability arrangements for cut-in works on DNA 1 to facilitate the connection of DNA 2 need to differ. Under the final rule, the owner of DNA 1 has the exclusive right to provide cut-in works into its DNA in order to connect DNA 2.⁵⁹⁵

589 Clause 3.6.2B(c) under Schedule 1 of the Amending Rule.

590 Clause 3.6.2B(c) under Schedule 1 of the Amending Rule.

591 Clause 3.6.2B(f) under Schedule 1 of the Amending Rule.

592 Clause 3.6.2B(f) under Schedule 1 of the Amending Rule.

593 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

594 See Clause 5.2A.4(a)(1) under Schedule 2 of the Amending Rule.

595 Clause 5.2A.4(a)(2) under Schedule 2 of the Amending Rule.

The reason for this approach is that cut-in works have the potential to disrupt activity on DNA 1, including impacting the network transmission capacity that can be used by connected parties. The Commission therefore considers DNA owner 1 must have the exclusive right to undertake (or contract out) the cut-in works. This approach is consistent with the rationale for requiring the initial DNA to obtain cut-in works from the Primary TNSP, where its asset is cutting into the shared network.

Access arrangements

Under the DNA access arrangements, the DNA owner is responsible for administering access to its DNA under the final rule and access is negotiated between the access seeker and the DNA owner.⁵⁹⁶

In order for a connecting party to obtain access to DNA 2, which is connected to DNA 1, access to DNA 1 is also required in order to access the shared network. Consistent with the existing arrangements for DNA access, which is based on negotiation between an access seeker and DNA owner, the Commission considers that a person seeking access to DNA 2 should also be required to negotiate access to DNA 1.⁵⁹⁷ This removes the need for DNA owner 1 and DNA owner 2 to coordinate in relation to an access request to DNA 2.

Accordingly, where a prospective connecting party (generation or load) wants to connect to DNA 2, the party will need to negotiate access arrangements with each DNA owner along the chain, e.g. DNA owner 2 and DNA owner 1 between its TNCP and the shared network. An access seeker can only obtain a connection agreement with the Primary TNSP once it has successfully negotiated an access agreement with each DNA owner on its 'pathway' to the shared network.⁵⁹⁸

The Commission considered, alternatively, requiring DNA owner 2 to negotiate access to DNA 1 in the same way that connecting generation or load would negotiate access. DNA owner 2 would then be responsible for providing access to any prospective access seekers to DNA 2. Parties connecting to DNA 2 would then only need to reach an access agreement with DNA owner 2. However, this approach would require significantly more complicated arrangements, especially in relation to the contractual arrangements between DNA owner 1 and DNA owner 2. It would also require a specific set of access principles in the rules and specific pricing from DNA owners in access policies for the pricing of access to daisy chained DNAs. The Commission therefore considers this alternative approach to access to daisy chained DNA is less preferable than extending the existing arrangements to DNA daisy chains.

Under the final rule, once access has been agreed, consistent with the access arrangements for DNA 1, DNA owner 2 is likewise responsible for confirming with the Primary TNSP that access has been granted to its asset.⁵⁹⁹ Likewise, DNA owner 2 is responsible for publishing information about utilisation of its asset on its website.⁶⁰⁰

⁵⁹⁶ See Clauses 5.2A.2(b)(7) and 5.2A.8 under Schedule 2 of the Amending Rule.

⁵⁹⁷ See Clauses 5.2A.2(a1)(6)(ii) and 5.2A.3(d1)(2) under Schedule 2 of the Amending Rule.

⁵⁹⁸ See Clause 5.2A.2(b)(6)(ii) and 5.3.6(a3)(1) under Schedule 2 of the Amending Rule.

⁵⁹⁹ Clauses 5.2A.2(b)(6)(ii) and 5.3.6(a3)(1) under Schedule 2 of the Amending Rule.

⁶⁰⁰ Clause 5.2A.8(n) under Schedule 2 of the Amending Rule.

F.3 Interaction with transmission planning and investment framework

BOX 24: CHANGES BETWEEN THE DRAFT AND FINAL RULE

Consistent with the draft rule, the final rule does not further specify the interaction of the new DNA regime with the existing transmission planning and investment framework.

F.3.1 Draft rule

The draft rule did not directly address interactions between the new DNA framework and the existing transmission planning and investment framework.

F.3.2 Stakeholder views

Network businesses expressed concern that without further action, the new DNA framework could undermine the existing transmission planning framework. For example, ENA asked the AEMC to ensure the final rule would not undermine the existing transmission planning and investment framework under the NER.⁶⁰¹

According to ENA, the existing transmission planning framework (including AEMO's integrated system plan (ISP)) represents the principal means for promoting the National Electricity Objective by delivering prudent and efficient investment in, and use of, transmission networks.⁶⁰² ENA further noted the existing planning framework includes extensive community engagement to obtain a social licence for new transmission development, suggesting such consultation is largely absent from third-party transmission investment allowed under the new DNA framework.⁶⁰³ ENA therefore suggested the final rule should impose specific obligations on DNA owners to ensure the new framework operates as intended.

TransGrid was concerned about potential inefficiencies in the planning and development of transmission networks.⁶⁰⁴ TransGrid stated:

"It is important that the AEMC's connection to dedicated connection assets rule does not undermine the broader transmission framework in the NER, in particular the recently developed rules to effectively action AEMO's ISP. The incremental development of shared network transmission networks on a larger scale under the AEMC's draft rule would likely result in the inefficient design of the transmission network as a whole."

TransGrid also recommended clarifying the primacy of the existing planning framework. This would minimise the potential for unintended reliability and security concerns due to the

601 ENA submission to the draft determination, p. 7.

602 ENA submission to the draft determination, p. 7.

603 ENA submission to the draft determination, p. 7.

604 TransGrid submission to the draft determination, p. 2

necessary complexity of the relationships between the parties involved in DNA investment. For this purpose, the Commission should clarify under the final rule how TNSPs, as jurisdictional planning bodies, should take DNAs into account when planning the transmission network.⁶⁰⁵

F.3.3

Final rule

The final rule does not directly address the interaction between the new DNA framework and the NER's broader transmission planning and investment framework. However, the Commission emphasises that the new DNA framework is not intended, and is unlikely, to impact the existing transmission planning and investment framework.⁶⁰⁶

The core focus of the existing transmission framework is to facilitate efficient investment in shared network infrastructure to meet consumer demand for safe, reliable, and secure power supply. Such infrastructure remains funded by consumers through regulated charges. By contrast, the new DNA framework is a targeted framework that seeks to facilitate third party investment in transmission infrastructure, limited to radial network assets. A key distinction is that the cost of DNAs will not be recovered from consumers through regulated charges. Instead, investors bear commercial risks and are entitled to earning commercial returns from the asset. Where DNA projects could be more efficiently delivered as shared network infrastructure, the Primary TNSP remains able to propose the project through the RIT-T process for new transmission network investment.

Put simply, the transmission planning and investment framework remains the prime mechanism for investing in shared network infrastructure to meet consumer demand. Nothing in the final rule undermines these arrangements. Furthermore, by making DNAs part of the broader transmission network, with the Primary TNSP operating and maintaining assets in accordance with existing network standards, the new framework provides TNSPs with increased oversight over DNAs compared with the existing framework for large DCAs.⁶⁰⁷

The Commission also notes its forthcoming review of the broader transmission planning and investment framework. Stakeholders will have the opportunity to comment on any potential implications of private investment in transmission assets on the broader shared network through that upcoming review process.

F.4

Interaction with REZs

BOX 25: CHANGES BETWEEN THE DRAFT AND FINAL RULE

Consistent with the draft rule, the final rule does not further specify the interaction of the new DNA regime with REZs.

⁶⁰⁵ TransGrid submission to the draft determination, p. 2.

⁶⁰⁶ See Clause 5.12 of the NER.

⁶⁰⁷ Clause 5.2A.2(b)(5) under Schedule 2 of the Amending Rule.

F.4.1

Draft rule

As the draft determination observed, this rule change request has been proposed at a time when there is significant interest in connecting new generating plant to the transmission system in the NEM, particularly renewable generation and storage. For example, the central scenario in the 2020 ISP projects that by 2040 there will be an additional:⁶⁰⁸

- 31,140MW of variable renewable generation connected to the transmission system, and
- 11,737MW of storage.

Having an effective transmission connections framework will therefore be of critical importance to allow this plant to be efficiently connected to the transmission network. However, there will be insufficient capacity on the transmission network itself in the right locations to support this forecast generation.

Further, jurisdictional governments have been promoting REZs. These appear likely to be of a size that will require them to be an integral part of the transmission network. For example, the New South Wales Government is prioritising the delivery of a 3GW REZ in the Central-West Orana region and an 8GW REZ in New England.⁶⁰⁹

Consequently, the Energy Security Board (ESB) has instigated a work program to develop arrangements to support the establishment of REZs. REZs are a means of giving effect to orderly renewable development, reducing risk associated with network congestion, low marginal loss factors and technical difficulties.

This work program is being developed in two stages:

- Stage 1: ESB consultation paper in August 2020. This proposed that REZs should be subject to a special planning regime based on the actionable ISP rules that includes measures to take into account evidence supplied by generation developers and the views of local communities. These REZ planning arrangements should also ensure that the REZs leverage and contribute to the efficient design of the broader power system.⁶¹⁰
- Stage 2: ESB consultation paper in January 2021. This set out options for implementing REZs in the near term, addressing questions of how to establish a REZ and how to maintain a REZ once it is established.⁶¹¹

The draft rule itself did not explicitly describe how the new DNA framework would interact with the ESB's work program on REZs and the framework it is considering for REZ development. Nevertheless, the Commission explained several potential interactions in the draft determination.

The Commission envisaged two main ways in which the draft rule would support REZ development:

608 AEMO, *2020 Integrated System Plan*, 30 July 2020.

609 NSW Department of Planning, Industry and Environment, *NSW Electricity Infrastructure Roadmap*, Overview, November 2020, p. 26.

610 ESB, *Renewable Energy Zones - Planning*, Consultation Paper, 11 August 2020, p. 2.

611 ESB, *Renewable Energy Zones - Interim REZ framework*, Consultation Paper, January 2021.

- **Facilitating smaller REZs:** The draft rule provided a framework for 'sharing' of the same transmission asset between multiple independent generation and storage projects by facilitating the establishment of individual TNCPs on a DNA.
- **Supporting radial REZ 'spokes':** The draft determination also mentioned that DNAs could be used to support radial 'spokes' on larger REZs. These spokes could have collected renewable generation, to feed into the larger REZ.

The Commission further observed that one of the advantages of treating DNAs as part of the transmission network was that, depending on access arrangements developed for REZs, there was the potential for DNA and REZ frameworks to converge over time. This would allow the transmission system to be developed in a holistic and more efficient manner than possible under the existing DCA framework, where DCAs are maintained as an asset class separate to the transmission network.

The Commission therefore considered the draft rule and proposed REZ arrangements complementary, with several important interactions. For this reason, it agreed to continue working closely with ESB during the development of this rule change.

F.4.2

Stakeholder views

AEMO, project developers, and investors requested more clarity about the potential interaction between the new DNA and REZ frameworks.

AEMO observed the relationship between the new DNA framework and the ESB's REZ work program, including the potential for both frameworks to eventually converge.⁶¹² However, as AEMO also observed, it is too early in the REZ framework development process to understand exactly what the implications of the REZ framework will be for the new DNA framework.⁶¹³

AEMO was also concerned the draft rule would incentivise further development of, or on, radial assets which may exacerbate its security and efficiency concerns. According to AEMO, without further alignment between the DNA and REZ frameworks there is an eventual risk that generators on radial DNAs will find they have poor access to the Regional Reference Price, and emergent access needs may become apparent.

AEMO therefore recommended that the Commission and the ESB consider how the REZ framework might operate alongside, or converge with, the DNA framework over time.⁶¹⁴ It also suggested the new DNA framework may need to be flexible in the future to accommodate the ultimate design of the REZ framework. In particular, a radial design, as required by the DNA framework is not an optimal configuration for the overall transmission network with the potential for various security and efficiency issues.⁶¹⁵ However, it also recognised that at this point it is too early to incorporate ESB REZ elements into this rule change or to otherwise contemplate such changes, other than where possible allowing flexibility for addressing these issues in the future.⁶¹⁶

612 AEMO submission to the draft determination, p. 8.

613 AEMO submission to the draft determination, p. 8.

614 AEMO submission to the draft determination, p. 2.

615 AEMO submission to the draft determination, p. 8.

616 AEMO submission to the draft determination, p. 8.

Several project developers and investors also asked for greater alignment between the draft rule and the ESB's emerging REZ framework. For example:

- The AEC was disappointed that, in its view, the draft rule did not cater for REZ development.⁶¹⁷
- ATCO wanted a more holistic approach to REZs, rather than potentially needing to deal with interactions between separate DNA and REZ frameworks in the future. It nevertheless acknowledged that the draft rule would be important in facilitating connection of smaller REZs and support radial 'spokes' to feed generation into larger REZs.⁶¹⁸ Such arrangements may set a precedent for the ESB's work on larger REZs.
- The CEIG was concerned that a large REZ could be subject to DNA framework in some respects but in other respects subject to ESB's REZ framework. According to the CEIG this could create discrepancies about who ultimately pays for REZ investment compared with DNAs.⁶¹⁹ CEIG wanted the Commission to leave open the prospect of recovering DNA costs from a range of parties including project developers, generators, load, and customers, with the AER responsible for overseeing such cost-sharing arrangements based on the party's share of the overall market benefits.⁶²⁰

F.4.3

Final rule

The Commission considers that the DNA framework established under the final rule could be used for the delivery of smaller REZs (based on the size limitations of a radial asset in terms of connecting generation and load capacity) or components of REZ projects, i.e. radial 'spokes' that collect generation capacity and feed into a larger REZ.

The Commission acknowledges stakeholder interest in more information about the potential interactions between the new DNA framework and the forthcoming REZ framework being developed by the ESB. However, the Commission considers REZ development (and associated stakeholder consultation) being more appropriately done by the ESB through its existing REZ development methodologies. This process has a greater likelihood of capturing the views and interests of a broader range of stakeholders than those directly affected by the new DNA framework. Furthermore, and as noted by stakeholders, with this rule change leading the ESB REZ process, it is not possible to incorporate the ESB's REZ process into the DNA design.

The Commission confirms it will continue working closely with the ESB, other market bodies, and relevant stakeholders to finalise a market-wide approach to REZs in a timely manner.

617 AEC submission to the draft determination, p. 1.

618 ATCO submission to the draft determination, p. 1.

619 CEIG submission to the draft determination, p. 5.

620 CEIG submission to the draft determination, p. 5.

G FUNDED AUGMENTATIONS

BOX 26: CHANGES FROM THE DRAFT RULE

- The final rule does not introduce the concept of 'funded network asset'.
- The final rule amends the definition of funded augmentation to expressly exclude designated network assets (DNAs) and identified user shared assets (IUSAs).

Under the draft rule, the Commission introduced the concept of 'funded network asset' to collectively refer to IUSAs and DNAs. The Commission also invited stakeholder feedback on whether additional changes could be made to the NER to incorporate 'funded augmentations' into this new concept.

This Appendix discusses the Commission's analysis and stakeholder views on the classification of these assets. In doing so, this Appendix provides further clarity regarding the existing regulatory framework for funded augmentations and the regulatory arrangements that apply to IUSAs and DNAs under the final rule.

G.1 Current arrangements

G.1.1 Funded augmentations

The NEL defines 'augmentation' of a transmission system or distribution system as work to enlarge the system or to increase its capacity to transmit or distribute electricity.⁶²¹ The NEL does not define 'funded augmentation'.

The NER defines 'funded augmentation' as a transmission network augmentation for which the TNSP is not entitled to receive a charge pursuant to Chapter 6A.⁶²² The regulatory arrangements for funded augmentations is set out in rule 5.18 of the NER and is relatively high-level.⁶²³ The framework requires a TNSP who proposes to construct a funded augmentation to set out a notice to AEMO and all Registered Participants including (among other things) a description of the proposed funded augmentation and technical details.⁶²⁴ If the proposed funded augmentation is reasonably likely to have a material inter-network impact, the TNSP may need an augmentation technical report prepared by AEMO. The TNSP must consult with any interested parties on any matter set out in the notice.⁶²⁵

The concept of 'funded augmentation' was introduced to the National Electricity Code on 16 May 2002 as section 5.6.6B, via Amendment 7.⁶²⁶ The Code Change Panel report for this change explained that the term 'funded augmentation' was introduced to distinguish it from

621 Section 2 of the NEL.

622 See definition of 'funded augmentation' in Chapter 10 of the NER.

623 The term is also used in clauses 5.16.3(d) and 5.16A.3(d) but merely to state that funded augmentations, which are not subject to the RIT-T, need not comply with a least cost test.

624 Rule 5.18(b) of the NER.

625 Rule 5.18(d) of the NER.

626 The National Electricity Code (NEC) was the legislative instrument prior to the NER.

those augmentations funded by regulated charges. The report stated that the change was "not intended to cover entrepreneurial network investments under the safe-harbour provisions or the funding of connection assets. Rather, it seeks to provide for those cases where a party wishes to fund an augmentation to the existing shared network based on the benefit they expect to receive from that network enhancement".⁶²⁷

There may be instances where a connecting party would derive a benefit from and therefore want to fund an asset which augments the shared network. However, that party would not have any exclusive rights to use the asset given the NEM's open access regime. Funded augmentations are also subject to the open access regime. This presents a free-rider problem, in that parties are reluctant to fund network assets when there is no guarantee of their ability to use the associated capacity and when their competitors can subsequently connect to these assets without having contributed to the cost of them. The free-rider problem results in the construction of funded augmentations being relatively rare in practice. Despite this, a connecting party may deem the benefits sufficient to warrant funding the asset. The concept of funded augmentations creates the opportunity for this to occur.

At the time of authorising the amendment to the National Electricity Code, the ACCC noted in its Determination that "parties may be reluctant to come forward to fund an augmentation without the existence of property rights", but considered the issue beyond the scope of the Code change.⁶²⁸

The construction of a funded augmentation is subject to rule 5.18 of the NER and has (in practice) the following key features:

- Funded augmentations are paid for by a third party
- Funded augmentations must be owned and operated by the relevant TNSP as part of the shared network
- Funded augmentations provide benefits to the party who paid for them, but do not grant exclusive physical or financial rights under either the NER or through contractual arrangements with that party.

G.1.2

TCAPA Rule

Under the AEMC's TCAPA Rule made in 2017, substantial amendments were made to the connections framework to clarify the assets involved in connection to the transmission network and the framework for economic regulation of services required to connect to the shared transmission network.⁶²⁹ The TCAPA Rule clarified many aspects of the connection process, and in particular, defined two types of assets that provide the services required to connect a party to the shared transmission network – IUSAs and DCAs. The latter are the subject of this final rule determination.

⁶²⁷ NECA, Code Change Panel, A network and distributed resources package Report (December 2000), p. 7.

⁶²⁸ ACCC, Applications for Authorisation, Amendments to the National Electricity Code, Network and Distributed Resources (13 February 2002) p. 36.

⁶²⁹ AEMC, *Transmission Connection and Planning Arrangements*, Rule determination, 23 May 2017.

G.2 Draft rule

G.2.1 Funded augmentations

The draft rule made no changes to the concept of funded augmentations.

G.2.2 Funded network assets

Under the framework introduced for large DCAs in the TCAPA Rule, large DCAs were entirely contestable.⁶³⁰ In the draft rule for this rule change, the Commission created a new framework for 'designated network assets' to replace the arrangements for large DCAs. Unlike DCAs, DNAs would form part of the transmission network operated by a Primary TNSP. This was to enable each facility connected to a DNA to have its own transmission network connection point (TNCP).⁶³¹ The Commission considered these arrangements would allow for the more effective management of power system security and better facilitate the sharing of parts of the transmission system funded by connecting parties.

The draft rule also introduced the concept of 'funded network asset' as an umbrella term to collectively refer to the newly-introduced DNAs and IUSAs. The Commission's policy intention was to align the regulatory arrangements for these two types of assets, which are funded by third parties, to the greatest extent possible. The draft rule therefore specified that funded network assets (i.e. both IUSAs and DNAs) can be contestably designed, built and owned, but that the Primary TNSP must provide for the functional specification and control, operate and maintain these assets as a negotiated transmission service as part of the Primary TNSP's transmission network.

Under the draft rule, the contestability arrangements that applied to funded network assets, i.e. IUSAs and DNAs, was built on the existing contestability arrangements for third party IUSAs, except for the following changes:

- **Removing the contestability threshold:** no further application of the current \$10million monetary limb from the current contestability threshold for IUSAs, with only the 'separability' limb being maintained.
- **Removing the ownership restriction:** no further application of the ownership restriction that currently prevents a person who owns a third party IUSA from owning, operating or controlling a generating system or facility that utilises electrical energy that is connected to that third party IUSA.

If the Primary TNSP does not own a funded network asset, the Primary TNSP must control, operate and maintain a funded network asset as part of its transmission network under a network operating agreement (NOA).

However, the creation of the funded network asset concept did not imply that these assets were subject to the open access regime under Chapter 5 of the NER. Whilst IUSAs continue to be subject to open access, a special access regime was introduced by the draft rule to

⁶³⁰ See the last row in the table in clause 5.2A.4(a) of the NER.

⁶³¹ See Chapter 2 and Appendix B of this determination for further information on this issue.

apply to DNAs. This sought to address the free-rider issue above, and therefore, distinguished DNAs from funded augmentations.

G.3 Stakeholder views

ENA suggested it is inappropriate to classify funded augmentations under funded network assets because funded augmentations are not necessarily contestable. ENA further requested that the Commission amend the definition of funded augmentations to exclude funded network assets. ENA considered this is necessary because the current definition inadvertently captures DNAs and would therefore require rule 5.18 to be applied, which ENA believes is not the intention of the draft rule.⁶³²

G.4 Final rule

G.4.1 Funded augmentations, DNAs and IUSAs

The Commission considers it important for the Rules to enable parties to easily identify between assets, especially when different assets are subject to significantly different regulatory arrangements.

Funded augmentations, IUSAs and DNAs are all third party funded assets which are controlled, operated and maintained by a TNSP. However, there are also differences between them.

The following Table G.1 outlines a comparison of funded augmentations, IUSAs and DNAs.

Table G.1: Comparison of funded augmentations, IUSAs and DNAs

	FUNDED AUGMEN- TATIONS	IUSAS	DNAS
Nature of the asset	Form part of the shared network	Form part of the shared network	Are radial assets separable from the rest of the shared network
Contestability	Not contestable	Contestable ownership, design and construction Functional specification, control, operation and maintenance is non-contestable	Contestable ownership, design and construction Functional specification, control, operation and maintenance is non-contestable
Access arrangements	Open access	Open access	Special access regime

⁶³² ENA submission to the draft determination: p. 7.

Nonetheless, the Commission agrees with ENA that the current definition of funded augmentations may inadvertently capture DNAs. It is not the Commission's intention for rule 5.18 to apply to DNAs as the final rule introduces a specific framework for DNAs.

Therefore, the final rule amends the definition in the NER of 'funded augmentation' to specifically exclude IUSAs and DNAs.⁶³³ ENA's submission was made in response to the draft rule under the assumption that the Commission would continue to use the term 'funded network asset'. However, the final rule does not introduce 'funded network asset' as an umbrella term and continues to refer to IUSAs and DNAs separately.

G.4.2 Funded network assets

Under the draft rule, the Commission attempted to align the regulatory arrangements for DNAs and IUSAs to the greatest extent possible, and it was therefore beneficial to use a term to refer to them collectively. However, subsequent changes made in the final rule have expanded the differences between DNAs and IUSAs. Therefore, there is less value in referring to them collectively.

The monetary limb of the contestability threshold is reinstated for IUSAs under the final rule, but does not apply to DNAs. Consequently, under the final rule different contestability arrangements will apply to DNAs and IUSAs based on the value of an IUSA.⁶³⁴

There were several changes between the draft and final rule relating to the aspect of contractual arrangements. Consequently, the scope of TNSPs' rights and obligations under a NOA will be narrower for DNAs than for IUSAs.⁶³⁵

Therefore, the final rule does not introduce the term 'funded network assets' under Chapter 10 of the NER. This is because changes since the draft rule mean that there is little overlap between IUSAs and DNAs which has reduced the benefit in grouping these assets under a single term.

⁶³³ See definition of 'funded augmentation' in Chapter 10 of the NER.

⁶³⁴ See box 16 under section C.1 of the Appendix.

⁶³⁵ See box 19 under section C.5 of the Appendix.

H SUMMARY OF OUTSTANDING ISSUES RAISED BY STAKEHOLDERS

This appendix discusses any outstanding issues raised in stakeholder submissions to the draft rule determination that is not discussed in the preceding chapters and appendices. Table H.1 outlines the outstanding issues and the Commission's responses to these issues.

Table H.1: Responses to outstanding issues raised by stakeholders

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
DNA's exemption from STPIS.	RES Group requested the AEMC consider excluding DNA's from the Service Target Performance Incentive Scheme (STPIS) to avoid incentives for the Primary TNSP to gold plate the functional specifications for DNAs.	RES Group, submission to the draft determination: pp. 3-4.	The same standards and technical requirements that apply to other parts of the Primary TNSP's network apply to DNAs under the final rule. The Primary TNSP therefore cannot require over specification of DNAs. Furthermore, the Commission considers STPIS should apply to DNAs. STPIS provides incentives for TNSPs to maintain and operate the transmission network to efficient levels over time. As part of the transmission network, it is important that these incentives apply to DNAs.

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
			<p>This is especially important because it is the market impact component of the STPIS that provides incentives for TNSPs to minimise the impact of transmission outages on generators and therefore efficient service standards on DNAs to connected generators.</p>
<p>Appropriateness of the marginal loss factor (MLF) methodology</p>	<p>The MLF methodology creates a risk to investment in renewables due to the volatility of MLFs and the increasing difficulty of forecasting revenue for generators</p>	<p>The Clean Energy Investor Group (CEIG), submission to the draft determination: pp. 6-7.</p>	<p>The Commission understands CEIG’s concerns regarding the impact of volatile MLFs on investment in renewables. However, a marginal loss factorthe MLF methodology remains the most efficient way of accounting for physical transmission losses in the national electricity market (NEM). It is important to note that the recent volatility in TLFstransmission loss factors (TLFs) reflects the reality of the underlying network flows occurring in the system given the wide market transition that is underway. It is fundamental</p>

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
			<p>to the efficient operation of the wholesale market, that prices and financial incentives are linked as closely as reasonably practicable to the physical operation of the network. Maintaining clear signals for efficient dispatch and future investment in the market, even in times of change, will safeguard consumers from having to shoulder such uncertainties when they have no ability to manage or offset them. Further, changes to the current MLF methodology used to calculate TLFs at TNCPs are not within the scope of this rule change.</p>
	<p>The MLF approach applied to DNAs may incentivise developers to opt for small DCAs in place of DNAs due to perceptions that “average” losses over a DCA are more economic for generators compared to “marginal” losses over a DNA. As a result, this may disincentivise the efficient co-</p>	<p>RES Group, submission to the draft determination: p. 4.</p>	<p>Given that under the proposed framework DNAs will be part of the network, the marginal methodology to calculate losses will apply to TNCPs located on a DNA. This is consistent with the approach applied to the calculation of</p>

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
	location of energy storage with wind and solar generators.		TLFs for the rest of the NEM. With regard to DCAs, a single MLF will apply at the TNCP where a DCA connects to an IUSA. Further, the distinction between DNAs and DCA is based on the 30km length threshold. Investors will therefore not have a choice regarding whether to build DCAs or DNAs based on differences in loss calculations, as the distinction between DNAs and DCAs is based on length.
Multi-circuit DNAs	According to ERM Power "it is important that 'radial configurations' allow for multi-circuit transmission assets" under the new DNA framework.	ERM Power submission to the draft determination: p. 2.	The Commission's final rule does not prevent multi-circuit transmission assets from being classified as DNAs under the new framework. Appendix I.5 provides further clarification in this regard.
	Tilt Renewables requested the Commission to clarify "that 'radial' configurations for the purposes of this rule change would include multi-circuit transmission assets."	Tilt Renewables submission to the draft determination: p. 2.	
Further consultation	"TLT requests there be further	Tilt Renewables submission to the	The Commission held an

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
	<p>consultation and then detail clarified into the rules regarding the structure and requirements for the access policy which will apply to a DNA, particularly how the rights of the existing user(s) and the owner of a DNA will be protected over time.”</p>	<p>draft determination: p. 1.</p>	<p>informal stakeholder roundtable on the revised access framework. The Commission further engaged in bilateral discussions with stakeholders regarding any non-access related issues stakeholders wanted to discuss.</p>
	<p>Powerlink believed that the draft rule lacks clarity and detail on the significant obligations it imposes on Primary TNSPs and other critical elements of the framework. Powerlink therefore strongly encouraged the Commission to introduce a further formal round of public consultation to enable networks and other stakeholders to review, consider and respond to the specifics it believes is absent in the Draft Rule.</p>	<p>Powerlink submission to the draft rule: p. 1.</p>	
	<p>ENA found that the proposed framework is unworkable and therefore the AEMC should pause the DCA Rule change and include an additional formal step in its consultation process before issuing its final Rule. The ENA believed that</p>	<p>ENA submission to the draft determination: p. 3.</p>	

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
	<p>additional consultation is essential, given the importance of the Rule change, to ensure that the Rule is fit for purpose and does not lead to unintended consequences or unworkable arrangements.</p>		
<p>Multiple parties connecting to a DCA</p>	<p>AEMO requested that if the final rule does permit multiple connecting parties to a DCA, the final determination should make it clear that AEMO will deal with only one FRMP, and that any NER requirements are shared and subject to an off-market, commercial agreement between parties. AEMO will not consider dual sets of NER requirements or their impacts on individual connecting facilities. Further, the definition of DCA should be reviewed to ensure clarity in giving effect to this intent.</p>	<p>AEMO submission to the draft determination: pp. 5-6.</p>	<p>The final rule does not preclude multiple facilities owned by one connecting party behind a TNCP.</p> <p>However, under the final rule, there is a single FRMP at the TNCP, where the DCA connects to the network.</p> <p>The definition of a DCA has been amended to define a DCA as being for the exclusive use of a connecting party.</p>
<p>Removal of DCASP category</p>	<p>AEMO disagreed with the Commission's draft decision to remove clause 2.5.1A(b) which it believes allowed AEMO to maintain visibility over any parts of the transmission system that comprise</p>	<p>AEMO submission to the draft determination: pp. 7.</p>	<p>Under the TCAPA rule, DCAs were defined as 'transmission systems' for registration purposes. This led to the creation of the registered participant category DCASP.</p>

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
	<p>DCAs and/or DNAs. AEMO noted that while the draft rule provides the Primary TNSP with visibility for network planning purposes, AEMO should have similar visibility.</p> <p>AEMO therefore, proposed that under NER clause 2.5.1A(b) a TNSP continue to be required to classify any parts of its transmission system that are DCAs, and extend this obligation to DNAs. Further, so that there is a central register of these assets, under NER clause 2.5.1A(c) a TNSP should be required to register the assets with the AER (similar to how 'Existing DCAs' were registered).</p>		<p>Consistent with the draft rule, the final rule removes this requirement for registration.</p> <p>Firstly, AEMO has oversight of DNAs as they form part of the network and individual TNCPs are located at the facility end of a DNA, providing AEMO with sufficient visibility of these assets. Secondly, as a DNA forms part of a Primary TNSP's network, and the Primary TNSP is currently not required to classify any other parts of its transmission network with AEMO, the Commission considers this should not be any different for DNAs.</p> <p>However, the final rule puts an obligation on the AER to publish on its website (and update as relevant) a register of DNAs for the purpose of assisting access seekers in finding the relevant information for establishing access to a</p>

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
			<p>DNA.</p> <p>Concerning DCAs, as these are no longer defined as 'transmission systems' for registration purposes, and are considered to be part of the connecting party's facility, there is no longer a requirement for registration or classification in relation to DCAs.</p>
Interaction with COGATI	<p>The CEC noted that the draft determination makes several references to the Coordination of Generation and Transmission Investment (COGATI) work program as a potential solution for the broader access reform work that will need to be undertaken to modify the DNA framework to allow for non-radial DNAs.</p> <p>Given that this work is deferred, the CEC suggested that the Commission provide stakeholders with further information on how this deferral impacts the DNA framework and if non-radial DNAs will not be possible</p>	CEC submission to the draft determination: p. 5.	<p>This final determination sets out that it is only possible to apply the new DNA framework to radial assets. The DNA special access framework cannot apply on meshed transmission networks due to the nature of power flows across such networks.</p> <p>Given these physical realities, it is only through a system of financial access rights — such as that proposed in the Commission's COGATI reforms</p>

ISSUE	STAKEHOLDER COMMENTS	STAKEHOLDER	AEMC RESPONSE
	until the COGATI project is resumed.		<p>— that an access framework to facilitate DNAs on meshed sections of the transmission network can apply. The Commission notes that while this limits the DNA framework provided in the final determination to radial assets, this will still provide a significant benefit through efficient investment and use of radial extensions to the 'shared network'.</p> <p>The Commission will also continue to work through the Energy Security Board to progress the broader transmission access reform package to allow for such benefits to be provided on the whole transmission system.</p>
	Based on the reference to COGATI in the draft determination, ERM stated that it did not support access reforms the Commission proposed as part of its COGATI consultation.	ERM Power submission to the draft determination: p. 5.	
	Tilt Renewables believed that the COGATI framework continues to act as a significant distraction from necessary market reforms and given fundamental flaws, a lack of justifications and opposition from industry participants, should not be assumed in other rule changes as a necessary or certain future reform.	Tilt Renewables submission to the draft determination: p. 2.	

I KEY CONCEPTS

This Appendix provides an overview of the key concepts and their interaction as they are established by the final rule.

I.1 Dedicated Connection Asset

Consistent with the draft rule, under the new framework for designated network assets (DNAs) established by the final rule, those assets that would currently be classified as 'large dedicated connection assets (DCAs)' are instead classified as 'designated network assets', i.e. assets including power lines with a total route length of 30 km or more. Only those assets that would currently be classified as 'small DCAs' continue to be DCAs, i.e. assets including power lines with a total route length of less than 30 km.

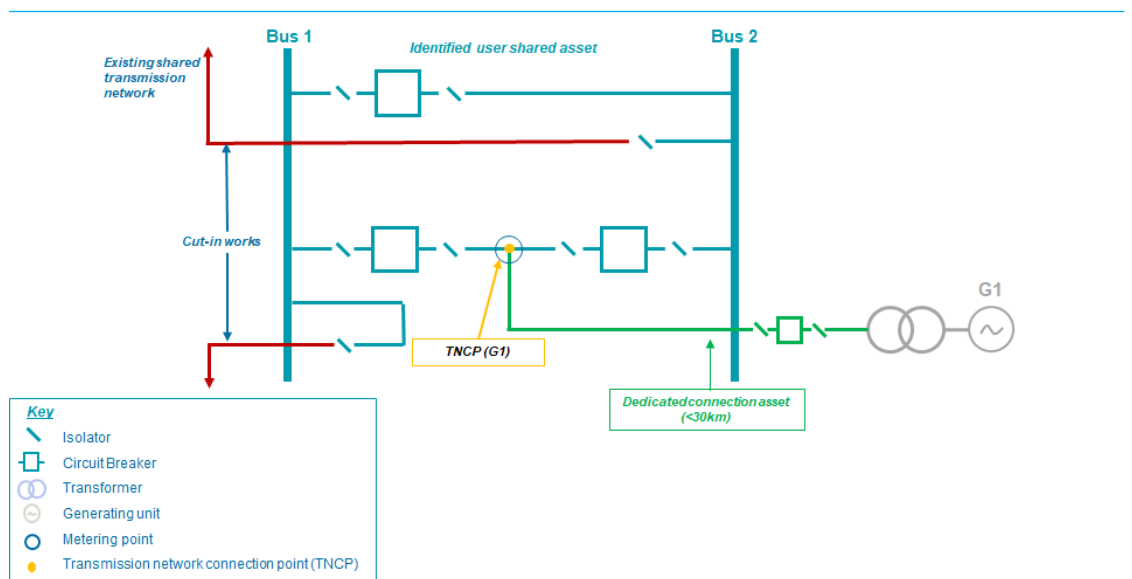
A DCA continues to facilitate the connection of a party (i.e. generator) at a transmission network connection point (TNCP), which can either be located:

- At an identified user shared asset (IUSA), or
- On a DNA.

As is the case under the current arrangements, a DCA would only be used for the purpose of forming a connection to a transmission network at a single TNCP. That is, a DCA cannot connect to another DCA.

Figure I.1 illustrates a connection configuration where a DCA facilitates the connection of a facility to a TNCP at an IUSA.

Figure I.1: DCA connection configuration



Source: GHD Advisory, 2020.

Note: Diagram is illustrative only and intended to distinguish responsibilities not technical design.

In line with the existing NER arrangements, one financially responsible market participant (FRMP) exists at the TNCP where a person connects via a DCA. However, this does not preclude multiple facilities being owned and operated by the same person or a related entity behind the single TNCP. However, the NER does not regulate such scenarios, and instead, this would require the respective parties to put in place contractual arrangements outside of the NER.

DCAs continue to be electrically isolatable from the transmission network at the TNCP, in a way that does not affect the provision of shared transmission services to other persons.

The concept of a Dedicated Connection Asset Service Provider (DCASP) is removed. The person that owns and operates a DCA could be the registered party at the TNCP, i.e. a generator or market customer, or it could be a third party. In any case, the registered participant at the TNCP will be responsible for the performance of its assets at the TNCP, and therefore, takes on the risk for performance of the DCA (and any party that owns or operates it on its behalf).

I.2 Designated Network Asset

Consistent with the draft rule, under the final rule the concept of a DNA replaces that of large DCAs and is intended to capture 'material additions' to the transmission system in terms of the length and size (i.e. connected generation capacity) of such additions. As such, the concept of a DNA refers to transmission assets including power lines with a total route length of 30 km or more by building on the existing threshold that differentiates between small and large DCAs. The key difference between large DCAs and the newly introduced DNAs is that the former is a connection asset, whereas the latter is part of the transmission network.

A DNA refers to a specific part of the Primary TNSP's network that conveys electricity for an identified user group. This part of the Primary TNSP's network will have been funded by market participants rather than by consumers through prescribed TUOS charges.

One or more generators or large load customers can be connected to a DNA. To reflect this, the concept of an identified user group is linked to the concept of a DNA.

DNAs are subject to contestable design, construction and ownership. These services can be provided by any party (including the Primary TNSP) on an unregulated basis where they meet the contestability criteria.

However, as these assets form part of the Primary TNSP's network, the Primary TNSP must provide services for control, operation and maintenance of and setting of the functional specification for these assets as a negotiated transmission service. Accordingly, the existing contestability arrangements for IUSAs will apply, with minor modifications, in the context of DNAs.

If the Primary TNSP does not own a DNA, the Primary TNSP must control, operate and maintain a DNA as part of its transmission network under a network operating agreement (NOA). If different DNAs are located behind a boundary point and these DNAs are owned by different persons, the Primary TNSP will have different NOAs with the respective owners of the different DNAs.

To facilitate the application of a special access regime, DNAs are limited to radial assets, i.e. cannot form part of a network loop. A boundary point (see for further detail I.4 on 'boundary point') demarcates between a DNA and an IUSA in terms of the application of different access regimes, i.e. a special third party access regime on the designated network asset as opposed to open access at the IUSA. If there are multiple DNAs located behind a boundary point, a DNA boundary point (see for further detail I.5 on 'DNA boundary point') demarcates between different DNAs to which different access policies apply.

A person seeking to connect to a part of the transmission network that is a DNA will be subject to the connections and access regime under Chapter 5 of the NER and the relevant access policy. The DNA owner is responsible for administering access to its DNA. This requires the DNA owner to develop an access policy for its DNA, based on a number of negotiating principles specified in Schedule 5.12 and the relevant access policy provisions under clause 5.2A.8 of the NER, as amended by the more preferable final rule.

I.3 Identified User Shared Asset

An IUSA forms part of the Primary TNSP's transmission network and is used for the purposes of:

- Connecting a person (through a DCA) to the transmission network, or
- Facilitating the integration of a DNA into the transmission network.

Accordingly, an IUSA is located at:

- The interface between a DCA and the 'shared' transmission network (this does not include where the interface is between a DCA with a DNA), and
- The boundary point between a DNA and part of a transmission network that is not a DNA. There is no IUSA at the interface between a DNA and another DNA.

In contrast to a DNA, to which a special access regime applies, open access continues to apply to IUSAs. As such, an IUSA is subject to the connections and access regime under Chapter 5 of the NER.

Regarding the contestability arrangements that will apply, the existing contestability arrangements for IUSAs continue to apply with the following modification: removing the existing ownership restriction. Similarly, if an IUSA is owned by a party other than the Primary TNSP, the Primary TNSP must control, operate and maintain the IUSA under a NOA.

I.4 Boundary Point

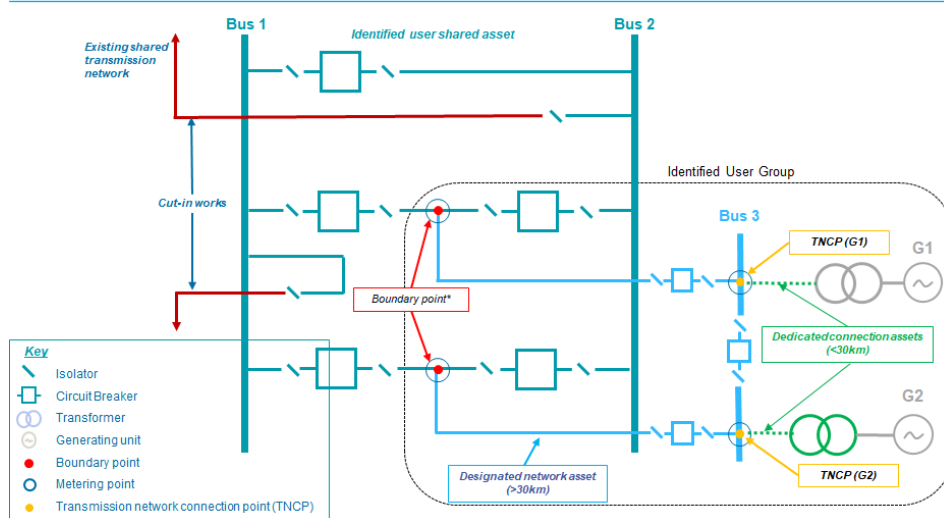
Consistent with the draft rule, the final rule introduces a new concept of the boundary point, which refers to the point of delineation between a DNA and an IUSA. Like a connection point, there could be one or more physical boundary points between the assets (for example, where a DNA comprised of a double circuit line is integrated with an IUSA). If there are multiple physical points, the involved parties can select a single point that is designated as the functional boundary point in the NOA and relevant access policy for that DNA.

The boundary point concept is illustrated in Figure I.2. It shows a DNA that consists of a double circuit and there are two physical interface points between the DNA and the IUSA. For these two physical points to be considered to be a single boundary point, the points will necessarily have the following characteristics:

- There is negligible impedance between the physical points (i.e. they are within a single substation), and
- There is no part of the shared transmission network that is not part of the IUSA to which the DNA is connected between the two physical points at any time regardless of the configuration of the designated network asset.

The second condition intends to ensure the physical boundary points are not located within two proximate, but separate substations that could be considered to have negligible impedance between them.

Figure I.2: Double-circuit designated network asset



Source: GHD Advisory, 2020.

Note: Diagram is illustrative only and intended to distinguish responsibilities not technical design.

One identified user group (which could consist of one or multiple persons) is located behind the boundary point.

Different DNAs that are located behind the boundary point could be owned by different parties and each owner must have a separate NOA with the Primary TNSP for the DNA it owns. The subsequent addition of DNAs behind the boundary point with different owners would not change the boundary point because it describes the point of delineation between the initial DNA and the IUSA.

I.5 DNA Boundary Point

As discussed in appendix F.2, the final rule allows for DNA to DNA connections in a so-called DNA 'daisy chain', with a potentially infinite number of asset owners. To facilitate DNA to DNA

connections, the final rule introduces the concept of a 'DNA boundary point'. The DNA boundary point is the point of delineation between DNAs that sit behind a single boundary point with the shared network.

Largely mirroring the existing definition of 'boundary point', in the context of DNA to DNA connections the DNA boundary point delineates between:

- different DNA owners' property rights
- access policies established by different DNA owners, and
- power flows on the individual DNAs for the purpose of estimating transmission losses and allocating any residue payments to the respective DNA owners.