Deloitte.

Australian Energy Market Commission

Feasibility of implementing contestability within the transmission connection arrangements

Final report

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Executive summary

Introduction

Stakeholder submissions on the AEMC's Transmission Frameworks Review indicate that generators and large customers find the current framework for connection to transmission networks in the National Electricity Market (NEM) is inefficient and costly. In particular, stakeholders have highlighted a lack of clarity in the National Electricity Rules (NER) in terms of what connection services entail and how they are to be classified, leading to varying interpretations among Transmission Network Service Providers (TNSPs) and commercially impractical outcomes. Issues relating to the extent of countervailing market power of connecting generators in negotiating with TNSPs have been raised by some stakeholders.

The flow on effects of the problem described by stakeholders include delays in the development of project business cases and inefficient risk margins being built into investments, which lower the profitability of projects and increase costs of connections.

In contrast, TNSPs have generally indicated that they are satisfied with how the current connections framework operates in practice in the NEM. TNSPs do, however, acknowledge that some sections of the NER relating to connections are unclear.

While in recent years there have been few new complex generator connections to the transmission networks in Australia, the growth of renewable and smaller scale distributed generation has increased the complexity of the economic regulation of connections and added a particular urgency to ensuring connections are efficient.

The AEMC has engaged Deloitte to provide advice on the feasibility of implementing contestability in the construction of connections assets within the NEM. In particular, the AEMC requested that Deloitte consider the contestable connections framework operating in the Irish Single Electricity Market (SEM) since 2001 and determine whether similar arrangements would be feasible in the NEM. WorleyParsons has assisted our review with relevant technical inputs.

Problem definition

Consultation with TNSPs has confirmed our view that in practice, there is very little construction of transmission assets (either prescribed, negotiated or unregulated) conducted by TNSPs themselves. In general, TNSPs seek competitive tenders for construction services from their own panel of independent service providers. In many cases, TNSPs also seek competitive tenders for design of new assets, however some TNSPs use their own in-house teams to design new connections, depending on their capacity.

We consider that TNSPs do have an incentive to seek out the best value asset design and construction services that also meet the need to maintain their networks in accordance with the NER.

However, given the stakeholder concerns discussed above, we acknowledge that it is unclear to connection applicants whether value is being derived from this competitive market for design and construction services, or at least that this value is being shared with connection applicants and, ultimately, electricity consumers.

We consider that the overarching problem with the current connection framework in the NEM is that from the viewpoint of connection applicants, the value of contestability in construction (if being realised at all) is not apparent. Connection applicants feel they are not getting enough information to satisfy themselves that the benefits of competition in construction are actually being passed onto them.

This problem reflects a lack of transparency in the connection process despite clear requirements in the NER for good faith negotiation and the sharing of information. Following consultation with stakeholders, we consider that this problem is exacerbated by the limited power that connection applicants have in negotiating connections due to their own commercial pressure to obtain timely connection for their investments.

We note that there is also a lack of clarity in the NER connections framework, which leaves it open to TNSPs' interpretations and discretion about which services they provide and how they're regulated (particularly for network extensions). This causes jurisdictional differences which increases costs to connection applicants.

Assessment of the Irish SEM framework

There are substantial differences between the NEM and the SEM that extend beyond the relative connections frameworks. A single TNSP (or Transmission Asset Owner (TAO)) operates in the SEM, unlike the six TNSPs in the NEM. An independent body (the Transmission System Operator (TSO)) operates in the SEM in a similar way to the Australian Energy Market Operator (AEMO), however, the TSO has substantial additional functions including determining Transmission Standards and accepting liability for the safe, efficient and reliable operation of the transmission system.

The SEM connections framework involves a connection applicant deciding which contestable connection assets it wishes to construct itself, and then applying to the TSO for approval of design and construction. The TSO then provides an offer of connection which includes costs for construction of the transmission assets that it arranges, an approach to long term asset ownership and two boundary points:

- *Construction Boundary* – the point where connection applicant provided assets intersect with TSO provided assets
- *Ownership Boundary* – the point where the transmission system ends and the connection applicant's assets begin.

Some assets which are constructed/provided by the connection applicant (according to the construction boundary) may be transferred to the TAO at the time of commissioning, subject to approval by a regulator.[1]

The SEM framework offers contestability or competition in the provision of transmission connections by enabling the connection applicant to determine the assets it wishes to independently construct and own. The benefits of the SEM framework include the enablement of commercial incentives for efficiency, by aligning the party who bears the costs of connection with control over its management. The SEM framework enables

[1] If, at a later date, the TSO determines that the assets need to be utilised by another party, then it may determine to transfer the assets to the TAO at that time, following the approval of the economic regulator (CER).

competitive pressure on the management of connections and transparency and consistency between connection assets and the rest of the transmission system.

However, in our view there are significant barriers to the implementation of the SEM connections framework in the NEM:

- The operation of the SEM framework requires the creation of an independent body to oversee connections, which is needed to intersect and balance the interests of TNSPs (network reliability, system security) and connection applicants (cost and time efficient connection, reliability) in the determination of design and connection standards. The need to create an independent body (or to transfer significant TNSP responsibilities to AEMO) to set standards, design and construct transmission connection assets which are on its side of the construction boundary would also need to take into account the differing requirements of six TNSPs in the NEM.[2] Should it be determined for other reasons that all network planning and standards for transmission should be overseen and implemented by an independent body, then it may be appropriate for it to also oversee transmission connections. However, in our view, the costs of creating an independent body just to improve the efficiency of connections would outweigh the benefits.
- The fact that the independent body, once it takes liability for the operation of the transmission system, may not act in a manner that is substantially different from the TNSP, or alternatively would still face issues around asset integrity at the intersection of the assets provided by the independent body and the TNSP's network
- The fact that there is a limited market for connection services, as many connection applicants and other third party infrastructure owners are unlikely to want to own and maintain transmission connection assets themselves due to the licensing and regulatory requirements. In addition, we consider that TNSPs are unlikely to compete to provide connection services in other jurisdictions, as this is not their 'core business' and currently yields a small proportion of overall revenue, even if they were to retain ownership, operation and maintenance of the connection assets. This means that were contestability introduced in transmission connection services there would not be a significant market for providers of these connection services in most cases
- The loss of economies of scale in shifting procurement and easement negotiation away from TNSPs
- Tax liability associated with asset transfer in Australia, which would result in a cost to the TNSP or alternatively the negotiation of a sale and purchase agreement which would complicate the connection process.

In conclusion, we consider that the differences between the NEM and the SEM mean that implementing this framework would require compromises (such as TNSPs retaining some

[2] Implementing contestability in construction and ownership without an independent body would mean there would still be an interface between the TNSP's and the connection applicant's assets, where issues of asset integrity for any assets transferred to the TNSP, plus the connection interface specifications, would create costs and risks. We note that without an independent body, the TNSP would still have monopoly negotiating power in the connection, in particular in determining standards for connection to the grid.

inputs into design standards for their network areas or alternatively introducing standardisation) which would undermine its objectives and operation.

In any case, we consider that the implementation of the SEM framework may not actually address the problems with the current connections framework, and would require substantial changes to the NEM regulatory framework for transmission which we consider are not commensurate with the problems being considered. We consider that the problem may be better addressed via incremental changes to the current framework.

Proposed solution

We consider that the benefits of contestability could be delivered by implementing the following changes to the current NEM framework:

- Provide connection applicants with the choice as to whether extension services are negotiated or unregulated by enabling them to determine the Connection Point. This implicitly requires that the incumbent TNSP be the 'service provider of last resort'.
- Share the benefits of the already existing competition in design and construction of transmission connection assets through improving transparency and requiring consistency with prescribed asset processes and standards. This could be implemented by enabling connection applicants the ability to 'trigger' an open and contestable connection service, if desired, which would give them the ability to:
    - Require the TNSP to competitively tender for both detailed design and construction of connection assets
    - Approve or reject construction contractor tenders that are proposed by the TNSP and determine design contractors.
- Improve the efficiency of connection through enabling parallel processing, where the connection applicant is certain of its investment and wishes to take on the risks involved in speeding up the connection process, by commencing some tasks prior to the final Connection Agreement being signed.

Our proposed approach to solving the problem rests on three key principles, as described in Figure 1.

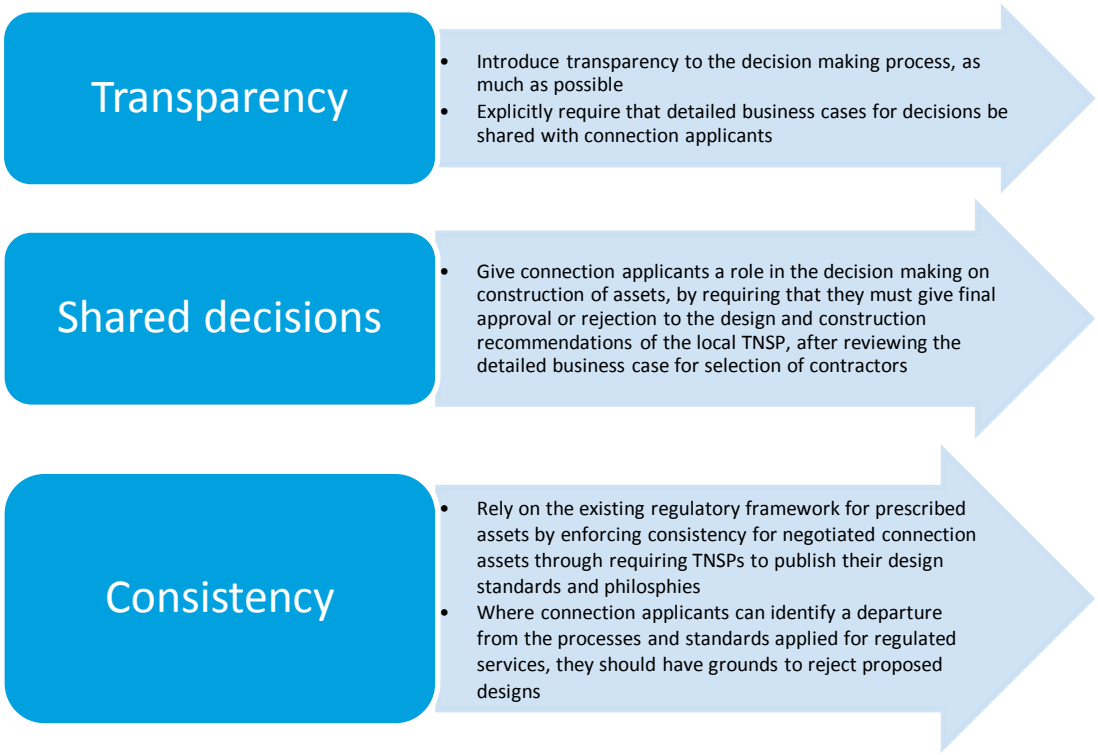

Figure 1: Principles for improving the connections process

Conclusion

In our view, our proposed amendments to the current connections framework can take a significant step towards obtaining the benefits of the SEM framework, without requiring substantial additional regulation and changes to the core structure of transmission networks in the NEM. It rests on our findings that:

- there is already competition in the construction of transmission connection assets, however the benefits of this competition may not be being shared with connection applicants
- there is likely to be limited interest among connection applicants or third party investors to build, own and operate transmission networks and limited interest among TNSPs in competing to provide connection services in other jurisdictions
- creating an independent body to determine network design standards, undertake planning functions and construct connection assets is costly and may not result in substantially different outcomes in terms of time and cost efficiency in connections.

1 Introduction

1.1 Background

1.1.1 Transmission Frameworks Review

The AEMC commenced reviewing the regulatory framework surrounding electricity transmission services in April 2010, following a direction from the Ministerial Council on Energy (MCE). This overarching Transmission Frameworks Review (TFR) considers a wide range of issues relating to transmission services, in particular how the transmission connection arrangements will minimise costs across transmission and generation.

Following an Issues Paper released in August 2010 and a Directions Paper released in April 2011, which outlined the key issues for review and initial stakeholder consultations, the First Interim Report for the TFR was released on 17 November 2011. Arrangements for the connection of generators and large customers to transmission networks is a key issue discussed in the papers, following concerns raised in stakeholder submissions.

While in recent years there have been few new complex generator connections to the transmission networks in Australia, the growth of renewable generation has increased the complexity of the economic regulation of connections and added a particular urgency to ensuring connections are efficient. Issues relating to the extent of countervailing market power of connecting generators in negotiating with TNSPs have been raised by some stakeholders.

The First Interim Report sets out analysis, conclusions and questions for stakeholders on the need for improved clarity in the economic regulation of connections. It raises some important questions about the need for contestability in transmission connections and the effectiveness of the framework for negotiated services.

1.2 Scope of our work

The AEMC engaged Deloitte to provide advice on the feasibility of implementing contestability within the NEM transmission connections arrangements, as part of its TFR. WorleyParsons has assisted our review with relevant technical inputs.

The scope of work was described as:

- Providing advice on the feasibility of implementing contestability in the construction of transmission connections, such as that which exists in the Irish SEM, in the NEM, considering:
    - Whether contestable construction of some or all connection assets can be achieved, with ownership then being transferred to the relevant TNSP
    - Principles and arrangements that would be required to facilitate contestability in the NEM, to the extent it is considered feasible

- The output is an assessment and conclusion as to whether contestability in the construction of transmission connection assets could be, or should be, adopted in the NEM.

2 Current connections framework

2.1 NER definitions

Table 1 sets out the key definitions in the NER relating to transmission connections. It also lists some key notes associated with each definition.

Table 1: Key terms and definitions

Term	Definitions and associated Rules in the NER	Key issues
Connection service	*An entry service (being a service provided to serve a Generator or a group of Generators, or a Network Service Provider or a group of Network Service Providers, at a single connection point) or an exit service (being a service provided to serve a Transmission Customer or Distribution Customer or a group of Transmission Customers or Distribution Customers, or a Network Service Provider or a group of Network Service Providers, at a single connection point).*	There is no defined link between connection service and the physical assets required to deliver that service, which leads to confusion about how the service is defined. The result of this is variable interpretations of what constitutes a connection service.
Connection assets	*Those components of a transmission or distribution system which are used to provide connection services*.	
Extension	*An augmentation that requires the connection of a power line or facility outside the present boundaries of the transmission or distribution network owned, controlled or operated by a Network Service Provider.*	There is some ambiguity in the NER in relation to how extensions are classified. While Cl. 5.3.6(k) requires that a TNSP is not obligated to provide an extension unless it is required to effect or facilitate a connection under a Connection Agreement. However, the establishment of a Connection Agreement may occur after the time an extension is reasonably required.
Connection point	*The agreed point of supply established between Network Service Provider(s) and another Registered Participant, Non-Registered Customer or franchise customer*.	The point of connection (where unregulated services meet negotiated services) is not defined in the NER – rather it is an 'agreed point.'
Transmission network connection point	*A connection point on a transmission network.*	

Term	Definitions and associated Rules in the NER	Key issues
Negotiated transmission service	*Any of the following services:* *(a) …* *(b) connection services that are provided to serve a Transmission Network User, or group of Transmission Network Users, at a single transmission network connection point, other than connection services that are provided by one Network Service Provider to another Network Service Provider to connect their networks where neither of the Network Service Providers is a Market Network Service Provider; or* *(c) use of system services provided to a Transmission Network User and referred to in rule 5.4A(f)(3) in relation to augmentations or extensions required to be undertaken on a transmission network as described in rule 5.4A,* *…but does not include an above-standard system shared transmission service or a market network service.*	Negotiated services include connection services and extension services (although only extensions that are required to establish connection under a Connection Agreement)
Shared transmission service	*A service provided to a Transmission Network User for use of a transmission network for the conveyance of electricity (including a service that ensures the integrity of the related transmission system).*	

In summary, submissions from stakeholders have indicated that the framework outlined in the NER currently contains or provides for:

- A lack of clarity in what connection services actually entail, including the assets involved and where the 'Connection Point' is intended to be
- Varying interpretations of the intended classification of services, particularly for extensions
- Limited negotiating power for connection applicants (discussed in more detail below).

2.2 Classification of connection services

The implication of the National Electricity Rules (NER) regulatory framework is that connection services can be classified within three categories:

- Prescribed Services;

- Negotiated Services; or
- Unregulated Services.[3]

TNSPs generally provide connection services on an unregulated basis where they consider that the service could be provided by a third party on a contestable basis. Prescribed services are generally natural monopoly services provided by TNSPs, subject to revenue regulation.

Connection services are currently classified as Negotiated Services, meaning that they are not subject to revenue regulation, rather a negotiating framework relaying on criteria set out in the NER. TNSPs are obliged to provide negotiated services, if requested by a Registered Participant (or someone who is eligible to become a Registered Participant).

The current classification of connection services as negotiated rests on the assumption that that the relative bargaining power of the connecting parties to the TNSPs is significant enough to ensure an efficient price and technical outcome can be achieved. While connecting parties making submissions to the TFR have consistently argued that they hold limited countervailing market power in negotiating with TNSPs, the AEMC has noted that the circumstances and the extent of the lack of market power have not been made entirely clear.

As part of this review, we have attempted to identify the precise problems with the current framework for negotiating connections, in particular areas where there is an imbalance of power in negotiations.

2.3 Negotiating framework

Two documents underpin the framework for negotiating the terms and conditions of TNSPs' negotiated services: the Negotiated Transmission Service Criteria (NTSC) and the Negotiating Framework.

Both documents must give effect to the Negotiated Transmission Service Principles in the NER.[4] These principles can be summarised as:

1. The price for a negotiated service should be based on the costs incurred in providing that service, in accordance with the TNSP's Cost Allocation Methodology

2. The price for a negotiated service should be at least equal to the avoided cost of providing it but no more than the cost of providing it on a standalone basis

3. For any negotiated service that exceeds jurisdictional or NER network performance standards, then the price differential between it and a service which meets but does not exceed the standards must reflect the TNSP's incremental cost

[3] We note that the NER doesn't explicitly provide for unregulated connection services.
[4] NER, Cl. 6A.9.1

4. For any negotiated service that does not meet (nor exceed) the jurisdictional or NER network performance standards, then the price differential between it and a service which meets the standards must reflect the TNSP's avoided cost

5. Prices must be the same for all customers, unless there are material differences in costs of serving the customers

6. Prices may be adjusted over time, and where another user is using the negotiated assets, the price must reflect the extent to which costs are being recovered from the other user

7. Prices must enable the TNSP to recover the efficient cost of complying with all its obligations associated with the negotiated service

8. Access charges must be based on costs reasonably incurred in providing access

9. Terms and conditions of access must be fair and reasonable and consistent with the safe and reliable operation of the power system, in accordance with the NER

10. Terms and conditions of access must not be unreasonably onerous taking into account the allocation of risk between the parties, the price and the costs

11. Terms and conditions of access must take into account the need for the service to be provided in a manner which does not adversely affect the safe and reliable operation of the power system, in accordance with the NER.[5]

Similar to the Negotiated Transmission Service Principles, the NTSC are *broad criteria* to be applied in negotiating the terms and conditions of access, including prices and access charges. The NTSC are also to be applied by a commercial arbitrator in resolving any disputes. The AER must specify the NTSC that apply to each TNSP as part of its transmission determinations. In practice, the AER has generally applied the same NTSC to each TNSP.

A TNSP's Negotiating Framework sets out the *procedure* to be followed during negotiations for a Negotiated Service. As part of making a transmission determination, the AER must approve a TNSP's proposed Negotiating Framework, if satisfied that it meets the requirements of the NER.

In summary, the NER requires that the Negotiating Framework must specify a:

1. Requirement for good faith negotiations of terms and conditions of access

2. Requirement for the TNSP to provide all commercial information that the applicant reasonably requires to engage in effective negotiation, including cost information (although commercial information that is confidentially provided by another party to the TNSP does not have to be provided, or may be provided subject to conditions of confidentiality)

[5] NER Cl. 6A.9.1.

3. Requirement for the TNSP to identify and inform the applicant of reasonable costs and to demonstrate that the price for the service reflects the costs incurred

4. Requirement for the applicant to provide all such commercial information that the TNSP reasonably requires to engage in effective negotiation (although commercial information that is confidentially provided by another party to the applicant does not have to be provided, or may be provided subject to conditions of confidentiality)

5. Reasonable period of time for commencing, progressing and finalising negotiations with an applicant, and a requirement that each party uses 'reasonable endeavours' to adhere to those time periods.

6. A process for dispute resolution, in accordance with the NER

7. Arrangements for payment of the TNSP's reasonable direct expenses incurred in processing the applicant to provide the service

8. Requirement that the TNSP determine the potential impact on other users

9. Requirement that the TNSP must notify and consult with any affected users, to ensure that the service does not result in non-compliance with obligations in relation to other users. [6]

Copies of the current NTSC and Negotiating Framework approved by the AER for TransGrid are attached at Appendices 1 and 2, respectively. We note that the NTSC for TransGrid is identical to those for ElectraNet and Powerlink and largely identical to those for SP AusNet.[7]

2.4 Connection requirements and processes in the NER

Chapter 5 of the NER is dedicated to the regulation of network connections (both distribution and transmission). It sets out the high level principles guiding connections, including specifying access rights for Registered Participants, the maintenance of minimum access standards for performance of connection assets, and the objectives of long term benefits for both connection applicants and the national grid and open communication and information flows between the relevant parties.

2.4.1 Technical requirements

[6] NER Cl. 6A.9.5(c).

[7] The NTSC for SP AusNet reflect earlier versions of the NER, in which the National Electricity Objective was known as the National Electricity Market Objective. Otherwise, the NTSC for SP AusNet is identical to those determined for other TNSPs.

Accreditation with AEMO as a Registered Participant (generator or customer), or exemption from accreditation, are required in order to connect to the grid. To achieve registration, participants must comply with the obligations set out in Chapter 2 of the NER, including that their equipment satisfies AEMO's performance standards and that they can appropriately participate in the NEM as either a generator or a customer. The requirements for exemption are specified in a guideline published by AEMO and must be consistent with the National Electricity Objective. Even customers who are exempt from being a Registered Participant must, in order to connect, comply with AEMO's published performance standards.

In order to connect to the grid, a generator or customer must also comply with the relevant technical standards set out in NER schedules S5.2 and S5.3 respectively.

The minimum standards in NER S5.2 for connecting generators apply where assets within the generation plant (being the generator and the transformer) can affect the TNSP's shared network. Similarly, NER S5.3 sets out the requirements for connecting a customer to the network, which apply where the connection applicant's load can affect the shared network system. Table 2 outlines the NER technical standards for generators and customers connecting to the transmission system.

Table 2: Technical standards for connection

Generator standards covered in the NER S5.2	Customer standards covered in the NER S5.3
• Reactive power capability • Quality of electricity generated • Response to frequency disturbances • Response to voltage disturbances • Response to disturbances following contingency events • Partial load rejection • Protection from power system disturbances • Protection systems that impact on power system security • Protection to trip plant for unstable operation • Frequency control • Impact on network capability • Voltage and reactive power control • Active power control • Monitoring and control requirements • Communications equipment • Power system auxiliary supplies • Fault current.	• Information to be provided to the TNSP • Design standards (Australian Standards, and specific standards for circuit breakers and other equipment needed to isolate the customer from the network) • Protection systems and settings • Settings of protection and control systems • Power factor requirements • Balancing of load currents • Voltage fluctuations • Harmonics and voltage notching • Design requirements for Network Users' substations • Load shedding facilities.

For each of these generator or customer requirements, an *automatic*, *minimum* and *negotiated* access standard applies, where the negotiated standard determines the range over which standards may be negotiated between an applicant and a TNSP as part of a connection agreement, which is typically between the minimum and automatic standards. Table 3 outlines the definitions of each standard.

Table 3: Access standards for connections

Term	NER definition
Automatic access standard	In relation to a technical requirement of access, a standard of performance, identified in a schedule of Chapter 5 as an automatic access standard for that technical requirement, **such that a plant that meets that standard would not be denied access because of that technical requirement.**
Minimum access standard	In relation to a technical requirement of access, a standard of performance, identified in a schedule of Chapter 5 as a minimum access standard for that technical requirement, **such that a plant that does not meet that standard will be denied access because of that technical requirement.**
Negotiated access standard	In relation to a technical requirement of access for a particular plant, **an agreed standard of performance determined in accordance with clause 5.3.4A and identified as a negotiated access standard for that technical requirement in a connection agreement.**

NER Cl.5.3.4A provides that a negotiated access standard must:

1. be no less onerous than the corresponding minimum access standard provided by the Network Service Provider in response to a connection enquiry;
2. be set at a level that will not adversely affect power system security;
3. be set at a level that will not adversely affect the quality of supply for other Network Users; and
4. in respect of generating plant, meet the requirements applicable to a negotiated access standard in clauses S5.2.5 (Technical standards), S5.2.6 (Monitoring and control requirements), S5.2.7 (Power station auxiliary supplies) and S5.2.8 (Fault current).

2.4.2 Process requirements

The NER outlines the process that must be undertaken in order to connect to the grid. At a high level, there are three key steps:

1. Connection enquiry
2. Connection application
3. Offer to connect.

Table 4 outlines the general steps and timeframes as specified in the NER.

Table 4: Connection Process – as specified in the NER

Step		Description	Specified timeframe
1	Connection enquiry	Connection applicant submits to the TNSP, advising of the type, magnitude and timing of proposed connection	N/A
2	Rejection of connection enquiry due to lack of information	Where information is inadequate to process the enquiry, TNSP must notify applicant of what information is needed	5 business days of receiving the Connection enquiry
3	Rejection of Connection enquiry due to incorrect TNSP	Where the Connection enquiry or the additional information indicates that another TNSP should be responsible for the connection, TNSP must notify connection applicant	10 business days of receiving the Connection enquiry
4	First response to a Connection enquiry	TNSP must provide: - Identity of other parties who need to be involved (planning or who'll need to be paid for the services) - Whether other agreements with other parties are needed - Whether the service is contestable in the relevant jurisdiction - A preliminary program of milestones for connection.	10 business days of receiving the Connection enquiry or receiving a request from the applicant to process the enquiry
5	Second response to a Connection enquiry	TNSP must provide: - Automatic, minimum and plant access standards - Negotiated access standards requiring AEMO's involvement - Normal voltage level if different from the nominal voltage level - Written advice on the details of all other information needed to enable the TNSP to assess the application to connect, including connection requirements and facility specifications, expectations of service standards and power transfer capability, list of technical data needed, commercial information, application fees	20 business days of receiving the Connection enquiry or receiving a request from the applicant to process the enquiry
6	Application for connection	Connection application must provide all the information required (as set out in the TNSP's second response to a connection	N/A

Step		Description	Specified timeframe
		enquiry). Where any technical requirements are not met (i.e. the automatic access standards nominated by the TNSP is not met), the applicant must nominate an access standard.	
7	AEMO advisory matters notifications	AEMO must respond to the TNSP on any advisory matters relating to the negotiated access standards	20 business days of AEMO receiving a proposed negotiated access standard
8	Acceptance/Rejection of a negotiated access standard	TNSP must either approve or reject the proposed negotiated access standard is it would (in its own or AEMO's opinion): - Adversely affect power system security or quality of supply - Be lower than the minimum access standard - Doesn't meet the technical standards in S5.2 of the NER. If the TNSP rejects the proposed negotiated access standard, it must advise of the standard it would accept	30 business days of receiving a proposed negotiated access standard
9	Response to acceptance/rejection of negotiated access standard	Connection applicant may either: - Accept the TNSP's proposed negotiated access standard - Reject the TNSP's proposed negotiated access standard - Propose an alternative negotiated access standard to be further evaluated - Elect to adopt the relevant automatic access standard or a corresponding plant standard.	N/A
10	Preparation of an Offer to connect	Where the access standard is either proposed as automatic or the TNSP's negotiated access standard is accepted by the connection applicant, TNSP must prepare an offer to connect in response. Offer to connect must include terms and conditions for connection, including automatic or negotiated access standards and those set out in NER S5.6. It must be capable of acceptance by the applicant to then form a Connection Agreement.	Within the time period specified in the preliminary program, although this may be extended to allow for any additional time taken in negotiating access standards
11	Finalisation of a connection agreement	N/A (This stage is not specified in the NER, but	N/A

Step		Description	Specified timeframe
		involves some negotiation between the parties on the final design of the connection).	
12	Notification to AEMO	Registered Participant and TNSP must notify AEMO of the agreement and forward all technical details.	Within 20 business days of execution of a connection agreement
13	AEMO advise on metering installation	AEMO must advise both parties whether the proposed metering installation is acceptable.	Within 20 business days of the notification

Schedules 5.4 and 5.5 set out the information that must be submitted with a Preliminary Enquiry for connection and the technical details to support a connection application, respectively.

Chapter 5 of the NER contains specific requirements with which an offer to connect must comply, summarised as:

- The Offer to connect must be within the timeframe specified in the preliminary program
- The preliminary program may be amended to account for any additional time taken in negotiating access standards
- The Offer to connect must contain proposed terms and conditions for connection, including the agreed negotiated (or automatic, if agreed) access standard, and must be capable of acceptance so as to constitute a Connection Agreement.
- The proposed terms and conditions must be no lower than the applicable minimum access standards
- The Offer to connect must be fair and reasonable and consistent with the safe and reliable operation of the power system in accordance with the NER
- The TNSP must use reasonable endeavours to provide an offer to connect in accordance with the requirements of the connection applicant, including the location and the level and standard of power transfer capability required
- The Offer to connect may contain options for connection at different locations, levels of service and terms and conditions applicable
- Both parties must then negotiate in good faith
- The Offer to connect must define the basis for any charges in accordance with NER 6A
- TNSPs do not have to provide an extension of a network unless it is required to effect or facilitate the connection which is the subject of a Connection Agreement.[8]

[8] NER, Cl 5.3.6.

3 Connections in practice

The NER sets out the general process and high-level steps in the negotiation of Connection Agreements. In practice, there are various interim steps and tasks that are needed to affect a connection to the transmission network.

Our understanding of the connections process that occurs outside of that specified in the NER is based on information provided in stakeholders' submissions to the AEMC as part of the Transmission Frameworks Review, as well as information gained in our own consultations with selected stakeholders (including TNSPs, large and small generators and the AER). We have also drawn on our own experience in the connections process (in particular, WorleyParsons' experience in assisting with designs for new connections).

3.1 Stakeholder views

3.1.1 Submissions

The TFR has revealed stakeholder concerns regarding the way the connection process operates and the extent to which it achieves efficient outcomes. In general, TNSPs have indicated that they are satisfied with the current connection process, while connection applicants (in particular, generators) have raised concerns relating to the degree of countervailing power they possess in the negotiations of connections, a lack of clarity in the classification of connection services and impractical outcomes in relation to the timing of key parts of the process.

Generators and the AER submitted that connection applicants hold limited real countervailing power in negotiating with TNSPs for connection. They stated that this lack of power stems from information asymmetry in relation to costs (whereby the TNSP does not have any obligation to publish a schedule of its likely costs for connection) and technical standards (whereby they perceive that there is no obligation for TNSPs to provide clear information upfront as to the detailed requirements for connection). Stakeholders have also indicated that the long timeframes for connection are at odds with commercial investment requirements, which adds to risk, cost, and places them in a difficult negotiating position where any action that could potentially extend the process (such as questioning the TNSPs' process or access standards, or even dispute resolution) is highly undesirable. The AER is also of the view that dispute resolution is also not really an option for connection applicants who need to establish an on-going working relationship with the TNSP.

Stakeholders from both sides of the connection debate have indicated that there is a lack of clarity in the NER, which leave it open to TNSPs' interpretations and discretion about which services they provide and how they're regulated (particularly for network extensions). This causes jurisdictional differences which increases costs to connection applicants. Examples of the lack of clarity in the NER include in the definitions of:

- *Connection service* – where it is not clear what exactly is required to serve a connection applicant in terms of assets, nor what the boundaries of the connection service entail. Negotiated services include Connection services, such that the NER intent is that connection applicants and TNSPs are to negotiate a price for

connection services, where the process is subject to the negotiation framework and procedures approved by the AER and dispute resolution process set out in the NER

- *Connection assets* – being defined simply as assets used to provide a connection service
- *Connection point and transmission connection point* – defined as the 'agreed point of supply' between the TNSP and connection applicant
- *Shared transmission service* – where it is unclear as to whether this includes connection services, however, TNSPs commonly consider these services to include the construction, operation and maintenance of any augmentations to the existing shared transmission network required to connect a connection applicant, including new substations or upgrades to communications and protection systems
- *Extension* – being an augmentation that requires connection of a power line or facility outside the present boundaries of the TNSP's network. TNSPs generally consider that, unlike connection services, the NER do not oblige them to provide extensions. Extension services are generally treated by TNSPs as non-regulated services, where it is considered that the assets and services could be provided by the connection applicant or another third party engaged by the connection applicant (that is, these services are considered to be contestable).

Submissions from connection applicants have presented evidence of impractical commercial outcomes in the connection process. In particular, information that must be provided to TNSPs by connection applicants when submitting a connection application (such as the precise generation plant characteristics) wouldn't always be available at that point in time (if, for example, arrangements relating to the investment haven't been finalised due to the need for a firm price to connect). This circumstance leads to 'work-arounds' in the process which leave connection applicants exposed, outside of the NER.

3.1.2 Consultations

As mentioned above, we consulted with a select group of stakeholders during our review to gather specific views and support our understanding of the current connection process and issues.

Consultations revealed views largely consistent with those expressed in submissions, however, a number of key points were confirmed.

TNSPS:

- TNSPs generally outsource the detailed design and construction of transmission assets (both prescribed and negotiated services) to a panel of independent contractors through a competitive tendering process, where possible (for example, where there is more than one qualified, available contractor operating in a region, which occurs in most cases).
- Design and construction panels are reviewed regularly and reflect the competitive market for qualified contractors. In some cases, TNSPs will issue an open tender for services where there is evidence of other qualified competitors in the market.
- The only construction capability that TNSPs maintain in house is in relation to very small jobs.

- Some TNSPs maintain their own design team (who develop the detailed designs for the connection assets or prescribed assets). However, when this internal team is occupied, TNSPs outsource design services as well as construction services.
- While negotiated transmission connection assets are identical to prescribed transmission connection assets (such as those used to connect a DNSP), in each case of connection, there is some analysis of the particular location and connection characteristics which requires a 'bespoke' service, making standardisation of services and costs problematic.
- When developing an Offer to connect, TNSPs consider the potential for future connection applicants wishing to connect in a similar location in order to ensure efficient decisions are made in the construction of new transmission assets (i.e. allow for additional bays in a substation for future generators to connect). This efficiency is likely to be at odds with the interests of competitive generators.
- Negotiated service connections typically represent between 5% and 10% of a TNSPs' total revenue.
- TNSPs are generally not interested in competing with incumbent TNSPs within other jurisdictions to provide connection services, because connections are generally small investments and are not part of the TNSP's 'core business'.

Connection applicants:

- Connections typically cost around 10% of the total project cost for a new generator, although this cost is highly dependent on the type, size and scope of a generation plant
- Small, one off connection applicants are in a more vulnerable negotiating position than large, established generators, in particular due to information asymmetry issues (both process and technical requirements) and the fact that they are usually more sensitive to underestimates of costs. In addition, TNSPs view small connection applicants as 'tyre-kickers' that have a low potential to proceed to connection, which affects their negotiating position.
- For larger, repetitive connection applicants (large generators), timing of connection is the chief concern, cost comes second.
- The experiences of connection applicants are extremely varied both between applicants and between jurisdictions.
- Some connection applicants have had positive, efficient connection experiences with some jurisdictions, while others have had negative, inefficient connections experiences from the same TNSP. The majority of experiences are negative for connection applicants, largely due to perceived excessive delays in the process and a lack of transparency. There is some suggestion that inefficiency relates to organisational culture more than the regulatory framework (due to the vast differences in experience).
- Negotiating access standards is not an efficient process, with little transparency. Connection applicants feel they lack true negotiating power and that this part of the process adds considerable costs to generators.

- Experiences in Victoria are largely negative. Connection applicants find that negotiating with AEMO creates an extra step in the process which leads to significant delays and that the need for tripartite agreements creates substantial inefficiency in the process.
- TNSPs are reluctant to give cost estimates until they have confirmed the detailed designs of connections
- Design standards or reasoning behind the selection of designs and standards are not always made clear to the connection applicant. In some cases, TNSPs claim that their technical network design standards constitute confidential IP. Often TNSPs do not share the detailed designs of transmission connection assets with the connection applicants.
- The process timeframes specified in Chapter 5 of the NER are not binding in practice, as a TNSP asking further questions of the connection applicant revises the timeframe. Some generators suggested that TNSPs tend to wait until the final day within the NER timeframe to ask further questions.
- TNSPs place time limits on their Offer to connect (generally one month, due to the binding nature of the offer and their own procurement contracts) which in many cases is not enough time for the connection applicant to carry out its own checks and to confirm the offer. This results in costly circularity.
- TNSPs do not commence work on the connection until the final Connection Agreement is signed, which means that even once the Connection Agreement is in place, the negotiation of easements is likely to take a substantial amount of time, further delaying connection.
- Generators are not generally interested in owning and maintaining transmission assets, as it is not part of their 'core business'.

3.2 Steps

In order to best describe the current connections process and understand where contestability could potentially be introduced or improved, we have identified 16 key steps that are undertaken by either of the connection applicant, the TNSP or by third party contractors in order to implement a connection. These steps generally reflect the connection process in NEM states, except for Victoria.[9]

We note that these steps are not all undertaken during the period of negotiating a connection, but also before a Connection Enquiry and after the finalisation of the Connection Agreement. However, all steps are required in order to implement connection to the grid.

Table 5 sets out these high level steps.

[9] In Victoria, AEMO is responsible for transmission planning and providing shared transmission network services. Accordingly, connection applicants in Victoria must deal both with AEMO and the incumbent network owner (SP AusNet), rather than just the local TNSP. We note that the primary focus of this project has been on the connection process operating in other NEM states.

Table 5: Connection process in practice: Steps involved

	Step	Responsible party
1	**Document network design standards**, to be revised from time to time as necessary. These standards apply to assets providing both **prescribed** and **negotiated** services. They are necessary to ensure the safe and reliable operation of the power system and take into account the existing assets and network characteristics and TNSPs' legal obligations. The design standards are relied upon in determining whether proposed connections are compatible with the network and would result in safe and reliable service outcomes.	TNSP, as part of its general network operations and planning role
2	**Pre-feasibility discussions** between the TNSP and the connection applicant, whereby the connection applicant is informed of the connection enquiry/application process and timeframes. During this stage investigation work is undertaken to identify possible connection options (including outsourced or TNSP-conducted feasibility studies, charged on a 'fee for service' basis)	TNSP and connection applicant
3	**Prepare connection enquiry**, advising of the likely type, magnitude and timing of proposed connection. The connection enquiry represents the connection applicant's preferred connection option/s identified during the pre-feasibility stage.	Connection applicant
4	**Review connection applicant's requirements** (e.g. 150MW at location X), seek more information or accept the enquiry based on the information provided (or direct the connection applicant to the correct party). **Respond to connection enquiry** with relevant information (any third parties involved, whether any part of the service is contestable). *(First response to connection enquiry)* **Prepare preliminary program** of milestones for connection. *(First response to connection enquiry)* **Provide information to connection applicant**, including relevant access standards, voltage levels, and others, drawing on network characteristics and design standards. Also advise on application fees *(Second response to connection enquiry)*.	TNSP
5	**Prepare and submit an Application for Connection**, including all information requested by TNSP and any proposed access standards (where not automatic). Application fees are paid to the TNSP at this point.	Connection applicant
6	**Negotiate access standards** for connecting plant or load, via consultation.	TNSP and connection applicant (seeking advice from AEMO on specific matters)
7	Prepare a design **scope** for tendering of design and construct services, considering **current grid capabilities and future planning.** Consider the potential costs of connection, based on experience. (In some cases, TNSPs may seek quotes from its panel of design	TNSP

	Step	Responsible party
	and construct contractors to inform the Offer to Connect, however we understand that typically this is done between the Offer to Connect and the Finalisation of the Connection Agreement stages).	
8	**Prepare an Offer to Connect**, including terms and conditions for connection and price, identifying the extent of the new transmission connection assets required (i.e. prescribed services) and any necessary augmentation to the shared network. This is generally costed by the TNSP on the basis of budget estimates using the broad design scope and may include options for the connection applicant to negotiate with the TNSP (such as location, performance, etc.), but it must be capable of acceptance by the applicant to then form a Connection Agreement.	TNSP
9	**Negotiate, then sign and enact a Connection Agreement**. Following the signing of the agreement, TNSP must notify AEMO, confirm metering installations, as required by the NER.	TNSP and connection applicant
10	Carry out **negotiation of easements** and **seek environmental approvals** for transmission connection assets that are not located on TNSP property. This process varies according to jurisdictional requirements and can take a significant amount of time.	TNSP (although in some cases, for connections requiring few new transmission assets, the connection applicant carries out this step).
11	Conduct **tendering** process for **detailed designs** and **construction** of transmission connection assets and any augmentations of the shared network (can be provided by one or multiple third parties) Source potential tenderers from the TNSP's panel of providers. All TNSPs outsource detailed design of construction assets in some cases (indicating that the services can be provided by third parties). In some cases, however, detailed design of connection assets is carried out by the TNSPs' own internal team, depending on their availability.	TNSP
12	**Select** detailed design and construction contractor/s, based on local TNSP's own **design standards**	TNSP
13	Carry out **detailed design** of connection assets, including the layout of assets.	Third party contractor or TNSP's own team if available
14	Carry out **procurement** of major materials (switchgear, transformers)	TNSP and/or third party contractor
15	Carry out physical **construction and commissioning** of connection assets and 'connection'	TNSP and/or third party contractor
16	**Maintain the connection assets** in accordance with the NER and according to service standards and safety incentives.	TNSP and/or third party contractor

We note that between 7 and 11, the steps in Table 5 above are not necessarily sequential as presented, because they vary among TNSPs. The sequence of the steps is based on our own understanding of the most typical process. For example, it is our understanding that the connection assets themselves (being the substation, extension and the physical connection) are selected and price estimates developed between the Offer to Connect and the Finalisation of the Connection Agreement (once the access standards are agreed). We understand that the Connection Agreement is generally priced based on budget estimates rather than firm agreements with contractors, using market testing and TNSP knowledge from previous connections.

Once the Connection Agreement is signed, budget estimates are confirmed through tendering and selection of a contractor. Where budget estimates in the Connection Agreement vary from the actual costs of construction, the TNSP either bears the excess cost or retains the price differential.

An additional task which is implied, but not mentioned in this list, is project management. Managing the connection process imposes costs to both the TNSP and connection applicant. The TNSP typically passes on its early project management costs to the connection applicant in the application fees, which are set out in the *Second response to a connection enquiry*. Other project management costs incurred at the final stages of the connection (including developing design scope, tendering, management of third party contractors, etc.) are typically included within the final Connection Agreement price. It is our understanding that project management costs are generally not transparent to the connection applicant.

3.3 Transmission connection assets

The following figures describe the transmission assets typically involved in connecting either a generator or a large load customer to the grid and provide an image of their location in the context of the transmission system. Figure 2 presents a diagram of connection assets and Figure 3 describes the current classification of the services related to these assets.

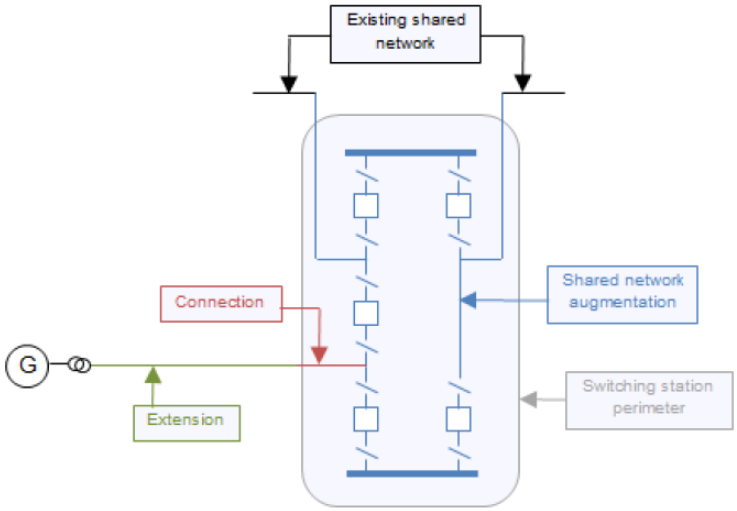

Figure 2: Simplified example of a generator connection

Source: AEMC First Interim Report – Transmission Frameworks Review, November 2011, p. 158

Figure 3: Transmission connection assets and service classification

Extension	• Extensions usually involve a line or lines to a generation facility which includes a generator and transformer. When connecting to a TNSP's network, these lines are 132kV and above • Connection applicants and other third parties typically don't want to own or maintain extensions – because they'd need a licence or exemption • TNSPs consider extensions to be non-regulated, no obligation to provide • Connection applicants want TNSPs to provide these services where there are no other options • Already negotiating with TNSP for other assets puts the connection applicant in a weaker negotiating position if there are no other providers.
Physical connection	• Negotiated service relating to the shared network • Few assets are involved – mainly a landing span or cable • TNSPs consider this service must be carried out by them as involves connection to the shared network • TNSPs typically outsource this work
Substation	• Negotiated service relating to the shared network • Significant assets involved, as it substantially affects the shared network. • The substation may or may not require a transformer, however a switchyard, control room, auxiliary supplies, DC supply, circuit breakers, other switchgear, bus systems, control & protection systems and other associated equipment will generally be required. • TNSPs consider construction work must be carried out by a TNSP • TNSPs typically outsource the design and construction works.

We note again that the negotiation of access standards described in the process set out in Table 4 above relates solely to the performance of assets that are to be owned by the connection applicant but that which have the potential to affect the operation of the shared network. For example, for connecting a generator, the assets involved include generation plant, generator step-up transformer and associated items of plant and control.

There can be situations where the access standard negotiation process does not affect the transmission connection assets that are eventually designed and constructed, only the connection applicant's choice of assets. The negotiations between TNSP and connection applicants on the location, performance and timing of transmission connection assets is carried out at the final stages of negotiation, prior to the enactment of a Connection Agreement.

For connections that do not require a new substation (i.e. where the new assets are connected to an existing substation), it is our understanding that TNSPs typically outsource design and construction works in the same manner as for connections requiring a new substation. This means that our assessment of the current competitiveness of the design and construction aspects of connections applies equally to connections requiring and not requiring new substations.

Potential issues associated with brownfield sites (where a transmission substation already exists at the site of connection), including:

- access to existing substations;
- working in the vicinity of live electrical equipment; and
- the staging of construction and coordination of outages to minimise interruption to existing connections,

have generally already been overcome by TNSPs through outsourcing the construction of new assets. TNSPs rely on their approved panels of qualified contractors to ensure assets are designed and constructed in accordance with their requirements. While some TNSPs treat brownfield construction differently to works requiring a new substation (i.e. carry out design for brownfield sites in house), in general the issues in relation to contestability are identical due to the fact that construction is currently outsourced by TNSPs.

4 Problem definition

In determining whether introducing contestability in the construction of connection assets is feasible for the NEM, we have revisited the issues driving our review in order to give context to the project and understand whether contestability (such as that incorporated in the SEM) is likely to solve these problems.

The Transmission Frameworks Review (TFR) has uncovered stakeholder concerns regarding the way the connection process operates and the extent to which it achieves efficient outcomes.

In summary, it appears that connection applicants do not believe they are getting a cost efficient, timely connection service from TNSPs and believe that the connections framework could be improved by introducing contestability, as defined in the NER (being to enable other TNSPs to compete to provide the service).

The flow on effects of the problem described by stakeholders include delays in the development of project business cases and inefficient risk margins being built into investments, which lower the profitability of projects and increase costs to connection applicants and electricity consumers (if connection applicants are generators).

4.1 Incentives and issues

The incentives and concerns of the parties involved in providing the services are important in understanding what is driving the problem.

Table 6 outlines our view on the incentives of the three parties involved (TNSPs, connection applicants and third party service providers or contractors). Figure 4 summarises the three core connection functions and issues associated with them.

Table 6: Parties involved in NEM connections and their incentives

Party	Incentives
TNSP	Regulated monopoly business Primarily concerned with ensuring the operation, viability and compliance of the broader transmission system Currently gains some (small) unregulated revenue from connection services
Connection applicant	Competitive generation industry Generally only interested in outsourcing connection services, provided they can obtain connection in accordance with their commercial timeframes and that there is faith in the long term functionality and reliability of the asset within the regulatory framework
Third party service provider	Competitive industry, involved in asset design and construction Incentivised to carry out work within the timeframe and budget determined in the contract with the TNSP

Asset construction	• Time taken to construct • Cost overruns • Technical difficulty of design and construction • Competitive generation market - potential for new entrants
Asset ownership	• Returns on investment • Potential for asset stranding • Tax treatment • Regulatory framework (prescribed assets), licensing • Future new entrants - potential for higher utilisation / returns
Asset operation and maintenance	• Regulatory framework: Safety, reliability • Technical compatibility with existing transmission system • Availability of replacement assets and spares / suitable technicians • Ongoing costs of operating different kinds of assets

Figure 4: Core connection functions and associated issues

While both connection applicants and TNSPs are motivated to ensure the long term reliability of connection assets (although to differing degrees), TNSPs do not have the same commercial imperative as connection applicants to ensure timely and cost efficient connection. Third party design and construction contractors are incentivised by the contracts they hold with TNSPs.

The First Interim Report notes that the dispute resolution process in Chapter 6A of the NER has never been invoked under the current connection arrangements.[10] In our view, the level of dispute resolution within the current connection arrangements is likely to be inefficiently low (zero) and reflects the poor bargaining position of connection applicants. Following stakeholder consultation, we consider that this poor bargaining position is driven largely by the commercial timeframes connection applicants are required to meet (such that extending the connection process through dispute resolution is undesirable), as well as information asymmetry and a lack of transparency in the connection process.

4.2 Contestability in the current arrangements

A contestable service is defined in the NER as '*a service which is permitted by the laws of the relevant participating jurisdiction to be provided by more than one Transmission Network Service Provider as a contestable service or on a competitive basis*.'[11]

The benefits of contestable provision of services are related to the efficiencies generated by competitive pressure, including efficiency in cost and timeliness of services. In the construction of transmission assets, we consider that such benefits are available through competitive tendering for construction services, regardless of whether there is more than one TNSP competing to carry out the tender process and project management of connections (being separate from the actual construction of connection assets).

Consultation with TNSPs has confirmed our view that in practice, there is very little construction of transmission assets (either prescribed, negotiated or unregulated) conducted by TNSPs themselves. Typically only very small asset construction projects are carried out by TNSP staff. In addition, we understand that unlike electricity distribution, the

[10] AEMC, First Interim Report, p. 179.
[11] NER, chapter 10.

companies engaged by TNSPs to construct their assets are typically not related parties to the TNSPs. This means that in general, there is no advantage to be gained by a TNSP selecting a particular contractor over a more efficient competitor.

The TNSPs each have their own panel of contractors which they draw from to carry out design and construction works as required, with some TNSPs preferring to keep design and construction separate while others seek contractors who can carry out both design and construction works.

Requests for tender are issued to panel members, depending on:

- The type of works and the contractors' expertise
- The availability of contractors, given they may also be working on other network projects at the same time.

Regardless of whether works are related to prescribed, negotiated or unregulated assets, the TNSPs carry out the same process to seek design and construction works, which is typically competitive.

We consider that TNSPs do have an incentive to seek out the best value asset design and construction services that also meet the need to maintain their networks in accordance with the NER. This is based on two key assumptions:

- The regulatory framework for prescribed assets creates incentives for TNSPs to invest efficiently in new capital assets and undertake efficient operating expenditure, within the bounds of maintaining their network service standards and complying with obligations in the NER and their transmission licences.
- The current negotiating framework whereby a Connection Agreement is priced based on budget estimates of costs (and in some cases, actual tender responses) gives the TNSP an incentive, once the Connection Agreement is signed, to keep its own costs under the price paid by connection applicants.[12]

Based on these assumptions (which we believe are reasonable), we consider that competition in the construction of connection assets is already occurring.

However, given the stakeholder concerns discussed above, we acknowledge that it is unclear to connection applicants whether value is being derived from this competitive market for design and construction services, or at least that this value is being shared with connection applicants and, ultimately, electricity consumers.

4.3 Conclusion

From the viewpoint of connection applicants, the value of contestability in construction (if being realised at all) is not apparent. This is because despite paying for the construction of the assets, connection applicants are not involved in the tendering process for construction.

[12] We note that the negotiating framework intends to ensure that the price paid by connection applicants (based on the budget estimates) is efficient by requiring that the TNSP negotiate in 'good faith' and provide the connection applicant with enough information, including on the costs incurred by the TNSP, to effectively negotiate a reasonable outcome. Whether this intention is realised or not is a question being considered in this review.

Connection applicants feel they are not getting enough information to satisfy themselves that the benefits of competition in construction are actually being passed onto them. In our view, this is the primary problem with the current connections framework.

This problem reflects a lack of transparency in the connection process despite clear requirements in the NER for good faith negotiation and the sharing of information. Following consultation with stakeholders, we consider that this result is likely driven by the limited power that connection applicants have in negotiating connections due to their own commercial pressure to obtain timely connection for their investments.

5 Irish SEM framework

In investigating the issues raised in stakeholder submissions relating to transmission connections, the AEMC has identified a framework for contestability that operates in the Single Electricity Market (SEM) that combines Northern Ireland and the Republic of Ireland (SEM framework).

The SEM contestability framework was introduced in 2000 and currently operates in EIRGRID's territory in the Republic of Ireland. Its core principles and operation are outlined in a guideline published by EIRGRID in October 2007.[13]

The AEMC has asked Deloitte to consider whether the SEM framework or aspects of it could be feasibly adopted in the NEM to address the concerns with the current connections framework.

5.1 Overview

The definition of contestability in the SEM framework differs from the current NER definition in that it is not restricted to the provision of services by TNSPs. Contestability in the SEM is '*the right of transmission connecting parties to construct part or all of their connection*.'[14]

Contestable assets within the SEM connections framework include all those assets required for shallow network connections, excluding assets needed for shared system protection and communications. It also excludes particular assets in circumstances where the location means that they cannot be separated from the existing live transmission system.

At a high level, the SEM connections framework involves an applicant deciding which contestable connection assets it wishes to construct, and then applying to the Transmission System Operator (TSO) for approval of design and construction. The TSO then provides an offer of connection, which includes a decision on asset ownership. In deciding whether contestable assets should remain the property of the applicant or transfer to the Transmission Asset Owner (TAO) upon completion, the TSO takes into account a number of factors, including:

- Whether the assets are, (or are likely to be) shared by more than one party
- Whether the assets are (or are likely to be) used to connect another party
- Where assets are specified to a higher standard than would have otherwise been required, with the aim of connecting future users or developing the system
- Where another party (or general system users) might be materially affected by the performance of the assets in question.

Taking into account these factors, the TSO then seeks approval from the Commission for Energy Regulation (CER) for transfer of the contestable assets to the TAO at the completion of construction.

[13] EIRGRID, Contestability of Connection Assets, October 16 2007.
[14] EIRGRID, Contestability of Connection Assets, October 16 2007.

The relationships within the SEM contestability framework are defined according to the following boundaries:

- *Construction Boundary* – the point where connection applicant provided assets intersect with TSO provided assets. The location of this boundary varies significantly, and its definition is at the discretion of the connection applicant, subject to the consent of the TSO prior to a connection offer being made.
- *Ownership Boundary* – the point where the transmission system ends and the connection applicant's assets begin. The location of this boundary is specified by the TSO in its offer for connection. Some assets which are constructed/provided by the connection applicant (according to the construction boundary) may be transferred to the TAO, subject to approval by the regulator.

It is important to note that within the Irish SEM, there is a single TNSP (EIRGRID), as compared to the six TNSPs operating in the NEM. The TSO has wide responsibilities for determining Transmission Standards and takes responsibility for ensuring the safety and security of the electricity network as well as constructing and arranging the maintenance of transmission assets. In comparing the SEM to the NEM, it is helpful to note that the TSO has similar responsibilities to both AEMO and the TNSPs in the NEM.

5.2 Parties involved in SEM connections

Table 7 outlines the key parties involved in transmission connections in the SEM and their roles.

Table 7: Irish SEM – Parties involved in transmission connections

Party	Description of role in connections
Transmission System Operator (TSO)	• Similar to AEMO, with additional system design responsibilities, including ensuring that all new connection assets are built to the defined standards • Arranges the construction of assets whose construction could impact directly on the live transmission system (to the Construction Boundary) • For applicant constructed assets beyond the Construction Boundary, TSO is responsible for design approval, certain inspection works, specifying the connection method, controlling the first energisation • Determines which assets are to be transferred to the TAO after construction • For assets transferred to the TAO, the TSO arranges maintenance (in accordance with the normal Transmission System maintenance procedures). • Publishes a set of technical, site and route selection guidelines for connection applicants • Provides a project outline description to connection applicants at the Connection Offer stage • Provides functional specifications and a list of relevant main equipment currently in use in the Transmission System • May be liable to pay constraint payments to the applicant, if assets on the Transmission System side of the ownership boundary are unavailable and the supply contract stipulates firm financial commitments.
Connection applicant	• For contestable assets, carries out detailed design, routing, site selection, planning consents, easement procurement, construction • Responsible for ensuring new assets (and those remaining on the connection applicant side of the ownership boundary) are maintained according to the TSO's standards • Has discretion to determine the Construction Boundary (subject to TSO consent)
Transmission Asset Owner	• To receive connection applicant-provided assets upon completion of their commissioning in exchange for a nominal fee (e.g. $1), subject to regulatory approval • May perform due diligence on the assets constructed by the applicant intended to form part of the Transmission System • Maintains assets on the Transmission System side of the ownership boundary.

5.3 SEM connection process

Table 8 outlines the core steps involved in connecting to the transmission system in the SEM. It compares these steps to those outlined in Table 4 above for the NEM. It also provides an indication of the changes to the NEM that would be required to implement the SEM framework for connections.

Table 8: Transmission connections – SEM and NEM comparison

As compared to NEM in Table 4	Task/role	Current party - NEM	Current party - SEM	Requirements for change – NEM to SEM
1	**Determine detailed network system and design standards** and assume responsibility for the safe and reliable operation of the transmission system (i.e. assets owned by the TAO in the SEM)	TNSP	TSO	An independent entity would be required to take on certain responsibilities for asset operation and control (removing these from the TNSPs). This might be AEMO or a new independent body established to take these roles.
2 and 4	**Prepare connection enquiries/applications to connect**, advising of the likely type, magnitude and timing of proposed connection	Connection applicant	Connection applicant	No change
3	**Review of connection applicant's proposal,** identification of information requirements and plans for the connection. In the SEM, identify construction boundary and ownership boundary for connection assets.	TNSP	TSO	As above, an independent entity needs to absorb TNSP responsibilities for asset operation and control.
5, 7, 8	**Negotiate the terms of connection** with the connection applicant, including access standards and terms and conditions of connection. Prepare offers to connect, etc.	TNSP	TSO	As above, an independent entity needs to absorb TNSP responsibilities for asset operation and control.

6, 10	Conducting construction **tendering** process and management of third party contractors	TNSP	Connection applicant	Rule changes to reclassify some elements of connection services as contestable (unregulated) and clarify the connection applicant's role in the construction of assets.
9	**Negotiate and obtain easements** for connection assets.	TNSP	Connection applicant	In Australia, state based legislation provides that TNSPs have rights to compulsorily acquire easements from landowners. Connection applicants also have the private right to acquire easements in association with their developments, although we understand that their rights are more limited and less certain. For the connection applicant to take full responsibility for acquiring easement, changes to state legislation to support connection applicants may be required.
13	**Procurement** of materials (switchgear, transformers, etc.)	TNSP	Connection applicant	No Rule changes needed, however this has the potential to raise issues related to asset integrity, retention of spares and maintenance of new assets. This may require the publication of a set of standards for procurement of assets.
14	Physical **construction** of connection assets and 'connection'	Third party contractor	Third party contractor	None
All	Pricing the connection, **management** of overall project	Local TNSP	Connection applicant with TSO oversight	Rule changes to reclassify some elements of connection services as contestable (unregulated) and clarify connection applicant's role in construction of assets

15	**Maintaining** connection assets	Local TNSP	TSO arranges maintenance, TAO carries out maintenance	Rule changes needed, depending on who takes liability for transmission system assets. Independent body needed to absorb responsibility for maintenance.

5.4 Assessment of feasibility for the NEM

5.4.1 Benefits of the SEM framework

The SEM framework described above offers contestability or competition in the provision of transmission connections by enabling the connection applicant to determine the assets it wishes to independently construct and own. Benefits stemming from this arrangement include:

- Enabling commercial incentives for efficiency by providing the party who bears the costs of the connection with control over its management, including selection of third party contractors and design for contestable assets (within the limits of the TSO's transmission standards) and some control over which assets it retains (subject to TSO agreement)
- Competitive pressure on the management of the connection construction, which improves the efficiency of connection times and costs
- Transparency in the provision of connection services, provided by the guidelines and information submitted by the independent TSO
- Consistency with the operation of the shared network, through oversight of the independent TSO.

In summary, the SEM framework reduces the monopolistic power of the TAO by placing an independent party at the intersection between the connection applicant and the TAO. This resolves issues of asset integrity by placing responsibility for the reliable and safe operation of the new assets onto the independent party.

5.4.2 Barriers to implementation in the NEM

There are a number of barriers to implementing a framework similar to the SEM framework in the NEM. As presented in Table 8 above, substantial changes to the structure of the regulatory framework for transmission would be required, including changes to the National Electricity Law and NER.

Substantial differences between the SEM and the NEM

The regulatory and commercial framework for transmission networks in the SEM is significantly different from the NEM framework, in terms of responsibility for service provision and the safe operation of the electricity network. Due to these differences, in order to apply a SEM framework arrangement to the NEM, compromises would need to be made which, in our view, would undermine the objectives of the change.

The NEM currently contains six TNSPs in five jurisdictions, operating across a vastly variable geographic territory with unique transmission capabilities and requirements. For an independent body to assume the responsibilities assumed by the TSO in the SEM, some standardisation of system requirements may be needed to prevent substantial costs of regulating standards for six independent networks. It is not clear to us that such standardisation would produce outcomes that are efficient and consistent with the safe and reliable operation of the electricity system. Without standardisation, the independent body would need to have knowledge and expertise in the characteristics of six different networks.

As such, we note that it is not necessarily the case that an independent body would have different (or even more efficient, less onerous) requirements to those of the TNSPs today, if the independent body held the same responsibilities for system security and reliability as the TNSP currently holds. The need to maintain asset integrity at the interface of negotiated and prescribed assets is an issue that the AEMC considered in its First Interim Report. Unless network operation and maintenance activities for transferred assets are arranged or carried out by the same independent body that approves the construction of new connections (such as the TSO), there will always be an interface between the TNSP and the connection assets. Problems associated with asset transfer are related to the cost of maintaining spares for assets transferred to the TNSP but which were not procured by the TNSP, as well as the issue of liability for the performance of the transferred assets. In our view, resolving these issues through regulation would impose significant additional costs on the connection process by requiring either standardised equipment across the NEM or liability transfer agreements, which may not be desired by either TNSPs or connection applicants.

Creating an independent body to duplicate the work that TNSPs already undertake would also impose significant costs on either government or electricity consumers (depending on who funds the independent body).

We note that in the SEM, the TSO performs the network planning role for the entire grid. Should it be determined that for other reasons, beyond improving the connections framework, that an independent body needs to be established to absorb planning and network design roles of the TNSPs, then it may be appropriate that this independent body perform roles in the connection process similar to those in the SEM. However, it is our view that improving the connection process alone is not sufficient reason to install a new independent body to oversee planning and design standards.

Implementing contestability in construction and ownership of transmission connection assets *without* an independent body to oversee standards for the connection would, in our view, require one of the following scenarios:

a) A build, own, transfer model, where connection construction is overseen and managed by the TNSP who ensures standards are upheld (effectively resulting in a similar situation as the current NEM framework); or

b) A build, own, operate model, where the connection applicant retains transmission connection assets and takes responsibility for ongoing transmission connection asset performance.

Scenario B fails to account for the fact that the performance of connections has an impact on the shared transmission network and that there is some risk associated with new transmission assets which would be borne by the TNSP. In addition, the responsibility for

transmission asset performance and operation would be a significant additional barrier to connection for connection applicants.

We note that under both scenario a) and b) there would still be a direct interface between the assets constructed by the TNSP (shared network/grid or connection assets) and those constructed by the connection applicant. From a TNSP's perspective, there are risks associated with owning and operating, or even connecting to assets for which it does not have input into determining the construction standards. The existence of this interface would create issues of asset integrity (for any assets transferred to the TNSP), plus the connection interface specifications would create challenges for the negotiating process. We note that the TNSP would still have some monopoly negotiating power in the connection, in particular in determining standards for connection to the grid.

Independent body may not act differently to the TNSP

We understand that the incentives of the TSO are to operate within its own legislated mandate and carry out its responsibilities in accordance with the safe and reliable operation of the electricity system. While we acknowledge that the SEM framework provides for the connection applicant to have more control over the construction of connection assets and indeed control over the costs of connection, it is not clear whether the TSO has any real incentive to more efficiently process applications for connection and to enforce efficient design standards than TNSPs in the NEM. The SEM framework relies on the independence of the TSO from the TAO to ensure efficiency, however, given the liability that rests with the TSO, it is not clear to us that this would result in any more efficient connections than those carried out in the NEM.

In addition, we note that if the SEM framework was adopted for the NEM without giving the independent party responsibility for the operation of the network, there would still be an interface with the TNSP and issues of asset integrity would arise.

In summary, it is not clear that the creation of an independent body that takes liability for the safe and reliable operation of the transmission system would act in a substantially different way to TNSPs considering connection applications.

Limited market for connection services

Stakeholder consultation during our review has confirmed that there is very little interest among connection applicants in owning and maintaining transmission assets themselves. The primary concern of connection applicants is in getting timely, reliable network access at reasonable cost, not owning and maintaining transmission assets.

It is our view that third party investors are also unlikely to be interested in owning and maintaining transmission connection assets, due to the complex regulatory and licensing regimes surrounding electricity assets and the small scale of connection assets.

Consultation also revealed that TNSPs are unlikely to want to compete to provide connection services in other jurisdictions, as this is not their 'core business,' and yields only small amounts of revenue.

It is our view that, even if changes to licensing and exclusions from regulations were made to support contestability (in ownership and maintenance), the assets are either not big enough to encourage another party to get involved, or the parties are unlikely to want to negotiate with the local TNSP in connecting the assets to the grid.

Accordingly, we consider that were contestability introduced in transmission connection services there would not be a significant market for providers of these connection services in most cases. Therefore, we consider that the benefits of this shift would be limited.

TNSPs' economies of scale

We also note that shifting certain responsibilities away from the TNSP, including procurement of connection assets and securing easements, would result in additional costs to the connection process. TNSPs, in their role as provider of prescribed assets, have substantial economies of scale in negotiating with suppliers. They are also skilled in negotiating easements for their prescribed assets.

In short, we consider that the TNSP is in most cases still the most efficient party to carry out the majority of the tasks involved in connections, however, we acknowledge that the benefits of this efficiency may not be appropriately shared with connection applicants. Accordingly, we consider that the problem may be better addressed via incremental changes to the current framework.

Tax efficiency of asset transfer

Within the SEM framework, in accordance with the TSO's decision, the connection applicant transfers some or all of the transmission connection assets that it constructed to the TAO for a nominal fee (1 Euro).

Under Australian tax legislation, such asset transfer would create a new tax liability for the TNSP. The liability arises because the TNSP receives the asset from the connection applicant at nominal value and so the fair value of the asset is treated as assessable income for tax purposes. This creates an upfront tax liability for the TNSP. The TNSP is entitled to claim tax depreciation deductions over the determined tax life of the asset. However, there is an NPV difference between the upfront tax liability and the deferred tax depreciation deductions, which results in a mismatch in tax cashflows.

While it is possible that the TNSP could recover this liability from the connection applicant via a one off payment or through ongoing connection fees, the precise calculation of the TNSP's liability would create significant complexity, adding to the costs of connection. A TNSP's tax is paid on the basis of overall income and deductions, not on an individual asset basis. A TNSP's tax liability also takes account of prior year losses. As such, calculating the precise liability of the asset transfer would require the TNSP to reveal its confidential tax position, or alternatively, the connection applicant would need to accept the reported tax liability calculated by the TNSP without full transparency. As this tax liability could represent a significant proportion of connection costs, the negotiation of the payment from the connection applicant to the TNSP is anticipated to be difficult and costly. [15]

These issues could be avoided if the connection applicant entered into a sale and purchase agreement to sell the asset to the TNSP for fair value. As part of this agreement, the TNSP could structure a connection charge to recover the cost of the asset over its economic life.

[15] We note that this transaction could also attract stamp duty, depending on jurisdictional requirements and particularly the characterisation of assets as 'fixtures' or 'chattels'. Depending on the relevant jurisdiction, the stamp duty could be calculated on the market value of the assets (rather than the amount paid), which could represent a significant additional tax liability for the TNSP receiving the assets. This would add to the complexity of the contract price negotiation and result in further costs for connection.

However, this would involve the negotiation of a sale and purchase agreement and would also complicate the connection process due to the need to negotiate an additional agreement.

In summary, under Australian tax law the SEM arrangements for asset transfer would not result in a tax efficient outcome for the connection and would add significant complexity to the negotiation of the connection price.

Conclusion

It is our view that the implementation of the SEM framework may not actually address the problems with the current connections framework, and in any case, would require substantial changes to the NEM regulatory framework for transmission which we consider are not commensurate with the problems being considered.

6 Proposed solution

6.1 The problem

Through stakeholder consultation and analysis of the current arrangements, we have concluded that the primary problem with the NEM transmission connection framework is that while there is contestability or competition in the design and construction of transmission assets, the benefits of this competition are not apparent to connection applicants.

Adding to our assessment of the current competitive approach at the construction and design level is the fact that, in our view, were contestability in the overall management or provision of connection services to be introduced there would be only limited interest among connection applicants, and limited competition among TNSPs or other parties for the overall management of connection services. Accordingly, we consider that implementing an arrangement such as the SEM would not be a commensurate response to the problem. In addition, for the reasons discussed above, we consider that the appointment of an independent body to oversee transmission system and connection standards may not result in an outcome that is substantially different, from the viewpoint of connection applicants.

6.2 Objectives and principles

We consider that the benefits available from the SEM framework could be delivered by implementing the following objectives:

- Provide connection applicants with the choice on whether extension services are negotiated or unregulated (i.e. require that the incumbent TNSP be the 'service provider of last resort')
- Share the benefits of the already existing competition in design and construction of transmission connection assets through improving transparency and requiring consistency with prescribed asset processes and standards. In doing so, require the publication of TNSP design standards and overarching 'design philosophy' (similar to that available for electricity distribution networks) to improve transparency in the negotiation process.
- Allow for connection applicants to 'trigger' their involvement in the connection service, if desired, which would provide them with the ability to:
    - Require the TNSP to competitively tender for both detailed design and construction of connection assets
    - Approve or reject design and construction contractor tenders that are proposed by the TNSP
- Improve the efficiency of connection through enabling parallel processing, where the connection applicant is certain of its investment and wishes to take on the risks involved in speeding up the connection process, by commencing some tasks with long lead times prior to the final Connection Agreement being signed.

Our proposed approach to solving the problem rests on three key principles, as described in Figure 5.

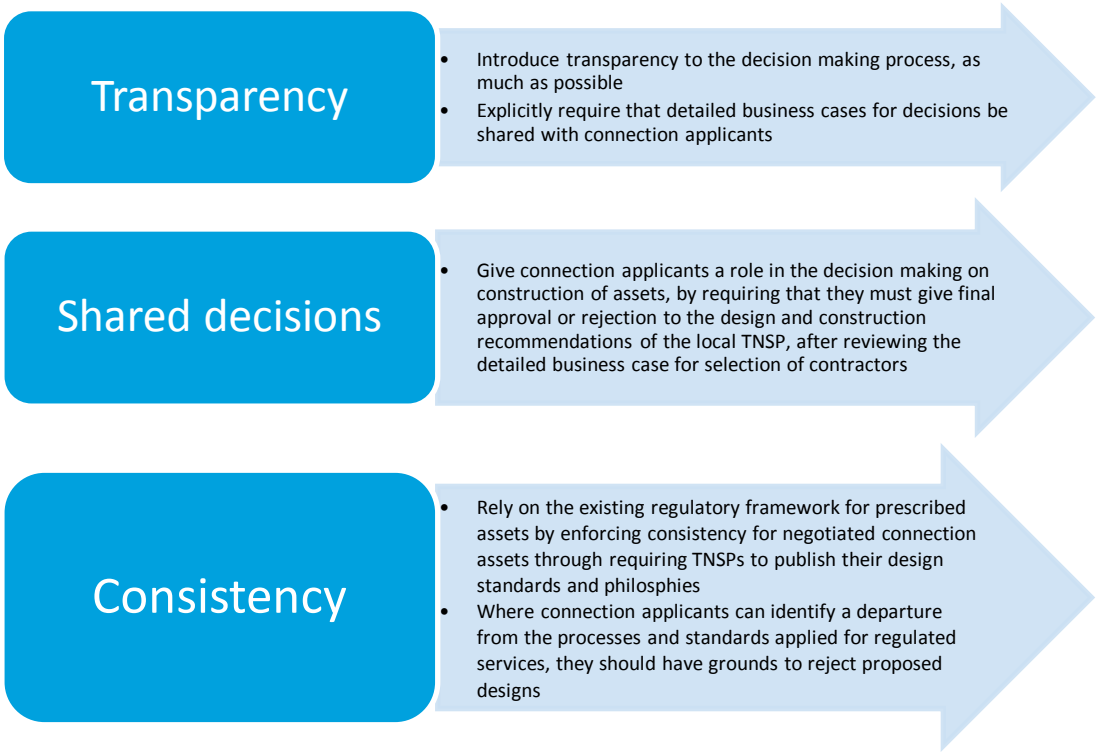

Figure 5: Principles for improving the connections process

6.3 Assumptions

In identifying an appropriate response to the problem, we have implicitly made the following assumptions, which we consider are reasonable:

1. At present, TNSPs do not engage their own field construction teams for most works, rather they seek competitive tenders for construction of both prescribed and negotiated assets in the substantial majority of cases, maintaining a panel of service providers from which they draw on to carry out works. In most cases, TNSPs also seek competitive tenders for detailed design services, particularly in relation to connection assets, however some TNSPs have in-house design teams. Even the TNSPs with in-house design teams sometimes choose to outsource detailed design services when, for example, their in-house teams do not have the capacity to undertake the work.
2. While it may be that every connection point has some unique characteristics that require some 'bespoke' design to meet the capacity of the precise connection, in terms of their functional specifications, transmission connection assets are highly similar (if not identical) to prescribed assets used to connect distributors. Connections are built to meet the same core technical design standards and criteria developed by the TNSP over time. These standard criteria typically cover the necessary levels of redundancy, protection systems, communications equipment, system security, busbar configurations, circuit breaker configurations and civil requirements (including layout, benching, fencing, etc.) for the connection.

3. Technical design standards and 'design philosophy' for prescribed assets are reviewed via the AER's transmission determination process in which significant capital expenditure projects are reviewed in detail against NER criteria that require efficient investment decisions in the context of the safe and reliable operation of the transmission system.
4. If connection services and assets are provided in accordance with the processes and prices for prescribed services and assets, then they are likely to be efficient in the context of the safe and reliable operation of the transmission system.

6.4 Proposed changes to the NER framework

6.4.1 Determining the Connection Point

Submissions and comments from stakeholders suggest that there are barriers to the contestability of extension services. The powers to obtain easements for extension assets are provided to TNSPs through jurisdictional legislation. While developers and other parties may also access easement rights, the TNSP is in most cases better placed to negotiate easements on behalf of the connection applicant than other third parties, which improves their competitive position.

The TNSP is at an advantage in the provision of extensions due to its role as the incumbent local service provider. Should an independent third party contractor develop an extension on behalf of a connection applicant, there will be an interface with the transmission network which requires some negotiation, which raises the costs to third parties relative to the TNSP.

However, in some cases depending on the location and asset requirements, there may be a sufficiently competitive market for extension services which generates efficiencies in the connection process.

As recommended in submissions to the AEMC made by connection applicants, we consider that the connection applicant is the most appropriate party to determine whether there is a competitive market for extension services, and in doing so, identify where the 'connection point' is, being some point between the connection applicant's own assets and the substation or shared network asset to which it is connected. We do not consider that the connection point needs to be precisely determined in the NER, because connection applicants should be given the ability to obtain value from competitively carrying out the design and construction of extension assets, where possible. In addition, we consider that it is difficult to standardise an appropriate boundary point for connection services, as the requirements of the connection applicant will depend on voltage, capacity, location, technology, etc.

Should the connection applicant determine that there are barriers to the competitive provision of extensions, then it should identify the connection point as being close to its own assets and any extension should be provided as part of the TNSP's Connection Service. This arrangement has parallels to the 'Retailer of last resort' provisions in jurisdictional energy legislation.

Conversely, where the connection applicant observes that there is sufficient competition in the market for extension services in relation to its particular requirements, then it should

determine the connection point as close to the TNSP's substation fence or other shared network asset to which it is connected.

We consider that, ideally, the connection applicant should identify the connection point at the time of its connection enquiry. However, we consider further consultation on the timing of this notification is needed. An explicit provision in the NER will be needed to identify the decision of connection point as that of the connection applicant (rather than 'an agreed point' as the NER currently states). For example, changes to the NER could be made as new Rule 5.3.2(a1):

> 'A Connection enquiry must include the Connection Applicant's decision on the *Connection Service Boundary*.'

Connection Service Boundary could be defined as:

> 'a point marking the boundary between negotiated connection service assets and unregulated connection service assets. This point must be located between:
>
> i. the Connection Applicant's own assets; and
>
> ii. the fence (or boundary) of any new or existing substation required to connect the Connection Applicant to the shared network.'

6.4.2 Triggering an open and contestable process

Based on our review of the current connections framework in the NER and issues discussed in consultation with stakeholders, we consider that an appropriate way to address the problems with the current framework is to add a new step in the NER process to allow the connection applicant to 'trigger' a number of actions, at their discretion.

Once the negotiation of access standards has been completed (after step 9 in Table 4 above), we consider that the connection applicant should be given the power to do the following:

- Require the TNSP to competitively procure detailed design services for the transmission connection assets from its own panel of providers, where previously some TNSPs may have carried out this work in-house. We consider TNSPs should themselves be able to tender for this work, however, the connection applicant should be given the power to select the final provider from the competitive offers. In doing so, the connection applicant can make its own decisions about the relative trade-offs within competitive offers, for example, connection price versus time taken to construct. These trade-off decisions may differ from those made by the TNSP (in cases where it has outsourced design services). In practice, we consider it appropriate for the TNSP to recommend an option, however that the connection applicant may reject this recommended option and select one of the other options from the competitive offers.
- Require the TNSP to competitively procure construction services for the transmission connection assets from its own panel of providers. The connection applicant should be given the power to approve or reject the service provider recommended by the TNSP, or select the provider from a range of options presented to the connection applicant.

There should be a timeframe specified in the NER such that, following the agreement of all negotiated access standards, the connection applicant has the right to trigger the contestable process within 10 business days (to ensure that the TNSP's Offer to connect can appropriately reflect the process). The tendering processes and selection of contractors should take place prior to the finalisation of a Connection Agreement so that the final agreement can reflect the actual underlying costs of connection, rather than a budget estimate.

This new step could be expressed as a new Rule 5.3.4B, for example:

> 'Decision Point: Within 10 business days of finalising all Negotiated access standards for connection (5.3.4A), the Connection Applicant must notify the TNSP whether it intends to invoke the *Competitive Design and Construction Services Trigger*.'

Competitive Design and Construction Services Trigger could be defined as

> 'the requirement for a TNSP to seek competitive (at least three) quotes for design and/or construction of transmission connection assets from approved contractors (including the TNSP's own team), where possible. Where the *Competitive Design and Construction Services Trigger* is invoked, the Connection Applicant must be responsible for the final approval of a contractor to design and/or construct the transmission connection assets (where that contractor is on the TNSP's own panel of providers or where the TNSP itself is selected by the connection applicant as the preferred contractor to design and/or construct the transmission connection assets). The TNSP must provide copies of all competitive tenders it receives to the Connection Applicant as well as other information to enable it to assess each option.'

In some cases, connection applicants may wish to remain somewhat separated from the connection process and exercise their right to receive and pay for a connection service that is managed entirely by the TNSP, in which case they should be able to elect to do so. In these cases, the connection applicant would advise the TNSP of its intention not to invoke the *Competitive Design and Construction Services Trigger*.

6.4.3 Parallel processing

At present, until a Connection Agreement is finalised, no progress on the management, design or construction of the connection is carried out, meaning that even once a Connection Agreement is finalised, there is a long timeframe to achieve connection. Some connection applicants have indicated that they are willing to take on risk in order to reduce the timeframe to connect.

We consider that for processes with long lead times such as the negotiation of easements, environmental approvals and procurement of transmission assets, the connection applicant should be given the power to require the TNSP to commence the processes early.

This parallel processing would only occur where the connection applicant is confident in its decision to connect at the designated point and is willing to take on the risk that either:

- The Connection Agreement is never finalised and the costs incurred by the TNSP in the process, including any easement negotiation, environmental approval or procurement costs, are sunk and must still be paid by the connection applicant

- The arrangements in the final Connection Agreement mean that changes to easements or assets procured need to be made, creating costs to the connection applicant.

This requirement for parallel processing should be triggered at a similar time as the connection applicant triggers open and contestable processes (that is, after step 9 in Table 4 above). It would require an additional step in the process described in the NER, which could be expressed similarly to the *Competitive Design and Construction Services Trigger* above, for example:

> 'Decision Point: Within 10 business days of finalising all Negotiated access standards for connection (5.3.4A), the Connection Applicant must notify the TNSP whether it intends to invoke the *Parallel Processing Trigger*.'

Parallel Processing Trigger could be defined as:

> 'in relation to a transmission connection service, the requirement for a TNSP to commence:
>
> a) Easement negotiations; and/or
>
> b) Seeking environmental approvals for transmission connection assets; and/or
>
> c) Procurement of major connection assets,
>
> as soon as possible after notification from the Connection Applicant. Where the *Parallel Processing Trigger* is invoked, the Connection Applicant becomes liable for any additional reasonable costs incurred by the TNSP due to later changes in the connection characteristics or requirements following the *Parallel Processing Trigger.*

6.4.4 Additional issue for further consultation – Access standards

Our review has focused on the feasibility of introducing contestability in the construction of transmission connection assets. In relation to the timeliness of negotiating access standards for new generators and large customers, we consider that further consultation with stakeholders is needed to properly identify how this process can be improved.

We understand the need for setting minimum standards for connecting parties to maintain the integrity of the electricity network, as well as the importance of effective negotiation to cater for the unique locational aspects of connections and ensure an efficient, reliable outcome, which may require above minimum access standards. However, it is not clear to us why both a minimum and automatic access standard need to be determined for connections, or in particular, why the automatic access standard differs from the minimum requirements. In addition, the negotiation process for access standards is cumbersome and lacks transparency, with connection applicants reporting that they are rarely provided with reasoning or insights into why higher access standards are required by the TNSP.

Given the reported costs incurred and time taken in negotiating access standards for connections, we consider that the need for both a minimum and automatic standard needs to be reconsidered by the AEMC (in consultation with industry) as part of its Transmission Frameworks Review. We consider that our recommendations for improving transparency and consistency with prescribed assets through shared decision making should go some way to improving the overall connection process, including the negotiation of access

standards. However, in our view, further consultation on the need for both minimum and automatic access standards is required.

6.5 Assessment of proposed solution

6.5.1 Introducing transparency

The NER currently requires TNSPs to provide information to connection applicants to enable them to effectively negotiate. Despite this, stakeholders indicated that they very rarely obtain information on the underlying costs of transmission connection services that are incurred by the TNSP, nor satisfactory justification for decisions around connection applicant access standards and the choice of transmission connection assets.

We consider that as part of enabling the connection applicant to 'trigger' an open and contestable process, the requirement that the connection applicant can approve or reject a proposed transmission design or construction tender will introduce transparency in the decision making and underlying costs that is not currently present. In order to approve or reject a design tender or recommended construction tender, connection applicants would need to understand the underlying costs and reasoning for the choices of assets, standards, designs, etc. We believe that TNSPs' project management costs and profit margins for connection services should be made apparent to connection applicants as part of this process.

We consider that injecting transparency into the connections process will facilitate a more efficient level of dispute resolution than that currently occurring. In addition, the introduction of parallel processing, reducing the timeframe for connection, should enable connection applicants more time within their commercial timeframes to consider dispute resolution options, should they be unsatisfied with the TNSP's requirements in the Offer to connect.

6.5.2 Consistency with prescribed assets

The value of transparency can be improved by applying an overarching principle of requiring consistency with prescribed assets. Allowing visibility to the connection applicant of the TNSPs' requirements and processes with those for prescribed assets would enable them to better determine if consistency is being applied to the connection assets.

We note that during consultations, some stakeholders questioned the need for standards that are equivalent to those for the shared network, where connection assets are stand alone and would only serve a single connection applicant. While this argument is relevant for distribution assets that are connected to a single customer, the nature of transmission networks and the size of customer and generator connections to the transmission network mean that the operation and reliability of stand-alone connection assets are likely to impact the operation of the shared network. Accordingly, it is our view that ensuring consistency with prescribed assets is an appropriate objective.

Technical standards for electricity distribution assets are publicly available. While we acknowledge that transmission requirements differ from distribution, we consider that the TNSPs should be required to publish their design standards and overarching 'design philosophy' to assist connection applicants in the negotiation process. This requirement

could be explicitly stated in the NER or alternatively could be the subject of a separate guideline for TNSPs issued under the NER.

Where the requirements for connection assets differ from the overarching design standards for similar prescribed assets, TNSPs should be required to explain and defend their reasoning to connection applicants.

6.5.3 Assessment criteria

In considering whether the amendments to the connections framework that we have proposed are likely to solve the problem that we have defined, we have developed a set of criteria for assessment of our proposed amendments and the SEM framework. Table 9 outlines the criteria and assessment.

Table 9: Proposed solution – criteria and assessment

Criteria	Current NEM framework	SEM framework	Proposed solution
Achieves contestability in construction of connection assets	√ - In most cases, already occurring (though the benefits may not be being shared)	√ - Connection applicant builds and transfers to the TAO	√ - Ensures that connection applicants can force competitive tendering and have a role in the process to enable them to access the benefits of the competitive construction market.
Improves information asymmetry problems	X	√ - Requires independent body to provide transparency and carryout information sharing	√ - Enables connection applicant a role in the process to improve transparency and relies on consistency with regulatory framework for prescribed assets
Ensures asset integrity and avoids issues associated with maintenance, spares for unique assets	√	√ - Requires independent body to ensure asset consistency and arrange maintenance of new assets	√
Provides incentives to connect efficiently	X	√ - Connection applicant manages the connection in accordance with its own risk profile and commercial timeframes	√ - Transparency in the process should improve timeliness, also parallel processing would add efficiency

Criteria	Current NEM framework	SEM framework	Proposed solution
Minimises the costs of regulation	√	X – Requires significant additional regulation	√ - Requires some amendments to the negotiating framework but avoids the need for a new regulatory body to approve design standards
Enables efficient dispute resolution	X – Current level of dispute resolution is too low, reflecting the weakened bargaining position of the connection applicant	√ - Independent body acts as interface between connection applicant and TAO, thus disputes may be less likely to occur, which may be considered desirable (although this depends on the operation and incentives of the TSO-equivalent in the NEM)	√ - Transparency in costs and process should improve the bargaining position of connection applicants, increasing the level of dispute resolution from zero
Balances the interests of TNSPs (safe, reliable, compliant network) and connection applicants (time, cost, reliability of network)	X	√ - although removes the network planning role from the TNSP.	√ - Shifts the balance back towards the connection applicant through transparency, shared decisions and consistency with the prescribed framework
Achieves tax efficiency	√ - No asset transfer required, tax payments are structured over the life of the asset in line with depreciation	X – Creates an additional upfront tax liability equal to the difference between the upfront tax liability and the recurrent tax depreciation.	√ - No asset transfer is envisaged, same as the NEM.

7 Limitation of our work

General use restriction

This report is prepared solely for the internal use of The Australian Energy Market Commission. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose set out in our proposal dated 5 April 2012. You should not refer to or use our name or the advice for any other purpose.

Appendix A – NTSC for TransGrid

The Negotiated Transmission Service Criteria (NTSC) are broad criteria to be applied in negotiating the terms and conditions of access (connection), including prices and access charges. The AER must specify the NTSC that apply to each TNSP as part of its transmission determinations. In practice, the AER has generally applied the same NTSC to each TNSP.

The following criteria were approved by the AER as part of its transmission determination for TransGrid for 2009-14.

Attachment 1: Proposed Negotiated Transmission Service Criteria

National Electricity Objective

1. The *terms and conditions of access* for a *negotiated transmission service*, including the price that is to be charged for the provision of that service and any *access charges*, should promote the achievement of the *national electricity objective*.

Criteria for terms and conditions of access

Terms and Conditions of Access

2. The *terms and conditions of access* for a *negotiated transmission service* must be fair and reasonable and consistent with the safe and reliable operation of the power system in accordance with the NER.

3. The *terms and conditions of access* for a *negotiated transmission service* (including, in particular, any exclusions and limitations of liability and indemnities) must not be unreasonably onerous taking into account the allocation of risk between the TNSP and the other party, the price for the *negotiated transmission service* and the costs to the TNSP of providing the *negotiated transmission service*.

4. The *terms and conditions of access* for a *negotiated transmission service* must take into account the need for the service to be provided in a manner that does not adversely affect the safe and reliable operation of the power system in accordance with the NER.

Price of Services

5. The price for a *negotiated transmission service* must reflect the costs that the TNSP has incurred or incurs in providing that service, and must be determined in accordance with the principles and policies set out in the *Cost Allocation Methodology*.

6. Subject to criteria 7 and 8, the price for a *negotiated transmission service* must be at least equal to the avoided cost of providing that service but no more than the cost of providing it on a stand alone basis.

7. If the *negotiated transmission service* is a *shared transmission service* that:

(i) exceeds any network performance requirements which it is required to meet under any relevant electricity legislation; or

(ii) exceeds the network performance requirements set out in schedule 5.1a and 5.1 of the NER

then the difference between the price for that service and the price for the *shared transmission service* which meets network performance requirements must reflect the TNSP's incremental cost of providing that service (as appropriate).

8. If the *negotiated transmission service* is the provision of a *shared transmission service* that does not meet or exceed the network performance requirements, the difference between the price for that service and the price for the *shared transmission service* which meets, but does not exceed, the network performance requirements should reflect the amount of the TNSP's avoided cost of providing that service (as appropriate).

9. The price for a *negotiated transmission service* must be the same for all *Transmission Network Users* unless there is a material difference in the costs of providing the negotiated transmission service to different *Transmission Network Users* or classes of *Transmission Network Users*.

10. The price for a *negotiated transmission service* must 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 must reflect the extent to which the costs of that asset is being recovered through charges to that other person.

11. The price for a *negotiated transmission service* must be such as to enable the TNSP to recover the efficient costs of complying with all regulatory obligations associated with the provision of the *negotiated transmission service*.

Criteria for access charges

Access Charges

12. Any *access charges* must be based on costs reasonably incurred by the TNSP in providing *Transmission Network User* access and (in the case of compensation referred to in clauses 5.4A(h) to (j) of the NER) on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in clauses 5.4A(h) to (j) of the NER where an event referred to in those paragraphs occurs (as appropriate).

Appendix B – TransGrid's Negotiating Framework

A TNSP's Negotiating Framework sets out the procedure to be followed during negotiations for a Negotiated Service. As part of making a transmission determination, the AER must approve a TNSP's proposed Negotiating Framework, if satisfied that it meets the requirements of the NER.

The following document was approved by the AER as part of its transmission determination for TransGrid over 2009-14.

2 Negotiating framework

Proposed Negotiating Framework for Provision of a Negotiated Transmission Service

1 July 2009 to 30 June 2014

30 May 2008

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Background

A. Clause 6A.9.5 of the National Electricity Rules ("NER") provides that:

(a) Transmission Network Service Providers must prepare a document setting out the procedure to be followed during negotiations between that provider and any person who wishes to receive a Negotiated Transmission Service as to the terms and conditions of access for the provision of the service;

(b) the negotiating framework must comply with and be consistent with the applicable requirements of a transmission determination applying to the provider; and

(c) the negotiating framework must comply with and be consistent with the applicable requirements of clause 6A.9.5(c) which sets out the minimum requirements for a negotiating framework.

B. TransGrid is registered with NEMMCO as a Transmission Network Service Provider.

C. This document has been prepared in fulfilment of TransGrid's obligations under clause 6A.9.5 of the NER to establish a negotiating framework.

D. This document applies to TransGrid and any Service Applicant who applies to receive a Negotiated Transmission Service.

E. A Negotiated Transmission Service is any of the following services:

(a) a shared transmission service that:

(1) exceeds the network performance requirements (whether as to quality or quantity) (if any) as that shared transmission service is required to meet under any jurisdictional electricity legislation; or

(2) except to the extent that the network performance requirements which that shared transmission service is required to meet are prescribed under any jurisdictional electricity legislation, exceeds or does not meet the network performance requirements (whether as to quality or quantity) as are set out in schedule 5.1a or 5.1;

(b) connection services that are provided to serve a Transmission Network User or group of Transmission Network Users, at a single transmission network connection point, other than connection services that are provided by one Network Service Provider to another Network Service Provider to connect their networks where neither of the Network Service Providers is a Market Network Service Provider; or

(c) use of system services provided to a Transmission Network User and referred to in rule 5.4A(f)(3) in relation to augmentations or extensions

required to be undertaken on a transmission network as described in rule 5.4A;

but does not include an above-standard system shared transmission service or a market network service.

TransGrid's Negotiating Framework

1. Application of negotiating framework

1.1 This negotiating framework applies to TransGrid and each Service Applicant who has made an application in writing to TransGrid for the provision of a Negotiated Transmission Service.

1.2 TransGrid and any Service Applicant who wishes to receive a Negotiated Transmission Service from TransGrid should comply with the requirements of this negotiating framework.

1.3 The requirements set out in this negotiating framework are additional to any requirements or obligations contained in Chapters 4, 5 and 6A of the NER. In the event of any inconsistency between this negotiating framework and any other requirements in the NER, the requirements of the NER will prevail.

1.4 Nothing in this negotiating framework or in the NER will be taken as imposing an obligation on TransGrid to provide any service to the Service Applicant.

2. Obligation to negotiate in good faith

2.1 TransGrid and the Service Applicant should negotiate in good faith the terms and conditions of access for the provision by TransGrid of the Negotiated Transmission Service sought by the Service Applicant.

2.2 Consistent with Clause 6A.9.1(1) of the NER the price for a *negotiated transmission service* should be based on the costs incurred in providing that service, determined in accordance with the principles and policies set out in the *Cost Allocation Methodology* which has been approved for TransGrid by the Australian Energy Regulator.

3. Timeframe for commencing, progressing and finalising negotiations

3.1 Paragraphs 3.3 and 3.4 set out the timeframe for commencing, progressing and finalising negotiations in relation to applications for Negotiated Transmission Services under Chapter 5 of the NER, and for applications for Negotiated Transmission Services other than under Chapter 5 of the NER respectively.

3.2 The timeframes set out in paragraphs 3.3 and 3.4 may be suspended in accordance with paragraph 8.

3.3 Applications for Negotiated Transmission Services under Chapter 5 of the NER

3.3.1 Where the Negotiated Transmission Service is a service sought under Chapter 5, the specified time for commencing, progressing and finalising negotiations with a Service Applicant for the purposes of clause 6A.9.5 of the Rules is as set out in Chapter 5 of the NER.

3.3.2 TransGrid and the Service Applicant shall use reasonable endeavours to adhere to the time periods specified in paragraph 3.3.1 during the negotiation for the supply of the Negotiated Transmission Service.

3.4 Applications for Negotiated Transmission Services other than under Chapter 5 of the NER

3.4.1 Where the application is in respect of a Negotiated Transmission Service other than a service sought under Chapter 5, the specified time for commencing progressing and finalising negotiations with a Service Applicant for the purposes of clause 6A.9.5 of the NER is as set out in Table 1.

3.4.2 TransGrid and the Service Applicant shall use reasonable endeavours to adhere to the time periods specified in Table 1.

3.4.3 The preliminary program finalised under C in Table 1 may be modified from time to time by agreement of the parties, where such agreement must not be unreasonably withheld. Any such amendment to the preliminary program shall be taken to be a reasonable period of time for commencing, progressing and finalising negotiations with a Service Applicant for the provision of the Negotiated Transmission Service for the purposes of 6A.9.5(5) of the NER. The requirement in paragraph 3.4.2 applies to the last amended preliminary program.

Table 1

	Event	Indicative timeframe
A.	Receipt of written application for a Negotiated Transmission Service	X
B.	Parties meet to discuss a preliminary program with milestones for supply of the Negotiated Transmission Service that represent a reasonable period of time for commencing, progressing and finalising negotiations for the provision of the Negotiated Transmission Service	X + 20 business days
C.	Parties finalise preliminary program, which may include, without limitation, milestones relating to: ▪ the request and provision of commercial information; and ▪ notification and consultation with NEMMCO and / or any affected Transmission Network Users.	X + 30 business days
D.	TransGrid provides Service Applicant with an offer for the Negotiated Transmission Service;	X + 120 business days

	Event	Indicative timeframe
E.	Parties finalise negotiations	X + 160 business days

3.5 Subject to paragraph 3.3 and 3.4, TransGrid and the Service Applicant must, following a request by the Service Applicant, use their reasonable endeavours to:

3.5.1 hold a meeting within 20 Business Days of receipt of the application by the Service Applicant, or such other period as agreed by the parties, in order to agree a timetable for the conduct of negotiations and to commence discussion regarding other relevant issues;

3.5.2 progress the negotiations for the provision of a Negotiated Transmission Service by TransGrid such that the negotiations may be finalised in accordance with paragraph 3.5.1;

3.5.3 adhere to any timetable established for the negotiation and to progress the negotiation in an expeditious manner; and

3.5.4 finalise the negotiations for the provision of a Negotiated Transmission Service by TransGrid within a time period agreed by the parties.

3.6 Notwithstanding paragraph 3.1, or any other provision of this negotiating framework, the timeframes set out in paragraphs 3.3 and 3.4 :

3.6.1 do not commence until payment of the amount to TransGrid pursuant to paragraph 10;

3.6.2 re-commence if there is a material change in the Negotiated Transmission Network service sought by the Service Applicant, unless TransGrid agrees otherwise.

4. Provision of Initial Commercial Information by Service Applicant

Obligation to provide Initial Commercial Information

4.1 Within a time agreed by the parties TransGrid must use its reasonable endeavours to give notice to the Service Applicant requesting Commercial Information held by the Service Applicant that is reasonably required by TransGrid to enable it to engage in effective negotiations with the Service Applicant in relation to the application and to enable TransGrid to submit Commercial Information to the Service Applicant.

4.2 Subject to paragraphs 4.3 and 4.4, the Service Applicant must use its reasonable endeavours to provide TransGrid with the Commercial Information

requested by TransGrid in accordance with paragraph 4.1 within 10 Business Days of that request, or within a time period as agreed by the parties.

4.3 Notwithstanding paragraph 4.1, the obligation under paragraph 4.1 is suspended as at the date of notification of a dispute if a dispute under this negotiating framework arises until conclusion of the dispute in accordance with paragraph 9.

Confidentiality Requirements – Commercial Information

4.4 For the purposes of this paragraph 4, Commercial Information does not include:

4.4.1 confidential information provided to the Service Applicant by another person; or

4.4.2 information that the Service Applicant is prohibited, by law, from disclosing to TransGrid.

4.5 Commercial Information may be provided by the Service Applicant subject to conditions including the condition that TransGrid must not disclose the Commercial Information to any other person unless the Service Applicant consents in writing to the disclosure. The Service Applicant may require TransGrid to enter into a confidentiality agreement, on terms reasonably acceptable to both parties, with the Service Applicant in respect of any Commercial Information provided to TransGrid.

4.6 A consent provided by the Service Applicant in accordance with paragraph 4.5 may be subject to the condition that the person to whom TransGrid discloses the Commercial Information must enter into a separate confidentiality agreement with the Service Applicant.

5. Provision of additional Commercial Information by the Service Applicant

Obligation to provide additional Commercial Information

5.1 TransGrid may give a notice to the Service Applicant requesting the Service Applicant to provide TransGrid with any additional Commercial Information that is reasonably required by TransGrid to enable it to engage in effective negotiations with the Service Applicant in relation to the provision of a Negotiated Transmission Service or to clarify any Commercial Information provided pursuant to paragraph 4.

5.2 The Service Applicant must use its reasonable endeavours to provide TransGrid with the Commercial Information requested by TransGrid in accordance with paragraph 5.1 within 10 Business Days of the date of the request under paragraph 5.1, or such other period as agreed by the parties.

Confidentiality requirements

5.3 For the purposes of this paragraph 5, Commercial Information does not include:

5.3.1 confidential information provided to the Service Applicant by another person; or

5.3.2 information that the Service Applicant is prohibited, by law, from disclosing to TransGrid; and

5.4 Commercial Information may be provided by the Service Applicant subject to conditions including the condition that TransGrid must not disclose the Commercial Information to any other person unless the Service Applicant consents in writing to the disclosure. The Service Applicant may require TransGrid to enter into a confidentiality agreement, on terms reasonably acceptable to both parties, with the Service Applicant in respect of any Commercial Information provided to TransGrid.

5.5 A consent provided by the Service Applicant in accordance with paragraph 5.4 may be subject to the condition that the person to whom TransGrid discloses the Commercial Information must enter into a separate confidentiality agreement with the Service Applicant.

6. Provision of Commercial Information by TransGrid

Obligation to provide Commercial Information

6.1 TransGrid shall provide the Service Applicant with all Commercial Information held by TransGrid that is reasonably required by a Service Applicant to enable it to engage in effective negotiations with TransGrid for the provision of a Negotiated Transmission Service within a timeframe agreed by the parties, including the following information:

6.1.1 a description of the nature of the Negotiated Transmission Service including what TransGrid would provide to the Service Applicant as part of that service;

6.1.2 the terms and conditions on which TransGrid would provide the Negotiated Transmission Service to the Service Applicant;

6.1.3 the reasonable costs and/or the increase or decrease in costs (as appropriate) of providing the Negotiated Transmission Service to the Service Applicant which demonstrate to the Service Applicant that the charges for providing the Negotiated Transmission Service reflect those costs and/or the cost increment or decrement (as appropriate).

Confidentiality requirements

6.2 For the purposes of paragraph 6.1, Commercial Information does not include:

6.2.1 confidential information provided to TransGrid by another person; or

6.2.2 information that TransGrid is prohibited, by law, from disclosing to the Service Applicant.

6.3 TransGrid may provide the Commercial Information in accordance with paragraph 6.1 subject to relevant conditions including the condition that the Service Applicant must not disclose the Commercial Information to any other person unless TransGrid consents in writing to the disclosure. TransGrid may require the Service Applicant to enter into a confidentiality agreement with TransGrid, on terms reasonably acceptable to both parties, in respect of Commercial Information provided to the Service Applicant.

6.4 A consent provided by a Service Applicant in accordance with paragraph 6.3 may be subject to the condition that the person to whom the Service Applicant discloses the Commercial Information must enter into a separate confidentiality agreement with TransGrid.

7. Determination of impact on other Transmission Network Users and consultation with affected Transmission Network Users

7.1 TransGrid should determine the potential impact on Transmission Network Users, other than the Service Applicant, of the provision of the Negotiated Transmission Service.

7.2 TransGrid should notify and consult with any affected Transmission Network Users and ensure that the provision of the Negotiated Transmission Service does not result in non-compliance with obligations in relation to other Transmission Network Users under the NER.

8. Suspension of Timeframe for Provision of a Negotiated Transmission Service

8.1 The timeframes for negotiation of provision of a Negotiated Transmission Service as contained within this negotiating framework, or as otherwise agreed between the parties, are suspended if:

8.1.1 within 15 Business Days of TransGrid providing the Commercial Information to the Service Applicant pursuant to paragraph 6.1, the Service Applicant does not formally accept that Commercial

Information and the parties have agreed a date for the undertaking and conclusion of commercial negotiations;

8.1.2 a dispute in relation to the Negotiated Transmission Service has been notified to the AER under clause 6A.30.1, from the date of notification of that dispute to the AER until:

(a) the withdrawal of the dispute under clause 6A.30.1(c) of the NER;

(b) the termination of the dispute by the commercial arbitrator in accordance with clause 6A.30.5(d) or (e) of the NER; or

(c) determination of the dispute by the commercial arbitrator under clause 6A.30.6(b) of the NER;

8.1.3 within 10 Business Days of TransGrid requesting additional Commercial Information from the Service Applicant pursuant to paragraph 5, the Service Applicant has not supplied that Commercial Information;

8.1.4 without limiting paragraphs 8.1.1 to 8.1.3, either of the parties does not promptly conform with any of its obligations as required by this negotiating framework or as otherwise agreed by the parties;

8.1.5 TransGrid has been required to notify and consult with any affected Transmission Network Users under paragraph 7.2 or NEMMCO at any time, from the date of notification to the affected Transmission Network Users or NEMMCO until the end of the time limit specified by TransGrid for any affected Transmission Network Users or NEMMCO, or the receipt of such information from the affected Transmission Network Users or NEMMCO whichever is the later regarding the provision of the Negotiated Transmission Service.

9. Dispute Resolution

9.1 All disputes between the parties as to the terms and conditions of access for the provision of a Negotiated Transmission Service are to be dealt with in accordance with Part K of Chapter 6A of the NER.

10. Payment of TransGrid's Costs

10.1 Prior to commencing negotiations, the Service Applicant shall pay an application fee to TransGrid. Where the application is for a Negotiated Transmission

Service under Chapter 5 of the NER, this payment is made in accordance with clause 5.3.3(c)(5).

10.2 The application fee lodged pursuant to paragraph 10.1 will be deducted from the reasonable Costs incurred in processing the Service Applicant's application to TransGrid for the provision of a Negotiated Transmission Service.

10.3 From time to time, TransGrid may give the Relevant Service Applicant a notice setting out the reasonable Costs incurred by TransGrid and the off-set of any amount applicable under paragraph 10.1.

10.4 If the aggregate of the Costs exceed the amount paid by the Service Applicant pursuant to paragraph 10.1, the Service Applicant must, within 20 Business Days of the receipt of a notice in accordance with paragraph 10.3, pay TransGrid the amount stated in the notice.

10.5 TransGrid may require the Service Applicant to enter into a binding agreement addressing conditions, guarantees and other matters in relation to the payment of on-going Costs.

11. Termination of Negotiations

11.1 The Service Applicant may elect not to continue with its application for a Negotiated Transmission Service and may terminate the negotiations by giving TransGrid written notice of its decision to do so.

11.2 TransGrid may terminate a negotiation under this framework by giving the Service Applicant written notice of its decision to do so where:

11.2.1 TransGrid believes on reasonable grounds that the Service Applicant is not conducting the negotiation under this negotiating framework in good faith;

11.2.2 the Service Applicant consistently fails to comply with the requirements of the negotiating framework;

11.2.3 the Service Applicant fails to comply with an obligation in this negotiating framework to undertake or complete an action within a specified or agreed timeframe, and does not complete the relevant action within 20 Business Days of a written request from TransGrid;

11.2.4 An act of Solvency Default occurs in relation to the Service Applicant.

12. Giving notices

12.1 A notice, consent, information, application or request that must or may be given or made to a party under this document is only given or made if it is in writing and delivered or posted to that party at its address set out below.

If a party gives the other party 5 Business Days' notice of a change of its address, a notice, consent, information, application or request is only given or made by that other party if it is delivered or posted to the latest address.

TransGrid

Name:	TransGrid
Address:	201 Elizabeth Street (cnr Park Street) Sydney NSW 2000

Service Applicant

Name:	Service Applicant
Address:	The nominated address of the Service Applicant provided in writing to TransGrid as part of the application

Time notice is given

12.2 A notice, consent, information, application or request is to be treated as given or made at the following time:

12.2.1 if it is delivered, when it is left at the relevant address; or

12.2.2 if it is sent by post, 2 Business Days after it is posted.

12.2.3 If sent by facsimile transmission, on the day the transmission is sent (but only if the sender has a confirmation report specifying a facsimile number of the recipient, the number of pages sent and the date of transmission); or.

12.2.4 If sent by email once acknowledged as received by the addressee.

12.3 If a notice, consent, information, application or request is delivered after the normal business hours of the party to whom it is sent, it is to be treated as having been given or made at the beginning of the next Business Day.

13. Definitions and interpretation

Definitions

13.1 In this document the following definitions apply:

Business Day means a day on which all banks are open for business generally in Sydney, New South Wales.

Commercial Information shall include at a minimum, the following classes of information:

- details of corporate structure;
- financial details relevant to creditworthiness and commercial risk;
- ownership of assets;
- technical information relevant to the application for a Negotiated Transmission Service;
- financial information relevant to the application for a Negotiated Transmission Service;
- details of an application's compliance with any law, standard, NER or guideline.

Costs means any costs or expenses incurred by TransGrid in complying with this negotiating framework or otherwise advancing the Service Applicant's request for the provision of a Negotiated Transmission Service.

TransGrid trades under it's own name, ABN 19 622 755 774.

Solvency Default means the occurrence of any of the following events in relation to the Service Applicant:

(a) An originating process or application for the winding up of the Service Applicant (other than a frivolous or vexatious application) is filed in a court or a special resolution is passed to wind up the Service Applicant, and is not dismissed before the expiration of 60 days from service on the Service Applicant;

(b) A receiver, receiver and manager or administrator is appointed in respect of all or any part of the assets of the Service Applicant, or a provisional liquidator is appointed to the Service Applicant;

(c) A mortgagee, chargee or other holder of security, by itself or by or through an agent, enters into possession of all or any part of the assets of the Service Applicant;

(d) A mortgage, charge or other security is enforced by its holder or becomes enforceable or can become enforceable with the giving of notice, lapse of time or fulfilment of a condition;

(e) The Service Applicant stops payment of, or admits in writing its inability to pay, its debts as they fall due;

(f) The Service Applicant applies for, consents to, or acquiesces in the appointment of a trustee or receiver of the Service Applicant or any of its property;

(g) A court appoints a liquidator, provisional liquidator, receiver or trustee, whether permanent or temporary, of all or any part of the Service Applicant's property;

(h) The Service Applicant takes any step to obtain protection or is granted protection from its creditors under any applicable legislation or a meeting is convened or a resolution is passed to appoint an administrator or controller (as defined in the *Corporations Act 2001*), in respect of the Service Applicant;

(i) A controller (as defined in the *Corporations Act 2001*) is appointed in respect of any part of the property of the Service Applicant;

(j) Except to reconstruct or amalgamate while solvent, the Service Applicant enters into or resolves to enter into a scheme of arrangement, compromise or reconstruction proposed with its creditors (or any class of them) or with its members (or any class of them) or proposes re-organisation, re-arrangement moratorium or other administration of the Service Applicant's affairs;

(k) The Service Applicant is the subject of an event described in section 459C(2)(b) of the *Corporations Act 2001*; or

(l) Anything analogous or having a substantially similar effect to any of the events specified above happens in relation to the Service Applicant.

Interpretation

13.2 In this document, unless the context otherwise requires:

13.2.1 terms defined in the NER have the same meaning in this negotiating framework;

13.2.2 a reference to any law or legislation or legislative provision includes any statutory modification, amendment or re-enactment, and any subordinate legislation or regulations issued under that legislation or legislative provision;

13.2.3 a reference to any agreement or document is to that agreement or document as amended, novated, supplemented or replaced from time to time;

13.2.4 a reference to a paragraph, part, schedule or attachment is a reference to a paragraph, part, schedule or attachment of or to this document unless otherwise stated;

13.2.5 an expression importing a natural person includes any company, trust, partnership, joint venture, association, corporation, body corporate or governmental agency; and

13.2.6 a covenant or agreement on the part of two or more persons binds them jointly and severally.