

EnergyAustralia supplementary submission to MCE Standing Committee of Officials

National Framework for Electricity Distribution – Connection Procedures

2 April 2009



1 Overview

EnergyAustralia has prepared this information to supplement its main submission¹ to the Ministerial Council on Energy (MCE) Standing Committee of Officials (SCO) policy response on *Electricity Distribution Network Planning and Connection – A National Framework for Electricity Distribution Networks* (SCO paper). This supplementary submission sets out an alternative connection procedure to the one prepared by SCO in its policy response paper.

In our view, the proposed connection procedures and contractual arrangements proposed by SCO will not work with the contestability arrangements in NSW. In NSW, the customer has a choice of accredited service provider for the provision of connection assets but the DNSP has ultimate responsibility for the performance of the connection assets and the delivery of the connection service. The connection process therefore requires services and responsibilities to be clearly articulated and understood by all parties.

EnergyAustralia is committed to achieving a nationally consistent framework that can accommodate specific jurisdictional arrangements. Thus, we have been mindful of developing an approach that is simple and generic and appropriate for all jurisdictions in the national electricity market. The alternative connection procedure set out in this submission better reflects the contestability arrangements in NSW and it can easily be adopted in jurisdictions that have no or limited contestability arrangements.

The process set out in this supplementary submission only relates to standard contracts. A request from a customer to enter into a negotiated contract will follow a negotiated contract process and, where necessary, the negotiating framework prepared in accordance with clause 6.7.5 of the National Electricity Rules (Rules).²

The information in this supplementary submission presents:

- an alternative connection procedure to the one set out by SCO;
- four case studies covering simple through to more complex connections; and
- the reasoning and rationale for our position on the connection procedure and contracts.

In developing the connection procedure we have taken as our starting point good regulatory practice which in the context of connection procedures translates into clarity about obligations and services as well as having clear and realistic timeframes. As such our alternative approach to a standard connection procedure sets out:

- clear obligations;
- clear timeframes;
- clear understanding of the initial connection services provided by the DNSP; and
- simple approach to the commencement of the standard connection contract.

The case studies that we have prepared in section 3 of this submission cover generic examples of a simple “accept-and-connect” type connection through to more a complex “accept-consult-connect” type connection. Through these case studies we wish to demonstrate that connection services vary in technical complexity but the terms and conditions for each of these types of connections do not vary from the contractual standard terms and conditions. Further, they show that in NSW, DNSP’s provide monopoly services that assist in the contestable provision of the connection asset. For this reason, the connection contract must commence as soon as the DNSP accepts the customer’s application. This is the simplest and most practicable approach to commencing a connection contract.

¹ EnergyAustralia submission to the MCE SCO, National Framework for Electricity Distribution Networks and Capital Contributions, 10 March 2009 (main submission).

² As discussed in our main submission in section 3.6.1.

EnergyAustralia is hoping that the SCO will develop a national connection framework that will provide a seamless link between the national connection framework and the national energy customer framework. This supplementary submission seeks to offer practical assistance on the more detailed aspects of connection procedures under a contestable framework. The approach that we have outlined will more readily allow for this to occur. We trust that SCO will take these comments into its consideration during the next stage in developing the policy on the national connection framework.

2 An alternative to SCO's connection procedure

This section outlines EnergyAustralia's preferred connection framework and outlines an alternative connection procedure that is consistent with this preferred framework. The alternative connection procedure separately sets out the key stages in the connection process for:

- "accept-and-connect" connections; and
- large and complex connections.

We present four case studies of connections that range from simple "accept-and-connect" connections through to more complex and larger connections, including connections for embedded generators. In these practical examples we show the range of services provided by DNSPs during the construction of the connection asset and have proposed clear timelines for the performance of these services by the DNSP. The timelines are aimed at providing better service and certainty to customers seeking to connect to the distribution network.

All of these case studies follow a standard process and result in a standard connection contract regardless of their complexity. In the case of simple connections, the technical specifications for the connection are provided by the customer in the application form. The standard connection contract requires the customer's connection installation to comply with the network standards and the NSW Service and Installation Rules.³ Larger and more complex connections require more consultation with the customer which results in the certification of a design specific to the customer's connection and a technical schedule that forms part of the standard connection contract. A formal agreement is established between the customer, appointed accredited service provider and DNSP setting out their respective responsibilities including the requirement for the customer to construct the connection assets in accordance with the certified design. At EnergyAustralia this is called the ES 9 agreement for connection of developments (ES 9 agreement).

These case studies demonstrate the need for the standard contract to be deemed and commence when the DNSP accepts the customer's application.

2.1 Our preferred national framework for electricity distribution

EnergyAustralia's main submission presented details about our preferred approach to a national framework for electricity distribution network connections. This submission is intended to set out details of our alternative connection procedure that forms an important aspect of the national connection framework. A high level summary of our preferred connection framework is summarised below.

Key aspects of our preferred connection framework are as follows:

- A single distribution service contract for the initial connection and the ongoing distribution services. This is a deemed contract in that the customer is not required to sign a contract.
- The DNSP's published standard connection contract is treated as a standing offer to connect.
- The connection service contract commences at the time the DNSP accepts a completed application for connection service. The only basis for not accepting the customer's application is that it does not contain sufficient information for the DNSP to start the connection process.
- At most, three types of standard connection contract: one for load (including micro generation); one for unregistered embedded generators; and one for registered generators.⁴ The large and complex

³ NSW Department of Water and Energy, Service and Installation Rules of New South Wales, October 2006 (amended January 2009).

⁴ Note we consider that it may be possible to adopt a single connection contract for registered and unregistered embedded generators but this needs to be at the DNSP's discretion.

connections will require separate formal agreement setting out the responsibilities between the parties and a technical schedule specific to the connection.

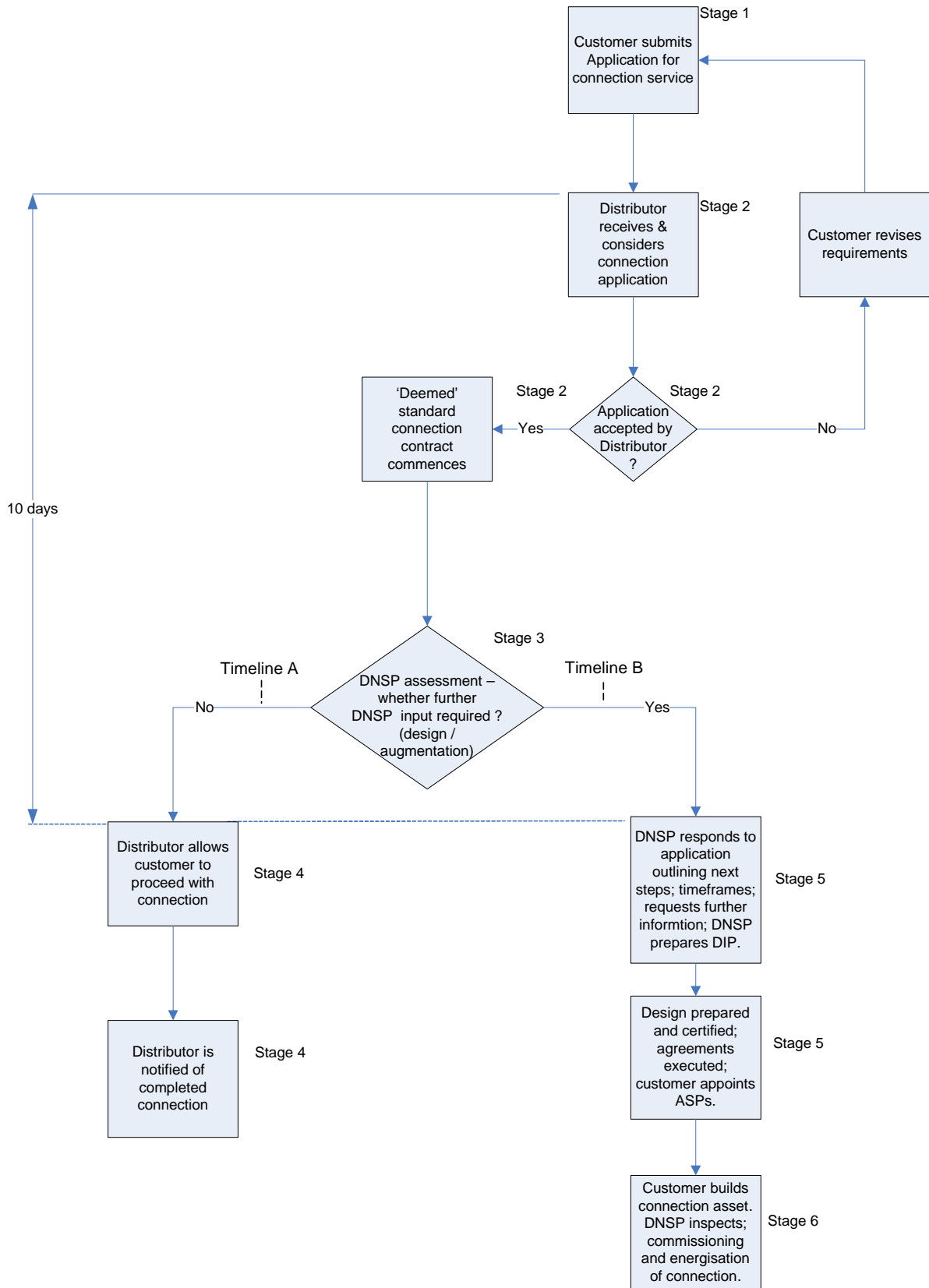
- Negotiated distribution services to be subject to the negotiating framework under Rule 6.7.5.
- The model/ minimum terms and conditions for the contracts are set out in the Rules.
- The AER has a compliance and enforcement role in regulating the standard connection contracts that comply with the model/minimum terms and conditions. We acknowledge that the AER may have a role in approving terms and conditions for standard contracts that seek to move away from the model/minimum terms and conditions.
- Clear timelines in the connection procedure for the services that are provided to customers by the DNSP.
- Timelines that accommodate the involvement of accredited service providers in the provision of distribution services.
- The connection contract remains in place on energisation and forms part of the ongoing contract for distribution services.

2.2 An alternative connection procedure

Diagram 1 sets out an alternative connection procedure that takes into account NSW contestability arrangements. The procedure could be adjusted to apply to other jurisdictions where contestability is limited.

The steps in the alternative connection procedure are explained in section 2.2.1.

Diagram 1 Connection procedure for standard connection service



2.2.1 Stages in the procedure for standard connection contracts

Stage 1. Application by customer

There may be an inquiry made by a customer prior to the submission of a connection application. During the inquiry stage there is an exchange of information between the customer and the DNSP. The customer is made aware of the standard connection contract including the terms and conditions and, in NSW, that certain connection services are contestable. In NSW, the contestability regime enables the customer to select a suitably qualified person(s) (accredited service provider) to carry out the customer-funded connection works.⁵

A customer may make a connection application in writing, either by completing an application form or in the form of a letter addressing all of the matters required by an application form. The application can be made by the customer or the customer's agents, including an accredited service provider.

The DNSP considers whether the connection application contains sufficient information. The DNSP either accepts the application or requests that the customer provides further information and resubmit the application. The only basis for not accepting an application is that it does not contain sufficient information for the DNSP to commence the connection process.

Stage 2. DNSP accepts the application for connection

The DNSP accepts the application when it determines that there is sufficient information to proceed with processing the connection application. When this occurs, the DNSP commences processing the application. The provision of connection services commences when the DNSP accepts a completed application from the customer. Section 4.1.1 includes a more detailed discussion of the types of services provided by the DNSP following acceptance of the application for connection.

Accordingly, the contractual relationship between the DNSP and customer commences at this time. The contract is a 'deemed' contract in that the customer and the distributor are taken to have entered into an agreement for the provision of customer connection services on the terms and conditions set out in the relevant standard form customer connection contract. In NSW, the customer pays a site establishment fee for the cost of administering the connection, either at the application stage or, at a later stage. The site establishment fee is a monopoly service and the fee is regulated under Chapter 6 of the Rules.

Stage 3. Assessment by DNSP

The DNSP assesses whether the application is for a simple accept-and-connect connection, or a more complex connection. The criteria for assessing whether a connection is simple or more complex is based on its rated capacity to supply the load and the potential impact of that connection on the operation and performance of the network system. The more complex connection requires further investigation by the DNSP.

A simple connection does not require further technical involvement by the DNSP. In EnergyAustralia's case, the threshold is generally a 100 Amp connection.⁶ The DNSP notifies the customer that connection can proceed by

⁵ Accredited service provider (ASP) refers to accreditation gained under the under Office of Fair Trading accreditation scheme. **Level 2** service providers may be accredited for the following categories: Category 1 – disconnection/reconnection; Category 2 – underground service lines Category 3 – overhead service lines; Category 4 – metering service (types 5 – 6) and energising installations; Category 5 – installing contestable market metering (types 1 – 4).

Accreditation as a **Level 1** Service Provider relates to Constructing and Installing Transmission & Distribution Works. **Level 3** service providers may be accredited to design overhead and/or underground network assets, including substations. Such work involves contestable high and low voltage overhead and underground reticulation and substations.

⁶ Unless there is a requirement for augmentation or a substation on the customer's premises.

issuing a job number to the customer. A simple connection can proceed without further input from the DNSP, apart from post-energisation inspection services. The technical specifications for the connection are set out in the customer's application as accepted by the DNSP.⁷ The simple accept-and-connect procedure is illustrated in case study 1.

A more complex connection may require the DNSP to undertake further investigation and analysis. One of the aims is to determine whether there is a need for augmentation by the DNSP (as set out in case study 3).

In the case of the large and complex connections in case study 4 the services of an ASP/1 will need to be retained to undertake the construction of the assets. This is discussed in stage 5 below.

Upon acceptance of the application, the DNSP notifies the customers by issuing a job number to the customer.

In EnergyAustralia's case (and NSW in general) a site establishment fee⁸ will be charged where a customer's installation requires the creation of a new National Metering Identifier (NMI). The fee covers the issue of a meter by EnergyAustralia and its coordination with NEMMCO (National Electricity Market Management Company Limited) for the purpose of establishing the NMI and for checking and updating network load data.⁹

Stage 4. Accept-and-connect connections

The connections that are assessed by the DNSP as simple accept-and-connect connections do not require further site specific input from the DNSP. The technical specifications for the connection are provided by the customer in the application that has been accepted by the DNSP. The standard connection contract requires the connection works comply with network standards and the NSW Service and Installation Rules.

In NSW, the design, construction, and energisation of connection assets are undertaken by an accredited service provider (ASP/2). Energisation occurs without further involvement of a DNSP. The DNSP may inspect the installation, but this occurs after energisation.

In cases where the DNSP needs to augment the network (case study 3), there may be a need for greater coordination between the customer/ accredited service provider and the DNSP regarding the dates that construction of assets will be completed. Otherwise the procedure is the same as the simple accept-and-connect connection.

Under the accept-and-connect connections, the submission of the application is the only point where the customer and DNSP have contact prior to an inspection (apart from when the DNSP needs to augment the network). The point of DNSP acceptance of the application is the most logical point for a connection contract to be entered into.

Stage 5. Complex "accept-consult-connect" connections

Large and complex connections require a series of consultations and an exchange of information between the customer and the DNSP. The aim of this consultation is to establish a technical schedule that details the technical requirements specific to a connection.

Further, an ES 9 agreement is required to ensure that:

- the connection asset is constructed so as to enable the delivery of the connection service consistent with the DNSP's network performance requirements; and
- the DNSP can accept the asset once it is completed.

⁷ The technical information in the application set out in the application form could, if required, be formulated into a technical schedule which would form part of the customer's connection contract.

⁸ A site establishment fee is detailed in ES5 - Charges for Network Miscellaneous & Monopoly Services. This is a regulated monopoly service charge.

⁹ The site establishment fee will usually be charged to the ASP responsible for installing the metering for the installation. It will be charged when the Notification of Service Work (NOSW) form is submitted detailing metering for the new installation or the transfer or separation of an existing installation for which a new NMI is to be created.

Following the DNSP's assessment of the connection as being large and complex, the distributor responds to the customer's application with the following types of information and requests:

- any additional information that the DNSP requires to progress the connection;
- any special conditions relating to the connection;
- applicable monopoly or miscellaneous fees;
- any funding requirements under the capital contributions policy;
- confirmation of the size and capacity of the service line and type of current transformers;
- the need for a substation on the premises;
- whether works involving extension to the underground or overhead network is required and who is responsible for the associated cost; and
- lead times for ordering of any DNSP funded equipment related to the customer's connection.

Technical information

The DNSP uses the technical information obtained from the customer to prepare a design information package (DIP). The DNSP conducts a series of investigations into connection options and any augmentation requirements. Depending on the locational characteristics of the network, it will take from 10-30 days to prepare all the elements of the design information package. Case study 4 in section 3.4 of this submission provides more detail about the types of investigations required to be conducted.

The design information package is the initial step in developing a technical schedule specific to a large and complex connection.

Agreement for connection of developments

The customer will be sent a draft ES 9 agreement for connection of developments which:

- seeks to ensure a satisfactory standard for the contestable works;
- sets out the relationship between the DNSP, the customer and the accredited service provider; and
- sets out the conditions upon which the DNSP will agree to accept transfer of the works from the customer when they have been completed. A more detailed discussion of this agreement is contained in section 4.1 of this submission.

Stage 6. Construction, commissioning, inspection of the complex connection

Once the DNSP provides the design information package to the customer, the customer engages an accredited designer ASP/3 to prepare the design work. The customer submits the design work and a completed ES 9 agreement for connection and deeds of agreement to guarantee any necessary lease and/or easement.

The DNSP's role is to certify the design and this may require resubmission of the design work by the customer depending on the quality of the design work. The resubmission of the design may occur more than once.

The DNSP, accredited service provider and the customer execute the agreement for connection of developments (ES 9). At this stage a technical schedule is agreed between the DNSP and the customer and this schedule forms part of the connection contract.

Once design is certified and the agreements are in place, the customer can proceed to construct the connection asset. The DNSP may be required to inspect the works at various stages.

Near the completion of construction, the customer notifies the DNSP to schedule a final inspection; arrange access permits; and schedule commissioning actions leading to energisation of the connection. In the case of complex connections, the DNSP has a key role in the final stages of energising the connection. The DNSP's role is set out in more detail in case study 4 in section 3.4.

2.3 The timeframes in the connection procedure

The timelines for forming both simple and complex connections are set out in Diagram 2 and Diagram 3. The timelines vary depending on the complexity of the connection and the types of services provided by the DNSP. The connection procedure has been split into services that are:

- under the control of the DNSP. (Timeframes have been suggested for the services that are within the control of the DNSP); and
- those that are within the customer's control (i.e., not within the DNSP's control).

2.3.1 Timeline for simple connections

Diagram 2 outlines timelines for simple connections where the DNSP's involvement is limited. The timelines are:

- Ten days from the receipt of an application to the response by the DNSP about whether the application is accepted or further information is required.
- The customer builds the connection asset. The DNSP does not monitor the construction of the asset and there is no time limit proposed.
- The accredited service provider is accredited to energise the connection service. The DNSP is notified within two days that the connection has been energised.
- The DNSP may inspect the connection asset but this does not impact energisation of the connection.

2.3.2 Timeline for complex connection

Diagram 3 relates to the timelines for complex connections where the DNSP is required to provide a number of connection services. These are connections that may require further design or analysis work and consultation with a customer on 'negotiable' components of standard connections.

The timelines are:

- Ten days from the receipt of an application to the response by the DNSP about whether it is accepted or further information is required. If accepted, the DNSP provides information to the customer about the ongoing process.
- The customer's response time to this information is not regulated.
- Upon customer's response with further completed information, the DNSP has up to 30 days to provide a design information package. The preparation of the design information package is discussed in more detail in section 3.4 in the discussion of large and complex connections.
- The customer designs the works in accordance with the design information package. The design must be submitted within six months, otherwise, the design information package lapses unless the DNSP agrees to an extension.

- The DNSP has up to 20 days to certify or seek amendments to the design. If required by the DNSP, the customer resubmits the design. After each resubmitted design, the DNSP either certifies the design or requests further changes within five days.
- The customer builds the connection asset according to the certified design. The DNSP does not control the timing of the construction of the asset but the agreement for connection of developments (ES 9) lapses if construction of the work does not commence within 12 months of the design being certified by the DNSP.
- The customer requests the DNSP to commission the works and provides adequate notice to enable commissioning works to be scheduled.
- Commissioning can take between 2-20 days.

Diagram 2: Timeline A for accept-and-connect connection

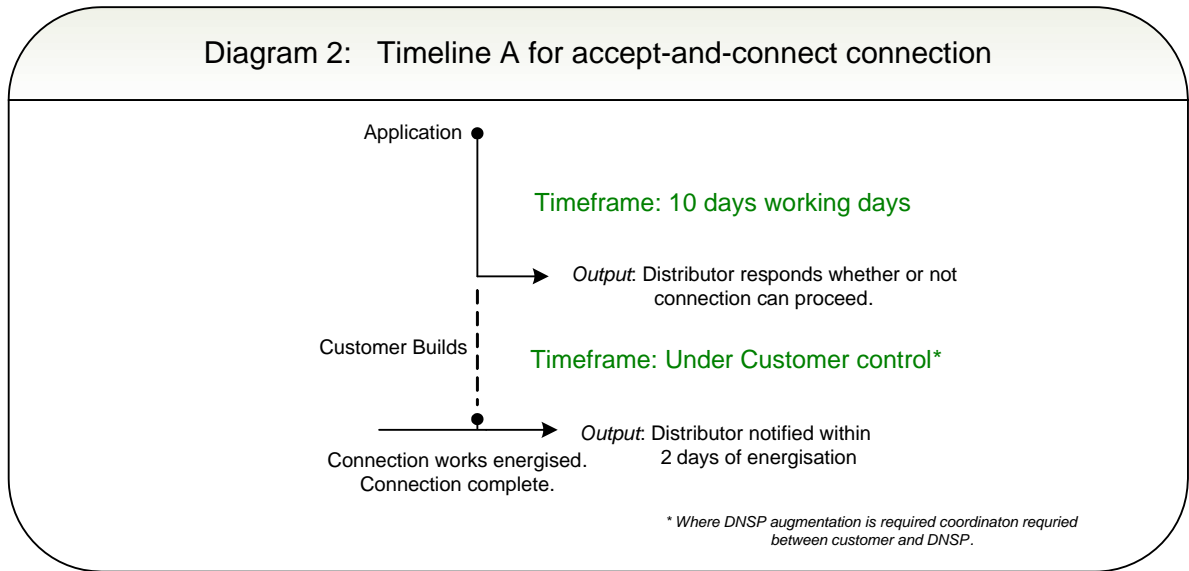
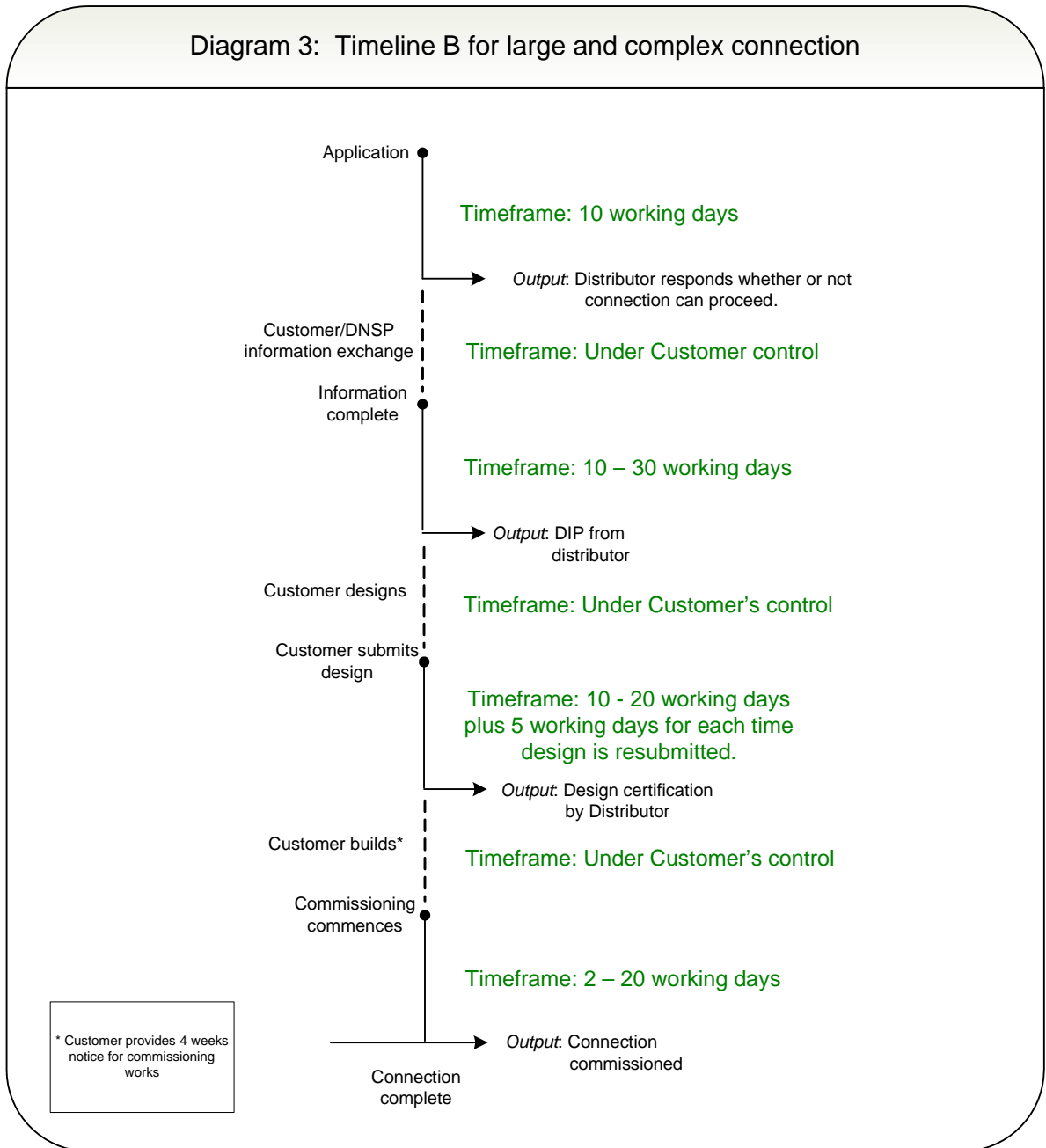


Diagram 3: Timeline B for large and complex connection



3 Case studies of typical connections

This section looks at four types of connections with their complexity ranging from simple through to large and complex connections. The cases studies show the extent of a DNSP's involvement in the provision of services and the obligations on the different parties using our alternative model. These case studies are typical of the 30,000 connection processes undertaken by EnergyAustralia each year. However, in an effort to improve on current arrangements in light of the move to a national framework we have incorporated the timelines proposed in Diagrams 2 and 3.

We are aiming to show that under the NSW contestability framework:

- The contractual relationship commences once the DNSP accepts the customers application.
- The DNSP provides a range of services to the connection applicant, even prior to the construction of the connection asset.
- Consultation on technical issues occurs during the more complex connections on "negotiable components" but these are not a "negotiated distribution services".
- A standard connection contract with standard terms and conditions applies in all of these cases. For the complex and large connections, technical schedules detailing the negotiable components are attached and form part of the standard connection contract.

3.1 Case study 1: A simple load connection (< 100 Amps) no augmentation

Typical features of a simple connection:

- New customer connection <100 Amps;
- No network augmentation required; and
- Simple service connection can be installed by accredited service provider – level 2 (ASP/2).

The typical process for a simple connection is:

1. Customer submits a completed 'application for connection' form that includes technical details of the connection. The customer is made aware of the standard connection contract and that connection services are contestable. We propose that the application form contain details informing the customer of the existence of the standard terms and conditions in the standard contract.
2. The application form is received and processed (at EnergyAustralia this is conducted by the Installation Data Operations section).
3. The DNSP accepts the completed application and the connection contract is deemed to have commenced. The DNSP commences providing administrative services at this point.
4. For applications not exceeding 100 Amps (typically domestic customers with one meter), an installation is created in a database, a NMI is allocated and the associated job number is created and provided to the customer (or customer's agent). The customer is generally notified of the job number on the same day (or at most within two business days). The notification of the job number allows the customer to proceed with the connection works.
5. From this point the DNSP has no further involvement prior to energisation.

6. The ASP/2 has access to the relevant network standards and makes decisions regarding the point of attachment or point of supply to the customer's installation and the route of the service mains. The ASP/2; purchases the standard approved materials, erects or installs the service and energises the connection.
7. ASP/2 notifies the DNSP (in EnergyAustralia's case by submitting a Notification of Service Work (NOSW)) within two days after energisation to advise that the work is complete and compliant and advises the DNSP of the meter number that has been installed (i.e., the national metering identifier (NMI)) and that the work may be inspected.
8. DNSP may inspect the work.¹⁰

3.2 Case study 2: A simple load connection (>100 Amps)

Typical features:

- New customer connection > 100 Amps;
- No network augmentation required; and
- Simple service connection can be installed by ASP/2.

The typical process for a simple connection above 100 Amps is:

1. Customer submits a completed 'application for connection' form that includes technical details of the connection. The customer is made aware of the standard connection contract and that connection services are contestable. We propose that the application form contain details informing the customer of the existence of the standard terms and conditions in the standard contract.
2. Applications exceeding 100 Amps are referred, in EnergyAustralia's case, by the Installation Data Operations section to the Regional Customer Operations Planning (Operations Planning) section within 1 to 2 days for investigation.
3. The DNSP accepts the completed application and the connection contract is deemed to have commenced.
4. The Operations Planning checks whether network augmentation is required and if not, whether the job is approved for issue to an ASP/2 without further DNSP input. This investigation requires examination of the low voltage network in the vicinity to ascertain whether:
 - the existing network has adequate current rating to supply the new load having regard to other concurrent or anticipated load applications;
 - voltage levels will remain within acceptable limits; and
 - the new load can be supplied without interference to other customers.
5. Connection can be made by an ASP/2 within the tolerances allowed in the relevant network standard.
6. The Operations Planning advises Installation Data Operations typically within one week if no augmentation is required and that it is permitted to issue the job number to the ASP/2 for work to commence. These jobs are for simple service work generally up to 400 Amps.

¹⁰ In EnergyAustralia's case, the carrying out of inspections for simple connections is based on an audit system which considers the type of installation (e.g., if a small embedded generator – solar panel inverter is installed) and the connection history and graded quality of the accredited service provider.

7. The Installation Data Operations issues a job number to the ASP/2 within 1 to 2 days to allow the work to commence and a NMI(s) is also allocated. The total time for this class of approval generally requires up to 10 days.
8. Where there is no requirement for augmentation by the DNSP, the DNSP has no further involvement prior to energisation. [Refer the case study 3 for connections where augmentation by DNSP is required).
9. The ASP/2 has access to the relevant network standards and makes decisions regarding the point of attachment or point of supply to the customer's installation and the route of the service mains; purchases the standard approved materials; erects or installs the service and energises the connection.
10. ASP/2 submits a Notification of Service Work (NOSW) within 2 days after energisation to advise the DNSP that the work is complete and compliant, the meter number (NMI) that has been installed and that the works and may be inspected.
11. DNSP may inspect the work.

3.3 Case study 3: Connection with DNSP funded network augmentation

Type of connection:

- **New or modified connections (in excess of 100 Amps);**
- **Network augmentation is required and is funded by the DNSP; and**
- **Simple service connection can be installed by ASP/2.**

The process for a simple load connection above 100 Amps with augmentation:

1. Customer submits a completed 'application for connection' form that includes technical details of the connection. The customer is made aware of the standard connection contract and that connection services are contestable. We propose that the application form contains details informing the customer of the standard connection contract and the standard terms and conditions.
2. DNSP accepts completed application and deemed connection contract commences.
3. Applications exceeding 100 Amps are referred, in EnergyAustralia's case, by Installation Data Operations to the Regional Customer Operations Planning (Operations Planning) section within 1 to 2 days for investigation.
4. For jobs requiring augmentation of the network by the DNSP there will often be contact between Operations Planning directly with the customer. The scope and degree of contact will vary with the size of the load required and the state of the network in the vicinity.
5. Upon DNSP's acceptance of an application for connection, the process that is then followed is similar to Case Studies 1 and 2 except that the construction timeframe from when the DNSP contacts the customer to permit the connection by an ASP/2 until time of energisation may be extended because augmentation work needs to be carried out by the DNSP. The service work by the ASP/2 and the augmentation work by DNSP needs to be scheduled and coordinated.
6. The ASP/2 has access to the relevant network standards and makes decisions regarding the point of attachment or point of supply to the customer's installation and the route of the service mains; purchases the standard approved materials; erects or installs the service and energises the connection.
7. ASP/2 submits a Notification of Service Work (NOSW) within 2 days after energisation to advise EnergyAustralia that the work is complete and compliant and may be inspected. Energisation occurs without DNSP inspection but may be dependent on DNSP augmentation works.

8. The site establishment fee will usually be charged to the ASP/2 responsible for installing the metering for the installation. It will be charged when the NOSW form is submitted detailing metering for the new installation.

3.4 Case study 4: Large and/or complex connection

Type of connections:

- Large and/or complex connection (including an embedded generator and large commercial or residential developments)
- Usually requires a substation(s) on a customer's premises (Note: some connections requiring less than 200 Amps may still require a substation and be subject to this process).
- Network augmentation may or may not be required.
- Requires the services of an ASP/3 (Accredited Designer) and an ASP/1. (This is used as the criteria for identifying a large connection).
- Consultation required between a DNSP and customer on design information and agreements on the responsibilities between the DNSP, customer and accredited service provider.

A typical process for a large and/or complex connection is as follows:

1. For larger jobs, the DNSP may be contacted in the form of a letter from consultants acting for the customer instead of an application form. This is acceptable as an application if sufficient information is provided in the letter to commence investigation. It may take up to 10 days to assess if the application is a complex connection and requires the appointment by the customer of an ASP/1. If it does, the customer is notified that a more complex connection to a higher voltage is needed and that more information may be required.
2. Customer provides any further information requested by the DNSP.
3. DNSP requires the customer in its application to agree to the contestable process in NSW. This includes:
 - developing a technical schedule with the DNSP (through the design information package);
 - acknowledging that compliance with published policy documents under the standard connection contract is a condition of supply; and
 - agreeing to provide design and construction connection services for the DNSP on this basis.
4. DNSP accepts the application once it has sufficient information to prepare a Design Information Package (DIP) and the deemed connection contract commences.
5. Design Information – DNSP prepares a design information package to be provided to the customer. The design information package becomes the technical standard for a specific connection and forms an attachment to the standard connection contract. The design information package is a regulated monopoly (direct control) service and charges are regulated under Chapter 6 of the Rules. To prepare the design information package, the DNSP investigates connection options and need for network augmentation. This process needs to be scheduled and may take a further 10 to 30 business days. This requires some or all of the following investigations:
 - The agreed realistic diversified demand of the loads applied for.

- The voltage of connection and a broad outline of a suitable connection to the network based on the type and size of load, network capacity. Network studies are undertaken to determine a range of factors.¹¹
- Assessment of whether the new works will result in assets that will be dedicated to the applicant or if they could be used to supply other customers as well. This is important as it is the nature of whether assets are to be shared or dedicated that determines the application of the capital contributions policy to the tentative connection solution, and will determine level of customer funding required.
- Identifying the negotiable components of the connection service. In EnergyAustralia's case these may include: location of a substation to support customer load; location of the customer's connection to network and point of entry to the premises and location of metering; voltage level of customer's connection; assessment of customer's load requirement; availability of standby supply from the grid when on-site generation unavailable; capacity of customer's connection before augmentation or other works will be required; and design planning criteria which exceeds the applicable security standard.

The findings of these investigations are incorporated into a design information package. In addition to this information the design information package also includes details of the system in the vicinity; connection point; suggested cable route; substation ratings; lists of relevant DNSP network standards to be complied with; reliability of supply; need for statutory approvals; an environmental impact assessment; street lighting requirements; lease and easements. The DNSP forwards the design information package to the customer.

In addition, the customer is provided with a draft ES 9 agreement for connection of developments which sets out the responsibilities of the DNSP, customer and accredited service provider (this includes compliance to the technical schedule developed under the design information package)¹² and draft deeds of agreement for lease/easement.

6. Design by customer - on receipt of the design information package, the customer contracts an ASP/3 - accredited designer to prepare a formal design based on the design parameters in the design information package and submits this (with the completed ES9 incorporating the technical schedule and deeds) for certifying by EnergyAustralia. The design must be based on the design information package, the DNSP's network standards as well as on the developer's site constraints and preferences regarding location, point of entry of cables and selection of preferred cable routes and standard substation option.
7. Design certification - EnergyAustralia checks the design against the design information package and its network standards. The process may take considerable time and ongoing consultation. The network standards, in some respects, allow discretion on how an outcome is achieved. The design details need to be checked to ensure the standard outcomes will be achieved on sites which in many cases are constrained. There is usually a need for reiterative discussions between the DNSP and the customer.¹³

¹¹ The network studies will investigate:

- whether the existing network at that voltage has adequate current rating to supply the new load having regard to other concurrent or anticipated load applications. This involves load flow studies of complex networks under both normal and emergency conditions and such studies may be required at the supply voltage as well as the next voltage level up;
- options for HV feeder connections to the customer;
- broad substation requirements;
- whether supply voltage levels will remain within acceptable limits;
- whether load be supplied without interference to other customers;
- the need for augmentation of the existing shared network; and
- scheduling and carrying out of technical studies to determine fault levels, phasing, and a system protection scheme.

¹² ES9 - Agreement for Connection of Developments can be found at www.energyaustralia.com.au/energy/ea.nsf/Content/Network+Electrical+supply+standards

¹³ Typical examples are:

- it is critical that fire ratings and fire and blast segregation distances be maintained from occupied or hazardous areas and from adjacent and unrelated premises;
- substation ventilation cannot be compromised and designing ventilation ducts for venting and fire segregation can be difficult;
- stringent requirements for segregated 24 hour equipment and personnel access and escape particularly in inner urban and high rise situations;

This process generally needs to be scheduled and may take up to 20 days for certification to be completed or for a response requesting amendments. If the customer makes subsequent changes to aspects of the application (such as demand) or site conditions or the DNSP requests an amendment then the customer must resubmit the design for certification. If there is a resubmission of a design due to either customer initiated or DNSP requested changes then the certification will take a further five days for each resubmission. There is no timeline for the customer to resubmit. At the end of this process the DNSP certifies the design if it meets the requirements of the design information package. The certified design is agreed to by the customer and becomes the technical schedule. The customer must build the asset in accordance to the technical schedule as per the ES 9 agreement.

8. Construction by customers - on receipt of design certification the customer appointed ASP/1 will build the connection assets in accordance with the certified design. EnergyAustralia will inspect the construction works according to an agreed process.
9. When nearing the end of the construction phase, the ASP/1 needs to provide four weeks notice to the DNSP to enable scheduling of the final inspection, access permits and commissioning actions leading to energisation.¹⁴
10. Commissioning. For large works the DNSP is involved in commissioning of the energisation. The typical commissioning services provided by the DNSP are:
 - Final inspection of works and notifying and rectifying of defects.
 - Checking the accredited service provider's final as-built field recordings to ensure compliance with certified design and compatibility with easement locations.
 - Checking the accredited service provider's completed pre-commissioning test sheets and inventory sheets.
 - Advising other customers that they may be affected by network de-energising to allow connection of the new customer. This requires a minimum of two days notice and can only be done when the accredited service provider has finished – this cannot be done in advance. This step may require the hiring and placement, connection and subsequent disconnection of mobile generators sets to maintain supply in some areas.
 - Installing and removing LV paralleling.
 - De-energising and earthing network elements to give effect to the access permits.
 - Identifying de-energised cables and any adjacent live cables.
 - Cable stabbing and subsequent phase-out after final commissioning jointing by accredited service provider.
 - Carrying out final connection/termination works within a live substation with live parts as accredited service providers are not permitted in these areas.
 - Carrying out transformer phasing and other tests in substation.
 - Carrying out protection checks involving settings, and check trips.
 - Recovering access permits from EnergyAustralia and accredited service provider, remove earths and re-energise network components.

- location of high voltage cables and/or poles in congested streets and across and under major roadways and in juxtaposition with existing network infrastructure. Feeder lengths in public streets may be in excess of 2 km and require relocation of other services such as water mains;

- possible need to relocate or underground existing assets of EnergyAustralia and other utilities;

- negotiation with the customer and its chosen ASP/1 to also carry out connection related EnergyAustralia funded network augmentation.

¹⁴ Four week timeframe is necessary to allow works to be coordinated with a very large work program forecast for EnergyAustralia's network.

This sequence of connection services provided by the DNSP will take from 2 to 20 days. Allowance needs to be made for defects and failures of the new work as testing progresses. Allowance should also be made for emergencies on other parts of the network which may require reallocation of staff and this is, of course, unpredictable and unavoidable.

11. On large projects where several substations are being installed such as shopping centres or large subdivisions, there may be several stages of commissioning before the project is completed and each stage may require the same sequence of actions.
12. Connection is energised by the DNSP.

3.5 What do the case studies show?

These case studies show that the DNSP is involved in providing connection services to the customer from the time the DNSP accepts a completed application for connection from the customer. For simple connections in case studies 1-3 the DNSP provides administrative services, including the allocation of a NMI, and an inspection service. For the large and complex connections the DNSP is involved in administration; providing design information; design certification; and commissioning for the energisation of the connection service. Once the DNSP accepts the application, the DNSP provides connection services to the customer that assist in the connection assets being built and energised. This demonstrates that a contractual relationship between the customer and the DNSP commences prior to the construction of the connection asset.

For this reason, it is necessary for the contractual relationship between the DNSP and the customer to commence when the DNSP accepts the customer's application for connection. The connection contract is, and needs to be, a deemed contract. Under the case studies provided there is no offer made by the DNSP other than the published standard connection contract. A contractual process requiring formal signature by the customer of documents would add additional time to the process and in our view, lead to unnecessary delays for customers compared to the 'deemed' option. With the terms and conditions of the standard contract publicly available we consider that this forms the invitation to customers to make an offer. The application is the customer's offer to accept the invitation to connect and the DNSP's acceptance of the application formalises the contract between the customer and DNSP. The customer obtains quotes for the work from accredited service providers to design and construct connection works and for simple connections, to energise the connection.

For the more complex connections, there is consultation and exchange of information on technical matters throughout the connection process from the initial application, during preparation of the design, certification of the design, and subsequent commissioning. This process reflects the complex nature of connections involving new residential and commercial developments, multi-story buildings (especially in urban areas), and embedded generators. As shown in case study 4, consultation between the DNSP and customer occurs on technical matters but not on price – because the connection service is contestable.

In the case studies for the simple connections (case studies 1-3) there are no negotiations or negotiable components of the service. Only in the large and complex connection are there negotiable components of the connection service. These negotiable components relate mainly to agreement on the load applied for and the locational aspects of the connection which allow for choice between a range of DNSP defined standard technical solutions. The four cases studies shown are all considered to be standard connection services under standard connection contracts.

The connection services and the technical aspects (which are negotiated during the connection phase in the case of large connections), affect the ongoing provision and reliability of those services. For this reason, we consider that the connection and the ongoing distribution service are inextricably linked, and not able to be separated in any meaningful way.

These case studies show the types of roles and responsibilities that the DNSP has in relation to providing connection services under a contestable framework. The factors surrounding contestability in NSW need to be taken into account by SCO in developing a connection procedure that can be applied nationally. We consider that the alternative connection procedure set out in this submission achieves this objective to a large extent. The following section further elaborates on the rationale underlying our position on the alternative connection procedure.

4 Rationale for the alternative connection procedure

This section provides EnergyAustralia's rationale underpinning the alternative connection procedure. Our main concern is that the NSW contestability framework has a significant impact on the connection procedure and as such requires more detailed consideration by SCO prior to national arrangements for connection being finalised.

In considering the issues surrounding contestability we propose that:

- The standard connection contract commences from the time the DNSP starts providing services to the customer which occurs when the DNSP accepts the customer's application for connection. This is a deemed connection contract in NSW.
- Timelines in the connection procedures for services that are provided by the DNSP to customers are clearly set out but timeframes for the services provided by a third party service provider to the customer are flexible. That is, services that are within the control of the DNSP can be predetermined but those that are not can be more flexible; and
- Standard connection processes and standard connection contracts are appropriate for the majority of connections ranging from "accept-and-connect" type contracts to more complex developers and embedded generators.

4.1 What is the impact of NSW's contestability framework?

Under the Electricity Supply Act (NSW) 1995 (ES Act) a customer has the right to make an application for connection and the DNSP is obliged to provide customer connection services to the applicant's premises under the customer connection contract.¹⁵ The ES Act entitles DNSP's to require the customer to fund the installation of certain equipment (or provision of certain services) so that connection services and an adequate supply of electricity can be provided to the customer's premises.

The installation of this equipment and provision of these services are contestable works. This means that the customer must appoint an accredited service provider to perform the contestable works. Under this contestability arrangement, the customer has the benefit of choosing a provider who best meets their requirements and offers the best price for constructing the connection assets.

To maintain the integrity of its distribution system, the DNSP must ensure that contestable works are built and maintained to comply with the standards it administers. For the less complex connections such as in case studies 1-3, the DNSP is not involved in the energisation of the connection. The ASP/2 is accredited to design, construct and energise these works.

Before work is undertaken for the large and complex connections, EnergyAustralia's practice is to enter into an agreement with the customer and the appointed ASP/1 which:

- seeks to ensure a satisfactory standard for the contestable works;
- sets out the relationship and responsibilities between EnergyAustralia, the customer and the ASP/1 in relation to enabling;

¹⁵ Section 15 of the Electricity Supply Act.

- the customer to procure and the ASP/1 to effect the carrying out of contestable works in relation to the proposed development; and
 - EnergyAustralia to discharge its obligations under applicable Laws to ensure the safe and reliable supply of electricity to consumers.
- sets out the conditions upon which EnergyAustralia will agree to accept transfer of the works from the customer when they have been completed.

The effect of the NSW contestability arrangements is that:

- The DNSP provides a range of services to the customer in order to facilitate the construction of the connection assets and thus the contractual relationship between the DNSP and the customer must commence when the DNSP accepts the customer's application. This is discussed in more detail in sections 4.1.1 and 4.1.2.
- The timing for services provided by the accredited service provider is a matter between the customer and the provider as outlined in Diagrams 2 and 3. This is discussed in more detail in section 4.1.3.

4.1.1 Agreement for connection of developments

EnergyAustralia's agreement for connection of developments (called an ES 9 agreement) is not an agreement under which EnergyAustralia provides connection services to customers. EnergyAustralia provides customer connection services under its standard form connection contract.

An ES 9 agreement is only required by EnergyAustralia for customers of large and complex connections. These type of customer connections include developers of large commercial and industrial projects (office buildings, shopping centres, Internet Service Providers, factories); and large subdivisions (commercial, industrial or residential). Such an agreement is necessary when the connection requires:

- Involvement and cooperation of several parties such as the owner, applicant for connection services i.e., the customer, builder, ASP/3, ASP/1, surveyors, interested third parties such as mortgagees, Local Councils, (The applicant for connection services can also be the owner and also the builder but not usually).
- Delivery of all of the IPART monopoly services particularly design information, design certification and inspection. For the large and complex connections inspections are required during construction - not after as for simple service work. In this regard the DNSP is contracting for adequate notice to inspect not permission to inspect.
- Construction of complex civil connection works often in major public thoroughfares by unaccredited builders under the customer's control.
- Construction, usually, at high voltage and requires construction of these future network connection assets in public streets as well as on the customer's premises.
- Management of supply interruptions or impacts to other customers.
- Construction, usually, of a substation which houses equipment containing sources of ignition, inflammable materials (e.g. oil) such as transformers (which also require blast proofing) and requiring stringent construction standards affecting the customer as well as adjacent premises.
- Formal registered leases and/or easements involving the agreement of owners and interested third parties such as mortgagees.
- Stringent initial and ongoing 24 hour access for heavy plant and for system operators.

- In general, a quantum increase in the level of risks to safety design and construction of assets which will become part of EnergyAustralia's network and that design and construction is to be carried out by an accredited service provider engaged by the customer.

An ES 9 agreement is critical for the proper implementation of the contestable regime which applies in NSW because it manages the risks faced by EnergyAustralia as a result of accredited service providers and unaccredited builders designing and constructing connection assets and augmentations. This is particularly important when these assets are located in public streets, and which when commissioned, will form part of EnergyAustralia's electricity network. Under this agreement, allocation of liability is given to the customer/accredited service provider until after energisation.

The risks addressed are primarily those which might arise if the design or construction of the works are not built to comply with the relevant technical and network standards, environment and safety requirements or are defective. Such risks, if not managed and eliminated as far as possible, would have a significant impact on the integrity and safety of EnergyAustralia's network (and in some cases the national electricity system more generally). They are also likely to involve EnergyAustralia in significant rectification works, the costs of which would be borne by all of EnergyAustralia's customers.

- The ES 9 agreement therefore is entered into between EnergyAustralia, the customer and the customer's accredited service provider separately from the standard connection contract. The ES 9 agreement deals separately with the obligations of EnergyAustralia, the customer and its appointed accredited service provider and only imposes those requirements reasonably required to ensure that assets designed and constructed by accredited service providers and builders are: constructed by builders and employees of accredited service providers who are appropriately trained and qualified;
- inspected at appropriate times during the construction and commissioning process;
- only commissioned and energised (or electrified) by EnergyAustralia if the works have been completed to all applicable standards and free of defects;
- supported by easements leases and license where necessary;
- transferred to EnergyAustralia subject to a warrant bond to cover the cost of rectification of any defects identified during a three year warranty period.

Whilst EnergyAustralia has obligations under the ES 9 agreement, these obligations are not to provide connection services as such. For example, under the standard connection contract EnergyAustralia has an obligation to connect provided all of the requirements specified under the contract have been met. ES 9 does not impact on that obligation but rather *sets out in detail how EnergyAustralia will ensure that all of the requirements have been met on its behalf* by the customer and its appointed accredited service providers. The ES 9 agreement allows EnergyAustralia ensure its requirements have been met before it will perform its obligation to connect by commissioning and energising assets that have been constructed by the customer.

It is very important that the national framework for customer connections does not restrict EnergyAustralia from continuing to enter into an ES 9 agreement where assets forming part of EnergyAustralia's network are constructed by an ASP.

The ES9 agreement ceases on energisation but secures ongoing rights (including a warranty bond which remains in place for three years). In contrast, the standard form customer connection contract continues unchanged for ongoing connection services.

4.1.2 What are the connection services provided by a DNSP?

In setting out a connection procedure, we have sought to identify and describe the range of connection services provided by DNSPs. The range of services provided by the DNSP and the extent to which these facilitate a connection prior to construction and energisation of the connection is an essential part of the DNSP's connection service.

The connection services provided by a DNSP are:

- the connection of any premises to a distribution network service provider's distribution system (i.e., a new connection). This includes investigation of technical options and development of the design overview, design and construction, and inspection and commissioning.
- an increase in the maximum capacity of any premises' existing connection to a distribution network service provider's distribution system (i.e., a modified connection). This includes investigation of technical options and development of the design overview, design and construction, and inspection and commissioning.
- the maintenance of the capability for electricity to be supplied to any premises from a distribution network service provider's distribution system. (We regard this as a post-energisation service and have referred to it as "ongoing distribution services" in the main submission).

It is the responsibility of the DNSP to deliver all of these services¹⁶ but under the contestability regime in NSW, some of these connection services are provided by the DNSP through the customer. The customer engages an accredited service provider to perform design and construction of the contestable assets and other services. The role of the DNSP is also to provide monopoly services that facilitate the work being done by the accredited service provider in this context and to ensure that the work will meet network performance standards.

In NSW, the monopoly services are itemised and their prices are separately regulated under a pricing determination by IPART. The services are now defined as *direct control services* under clause 6.2.2 of the Transitional Rules and the charges are currently part of a regulatory proposal being reviewed by the AER.

These services include:¹⁷

- Service establishment (administration);
- Design information;
- Design certification;
- Inspections;
- Access permits;
- Substation commissioning; and
- Authorisation.

As demonstrated in the case studies in section 3, the extent of DNSP's involvement is related to the size, complexity of the connection and the impact on the network. To illustrate this point, for simple "accept-and-connect" type connections that apply to, a single house on a block, the DNSP's involvement is limited. At this level,

¹⁶ Section 19 of the Electricity Supply Act states that (1) It is a condition of a distribution network service provider's licence that the distribution network service provider must prepare a standard form customer connection contract to establish the conditions on which it will provide customer connection services.

¹⁷ The prices are currently regulated under an IPART determination but are being reviewed in the 2009-14 NSW DNSP regulatory determination process. The current price list can be found at: www.energy.com.au/energy/ea.nsf/Content/Network+charges

timing for the construction and energisation of the connection process is under the control of the accredited service provider rather than the DNSP.

A more complex connection requires a wider range of services to be provided by the DNSP. There is also considerable and reiterative exchange of information and interaction on technical matters. The range of these services is set out in case study 4.

The case studies demonstrate that the DNSP provides connection services to the customer for the construction of the assets. These services facilitate the contestable provision of the connection services. The procedure illustrated by SCO¹⁸ is only applicable to a DNSP that was building the asset and providing all the connection services following the consultation over the physical assets. The SCO approach is not applicable to the arrangements in NSW.

4.1.3 When does a connection contract commence?

Due to the range of connection services involved in facilitating the connection, we consider that it is necessary for the connection contract to be deemed to commence on application rather than commence at a later stage. The reason is that the DNSP is providing a range of services to fulfil the customer's application for connection during the connection process which commence as soon as the application is accepted.¹⁹ As demonstrated under the alternative connection framework, the DNSP provides the customer with a range of services following the acceptance of the customer's application.

These services apply whether the infrastructure is provided by the DNSP or an accredited service provider. The provision of these services recognises an obligation that DNSPs have to provide monopoly services to customers in relation to facilitating the customer's connection to the network.

The SCO's contractual model is based on having:

1. a customer apply for connection;
2. DNSP makes an offer;
3. customer accepts the offer;
4. contract commences;
5. infrastructure installed; then
6. DNSP connects customer.

The SCO's proposed procedure appears to be regulating the 'how', 'when' and 'what' of physical connection where the DNSP is the provider of the connection assets. The SCO proposal is regulating a connection process not the actual connection service. The contract formation process for the standard connection set out by SCO has the following problems:

- Relies on the DNSP formally providing an offer and the customer formally accepting an offer (by signing an offer). We consider that this will lead to delays for customers compared to the current deemed approach which is efficient and effective.
- Connection contract commences at the completion of the connection process.
- Is decoupled from the existing connections (which raises concerns about how the connection component of the contract will be deemed in a move-in situation).

¹⁸ MCE Standing Committee of Officials, Electricity Distribution Network Planning and Connection – A National Framework for Electricity Distribution Networks, 15 December 2008, p.14.

¹⁹ Under section 21 of the NSW Electricity Supply Act 1995, a customer and distributor are taken to have entered into an agreement for the provision of customer connection services on the day a customer applies to the distributor for the provision of customer connection services.

A formal offer and acceptance process for connections as set out by SCO will be impractical and inefficient leading to delays in the connection process. The approach implies that there will need to be an exchange of paper work and signing of documents. We consider that in simple 'accept-and-connect' type connections that an exchange of contracts is not practical nor necessary. There is no need for the DNSP to make an offer because its standard contract is published and available. The customer's completed application is the acceptance of the DNSP's standard terms and conditions. In complex cases there is more interaction between the DNSP, customer or accredited service provider. This interaction is related to the technical requirements of the connection. As discussed previously, the technical schedule to the standard contract contains the specific technical details for large and complex connections.

4.1.4 What are the appropriate timelines?

As discussed under contestability, not all parts of the connection service process are within the control of the DNSP. For example, the construction of the asset is a matter between the customer and their accredited service provider.

We are proposing to place timeframes around those services that are provided by the DNSP. The timeline for the provision of connection services set out in Diagrams 2 and 3 vary depending on the complexity of the connection and the types of services provided by the DNSP. The connection procedure has been split into those services that are under the control of the DNSP and those that are within the customer's control (i.e., not within the DNSP's control). Timeframes have been suggested for the services that are within the control of the DNSP.

Under 'accept-and-connect' type connections there is no delay in energisation once the accredited service provider has built the assets. In these simple 'accept and connect' type connections the DNSP has no control over the timeframe and no role in energising the customer other than the right to inspect the work of the accredited service provider. It would not be appropriate to set timeframes on these parts of the process as they will vary and are outside the control of the DNSP.

The clear timeframes for both simple and complex connections as set out in our alternative procedure will, in our view, provide a better service to customers as well as provide greater certainty. The procedure will be an improvement to current processes as to date, there have been no such requirements placed on NSW distributors.

4.2 How will the NCF interact with the NECF

We are becoming increasingly concerned that the national connection framework (NCF) and the national energy customer framework (NECF) are not being developed in a seamless and holistic way. A case in point is that the NPWG has proposed that the connection contract is intended to start at the end of the connection procedure yet at this point, the service becomes an existing service and is regulated under the NECF. We question what the purpose of this connection contract will be.

We envisage that under the proposed decoupling of the "new connections" (NCF) and "existing connections" (NECF) that there will be duplication and complexity in administering the connection contracts. This will lead to higher compliance costs for the DNSP. This is a key issue discussed in EnergyAustralia's main submission.

We support having one contract for both the physical connection and the ongoing distribution supply, regardless of whether the customer is a generator or load customer. This also holds for move-in style connections. We ask the SCO to be mindful of ensuring that the development of the NCF and NECF creates an integrated national framework for the connection services provided by DNSPs and that it facilitate the operation of the contestability framework in place in NSW.

The development of the connection procedure is an area where we see benefit in the establishment of an industry working group to assist SCO and the Network Policy Working Group develop policy that is practical and mindful of jurisdictional arrangements.