

> 30 kVA and < 5 MVA







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### INTRODUCTION

Renewable and other new technologies are continuing to expand and influence the operation of our distribution network and the energy market in Queensland.

We (DNSP, Ergon Energy Corporation Limited, Energex Limited, we, our or us) have traditionally partnered with our customers in supporting the connection of solar, diesel and other renewable generation projects, and continues this partnership by advancing new technologies and industrial changes within Queensland's energy communities.

#### PURPOSE OF THIS INFORMATION PACK

Different connection processes apply depending upon the size and regulatory classification of the DER system – regardless of the technology used in the DER system and whether the electricity will be exported back into our distribution network.

This information pack sets out some things that you will need to know if you are planning on connecting a DER system above 30 kVA to our distribution network, such as:

- the relevant connection process and requirements for DER systems;
- information on the services offered to support the connection of a DER system (including whether such services are contestable);
- examples of relevant costs associated with the connection of a DER system;
- technical requirements relevant to assessing the proposed connection of a DER system; and
- how to access more information or apply for the connection of a DER system

#### WHAT IS A DER SYSTEM?

Under the National Electricity Rules, distribution connected units are generating units or bidirectional units that are connected within, and distributed along, the distribution network (rather than connected to the transmission network). A DER system means the distribution connected units (including ancillary equipment such as protection and control mechanisms) to be interconnected with and connected (directly or indirectly) to the distribution system at the connection point.

Typically, DER systems are located at a home or business and can generate electricity for that home or business's own use.

#### **TECHNOLOGIES USED IN DER SYSTEMS**

DER systems use a variety of technologies to produce electricity, as set out below. Some DER systems use inverters, while others are based on rotating machines and do not use inverters. DER systems also vary in size, from (for example), a typical 1 kVA domestic solar photovoltaic system to a 50 MVA solar or wind farm.

- Solar photovoltaic cells
- Solar thermal
- Wind turbines
- Biogas

- Bagasse (the fibrous material left over from crushed sugar cane)
- Hydro
- Landfill generation
- Standby diesel generation



#### TECHNICAL CONFIGURATION OF DER SYSTEMS

DER systems may be configured as the following (and may include storage solutions such as battery technology):

- Non-export, which means that they do not export electricity back into our distribution network
- Partial export, which means that they do export electricity back into our distribution network, but not to the full rated capacity of the DER system; or
- Full export, which means that they can export up to the full rated capacity of the DER system back into our distribution network.



### **REVIEW OF CONNECTION OPTIONS**



We, like other network providers, are operating in a period of rapid change, especially in relation to the choices our customers are making in meeting their energy needs. The way our customers are using the electricity network is undergoing unprecedented change.

With the ongoing popularity of commercial DER systems such as solar PV systems, and innovations in energy storage, we are working collaboratively with the industry to manage impacts to customers and our distribution network.



### CHOOSING YOUR CONNECTION PROCESS

The National Electricity Rules (NER) set out different connection processes for DER systems depending on the size and registration status of the DER system(s). *Our* connection processes comply with the NER and are intended to provide information to help you through the process of connecting a DER system to our distribution network.

These processes also set out certain requirements for the exchange of information between you and us, and clarify the requirements regarding the process, timeframes and provision of information before and during the connection process, to assist you in understanding all stages of connecting a DER system to our distribution network.

We offer **two main connection pathways**, which are detailed in <u>Part A</u> and <u>Part B</u> of this Information Pack. We understand that this information can be complex, so for ease of understanding, we've provided a simplified summary of the relevant processes below:

I would like to connect a DER system to the distribution network ... What process applies to me?

#### Is your DER system inverter-based and ≤ 30 kVA?

**Yes** – Refer to MICRO EG via IES ≤ 30 kVA.

DER systems of this size are **not covered** in this Information Pack.

X No - Proceed to the next question.

#### Is your DER system inverter-based, > 30 kVA, and connected at low voltage (LV)?

▼ Yes – Refer to MICRO EG via IES > 30 kVA and connected at LV.

You must follow the process outlined in **Part A** of this Information Pack.

X No - Proceed to the next guestion.

#### Does your DER system qualify for a Standing Exemption from Registration?

▼ Yes – Refer to DEFAULT NON-REGISTERED DER SYSTEM.

Follow the process in Part A, unless you choose to follow Part B.

X No – Proceed to the next question.

#### Are you applying for registration, or is your DER system already registered with AEMO?

▼ Yes – Refer to DEFAULT NON-REGISTERED DER SYSTEM.

Follow the process in Part A, unless you choose to follow Part B.



#### MICRO DER CONNECTIONS

#### Via an Inverter Energy System (IES) up to and including 30 kVA

The connection of inverter-based DER systems up to and including 30 kVA to a distribution network are classified as a Micro DER and are subject to the relevant connection process outlined in Chapter 5A of the NER.

The connection of DER systems up to and including 30 kVA, are <u>not</u> covered in this Information Pack. Further information on the connection of these Micro DER systems, including the steps involved in buying and installing your DER system can be found on our **Residential & commercial connections** (<u>Residential & commercial connections</u> | <u>Energex</u>) web page.

#### Via an Inverter Energy System (IES) between >30kVA and LV Connected

An inverter-based DER system greater than 30 kVA and connected at low voltage, is also classified as a Micro DER connection under the NER, and as such, the relevant connection process is aligned with Chapter 5A of the NER.

Due to the nature and complexity of these DER connections, relevant *connection applications* and enquiries are managed by our large customer connection support teams. Please refer to Part A of this information pack for further information around the process for these connections.

#### NON-MICRO DER CONNECTIONS

If your DER system does not qualify as Micro DER, the connection process and certain obligations will vary depending on its default registration status with the Australian Energy Market Operator (AEMO).

Under the National Electricity Rules (NER), the default requirement is that all DER systems connected to our distribution network must be registered with AEMO, unless they qualify for an exemption. Exemptions may be:

- Standing exemption automatically applies, typically when the DER system has a nameplate capacity below 5 MVA; or
- **Individual exemption** requires the system proponent to apply directly to AEMO, usually when the standing exemption does not apply.

You'll need to refer to AEMO's *NEM Generator Registration Guide*—available on their <u>AEMO</u> <u>Registration Fact Sheets and Guides</u> web page—along with other relevant information from <u>AEMO</u> to determine whether:

- your specific DER system qualifies for a standing exemption;
- you may be eligible for an individual exemption; or
- your DER system must be formally registered.

Please refer to <u>Part A</u> of this information pack for further information around the process for connecting DER systems under Chapter 5A (Default Non-Registered DER systems) or <u>Part B</u> of this information pack which is covered under Chapter 5 of the NER.

#### **DEFAULT NON-REGISTERED DER SYSTEMS**

By default, connections of DER systems that have the benefit of the standing exemption are covered under Chapter 5A of the NER. Please refer to Part A of this information pack for further information around the process for connecting DER systems under Chapter 5A.



Please note: these DER systems can elect, early in the process, to use the connection process under Part B of this Information Pack which is covered under Chapter 5 of the NER.

For the purposes of our connection processes, we have assumed that 5 MVA represents the relevant boundary between the two connection processes, although of course this will depend upon your situation.

#### **DEFAULT REGISTERED DER SYSTEMS**

DER systems that do not qualify for the standing exemption—such as those requiring registration with AEMO or a specific exemption—are subject to the provisions outlined in Chapter 5 of the National Electricity Rules (NER), particularly under Rule 5.3A.

Please refer to <u>Part B</u> of this information pack for further information around the process for connecting DER systems under Chapter 5.



# PART A - CONNECTION PROCESS - DER SYSTEMS UNDER CHAPTER 5A



The following information is an overview of the steps involved in the connection process applicable to:

- Micro DER connections > 30 kVA connected at Low Voltage
- DER systems who have the benefit of the standing exemption (typically those < 5 MVA) and who haven't elected to use the Part B process

Please refer to AEMO's NEM Generator Registration Guide (available on their <u>AEMO Registration Fact Sheets and Guides</u> web page) and Chapter 5A of the NER if you require additional information.



#### OVERVIEW – CHAPTER 5A CONNECTION PROCESS

Below is a **high-level overview** of the steps that may be involved in the Chapter 5A connection process:



This section outlines the process for connecting Distributed Energy Resources (DER) systems larger than 30 kVA—typically up to 5 MVA—to our distribution network. As noted earlier, this includes both Micro DER systems exceeding 30 kVA and DER systems eligible for the standing exemption, which generally applies to systems up to 5 MVA.

The formal connection process is governed by Chapter 5A of the National Electricity Rules (NER), titled *Electricity Connection for Retail Customers*. This framework applies to both Micro DER and, by default, Non-Registered DER systems. It consists of several stages, each with defined timeframes, required actions, and information exchanges between you and the relevant Distribution Network Service Provider (DNSP).

This process is designed to provide a more flexible pathway for connecting DER systems between >30 kVA and 5 MVA, while ensuring that agreed timelines are met. It also supports a collaborative relationship between you and the DNSP.

To help guide you through each step, we've broken down the Chapter 5A connection process into the following categories within this pack:

- Low Voltage Connection DER System >30 kVA
- High Voltage DER System Class A1 (≤1500 kVA)
- High Voltage DER System Class A2 (1.5 MVA to 5 MVA)



#### LOW VOLTAGE CONNECTION DER SYSTEM >30 KVA



#### 1. Enquiry

To start, you will need to submit a formal connection **enquiry** to us.

Your electrical contractor can complete the enquiry through the **Electrical Partners Portal** (<u>Ergon Network</u> | <u>Energex</u>) on your behalf. Alternatively, you or your consultant can create the enquiry through **Customer Self Service Portal** (Ergon Network | Energex).

We will acknowledge receipt of your inquiry within 5 business days.



#### 2. Preliminary Information

Our Customer Connections Preliminary Enquiry Information (<u>Ergon Energy Network</u> | <u>Energex</u>) fact sheet provides information to support your *connection application* to our distribution system, in line with the requirements of Chapter 5A.D2(b).



#### 3. Pre-Application Services

To ensure your proposed embedded generation (EG) system does not compromise the safety or reliability of our distribution network, we must assess whether the system's design and operating conditions meet our Technical Standards.

This assessment is known as a Site-Specific Enquiry Response (SSER) and forms part of our pre-connection services, as outlined in the Alternative Control Services (ACS) price list.

The **Site-Specific Enquiry Response (SSER)** will provide you with the following information:

- ✓ Preliminary assessment of your proposed generation capacity and proposed export
- ✓ Preliminary Technical Study
- ✓ A list of supporting documentation to be included with your application.

A valid SSER is required before we can proceed with processing your connection application.

Please refer to our Chapter 5A – Connection Enquiry Essentials (<u>Ergon Energy Network</u> | <u>Energex</u>) fact sheet about the information required to be provided by you as part of the delivery of these services.



#### 4. Connection Application

Once the relevant pre-application services have been completed, you may proceed to submitting an Application via our Portal.

As part of your Application, you must provide a Design Compliance Report certifying compliance of the DER System in accordance with our applicable connection standards (such as, STNW1174 or STNW3511).

The Design Compliance Report templates can be found on the "How to connect - Larger systems over 30kVA" landing page on our website (<u>Ergon Energy</u> | <u>Energex</u>) and must include a covering letter signed by an RPEQ with the following supporting documentation:

Network connection diagram (signed by RPEQ)



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- Protection line diagram including inverter and interface protection device settings and instrument transformer details (signed by RPEQ)
- DNSP approved Interface Protection Relay (IPR) including name, make and model (applicable for IES systems >200kVA and rotating machines)
- Voltage Rise Calculations the DER system has been designed to operate so that there is a maximum 2% voltage rise from the DER system to the Connection Point
- o details of any distribution connected bidirectional units (if applicable)
- o For any rotating machines, impedance parameters.

#### **Application Review**

We will advise you **within 10 business days** if your *connection application* is incomplete in a material respect and advise you of what details are needed to complete your application. We may require you to provide the outstanding information before your *connection application* can be progressed.



#### 5. Connection Offer

Once the connection application is complete in a material respect, we will prepare a connection offer and provide this to you within 65 business days.

The *connection offer* will remain open for acceptance for a period of 20 business days from the date of issue. This period may be extended by mutual agreement.

Acceptance requires the return of signed contracts within the specified timeframe. Failure to do so will result in the offer lapsing. If you wish to proceed after the offer has lapsed, a new *connection* application must be submitted, and the process will recommence.



#### 6. Detailed design, construction and commissioning

The purpose of this stage is to complete the installation of your DER system and facilitate the connection and energisation of your DER system.

You will need to provide evidence that your DER system complies with all of the relevant technical and operational conditions outlined in your *connection* 

offer and the relevant technical standard applicable to the size and connection voltage of your DER system.

#### **Construction to Commissioning**

Once constructed, you, or your chosen consultant, are required to provide confirmation that your DER system is compliant with the technical and operating conditions specified in your planning assessment (either basic or detailed) and your connection contract or consent agreement (as relevant to your DER system).

For DER systems connected to our LV network, this generally involves you engaging a competent person who is approved as a Registered Professional Engineer of Queensland (RPEQ) to complete an RPEQ Compliance Report to confirm that the chosen RPEQ has completed relevant testing and certifies the outcomes of the testing. This report must be submitted to us via our email address at either <a href="mailto:ergongeneration@energyq.com.au">ergongeneration@energyq.com.au</a> or <a href="mailto:energyq.com.au">energyq.com.au</a> or <a href="mailto:energyq.com.au</a>.

The system can then be tested for compliance (NB following completion of this testing the system must then be switched off). A Compliance Report, certified by an RPEQ must be submitted to us within the timeframe specified in the Connection Contract for our final approval.



Failure to submit the Compliance Report as required may result in the Connection Contract terminating. If this occurs and you still wish to proceed, you would be required to recommence the process.

Once we have approved the Compliance Report, an electrical works request must be submitted. Following our endorsement of the RPEQ Compliance Report, you, or your chosen consultant, will be requested to submit an Electrical Work Request (EWR) via our online service portal.

This will signal that your proposed DER system is ready to interconnect with our distribution network, so that we can carry out a final inspection. If no changes to the meters or the DER system are required, we will switch the DER system on.

#### **Energisation (for eligible exporting DER systems)**

Before your connection is energised you may, depending on the size of your DER system, also need to ensure you have arrangements in place for the sale and purchase of electricity. This should be arranged by contacting your relevant *retailer*.

#### HIGH VOLTAGE DER SYSTEM - CLASS A1 (≤1500 KVA)

The connection process for a high voltage (HV) Class A1 DER system under Chapter 5A is outlined below:



#### 1. Enquiry

To begin the process of connecting your DER system, you'll need to submit a formal connection enquiry.

Please complete the Large Customer Connection Enquiry Form <a href="Ergon">Ergon</a>
<a href="Metwork">Network</a> | <a href="Energex">Energex</a> available on our website. Once completed, you can email the form to us at: <a href="majorcustomers@energyq.com.au">majorcustomers@energyq.com.au</a>.

Alternatively, you or your consultant can submit the enquiry directly through the **Customer Self Service Portal** on our Ergon Network | Energex websites.

We will acknowledge receipt of your enquiry within **five** business days.



#### 2. Preliminary Information

Our **Customer Connections Preliminary Enquiry Information** (<u>Ergon Energy Network</u> | <u>Energex</u>) fact sheet provides information to support your *connection application* to our distribution system, in line with the requirements of Chapter 5A.D2(b).



#### 3. Pre-Application Services

As part of your connection application, you may need to provide specific technical information—some of which can be obtained through our **Pre-Application Services**, offered on a quoted basis. These services include:

Preliminary Connection Advice (PCA)

#### Detailed Connection Advice (DCA)

We will advise you which service(s) may be relevant to your project in our response to your initial enquiry. For example, a Class A1 system that does **not** require network augmentation may proceed directly from PCA to the formal application. However, if augmentation works are needed, a DCA will be required.



Below is a summary of what each service typically includes:

	Preliminary Connection Advice (PCA) provide you with the following information:	The <b>Detailed Connection Advice (DCA)</b> will provide you with the following information:	
✓	Network capacity	✓ Planning Report	
✓	Connection voltage options	✓ Project Scope Statement (site specific)	
✓	Coupling point options	✓ DCT/Contestable scope developed	
✓	Connection asset (only one option included)	<ul> <li>Completed checklists agreeing to particular aspects of your design</li> </ul>	
✓	Restrictions and limitations on the network	<ul> <li>Project specific checklists for entry into Application</li> </ul>	
✓	References to appropriate standards and manuals	<ul> <li>Project specific checklist for design commencement</li> </ul>	
✓	±50% indicative estimated project cost		
	range (on request)	✓ Indicative duration of project phases	
		✓ Application Phase Cost Estimate	
We anticipate around <b>30 business days</b> to deliver this service		We anticipate around <b>65 business days</b> to deliver this service	

Please refer to our Chapter 5A – Connection Enquiry Essentials <u>Ergon Energy Network</u> | <u>Energex</u> fact sheet about the information required to be provided by you as part of the delivery of these services.



#### 4. Connection Application

Once you've completed the relevant pre-application services and are ready to proceed, you'll need to submit a formal *connection application*.

To do this:

Complete the Large Customer Connection Application Form <u>Ergon</u>
Network | Energex available on our website.

- Email the completed form to: majorcustomers@energyq.com.au
- Alternatively, you or your consultant can submit the application via the Customer Self Service Portal.

As part of your application, you must also provide a **Design Compliance Report (DCR)**, certifying that your generating system complies with the requirements outlined in our **STNW1175** standard. Templates for the DCR are available on our website.

For a detailed overview of the required information, please refer to our **Chapter 5A Connection Application Essentials** fact sheet <u>Ergon Energy Network</u> | <u>Energex</u>.

#### **Application Review**

Within **10 business days** of receiving your *connection application*, we will notify you if it is **materially incomplete** and specify what additional information is required. You may need to provide this information before we can proceed with assessing your application.



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#### **Application Fee**

Once your application is confirmed to be materially complete, an **application fee** will be charged. This quoted fee covers the cost of assessing your *connection application* and preparing a *connection offer*.

Please note: fees begin accruing from the time your application is lodged. If you decide not to proceed at any point, you must notify us as soon as possible. You will be charged for any work completed up to the time of your notification.



#### 5. Connection Offer

Once the connection application is complete in a material respect, we will prepare a connection offer and provide this to you within 65 business days.

The *connection offer* will remain open for acceptance for a period of 20 business days from the date of issue. This period may be extended by mutual agreement.

Acceptance requires the return of signed contracts within the specified timeframe. Failure to do so will result in the offer lapsing. If you wish to proceed after the offer has lapsed, a new *connection application* must be submitted, and the process will recommence.



#### 6. Detailed design, construction and commissioning

The purpose of this stage is to complete the installation of your DER system and facilitate the connection and energisation of your DER system.

You will need to provide evidence that your DER system complies with all of the relevant technical and operational conditions outlined in your *connection* 

offer and the relevant technical standard applicable to the size and connection voltage of your DER system.

#### **Construction to Commissioning**

Regardless of the size of your proposed DER system, this stage of the connection process requires the construction and/or installation of the approved electrical infrastructure, or your system, and relevant testing and commissioning (which may be both the connection point and the DER system).

Once constructed, you, or your chosen consultant, are required to provide confirmation that your DER system is compliant with the technical and operating conditions specified in your planning assessment (either basic or detailed) and your connection contract or consent agreement (as relevant to your DER system).

Following our endorsement of the RPEQ Compliance Report (CR), based on the agreed performance standards, you, or your chosen consultant, will be requested to submit an Electrical Work Request (EWR) via our online service portal. This will signal that your proposed DER system is ready to interconnect with our distribution network, so that we can carry out a final inspection. If no changes to the meters or the DER system are required, we will switch the DER system on.

For those DER systems connected to our HV network or more complex configurations involving the addition or alteration of connection assets, the use of an RPEQ to endorse your connection may not be sufficient, and additional witness testing may be required. Such additional testing and confirmation may include a HV Audit or additional witness testing by the relevant *DNSP*. These requirements will be discussed with you prior to commissioning to ensure that you are aware of all obligations and any associated costs.



#### **Energisation (for eligible exporting DER systems)**

Before your connection is energised you may, depending on the size of your DER system, also need to ensure you have arrangements in place for the sale and purchase of electricity. This should be arranged by contacting your relevant *retailer*.

#### HIGH VOLTAGE DER SYSTEM - CLASS A2 (>1.5MVA TO 5 MVA)

The connection process for a high voltage Class A2 DER systems connecting under Chapter 5A is outlined below:



#### 7.Enquiry

To begin the process of connecting your DER system, you'll need to submit a formal connection enquiry.

Please complete the Large Customer Connection Enquiry Form <u>Ergon</u> <u>Network</u> | <u>Energex</u> available on our website. Once completed, you can email the form to us at: <u>majorcustomers@energyq.com.au</u>.

Alternatively, you or your consultant can submit the enquiry directly through the **Customer Self Service Portal** on our Ergon Network | Energex websites.

We will acknowledge receipt of your enquiry within five business days.



#### 8. Preliminary Information

Our **Customer Connections Preliminary Enquiry Information** (<u>Ergon Energy Network</u> | <u>Energex</u>) fact sheet provides information to support your *connection application* to our distribution system, in line with the requirements of Chapter 5A.D2(b).



#### 9. Pre-Application Services

As part of your connection application, you may need to provide specific technical information—some of which can be obtained through our **Pre-Application Services**, offered on a quoted basis. These services include:

- Preliminary Connection Advice (PCA)
- Detailed Connection Advice (DCA)

We will advise you which service(s) may be relevant to your project in our response to your initial enquiry.

Below is a summary of what each service typically includes:

The <b>Preliminary Connection Advice (PCA)</b> will provide you with the following information:	The <b>Detailed Connection Advice (DCA)</b> will provide you with the following information:
✓ Network capacity	✓ Planning Report
✓ Connection voltage options	✓ Project Scope Statement (site specific)
✓ Coupling point options	✓ DCT/Contestable scope developed
<ul> <li>✓ Connection asset (only one option included)</li> </ul>	<ul> <li>Completed checklists agreeing to particular aspects of your design</li> </ul>



✓ Restrictions and limitations on the network	<ul> <li>Project specific checklists for entry into Application</li> </ul>
<ul> <li>References to appropriate standards and manuals</li> </ul>	<ul> <li>Project specific checklist for design commencement</li> </ul>
	<ul> <li>         ✓ ± 20% estimate cost (on request)</li> <li>         ✓ Indicative duration of project phases</li> <li>         ✓ Application Phase Cost Estimate     </li> </ul>
We anticipate around <b>30 business days</b> to deliver this service	We anticipate around <b>65 business days</b> to deliver this service

Please refer to our Chapter 5A – Connection Enquiry Essentials (<u>Ergon Energy Network</u> | <u>Energex</u>) fact sheet about the information required to be provided by you as part of the delivery of these services.

#### Assessing your DER system

When assessing the proposed connection of *your* DER system, *we* consider the following factors (at both the Connection Enquiry and Connection Application stage):

- The type and nature of the DER system (e.g. inverter energy system or rotating machine such as a diesel generator), and whether the DER system will export to our distribution network, or will operate in a non-export configuration;
- The location and available capacity of the nearest power system infrastructure capable of facilitating the connection at the requested voltage levels and export levels;
- Whether that infrastructure is owned the relevant DNSP or Powerlink (if it is owned by Powerlink, then the response to the enquiry may be that you seek connection via Powerlink);
- · Compliance with the relevant technical standard;
- The impact of the proposed operation, both short term and into the future, of the DER system on our distribution network (and nearby customers);
- Any new or augmented infrastructure that is likely to be required to facilitate the connection
  of the DER system and the ownership model under which any construction will occur,
  including the classification of services provided and their costs;
- The ability to obtain necessary approvals (easements etc.);
- The ability to connect in the requested timeframes; and
- The legal structure and financial stability of the DER system proponent and any entity that proposes to issue any securities under the contracts executed with the relevant *DNSP*.



#### 10. Connection Application

Once you've completed the relevant pre-application services and are ready to proceed, you'll need to submit a formal *connection application*. To do this:

- Complete the Large Customer Connection Application Form Ergon Network | Energex available on our website.
- Email the completed form to: <u>majorcustomers@energyg.com.au</u>



 Alternatively, you or your consultant can submit the application via the Customer Self Service Portal.

As part of your application, you must also provide a **Design Compliance Report (DCR)**, certifying that your generating system complies with the requirements outlined in our **STNW1175** standard. Templates for the DCR are available on our website.

For a detailed overview of the required information, please refer to our **Chapter 5A Connection Application Essentials** fact sheet Ergon Energy Network | Energex.

#### **Application Review**

Within **10 business days** of receiving your *connection application*, we will notify you if it is **materially incomplete** and specify what additional information is required. You may need to provide this information before we can proceed with assessing your application.

#### **Application Fee**

Once your application is confirmed to be materially complete, an **application fee** will be charged. This quoted fee covers the cost of assessing your *connection application* and preparing a *connection offer*.

Please note: fees begin accruing from the time your application is lodged. If you decide not to proceed at any point, you must notify us as soon as possible. You will be charged for any work completed up to the time of your notification.



#### 11. Connection Offer

Once your connection application is deemed materially complete, we will prepare and issue a formal **Connection Offer** within **65 business days**.

The offer will remain open for acceptance for **20 business days** from the date of issue. This acceptance period may be extended by mutual agreement if required.

To accept the offer, you must return the signed contracts within the specified timeframe. If the offer is not accepted within this period, it will lapse. Should you wish to proceed after the offer has lapsed, a new *connection application* must be submitted, and the process will start again from the beginning.



#### 12. Detailed design, construction and commissioning

The purpose of this stage is to complete the installation of your DER system and facilitate the connection and energisation of your DER system.

You will need to provide evidence that your DER system complies with all of the relevant technical and operational conditions outlined in your *connection offer* and the relevant technical standard applicable to the size and connection voltage of your DER system.

#### **Construction to Commissioning**

Regardless of the size of your proposed DER system, this stage of the connection process requires the construction and/or installation of the approved electrical infrastructure, or your system, and relevant testing and commissioning (which may be both the connection point and the DER system).



Once constructed, you, or your chosen consultant, are required to provide confirmation that your DER system is compliant with the technical and operating conditions specified in your planning assessment (either basic or detailed) and your connection contract or consent agreement (as relevant to your DER system).

Following our endorsement of the RPEQ Customer Performance Compliance Report, based on the agreed Customer Performance Standards., you, or your chosen consultant, will be requested to submit an Electrical Work Request (EWR) via our online service portal. This will signal that your proposed DER system is ready to interconnect with our distribution network, so that we can carry out a final inspection. If no changes to the meters or the DER system are required, we will switch the DER system on.

For those DER systems connected to our HV network, Single Wire Earth Return (SWER) lines or more complex configurations involving the addition or alteration of connection assets, the use of an RPEQ to endorse your connection may not be sufficient, and additional witness testing may be required. Such additional testing and confirmation may include a HV Audit or additional witness testing by the relevant *DNSP*. These requirements will be discussed with you prior to commissioning to ensure that you are aware of all obligations and any associated costs.

#### **Energisation (for eligible exporting DER systems)**

Before your connection is energised you may, depending on the size of your DER system, also need to ensure you have arrangements in place for the sale and purchase of electricity. This should be arranged by contacting your relevant *retailer*.



# PART B - CONNECTION PROCESS FOR DER SYSTEMS CONNECTING UNDER CHAPTER 5



The following information is an overview of the steps involved in the connection process applicable to:

- DER systems who do not have a standing exemption to registration (typically 5 MVA and larger)
- DER systems under 5 MVA who elect to connect under Chapter 5.

Please refer to AEMO's NEM Generator Registration Guide (available on their <u>AEMO Registration</u> <u>Fact Sheets and Guides</u> web page) and Chapter 5A of the NER if you require additional information.



#### OVERVIEW – CHAPTER 5 CONNECTION PROCESS

Below is a **high-level overview** of the steps that may be involved in the Chapter 5 connection process:



The process for Chapter 5 connections is detailed in the section below.

#### HIGH VOLTAGE DER SYSTEM - CLASS B

The connection process for high voltage DER systems > 5 MVA connecting under Chapter 5, or <5 MVA who have elected to connect under Chapter 5, is outlined below:



#### 1. Enquiry

To get started, you will need to submit a formal connection enguiry to us.

Please complete our Large Customer Connection Enquiry Form (<u>Ergon Network</u> | <u>Energex</u>). Once done, simply email it to us at majorcustomers@energyq.com.au.

Alternatively, you or your consultant can create the enquiry via our Customer Self Service Portal. We will acknowledge receipt of your inquiry within 5 business days.



#### 2. Preliminary Response to Enquiry

You may choose to commence with a **Preliminary Response to Enquiry** (PRE) or proceed directly to a **Detailed Response to Enquiry** (DRE).

If you elect to receive a PRE, we will provide you with the information outlined in Schedule 5.4A of the NER.



#### 3. Detailed Response to Enquiry

The Detailed Response to Enquiry is a mandatory requirement under the NER that must be undertaken before you can proceed with an *application to connect*. At this point we will allocate a dedicated Project Sponsor, who'll be your single point of contact right through the connection process. They'll



endeavour to maintain regular contact with you and help guide you through the connection process.

#### Assessing your DER system

When assessing the proposed connection of your DER system, we will consider the following factors (at both the Connection Enquiry and Application to Connect stage):

- The type and nature of the DER system (e.g. inverter energy system or rotating machine such as a diesel generator), and whether the DER system will export to our distribution network, or will operate in a non-export configuration;
- The details of your intended Registration category (such as whether your DER system will be scheduled, semi-scheduled or non-scheduled) or applicable exemption
- The location and available capacity of the nearest power system infrastructure capable of facilitating the connection at the requested voltage levels and export levels;
- Whether that infrastructure is owned the relevant DNSP or Powerlink (if it is owned by Powerlink, then the response to the enquiry may be that you seek connection via Powerlink);
- Compliance with the relevant technical standard;
- Compliance with AEMO's System Strength Impact Assessment Guidelines;
- The impact of the proposed operation, both short term and into the future, of the DER system on our distribution network (and nearby customers);
- Any new or augmented infrastructure that is likely to be required to facilitate the connection of the DER system, and the ownership model under which any construction will occur, including the classification of services provided and their costs;
- The ability to obtain necessary approvals (easements etc.);
- The ability to connect in the requested timeframes; and
- The legal structure and financial stability of the DER system proponent and any entity that proposes to issue any securities under the contracts executed with the relevant DNSP.



#### 4. Application to Connect

Once you have received a detailed response to enquiry you may proceed with an application *to connect*.

This can be done by completing our Large Customer Connection Application Form (<u>Ergon Network</u> | <u>Energex</u>). Once done, simply email it to us at

<u>majorcustomers@energyq.com.au</u>. Alternatively, you or your consultant can use our Customer Self Service Portal.

Our Chapter 5 Connection Enquiry & Application Essentials (<u>Ergon Network</u> | <u>Energex</u>) fact sheet may also be useful to you.

#### **Application review**

We will advise you if your *application to connect* is deemed incomplete in a material respect and specify the information required to complete it.

A completeness check will be made of the application package within 10 business days, against the relevant application checklist. Once accepted, we will assess the connection package, in order



to agree on the performance standards, and conduct a full assessment under the system strength framework (if required).

To do this, we will conduct due diligence on the provided information:

- PSCAD<sup>™</sup> SMIB model, and then full assessment or stability assessment (if required) by using the provided models in a wider area model.
  - This requires many scenarios to be modelled and investigated so that it can be determined there is no stability remediation required, and the DER system(s) can meet the proposed Performance Standards, and do not cause harm to any other connections,
  - Where a full assessment or stability assessment is not required, we will undertake some wider area PSCAD<sup>TM</sup> modelling. These tests will at minimum include S5.2.5.4, S5.2.5.5 and S5.2.5.13 studies to gauge the suitability and performance of the provided PSCAD<sup>TM</sup>/EMTDC<sup>TM</sup> model.
- PSS®E modelling on both the SMIB model, and in a wider AEMO snapshot model;
- Benchmarking between PSCAD<sup>™</sup> and PSS®E to ensure the suitability of the PSS®E model and lowest short circuit ratio validity;
- Check of validity of models and consistency with provided single line diagrams;
- Review of all provided connections studies reports, protection reports, energisation reports, voltage control strategy, benchmarking reports, and negotiated access standard report.

#### **Application Fee**

We will also advise you of the relevant **application fee**. This quoted fee reflects the cost of assessing your application and undertaking the necessary steps to negotiate and prepare as *offer to connect*.

Should you choose to withdraw your application at any stage, you must notify us promptly. Charges will apply for any work completed up to the point of your notification.

#### **Access Standards**

Schedule 5.2.5 of the NER outlines the technical requirements for the connection of registered DER systems to a Network Service Provider's (NSP) network. The technical requirements are referred to as access standards, namely, automatic, minimum, and negotiated access standards. The access standards define the acceptable level of performance which a *Generator* or *Integrated Service Provider* must achieve for connection to a NSPs' network. Information about relevant access standards can be found in the Detailed Response to Enquiry and STNW1175.

A negotiated access standard falls between the automatic and minimum access standards. It is an agreed standard of performance for the relevant technical requirement that will be accepted to gain access to the network. This standard should be as close as possible to the automatic standard.

#### **Negotiating Access Standards and Performance Standards**

The Detailed Response to Enquiry will provide information on the technical requirements relevant to the proposed plant including details on the automatic, negotiated and minimum access standards.

At application, you will submit the proposed access standards, including any proposed negotiated standards. These will then be assessed. The factors we take into account when considering your proposed negotiated access standards generally include ensuring that the proposed access standards:



- are no less onerous than the corresponding minimum access standard;
- are set at a level that would not adversely affect the quality of supply of other customers;
- are able to be approved by AEMO (where applicable).

As per Rule 5.3A.3(b)(5), Information relating to Access Standards can be found in section 6.2 of STNW1175 Standard for HV DER connections. This information details the automatic, minimum and negotiated access standards.

It is suggested that Proponents familiarise themselves with the requirements of the Negotiation Framework prior to developing the *application to connect* package. A factsheet is available from your Project Sponsor. It is also suggested, that in-principle agreement on any 'negotiated' performance is sought prior to submission of the application package, in order to improve efficiency of the assessment process.

#### **AEMO Advisory Matters**

AEMO's role in Queensland, for the connection of DER systems, includes negotiating performance standards.

Following your *application to connect*, we must consult with AEMO in relation to AEMO Advisory Matters for each of the proposed negotiated standards and will liaise with AEMO on your behalf to seek AEMO's assessment and approval of the proposed performance standards.

Please note that any cost associated with an AEMO assessment or involvement will be your sole responsibility.

Indicative estimates of AEMO's fees are available in AEMO's Schedule of Fees on the AEMO website and will also be provided to you in your Detailed Response to Enquiry.



**DETAILED DESIGN** 

CONSTRUCTTION
AND COMMISSIONNING

#### 5. Offer to Connect

Once the *application to connect* is complete in a material respect, we will prepare a *connection offer* and provide this to you within 4 months.

The offer to connect will include details such as charges for the requested works (including construction and network tariffs), commercial terms, technical

requirements, any required augmentation or extensions, and indicative construction timeframes.

The offer to connect will remain open for acceptance for a period of 20 business days from the date of issue. This period may be extended by mutual agreement.

Acceptance requires the return of signed contracts within the specified timeframe. Failure to do so will result in the offer lapsing. If you wish to proceed after the offer has lapsed, a new *application to connect* must be submitted, and the process will recommence.

A sample of our model terms and conditions and draft copies of our connection agreements applicable to DER systems, can be found under our **Large high voltage DER systems** (Ergon Energy | Energex) web page.

### 6. Detailed design, construction and commissioning

The purpose of this stage is to complete the installation of your DER system and facilitate the connection and energisation of your DER system.

You will need to provide evidence that your DER system complies with all of the relevant technical and operational conditions outlined in your *offer to connect* and the relevant technical standard applicable to the size and connection voltage of your DER system.



#### **Registering with AEMO**

Both AEMO and Market Participants are required to comply with the National Electricity Rules (NER). If you're a new applicant, it's essential to understand the NER, the structure of the National Electricity Market (NEM), and your responsibilities as a Registered Participant.

We recommend reviewing the comprehensive registration resources available on the AEMO website. These include guidance on registration procedures, exemption and classification criteria, and the requirements for applying as a Generator or Integrated Service Provider—or for seeking an exemption.

Once your Registration Package (commonly referred to as the R1 package) is submitted, we will begin our assessment and conduct the necessary due diligence. You can download our **Customer R1 Checklist and Issues Register for EGs over 5 MW** from the *Standards, Manuals & Fact Sheets* page on the <u>Ergon Energy</u> | <u>Energex</u> website.

At this stage, the generator models may have evolved since the Application to Connect phase, as detailed design work is now complete. Our due diligence process includes:

- PSS®E and PSCAD™ modelling, including both Single Machine Infinite Bus (SMIB) and wide-area studies
- Benchmarking between PSCAD™ and PSS®E to confirm model suitability
- Verification and negotiation of any changes to Generator Performance Standards (GPS), including the 5.3.9 process if applicable
- Development of the Operational Protocol
- Design of curtailment schemes, if required
- Review of updated technical documentation, such as protection reports, transformer energisation studies, and voltage control strategies
- Finalisation of the Compliance Test Plan
- Coordination of the registration process as the primary DNSP representative in collaboration with AEMO

Once our due diligence is complete, we will endorse your registration to AEMO. If AEMO is satisfied with the submission, your plant will be formally registered.

For further details, please refer to AEMO's NER 5.3.0 Process Guideline.

Due diligence is carried out during both the Application and Registration phases because the detailed design—completed by the Generator or Integrated Service Provider—often results in updates to models, protection schemes, voltage control strategies, and energisation studies. Any items previously marked as "to be confirmed" will be finalised. Additionally, changes to the network or other committed generators may have occurred. In our experience, there are always outstanding matters that are resolved during the Registration phase.

#### **Construction to Commissioning**

Before your DER system is connected to our distribution network, we reserve the right to inspect and, if necessary, request testing of any components that directly impact our network.

As the National Electricity Market and Systems Operator, AEMO also plays a key role during this phase. Their involvement includes reviewing simulation models of power system equipment and control systems, as well as overseeing commissioning and post-commissioning activities.

For any Generator Performance Standard (GPS), a commissioning plan must be developed. This plan includes a GPS compliance test program, which must be agreed upon by you, us, AEMO, and Page 23 of 26

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any other relevant Network Service Providers. Please note that all costs associated with this compliance testing are your responsibility.

During commissioning, we will:

- · Review hold point reports
- · Facilitate technical discussions
- Coordinate with our control room and other affected customers as needed
- · Conduct a final review of models and associated reports once commissioning is complete

Ongoing communication with AEMO is required under the NER. Additionally, as part of the *offer to connect* conditions, you will be responsible for the costs associated with remote monitoring equipment and data services.

#### **SAMPLE CONNECTION DIAGRAMS – CHAPTER 5**

In accordance with Rule 5.3A.3(b)(2) of the NER, we provide single line diagrams illustrating our preferred and alternative connection arrangements for DER systems. These diagrams show key components such as:

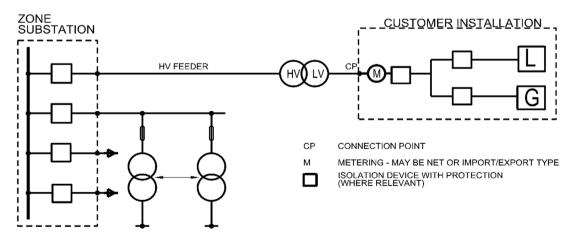
- Connection point
- Point of common coupling
- Distribution-connected generating units
- Loads
- Meters
- Circuit breakers
- Isolators

Further diagrams and information can be found in the Large Customer Connection Manual, which outlines the connection process, and in **Standard STNW3522**, which details our standard connection arrangements (see Appendix A).

You can access the relevant documents from the from the *Standards, Manuals & Fact Sheets* page on the <u>Ergon Energy</u> | <u>Energex</u> website.

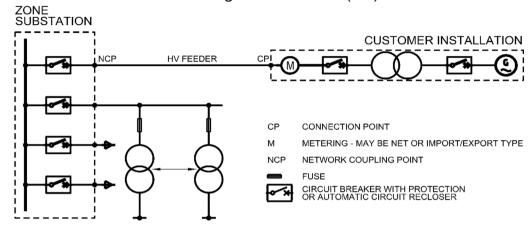
Sample schematic diagrams showing protection and control system requirements are available in the relevant Technical Standard for your DER system. Please refer to our technical standards—available on our websites—for more detailed guidance.

A - Connection of a Generator through a transformer (LV)

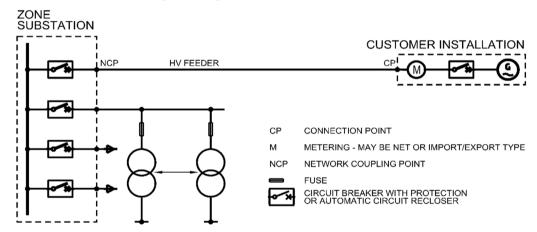




B - Connection of a Generator through a transformer (HV)



C- Direct Connection of a High Voltage Generator





### **CONNECTION COSTS & CHARGES**





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### Australian Energy Regulator (AER) Pricing Information

We charge customers for regulated distribution services. The AER classifies the services we provide as either:

Standard Control Services, which reflect core distribution services associated with the access and supply of electricity to customers, including network services (e.g. construction, maintenance and repair of the network), some connection services (e.g. small customer connections) and Type 7 metering services. We will recover our costs in providing Standard Control Services through network tariffs which are billed to retailers.

Alternative Control Services are activities undertaken by us which relate to a specific request from an identifiable customer, retailer or appropriate third party which are in addition to our Standard Control Services. The charges for Alternative Control Services can be directly attributed to the customer requesting the service.

Price lists for both Standard Control Services and Alternative Control Services are approved by the AER every year. More information on our distribution pricing principles and methodologies can be found via our **Network tariffs & pricing** (Ergon Energy | Energex) web page).

#### Services available

A full list of services is available in the current Price List for Alternative Control Services which can be found via our **Standards**, **Manuals & Fact Sheets** (<u>Ergon Energy</u> | <u>Energex</u>) web page. A selection of those services typically applying to DER system connections (large customer connections) is outlined overleaf.

These services can be tailored to meet your individual project needs, and your Project

Sponsor will be able to assist you with any enquiries you have.

#### **Contestability of Services**

Some services are contestable, meaning you have the option of engaging us or a suitably qualified and experienced consultant to perform the service.

If we are providing a chargeable service, we will provide you with a quote tailored to your needs. Upon acceptance of this quote, we will issue you with an invoice which will be payable prior to the commencement of work

#### **Example Services & Indicative Charges**

Your proposed project may require several pre-connection services to enable us to determine the impact of the DER system connection on the safety and security of our distribution network prior to an application to connect/connection application.

The services required to be performed in relation to your connection can vary, and, as the cost of those services are tailored to your project's specific requirements, it is difficult to provide indicative costs outside of an itemised quote.

#### **Additional Costs**

There may also be ongoing charges associated with your proposed DER system, including, but not limited to:

- additional network tariffs associated with DER systems
- security (contract or construction) costs (where applicable)
- costs regarding third party involvement (e.g. AEMO), where required, such as registration of generator performance standards (GPS)

Your Project Sponsor will advise if any of these costs are applicable to your proposed project.

As your connection arrangements may differ significantly, you must understand that your connection costs will be determined in line with your connection agreements and the applicable regulatory arrangements. However, worked examples of connection costs associated with the connection of DER systems, based on preferred and possible connection arrangements, are noted below.



#### PRE-CONNECTION AND CONNECTION COSTS (ESTIMATED)

The applicable pre-connection and connection costs depend on the nature of your project. We have outlined the estimated costs in the relevant tables below:

Negotiated connection fees and charges may also be found in the fees and charges documentation on our websites:

- Connecting to the Ergon Energy Network Fees and Charges | Ergon Energy
- Connecting to the Energex Network Fees and Charges | Energex

#### 1. Connecting under Chapter 5A

The following services are quoted services and vary depending on the size and complexity of your connection. Below is a table of indicative costs:

#### Low Voltage (LV) DER Systems < 30 kVA under Chapter 5A of the NER

Indicative Service required	Connection Supply	Category	Fee (excl. GST)
Site Specific Advice	Embedded Network Investigations	Negotiated	Quoted
	Technical Advice Service	Negotiated	Quoted
	Consultation Service	Negotiated	Quoted
Application	SWER	Negotiated	\$355.45
	Isolated Networks		\$355.45
	Negotiated (Static)	Negotiated	\$109.09 - \$355.45
	Negotiated – V2G (SWER and Negotiated \$7 Non Standard)		\$1312.73
	Dynamic	Negotiated	\$109.09
	Dynamic SWER with Energy Storage Systems (AC)	Negotiated	\$355.45
	Solar Sharing	Negotiated	\$6,019.09

#### Low Voltage (LV) DER Systems > 30 kVA under Chapter 5A of the NER

Indicative Service required	Connection Supply	Category	Fee (excl. GST)
Site Specific Enquiry Response	30kVA - 1500kVA	Negotiated	\$1,258.18
Enquiry Response	Rotating Machine – Bumpless transfer		





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Indicative Service required	Connection Supply	Category	Fee (excl. GST)
without construction	Rotating Machine – Standby (testing only)		
Site Specific Enquiry Response with Construction	Connections with aggregate capacity ≥1500kVA, Network Connection/Augmentation, Continuous Parallel Rotating Machines	Negotiated Quoted	
Application	30kVA –200kVA	Basic	\$710.91
	30kVA -200kVA	Negotiated -	\$2,188.18
	201kVA - 500kVA	IES	\$4,076.36
	501kVA – 1,500kVA		\$5,170.91
	Solar Sharing (IPDS) 30kVA - 200kVA		\$6,019.09
	Solar Sharing (IPDS) 201kVA - 500kVA		\$7,496.36
	Solar Sharing (IPDS) 501kVA - 1499kVA		
	30kVA –200kVA	Negotiated - IES – Isolated	\$3,967.27
	201kVA - 1499kVA	Network	\$6,812.73
	SWER & ≥ 50 kVA	Negotiated - V2G	\$3,146.36
	Bumpless transfer & Standby (for testing only)	Rotating Machine Based EG System	Quoted
	Multiple Connection Points	Complex	Quoted
	Embedded Network		Quoted
	DER systems with construction: ≥1500kVA, Network Connection/Augmentation		Quoted
	Complex Applications		Quoted



### High Voltage DER System - Class A1 (≤1500 kW)

Indicative Service required	Simple Fee (inc GST)	Standard Fee (inc GST)	Complex Fee (inc GST)
Preliminary Connection Advice	As quoted	As quoted	As quoted
Site Specific Connection Advice	As quoted	As quoted	As quoted
Detailed Connection Advice (where applicable)	As quoted	As quoted	As quoted
Application	As quoted	As quoted	As quoted

#### High Voltage DER System - Class A2 (>1500 kW to 5 MVA)

Indicative Service required	Standard Fee (inc GST)	Complex Fee (inc GST)
Preliminary Connection Advice	As quoted	As quoted
Site Specific Connection Advice	As quoted	As quoted
Detailed Connection Advice	As quoted	As quoted
Application	As quoted	As quoted
Application fee for Generator modelling and generator performance standard GPS review.	As quoted	As quoted

#### 2. Connecting under Chapter 5

#### High Voltage DER System - Class B ( > 5 MVA)

Indicative Service required	Standard Fee (inc GST)	Complex Fee (inc GST)
Preliminary Response to Enquiry	*Nil cost	*Nil cost
Detailed Response to Enquiry	\$115,600	\$157,600
Application process (Inclusive of AEMO and other NSP's)	\$214,400	\$508,000

<sup>\*</sup> Please note : Multi Site Enquires from the same applicant may require quoted fees to be applied for the Preliminary response.



### **ACS SERVICES (RELEVANT TO CONNECTION OF DER SYSTEMS)**

Please find below an extract of the services relevant to the connection of DER systems from our Price List for Alternative Control Services.

Service	Description	Performed by	Fee		
	Pre Connection Services				
Provision of general Information	Provision of standard information and general information during a connection enquiry. Includes but not limited to:  • Provision of advice on Supply Availability  • Provision of advice on process related issues  • Initial Assessment of Enquiry and response / acknowledgement	DNSP	No - service provided at no cost		
Pre-Connection Site Inspection	Site inspection in order to determine nature of the connection being sought	DNSP	Yes - fee to be quoted		
Provision of site- specific connection advice for Large Customers	Provision of site-specific advice, data and/or information on request for small or large customer connections (during the connection enquiry and/or connection application stage only). For example:  • advice on project feasibility • advice on whether augmentation would likely be required • capacity information, including specific network capacity • load profiles for load flow studies • requests to review reports and designs prepared by external consultants, prior to lodgement of connection application • additional or more detailed specification and design options.  Excludes information provided in planning reports/studies and project scopes.	DNSP	Yes - fee to be quoted		
Assessment for Non- Exporting DER system applications	Services associated with assessing a generator on a customer's installation which will not be exporting into the distribution system.	DNSP	Yes - fee to be quoted		
Provision of a Planning Report	General evaluation and advice on asset options - Build-own-operate ~ build-own-transfer ~DNSP build  Design of up to three connection options that we would see as feasible. These can be standard connection options – tailored to individual circumstances. e.g. load, distances, network conditions  The advantages, disadvantages, likely costs and timing of each option  A clear recommendation from us on the most suitable option  (These are indicative and non-binding estimates, and subject to formal design & pricing via the Application Stage)	DNSP	Yes - fee to be quoted		





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Service	Description	Performed by	Fee	
Pre Connection Services				
Provision of a Project Scope	Design and advice on one (1) connection configuration option from the Planning Report; including information as follows Prepare indicative estimates for this connection configuration option Technical connection configuration design Secondary Systems Assessment and Design including Communications, Protection Property Aspects Advice - including guidance on landowner agreements, the consultation process and easement requirements or land acquisitions that remain outstanding. Environment and Cultural Heritage Advice - includes guidance on all documents required to support the application for such approvals (Whilst more refined than the Connection Planning report, - these remain indicative and non-binding estimates, and are subject to formal design & pricing via the Application Stage) (Equivalent to external consultant estimates - to be formalised in application).	DNSP or a suitably qualified and experienced external consultant (the DNSP can provide, on request, a list of recommended consultants)	Yes - fee to be quoted	
Connection Services				
Removal of a network constraint for DER system	Augmenting the network to remove a constraint faced by a DER system	DNSP	Yes - fee to be quoted	
Witness Testing	Witnessing of testing carried out at the customers' installation where reasonably required or requested.	DNSP	Yes - fee to be quoted	
Post Connection Services				
Re-arrange connection assets at the request of the customer	Removal, relocation or rearrangement of connection assets at customer's request.	DNSP	Yes - fee to be quoted	



### **RESOURCES & SUPPORT**

#### **ACCESING TECHNICAL STANDARDS**

You can find our technical standards on the **Standards**, **Manuals & Fact Sheets** page of the <u>Ergon Energy</u> | <u>Energex</u> website.

These standards are organised based on the **size** and **voltage level** of your DER system—not whether the system is registered—so it's important to confirm these details when selecting the appropriate standard.

The technical standards provide essential information to support your connection process, including:

- Single line diagrams showing how your system connects to the grid
- · Schematics for protection and control systems
- Minimum technical requirements your system must meet
- Other key technical specifications and guidelines

For larger systems, you may need to refer to multiple standards, as they often include more detailed requirements.

If your site already has a **low-voltage connection** and you're planning to install a system larger than 30 kVA, please review the **STNW1174** standard.

Additionally, the **STNW3522** standard applies to all large customer connections—even if no generation is installed. It outlines general connection requirements, including preferred connection arrangements.



If you wish to submit an enquiry to connect an LV DER system >30kVA to our LV Network, please review our STNW1174 standard.

Low voltage generating systems also have the option of a dynamic connection, in which case review our **STNW1174**, and **STNW3511** standards.



If you wish to submit an enquiry to connect a **DER** system to our HV network, please review our **STNW1175** standard.



#### **OUR ENQUIRY & APPLICATION FORMS**

#### For Low Voltage DER systems >30kVA

Form	Ergon Energy Network	Energex
Enquiry Form	Your electrical contractor can submit online via our Electrical Partners Portal (Ergon Network) on your behalf. Alternatively, you or your consultant submit via our Customer Self Service Portal (Ergon Network).	Your electrical contractor can submit online via our Electrical Partners Portal (Energex) on your behalf. Alternatively, you or your consultant can submit via our Customer Self Service Portal (Energex).
Application Form	Your electrical contractor can submit online via our Electrical Partners Portal (Ergon Network) on your behalf. Alternatively, you or your consultant submit via our Customer Self Service Portal (Ergon Network).	submit online via our <b>Electrical Partners Portal</b> (Energex) on your behalf. Alternatively, you or your consultant can submit via our

#### For all High Voltage DER systems

Form	Energex	Ergon Energy Network
Enquiry Form	Submit our Large Customer Connection Enquiry Form   Energex	Submit our <u>Large Customer</u> Connection Enquiry Form   Ergon Network
Application Form	Submit our Large Customer Connection Application Form   Energex.	Submit our Large Customer Connection Application Form   Ergon Network.

#### **OUR WEBSITE PAGES & RESOURCES**

Further information is available to support you on our web pages below:

Reference	Ergon Energy Network	Energex
Large customer connections	Large customer connections   Ergon Energy	Large customer connections   Energex
Large HV DER systems (including batteries)	Large high voltage DER systems   Ergon Energy	Large high voltage DER systems   Energex
Large customer electricity connections	Large customer electricity connections   Ergon Energy	Large customer electricity connections   Energex
Large customer connections support	Large customer connections support   Ergon Energy	Large customer connections support   Energex



Large customer standards manuals and fact sheets	Standards, manuals & fact sheets   Ergon Energy	Standards, manuals & fact sheets   Energex
Network pricing & tariffs	Network tariffs & pricing   Ergon Energy	Network tariffs & pricing   Energex
Network Fees & charges	Connecting to the Ergon Energy Network Fees and Charges   Ergon Energy	Connecting to the Energex Network Fees and Charges   Energex

#### **OUR LARGE CUSTOMER CONNECTION SUPPORT TEAMS**

We recognise that connecting large DER systems to the distribution network can be a complex and detailed process. To support you through this journey—from initial planning through to construction and energisation—we have dedicated teams ready to assist with both low voltage (LV) and high voltage (HV) DER systems over 30 kVA.

Our teams will work closely with you throughout the process, maintaining regular communication to ensure your requirements are understood and met.

For assistance or further information regarding DER systems over 30 kVA, please contact the relevant team:

- High Voltage DER Systems
  - Email: majorcustomers@energyg.com.au
- Low Voltage DER Systems (>30 kVA)
  - For Ergon Network: <a href="mailto:ergongeneration@energyq.com.au">ergongeneration@energyq.com.au</a>
  - For Energex: energexgeneration@energyq.com.au