

Fact Sheet: Metering Installation Design



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Purpose

This document describes the information that Ergon Energy Network and Energex, as Distribution Network Service Providers (DNSP), require Major Customers to provide for proposed metering installation arrangements as part of an externally developed Planning Report or Project Scope.

Glossary

Term	Acronym	Definition
Australian Energy Market Operator	AEMO	The entity responsible for the management of the NEM and who oversees the system security of the interconnected national electricity system in respect of which the NEM applies.
Connection Point		The physical point or link where the Connection Assets meet the Customer Assets so as to permit the flow of electricity between the Premises and Distribution System, being the agreed point of supply.
Distribution Network Service Provider	DNSP	In this Fact Sheet, refers to either Energex (who owns and operates the Distribution System in South-East Queensland) or Ergon Energy Network (who owns and operates the Distribution System in the remainder of Queensland).
Financially Responsible Market Participant	FRMP	The entity that is financially responsible under the NER for a <i>connection point</i> .
Major Customer		In this Fact Sheet, refers to a person intending to submit an application to connect to the DNSP (for either a new connection or modification of an existing connection) where the acceptance of that application and completion of necessary works will result in that customer being classified by as any of an ICC (Individually Calculated Customer), CAC (Connection Asset Customer) or EG (Embedded Generator) in accordance with the DNSP's Pricing Proposal which can be found on the relevant DNSP's website.
Metering Coordinator	MC	The entity appointed by a FRMP to be ultimately responsible for the provision, installation and maintenance of metering installations. The MC appoints the MP for the connection point.
Metering Data Provider	MDP	A service provider accredited by AEMO to undertake the collection, processing, storage and delivery of metering data to AEMO and other registered participants under the NER.

Term	Acronym	Definition
Metering Provider	MP	A service provider accredited by AEMO to undertake the provision, installation and maintenance of metering installations.
National Electricity Market	NEM	The wholesale electricity market operating in relation to the interconnected electricity network in Queensland, New South Wales, Australian Capital Territory, Tasmania, Victoria, and South Australia.
National Electricity Rules	NER	The National Electricity Rules under the <i>Electricity – National Scheme (Queensland) Act 1997</i> (Qld).
National Metering Identifier	NMI	A NMI is a unique identifier for each metering installation within the NEM. It must be provided by the DNSP at the request of the FRMP. NMIs are an essential part of the Connection Agreement and Connection Service Order and should be identified/created as soon as possible for any new or upgraded installation.
Retailer		An entity registered with AEMO as a Market Participant who purchases electricity from the NEM and sells this to customers. A Retailer may also be referred to as the FRMP for a Connection Point.

Background

Metering Installations

Each market connection point must have a metering installation, in which the FRMP (often the electricity Retailer) is ultimately financially responsible. Major Customers should discuss these requirements with their electricity Retailer or, where an electricity Retailer has not been chosen at the time of application, the Distribution Network Service Provider (DNSP). Local jurisdictional guidelines need to be considered when designing the metering installation as the DNSP may have specific design requirements or considerations.

Retail Contracts

A Major Customer is usually required to have a retail contract with an electricity Retailer of their choice. Connection of supply will not occur until this contract has been established. The retailer will be assigned as the FRMP for that Connection Point.

Appointing a Metering Coordinator, Metering Provider and Metering Data Provider

Before the FRMP may participate in the market in respect to a Connection Point, and for as long as they continue to participate, they must ensure that a Metering Coordinator is appointed. The Metering Coordinator must appoint a Metering Provider and Metering Data Provider, per NER 7.3.

The FRMP must provide a valid initial connection service order to the DNSP before the Connection Point can be energised.



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Metering Installation

Type	Annual Active Energy Use	Minimum Acceptable Class or Standard of Components	Check Metering Requirement
1	>1000 GWh	0.2 CT/VT/Meter Wh 0.5 Meter Varh	Check Metering Required
2	>100-1000 GWh	0.5 CT/VT/Meter Wh 1.0 Meter Varh	Partial Check Metering Required
3	0.75 to less than 100 GWh	0.5 CT/VT 1.0 Meter Varh 2.0 Meter Varh	No requirement
4	Less than 750 MWh	Either 0.5 CT and 1.0 Meter Wh; or Whole Current General Purpose Meter Wh (Meeting req. of NER 7.8.2(a)(9) & 7.10.6(d))	No requirement

Adapted from Chapter 7 of the NER.

Services in relation to Type 1–4 metering installations are both contestable and unregulated services and the prices for providing these services are not regulated by the AER.

For further information, refer to the Queensland Electricity Connection Manual (QECM) on the relevant DNSP's website ([QECM \(Ergon Energy Network\)](#), [QECM \(Energex\)](#) and the [National Metering Installation Requirements](#) on the Master Electricians website (<http://www.masterelectricians.com.au>).

Planning Metering Installations

Metering arrangements for all new or modified Major Customer Connection Points are described in a Metering Design Brief. This is a required component of the Project Scope. Specifications provided in any Metering Design Brief must comply with the NER and must be reviewed by the DNSP.

The DNSP appreciates that metering installation details may be refined as project progresses. However, it is imperative that where there is a change in scope, relevant information is promptly provided to the DNSP.

Options for Developing a Metering Design Brief

Either the DNSP or a Major Customer (or their respective contractors) can develop Metering Design Briefs. There is no legislated format for a Metering Design Brief.

The DNSP reviews all components of externally provided Project Scopes/Planning Reports (including proposed metering arrangements) to ensure they meet regulatory, customer and DNSP requirements.

Timeframes for delivery of these services will be provided upon request. Where the DNSP develops or reviews a design brief, there will be a fee for these services.



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Information required by the DNSP to Review or Develop a Metering Design Brief

Where a Major Customer requests the DNSP to develop a Metering Design Brief, the Major Customer must give the DNSP information in accordance with sections A–D of the attached Metering Installation Design template.

Where the DNSP reviews a third-party Metering Design Brief, it requires certain information to determine whether the proposed metering arrangement is acceptable to the DNSP and compliant with the NER. In this situation, the Major Customer must give the DNSP information in accordance with sections A-E in the Metering Installation Design template.

Guidelines for Location of Metering Installation

The location of the Metering Point must be as close as practicable to the Connection Point. Metering hardware, including instrument transformers, may be located in a substation switchyard or be a pole-mounted unit. This may be either on the Major Customer or the DNSP’s managed property.

Where the primary plant (current and voltage transformers) is located in the DNSP’s substation switchyard, access restrictions apply. Any personnel wishing to enter the substation switchyard must be trained and approved by the DNSP. Any third-party meter providers or external personnel must be trained in substation entry before accessing assets within DNSP’s substations, this authorisation must be obtained and maintained to continue accessing the asset.

No Major Customer owned metering installations may be located within a DNSP’s substation without the DNSP first conducting a risk assessment and granting approval.

Metering Installation Design Template

This template is provided as a guide to illustrate the information typically required by the DNSP to develop or review a Metering Design Brief. Design briefs may be provided by the DNSP, the Major Customer, or a third party appointed by the Major Customer.

For assistance in compiling this information, please contact your assigned Major Customer Project Sponsor.

SECTION A

Contact Details	
Company Name (as per ASIC registration)	
Project Title	
Name of Organisation Supplying Metering Information/Design Brief	
Name of Appointed Representative for Metering Information/Design Brief	



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Contact Details	
Email Address for Metering Correspondence (We will use email as the preferred method of contact unless otherwise advised)	

SECTION B

Locational Information	
Location of Connection Point <i>(Please specify whether new or existing)</i> <i>(Provide latitude/longitude, GPS, Google Map KML)</i>	
National Metering Identifier/s (if existing connection) If Multiple NMIs, please list all	
Installation Project Site Name	
Location of Metering Installation including Instrument Transformers and Metering Switchboard position <i>(Provide latitude/long, GPS, KML, or physical address for the site)</i>	
If site not owned by Major Customer, name of the registered owner of the installation site	
Registered Plan Number and/or Lease No.	
Distance in metres from Connection Point to metering installation	
Spatial Data / Maps <i>Please attach maps which clearly illustrate:</i> <ul style="list-style-type: none"> • <i>Asset Boundaries</i> • <i>Connection Point</i> • <i>Metering installation</i> • <i>Location of relevant mining leases</i> <i>(Preferably Google Earth pin attachment)</i>	
Additional Locational Information <i>(Please attach any additional information including Access Restrictions, Environmental or Cultural Heritage concerns)</i>	

SECTION C

Load Connection Details	
Connection Voltage	11 kV 22 kV 33 kV 66 kV 132 kV
Estimated Energy Consumption (kWh per annum)	
Authorised Maximum Demand (kW)	
Average Monthly Demand (max kW per 30 mins)	



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Load Connection Details	
Power Factor (e.g. 0.85)	
Power Factor Correction to be installed?	
Details of Disturbing Loads <i>(Specify any known large motors, welders, thyristor drives, draglines to be connected)</i>	
Other relevant information, including any anticipated rise in consumption in future years	
What is the highest rated motor to be connected?	
Anticipated First Connection Date	

SECTION D

Responsibilities	
Ownership Option	
Customer design, construct and DNSP own (transfer of asset)	Y/N
Customer design, construct and own	Y/N
Electricity Retailer (FRMP) <i>Please provide if known — ESSENTIAL prior to connection.</i>	
Metering Coordinator <i>Please provide if known; will be appointed by Retailer.</i>	
Metering Provider <i>Please provide if known —will be appointed by Retailer or be provided by DNSP in the interim.</i>	
Meter Data Provider <i>Please provide if known.</i>	

SECTION E

Additional Information required for a Customer Provided Metering Brief	
<p><i>Note: Where the DNSP does not develop the Metering Design Brief, the developer should ensure that the following information is provided and that specified equipment, installation arrangements and capabilities are in accordance with Chapter 7 of the NER. Additionally, the Queensland Electricity Connection Manual and the Metering Installation Requirements Manual can be found on the relevant DNSP's website. This document provides additional support for this.</i></p>	
Description of Primary Plant	



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Additional Information required for a Customer Provided Metering Brief	
<p><i>Notes: Instrument Transformers must:</i></p> <ul style="list-style-type: none"> • <i>Meet the required accuracy class for the type of metering installation,</i> • <i>Be tested to AS61869 or if legacy plant tested to AS60044,</i> • <i>Be provided with test certificates in accordance with NER schedules S7.2 and S7.3 and be in English, test certificates shall include the measurement uncertainty to 95% level of confidence,</i> • <i>Have endorsed reports from a laboratory accredited by NATA or from a laboratory accredited by an organisation recognised by the International Laboratory Accreditation Cooperation (ILAC).</i> <p><i>Where the load is to be supplied at voltages $\geq 66\text{kV}$ with annual energy usages $< 100\text{GWh}$ per annum, it is recommended that Current Transformers with multiple taps (ratios), or preferably single tap extended range i.e. Ext 200%, be installed to allow for future increases in loads</i></p>	
<p><i>Additionally, the description of primary plant should specify:</i></p> <ul style="list-style-type: none"> • <i>Security provisions which ensure that the connections are tamper proof and sealable; and</i> • <i>Maintenance provisions which comply with environmental standards.</i> 	
<p>Design of Metering Installation</p> <p><i>Please provide design layout and description.</i></p> <p><i>The description of the Metering Installation should specify:</i></p> <ul style="list-style-type: none"> • <i>Access provisions for testing and audit purposes</i> • <i>Site security provisions</i> <p><i>Provisions for remote communications to the metering equipment</i></p>	

Further Information

Major Customers may contact their Project Sponsor to obtain further specific information.



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