Network Tariff Guide for Standard Control Services

1 July 2017 to 30 June 2018

Revision history

Version	Date	Summary of changes
1.0	1 July 2017	Initial 2017–18 Network Tariff Guide.

Contents

1. Introduction

1.1 Overview

On 30 June 2016, Ergon Energy Corporation Limited (Ergon Energy) became a subsidiary of Energy Queensland Limited which is the holding company for both Energex and Ergon Energy. Ergon Energy is a Distribution Network Service Provider (DNSP) to around 730,000 customers in regional Queensland. Our service area covers around 97 per cent of Queensland and has approximately 160,000 kilometres of power lines and one million power poles. Around 70 per cent of our network's power lines are radial and service mostly rural areas with very low levels of customers per line kilometre.

Ergon Energy provides a number of different services. The Australian Energy Regulator (AER) decides how these services are classified and how they are regulated in its Distribution Determination. This is important as it determines how prices are set and how charges are recovered from our customers.

For the 2015 to 2020 period, many of our services are classified as Direct Control Services. These services are subject to direct regulatory oversight by the AER, through price or revenue setting. Direct Control Services are further classified into Standard Control Services and Alternative Control Services.

Standard Control Services are core distribution services associated with the access and supply of electricity to customers. They include network services (e.g. construction, maintenance and repair of the network), some connection services (e.g. small customer connections) and Type 7 metering services. Ergon Energy recovers our costs in providing Standard Control Services through network tariffs billed to retailers.

Alternative Control Services are comprised of:

- *Fee based services* – one-off distribution services that Ergon Energy undertakes at the request of an identifiable customer, retailer or appropriate third party which are levied as a separate charge, in addition to our Standard Control Services. These services are priced on a 'fixed fee' basis as the costs of providing the service (and therefore price) can be assessed in advance of the service being requested.

  Examples of fee based services include temporary connections, de-energisations, re-energisations and supply abolishment.

- *Quoted services* – similar to fee based services, but they are 'priced on application' as the nature and scope of these services are variable and the costs (and therefore price) are specific to the individual requestor's needs (e.g. design and construction of connection assets for major customers, real estate development connections and special meter reads etc.).

- *Default Metering Services* – relate to:

  - Type 5 and 6 meter installation and provision (before 1 July 2015)
  - Type 5 and 6 meter installation and provision (on or after 1 July 2015), where the replacement meter is initiated by Ergon Energy as a DNSP
  - Type 5 and 6 metering maintenance, reading and data services.

  Ergon Energy recovers our costs of providing Default Metering Services through daily capital and non-capital charges based on the number and type of meters we provide the customer. These charges are billed to retailers.

- *Public Lighting Services* – relate to the provision, construction and maintenance of public lighting assets owned by Ergon Energy, and emerging public lighting technology. Ergon Energy recovers

our costs of providing Public Lighting Services through a daily public lighting charge billed to retailers. We also charge a one-off exit fee, when a customer requests the replacement of an existing public light for a light emitting diode (LED) luminaire before the end of its useful operational life.[1]

We also pass on transmission-related costs and jurisdictional scheme amounts[2] to customers.

1.2 Purpose

This Tariff Guide sets out the network tariffs that apply in 2017-18, as well as the application rules. It is structured as follows:

Section	Description
Chapter 1	▪ Provides an overview of our Tariff Guide and our other supporting network pricing documents
Chapter 2	▪ Outlines what network tariffs are and key pricing concepts ▪ Summarises changes that apply to our network tariffs in 2017-18
Appendix 1	▪ Provides a website link to the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet. This spreadsheet sets out our tariff classes, network tariffs applicable to each class and the associated Network Tariff Codes and rates (GST exclusive) ▪ Outlines the process for obtaining site specific rates and other information ▪ Sets out explanatory notes on the application of our network tariffs, including tariff conditions ▪ Includes information on TUOS regional indicators and Distribution Loss Factors (DLFs) ▪ Outlines Network Tariff Codes applicable to micro-embedded generator units and information on the Queensland Government's Solar Bonus Scheme (SBS)
Appendix 2	▪ Outlines the methodology used by Ergon Energy to calculate our Inclining Block Tariff (IBT) network tariffs for Standard Asset Customers (SAC) Small and provides illustrative examples
Appendix 3	▪ Provides examples of the connection unit charge
Appendix 4	▪ Provides examples of how the Seasonal Time-of-Use Demand (STOUD) tariffs are calculated for different user groups
Appendix 5	▪ Provides an example of how the excess reactive power charge is applied
Appendix 6	▪ Details the kVA methodology used to calculate tariffs for Individually Calculated Customers (ICCs) and Connection Asset Customers (CACs)
Appendix 7	▪ Outlines a mapping of our DUOS locational zones to Queensland local government areas (LGAs)
Appendix 8	▪ Lists the Transmission Connection Points (TCPs), their assigned Transmission Node Identifier (TNI) and geographical Transmission Use of System (TUOS) Region
Appendix 9	▪ Describes the apparatus that is eligible to be connected to controlled load network tariffs

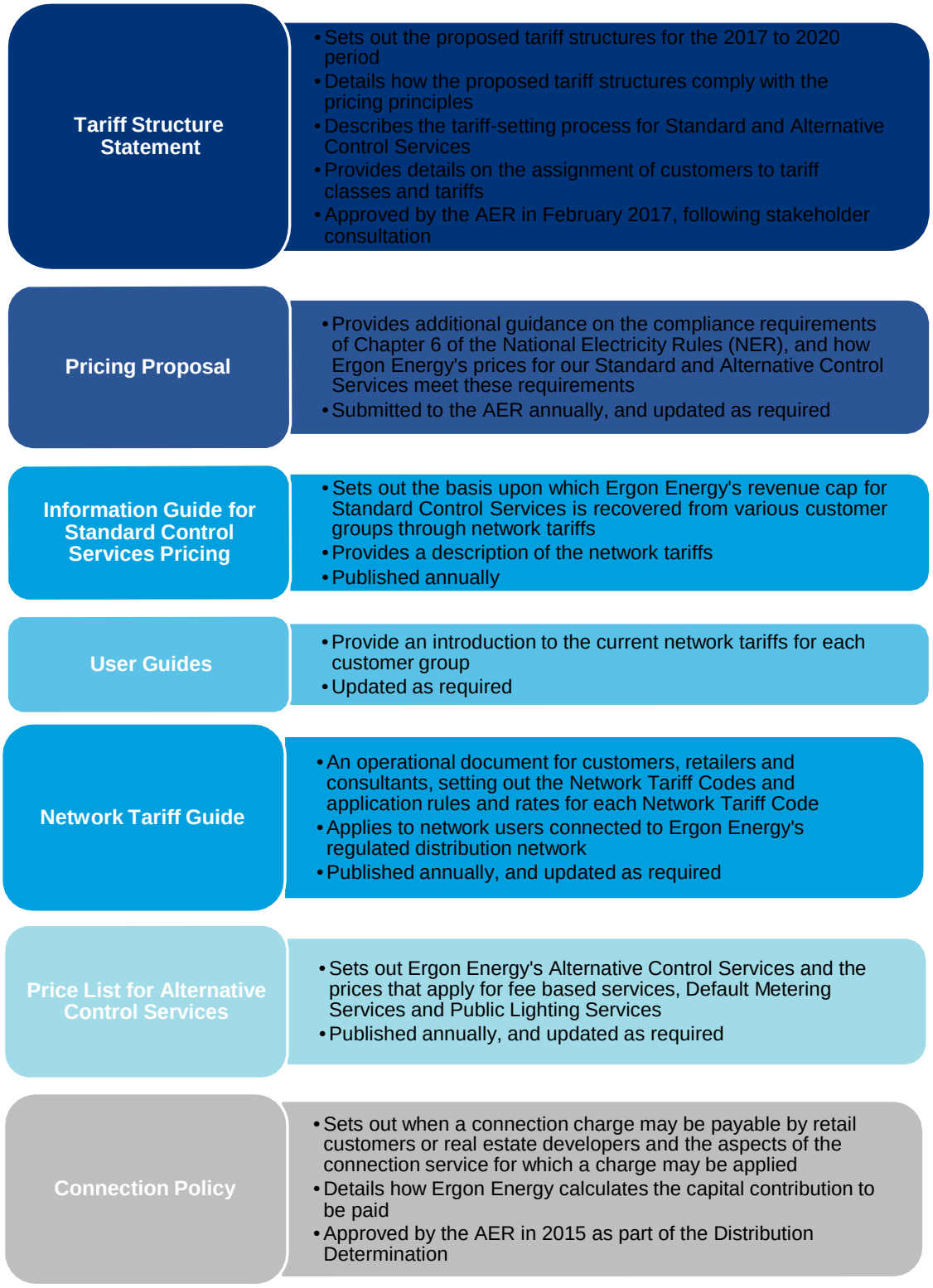
[1] Outside of our LED transition program.
[2] Jurisdictional scheme charges are set to zero from 1 July 2017. Refer to Section 2.1.3 for further details.

1.3 Supporting network pricing documents

In addition to this Tariff Guide, Ergon Energy has a number of network pricing documents to assist network users, retailers and interested parties understand the development and application of network tariffs, Alternative Control Services prices and connection charges. These documents are outlined in Figure 1.1 below and are available on Ergon Energy's website at:

https://www.ergon.com.au/network/network-management/network-pricing.

Figure 1.1: Supporting network pricing documentation



2. Understanding network tariffs

2.1 Network tariffs

Network tariffs are comprised of:

- Distribution Use of System (DUOS) charges
- TUOS charges
- jurisdictional scheme charges.

2.1.1 DUOS

The DUOS component recovers costs associated with some connection services and/or use of the distribution network for the conveyance of electricity (i.e. Standard Control Services).

Ergon Energy's Standard Control Services are regulated under a revenue cap form of price control. The revenue cap (or 'Total Annual Revenue') for any given year reflects Ergon Energy's smoothed revenue requirement (as determined by the AER), plus other annual revenue adjustments.

The revenue cap is allocated to the three pricing zones and the zonal costs are apportioned to different asset categories within each zone. The costs within the zones are then assigned to the four network user groups and converted into network tariffs that recover the costs.

Further information on the tariff-setting process is available in our *Information Guide for Standard Control Services Pricing*.

2.1.2 TUOS

Ergon Energy is able to recover transmission-related costs associated with:

- the use of Powerlink's transmission network to deliver high voltage electricity from generators to our network
- Avoided TUOS charges paid to eligible Embedded Generators (EGs)[3]
- payments made to other DNSPs for the supply of distribution services. For Ergon Energy, this includes our connection to Energex Limited's network at Postman's Ridge.

Attachment 14 of the Distribution Determination also allows us to pass through:

- charges levied on Ergon Energy for use of the 220 kV network which supplies the Cloncurry network in our Mount Isa Zone
- entry and exit services charged by Powerlink at three connection points – Stoney Creek, Kings Creek and Oakey Town.

These costs are recovered from customers through TUOS charges.

2.1.3 Jurisdictional scheme

Jurisdictional schemes are certain programs implemented by state governments that place legislative obligations on DNSPs. For Queensland, this includes:

[3] Ergon Energy makes Avoided TUOS payments to EGs that have sought access to Ergon Energy's distribution network under clause 5.5 of the NER, and who meet other requirements set out in our *Information Guide for Standard Control Services Pricing* (www.ergon.com.au/network/network-management/network-pricing)

- the SBS, which obligates Ergon Energy to pay a feed-in tariff (FiT) for energy supplied into our distribution network from specific micro-embedded generators
- the energy industry levy. Ergon Energy is obligated under our Distribution Authority to pay a proportion of the Queensland Government's funding commitments for the Australian Energy Market Commission in relation to this levy.

Under the National Electricity Rules (NER) and Distribution Determination, Ergon Energy is able to recover jurisdictional scheme amounts from customers. This is done via separate 'jurisdictional scheme charges'.

However, on 31 May 2017 Ergon Energy received a direction from Queensland Government not to pass on AER-approved jurisdictional scheme charges to customers in our network tariffs. The Queensland Government will instead subsidise the cost of the scheme until 2020. Consequently, from 1 July 2017 the jurisdictional scheme rates in our network tariffs will be set to zero.

2.2 Key concepts in tariff design

There are a number of pricing concepts mentioned in this Tariff Guide. To assist understanding, we have explained these concepts below.

2.2.1 Tariff classes

We have a wide diversity of customers, in terms of their size, location, and usage patterns. We group our customers according to these characteristics. Tariff classes therefore refer to a group of customers with similar characteristics.

Ergon Energy has 18 tariff classes for Standard Control Service customers. These tariff classes are differentiated by customer groups and locational zones as shown in Table 2.1 below:

Table 2.1: Ergon Energy's Standard Control Service tariff classes

ICC	●	●	●
CAC	●	●	●
EG	●	●	●
SAC Large	●	●	●
SAC Small	●	●	●
SAC Unmetered	●	●	●

Definitions associated with each customer group are outlined in the Glossary. A mapping of Ergon Energy's locational zones to local government areas (LGAs) is contained in Appendix 7.

2.2.2 Tariffs, charges and charging parameters

A tariff represents the combination of charges that Ergon Energy applies to a customer (through their retailer) in order to recover network costs. Within each tariff class a number of tariffs can be offered.

Tariffs have three key defining characteristics:

- the charge (can also be called 'charging component', 'tariff component' or 'tariff element')
- the parameters of the charge (specific characteristics that relate to the charge that influence how it is calculated)

- the rate applied to each charge.

Each tariff has at least one charge, but usually has more than one. There are six broad types of charges (e.g. fixed charge) and eight charging parameters (e.g. dollars per day) for our Standard Control Services. Charges and charging parameters are applied differently for each tariff class. Each charge and charging parameter is selected and structured to provide signals to network users about the efficient use of the network.

Other charges and charging parameters apply to the TUOS and jurisdictional scheme components of the network tariff.

A detailed explanation of the charges and charging parameters applying to each network tariff is provided in Appendix 1.

The *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet sets out the rates that apply to each charge .

2.2.3 Mandatory, opt-in and opt-out tariffs

Tariffs can be either 'mandatory' 'opt-out' or 'opt-in' for particular customers. An explanation of each of these is set out below:

- Mandatory tariffs – are the only tariffs available for particular customers or particular classes of customers, and there may be no other tariff option to choose from. For example, theoretically, a new customer with a smart meter may be assigned to a demand based tariff, and have no option to switch to another tariff. While an existing customer with a basic meter may be automatically assigned to energy based tariff but may choose to switch to the demand based tariff (i.e. with new metering installed). Another example of a mandatory tariff is for unmetered supplies within our network (e.g. public lighting, traffic lights). This class of customer can only access our unmetered supply network tariff.
- Opt-out tariffs – are assigned to customer's by default, but customers may voluntarily choose to be re-assigned to a different tariff. For example residential customers are automatically assigned to our residential inclining block network tariff, but they could choose to switch to a time-of-use tariff.
- Opt-in tariffs – are tariffs the customer can choose to be reassigned to, instead of the default tariff they would otherwise be assigned to. This is the opposite of an opt-out tariff. For example in the previous example the time-of-use tariff would be described as the opt-in-tariff.

An indication of whether our network tariffs are mandatory, opt-in or opt-out is included in Appendix 1.

2.2.4 Primary and secondary tariffs

For some tariff classes, customers may be able to access a secondary tariff in addition to their primary tariff at the premises. These tariffs are explained further below:

- Primary tariffs – are tariffs capable of applying to the entire load or the majority of the load at a customer's premises. For example – as a primary tariff, residential customers have the option of an inclining block, seasonal time-of-use demand or seasonal time-of-use energy network tariff.
- Secondary tariffs – can generally only be accessed in conjunction with a primary tariff. For example, a residential customer, in addition to their primary tariff, may elect to have some appliances (e.g. hot water system) subject to a secondary "controlled load" network tariff.

Appendix 1 provides further detail on secondary tariffs that customers can access, including the associated tariff conditions.

2.2.5 Network Tariff Codes

Network Tariff Codes are alpha-numeric descriptors used to identify a particular network tariff. In general, each Network Tariff Code has three components:

- a pricing zone code (e.g. “E” represents the East Zone)
- a tariff code (e.g. “BIB” represents the IBT Business tariff)
- a Transmission Region code (e.g. “T1” represents TUOS Region 1).

For example, “EBIBT1” refers to the East Business Inclining Block – TUOS Region 1 network tariff.

For SAC network tariffs an additional component code may apply (e.g. “C”, “X” or “B”). These additional series of Network Tariff Codes have been developed to enable the billing of the Alternative Control Services daily capital and non-capital metering charges (i.e. Default Metering Services), as shown in Table 2.2 below. For example, “EBIBXT1” refers to the East Business Inclining Block – TUOS Region 1 network tariff, where daily capital metering charges also apply.

Table 2.2: Tariff series for SAC network tariffs

Tariff series	Network Tariff Code example	Daily metering charges	
		Capital	Non-capital
Standard	EBIBT1	✓	✓
‘C’ series	EBIBCT1	×	×
‘X’ series	EBIBXT1	✓	×
‘B’ series	EBIBBT1	×	✓

For SAC unmetered tariffs, an additional ‘MI’ and ‘MA’ alpha-numerical component may apply. This component identifies minor and major public lighting installations that Ergon Energy is responsible for operating and maintaining (i.e. Alternative Control Services Public Lighting Services). For example, “EVUMIT1” refers to the East Volume Unmetered – TUOS Region 1 network tariff, for a minor public light.

Further information on the application of Default Metering Services charges and Public Lighting Services charges is set out in our *Price List for Alternative Control Services*.

A complete listing of our Network Tariff Codes is provided on the ‘List of Network Tariff Codes’ tab in the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet.

2.3 Network tariff changes

Ergon Energy has introduced a number of changes to our network tariffs for Standard Control Services in 2017-18. Key changes are summarised below. Further detail on the 2017-18 changes is set out in our AER-approved Pricing Proposal.

Table 2.3: Summary of network tariff changes in 2017-18

Network user group	Tariff changes
ICC	▪ No change to tariff structures.
CAC	▪ As noted in our approved TSS and Pricing Proposal we have introduced an excess reactive power charge (excess kVAr charge) for our CAC network tariffs in 2017-18. ▪ As foreshadowed in our TSS, any new premises and customers moving into existing premises will be assigned to the STOUD tariff in 2017-18. Subsequently, from 1 March 20187, any new CAC premise connections will default to the STOUD where no network tariff has been advised to Ergon Energy. Customers wishing to opt-out of this arrangement can either request an initial assignment or re-assignment to one of our other CAC anytime demand tariffs.
SAC Large	▪ The TSS made provision for any new premises and customers moving into existing premises (with the required metering) from 1 July 2017 to be assigned to the STOUD tariff. From 1 March 20184, any new SAC Large premise connections will default to the STOUD tariff where no network tariff has been advised to Ergon Energy. Customers wishing to opt-out of this arrangement can either request an initial assignment or a re-assignment to one of our other SAC Large anytime demand tariffs. ▪ Consistent with intentions noted in our Pricing Proposal and approved TSS, from 1 July 2017 the Demand High Voltage tariff will no longer be available in the East Zone5. Existing premises will be reassigned to either the STOUD tariff or one of the SAC Large general anytime demand tariffs.
SAC Small	▪ No change to tariff structures.
EG	▪ No change to tariff structures.

[4] Due to operational complexities associated with implementing this business rule prior to the Power of Choice changes, Ergon Energy has decided not to implement the change until after the 1 December 2017. The (further delayed) 1 March 2018 timeframe will also help mitigate the risk of customers having a poor initial experience with the STOUD tariff, by otherwise immediately incurring peak summer charges.

[5] The Demand High Voltage tariffs were phased out in the West and Mt Isa Zones in 2016-17

Appendix 1: Statement of tariff classes and tariffs

Consistent with clause 6.18.9 of the NER, this appendix, together with the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet forms our statement of tariff classes and tariffs for our Standard Control Services for 2017-18.

1. Published rates

The 2017–18 network tariff rates for our Standard Control Services have been published in a separate spreadsheet, *Ergon Energy 2017–18 SCS Network Tariffs*, which is available with this Tariff Guide on our website:

www.ergon.com.au/network/network-management/network-pricing/network-tariffs.

Only network tariffs with standardised rates have been published in the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet.

As discussed in Chapter 2, our network tariffs consist of three components – DUOS charges, TUOS charges and jurisdictional scheme charges. In the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet each component is presented separately. For each tariff, the total network charges (or NUOS charges) is determined by combining the relevant DUOS, TUOS and jurisdictional scheme charges.

As outlined in Chapter 2, for SAC network tariffs, a number of additional series of Network Tariff Codes have been developed to enable the billing of daily capital and non-capital metering charges (i.e. Default Metering Services). The *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet contains the relevant Alternative Control Services metering charges for these tariff classes. Additional information on the application of Default Metering Services tariffs is available in the *Price List for Alternative Control Services*.

2. Site specific rates

As per clause 6.19.2 of the NER, all information about a service applicant or distribution network user used by a DNSP for the purposes of distribution service pricing is confidential information.

Therefore the publication of site specific network tariffs for ICCs and EGs, and site specific details for CACs, would breach the NER and any connection agreements between Ergon Energy and our customers. It may also adversely affect the markets in which our customers operate.

Information on site-specific Network Tariff Codes, rates, connection units and DLFs are available on request by contacting Network Pricing (netprice@ergon.com.au). Ergon Energy will only release this information in the following circumstances:

- the requestor is the customer, or an authorised person who is able to sign on behalf of the customer (e.g. Company Manager)
- the requestor is the current Financially Responsible Market Participant and the request relates to a period of time for which they are responsible for the site
- the customer's written consent has been provided using the "Authority to Release Information to Third Parties Form" available with this Tariff Guide on Ergon Energy's website.

3. Procedures for assigning and reassigning customers to tariffs and tariff classes

Appendix D of our TSS provides information on how customers are assigned or reassigned to network tariffs and tariff classes for Standard Control Services, and the process retailers should follow if they do not agree with an assignment or reassignment decision made by Ergon Energy. The TSS is available on our website:

www.ergon.com.au/network/network-management/network-pricing/network-tariffs.

A listing of tariff classes and network tariffs applicable to each class is published in the *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet.

4. Customer or retailer initiated tariff changes

Customer or retailer initiated tariff changes can be requested for a variety of reasons. For example where the customer wishes to 'opt-in' to a different tariff (instead of the default tariff applied to the premises) or where there has been a takeover of an existing connection (change in tenancy).

Appendix D of our TSS outlines the business rules around network tariff changes, including the effective date for changes and any restrictions around further requests to change a network tariff.

Generally, a customer (or their retailer) may request a change in network tariff once every 12 months (subject to a change in usage or pattern of usage at the premises). Further requests to change a network tariff assigned to a NMI should not be made until a period of 12 months has elapsed from the previously approved request.

As noted in our TSS, backdating of charges prior to the applicable effective date is not allowed by Ergon Energy.

Ergon Energy will inform the customer and /or retailer within five business days of receiving a tariff change request, of the decision taken. A customer and/or retailer may appeal this decision. Further information on the appeals process is set out in Appendix D of the TSS.

5. General requirements

The following general requirements apply to our network tariffs:

- Network tariffs are applied to the electricity used at the connection point, as measured by the meter or meters at that connection point. While customers have the ability to request additional meters to enable particular tariff arrangements, Ergon Energy will only create a new connection point where we have a legislative right or obligation to do so.
- Network users with multiple network connections will pay network charges for each connection point. This approach is consistent with the National Metering Identifier (NMI) Procedure issued by the Australian Energy Market Operator.
- It is intended that a Network Tariff Code will apply to each meter data stream. In the case where a NMI has multiple meters (and data streams), metering data may be aggregated to calculate network charges. Ergon Energy's Retailer Handbook provides further guidance on network billing arrangements, including how network tariffs are applied to aggregated data streams.
- In some cases daily pro-rating will apply in the calculation and billing of charges (e.g. fixed charges and demand charges). This document contains worked examples of the calculation of charges for some of our network tariffs. Further information on network billing is contained within

the Queensland B2B Process Specification: Network Billing and Ergon Energy's Retailer Handbook.

- If a retailer does not specify its preferred network tariff (where multiple tariff options are available), Ergon Energy will default the network tariff to what it considers to be the most appropriate tariff, having regard to tariff conditions and opt-in and opt-out arrangements prevailing at the time.
- If there is a material change in connection, load or metering characteristics at a premises, such that the current tariff(s) is no longer applicable, Ergon Energy may initiate a change to the customers tariff class and/or network tariff(s). This change will be undertaken in accordance with procedures outlined in Appendix D of our TSS.
- If a network tariff is discontinued, redesignated[6] or otherwise amended such that the tariff is no longer available to a customer, Ergon Energy may initiate a change to the customer's network tariff. This change will also be undertaken in accordance with procedures outlined in Appendix D of the TSS.
- Residential and Business classifications in our SAC Small network tariffs align with the customer classifications notified to us by retailers in accordance with requirements under the National Energy Retail Rules.
- If a customer classification is not received for a SAC Small NMI, the following will apply:
    - For new connections, the IBT Business tariff will be the default primary tariff
    - For move-in customers, the new customer will inherit the existing network tariff(s) and customer classification
    - If a retailer subsequently advises that the default classification applied to a SAC Small NMI is to be changed (i.e. from Business to Residential), and the meter is required to be reprogrammed to support the network tariff change, then the costs to undertake this work will be the retailer's responsibility.
- Ergon Energy's network tariffs do not support a mixed tariff situation (for example, where one NMI has both residential and business retail tariffs). The determination of the appropriate SAC small network tariff will be based on the retailer's classification of the NMI as either business or residential in accordance with the National Energy Retail Rules.
- Where a retailer wants to access the network STOUE or STOUD tariff, and is offering a retail time-of-use (TOU) tariff that differs in the peak, shoulder and off-peak times from the applicable network TOU tariff, then this will be considered a special arrangement. The costs of this special arrangement will be the retailer's responsibility.
- Approval of apparatus to connect to controlled load network tariffs is at the absolute discretion of Ergon Energy. Appendix 9 describes the apparatus that Ergon Energy generally accepts to connect to controlled load.
- Where Ergon Energy's load control equipment exists (including associated metering), this may not be disconnected without Ergon Energy's prior written consent.
- Where there is no connection agreement in place defining an ICCs or CACs Authorised Demand (AD), Ergon Energy will determine an AD value to apply in network tariff calculations. Generally this will be based on the annual maximum demand in the previous full pricing period prior to the setting of prices. Under certain circumstances, a more recent demand may be substituted (e.g. where there has been a significant change in demand after the previous full pricing period).

[6] For example, given a different name or Network Tariff Code

- Where there is no connection agreement, or where the connection agreement defines an ICCs or CACs Authorised Demand (AD) in kW, Ergon Energy will convert the AD to a kVA measure as part of our annual price setting process. This conversion uses the lower of a compliant Power factor (PF) or the customer's PF as measured at the time of monthly maximum demand. Details of the customer's AD in kVA will be set out in the customer's site-specific tariff schedule.
- For CACs that have a primary and alternate supply[7] (as deemed by Ergon Energy), the AD will be set to zero on the alternate supply NMI for the purpose of calculating TUOS capacity charges. Ergon Energy will also waive the TUOS fixed charge on the alternate supply NMI.
- For EGs[8] who also have an ICC or CAC classification, for the purposes of calculating network charges for the load side (i.e. the ICC or CAC network tariff), we will set export kVAr to zero in any interval when kW are imported into our distribution network. This adjustment has an impact on total kVA and excess kVAr billing quantities. Further detail on Ergon Energy's kVA calculation methodology is set out in Appendix 6.
- DUOS locational zones are based on Queensland LGA's. The location of the connection point is the final determinant of which zone (and network tariff/s) will apply to a NMI. Further information on Ergon Energy's DUOS zones is set out in Appendix 7.
- The TNI identifies the Transmission Connection Point from which a customer is supplied. The NMI Discovery process (Stage 2) will provide retailers with the TNI applicable to a NMI. Appendix 8 contains a mapping of TNIs to Ergon Energy TUOS zones.

6. Tariffs and tariff conditions

This section provides explanatory notes and tariff conditions applying to each of our network tariffs. It is recommended this section be read in conjunction with published rates set out in *Ergon Energy 2017–18 SCS Network Tariffs* spreadsheet, or with the customer's site specific tariff schedule.

6.1. SAC Small tariffs

For our small to medium business and residential customers, who use less than 100MWh of electricity each year, we have a range of primary network tariffs:

- Inclining Block Tariff (IBT)
- Seasonal Time-of-Use Energy (STOUE)
- Seasonal Time-of-Use Demand (STOUD)

Many customers, in addition to the above primary tariffs, enter into arrangement with Ergon Energy whereby some appliances are subject to secondary "controlled load" tariffs. Controlled load tariffs allow us to curtail supply to designated circuits at a customer's premises in return for a lower tariff.

We have two secondary controlled load network tariffs:

- Volume Controlled
- Volume Night Controlled

Our SAC small group also covers unmetered supplies such as public lighting, traffic lights, watchman lights and other types of unmetered public amenities (e.g. illuminated signs, phone boxes and barbeques etc.). Only one type of network tariff is available for this customer group:

- Volume Unmetered

[7] Also referred to as back-up supply

[8] Refer to definition of an 'EG' in the Glossary section of this document

Further information on the application of charges and tariff conditions for our SAC Small tariffs is set out in the table below.

Table A1.1: Application of tariff and charges - SAC Small

<table>
<tr><th colspan="3">Application of tariff and charges – SAC Small</th></tr>
<tr><td colspan="3">SAC Small primary tariffs</td></tr>
<tr><td colspan="3">Seasonal TOU Demand tariffs – Residential and Business</td></tr>
<tr><td>Tariff description</td><td colspan="2">Under the SAC Small STOUD tariff, there is an anytime energy (volume) charge and demand charges with seasonal and time-of-day dimensions. Two time periods apply – peak and off-peak – with different demand rates applying for each time period. Different time periods will apply depending on whether the customer is classified as Residential or Business.

There is no fixed charge per day for DUOS.

An example of how (DUOS) charges are calculated under the SAC Small STOUD is provided in Appendix 4.</td></tr>
<tr><td>Opt-in and opt-out arrangements</td><td colspan="2">These tariffs are voluntary for SAC Small residential and business customers[9]. A customer (or their retailer) must request a tariff change to opt in to these tariffs. Tariff access considerations include suitable metering.</td></tr>
<tr><td>Residential – time periods</td><td colspan="2">The following time periods apply to DUOS charges for the STOUD – Residential tariffs:<table><tr><td>Peak demand</td><td>3:00pm to 9:30pm all summer days</td></tr><tr><td>Off-Peak demand</td><td>3:00pm to 9:30pm all non-summer days</td></tr><tr><td>Energy</td><td>An any time energy (volume) charge applies to all metered consumption in summer and non-summer months</td></tr></table>Note: ‘Summer’ is defined as the months of December, January and February.</td></tr>
<tr><td>Business – time periods</td><td colspan="2">The following time periods apply to DUOS charges for the STOUD – Business tariffs;<table><tr><td>Peak demand</td><td>10:00am to 8:00pm on summer weekdays</td></tr><tr><td>Off-Peak demand</td><td>10:00am to 8:00pm on non-summer weekdays</td></tr><tr><td>Energy</td><td>An any time energy (volume) charge applies to all metered consumption in summer and non-summer months</td></tr></table>Note: ‘Summer’ is defined as the months of December, January and February.</td></tr>
<tr><td>Chargeable demand quantities</td><td colspan="2">Determination of the chargeable demand quantity (for DUOS charges) is the same for both the peak and off-peak demand charges (Note: A minimum chargeable demand of 3 kW applies in non-summer months).</td></tr>
<tr><td>Fixed charge/s</td><td colspan="2">There is no fixed charge for DUOS. A fixed charge per day applies throughout the year for TUOS. The jurisdictional scheme fixed charge is set to zero for 2017-18.</td></tr>
<tr><td>Demand charge/s</td><td colspan="2">The monthly DUOS demand charges, for both summer and non-summer, are based on</td></tr>
</table>

[9] Opt-out and opt-in arrangements for SAC small tariffs may change in the 2017-2020 period. Our TSS notes that from 1 July 2018, we may move to an opt-out approach to the STOUD for new connections (where the installed meter is capable of applying the tariff).

Application of tariff and charges – SAC Small	
	the average demand [10] the customer places on the network in the daily demand window: Residential the 6.5 hour peak period between 3:00pm and 9:30pm Business the 10 hour peak period on weekdays between 10:00am and 8:00pm The highest four demand days in the month are determined by comparison of the average demand recorded in these daily demand windows. The monthly demand rate is applied to the average of these top four demand days. In the non-summer months a minimum chargeable demand of 3 kW also applies – meaning the customer pays for 3 kW of demand or the average of their top four average demand days in the month, whichever is the greater. Demand charges do not apply for TUOS and jurisdictional scheme charging components.
Volume charge/s	The DUOS volume calculation is based on an anytime $/kWh rate applied to all metered kWh consumption in summer and non-summer months. An anytime energy rate ($/kWh) applies throughout the year for TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.
IBT – Residential and Business	
Tariff description	These tariffs have an inclining block structure, with the rate increasing with each step up in a customer's energy consumption level above defined thresholds. Under the IBT there are three consumption blocks – Block 1, Block 2 and Block 3 – with different rates applying to the volume charge for each block. Different block sizes will apply depending on whether the customer is classified as Residential or Business. A fixed charge per day also applies. Ergon Energy's IBT network tariff calculation methodology is set out in Appendix 2.
Opt-in and opt-out arrangements	The IBT tariff is the default primary network tariff applying to all SAC Small residential and business customers.[11] The tariff can be accessed without requiring metering changes at the premises. A customer (or their retailer) may request a tariff change to another primary network tariff for SAC Small (STOUE or STOUD).
Residential - consumption blocks	The following consumption blocks apply for IBT Residential tariffs:

Block	Daily kWh	Annual equivalent kWh
Block 1	<2.74 kWh	<1,000 kWh per annum

[10] Note, 'demand' refers to the import demand in kW. No adjustment to import demand is made for export to the distribution network

[11] Opt-out and opt-in arrangements for SAC small tariffs may change in the 2017-2020 period. Our TSS notes that we may move to an opt-out approach to the STOUD for new connections (where the installed meter is capable of applying the tariff) from 1 July 2018.

<table>
<tr><td></td><td>
<table>
<tr><td>Block 2</td><td>2.74 - 16.43 kWh</td><td>1,000 - 6,000 kWh per annum</td></tr>
<tr><td>Block 3</td><td>>16.43 kWh</td><td>>6,000 kWh per annum</td></tr>
</table>
</td></tr>
<tr><td>Business – consumption blocks</td><td>The following consumption blocks apply for IBT Business tariffs:
<table>
<tr><th>Block</th><th>Daily kWh</th><th>Annual equivalent kWh</th></tr>
<tr><td>Block 1</td><td><2.74 kWh</td><td><1,000 kWh per annum</td></tr>
<tr><td>Block 2</td><td>2.74 - 54.76 kWh</td><td>1,000 - 20,000 kWh per annum</td></tr>
<tr><td>Block 3</td><td>>54.76 kWh</td><td>>20,000 kWh per annum</td></tr>
</table>
</td></tr>
<tr><td>Fixed charge/s</td><td>A fixed charge per day applies throughout the year for DUOS and TUOS. The jurisdictional scheme fixed charge is set to zero for 2017-18.</td></tr>
<tr><td>Volume charge/s</td><td>The DUOS volume charge is calculated according to three blocks. The inclining blocks are triggered once a customer exceeds each nominated consumption threshold. For network billing and operational purposes, the IBT is denominated and applied on a daily basis. The annual equivalent kWh is provided for presentation purposes only. The IBT DUOS calculation methodology is set out in Appendix 2.

An anytime energy rate ($/kWh) applies throughout the year for TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below.

The jurisdictional scheme volume charge is set to zero for 2017-18.</td></tr>
<tr><td>ACS meter charge/s</td><td>Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.</td></tr>
<tr><td colspan="2">Seasonal TOU Energy tariffs – Residential and Business</td></tr>
<tr><td>Tariff description</td><td>Under the SAC Small STOUE tariff, there are two time periods – peak and off-peak – which includes seasonal, day of week and time-of-day dimensions. Different rates apply for energy (volume) consumed in peak and off-peak periods. Different time periods will apply depending on whether the customer is classified as Residential or Business.

A fixed charge per day also applies.</td></tr>
<tr><td>Opt-in and opt-out arrangements</td><td>These tariffs are voluntary for SAC Small residential and business customers. A customer (or their retailer) must request a tariff change to opt in to these tariffs. Tariff access considerations include suitable metering.</td></tr>
<tr><td>Residential – time periods</td><td>The following time periods apply to DUOS charges for STOUE – Residential tariffs:
<table>
<tr><td>Peak</td><td>3:00pm to 9:30pm on all summer days</td></tr>
<tr><td>Off-Peak</td><td>All other times</td></tr>
</table>
Note: 'Summer' is defined as the months of December, January and February</td></tr>
<tr><td>Business – time periods</td><td>The following time periods apply to DUOS charges for STOUE – Business tariffs:</td></tr>
</table>

	Peak: 10:00am to 8:00pm on summer weekdays Off-Peak: All other times Note: 'Summer' is defined as the months of December, January and February
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS and TUOS. The jurisdictional scheme fixed charge is set to zero for 2017-18.
Volume charge/s	The DUOS volume calculation is based on the $/kWh rate applied to the relevant peak and off-peak time period (refer residential and business time periods above). An anytime energy rate ($/kWh) applies throughout the year for TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.
SAC Small secondary tariffs	
Volume Night Controlled	
Tariff description	This tariff allows Ergon Energy to directly curtail supply to designated circuits at a customer's premises in return for a lower rate. It is ideal for connecting hot water systems and other load that can be switched off at different times during the day to help manage load on the network. Supply is generally available for a minimum period of eight hours a day, at the absolute discretion of Ergon Energy, but usually between the hours of 10:00pm and 7:00am. To access this tariff, electricity supply must be either: ▪ permanently connected to eligible apparatus (e.g. hot water system) ▪ permanently connected to specified parts of eligible apparatus (e.g.hot water system booster heating unit) ▪ connected to eligible apparatus via a socket-outlet approved by Ergon Energy (e.g. pool pump) Approval of apparatus to connect to controlled load network tariffs is at the absolute discretion of Ergon Energy. Further detail on the types of apparatus generally accepted to be connected to the Volume Night Controlled network tariff is set out in Appendix 9.
Opt-in and opt-out arrangements	SAC small residential customers can access this tariff, provided it is used in conjunction with any other primary network tariff (IBT, STOUE or STOUD). SAC small business customers may also access this tariff, as long as their primary network tariff is the IBT or STOUE tariff. SAC small business customers on the STOUD network tariff are not eligible for the Volume Night Controlled tariff, however they may access our other controlled load network tariff (Volume Controlled). A customer (or their retailer) must request to opt in to these tariffs. Tariff access considerations include suitable apparatus (see Appendix 9), metering and load control equipment. The customer's retailer is to arrange provision of load control equipment from Ergon

Application of tariff and charges – SAC Small	
	Energy (where applicable). Additional charges may apply.
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS.
Volume charge/s	An anytime energy rate ($/kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.
Volume Controlled	
Tariff description	This tariff allows Ergon Energy to directly curtail supply to designated circuits at a customer's premises in return for a lower rate. The tariff is similar to the Volume Night Controlled tariff, however under the Volume Controlled tariff the minimum period of supply is extended to eighteen hours a day. The times supply is available under the Volume Controlled tariff is at the absolute discretion of Ergon Energy. To access this tariff, electricity supply must be either: ▪ permanently connected to eligible apparatus (e.g. hot water system) ▪ permanently connected to specified parts of eligible apparatus (e.g.hot water system booster heating unit) ▪ connected to eligible apparatus via a socket-outlet approved by Ergon Energy (e.g. pool pump) Approval of apparatus to connect to controlled load network tariffs is at the absolute discretion of Ergon Energy. Further detail on the types of apparatus generally accepted to be connected to the Volume Controlled network tariff is set out in Appendix 9.
Opt-in and opt-out arrangements	SAC small customers can access this tariff, provided it is in conjunction with another SAC small primary network tariff (IBT, STOUD or STOUE) at the premises. Under specific circumstances (e.g. to support a small tariff trial), this tariff may be offered as a primary tariff at Ergon Energy's discretion. A customer (or their retailer) must request to opt in to these tariffs. Tariff access considerations include suitable apparatus (see Appendix 9), metering and load control equipment. The customer's retailer is to arrange provision of load control equipment from Ergon Energy (where applicable). Additional charges may apply.
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS.
Volume charge/s	An anytime energy rate ($/kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes

Application of tariff and charges – SAC Small	
	which charges apply.
SAC Small unmetered tariffs	
Unmetered supply	
Tariff description	This tariff is designed for small uniform loads that have no meter at the connection point. Unmetered supplies within our network area include public lighting (street lights), traffic lights, watchman lights and other types of unmetered public amenities (e.g. illuminated signs, phone boxes and public barbeques etc.). There are three network charge categories applicable to unmetered supplies: ▪ **Unmetered Supply** (EVU, WVU or MVU) – applies to all unmetered supplies, other than public lighting, and public lighting where the customer owns and maintains the public lighting infrastructure. ▪ **Unmetered Supply with Public Lighting Services – Minor Public Light** (EVUMI, WVUMI or MVUMI) – applies to unmetered 'minor' public lighting where Ergon Energy owns and maintains the public lighting infrastructure. ▪ **Unmetered Supply with Public Lighting Services – Major Public Light** (EVUMA, WVUMA or MVUMA) – applies to unmetered 'major' public lighting where Ergon Energy owns and maintains the public lighting infrastructure. Each of the network charge categories have the same DUOS and TUOS rates applied. However separate Alternative Control Services daily public lighting charges apply in connection with the minor and major public lighting network charge categories. Further information on the Alternative Control Service charges applicable to public lights is set out in our *Price List for Alternative Control Services.*
Opt-in and opt-out arrangements	The unmetered supply network tariff applies to all loads approved to be unmetered by Ergon Energy[12]. No other tariffs are available for unmetered supplies. The network charge category (and associated Network Tariff Code) applicable to a customer will be nominated by the customer or their retailer.
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS.
Volume charge/s	An anytime energy rate ($/kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.

[12] The NER prescribes which metering installations do not require a meter (Type 7)

6.2. SAC Large tariffs

Our SAC Large network tariffs are designed for commercial, industrial and rural customers who typically use between 100MWh and 4GWh of electricity a year. Our network tariffs for this group include:

- Demand Large (DL)
- Demand Medium (DM)
- Demand Small (DS).
- STOUD

Further information on the application of charges and tariff conditions for our SAC Large tariffs is set out in the table below

Table A1.2: Application of tariff and charges - SAC Large

<table>
<tr><th colspan="2">Application of tariff and charges – SAC Large</th></tr>
<tr><td colspan="2">SAC Large STOUD</td></tr>
<tr><td colspan="2">Seasonal TOU Demand</td></tr>
<tr><td>Tariff description</td><td>The SAC Large STOUD tariff is similar to the SAC Large anytime demand tariffs, however rates charged have seasonal and time-of-day dimensions. Two time periods apply – peak and off-peak – with different rates applying for each time period.

For the SAC Large STOUD tariff, all of the charging parameters, with the exception of the fixed charge, include seasonal and time-of-day dimensions.

An example calculation of how the STOUD is calculated for SAC Large is provided in Appendix 4.</td></tr>
<tr><td>Opt-in and opt-out arrangements</td><td>Generally a customer (or their retailer) must request a tariff change to opt in to these tariffs. Tariff access considerations include suitable metering.

From 1 March 2018, any new SAC Large premise connections will default to the STOUD where no network tariff has been advised to Ergon Energy.</td></tr>
<tr><td>Time periods</td><td>The following time periods apply to the STOUD – SAC Large tariffs:

<table><tr><td>Peak demand</td><td>10:00am to 8:00pm on summer weekdays</td></tr><tr><td>Off-peak demand</td><td>All times during non-summer months</td></tr><tr><td>Peak energy</td><td>All times during summer months</td></tr><tr><td>Off-peak energy</td><td>All times during non-summer months</td></tr></table>
Note: ‘Summer’ is defined as the months of December, January and February</td></tr>
<tr><td>Threshold above which demand charge applies</td><td>The threshold demands applicable to the SAC Large STOUD tariffs are:

<table><tr><td>Peak</td><td>20kW</td></tr><tr><td>Off-peak</td><td>40kW</td></tr></table>
Note: Applies to DUOS and TUOS charges.</td></tr>
<tr><td>Fixed charge/s</td><td>A fixed charge per day applies throughout the year for DUOS and TUOS.

The jurisdictional scheme fixed charge is set to zero for 2017-18.</td></tr>
</table>

Application of tariff and charges – SAC Large	
Actual demand charge/s (peak)	The DUOS and TUOS peak demand calculation uses the highest kW maximum demand in any single half hour at any time during the peak demand period in each summer month (any single half hour between 10:00am and 8:00pm on a summer weekday). The demand charge will be applied to the kW amount by which a customer's actual monthly maximum demand is greater than the demand threshold applicable to the peak period. Where the monthly metered maximum demand is less than the demand threshold, the chargeable demand for that month is set to zero.
Actual demand charge/s (off-peak)	The DUOS and TUOS off-peak demand calculation uses the highest kW maximum demand in any single half hour at any time during the peak demand period in each non-summer month. The demand charge will be applied to the kW amount by which a customer's actual monthly maximum demand is greater than the demand threshold applicable to the off-peak period. Where the monthly metered maximum demand is less than the demand threshold, the chargeable demand for that month is set to zero
Volume charge/s	For DUOS, the peak volume calculation is based on a $/kWh rate applied to metered kWh consumption at all times during summer months. In 2017-18, the DUOS peak energy rate is set to $0/kWh. The off-peak volume calculation is based on a $/kWh rate applied to metered kWh consumption at all times during non-summer months. For TUOS the same anytime energy rate ($/kWh) applies for the volume charge in both peak and off-peak periods. The jurisdictional scheme volume charge is set to zero in 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.
SAC Large anytime demand	
Demand Large, Demand Medium, Demand Small	
Tariff description	The Demand Large, Demand Medium and Demand Small tariffs are general anytime demand tariffs which allow customers to reduce their network tariff costs by reducing peak demand and/or total energy use. The tariffs are self-selected with the customer load characteristics determining the optimum tariff category (DL, DM or DS).
Opt-in and opt-out arrangements	The anytime demand tariffs (DL, DM and DS) are generally the default network tariff applying to SAC Large customers, except for new SAC Large premise connections from 1 March 2018[13]. A customer (or their retailer) may request a tariff change to another SAC Large anytime demand tariff or to the STOUD tariff.
Threshold above which demand charge applies	The threshold demands applicable to the SAC Large anytime demand tariffs are: Demand Large: 400kW Demand Medium: 120kW Demand Small: 30kW Note: applies for DUOS and TUOS charges
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS and TUOS. The jurisdictional scheme fixed charge is set to zero for 2017-18.

[13] From 1 March 2018, any new SAC Large premises connections will default to the STOUD where no network tariff has been advised to Ergon Energy.

Application of tariff and charges – SAC Large	
Actual demand charge/s	For DUOS and TUOS, the actual demand charge will be applied to the kW amount by which a customer's actual monthly maximum demand is greater than the demand threshold applicable to the customer's network tariff. Where the monthly metered maximum demand is less than the demand threshold, the chargeable demand for that month is set to zero and no demand charge is payable for that month.
Volume charge/s	An anytime energy rate ($/kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate need to be adjusted by the customer's applicable DLF. The standard 2017-18 DLFs are provided in Section 8 below. The jurisdictional scheme volume charge is set to zero for 2017-18.
ACS meter charge/s	Where Ergon Energy is providing Default Metering Services, additional ACS capital and non-capital metering charges may apply. The customer's Network Tariff Code denotes which charges apply.

6.3. CAC tariffs

Our CAC network tariffs are designed for large commercial and industrial customers, typically consuming between 4GWh and 40GWh a year. Our network tariffs for this group include:

- CAC 22/11 kV Line
- CAC 22/11 kV Bus
- CAC 33kV
- CAC 66kV
- STOUD CAC 22/11 kV Line
- STOUD CAC 22/11 kV Bus
- STOUD CAC Higher Voltage (66/33 kV)

A further description on the application of charges and tariff conditions for our CAC tariffs is set out below.

Table A1.3: Application of tariff and charges - CACs

Application of tariff and charges	
CAC anytime demand	
CAC 66 kV, 33kV, 22/11 kV Bus, 22/11 kV Line	
Tariff description	The CAC 66 kV, 33kV, 22/11kV Bus and 22/11kV Line are anytime demand tariffs with an excess reactive power charge. This charge encourages customers to improve their power factor and reduce their usage of network capacity. Connection unit charges apply for customers who have connected to our network under legacy arrangements (prior to 1 July 2010). Customers on CAC tariffs have site-specific aspects, which are required to calculate network charges (e.g. authorised demand, DLF, number of connection units). A site specific tariff schedule is available on request by contacting Network Pricing.

Application of tariff and charges	
Opt-in and opt-out arrangements	The CAC anytime demand tariffs are generally the default network tariff applying to CACs, except for new CAC premise connections from the 1 March 2018[14]. The network tariff applicable to a customer will be nominated by Ergon Energy, based on the voltage at which a customer is connected to the network. A customer (or their retailer) may request a tariff change to the relevant CAC STOUD tariff, based on their connection voltage.
Connection unit charge/s	The DUOS connection unit calculation multiplies the connection unit charge ($/day) by the customer's site-specific number of connection units. Refer to Appendix 3 for an illustrative example.
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS and TUOS. Where CACs have an alternate supply (in addition to their primary supply), the TUOS fixed charge will be set to zero on the alternate supply. The jurisdictional scheme fixed charge is set to zero for 2017-18.
Capacity charge/s[15]	The DUOS and TUOS capacity charge is the greater of the authorised kVA demand[16] or any time maximum kVA demand recorded in any half hour period during the billing month. Where CACs have an alternate supply (in addition to their primary supply), the authorised kVA demand will be set at zero for the alternate supply.
Actual demand charge/s[18]	The DUOS Actual Demand Charge is the anytime maximum kVA demand recorded in any half hour period during the billing month.
Volume charge/s	An anytime energy rate ($ per kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate needs to be adjusted by the customer's site-specific DLF. The jurisdictional scheme volume charge is set to zero for 2017-18.
Excess reactive power charge/s[18]	The DUOS excess reactive (kVAr) power charge is calculated monthly based on the kVAr level at the time of each customer's individual monthly kVA peak. To the extent the actual kVAr exceeds the customer's permissible kVAr quantity (determined by the customer's authorised demand and the customer's compliant power factor), excess kVAr charges are applied. Ergon Energy's excess kVAr calculation methodology is set out in Appendix 5. The demand-based components are in kVA. Ergon Energy's kVA calculation methodology is set out in Appendix 6.**Error! Reference source not found.**
CAC STOUD	
Seasonal TOU Demand CAC Higher Voltage, 22/11 kV Bus, 22/11 kV Line	
Tariff description	Like our other STOUD tariffs, the CAC STOUD structure includes seasonal and time-of day dimensions with a peak demand charge, and off-peak energy charge, and a capacity charge (off-peak demand). The CAC STOUD also includes an excess reactive power

[14] From 1 March 2018, any new CAC premises connections will default to the STOUD where no network tariff has been advised to Ergon Energy.
[15] CACs who also have an EG classification will have their export kVAr set to zero in any interval when kW are imported into our distribution network. This adjustment impacts both kVA and excess kVAr billing quantities. Further details on our kVA calculation methodology is set out in Appendix 6.
[16] Where necessary Ergon Energy will convert an AD in kW to a kVA measure. For further details refer to Section 5 (General Requirements).

<table>
<tr><th colspan="2">Application of tariff and charges</th></tr>
<tr><td></td><td>charge and a connection unit charge, similar to the charging parameters applying to the CAC anytime demand tariffs.

Customers on CAC tariffs have site-specific aspects, which are required to calculate network charges (e.g. authorised demand, DLF, number of connection units). A site specific tariff schedule is available on request by contacting Network Pricing.</td></tr>
<tr><td>Opt-in and opt-out arrangements</td><td>Generally a customer (or their retailer) must request a tariff change to opt in to these tariffs. This is subject to suitable metering. From 1 March 2018, any new CAC premise connections will default to the STOUD where no network tariff has been advised to Ergon Energy.</td></tr>
<tr><td>Time periods</td><td>The following time periods apply to the STOUD – CAC tariffs:

<table><tr><td>Peak demand</td><td>10:00am to 8:00pm on summer weekdays</td></tr><tr><td>Capacity charge (off-peak)</td><td>All times during non-summer months and all times during summer months excluding demands occurring during the peak window of 10.00am to 8.00pm on summer weekdays</td></tr><tr><td>Volume charge (off-peak)</td><td>Applies to all metered consumption during non-summer months.</td></tr></table>
Note: ‘Summer’ is defined as the months of December, January and February.</td></tr>
<tr><td>Connection unit charge/s</td><td>The DUOS connection unit calculation multiplies the connection unit charge ($/day) by the customer's site-specific number of connection units. Refer to Appendix 3 for an illustrative example.</td></tr>
<tr><td>Fixed charge/s</td><td>A fixed charge per day applies throughout the year for DUOS and TUOS.

The jurisdictional scheme fixed charge is set to zero for 2017-18.</td></tr>
<tr><td>Capacity charge/s</td><td>The DUOS off-peak capacity charge calculation uses the maximum of authorised kVA demand[17] or the monthly actual kVA maximum demand during the off-peak window which is all times during non-summer months and all times during summer months excluding demands occurring during the peak window of 10:00am to 8:00pm on summer weekdays.

The TUOS capacity charge doesn’t have seasonal or time-of use dimensions. The TUOS calculation is the same as what is applied to calculate capacity charges under the CAC anytime demand tariff structure, which uses the greater of the authorised kVA demand or any time maximum kVA demand recorded in any half hour period during the billing month.</td></tr>
<tr><td>Actual demand charge/s</td><td>The DUOS peak demand calculation uses the maximum kVA demand in any single half hour at any time during the peak demand period in each summer month</td></tr>
<tr><td>Excess reactive power charge/s</td><td>The DUOS excess reactive (kVAr) power charge is calculated monthly based on the kVAr level at the time of each customer’s individual monthly kVA peak. To the extent the actual kVAr exceeds the customer’s permissible kVAr quantity (determined by the customer’s authorised demand and the customer's compliant power factor), excess kVAr charges are applied.

Ergon Energy’s excess kVAr calculation methodology is set out in Appendix 5.

The demand-based components are in kVA. Ergon Energy’s kVA calculation</td></tr>
</table>

[17] Where necessary Ergon Energy will convert an AD in kW to a kVA measure. For further details refer to Section 5 (General Requirements

Application of tariff and charges	
	methodology is set out in Appendix 6.
Volume charge/s	The DUOS off-peak volume calculation uses total metered kWh consumption at all times during non-summer months. An anytime energy rate ($ per kWh) applies throughout the year for TUOS volume charges. The TUOS rate needs to be adjusted by the customer's site-specific DLF. The jurisdictional scheme volume charge is set to zero for 2017-18.

6.4. ICC tariffs

ICCs generally use more than 40GWh of electricity per year and typically comprise of mining customers and customers involved in transport (e.g. rail) and pumping operations. ICC tariffs are site specific, and are calculated on an individual basis to reflect the specific site's load requirement.

A further description on the application of charges and tariff conditions for our ICC tariffs is set out below.

Table A1.4: Application of tariff and charges - ICCs

Application of tariff and charges	
ICC site specific tariffs	
Tariff description	ICC network tariffs comprise an actual demand charge an excess reactive power charge, a capacity charge, a fixed charge[18] and an any time energy (volume) charge. The excess reactive power charge encourages customers to improve their power factor and reduce their network capacity requirements. Demand based charging components in the ICC tariff are in kVA.
Opt-in and opt-out arrangements	All customers classified as an ICC must be on a site specific ICC tariff. No other tariff options are available.
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS and TUOS. The jurisdictional scheme fixed charge is set to zero for 2017-18.
Capacity charge/s[19]	The DUOS and TUOS capacity charge is the greater of the authorised kVA demand[20] or anytime maximum kVA demand recorded in any half hour period during the billing month.
Actual demand charge/s[21]	The DUOS Actual Demand Charge is any time maximum kVA demand recorded in any half hour period during the billing month.
Excess reactive	The DUOS excess reactive (kVAr) power charge is calculated monthly based on the kVAr level at the time of each customer's individual monthly kVA peak. To the extent the

[18] For TUOS an additional fixed $/day charge applies for common service and general charges. This is presented as a separate charging parameter in the customer's site-specific tariff schedule.
[19] ICCs who also have an EG classification will have their export kVAr set to zero in any interval when kW are imported into our distribution network. This adjustment impacts both kVA and excess kVAr billing quantities. Further details on our kVA calculation methodology is set out in Appendix 6.
[20] Where necessary Ergon Energy will convert a contracted AD in kW to a kVA measure. For further details refer to Section 5 (General Requirements).

Application of tariff and charges	
power charge/s[21]	actual kVAr exceeds the customer's permissible kVAr quantity (determined by the customer's authorised demand and the customer's compliant power factor), excess kVAr charges are applied. Ergon Energy's excess kVAr calculation methodology is set out in Appendix 5. The demand-based components are in kVA. Ergon Energy's kVA calculation methodology is set out in Appendix 6.
Common service and general charge/s	A daily common service and general charge applies throughout the year for TUOS only ($/day).
Volume charge/s	An anytime energy rate ($ per kWh) applies throughout the year for DUOS and TUOS volume charges. The TUOS rate needs to be adjusted by the customer's site-specific DLF. The jurisdictional scheme volume charge is set to zero for 2017-18.

6.5. EG tariffs

EG network tariffs are designed for network users that export into the distribution system other than micro-embedded generators with the inverters of the kind contemplated under AS 4777.1 – 2005[21]. EG tariffs are site specific and calculated on an individual basis.The NER prohibits Ergon Energy charging for the export of electricity generated by a user into the distribution network. Charges under the EG tariff reflects costs associated with connection assets and network user management services provided to the EG.

Table A1.5: Application of tariff and charges - EGs

Application of tariff and charges	
EG site specific tariffs	
Tariff description	The EG tariff structure only has one charging parameter – a DUOS fixed charge ($/day). TUOS and jurisdictional scheme charges are not applicable to an EG.
Opt-in and opt-out arrangements	All customer's with an EG classification must be on a site specific EG tariff for the generation side of their connection. Where the customer is also taking load from the distribution system, an additional network tariff will apply for the load side of the connection. These tariffs are allocated as per the appropriate network user group (i.e. ICC, CAC or SAC).
Fixed charge/s	A fixed charge per day applies throughout the year for DUOS
ACS meter charge/s	If Ergon Energy is providing Default Metering Services to an EG premises, additional ACS capital and non-capital metering charges may apply.

[21] Supplementary Network Tariff Codes are also applied to customers with micro embedded generating units. These tariffs are not the same as EG network tariffs. Refer to Section 9 for further details.

7. TUOS regional indicators

TUOS charges are charged to Ergon Energy by Powerlink at each TCP or Bulk Supply Point. A TNI is allocated to each of these Bulk Supply Points. TUOS charges for ICCs are directly reflective of the TNI to which they are supplied. For all other classes, charges for each Bulk Supply Point are allocated to one of three geographical TUOS Regions (i.e. T1, T2 or T3).

Appendix 8 lists all the TCPs, their assigned TNI and their geographical TUOS Region.

8. Distribution Loss Factors (DLFs)

DLFs are calculated annually by Ergon Energy in accordance with requirements of the NER in order to determine the amount of energy dispatched to supply customers. They are approved by the AER and published by the Australian Energy Market Operator (AEMO) on their website.

Every NMI has a DLF code which is associated with the location of the metering point.

The DLF is a multiplier used to convert the actual metered energy into the equivalent energy passing through the appropriate TCP by allowing for the distribution network losses that are incurred between the meter and the TCP.

The DLF is applied to the metered consumption for the calculation of TUOS volume charges. DLFs are generally assigned on the basis of the standard metering voltage for the type of connection. However, a specific loss factor may be applied where there is a unique network supply configuration.

8.1. DLF categories and applications

The table below outlines the DLF categories used by Ergon Energy and their applications.

Table A1.6: DLF categories and applications

Category	Description	Application
Sub-transmission Bus	Applicable to connection points that are High Voltage metered at a Sub-transmission Bus with a voltage greater than 30 kV.	NMIs that are supplied from a zone substation by dedicated, greater than 30 kV lines and metered at or immediately adjacent to the zone substation would be eligible for a Sub-transmission Bus DLF. Zone substations are defined as substations where the voltage level is stepped down from a voltage greater than 30 kV.
Sub-transmission Line	Applicable to connection points that are High Voltage metered at a Sub-transmission Line with a voltage greater than 30 kV.	The Sub-transmission Line DLF will apply to all NMIs that are: ▪ connected to high voltage sub-transmission lines (greater than 30 kV) ▪ metered at the same voltage as the line is energised. If customers believe that the NMI would qualify for a high voltage Bus DLF rather than a high voltage Line DLF they should submit details justifying their claim to Ergon Energy. As an example, NMIs supplied from a zone substation by dedicated 22/11 kV lines and are metered at or immediately adjacent to the zone substation would be eligible for a 22/11 kV Bus DLF.

Category	Description	Application
22/11kV Bus	Applicable to connection points that are High Voltage metered at a 22/11 kV Bus with a voltage less than 30 kV and greater than 1,000 volts.	As per "Sub-transmission Bus" application above.
22/11kV Line	Applicable to connection points that are High Voltage metered at a 22/11 kV Line with a voltage less than 30 kV and greater than 1,000 volts.	The 22/11 kV Line DLF will apply to all NMIs that are: ▪ connected to high voltage distribution lines ▪ metered at the same voltage as the line is energised.
Low Voltage (LV) Bus	Applicable to connection points that are Low Voltage metered at a Low Voltage Bus with a voltage less than 1,000 volts.	NMIs which are supplied from a distribution substation on their site (owned or leased) and metered at the low voltage level are eligible for a LV Bus DLF.
Low Voltage (LV) Line	Applicable to connection points that are Low Voltage metered at a Low Voltage Line with a voltage less than 1,000 volts.	All NMIs not covered by any of the above categories. If customers believe that the NMI would qualify for a LV Bus DLF rather than a LV Line DLF they should submit details justifying their claim to Ergon Energy.

8.2. DLFs for 2017-18

Ergon Energy's tariff schedules for SACs are published with default DLFs. The default DLFs are based on the standard DLF for the most common network supply configuration for customers allocated to the tariff. The actual DLF that is applied to a NMI will depend on individual characteristics of the customer's site (see application rules in Table A1.6 above).

The standard DLFs approved to apply to our SAC tariffs in 2017–18 are detailed in Table **A1.7**the table below. DLFs for ICCs, CACs and EGs are confidential and are available on request by contacting Network Pricing (netprice@ergon.com.au).

Table A1.7: Standard DLFs

Network Level	East Zone *		West Zone		Mount Isa Zone	
	Code	DLF	Code	DLF	Code	DLF
Sub-transmission Bus	GESB	1.006	GWSB	1.029	GMSB	1.001
Sub-transmission Line	GESL	1.011	GWSL	1.057	GMSL	1.005
22/11 kV Bus	GEHB	1.015	GWHB	1.065	GMHB	1.007
22/11 kV Line	GEHL	1.030	GWHL	1.097	GMHL	1.035
LV Bus	GELB	1.073	GWLB	1.149	GMLB	1.061
LV Line	GELL	1.096	GWLL	1.192	GMLL	1.070

* The zonal boundaries are identical to those used for network tariffs.

8.3. Further information

Further information on Ergon Energy's methodology for calculating DLFs is available on our website:

https://www.ergon.com.au/network/network-management/network-pricing/distribution-loss-factor-calculation-methodology.

Detailed information about the purpose and application of DLFs may also be obtained from the AEMO website:

http://www.aemo.com.au/electricityops/lossfactors

9. Micro Embedded Generating Units and the Solar Bonus Scheme (SBS)

A micro-embedded generating unit is one of the kind contemplated under Australian Standard (AS) 4777.1-2005. This is the standard that applied at the start of the current regulatory control period (1 July 2015) and captures inverters for energy systems up to 10kVA on single phase and up to 30 kVA on three phases. Typically customers with a micro-embedded generating unit are classified as SACs for network pricing purposes.

All customers with a micro-embedded generating unit must have a network connection agreement in place with an Ergon Energy signalling their approval to connect the unit to the electricity grid.

Some customers may be eligible for distributor or retail funded FiT under the Queensland Governments SBS. The Queensland Government's SBS pays eligible customers a FiT for the surplus electricity generated from solar photovoltaic (PV) systems and exported to the Queensland electricity grid.

Further information is available on the Department of Energy and Water Supply website.[22] Details of retailer funded solar FiT arrangements are available on the Queensland Competition Authority's website.[23]

Network Tariff Codes

SACs that connect a micro embedded generating unit to our network have a supplementary Network Tariff Code applied for Ergon Energy to administer and pay the FiT (if/where applicable). The Network Tariff Codes that apply to micro embedded generating units are detailed in the table below.

Table A1.8: Network Tariff Codes applied to SACs with a micro EG unit

Network Tariff Code	Description	Conditions
NVG0	Net Volume Generation 0	Applicable to a net metering installation that does not access the distributor-funded 44c/kWh FiT or meet the requirements for Net Volume Generation 2 (NVG2). The micro EG unit may be solar or non-solar (e.g. wind, battery).
NVG1	Net Volume Generation 1	Applies to any net metering installation that meets the SBS requirements for the distributor-funded 44 c/kWh FiT rate. This arrangement is no longer available to new customers.
NGV2	Net Volume Generation 2	Applies to any net metering installation that

[22] (https://www.dews.qld.gov.au/electricity/solar/installing/benefits)..
[23] http://www.qca.org.au/Electricity/Consumer/Solar-Feed-in-Tariffs.

Network Tariff Code	Description	Conditions
		meets the following criteria: ▪ is assigned to a "SAC Small" tariff class (annual consumption less than 100 MWh per annum) ▪ operates a solar PV system with a maximum inverter capacity not exceeding 5 kilowatts24 ▪ does not receive a distributor-funded or retail-funded FiT for the same PV system or for another PV system at the same premises.
GVG0	Gross Volume Generation 0	Applicable to any gross metering installation where all energy produced by the micro EG unit is measured. The micro-EG unit may be solar or non-solar (e.g. wind, battery). Customers on this arrangement are not eligible for the SBS.

As highlighted in *Appendix 1: Ergon Energy 2016–17 SCS Network Tariffs* , an additional "C", "X" or "B" component code may apply to the Network Tariff Code listed above (e.g. NVGC0). As noted in Section 2.2.5, these additional series of Network Tariff Codes have been developed to enable the billing of the regulated metering charges (i.e. Default Metering Services).

Further information on the application of Default Metering Services charges is set out in our *Price List for Alternative Control Services*.

10. EG Avoided TUOS payments

"Avoided TUOS" applies where Ergon Energy does not source load from Powerlink's transmission system because part of the load is supplied from EGs that are connected directly to our distribution system.

In certain situations the NER requires Ergon Energy to make payments to EGs, where that payment represents a reduction in the amount payable by Ergon Energy to Powerlink.

Generally, to be eligible for Avoided TUOS payments, the EG must have:

- sought access to Ergon Energy's distribution network under Chapter 5 of the NER; and
- a generator Connection Agreement with Ergon Energy; and
- registered, or intend to register with AEMO as a *Generator* Rules Participant.

Further information on the requirements for Avoided TUOS, including the methodology that Ergon Energy uses to calculate Avoided TUOS is contained in our *Information Guide for Standard Control Services Pricing* (www.ergon.com.au/network/network-management/network-pricing).

[24] Capacity requirements are subject to change during 2017. Arrangements currently align to eligibility for the regional FIT.

Appendix 2: Ergon Energy's IBT network tariff calculation methodology

The IBT is structured with a fixed rate per day and three energy consumption blocks, each with a different volume (energy) rate applicable.

Block and fixed rates are different between the East, West and Mount Isa Zones and between residential and business customers. Block sizes are also different between residential and business customers.

The IBT is denominated and applied on a daily basis. However, it may be described in the context of an annual basis for network tariff consultation and presentation purposes. For example, the IBT Residential consumption blocks are:

Block	Daily kWh	Annual equivalent kWh
Block 1	<2.74 kWh	<1,000 kWh p.a.
Block 2	2.74 kWh – 16.43 kWh	1,000 kWh p.a. – 6,000 kWh p.a.
Block 3	>16.43 kWh	>6,000 kWh p.a.

Daily denomination ensures IBT billing is equitably applied for any meter reading period (including NMIs where a customer move-out/move-in occurs), based on an accumulated total of consumption divided by the number of days in the reading period.

The IBT network tariff calculation methodology is as follows:

- a meter read is taken, with total consumption for the number of days within that meter reading period
- for IBT network billing purposes, the energy (kWh) assigned to each block is prorated back to a daily equivalent for that meter reading period
- the bill is then calculated with the component parts being a daily fixed charge, Volume Charge Block 1, Volume Charge Block 2 and Volume Charge Block 3
- daily calculations are then converted back to the total network charge by multiplication by the number of days in the meter reading period
- in relation to TUOS –
    - the TUOS volume component will effectively remain as a flat rate for all IBT tariffs (i.e. same TUOS rate applied in each tariff block or meter reading period)
    - the DLF will be applied to total metered consumption for TUOS.

The IBT bill is calculated as follows:

Component	Calculation
Fixed Charge	Number of days in the period *multiplied by* fixed charge rate.
Volume Charge Block 1	If equivalent daily consumption is less than the Block 1 daily allowance then: ▪ equivalent daily consumption *multiplied by* Block 1 rate ▪ multiplied by days in meter reading period ▪ no further calculations required. Or, if equivalent daily consumption exceeds the Block 1 daily allowance then: ▪ Block 1 volume charge calculation applied ▪ proceed to Volume Charge Block 2 calculation.

Component	Calculation
Volume Charge Block 2	For consumption within the Block 2 allowance then: ▪ equivalent daily consumption *less* the Block 1 daily allowance *multiplied by* Block 2 rate (up to the max block 2 threshold) multiplied by days in meter reading period.
Volume Charge Block 3	For any consumption above the aggregate of Block 1 and Block 2 daily allowance then: ▪ remaining consumption above the Block 1 and Block 2 daily allowance *multiplied by* the Block 3 rate ▪ multiplied by days in meter reading period.

Example:

A residential customer is read quarterly. On this occasion, the customer is read at 90 days with the start read being 123,400 kWh and the end read as 125,200 kWh. This equates to a consumption of 1,800 kWh for that quarter's read.

Currently, the GST exclusive rates for each DUOS component of the IBT Residential East tariff are as follows:

Network Tariff Code	Fixed charge	Block 1 Rate	Block 2 Rate	Block 3 Rate
ERIBT1	$1.250	$0.02150	$0.06150	$0.09600

Calculation

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 1,800/90 = 20.00.

Fixed Charge = 90 x $1.250 = $112.500

Volume Charge Block 1 = 2.74 x $0.02150 x 90 = $5.302

Volume Charge Block 2 = (16.43 - 2.74) x $0.06150 x 90 = $75.774

Volume Charge Block 3 = (20 - 2.74 - 13.69) x $0.09600 x 90 = $30.845

Quarterly DUOS = $224.421

The second quarter for this customer shows a total consumption of 200 kWh over 88 days for the period.

Calculation

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 200/88 = 2.27

Fixed Charge = 88 x $1.250 = $110.000

Volume Charge Block 1 = 2.27 x $0.02150 x 88 = $4.295

Volume Charge Block 2 = 0 x $0.06150 x 88 = $0

Volume Charge Block 3 = 0 x $0.09600 x 88 = $0

Quarterly DUOS = $114.295

Example:

A residential premise (e.g. a summer holiday beach) is read quarterly. On this occasion, the customer has the following consumption pattern.

	Meter reading period (days)	Consumption kWh
Quarter 1	90	1000
Quarter 2	88	0
Quarter 3	93	0
Quarter 4	95	0

The meter reading at the start of quarter 1 is 240,000 kWh and the reading at the end of the fourth quarter is 241,000 kWh.

Calculation – Quarter 1

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 1000/90 = 11.11.

Fixed Charge = 90 x $1.250 = $112.500

Volume Charge Block 1 = 2.74 x $0.02150 x 90 = $5.302

Volume Charge Block 2 = (11.11 – 2.74) x $0.06150 x 90 = $46.328

Volume Charge Block 3 = (0) x $0..09600 x 90 = $0

Quarterly DUOS = $164.130

Calculation – Quarter 2

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 0/88 = 00.00.

Fixed Charge = 88 x $1.250 = $110.000

Volume Charge Block 1 = (0) x $0.02150 x 88 = $0

Volume Block 2 = (0) x $0.06150 x 88 = $0

Volume Block 3 = (0) x $0.09600 x 88 = $0

Quarterly DUOS = $110.000

Calculation – Quarter 3

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 0/93 = 00.00.

Fixed Charge = 93 x $1.250 = $116.250

Volume Charge Block 1 = (0) x $0.02150 x 93 = $0

Volume Charge Block 2 = (0) x $0.06150 x 93 = $0

Volume Charge Block 3 = (0) x $0.09600 x 93 = $0

Quarterly DUOS = $116.250

Calculation – Quarter 4

Equivalent Daily Consumption = consumption *divided by* the number of days in the read = 0/95 = 00.00.

Fixed Charge = 95 x $1.250 = $118.750

Volume Charge Block 1 = (0) x $0.02150 x 95 = $0

Volume Charge Block 2 = (0) x $0.06150 x 95 = $0

Volume Charge Block 3 = (0) x $0.09600 x 95 = $0

Quarterly DUOS = $118.750

Total Annual DUOS (excluding GST) = $509.130**.**

Appendix 3: CAC connection unit charge examples

Note: all amounts included in the worked examples below relate to DUOS only, and are GST exclusive

Network Tariff Code	Default Distribution Loss Factor		Distribution Use Of System (DUOS)					
			Connection Unit Charge (NDCUC)	Fixed Charge (NDFC)	Capacity Charge (NDKVACC)	Actual Demand Charge (NDKVAADC)	Volume Charge (NDVC)	Excess Reactive Power Charge (NDERPC)
	Value	Code	$/day per connection unit	$/day	$/kVA of AD per month	$/kVA per month	$/kWh	$/excess kVAr per month
EC66T1	Site specific		$9.451	$120.000	$3.519	$2.500	$0.00500	$4.000

Example 1:

Where the customer's:

AD = 3,500 kVA

Connection Units = 11

Actual Demand for the month = 3,000 kVA

Energy for the month = 1,400,000 kWh

Excess reactive power for the month = 0 kVAr.

Calculation

Connection Unit Charge = $9.451 x 30 days x 11 connection units = $3,118.830

Fixed Charge = $120.000 x 30 = $3,600.000

Capacity Charge = $3.519 x 3,500 kVA = $12,316.500

Actual Demand Charge = $2.500 x 3,000 kVA = $7,500.000

Volume Charge = $0.00500 x 1,400,000 kWh = $7,000.000

Excess Reactive Power Charge = $4.000 x 0 kVAr = $0.000

Total monthly DUOS = $33,535.330

Example 2:

Where the customer's:

AD = 4,000 kVA

Connection Units = 0

Actual Demand for the month = 3,900 kVA

Energy for the month = 1,900,000 kWh

Excess reactive power for the month = 0 kVAr.

Calculation

Connection Unit Charge = $9.451 x 30 days x 0 connection units = $0
Fixed Charge = $120.000 x 30 = $3,600.000
Capacity Charge = $3.519 x 4,000 kVA = $14,076.000
Actual Demand Charge = $2.500 x 3,900 kVA = $9,750.000
Volume Charge = $0.00500 x 1,900,000 kWh = $9,500.000
Excess Reactive Power Charge = $4.000 x 0 kVAr = $0.000
Total monthly DUOS = $36,926.000

Appendix 4: Seasonal TOU Demand (STOUD) calculation examples

Note: all amounts included in the worked examples below relate to DUOS only, and are GST exclusive.

CAC STOUD:

Network Tariff Code	Distribution Use Of System (DUOS) Charges (GST exclusive)					
	Connection Unit Charge (NDCUC)	Fixed Charge (NDFC)	Capacity Charge Off-peak (NDKVACCOP)	Actual Demand Charge Peak (NDKVADCP)	Excess Reactive Power Charge (NDERPC)	Off-peak (NDVCOP)
	$/day per connection unit	$/day	$/kVA of AD/ month	$/kVA/month	$/excess kVAr per month	$/kWh
EC66TOUT1	$9.451	$0.000	$6.000	$11.000	$4.000	$0.00400

Example:

Where the customer's:

AD = 4,000 kVA

Connection Units = 0

Actual Demand Peak for the month = 3,600 kVA

Actual Demand Off-Peak for the month = 3,900 kVA

Excess reactive power for the month = 0 kVAr

Energy for the month = 1,600,000 kWh

Calculation – Month of January (Summer)

Connection Unit Charge = $9.451 x 31 days x 0 connection units = $0.000

Fixed Daily Charge = $0.000

Capacity Charge Off-peak = $6.000 x 4,000 kVA = $24,000.000

Actual Demand Charge Peak = $11.000 x 3,600 kVA = $39,600.000

Excess Reactive Power Charge = $4.000 x 0 kVAr = $0.000

Volume Charge Off-peak = Does not apply during a summer month

Total monthly DUOS = $63,600.000

Calculation – Month of September (Non-summer)

Connection Unit Charge = $9.451 x 30 days x 0 connection units = $0.000

Fixed Daily Charge = $0.000

Capacity Charge Off-peak = $6.000 x 4,000 kVA = $24,000.000

Actual Demand Charge Peak = Does not apply during a non-summer month

Excess Reactive Power Charge = $4.000 x 0 kVAr = $0.000

Volume Charge Off-peak = $0.00400 x 1,600,000 kWh = $6,400.000

Total monthly DUOS = $30,400.000

SAC Large STOUD:

Network Tariff Code	Threshold above which demand charge applies		Distribution Use Of System (DUOS) Charges (GST exclusive)				
			Fixed Charge (NDFC)	Actual Demand Charge		Volume Charge Peak (NDVCP)	Volume Charge Off-peak (NDVCOP)
				Peak (NDDCP)	Off-peak (NDDCOP)		
	Peak kW	Off-peak kW	$/day	$/kW/ month	$/kWh	$/kWh	$/kWh
ESTOUDCT1	20	40	$30.000	$56.240	$9.500	$0.00000	$0.02500

Example 1:

Where the customer's:

Peak demand for the month = 50 kW

Peak energy for the month = 20,000 kWh

Calculation – Month of February (Summer)

Fixed Charge = $30.000 x 28 days = $840.000

Actual Demand Charge Peak = $56.240 x (50 kW – 20 kW) = $1,687.200

Actual Demand Charge Off-peak = Does not apply during a summer month

Volume Charge Off-peak = Does not apply during a summer month

Total monthly DUOS = $2,527.200

Example 2:

Where the customer's:

Off-peak demand for the month = 40 kW

Off-peak energy for the month = 25,000 kWh

Calculation – Month of July (Non-summer)

Fixed Charge = $30.000 x 31 days = $930.000

Actual Demand Charge Peak = Does not apply during a non-summer month

Actual Demand Charge Off-peak = $9.500 x (40 kW – 40 kW) = $0

Volume Charge Off-peak = $0.02500 x 25,000 kWh = $625.000

Total monthly DUOS = $1,555.000

SAC Small STOUD:

Network Tariff Code	Minimum chargeable demand		Distribution Use Of System (DUOS) Charges (GST exclusive)			
			Fixed Charge (NDFC)	Actual Demand Charge		Volume Charge (NDVC)
				Peak (NDDCP)	Off-peak (NDDCOP)	
	Peak kW	Off-peak kW	$/day	$/kW/ month	$/kW/ month	$/kWh
ERTOUDCT1	Nil	3	$0.000	$76.220	$11.500	$0.01800

Example 1:

Where the Residential customer's:

Peak demand for the month = 2 kW

Energy for the month = 500 kWh

Calculation – Month of February (Summer)

Fixed Charge = $0.000

Actual Demand Charge Peak = $76.220 x 2 kW = $152.440

Actual Demand Charge Off-peak = Does not apply during a summer month

Volume Charge = $0.01800 x 500 kWh = $9.000

Total monthly DUOS = $161.440

Example 2:

Where the Residential customer's:

Peak Demand for the month = 2.725 kW

Energy for the month = 500 kWh

Calculation – Month of July (Non-summer)

Fixed Charge = $0.000

Actual Demand Charge Peak = Does not apply during a non-summer month

Actual Demand Charge Off-peak = $11.500 x 3 kW = $34.500 (minimum off-peak demand charge applied)

Volume Charge = $0.01800 x 500 kWh = $9.000

Total monthly DUOS = $43.500

Appendix 5: Ergon Energy's Excess kVAr calculation methodology

Permissible kVAr

$$= ����(���^2 - (A\text{}* ������������ ��)^2)$$

Where AD = Authorised Demand and PF = Power factor

Actual Monthly kVAr

$$= ����(������h�������\ ����^2 - ������������g\ ��^2)$$

Where ATMD = Anytime Maximum Demand

Excess Reactive Power Charge

$$= ����\ (0, ������\ ����h��\ ����\ -\ ��e������������e\ ����) * ������\ ��e���i��e\ ������$$

$$\text{}h��ge$$

Example 1:

Where the customer's:

AD = 6,000 kVA

Compliant PF = 0.95

Monthly ATMD is 5,000 kVA and 4,000 kW

Excess reactive power charge = $4.000 / excess kVAr

Calculation

Permissible kVAr

$$= ����(6000^2 - (6000 * 0.95)^2)$$

= 1,873 kVAr

Actual Monthly kVAr

$$= ����(5000^2 - 4000^2)$$

= 3,000 kVAr

Excess Reactive Power

$$= ����\ (0, 3000 -\ 1873)$$

= 1,127

Total monthly Excess Reactive Power Charge

= 1,127 x $4.000

= $4,508

Appendix 6: Ergon Energy's kVA calculation methodology

The four metering data quadrants recorded by interval meters are referred to as:

- $\mathrm{kW}_{\mathrm{Load}}$ the real component of load power consumed by the customer over a given time period (Export kWh - Ei)
- $\mathrm{kW}_{\mathrm{Gen}}$ the real component of power generated by the customer over a given time period (Import kWh - Bi)
- $\mathrm{kVAr}_{\mathrm{Lag}}$ (kilovolt-amperes-reactive-hours) is a measure of the reactive power which exists when the current and voltage are out of phase, where the current waveform is lagging the voltage waveform (Export kVArh - Qi)
- $\mathrm{kVAr}_{\mathrm{Lead}}$ is a measure of the reactive power which exists when the current and voltage are out of phase, where the current waveform is leading the voltage waveform (Import kVArh - Ki).

The kVA algorithm to be used by Ergon Energy is detailed below.

This "Standard" algorithm specifically excludes:

- incidental generation back into the Ergon Energy network
- any Leading VArs generated by customer equipment
- any contribution to lagging VArs by the generator

through modification of interval data as described below,

$\sqrt{(\quad)^2 + (\quad)^2}$ for each 30 minute interval at a connection point.

For the purposes of network billing, the monthly maximum demand is the maximum kVA of the half hourly values for each interval during the relevant month, calculated as above.

Where Ergon Energy has agreed to the summation of the customer's demand at more than one metering installation for the purposes of determining a diversified demand charge, the billable demand is the vector summation of kWLoad and kVArLag at the individual metering installations. That is, the chargeable demand is calculated for each interval as:

$$\sqrt{(\quad + \cdots)^2 + (\quad + \cdots)^2}$$

Modification of interval data explained

Within a metering interval, there may be both kWLoad and kWGen, where the real demand at a site swings through zero from load to generation or vice-versa. There may also be both kVArLag and kVArLead, where the reactive power swings from lagging to leading power factor, or vice-versa. Depending upon the excitation level of the embedded generator, it will contribute $\mathrm{kVAr}_{\mathrm{Lag}}$ or $\mathrm{kVAr}_{\mathrm{Lead}}$.

With kVA charging for loads, if the load demand were to be directly calculated as $\sqrt{(\quad)^2 + (\quad)^2}$ for each 30 minute interval, the kVArLag component may contain a contribution from the generator. This has the potential to increase the total kVA and kVAr and may create the monthly maximum load demand and a kVAr level that exceeds the permissible quantity.

It is not the intent of load side kVA charging for demand and excess kVAr to include this generator impact. Therefore, the generator's contribution to kVA charges for the load needs to be negated.

For the purposes of Ergon Energy network billing for loads, where an ICC or CAC also has an EG classification[25], the interval data is modified so that in any 30 minute interval where Bi≠0, Qi is made equal to 0.

With the half hourly interval values of kWLoad and kVArLag modified to remove generator contribution as described the monthly maximum load kVA charge will be based on the vector sum of Ei and Qi interval data. A load that swings from export to import within an interval would receive a charge based only on the energy exported from the grid to the customer for the interval and would not include any kVArLag contribution by the generator. Where a peak period has been nominated by Ergon Energy the charge would be based on the load based maximum demand occurring during this period.

[25] Means a network user classified as an 'EG' in accordance with definitions set out in our annual Pricing Proposal. For further details, refer to the Glossary in this document.

Appendix 7: DUOS locational zones

Three pricing zones have been delineated in our distribution area, broadly based on Queensland's local government areas (LGAs), with the distribution network electrical connection being the final determinant of which zone applies. Zone pricing impacts DUOS charges only; TUOS and jurisdictional scheme charges are not impacted by zones.

The LGAs covered by each zone are detailed below.

Figure A7.1: Zone coverage

East

The whole LGAs of:

- Bundaberg (R)
- Cairns (R)
- Cassowary Coast (R)
- Fraser Coast (R)
- Gladstone (R)
- Mackay (R)
- North Burnett (R)
- Rockhampton (R)
- South Burnett (R)
- Southern Downs (R)
- Toowoomba (R)
- Whitsunday (R)
- Townsville (C)
- Banana (S)
- Livingstone (S)
- Burdekin (S)
- Hinchinbrook (S)
- Cherbourg (S)
- Woorabinda (S)
- Yarrabah (S)

Part of the following LGAs:

- Gympie (R) (Ergon Energy area only)
- Douglas (S) (excluding areas north of the Daintree River)
- Isaac (R) (excluding areas west of Moranbah township)
- Western Downs (R) (Dalby township and Wambo district only)
- Central Highlands (R) (excluding Emerald and areas west of Emerald)
- Tablelands (R) (excluding Herberton areas not supplied by the "East" distribution system)
- Mareeba (S) (excluding areas not supplied by the "East" distribution system)

West

The whole LGAs of:

- Barcaldine (R)
- Blackall - Tambo (R)
- Charters Towers (R)
- Longreach (R)
- Maranoa (R)
- Balonne (S)
- Bulloo (S)
- Carpentaria (S)
- Cook (S)
- Croydon (S)
- Etheridge (S)
- Flinders (S)
- Hope Vale (S)
- McKinlay (S)
- Murweh (S)
- Paroo (S)
- Quilpie (S)
- Richmond (S)
- Winton (S)
- Wujal Wujal (S)

Part of the following LGAs:

- Barcoo (S) (connected to national electricity grid only)
- Douglas (S) (north of the Daintree River only)
- Goondiwindi (R) (Ergon Energy supply area only)
- Isaac (R) (west of Moranbah township only)
- Western Downs (R) (excluding Dalby township and Wambo district)
- Central Highlands (R) (Emerald and areas west of Emerald only)
- Tablelands (R) (Herberton areas not supplied by the "East" distribution system only)
- Mareeba (S) (areas not supplied by the "East" distribution system only)

Mount Isa

Consists of the regulated network within the whole LGAs of Cloncurry (S) and Mount Isa (C), and those parts of Burke (S) and Boulia (S) supplied from the Mount Isa system.

Note: (R) = Regional Council, (S) = Shire Council and (C) = City Council

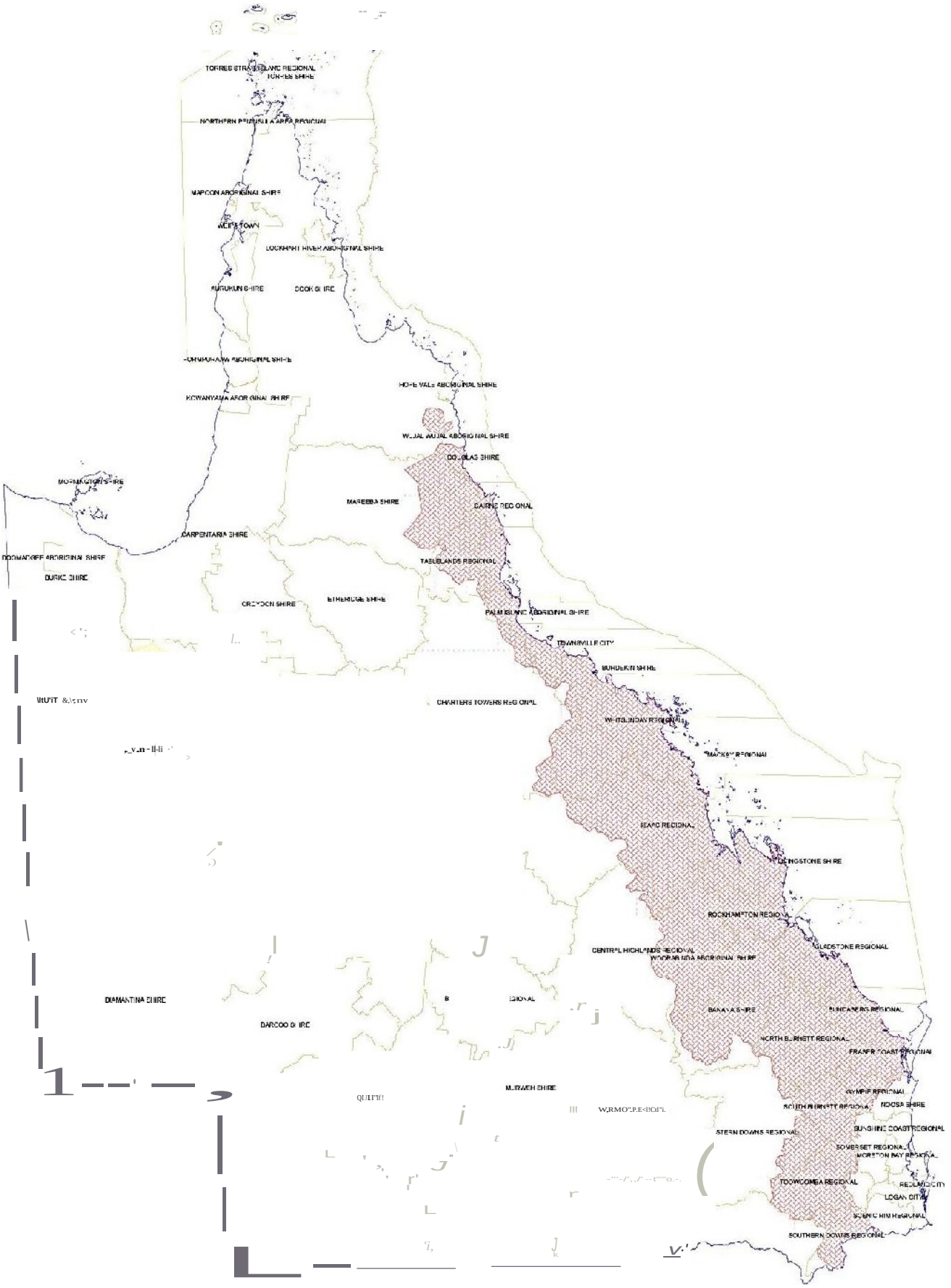


Figure A7.2: Zone map

Appendix 8: TUOS regional indicators

Ergon Energy's TUOS tariff structures are based on geographical TUOS Regions (e.g. T1, T2, T3 or T4). The TUOS regions are based on groupings of Transmission Connection Points (TCP) or Bulk Supply Points. A list off all the TCPs, their assigned TNI and their geographical TUOS region is provided below.

TUOS regional indicators for CAC and SAC network tariffs		
Transmission Connection Point	**TNI**	**TUOS Region**
Alligator Creek	QALC	T2
Louisa Creek	QALH	T2
Alan Sherriff	QASF	T2
Biloela	QBIL	T1
Bowen North	QBNN	T2
Blackwater 132kV (Rolleston)	QBWH	T1
Blackwater 66 kV	QBWL	T1
Gladstone North (Calliope River)	QCAR	T1
Columboola	QCBL	T1
Cardwell	QCDW	T3
Chinchilla	QCHA	T1
Clare South	QCLR	T2
Cairns 132kV	QCNS	T3
Collinsville	QCOL	T2
Cairns 22 kV	QCRN	T3
Dan Gleeson	QDGL	T2
Dysart	QDYS	T1
Egans Hill	QEGN	T1
El Arish	QELA	T3
Edmonton	QEMT	T3
Garbutt	QGAR	T2
Gin Gin	QGNG	T1
Gladstone South	QGST	T1
Innisfail	QINF	T3
Ingham	QING	T3
Kamerunga	QKAM	T3
King Creek	QKCK	T2
Lilyvale 132kV	QLCM	T1
Lilyvale 66 kV	QLIL	T1

TUOS regional indicators for CAC and SAC network tariffs		
Transmission Connection Point	**TNI**	**TUOS Region**
Mackay	QMKA	T2
Moura	QMRA	T1
Middle Ridge	QMRG	T1
Broadlea	QMRH	T1
Moranbah 11 kV	QMRL	T1
Moranbah 66 kV	QMRN	T1
Mount Isa	Mt Isa	T4
Nebo	QNEB	T2
Newlands	QNLD	T2
Oakey	QOKT	T1
Pandoin	QPAL	T1
Pioneer Valley	QPIV	T2
Proserpine	QPRO	T2
Rockhampton	QROC	T1
Ross	QROS	T2
Stony Creek	QSYC	T2
Teebar Creek	QTBC	T1
Tangkam	QTKM	T1
Tully	QTLL	T3
Tarong 66 kV	QTRL	T1
Turkinje 132kV	QTUH	T3
Turkinje 66 kV	QTUL	T3
Townsville East	QTVE	T2
Townsville South	QTVS	T2
Woolooga	QWLN	T1
Woree	QWRE	T3
Boat Creek	QYAE	T1
Bulli Creek	QBLK	T1
Kemmis	QEMS	T2
Wandoan South	QWSH	T1

Appendix 9: Eligible apparatus for controlled load network tariffs

Approval of apparatus to connect to controlled load network tariffs is at the absolute discretion of Ergon Energy. The apparatus that Ergon Energy generally accepts to connect to our controlled load network tariffs is described below. Further information on the application of charges and tariff conditions for the controlled load network tariffs is set out in **Error! Reference source not found.**.

Volume Night Controlled

The below table outlines the apparatus that can be accepted on our Volume Night Controlled network tariff.

Table A9.1: Eligible apparatus – Volume Night Controlled

Apparatus	Technical specification and requirements for connection to the tariff
Electric storage water heater	▪ Electric storage water heaters with thermostatically controlled or continuously operating heating units and which comply with the construction and performance requirements of Australian Standard 1361 or 1056 or previous Standards superseded by these two Standards or similar electric water heaters which are approved for connection by Ergon Energy. ▪ Where the heating unit rating exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of heat storage volume for heat exchange type water heaters or 15.5 watts per litre of rated hot water delivery for other storage type water heaters. ▪ The following conditions apply to any booster heating unit fitted: o its rating shall not exceed that of the main heating unit; o it shall be connected so as to prevent it being energised simultaneously with the main heating unit; o electricity used by the booster heating unit shall be metered under and charged at the tariff applicable to primary supply at the premises concerned; o it shall be located in accordance with the provisions of the above Standards.
Solar-heated water heaters	▪ Where the electric heating unit rating exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of storage tank capacity. ▪ If a circulating water pump is fitted to the system, continuous supply will be available to the pump, and electricity used shall be metered under and charged at the tariff applicable to primary supply at the premises.
Solar-heated water heaters with one-shot boost	▪ Where the electric heating unit rating exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of storage tank capacity. ▪ If a circulating water pump is fitted to the system, continuous supply will be available to the pump, and electricity used shall be metered under and charged at the tariff applicable to primary supply at the

	premises. ▪ If a current held changeover relay is fitted to the solar-heated water heater to deliver a one-shot boost at times when supply is not available under this tariff, such supply is subject to thermostatically controlled switch off. ▪ Electricity used during operation of the one-shot boost shall be metered under and charged at the tariff applicable to primary supply at the premises. ▪ The cost of supply and installation of a current held changeover relay, is the responsibility of the customer.
Heat pump water heaters	▪ Where the rated electrical input, as shown on the nameplate, exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of storage tank capacity.
Heatbanks	▪ Booster heating units are permitted in heatbanks in which the main element rating is at least 2 kilowatts. The following conditions apply to any booster heating unit fitted: o its rating shall not exceed 70 percent of the rating of the main heating unit; o it shall be connected so as to prevent it being energised simultaneously with the main heating unit; o electricity used by the booster heating unit shall be metered under and charged at the tariff applicable to primary supply at the premises.
Pool filtration systems	▪ Pool filtration systems connected by means of a socket outlet approved by Ergon Energy may be allowed to be connected to this tariff.
Electric vehicles	▪ Electric vehicles may be allowed to be connected to this tariff at the discretion of Ergon Energy.
Other eligible apparatus	▪ Other loads may be allowed to be connected to this tariff at the discretion of Ergon Energy, with the exception of: o arc or resistance welding plant; o where apparatus is duplicated to obtain supply on a different tariff for the same purpose during the restricted (off-supply) period.

Volume Controlled

The below table outlines the apparatus that can be accepted on our Volume Controlled network tariff.

Table A9.2: Eligible apparatus – Volume Controlled

Apparatus	Technical specification and requirements for connection
Electric storage water heaters	▪ Electric storage water heaters with thermostatically controlled or continuously operating heating units and which comply with the construction and performance requirements of Australian Standard 1361 or 1056 or previous Standards superseded by these two Standards or similar electric water heaters which are approved for

	connection by Ergon Energy. ▪ Where the heating unit rating exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of heat storage volume for heat exchange type water heaters or 15.5 watts per litre of rated hot water delivery for other storage type water heaters.
Solar-heated water heaters	▪ Where the electric heating unit rating exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of storage tank capacity.
Heat pump water heaters	▪ Where the rated electrical input, as shown on the nameplate, exceeds 1,800 watts, it shall not exceed 13.5 watts per litre of storage tank capacity.
Pool filtration system	▪ Pool filtration systems connected by means of a socket outlet approved by Ergon Energy may be allowed to be connected to this tariff.
Electric vehicles	▪ Electric vehicles may be allowed to be connected to this tariff at the discretion of Ergon Energy.
Other eligible apparatus	▪ Other loads may be allowed to be connected to this tariff at the discretion of Ergon Energy, with the exception of: o arc or resistance welding plant; o where apparatus is duplicated to obtain supply on a different tariff for the same purpose during the restricted (off-supply) period.

Glossary

Abbreviations

ACS	Alternative Control Service
AD	Authorised demand
AER	Australian Energy Regulator
ATMD	Any Time Maximum Demand
CAC	Connection Asset Customer
DH	Demand High Voltage
DL	Demand Large
DLF	Distribution Loss Factor
DM	Demand Medium
DNSP	Distribution Network Service Provider
DS	Demand Small
DUOS	Distribution Use of System
EDNC	Electricity Distribution Network Code
EG	Embedded Generator
Ergon Energy	Ergon Energy Corporation Limited
Excess kVAr	Excess reactive power
FiT	Feed-in tariff
GWh	Gigawatt hour
IBT	Inclining Block Tariff
ICC	Individually Calculated Customer
kV	Kilovolt
kVA	Kilovolt-ampere
kVAr	Kilovolt-ampere reactive
kW	Kilowatt
kWh	Kilowatt hour
LRMC	Long Run Marginal Cost
MWh	Megawatt hour
NEM	National Electricity Market
NER	National Electricity Rules
NMI	National Metering Identifier
p.a.	Per annum
PV	Photovoltaic
SAC	Standard Asset Customer
SBS	Solar Bonus Scheme **SCS**
	Standard Control Service
STOUD	Seasonal Time-of-Use Demand
STOUE	Seasonal Time-of-Use Energy

TCP	Transmission Connection Point
TNI	Transmission Node Identifier
TNSP	Transmission Network Service Provider
TOU	Time-of-Use
TUOS	Transmission Use of System

Definitions

Actual demand charge	A type of charge (charging parameter) included in Ergon Energy's network tariff structures to signal the effect demand has on the shared network and system augmentation. For ICC, CAC and SAC Large the demand used in the calculation of the charge is the maximum demand recorded in any half hour period each month.
Alternative Control Service	A distribution service provided by Ergon Energy that the AER has classified as an Alternative Control Service under the NER. Includes fee based services, quoted services, Default Metering Services and Public Lighting Services.
Any time energy	Is the amount of energy consumed by the customer irrespective of the time of day.
Any Time Maximum Demand (ATMD)	Is the maximum half hourly demand for a customer that occurs at any time within a specified period.
Australian Energy Regulator (AER)	The AER is an independent statutory authority that is part of the Australian Competition and Consumer Commission. The AER is responsible for the economic regulation of electricity networks in the National Electricity Market (NEM). It also monitors the wholesale electricity and gas markets and is responsible for compliance with and enforcement of the National Electricity Law, NER, National Gas Law and Rules, and the National Energy Retail Law and Rules.
Avoided TUOS	The amount paid to an eligible EG for the locational component of prescribed TUOS services that would have been payable by Ergon Energy to a TNSP had the EG not been connected to the distribution network. The methodology Ergon Energy uses to comply with the NER is set out in the *Information Guide for Standard Control Services Pricing*.
Business customer	Means a customer who is not a residential customer (as defined in the Queensland EDNC).
Capacity charge	A type of charge (charging parameter) included in Ergon Energy's network tariff structures. The capacity charge is reflective of the costs associated with the network capacity required by a customer on a long term basis.
Capital contribution	A capital contribution is a prepayment for the provision of direct control services. A capital contribution may be charged to a customer if the new connection or modification for an existing connection is required to the network to accommodate the connection/modification. Ergon Energy's Connection Policy sets out circumstances in which a capital contribution may be required and details how the capital contribution to be charged to a customer is calculated.
Charging parameter	The constituent elements of a tariff (as defined in the NER).

Connection	The physical link to or through a transmission network or distribution network.
Connection Asset Customer (CAC)	Typically reflects those customers: ▪ with required capacity above 1,500 kVA ▪ with energy consumption typically greater than 4 GWh per annum (p.a.) (but less than 40 GWh p.a.), or ▪ with required capacity below 1,500 kVA where: o a customer has a dedicated supply system which is quite different and separate from the remainder of the supply network, or o inequitable treatment of otherwise comparable customers will arise from the application of the 4 GWh p.a. threshold. The CAC group is further subdivided into categories based on voltage levels as follows: ▪ 66 kV – connected to either a 66 kV substation or a 66 kV line ▪ 33 kV – connected to either a 33 kV substation or a 33 kV line ▪ 22/11 kV Bus – connected to either a 22 kV or 11 kV substation ▪ 22/11 kV Line – connected to either a 22 kV or 11 kV line.
Connection assets	Those components of a transmission or distribution system which are used to provide connection services. Connection assets are those assets required to connect an electrical installation to the shared network and are all the assets from the connection point back up to and including the network coupling point.
Connection point	The agreed point of supply established between the Network Service Provider(s) and another Registered Participant, Non-Registered Customer or franchise customer.
Connection unit charge	A type of charge (charging parameter) included in Ergon Energy's network tariff structures to recover the specific value of investment Ergon Energy made in contributing the costs of the connection assets for that customer.
Customer	A person or entity that receives, or wants to receive a supply of electricity for a premises, or any other distribution service from Ergon Energy.
Default Metering Services	A type of Alternative Control Service. Relates to: ▪ Type 5 and 6 meter installation and provision (before 1 July 2015) ▪ Type 5 and 6 meter installation and provision (on or after 1 July 2015), where the replacement meter is initiated by Ergon Energy as a distributor Type 5 and 6 metering maintenance, reading and data services.
Demand	The amount of electricity energy being consumed at a given time measured in either watts (W) or volt amperes (VA). The difference between the two is the power factor.
Distribution Determination	The AER's Distribution Determination sets the revenue and pricing control regime that Ergon Energy must comply with for the current regulatory control period (i.e. 2015–20).
Distribution network	The electrical system used to transport electricity from the high voltage TCP to distribution network users.

Distribution Use of System (DUOS) charge	Component of the network tariffs which covers costs associated with connection services and/or use of the distribution network for the conveyance of electricity (i.e. Standard Control Services).
East Zone	Those areas where the network users are supplied from the distribution system connection to the national grid and have a relatively low distribution cost to supply. The local government areas covered by the East Zone are located in this document.
Embedded Generator (EG)	EGs are those network users that export energy into the distribution system, except for network users with micro-generation facilities of the kind contemplated under Australian Standard (AS) 4777.1 – 2005. EGs are separated into two categories: ▪ EGs that are connected to the distribution system and only generate into the distribution system ▪ EGs that are connected to the distribution system, generate and take load from the system.[26]
Energy	The amount of electricity consumed by a consumer (or all customers) over a period of time. Energy is measured in terms of watt hours (Wh), kilowatt hours (kWh), megawatt hours (MWh) or gigawatt hours (GWh).
Excess reactive power charge (Excess kVAr)	A type of charge (charging parameter) included in Ergon Energy's network tariff structures which is applied against the kVAr used by a customer that exceeds what they would be entitled to use at their minimum compliant power factor at authorised demand.
Fee based services	A type of Alternative Control Service which Ergon Energy undertakes at the request of an identifiable customer, retailer or appropriate third party which is levied as a separate charge. The costs of providing the service (and therefore price) can be assessed in advance of the service being requested.
Fixed charge	A type of charge (charging parameter) included in Ergon Energy's network tariff structures which is levied on a fixed dollar amount per day or fixed dollar amount per day per device (as is the case for unmetered supply).
Gigawatt hour (GWh)	1,000,000 kilowatt hours.
High Voltage (HV)	Refers to parts of the network that are 11 kV or above.
Inclining Block Tariff (IBT)	A type of network tariff where the price per kWh increases as consumption thresholds are crossed during a particular time period.
Individually Calculated Customer (ICC)	Typically reflects those customers: ▪ with energy consumption typically greater than 40 GWh p.a., or ▪ with energy consumption lower than 40 GWh p.a. where: o a customer has a dedicated supply system which is quite different and separate from the remainder of the supply network o there are only two or three customers in a supply system, making average prices inappropriate o a customer is connected at or close to a TCP, or o inequitable treatment of otherwise comparable customers will arise from the application of the 40 GWh p.a. threshold.

[26] The load side will be classified as an ICC, CAC or SAC, and a separate network tariff will apply.

Jurisdictional scheme amount	In respect of a jurisdictional scheme, the amounts a DNSP is required under the jurisdictional scheme obligations to: (a) pay to a person (b) pay into a fund established under an Act of a participating jurisdiction (c) credit against charges payable by a person, or (d) reimburse a person, less any amounts recovered by the DNSP from any person in respect of those amounts other than under the NER (as defined in the NER).
Jurisdictional scheme charges	Component of the network tariff which passes through jurisdictional scheme amounts.
kVA	1,000 Volt-Ampere which is a measure of the apparent power flow which is a measure of the total capacity required to supply a customer's load.
kVAr	1,000 Volt-Ampere reactive which is a measure of reactive power.
kW	1,000 Watts which is a measure of the real component of power being consumed by the consumer's load.
Load factor	Measure of the percentage of time a load is used in any given period. Loads used 24 hours per day, 7 days a week have a load factor of one (1) or 100 per cent.
Low Voltage (LV)	Refers to the sub 11 kV network.
Maximum demand	The maximum demand recorded at a customer's individual meter or the maximum demand placed on the electrical distribution network system at any time or at a specific time or within a specific time period, such as a month. Maximum demand is an indication of the capacity required for a customer's connection or the electrical distribution network.
Megawatt hour (MWh)	1,000 kilowatt hours
Micro embedded generating unit (micro EG Unit)	A micro embedded generating unit contemplated under Australian Standard (AS) 4777.1 – 2005. Typically customers connecting a micro embedded generating unit are classified as Standard Asset Customers for network pricing purposes.
Mount Isa Zone	Those areas supplied from the isolated Mount Isa system. This zone is not connected to the national grid and would normally be excluded from the application of the NER. However, under the *Electricity – National Scheme (Queensland) Act 1997,* the Queensland Government has transferred responsibility for the economic regulation of the Mount Isa-Cloncurry supply network to the AER. The local government areas covered by the Mount Isa Zone are located in this document.
National Electricity Market (NEM)	The interconnected electricity grid covering Queensland, New South Wales, Victoria, Tasmania, South Australia and the Australian Capital Territory.
National Electricity Rules (NER)	Rules made under the National Electricity Law which govern the operation of the NEM.
National Metering Identifier (NMI)	A unique number assigned to each metering installation.
Network capacity	The maximum demand (kVA) that the distribution network can provide for at any one time.

Network tariff	Refers to the price (or tariff) that Ergon Energy sets to recover costs associated with the customer's connection and use of the distribution and transmission network, and jurisdictional scheme amounts. Network tariffs comprise DUOS, TUOS and jurisdictional scheme charges.
Network user	There are four network user groups included in Ergon Energy's network tariff structures – ICCs, CACs, SACs and EGs. For the purposes of our network pricing documents, the term 'network user' refers to both a 'customer' and an 'EG'.
Power factor	The ratio of kW to kVA at a metering point during a defined period.
Public Lighting Services	A type of Alternative Control Service. Relates to the provision, construction and maintenance of public lighting assets owned by Ergon Energy, and emerging public lighting technology. Also encompasses public lighting exit fees.
Public lights – Major	Includes the following lantern types: ▪ Metal Halide – above 125 W ▪ Mercury Vapour – above 125 W ▪ High Pressure Sodium – above 100 W.
Public lights – Minor	Includes the following lantern types: ▪ Compact Fluorescent – all wattages ▪ Fluorescent – all wattages ▪ Metal Halide – up to and including 125 W ▪ Incandescent – all wattages ▪ Low Pressure Sodium – all wattages ▪ LED – all wattages ▪ Mercury Vapour – up to and including 125 W ▪ High Pressure Sodium – up to and including 100 W.
Quoted services	A type of Alternative Control Service. Similar to fee based services, but they are priced on application as the nature and scope of these services is variable and the cost (and therefore price) is specific to the individual requestor's needs.
Residential customer	Means a customer who acquires electricity for domestic use (as defined in the Queensland EDNC).
Revenue cap	The Total Annual Revenue, as determined using the revenue cap formula set out in the Distribution Determination.
SAC Large	Those SACs that typically use between 100 MWh p.a. and 4 GWh p.a.
SAC Small	Those SACs that typically use less than 100 MWh p.a.
Standard Asset Customer (SAC)	Typically reflects those customers with annual energy consumption below 4 GWh p.a. Includes customers with micro-generation facilities (such as small scale photovoltaic generators) of the kind contemplated under AS 4777.1 – 2005. The SAC group is further subdivided into network tariff categories based on whether: ▪ the customer's connection is metered or unmetered ▪ the customer's consumption relates to residential or business use

	▪ the customer is taking supply at high voltage or low voltage ▪ the customer's consumption is above or below 100 MWh p.a. ▪ the customer has a meter installed capable of recording demand ▪ the customer's supply is capable of being controlled by Ergon Energy.
Standard Control Service	A distribution service provided by Ergon Energy that the AER has classified as a Standard Control Service under the NER. Includes network services, some connection services (including small customer connections) and Type 7 metering services. Ergon Energy recovers our costs in providing Standard Control Services through the DUOS component of network tariffs which are billed to retailers.
Summer	The months of December, January and February.
Tariff class	A class of customers for one or more Direct Control Services who are subject to a particular tariff or particular tariffs (as defined in the NER).
Threshold demand	The amount by which a SAC Large customer's metered monthly actual kW maximum demand is adjusted for the purposes of calculating the demand component of their network tariff. The actual demand charge for any time demand tariffs and the peak and off-peak demand charges for the STOUD tariffs are applied to the kW amount by which the recorded monthly maximum demand exceeds the relevant threshold. This demand may occur at any time during the month (actual demand charge and off-peak demand charge) or during a set peak period (peak charge). Where the monthly metered maximum demand is less than the demand threshold, the chargeable demand for that month is set to zero.
Time-of-Use (TOU)	A type of network tariff where the price per kWh varies according to when the consumption occurs. The TOU tariff may apply a different price during peak and off-peak periods.
Transmission Use of System (TUOS) charge	Component of the network tariff which passes through costs associated with use of the transmission network. This includes designated pricing proposal charges as defined under the NER plus charges levied on Ergon Energy in relation to Chumvale and three Powerlink connection points.
Unmetered	A customer who takes supply where no meter is installed at the connection point.
Volume charge	A type of charge (charging parameter) included in Ergon Energy's network tariff structures which is calculated using the customer's metered energy (kWh) consumption. It may be based on a flat rate, an inclining block or TOU charging structure (depending on the customer's applicable network tariff).
West Zone	Those areas outside the East Zone and connected to the national grid, which have a significantly higher distribution cost of supply than the East Zone. The local government areas covered by the West Zone are located in this document.

Contact information

Manager – Network Pricing
Ergon Energy Corporation Limited
PO Box 264
FORTITUDE VALLEY QLD 4006
Telephone: **13 74 66**
Email: netprice@ergon.com.au

Ergon Energy Corporation Limited ABN 50 087 646 062

ergon.com.au