

Customer Development Management Plan

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- **Compliance** All group managers.

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1 Purpose

The purpose of this document is to describe the supporting principles of customer development activities associated with the provision, modification or electrical connections to the distribution network, and relocation of electrical infrastructure, owned and operated by Tasmanian Networks Pty Ltd (TasNetworks). This plan provides:

- TasNetworks' approach to facilitating the establishment and/or modification of customer connections, and non-demand network alterations as requested by a third party or customer as reflected through its legislative and regulatory obligations, pricing policy, and strategic plans;
 - The key programs underpinning its activities; and
- 

2 Scope

This document covers customer development activities including all effort and expenditure associated with the negotiation, planning, solution development, design, construction and commissioning activities for establishing or modifying complex customer connections¹. This covers Customer Initiated Capital Works (CICW), Pre-connection Services, and Quoted Services (non-demand related).

Non-demand related network alterations are work activities separate from the CICW programs that have been requested by a third party or customer. This includes work activities such as asset relocation for road widening, pole relocations, or undergrounding.

Pre-connection services are the tasks associated with the administration of the connection application process and the preparation and finalisation of the asset construction design.

This document excludes:

- Basic connection services;
- Network development activities including demand, quality, and reliability related capital works; and
- Maintenance and renewal activities including replacement of the service wire connection for condition based, fault replacement or similar circumstances.

3 Regulatory and Legislative Obligations

The Tasmanian electricity supply industry operates under both state and national regulatory regimes. TasNetworks, being a participant in the NEM, is required to develop, operate and maintain the transmission and distribution system in accordance with the National Electricity Rules (NER) and other local requirements under the terms of our licences issued by the Tasmanian Economic Regulator under the Tasmanian Electricity Supply Industry Act 1995.

¹ For the purpose of this management plan the term customer connection relates to the physical provision of a new or upgraded service wire connection that makes supply to a single point for use by customer(s). Notwithstanding that the single point of supply may supply multiple customers (e.g. apartments / units) with multiple National Meter Identifiers (NMI).

Customer initiated expenditure is associated with the construction of new distribution assets or modification of existing assets, including network extensions and augmentations of the shared network to facilitate that connection or relocation request. Customer initiated works are developed in accordance with our asset management plans, strategic area plans, and planning principles, to ensure that the distribution network delivers:

- Compliance with regulatory obligations; and
- Safety, reliability and security of supply outcomes that meet customers' needs; and
- Economic whole of life costs associated with network expansion and connection integration.

The regulations are relevant to transmission and distribution network planning and development are:

- the National Electricity Rules (NER). These rules stipulate the requirements surrounding the electrical performance of the network. Of particular relevance to the distribution network is the Service Target Performance Incentive Scheme (STIPS);
- The NER (specifically Chapter 5) also stipulates our obligations for encouraging and managing new and modified customer connection services to the transmission and distribution networks;
- the *Electricity Supply Industry (Network Planning Requirements) Regulations 2007* (ESI). The ESI regulations define the minimum criteria for network performance following contingency events on the transmission network; and
- guidelines and standards applicable to the electricity industry as per the Tasmanian Electricity Code (TEC). The TEC contains arrangements for the regulation of the Tasmanian electricity supply industry which are not covered by the NER and are largely related to the distribution network. Of particular interest to network planning are the reliability requirements which outline the acceptable levels of reliability for various classifications of Tasmanian communities. Any excursions outside these requirements result in Guaranteed Service Level (GSL) payments to the impacted customers.

As a joint transmission and distribution network service provider, customer initiated development strategies in the distribution network considers TasNetworks' regulatory obligations for the transmission network.

4 Strategic Alignment and Objectives

TasNetworks Distribution Connection Pricing Policy 2017² provides the principles that will apply when a connection applicant seeks a new or modified connection to TasNetworks' distribution network and establishes the requirements for the provision of those customer connection services.

The Customer initiated management plan has been developed to align with TasNetworks' Distribution Connection Pricing Policy 2017, Asset Management Policy, and Strategic Objectives.

The asset management objectives focus on six key areas:

- Safety will continue to be our top priority and we will continue to ensure that our safety performance continues to improve

² R691134

- Service performance will be maintained at current overall network service levels, whilst service to poorly performing reliability communities will be improved to meet regulatory requirements
- Cost performance will be improved through prioritisation and efficiency improvements that enable us provide predictable and lowest sustainable pricing to our customers
- Customer engagement will be improved to ensure that we understand customer needs, and incorporate these into our decision making to maximise value to them
- Our program of work will be developed and delivered on time and within budget

This management plan should be read in conjunction with relevant TasNetworks asset management plans, area strategy reports, and our design and construction manuals and standards.

4.1 TasNetworks Transformation Roadmap 2025

TasNetworks has created Roadmap 2025, which sets out how it will tackle the challenges of a rapidly changing electricity system into the future. TasNetworks expects that the way customers use electricity will change, and the services that customers require from the network will increase. In particular, TasNetworks expect customers will continue host small scale renewables, such as solar photovoltaic systems as well as small scale energy storage systems such as batteries, and electric vehicles.

In the context of this document, there may be additional costs to some customers for the provision of new or modified connections services. For the purposes of forecast expenditure, influences of the roadmap vision have been excluded.

4.2 Asset Management Plans

The suite of asset management plans have been developed to align with both TasNetworks' Asset Management Policy and Strategic Objectives.

The asset management policy, contained within the Strategic Asset Management Plan, states 'Consistent with our vision and purpose, we strive for excellence in asset management and are committed to providing a safe working environment, value for our customers, sustainable shareholder outcomes, care for our assets and the environment, safe and reliable network services, whilst effectively and efficiently managing our assets throughout their life-cycle'.

It is part of a suite of documentation that supports the achievement of TasNetworks strategic performance objectives and, in turn, its mission. The asset management plans identifies the issues and strategies relating to network system assets and details the specific activities that need to be undertaken to address the identified issues.

4.3 Area planning strategies (Area Development Plans)

For planning purpose, the transmission and distribution networks are managed as seven planning areas. An Area planning strategy exists for each planning area, which is used to capture and summarise location specific network information, economic and demand forecasts, and strategic network development plans. These strategy reports are used to develop our publically available combined transmission and distribution Annual Planning Report.

The Area Strategy reports contribute to the asset management objectives by building understanding, capabilities and strategies to realise early opportunities, whilst delivering safe and reliable network services. We do this to meet our customers' needs and the Rules requirements. The Area planning strategies form a part of the end to end works program process, which identify

the need, timing and opportunity, in the early phases of the planning and network development process.

The Business Plan states the key operational activities that are needed to operate our business effectively. These include:

- Forecasting of future network requirements;
- Develop solutions to network issues and manage design standards and policies; and
- Develop asset strategies including business cases for inclusion in the program of work.

The Area planning strategies contribute directly to the above operational activities.

5 Related Standards and Documentation

The following documents have been used to either in the development of this management plan, or provide supporting information to it:

- Customer Number Forecast 2017 (R628498)
- Customer Expenditure Forecasts (R861720)

6 Overview

6.1 Customer Initiated Capital Works

CICW activity is initiated and undertaken at the request of customers through a connection process³, which includes assessing and subsequently agreeing to the conditions for connection to the network. This connection process focuses on facilitating and establishing the connection of new and modified private electrical infrastructure to TasNetworks' distribution network through either direct connection or via dedicated distribution connection assets (connection assets).

A customer connection to the network allows a customer to not only import energy (consume) from the network but also, in certain circumstances, generate (produce) and export energy into the network, e.g. rooftop photo-voltaic systems.

In determining the scope of work for a specific customer connection there are two (2) areas where infrastructure investment may be required:

- **Connection assets**, specific to that customer connection; and
- **Network alterations, expansion and extension works** (shared assets alterations) associated with strengthening and expanding the shared network specifically to facilitate only that customer connection.

CICW infrastructure investments for connection services therefore relate to:

- Building connection assets at the customer's premises;
- Modifying the existing network or building additional network; and
- Connecting connection assets to the network.

³ <https://www.tasnetworks.com.au/our-network/new-connections-and-alterations/connections-and-alteration-process-explained/>

The specific technical requirements, commercial arrangements, location and type of customer connection, and capability or constraints of the existing network influence the magnitude of individual CICW projects.

CICW investment is further defined through a set of existing work categories within the Program of Work (POW) reflecting in more detail the nature, type and size of the connection assets required.

All CICW projects are prioritised with other projects within the POW, whilst recognising the customer's supply timing requirements, to ensure efficient resource and materials deployment within the POW.

6.2 Customer connection forecasts

The forecasting of customer connection numbers and network maximum demands (MD) whilst related, are separate activities. In particular, the demand forecast is informed by a gross state product (GSP) forecast, which is also utilised as a basis of the customer connection forecasts. Where customer number forecasts demonstrate the requirement for new and modified connection investment more globally across the network, the demand forecast is aimed at providing evidence of emerging system constraints upstream of new connections and locally within the High Voltage (HV) distribution networks. These emerging demand related issues are a result of increased customer connections as well as existing customer usage changes, recognising external econometric, weather related and environmental influences.

6.3 Pre-connection services

Pre-Connection Services relate to the design, engineering, plant, and labour costs associated with the preparation of an Offer to Connect; for work activities associated with CICW and non-demand replacement activity.

6.4 Non-Demand Network Alterations

Non-demand related network alterations are work activities separate from the CICW programs, which have been requested by a third party or customer. This includes work activities such as asset relocation for road widening, pole relocations, or undergrounding.

Non-demand activity is initiated and undertaken at the request of customers through the connection process, which includes assessing and subsequently agreeing to the conditions of the requested works. This connection process focuses on facilitating the customers' requests and timeframe, as well as ensuring appropriate infrastructure is installed with the works i.e. cater for future growth, assets etc.

In determining the scope of work required for alternative control services, TasNetworks assess the request in conjunction with associated area strategies to ensure opportunity or 'bring-forward' investment by TasNetworks is managed sustainably.

Where additional infrastructure is installed or additional works undertaken with the non-demand customer initiated works, this expenditure is excluded from the Customer Initiated work categories; allocating this expenditure to other network streams as appropriate i.e. asset renewal or network development.

The specific asset type, technical capability or constraints of the existing network influence the magnitude of network alteration work. All works are delivered by the Works and Service Delivery unit, however for work requests associated with the HV distribution networks, the Strategic Asset management unit are engaged for strategic input.

All Quoted Services projects are prioritised with other projects within the POW, whilst recognising the customer's request timing requirements, to ensure efficient resource and materials deployment within the POW.

Non-demand related network alterations or Quoted Services describe alternative control services requested by a third party or customer, e.g. asset relocation for road widening, pole relocations, or undergrounding. Quoted Services also include all pre-connection services (Design and Engineering plant and labour) associated with preparing an Offer to Connect on request from customers.

6.5 Activity Management

Customer development activity is managed within TasNetworks through a number of areas of responsibility, including:

- The *Network Planning Team Leader*, facilitating ownership of the Customer Initiated Managing Plan;
- The *Network Planning Team*, facilitating the development of future POW volumes and budget forecasts;
- the Customer Service Group, negotiating the customer connection directly with the customer;
- the Strategic Asset Management (SAM) unit recognising the impact and technical requirements for the customer connection and influence on network development plans and strategies; and
- the Works & Service Delivery (W&SD) unit undertaking the design and construction⁴, commissioning, audit, project finalisation, and management of work activities to establish and facilitate the customer connection; and
- the Finance team, journaling and reporting of customer initiated expenditure to the business.

7 Supporting Principles

There are a number of key supporting principles that guide TasNetworks approach to Customer Initiated activity.

7.1 Area planning strategies (Area development plans)

As detailed in Section 4.3, to ensure the outcomes of the planning philosophy are met, customer initiated works are managed in conjunction with the area planning strategies. This is how customer initiated activity is influenced by TasNetworks strategic plans, and vice versa.

7.2 TasNetworks distribution connection pricing policy

The Distribution Connection Pricing Policy 2017 provides the basis for the commercial arrangements and any on-going maintenance and contractual arrangements necessary for any customer connection to the distribution network. There is an obligation on both parties to establish a connection agreement to ensure that this happens and that such a customer connection meets specific legislative and regulatory requirements.

⁴ For some customer initiated works the design and construction activities may be contestable whereby the works may be undertaken by either WS&D or by the customer's external resources, as requested by the customer.

7.3 Connection conditions

In establishing a customer connection to the network, while satisfying the customer electrical supply requirements, the conditions and arrangements for that customer connection must ensure that the network and consequently other customer connections are not adversely affected.

All customer connections must comply with the obligations of the National Electricity Rules (NER), Tasmanian Electricity Code (TEC) and relevant Australian Standards.

7.4 Customer service

TasNetworks' customer charter⁵ provides the levels of expected service when establishing a customer connection to the network.

7.5 Customer obligations

Each application for a customer connection is assessed and investigated to ensure that operation of customer facilities has minimal impact on existing customer connections and complies with relevant legislative, commercial and technical obligations.

Customer installations must comply with the relevant rules, legislation and Australian Standards prior to connecting to the network.

7.6 'Good electricity industry practice'

In establishing a customer connection to the network, TasNetworks recognises infrastructure design and construction required for that connection must be in accordance with good electricity industry practice as defined in Chapter 14 of the Tasmanian Electricity Code.

7.7 Essential service

Additional considerations are given to the required infrastructure and connection assets where that customer connection has identified reliance of supply as an essential service in terms of emergency, safety and life support requirements.

7.8 Greater asset / network utilisation

In determining the optimum investment for a customer connection, recognition of the least cost, most prudent investment and maximum utilisation of the existing infrastructure is paramount to ensure the 'cost to serve' is minimised.

⁵<https://www.tasnetworks.com.au/TasNetworks/WebParts/TasNetworks/EWP/DownloadPublishedDocument.ashx?d=R0000625828>

8 Regulatory Framework

Chapters 4, 5, 6 and 7 of the NER provide various minimum requirements and a framework for access arrangements to the network.

In particular, clause 6.1.3 states:

Access to direct control services and negotiated distribution services

(a) Subject to and in accordance with the Rules:

- (1) a person (a Service Applicant) may apply to a Distribution Network Service Provider for provision of direct control services or negotiated distribution services;
- (2) a Distribution Network Service Provider must provide direct control services or negotiated distribution services (as the case may be) on terms and conditions of access as determined under Chapters 4, 5, this Chapter 6 and Chapter 7 of the Rules.

(b) The terms and conditions of access are:

- (1) in relation to negotiated distribution services:
 - (i) the price of those services (including, if relevant, access charges); and
 - (ii) other terms and conditions for the provision of those services;
- (2) in relation to direct control services:
 - (i) the price of those services under the approved pricing proposal; and
 - (ii) other terms and conditions for the provision of those services.

TasNetworks is therefore required to provide offers to connect to all connection applicants on fair and reasonable terms and conditions.

Chapter 5 of the NER provides additional detail regarding the connection process and requirements for access to the network for a customer connection, including access standards.

9 Connection Classes and Types

9.1 Connection class

For the purposes of managing the CICW activities, the CICW category of work is segmented into four (4) connection classes. Each connection class reflects the nature 'of' and drivers for the connection service, the type of customer connection, the appropriate connection asset infrastructure, the complexity of supply requirements, and the customer's private installation. These connection classes include Residential, Commercial, Irrigation, and Subdivisions.

9.1.1 Residential class

Residential installations include residential construction activities. Connection assets associated with this connection class may include:

- Simple connections (LV connection):
 - customer connection service fuses; and / or
 - one (1) span of overhead service wire.

- Medium connections (LV connection):
 - customer connection service fuses; and / or
 - greater than one (1) span of overhead service wire and crossover;
 - small extension, overhead and/or underground, of the LV feeder; and
 - additional street furniture (i.e. turret or cabinet).
- Complex connections (LV connection):
 - customer connection service fuses; and / or
 - greater than one (1) span of overhead service wire and crossover;
 - large extension of the LV feeder;
 - extension of the HV feeder;
 - installation of a distribution transformer (predominantly pole-type); and
 - Upstream shared asset alterations may be required.

9.1.2 Commercial class

Commercial installations include agribusiness installations (but not irrigation supplies), supply for commercial construction activities, industrial developments and mining complexes. Connection assets associated with this connection class include:

- Simple connections (LV connection):
 - customer connection service fuses; and / or
 - greater than one (1) span of overhead service wire and crossover;
 - small extension, overhead and/or underground, of the LV feeder; and
 - additional street furniture (i.e. turret, cabinet or wall box).
- Medium connections (LV connection):
 - Large extension, overhead and/or underground, of the LV feeder;
 - Small extension, overhead and/or underground, of the HV feeder; and
 - installation of a distribution transformer (predominantly pole-type).
- Medium connections (HV connection):
 - small extension, overhead and/or underground, of the HV feeder;
 - installation of a HV isolator; and
 - Upstream shared asset alterations may be required.
- Complex connections (LV connection):
 - large extension, overhead and/or underground, of the HV feeder; and
 - installation of a distribution transformer (predominantly ground-type).

- Complex connections (HV connection):
 - large extension, overhead and/or underground, of the HV feeder;
 - installation of a HV isolator; and
 - Upstream shared asset alterations expected to be required.

9.1.3 Irrigation class

Irrigation installations include irrigation construction activities. That is, connection works associated with *customer connections* for the purpose of irrigating. Connection assets associated with this connection class may include:

- Simple connections (LV connection):
 - customer connection service fuses; and / or
 - one (1) span of overhead service wire; and
 - small extension, overhead and/or underground, of the LV feeder.
- Complex connections (LV connection):
 - customer connection service fuses; and / or
 - greater than one (1) span of overhead service wire;
 - large extension of the LV feeder;
 - large extension of the HV feeder;
 - installation of a distribution transformer (predominantly pole-type); and
 - Upstream shared asset alterations may be required.

9.1.4 Subdivision class

Subdivision developments include residential and commercial/industrial activities. Connection assets associated with this connection class, both residential and commercial, is based on basic infrastructure and typical loadings per block. The 'per block' assessment includes the electrical infrastructure and does not include civil works associated with any excavation, trenching, backfilling or reinstatement within the subdivision development. Connection assets associated with this connection class may include:

- Medium complexity connections
 - LV & HV feeders;
 - installation of a distribution transformer; and
 - possible upstream shared asset alterations may be required.

9.2 Connection class types

Generally the complexity of infrastructure and level of expenditure required for each connection class is influenced by:

- Load or maximum demand;
- Type of customer connection or technical requirements requested;
- Location (topography) of the customer connection; and
- Capability and topology of the existing network infrastructure to establish the customer connection.

Accordingly each connection class can be grouped into types with the aim of assisting forecasting the CICW investment allowances, and align with relevant regulatory reporting requirements.

Table 9-1 below summarises the connection class type codes used to forecast CICW investment allowances including associated internal Work Levels, and POW Work Category Codes.

Quoted services investment is further defined through a set of existing work categories within the Program of Work (POW) reflecting in more detail the nature, type and size of the alteration required. With the aim of assisting budget forecasting and align with relevant regulatory reporting requirements these categories have been grouped as summarised in

Table 9-1.

Table 9-1: Summary of Customer Connection types

Customer Class	Connection class type Code	Work Level Description	Work Level Code	Associated POW Work Category Codes ⁶
Subdivision	CSUDN	<i>Customer Initiated Subdivisions</i>	CSUD	SOSDC, SOSDI, SUSBD, LANDS, EASES.
Residential	CCONR ⁷	<i>Customer Initiated Connection Assets</i>	CCON	SUSCA, LANDC, EASEC
	CNMAR	<i>Customer Initiated Non-Major Works</i>	CNMA	DESDB, SOLCI, SOLCP, SOPOR, SUPOR, SOPOC
Irrigation	CNMAI	<i>Customer Initiated Non-Major Works</i>	CNMA	SOIRR, SOIRC
Commercial	CNMAC	<i>Customer Initiated Non-Major Works</i>	CNMA	SOGSI, SUGSI, LANDN ⁸ , EASEN ⁹
	CMAJC	<i>Customer Initiated Major Works</i>	CMAJ	CASYS, SUMPR, SOGSM, LANDM, EASEM
	CSUBC	<i>Customer Initiated Substations</i>	CSUB	SUSUB, LANDB, EASEB
Quoted Services (OPEX)	QUOTS	<i>Customer Initiated Quoted Services</i>	QUOT	QUREO, QUHIO, QUSCO, QUSUO, QUNSO, EASEQ, (includes pre-connection services)

⁶ POW Work Category Descriptions detailed in Appendix A

⁷ Not included in budget forecast – retained for reporting purposes only.

⁸ Work Category LANDN also used for non-major Residential and Irrigation connection classes.

⁹ Work Category EASEN also used for non-major Residential and Irrigation connection classes.

10 Forecasting methodology

TasNetworks creates forecasts of the number of new network connections split into the categories residential, commercial, irrigation and residential subdivisions (lots). These customer connection forecasts are then used; in conjunction with historical unit rates for these activities, to determine the budget forecast for Customer Initiated activity in future programs of work.

TasNetworks customer connection forecast, that was developed for the 2017-19 Distribution Reset, has been updated for the upcoming 2019-24 Reset. The methodology and driving inputs are summarised below.

10.1 Customer connection forecasts (volumes)

TasNetworks has opted to apply an econometric methodology to forecast new customer connections to the distribution network. This approach required the estimation and testing of statistical relationships between the number of new connections and the underlying drivers that influence the number of new connections in Tasmania.

The 2015 customer connection forecasts were created by conducting a trend analysis of historical customer project volumes by customer connection class and applying relevant econometric forecast drivers to map out long term trends. TasNetworks customer connection forecasts are driven by a strong correlation between the one year lag of the four year rolling average of gross state product (GSP), and the historical change in new customer connections. This reflected adequately the delay in the construction industry response to the prevailing economic conditions as well as the response to the trend in economic conditions rather than the economic conditions that exist at any point in time. The 2017 customer connection forecasts apply the same relationship to lagging GSP.

Input data for the customer connection forecasts were collated from the Distribution Category Analysis Regulatory Information Notice 08/09 – 16/17¹⁰.

The GSP forecast was developed by the National Institute of Economic and Industry Research (NIEIR) for TasNetworks' annual load forecasting activities¹¹, where growth is forecast to increase 1.2% in 2016-17, but remain relatively flat to 2021-22. Average growth over the period to 2021-22 is 1.1% per annum.

For more information refer to the customer connection forecast report.

10.2 Historical investment evaluation (unit rates)

Unit rates (\$/connection) are developed to forecast future program budgets for CICW activity. From the category analysis RIN provided for 2008/09 to 2016/17, the estimated unit rates vary from year to year. Average unit rates, shown below for these activities (excluding outliers) were developed and applied to the connect forecasts.

¹⁰ TIME_SERIES_Distribution_Category Analysis RIN (R814249)

¹¹ Electricity sales and maximum demand forecasts for Tasmania to 2045 TON848 (R640353)

Table 10-1: [REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

10.3 Expenditure forecasting approach

Customer initiated budgets are forecast by connection class type by applying the average historical unit rate to the new customer connection forecasts. This is applicable to the non-major and subdivision connection class types only.

The TasNetworks finance team journals costs between POW work categories in order to make sure the costs are correctly allocated to each work category. This can have the unintended result of inconsistencies with connection volumes for a number of work categories. As a result the unit rate calculation method is not directly applicable to the following connection class types:

- customer initiated major works (CMAJR),
- customer initiated substations (CSUBS), and
- alternative control quoted services - OPEX (QUOTS).

These categories were forecast using an average historical total category cost (excluding outliers).

Major works and substations connection class type budgets are forecast according to recent historical spend and growth in the commercial customer category as commercial activity is the main driver for work in these areas.

Quoted services are kept steady across the forecast period.

The capital and operation expenditure forecasts are shown in Table 10-2 below.

Table 10-2: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

