Pricing Quantities Forecasting Methodology

2021–22

As submitted to the Australian Energy Regulator

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1 Introduction

Tasmanian Networks Pty Ltd (TasNetworks) is a State Owned Corporation that commenced operations on 1 July 2014 by bringing Tasmania's electricity distribution and transmission networks into one network business.

We own, operate and maintain the network that delivers electricity to approximately 290,000 households, businesses and organisations on mainland Tasmania. Our core business is providing safe, reliable and efficient electricity transmission, distribution and telecommunication services in a national market. Our roles in the electricity supply chain and our customer service relationships are shown below.

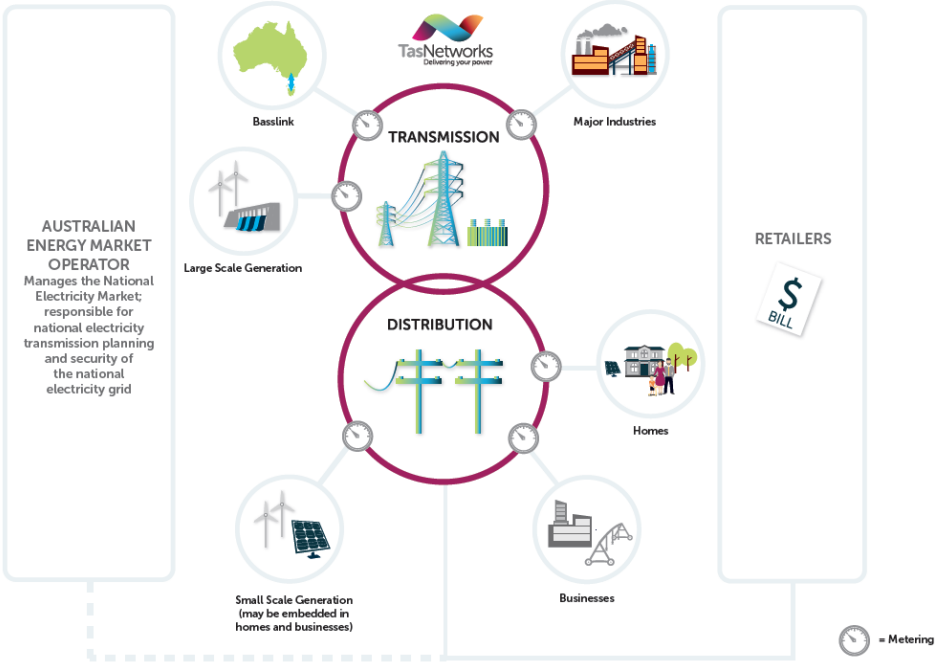

Figure 1: TasNetworks' customer service relationships

1.1 Purpose of this document

The prices that TasNetworks charges for the use of its distribution network (electricity poles and wires) and the provision of associated services to customers are approved by the Australian Energy Regulator (**AER**). Section 6.18.2(a)(1) of the National Electricity Rules (**Rules**) requires that distribution network service providers (**DNSPs**) submit their Annual Distribution Pricing Proposal to the AER, at least three months before the start of the second and each subsequent regulatory year of their regulatory control period. The AER has requested that each DNSP include with their Annual Distribution Pricing Proposal an outline of their forecasting methodology for quantities used to calculate tariffs.

The purpose of this document is to advise the AER on our forecasting methodology for the quantities used to calculate tariffs and thereby support the AER's subsequent assessment of our quantity forecasts and tariffs for standard control distribution services. This submission will also assist customers and stakeholders in understanding our forecasting approach.

1.2 Structure of this document

The remainder of this document is structured as follows:

- section 2 sets out TasNetworks' overarching forecasting principles and approach;
- section 3 sets out in more detail TasNetworks' forecasting approach, data requirements and assumptions for developing forecasts for setting network tariffs; and
- section 4 contains a glossary of terms, abbreviations and acronyms used in this document.

2 Forecasting principles and high level approach

To inform the development of annual network tariffs, TasNetworks must forecast the number of customers as well as electricity consumption and demand for each year of the regulatory control period. The forecasts are prepared on a bottom-up basis by network tariff and aggregated to a tariff class level and reconciled with top-down forecasts.

The tariffs and tariff classes are the same as those outlined in TasNetworks' Annual Distribution Pricing Proposal.[1] There are currently ten network tariff classes:

- residential;
- small low voltage (**LV)**;
- large low voltage (**LV**);
- uncontrolled energy;
- controlled energy;
- irrigation;
- high voltage (**HV**);
- individual tariff calculation (**ITC**);
- unmetered; and
- street lighting.

The tariffs contained within each tariff class are outlined in Table 1**Error! Reference source not found.**.

Table 1: Network tariff classes – standard control services

Network tariff class	Network tariff code	Network tariff
Residential	(TAS31)	Residential low voltage general
	(TAS87)	Residential low voltage time of use demand
	(TAS92)	Residential low voltage pay as you go time of use
	(TAS93)	Residential low voltage time of use
	(TAS97)	Residential low voltage distributed energy resources
	(TAS101)	Residential low voltage pay as you go
Small Low Voltage	(TAS22)	Business low voltage general
	(TAS88)	Business low voltage time of use demand
	(TAS94)	Business low voltage time of use
	(TAS98)	Business low voltage distributed energy resources
Large Low Voltage	(TAS82)	Business low voltage kVA demand
	(TAS89)	Large business low voltage time of use demand
Uncontrolled Energy	(TAS41)	Uncontrolled low voltage heating
Controlled Energy	(TAS61)	Controlled low voltage energy – off peak with afternoon boost
	(TAS63)	Controlled low voltage energy – night period only
Irrigation	(TAS75)	Irrigation low voltage time of use

[1] This document can be found at https://www.tasnetworks.com.au/poles-and-wires/pricing/Our-prices.

Network tariff class	Network tariff code	Network tariff
High Voltage	(TASSDM)	Business high voltage kVA specified demand
	(TAS15)	Business high voltage kVA specified demand >2MVA
Individual Tariff Calculation	(TASCUS1) (TASCUS2) (TASCUS3) (TASCUS4)	Individual tariff calculation
Unmetered	(TASUMS)	Unmetered supply low voltage general
Street Lighting	(TASUMSSL)	Unmetered supply low voltage public lighting

More information can be found on TasNetworks' approach to network tariffs and network tariff classes can be found in our Network Tariff Application and Price Guide.[2]

[2] This document can be found at our website at: https://www.tasnetworks.com.au/poles-and-wires/pricing/Our-prices.

3 TasNetworks' pricing quantities forecasting methodology

3.1 Key drivers

The number of customers connected to the Tasmanian distribution network and the level of their electricity consumption and demand are driven by a range of factors, including:

- the number of new customer connections;
- economic growth measured by State Gross Product;
- employment and income levels;
- demographic impacts including population growth, aging population and the formation of new households;
- previous consumption and demand;
- energy efficiency;
- customer engagement;
- the amount of rooftop photovoltaic (**PV**);
- regulatory and legislative changes;
- weather; and
- price.

These drivers are central to the development of our forecasts of the quantities used to determine network tariffs.

3.2 Overview of pricing quantities forecasting methodology

Forecasts of the quantities used to prepare annual network tariffs are typically determined at a tariff level and aggregated, and subject to a 'top-down' review. There are a number of validation processes undertaken to confirm the integrity of the forecasts used in the tariff setting process.

3.2.1 Top-down forecasts

Top-down forecasts of consumption and demand are developed at a tariff class level based on trend analysis. The time period used to develop the trend forecasts will depend on a number of factors, such as step changes in the historical series, to avoid compromising the integrity of the forecast.

The preliminary forecasts are then considered against any known factors that may suggest the trend analysis does not adequately capture anticipated future changes in the series. For example, the continuing impact of COVID-19 is still having an impact on economic growth, as well as employment and income levels. Extrapolation of the historic consumption and demand series assumes no material departure from the performance of the explanatory variables that underpin these series, which is clearly violated by the impact of COVID-19. Therefore, an adjustment has been made to include an estimate of the impact of COVID-19 in the forecasts.

These top-down forecasts can be aggregated to a network level and compared against the forecasts prepared by the Australian Energy Market Operator (**AEMO**) to provide some degree of validation and to assist in ensuring consistency in reporting and application of these forecasts.

3.2.2 Bottom-up forecasts

Bottom-up forecasts are developed for each network tariff using known (or expected) changes to the series. The process to develop the forecasts can include consideration of items outlined in section 3.1 as well as individual tariff-specific issues. A key objective of this process is to identify those factors that may result in individual network tariff forecasts moving differently to those of the network tariff class to which it belongs.

For example, the default ('opt out') tariff assignment sees eligible customers transition from flat rate tariffs to time of use consumption tariffs 14 months after the trigger event. Therefore, while meeting the forecast change at a network tariff class level (such as Residential), forecasts for the associated flat rate tariffs (such as TAS31) are expected to continue to decline while those for the relevant time of use consumption tariffs (such as TAS93) will experience an offsetting increase.

Similarly, the impact of retail initiatives are also considered, such as Aurora Energy's continued roll out of advanced meters and the uptake of the aurora+ app, which it is expected to see customers churn from flat rate tariffs (such as TAS31 for residential customers and TAS22 for small business low voltage customers) to time of use consumption tariffs (TAS93 and TAS94 respectively).

These bottom-up forecast are aggregated for each respective network tariff class.

3.2.3 Validation process

The two sets of forecasts at the network tariff level are compared and material differences are examined to identify the reason for the differences and to assist in determining how they can be reconciled. In many cases this may be to understand whether or not there is consistency in the critical assumptions underlying both sets of forecasts.

4 Glossary

Term	Definition
AER	Australian Energy Regulator
DNSP	Distribution Network Service Provider
HV or High Voltage	A voltage exceeding 1,000 volts
ITC	Individual Tariff Calculation
kV	KiloVolt
LV or Low Voltage	A voltage not exceeding 1,000 volts
NIEIR	National Institute of Economic and Industry Research
NEM	National Electricity Market
Rules	National Electricity Rules
TasNetworks	Tasmanian Networks Pty Ltd
ToU	Time of Use