TasNetworks
Delivering your power

Tasmanian Networks Pty Ltd
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15 May 2018

Chris Pattas
General Manager
Australian Energy Regulator
GPO Box 520
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Dear Chris

RE TasNetworks' Transmission Revenue and Distribution Regulatory Proposal

On 28 March 2018, the Australian Energy Regulator (**AER**) released an Issues Paper inviting stakeholder feedback on TasNetworks' 2019-24 Transmission Revenue and Distribution Regulatory Proposal, as well as the accompanying Tariff Structure Statement. In addition to addressing the matters raised in the Issues Paper, we have taken the opportunity to respond to a range of topics raised by stakeholders since our submission, including issues raised by members of the AER's Consumer Challenge Panel assigned to TasNetworks' regulatory determination.

Since TasNetworks submitted its Revenue Proposal in January, the Council of Australian Governments Energy Council has introduced a draft Bill to implement a new guideline for the rate of return component of the AER's regulatory determinations. This change is a fundamental component of our next regulatory determination and introduces both significant uncertainty and additional regulatory burden for TasNetworks. Given that uncertainty, it may be necessary for TasNetworks to re-examine the package of efficiency and revenue reduction measures which has been proposed.

We remain confident that in our original proposal we struck the right balance by keeping prices low, while maintaining reliability and safety – two of the key themes raised by our customers.

We look forward to continuing to work constructively with the AER, customers and other interested stakeholders during the reviews of TasNetworks 2019-24 Transmission Revenue and Distribution Regulatory Proposal. Any questions regarding any aspect of this submission, please contact John Sayers on (03) 6271 6469 or by email to John.Sayers@tasnetworks.com.au.

Yours sincerely

Lance Balcombe

CEO

Response to the AER's Issues Paper

Transmission Revenue and Distribution Regulatory Proposal and Tariff Structure Statement

May 2018 - Submission

Tasmanian Networks Pty Ltd (ABN 24 167 357 299)

Authorisations

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Responsibilities

This document is the responsibility of the Revenue Reset Team, Tasmanian Networks Pty Ltd, ABN 24 167 357 299 (hereafter referred to as "TasNetworks").

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1 Introduction

On 31 January 2018, TasNetworks submitted a combined transmission and distribution regulatory proposal for the 2019-24 regulatory period to the Australian Energy Regulator (AER) for approval, along with a Tariff Structure Statement (TSS).

The regulatory proposal sets out TasNetworks' expenditure plans, incentive arrangements, revenue requirements and prices for the period 1 July 2019 to 30 June 2024. Our proposal has been developed so that it delivers the best possible service and pricing outcomes for our transmission and distribution customers, both today and into the future. During the development of our proposal we have listened to our customers and modified our plans accordingly. In particular, we have made further reductions to our proposed expenditure and rate of return on our transmission assets, in response to feedback on our provisional plans.

On 28 March 2018, the AER released an Issues Paper requesting stakeholder feedback regarding aspects of our revenue and regulatory proposals for our transmission and distribution services, as well as TasNetworks' TSS. We would like to take this opportunity to provide further information in support of our proposal for the 2019-24 regulatory period and help our customers and stakeholders engage constructively in the regulatory process.

We are confident our proposal, along with the associated package of revenue inputs is one that the Regulator and our customers can accept, striking the right balance between keeping prices low and maintaining reliability and safety, while continuing to innovate to provide a better, sustainable future.

2 Customer feedback

An important part of developing a deeper understanding of customers' views is the need for ongoing engagement outside the revenue and pricing review process. To that end, since submitting our proposal to the AER in January 2018, we have continued discussing our plans with our customers, their advocates and the AER's Customer Challenge Panel (CCP). We have received a range of feedback, the key themes of which are summarised below:

- Large, uncertain capital projects. Our customers have indicated concern with the cost of the proposed contingent projects; customers want to understand the potential impact of these projects on both our forecast revenue and prices, as well as the benefits the projects would deliver for customers. Given the rate of change in relation to these projects we are continuing to liaise with customers and other stakeholder to gain a better understanding of both connection requirements and potential funding arrangements. We will be updating our assumptions in relation our contingent projects as part of our Revised Revenue Proposal in November 2018.

- Metering. Our metering proposal includes applying accelerated depreciation to recover the existing capital costs associated with legacy type 6 meters. TasNetworks metering charges are recovered from all customers. By accelerating metering depreciation, all customers will realise a lower metering charge by 1 July 2024 while being able to take advantage of the benefits of advanced metering. Some customers have expressed concern about the resulting increases in metering capital charges. We are continuing to consult on our metering plans including seeking to get a better understanding of Aurora Energy's plans for advanced metering rollout.

- Public Lighting. We are proposing a gradual glide path for public lighting prices spanning the 2019-24 and 2024-29 regulatory periods, to transition public lighting to fully cost reflective pricing. Some customers have expressed concern at the level of public lighting price increases and have sought to understand the drivers underpinning forecast cost increases. We are continuing to seek feedback from stakeholders on our proposed public lighting approach.

- Tariff reform. TasNetworks is proposing a customer-led transition to cost reflective network tariffs over several successive regulatory periods, initially on an opt-in basis. The AER and CCP have indicated that it considers the pace of reform proposed by TasNetworks to be slower than it should be. We support a conversation to transition residential customers to time of time

consumption tariffs on an opt-out basis. However, we consider more engagement and feedback would be needed from retailers, customers and their advocates before we move to this approach. We are planning on engaging on this matter specifically before the AER's draft determination.

The lodgement of our regulatory proposal with the AER is the culmination of a significant amount of work for our business. We are continuing to work with our customers to progress our regulatory proposal focusing on the key themes above and ensuring customers remain central to all we do.

3 Capital expenditure forecasts

To address customers' feedback that affordability is of primary concern, we proposed a top down discipline to our preliminary capital expenditure forecasts. As a result, we have already reduced our total capital expenditure forecasts by over $42 million (transmission and distribution), with the majority of this reduction applying to expenditure on the State's distribution network. The optimisation of the distribution capital expenditure program reflects the benefits that are expected to flow from our recent and planned investments in business transformation. TasNetworks will, therefore, deliver the same programs for less cost.

While we seek to minimise our capital expenditure, at the same time we must also ensure that the safety and reliability of our network services is not compromised. To achieve this objective, our analysis shows that capital expenditure must increase in the forthcoming regulatory period, as we renew assets in poor condition, replace technology platforms which are the end of their lives, manage increased bushfire-related risks and connect new customers.

Transmission capital expenditure forecasts

Our proposal demonstrates that a key focus for the transmission network over the 2019-24 regulatory period will continue to be bulk energy transfer for:

- Large users and large customer communities – with more than half of Tasmania's energy being transported to large customers at transmission voltages and never entering the distribution system
- Transferring Tasmania's clean hydro and wind energy resource – including to the rest of the National Electricity Market.

Our transmission investment in the 2019-24 period concentrates on:

- Renewing assets in poor condition. Our expenditure requirements are primarily driven by asset condition and risk in our aging protection and control systems, circuit breakers and power transformers.
- Security of the system, supporting the clean energy transition. This work is driven by voltage and ancillary services support, including an investment in excess of $15 million for a new static VAR compensator at the George Town Substation. The compensator will support more stable and efficient operation of our transmission network with changing generation and interconnector flows, and allow the dispatch of lower cost generation.

TasNetworks will initiate the Regulatory Investment Test-Transmission (RIT-T) assessment for the new static VAR compensator at the George Town Substation and expect our project assessment to be well progressed by the time we submit our revised regulatory proposal to the AER in December 2018. Throughout this assessment process we will continue to engage with our customers, the CCP and AER.

Distribution capital expenditure forecasts

Our proposal shows a key focus for the distribution network will be to maintain and renew the 'poles and wires' network that delivers energy to our 285,000 business and residential distribution customers, including increasing numbers of customers with their own generation sources.

Our distribution investment plans recognise the following:

- Increased investment to manage safety risks (that may not be fully offset by efficiencies elsewhere)
- We expect the number of new distribution customer connections will increase consistent with recent trends, with new connection standards to support network security and two way flows of electricity
- Supporting two way flows in the distribution network will require an increase in technology-related expenditure
- We will continue to manage network voltage levels which may be impacted due to growth in embedded generation, noting that this has the potential to drive more reactive projects to address these emerging issues
- Increased expectations for technology investments to support improved customer relationship management, SMS notifications, planned outage information, website portals, and network pricing reform.

TasNetworks also proposed a top-down optimisation adjustment of $36.4 million compared to our provisional Regulatory Proposal. In developing our capital expenditure forecasts, we have considered the risks associated with our assets together with the future demands on our network, particularly in response to changing customer use and the growth of renewable generation. We maintain our proposal is one the Regulator and our customers can accept.

4 Contingent projects

TasNetworks has identified five contingent projects for its transmission network in its revenue proposal for the regulatory period from 1 July 2019 to 30 June 2024. Contingent projects are put forward in the interests of transparency because there is a reasonable prospect of the projects going ahead during the upcoming regulatory period. The proposed projects are very large and have a sufficient degree of uncertainty about the need, cost/benefits and timing for the investment, we have therefore chosen to exclude them from our capital expenditure plans. There are a number of uncertainties that may affect whether or not a contingent project will be required, including:

- Decisions by governments and regulatory bodies
- Technological change
- Customer demand for electricity in the future
- Future investments by third-parties in large-scale electricity generation and storage.

Customer and network interests are balanced, by signaling that a project may be required but not including it as part of the capital expenditure allowance approved by the AER. A range of pre-determined triggers need to occur, a consultation process is initiated, a Regulatory Investment Test, which includes a cost-benefit analysis is completed before the capital allowance approved by the AER can be adjusted to take account of a contingent project.

We understand the concern of customers about the level of uncertainty about the scope, timing and cost of each of the five contingent projects. This also makes providing reasonable estimates of the possible revenue and pricing impacts difficult.

It is worth noting that TasNetworks (and its predecessor business Transend Networks) identified contingent projects in previous revenue proposals – including some which are included again in the current proposal. To date, none of the projects have been 'triggered'. This reflects the uncertainty that can affect the need for transmission network developments. It also highlights that the identification of a project as a contingent project is just the start in an investment decision and related consultation process.

Contingent project benefits

Despite the uncertainty surrounding the contingent projects nominated by TasNetworks, one thing is certain: none of the projects will progress unless their value can be demonstrated. We will continue to examine each contingent project in terms of its need, cost/benefit and timing to ensure customer value can be demonstrated. We will conduct a targeted engagement with stakeholders, customers and the community.

We will be updating our assumptions and re-examining the appropriate contingent triggers in relation our proposed contingent projects as part of our Revised Revenue Proposal in November 2018.

5 Rate of Return and our Revenue

A major component of our revenue allowance is the return on our regulatory asset base (RAB), and the rate of return applied to our RAB – represented by the Weighted Average Cost of Capital (WACC) – is a key determinant of the revenue we are permitted to recover from our customers.

We have heard loud and clear that our customers consider our service levels and reliability to be generally acceptable and that affordability is their primary concern. Our customers expect us to make a clear case for any decisions that will increase prices and we took this feedback into account when preparing our revenue proposal for the 2019-24 regulatory period.

With affordability in mind we proposed a package of measures aimed at minimising upward pressure on the network costs faced by our customers. A key component of those measures was aligning the rate of return applying to our transmission RAB with the rate of return applying to our distribution network.

Applying the 2013 Guideline would produce a higher WACC for our transmission assets compared to our distribution assets, but aligning the two would see TasNetworks' transmission rate of return decrease by 25 basis points. Based on past revenue determinations, our expectation was that this lower rate of return on our transmission assets would be likely to be lower than might otherwise be determined by the AER.

Together, the package of measures that included the reduction in the transmission rate of return was expected to reduce transmission and distribution revenues over the forthcoming regulatory control period, in nominal terms, by $29.8 million and $28.4 million respectively, compared to our provisional plans[1] (or by $58.2 million in total). We believed, and still do, that this is a proposal that our customers and the AER could have accepted, one that delivers outcomes which are consistent with the themes we heard during our customer consultation activities.

In December 2013, the AER published a Rate of Return Guideline (Guideline) setting out its proposed approach to estimating the WACC. TasNetworks submitted a Rule change proposal in June 2017 requesting that the 2013 Guidelines apply to both the distribution and transmission determinations for the forthcoming regulatory period and the Rule change was approved by the AEMC on 26 September 2017.

The package of efficiency and revenue reduction measures put forward by TasNetworks, including the reduction in our transmission return of return, was based on the assumption that the current 2013 Guideline would apply to TasNetworks' revenue determination for the 2019-24 regulatory period, as approved by the AEMC.

Since TasNetworks submitted its revenue proposal to the AER in January 2018, the Council of the Australian Governments (COAG) Energy Council has introduced a draft Bill that will

[1] For further information regarding our provisional Regulatory Proposal refer (TN175)

make the new Guideline binding. The Bill is expected to be enacted by December 2018 and apply to the next round of network revenue and pricing determinations, which are due to be finalised in April 2019. This would mean that the new guideline would apply to TasNetworks in its next regulatory period (2019-24).

The amendments will implement a binding instrument (rate of return guideline) that sets out a single approach to the calculation of rate of return parameters for all network businesses, developed through a single, industry-wide process every four years. The move to a binding rate of return guideline is intended to improve the transparency and certainty of the AER's decisions and reduce the regulatory burden.

TasNetworks is supportive of the change. However, the timing of its introduction, and the way that the new arrangements will override the September 2017 Rule change approved by the AEMC – which TasNetworks has relied on in developing its 2019-24 regulatory proposal – introduces both significant uncertainty and additional regulatory burden.

This means that in addition to the uncertainty created by the timing of the binding rate of return's implementation, TasNetworks does not have certainty in terms of guideline review outcomes in relation to particular WACC parameters, and will not have clarity on these and other matters until the final Guideline is published in December 2018.

Given the uncertainty, a re-examination of the package of interrelated efficiency and revenue reduction measures, including the voluntary reduction in the rate of return we proposed for our transmission network revenue may be necessary. It may be unsustainable for TasNetworks to preserve all of the efficiency and revenue reduction measures from the original proposal. TasNetworks' revenue proposal was developed to deliver a revenue outcome that strikes a balance between maintaining affordability for our customers and ensuring that TasNetworks continues to be a sustainable business – a balance which we believed would be acceptable to our customers and the AER. So, while the revenue allowance sought by TasNetworks may not change, the means by which that outcome is achieved – with a focus on ensuring we continue to run a sustainable business – may be different.

6 Service Target Performance Incentive Scheme (STPIS) - Transmission

The AER has a service target performance incentive scheme (**STPIS**) which it applies to TasNetworks' transmission network. The transmission STPIS consists of three components:

1. A service component, which relates to network reliability
2. A market impact component, which seeks to minimise the impact of network outages on the efficient dispatch of generation
3. A network capability component, which encourages TasNetworks to undertake low cost projects that improve the capability of existing assets when most needed, while maintaining adequate reliability.

TasNetworks is supportive of the objectives of the STPIS, but has proposed a number of changes in the application of the scheme to its transmission network, a summary of which are provided in the subsequent sections. The changes have been put forward in the interests of better balancing risks and rewards, providing a clearer incentive to maintain performance and reducing pricing volatility for our customers.

Service component

The performance targets, caps, collars and weightings for the parameters of the service component in TasNetworks' revenue proposal for the 2019-24 regulatory period satisfy the requirements of version 5 of the STPIS. In calculating our proposed performance targets, we have applied the methodologies specified in the scheme and the AER's final Framework and Approach for TasNetworks (2019-24).

The caps and collars are in general the targets plus or minus one standard deviation of actual performance over the years 2013 to 2017. Some adjustment is made where this results in an unreasonable outcome, for example, if the cap is a negative number. The results have been charted to ensure that the associated S-curves give a reasonable spread of annual results along the sloping part of the S curve.

While the proposed targets reflect the operation of the STPIS, we remain concerned that the loss of supply event frequency targets are inappropriate. The problem arises because the performance measure identifies loss of supply events that exceed x and y thresholds of 0.1 and one system minute, respectively. This results in a target of one event for events that exceed one system minute, and caps of zero for both measures.

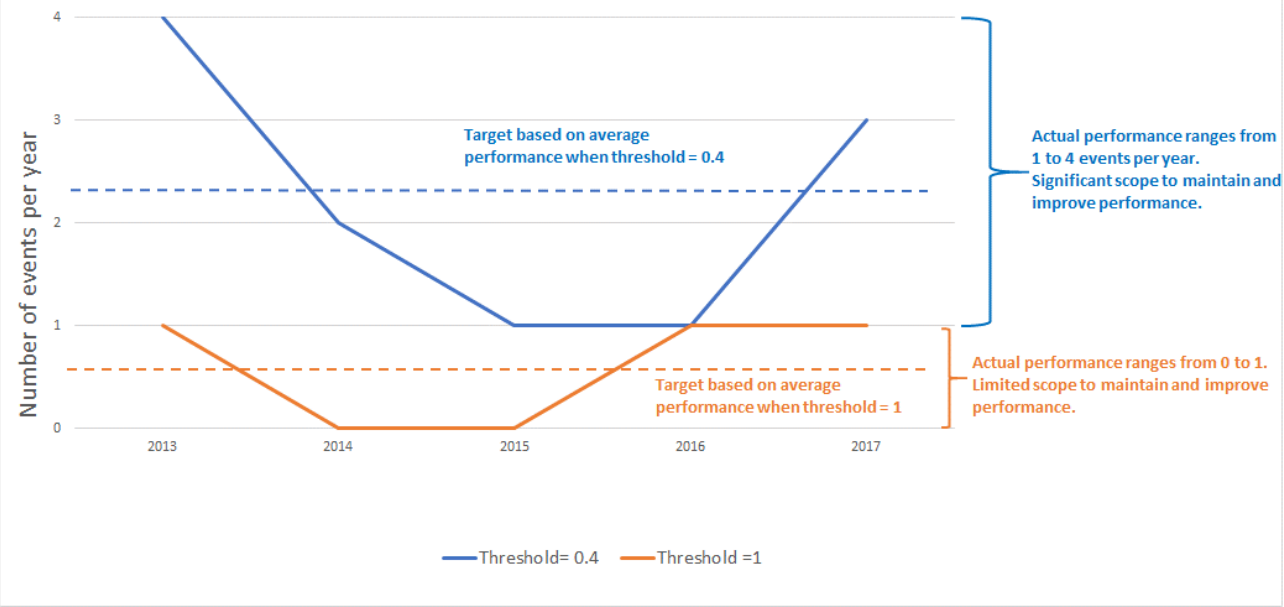
As a consequence of our improved performance in relation to loss of supply events, we believe that these parameters do not provide appropriate incentives to improve and/or maintain performance. In effect, the parameters provide an 'all or nothing' incentive scheme, which presents TasNetworks with limited scope to manage network service performance over time.

Such a target may also create increased pricing volatility for our customers. As such, TasNetworks considers that the continued application of the current thresholds would not

be consistent with the objectives of the STPIS and would be contrary to the interests of our customers.

With these considerations in mind, and to better balance risks and rewards, we propose a reduction in our loss of supply event frequency thresholds. The figure below illustrates the improvements that can be made to the effectiveness of the scheme by reducing the y threshold from one to 0.4 system minutes. Although the alternative measures and targets shown below use exactly the same historical data, reducing the threshold increases the number of outage events that are subject to the scheme.

Figure 1: Improving incentives by reducing the y threshold



As shown above, maintaining the current threshold of one leads to a very narrow range of performance outcomes, which gives TasNetworks an indistinct and ineffective incentive to maintain performance. By contrast, the lower threshold provides a clearer incentive to maintain performance because it provides more detailed data on our historic performance. As a result, our proposed change provides more effective incentives for us to maintain performance to the benefit of our customers, in accordance with the objectives of the STPIS.

If the y threshold is reduced to 0.4, it is appropriate to also reduce the x threshold from 0.1 to 0.05. This change will also provide a modest enhancement to the incentive properties of the scheme. It would also align both thresholds with those of Powerlink.

The AER states in its Issues Paper that under TasNetworks' proposal, the business "could be rewarded for further performance improvements". As the loss of supply frequency parameters are capped at 0.3 per cent or TasNetworks' transmission annual maximum allowed revenue, the total reward or penalty for these parameters does not change. TasNetworks' proposal would introduce a level of granularity, which already exists in other jurisdictions, that provides appropriate incentive to TasNetworks to maintain its performance.

Common reporting arrangements

In its Framework and Approach paper, the AER proposes to apply Version 5 of the transmission STPIS to TasNetworks during the 2019-24 regulatory period. As explained above, we have proposed modification of the thresholds specified in the scheme, technical changes that we consider promote the objectives of the scheme.

We also propose the application of a common STPIS reporting period for both our transmission and distribution networks. To align with other reporting obligations, we propose that the transmission performance reporting be changed to a financial year basis.

While the AER has yet to accept this proposal, we note that the proposal has the potential to be of benefit to our customers through the delivery of business efficiency gains and, in our view, this warrants the AER's consideration of the revised reporting arrangements proposed by TasNetworks. Aligning the reporting periods for both networks will also help our customers understand the link between annually reported service performance, the resulting revenue adjustments and the implications those adjustments have on network charges and pricing.

We understand that a change to the reporting arrangements will require a transitional period between the two methods. We propose a six month target for this transition period that is simply half of our existing targets, with no changes to our incentive rates during this period. This approach is consistent with past transitional arrangements agreed to by the AER and provided for in the STPIS.

Specifically with regard to the market impact component, the AER states in its Issues Paper that setting a 6-month target for the transition period is potentially complex, as the period covers two-thirds of the summer months and one-third of the winter months. TasNetworks does not consider this to be a complex issue, as it already has processes in place to evaluate and minimise the market impact of outages during peak load periods, which includes the summer months. TasNetworks also has quarterly consultations with our major generation customers to review proposed outages. We believe that our controls are appropriate and that it is unlikely we would need to make any adjustments to our business processes to accommodate a temporary seasonal variation to targets.

Concluding comments

As part of reviewing the STPIS Guideline to facilitate the changes TasNetworks has proposed to the operation of the scheme, TasNetworks strongly advocates a review of the Guideline, even if it only enables change for one network business as part their revenue determination process, because it strives for better customer outcomes.

TasNetworks believes that a Transmission STPIS Guideline that is less binary and rigid can still achieve the intended outcomes, noting that a similar result has been achieved with the AER's Distribution STPIS Guideline.

7 Metering

Until the introduction of metering contestability on 1 December 2017 as part of the AEMC's Power of Choice reforms, TasNetworks was the metering provider for households and small businesses in the State of Tasmania. The provision of new meters is now the responsibility of retailers, with TasNetworks' role being reduced to that of supporting the type 6 meters that are still in service, until such time as they are replaced with advanced meters, a roll-out that has already been begun by the electricity retailer Aurora Energy. We have used estimates of the Tasmanian advanced meter rollout provided by the metering coordinator to inform our proposed approach.

With nearly 435,000 type 6 meters in service with an average asset life of 15 years, we are of the view that requiring customers to bear the cost of legacy metering investments over the remaining technical life of the asset base, rather than its shortened service life, would not be in the best interests of our customers. This is because, based on the advanced metering roll out forecasts provided by the retailers, customers would be potentially paying two metering charges over a long period of time. We believe our approach is more an equitable and cost reflective outcome for our customers.

Like other DNSPs, TasNetworks charges customers (through retailers) an amount to recover the capital cost of those meters, on top of a separate charge that covers the cost of maintaining, operating and reading them. While the replacement of a type 6 meter with an advanced meter from another provider will lead to a reduction in TasNetworks' operating expenditure, it provides no offset in terms of the original investment in the meter itself. With an estimated value of approximately $45 million as at the end of 2018-19 (nominal dollars), the recovery of the residual value of TasNetworks' existing meters is a material issue for the business, as its metering asset base will effectively become stranded due to the metering contestability reforms.

TasNetworks notes the AER's concern, and the concerns expressed by some customers, about the recovery of the residual capital value of existing meters over the 2019-2024 period. We explored options with a targeted group of customers.

TasNetworks' analysis shows that for the majority of our customers, accelerating the depreciation of the type 6 metering asset base will increase metering charges by only around $9.29 per annum, per metering register. A small number of customers will pay up to an additional $24.85 per annum per metering register for more complex metering. While such an increase, in percentage terms, might be presented as a significant price rise, in outright terms it represents a negligible increase in the delivered cost of electricity over the course of a year, amounting to as little as an extra 2.5 cents per day for some customers.

We recognise that even relatively small increases in the delivered cost of electricity can assume greater significance for genuinely vulnerable customers. TasNetworks is of the view that the accelerated recovery of metering capital costs offers a number of important benefits to customers, in that:

1. Customers will be able to take advantage of new metering technology and greater competition in metering to enable greater choice of products and services, compared to the current environment
2. Customers will pay less in metering charges in total over the 2019-24 regulatory period (around 10% less) under an accelerated depreciation scenario, even though on a Net Present Value basis, TasNetworks will still recover the full cost of the meters currently in service
3. In the case of any type 6 accumulation meter that remains in use at 30 June 2024, there will be no further capital charge. Thereafter, customers will experience an ongoing reduction in their metering charges, to reflect only the regulated service operating costs, until such time as their meter is replaced, through their retailer, with an advanced meter
4. Interest rates have been at historical lows and taking advantage of current financial markets to recover metering costs quicker while other network cost inputs (i.e. WACC) are low will reduce customer bill volatility over time
5. The vast majority of customers will not be required to pay two metering charges for an extended period of time
6. Customers that switch to advanced meters will not be paying for meters that they are no longer using (post 2024).

TasNetworks acknowledges that it has received sometimes conflicting feedback from customers about our proposed metering services approach. Some stakeholders expressed concern regarding the short-term increase in metering charges resulting from accelerating the depreciation of the metering RAB. These stakeholders thought that the increase in metering charges may present difficulties for people on low incomes who are already struggling with electricity prices and cost of living pressures. However, other stakeholders maintained that a short term increase in metering charges is offset by the benefits to customers of advanced metering technology.

The unique Tasmanian electricity retail environment, namely the regulatory oversight of retail tariffs, is important to context when considering our proposed approach to metering charges. The Office of the Tasmanian Economic Regulator maintains oversight of all retail charge outcomes for small customers, this approach smooths the customer impact of the transition to competitive metering. On balance, however, TasNetworks is confident that the benefits to customers far outweigh a relatively small increase in capital metering charges over a short period of time.

8 Overview of network tariff proposal

As discussed in our TSS, over the 2019-24 regulatory period TasNetworks will continue with pricing reform by:

- Introducing two new demand based time of use tariffs to give households and small businesses who invest in distributed energy resources (DER) new opportunities to control their electricity costs
- Offering 'introductory' discounts for our demand based time of use tariffs for both residential and small business customers, to encourage customer take up of the new tariffs
- Introducing new tariffs specifically for embedded networks
- Continuing to progressively reduce cross subsidies between customers and between tariffs.

The changes to our network tariffs come at a time when amendments to the national regulatory framework for metering have paved the way for advanced meters to be rolled out in Tasmania. Our new time of use tariffs are designed to capitalise on the services that advanced meters can support, enabling households and small businesses to:

- Pay different network charges depending on how and when they use electricity
- Be supplied under just one network tariff for all their electricity needs
- Offset the energy they generate themselves against all of their electricity use, including hot water and/or home heating.

We are not seeking to increase the amount of revenue we collect from customers, nor disadvantage any particular customer group. The amount of revenue we earn is, and will continue to be, determined by the AER and is not affected by the network tariff structure. We are simply looking to introduce a more efficient network tariff design. Our aim is to shift to a suite of network tariffs that encourage more efficient electricity consumption, reducing pressure during periods of highest demand and ultimately reducing the need for network investment to accommodate the network peak.

We propose to transition across a sensible time frame, making incremental changes that will allow customers to choose the right network tariff for their circumstances, while making sure our network tariff offering is appropriate, efficient, and recovers the costs of providing network services.

Time of use periods

In its distribution revenue proposal for the 2017-19 regulatory period and the proposal for the 2019-24 regulatory period, TasNetworks has introduced, or is planning to introduce, a number of new network tariffs for low voltage residential and small business customers that

feature time of use pricing. A feature of these new tariffs is that they share common time of use periods, which recognise the weekday morning and afternoon/evening peaks in demand that have long been a characteristic of Tasmania's distribution network, but treat weekends in their entirety as off-peak periods. In the interests of cost reflectivity and consistency, TasNetworks has also adjusted the time of use periods applying to some existing tariffs in order to align them with the new tariffs.

The AER has observed that Tasmania's demand for electricity peaks in winter and concluded that TasNetworks' peak rates should, therefore, only apply in winter, with lower rates available for the rest of the year. This is, however, inconsistent with customer and stakeholder feedback.

In the course of developing our network tariff reform plans, a variety of charging windows were considered. Prior to lodging our Tariff Structure Statement with the AER for the 2017 – 2019 regulatory period, we consulted with our customers and stakeholders on the time of use periods that should apply to the new network demand based tariffs which we were planning to introduce. This involved considering a variety of alternatives, which were evaluated in the context of the Tasmanian market and the pricing principles developed for evaluating prospective new network tariffs.

As noted in our TSS, a common theme raised by customers and consumer groups has been the concern that our new demand based tariffs for low voltage customers would lead to an increase in complexity, and that customers would find it hard to choose between different tariffs.

We would add to that the potential for greater complexity to confuse customers and make it less likely that they will respond to new tariffs in ways that benefit them. This is particularly the case when the only exposure that most residential and small business customers in Tasmania have had to time of use tariffs is to off-peak tariffs that featured load control or Aurora Energy's Pay As You Go product. Further, the rest of the retail tariffs that have applied in Tasmania for decades (and the network tariffs that grew out of those tariffs) have encouraged usage of electricity without regard to the time of use, and in fact encouraged the use of energy intensive heating appliances at times when the distribution network is already experiencing peaks in demand.

Some of our existing business and irrigation consumption based network tariffs offer three-period time of use tariffs that divide the day into peak, off-peak and shoulder periods. However, to ensure that our new demand based network tariffs are readily understood by our residential and low voltage business customers, and in response to feedback from our working group, we decided to distinguish only between peak and off-peak periods. We consider that the potential for greater cost reflectivity offered by using three time of use periods does not outweigh the added complexity.

Similarly, TasNetworks – in consultation with customers and stakeholders – has elected not to recognise seasonality in its tariff designs for residential and small business customers, because the incremental improvement in cost reflectivity does not justify the loss of simplicity.

Although the use of seasonality as part of demand pricing does have the potential to provide a greater degree of cost reflectivity to address particular network constraints, our approach has been informed by feedback received from our customers. Our customers have told us

very clearly that they do not support seasonal variations for these new tariffs. This is partly due to the potential impact of higher network charges during the winter period, at a time when consumption and, therefore, energy costs, is also at its highest for most customers, and partly because they prefer the simplicity of having no seasonal variation.

The objective of time of use pricing is to provide pricing signals that encourage customers to use electricity in ways that that ease the growth in peak demand, thus helping to lower network costs for all customers in the future. Our customers will require time to adapt to these new tariff offerings, given that they introduce two concepts that will be unfamiliar to many if not most of them, namely the concepts of demand and time of use. We consider that adding seasonality to the mix would add unwarranted complexity to the signals being sent to customers that would only hinder the long-term behavioural change that would indicate a successful transition to cost reflective tariffs.

In its current revenue proposal, Evoenergy has flagged that it expects network capacity to be driven in the future by winter rather than summer peak demand, due to the rate of installation of solar PV during the next regulatory period. While TasNetworks does not anticipate that Tasmania will switch from a winter to summer peaking market, the potential for future load (and demand) growth across the warmer months due to increased air-conditioner use in Tasmania lends weight to maintaining consistent network pricing signals, and consumer behaviour, throughout the year.

The AER has repeatedly encouraged all networks to consider refining their approach to setting time of use windows and has previously asked TasNetworks to consider time of use pricing windows that include the element of seasonality. While acknowledging the greater cost reflectivity of seasonal pricing, TasNetworks does not intend differentiating between seasons in the design of its residential and small business network tariffs. In our view, the time of use periods developed in consultation with a wide range of stakeholders, our customers and their advocates, represent a workable balance between cost reflectivity and simplicity.

Pace of tariff reform

The AER has asked in its issues paper whether TasNetworks' network tariffs should place a stronger incentive on Aurora Energy and other Tasmanian retailers to reform their retail offerings. TasNetworks has proposed that its new time of use demand tariffs for residential and small business customers be made available to customers, through their retailer, an opt-in basis, at least during the 2019-24 regulatory period. Subject to the level of advanced meter take-up in Tasmania, TasNetworks plans to begin billing retailers serving residential and small business customers on a cost reflective basis as the default during the 2029-34 regulatory period.

The AER has previously indicated its support for this phased approach to network tariff reform in Tasmania, involving an initial customer-led transition to cost reflective network tariffs followed by assignment principles which support a faster pace of reform.

While the AER has reiterated in its Issues Paper that it is supportive of our intent and our reform ideas, the Issues Paper notes the experience in other states and territories where opt-in arrangements have been implemented and the uptake by customers of cost reflective tariffs has been low. The AER has, therefore, questioned whether an 'opt-out' arrangement,

whereby retailers in Tasmania are charged a cost reflective network tariff by default, would be more appropriate.

TasNetworks supports a transition to cost reflective tariffs by assigning for residential customers time of time consumption tariffs to the retailer on an opt-out basis. However, we consider more engagement and feedback would be needed from our retailer, customers and their advocates before we move to this approach. TasNetworks' Pricing Reform Working Group (PRWG) has been particularly supportive of the proposal for maintaining our opt-in approach for demand based tariffs for the 2019-24 period.

Our proposed approach to move to demand based time of use tariffs for residential customers was discussed with our PRWG and the majority of PRWG members as a way to create value through an incentive and our members were supportive of TasNetworks' plans to encourage residential and small business customers to move to more cost reflective tariffs in the coming regulatory period.

We recognise that there are some stakeholders with an appetite for a faster rate of reform than we have proposed. However, there are divergent views about the pace of pricing reform. Our shareholders have, for example, expressed a preference for a slower pace of pricing reform.

Through our engagement we are learning from our customers that complementary measures to support the move to cost reflective pricing is key to supporting vulnerable customers and enabling better customer outcomes.

Distributed Energy Resources tariffs

In the coming regulatory period, TasNetworks is to introduce two new demand based time of use tariffs, specifically to give households and small businesses who invest in distributed energy resources (DER) new opportunities to control their electricity costs. Initially, TasNetworks has proposed that the service charge and time of use demand charges applying to the new DER tariffs will be the same as for the demand-based time of use tariffs introduced by TasNetworks in 2017, which feature reduced prices at off-peak times and higher prices at peak times.

The AER has questioned TasNetworks' intention to price these tariffs (at least for the 2019-24 period) the same as other time of use demand tariffs which are available to customers both with and without DER.

In responding to the AER's question, it is important to understand that the role of the new DER tariffs is two-fold:

- To provide cost-reflective network pricing signals to customers with DER
- To identify customers with DER.

Pricing signals

The planned DER tariffs are intended to enable TasNetworks to provide price signals that encourage customers to use their DER to reduce their peak load or shift demand to off-peak periods, in the process minimising their own network charges while avoiding increasing costs for TasNetworks (and other customers) in the longer term. The tariffs are also

intended to facilitate use of the network to by customers to trade energy and, at some point in the future, network support services.

TasNetworks expects growth in the uptake of DER to continue, but at this early stage in the rise of DER is not in a position to provide bespoke pricing for the new DER network tariffs. In the main, this is because the data and insights needed to inform prices that accurately reflect the particular demands that DER customers place on the network, and the value they potentially provide to the wider customer base, are not yet available. The absence of interval metering data in Tasmania, the emerging uptake of battery storage and electric vehicles, plus the lack of reliable details about the DER installed at customers' premises, all combine to make robust analysis of customers' usage of DER, its impact on our costs and, by extension, its likely impacts on our pricing, difficult.

Our aim is to ensure that customers with DER can benefit from their investment, including by providing network support services – without the rest of our customers incurring the cost. The work we have done with Energy Networks Australia and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) on the Energy Network Transformation Roadmap highlights the potential opportunities to purchase services from DER customers to reduce long-term network upgrade costs. But we do not yet have the information we need to be able to value or price those services.

Conversely, we already know that the rapid uptake of DER, particularly in the form of photo-voltaic solar panels, has been having unintended consequences for distribution networks and customers alike. For example, the intermittent and variable nature of the power they generate causes power quality issues for the network, bringing with it the risk of damage to customers' appliances or network infrastructure. Far from reducing TasNetworks' costs, this has required components of the network – often transformers – to be upgraded in order to preserve a safe and compliant power supply for all customers.

However, the exact impact that customers with DER are having on our costs, including the potential for customers with DER to reduce TasNetworks' costs, is not yet understood. This is one of the reasons why TasNetworks is conducting a trial of solar panels, batteries and advanced energy management systems for approximately 40 customers on Bruny Island[2], along with a trial of advanced metering and time of use demand-based pricing involving nearly 600 residential customers in southern Tasmania.[3]

We are, therefore, still learning – as are our customers – how DER will shape customer's use electricity and their use of the network in the future, as well as the impact that their behaviour will have on the costs of providing the network. We need more time to build our data and understand customer outcomes before we consider offering unique DER network pricing.

Identifying customers with DER

[2] CONSORT Bruny Island Battery Trial, https://www.tasnetworks.com.au/customer-engagement/tariff-reform/consort-bruny-island-battery-trial/

[3] TasNetworks' emPOWERing You Trial, https://www.tasnetworks.com.au/customer-engagement/tariff-reform/empoweringyou/

Even though TasNetworks may not yet be in a position to offer different pricing to customers with DER, there are still significant benefits to be had in identifying customers with DER. Using a tariff which is unique to customers with DER is considered to be the best means available to TasNetworks to do this.

Firstly, assigning customers to a DER tariff now avoids creating legacy issues in the future, where customers have to be reassigned to a more appropriate tariff, or opt to make the change themselves. TasNetworks has been working over successive regulatory periods to migrate customers from a number of obsolete tariffs and unwind some long-standing cross subsidies between tariffs and between different classes of customer. The introduction of DER specific network tariffs is a forward looking initiative which avoids customers with DER from being supplied under inappropriate network tariffs, such as a flat consumption based tariff, arrangements which would only have to be unwound at some point in the future in order for the customer to take full advantage of their investment in DER.

Assigning customers with DER to a specific DER tariff will also help TasNetworks analyse those customers' use of electricity in order to better inform the pricing applied to the DER tariffs in the future. It will help us learn how to best integrate their energy use, energy export and network support capabilities into our own network operation practices. And this will help us tailor our services and lower our costs over time, resulting in lower prices for all customers in the future, relative to the case where these technologies are not used efficiently or optimally integrated into the network.

The Australian Energy Market Commission (AEMC) has recognised the value to network businesses in being able to identify customers who deploy DER, having only recently proposed the implementation of a national DER register of small-scale behind the meter DER. There are likely to be substantial benefits to a range of stakeholders, including TasNetworks, flowing from the collection and sharing of information about DER installed at customers' premises. Nonetheless, the means by which any national DER register might be delivered and a timeframe for its implementation are yet to be determined, and the identification of DER customers through the use of a DER specific tariff offers TasNetworks additional opportunities, over and above those that might flow from any national database.

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In summary, DER is going to be an important part of Tasmania's energy sector in the decades to come and an important part of TasNetworks' role is to facilitate its uptake in a way that maintains a safe, reliable and affordable service that does not disadvantage customers without DER. The new DER tariffs are going to be an integral part of TasNetworks' distribution pricing strategy over the coming five year regulatory period and beyond. But until we can develop a greater understanding of how DER can be deployed in ways that benefit, rather than disadvantage, the network and other customers who do not have DER, we don't know enough to offer network pricing which is unique to customers with DER and more cost reflective than the existing demand-based time of use tariffs.

9 TasNetworks' Connection Pricing Framework

The AER have reviewed TasNetworks' Regulatory Proposal and supporting documentation and have sought further information about TasNetworks' proposed Distribution Connection Pricing Policy. At the time of lodging our response to the AER's Issues Paper TasNetworks has also submitted an updated Distribution Connection Pricing Policy. The information accompanying the updated policy explains the derivation of the upstream augmentation charges being proposed for the 2019-24 regulatory period, noting that the proposed rates are higher than the rates applying in the current regulatory period.

10 Concluding comments

This submission has sought to address a number of the issues raised by the AER in its Issues Paper and provide additional information in support of TasNetworks combined transmission revenue and distribution regulatory proposal for the 2019-24 period. We welcome ongoing dialogue with the AER, the CCP and our customers and stakeholders as the AER works towards its draft and final determinations.

Distribution Connection Pricing Policy

Regulatory Control Period: 1 July 2019 to 30 June 2024

Authorisations

Action	Name and title	Date
Prepared by	Adrian Pickin, Pricing Specialist	May 2018
Reviewed by	Iain Meaney, Commercial Solutions Team Leader	May 2018

Responsibilities

This document is the responsibility of the Revenue Reset Team, Tasmanian Networks Pty Ltd, ABN 24 167 357 299 (hereafter referred to as "TasNetworks").

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Table of Contents

1 Introduction

TasNetworks operates the electricity distribution network across mainland Tasmania and is licensed to provide customer connection services in accordance with the provisions of the electricity laws.

Customer connection services are those customer initiated services, or works, associated with the:

- establishment of a new connection to TasNetworks' distribution network;
- modification of an existing connection to TasNetworks' distribution network; or
- extension or augmentation of TasNetworks' distribution network in support of a new or modified connection.

This policy provides the principles that will apply when a connection applicant seeks a new or modified connection to TasNetworks' distribution network.

This policy further establishes the requirements for the provision of customer connection services and sets out the circumstances in which TasNetworks will require a connection applicant, including a real estate developer, to pay a connection charge and establishes the basis for determining those connection charges.

Connection charges are payments made by persons intending to connect or alter their connection to TasNetworks' distribution network to:

- enable those persons to access network services under the standard suite of network tariffs;
- ensure, where appropriate, that costs for that particular connection are borne by the party requesting the connection, and not shared across the entire customer base;
- share the cost of works that have previously been funded by other customers; and
- reduce the likelihood of making uneconomic (inefficient) connections.

To the extent applicable, this policy is consistent with the connection charge principles set out in:

- Part E (Connection Charges) of Chapter 5A of the Rules;
- Part DA (Connection Policies) of Chapter 6 of the Rules;
- the AER's Connection Charge Guidelines for electricity retail customers, published in accordance with clause 5A.E.3 of the Rules; and
- any determination made by the AER in relation to the fees that TasNetworks can charge for the provision of connection services during a regulatory control period.

This policy should be read in conjunction with TasNetworks':

- Service and Installation Rules;

- credit policy; and
- connection guidelines for specific connection types (eg micro generation).

There are a number of terms appearing in this policy that have the meaning given to them in the Glossary.

2 Scope

This policy applies to all connections to TasNetworks' distribution network, including:

- residential and business customers seeking a new supply;
- small (embedded) generators connecting directly to the distribution network (for example the installation of solar photo voltaic panels);
- modifications or alterations to existing customer and embedded generator connections; and
- developers constructing residential and non-residential subdivisions.

This policy also covers requests for other connection related services, for example, to remove or relocate TasNetworks distribution assets, or the provision of public lighting schemes.

This policy ends at the customer point of supply. Electrical infrastructure beyond this point is referred to as private mains and the responsibility of the customer.

3 Connection requirements

TasNetworks will, in accordance with the applicable laws, provide access (connection) to its distribution network for any party that requests access on fair and reasonable terms. The electricity laws also prescribe the processes to be followed when creating a new connection or modifying an existing connection to the TasNetworks' distribution network.

The electricity laws establish a set of regulatory obligations governing the sale and supply of electricity to all customers that are connected to the TasNetworks' distribution network. In consequence, TasNetworks must:

- provide access to the distribution network to those parties that request new connections, which may:
    - involve extension and augmentation of the existing TasNetworks' distribution network; and
    - require the party requesting the new connection to contribute towards the cost of making that connection; and
- modify existing connections to the distribution network to accommodate requests to meet the altered requirements of connected parties, which may:
    - involve extension and augmentation of the existing distribution network; and
    - require the party requesting the modified connection to contribute towards the cost of making any necessary changes to the TasNetworks' distribution network.

Important connection principles which guide the application of this policy are detailed in Attachment 1.

3.1 Connection contract – establishing or modifying connection

TasNetworks will, in accordance with the applicable laws, establish a connection contract with each connection applicant that is establishing or modifying a connection to the TasNetworks' distribution network. There are generally two types of connection contracts that will be formed between TasNetworks and a connection applicant:

1. Standard connection contracts – that must be approved by the AER and can be accepted by a connection applicant, by either:

(a) accepting the terms and conditions of the standard connection contract when they make application for a new or modified connection (referred to as an expedited process); or

(b) formally receiving and accepting a connection offer from TasNetworks. The electricity laws require that both the offer and the acceptance must be in writing and this process can delay the final connection.

2. Negotiated connection contracts – where TasNetworks and a connection applicant negotiate the terms and conditions of the connection offer. TasNetworks will make a formal offer to the connection applicant for their acceptance.

3.2 Types of connection contracts

The electricity laws define the types of connection contracts that will apply for the provision of connection services. TasNetworks has adopted two types of connection contracts and the type of connection contract applicable will depend on the nature of the required connection and whether sufficient network capacity is available. The two types of connection contracts TasNetworks offers are:

1. Basic connection contracts; or
2. Negotiated connection contracts.

The above contracts relate to the construction works necessary to establish a connection to our network. After the new connection is energised, your contractual relationship with us is defined by a Standard Connection Contract as specified by the National Energy Retail Rules.

3.2.1 Standard offers

The electricity laws require TasNetworks to develop model standing offers (standard offers) for the provision of basic connection services and these standard offers must be approved by the AER. TasNetworks has developed a number of standard offers that specify the terms and conditions for the provision of a basic connection service.

There are a number of points to note regarding standard offers.

1. A standard offer is subject to a number of pre-conditions, including that TasNetworks agrees that a connection applicant can be connected via the standard offer.
2. If a connection applicant does not wish to accept the terms and conditions of a standard offer they are able to negotiate a connection offer.
3. Where a connection applicant chooses to negotiate a connection offer, fees may apply as a component of the preparation and finalisation of that negotiated connection offer.

The electricity laws allow for the development of standard offers for the provision of other standard connection services. TasNetworks has not identified any other standard connection services for which a standard offer will apply. However further standard offers may be introduced at a later date.

3.2.1.1 Basic connection

TasNetworks has a number of standard offers for the provision of basic connection services.

Basic connection services encompass the provision of new or modified connections, such as the provision of a new overhead service wire or the upgrading of the customer connection from single phase to multi-phase.

Figure 1 – Basic connection

TasNetworks is required to provide a connection offer to a connection applicant within 10 business days of the connection applicant submitting a satisfactorily completed application form.

TasNetworks can offer an expedited process for a basic connection service where the connection applicant accepts the terms and conditions as published at the time of submitting a completed application.

Where a connection applicant has elected to expedite the provision of a connection service, and the connection is suitable for a basic connection service, TasNetworks will complete that connection within the timeframe stated in the standard offer. This timeframe will commence following the application being approved by TasNetworks for the provision of the requested service.

If the connection is not suitable for a basic connection service, TasNetworks will advise the connection applicant within 10 business days that the application will be managed as a negotiated connection offer.

Copies of TasNetworks' standard connection contracts, detailing the terms and conditions associated with the provision of a basic connection service, are available on the TasNetworks website.

3.2.2 Negotiated connection offer

The electricity laws provide guidance to TasNetworks on the processes that should be followed, and the information that should be provided, when negotiating a connection service.

Negotiated connection offers apply to all connections not covered by a basic connection service and will generally apply where:

- there is no supply at the property or nearby;
- there is insufficient capacity available to facilitate the connection;
- a customer does not accept the standing offer for a basic connection service; or
- a customer seeks to connect to a portion of the distribution network that was previously funded by another customer (refer to section 4.4 of this policy).

TasNetworks must advise the connection applicant within 20 business days of receiving an application if there is any additional information that must be supplied prior to TasNetworks making an offer.

TasNetworks must use its 'best endeavours' to provide a negotiated connection offer within 65 business days of a connection applicant lodging a completed application.

In calculating the 65 business day response period, time taken for the customer to provide any requested additional information is excluded. This may for example, include the time taken for a customer to provide a formal design to TasNetworks, if the design is being prepared by an Authorised Electrical Designer.

TasNetworks' negotiated connection offer will, where applicable, include the following details about the connection charge:

- any applicable connection charge;
- ancillary costs associated with providing the offer;
- cost of connection assets;
- cost of extension services;
- details of any augmentation charge;
- details of any charges relating to a Developer Mains Scheme; and
- any incremental revenue rebate, including any estimates used for consumption and demand.

Note:

Where the connection applicant has elected for an Accredited Electrical Designer and/or Accredited Electrical Constructor to complete part of the extension services required for their connection, the cost of extensions services in the connection offer will only relate to any costs incurred by TasNetworks to connect the new extension works to the existing distribution network. The costs do not include any charges payable by the connection applicant to the Accredited Electrical Designer and/or Accredited Electrical Constructor.

3.3 Connection concepts

There are a number of services and assets required to facilitate connection to the distribution network. Together these services are referred to as 'connection project services'.

A customer seeking a new or modified connection to the distribution network may require the provision of one or more of the following connection project services:

- a basic connection service;
- a major connection service;
- an extension service; or
- an augmentation service.

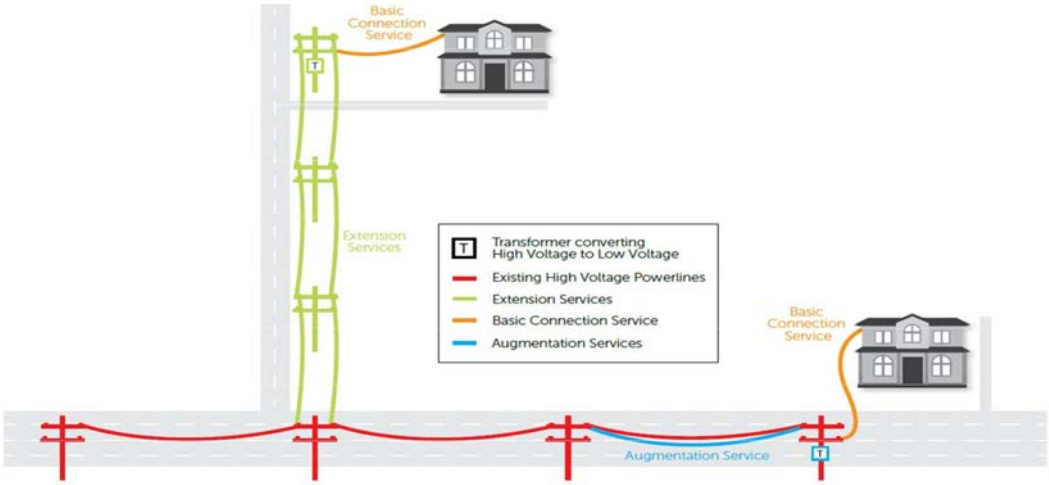

Figure 2 – Example of a basic connection service, an extension service and an augmentation service

A customer seeking larger, more complex, connections may also require the provision of one or more of the following additional services:

- a temporary connection service;
- an asset relocation service;
- an asset removal service; or
- a street lighting service.

The delivery of these connection project services is achieved by means of the following customer project works:

- a basic customer project – where only a basic connection service is required;
- a standard customer project – where a basic connection service will also require the provision of extension service and may include an augmentation service; and
- a complex customer project – where a major connection service may also require the provision of extension service and may include an augmentation service.

This is illustrated in Table 1.

Table 1: Types of connection projects

Customer project	Basic connection service	Major connection service	Extension service	Augmentation service
Basic customer project	Yes	No	No	No
Standard customer project	Yes	No	May include	May include
Complex customer project	No	Yes	May include	May include

4 Policy

4.1 Charging principles

A connection applicant requesting a new or modified connection to the distribution network is to make a contribution (pay a connection charge) towards that connection.

The value of the connection charge should be calculated based on the optimally sized assets (least cost and technically acceptable assets) required for the new or modified connection and where applicable, take account of any incremental network revenue that is generated by that connection. Operations and maintenance components will not be included in any calculation of charges, or considered in the assessment of incremental revenues associated with the provision of connection services.

Flexible payment models are provided to support customer connections to the distribution network.

A prudential requirement may be put in place in conjunction with any connection charges that are required.

A customer that has paid a connection charge towards the cost of a connection service may be eligible for a refund of a portion of that connection charge should another customer subsequently connect to that part of the distribution network provided solely in respect of the original connection. Similarly a customer may be required to contribute to costs of works previously funded by another customer.

Important charging principles which guide the application of this policy are detailed in Attachment 1.

4.2 The steps in calculating customer charges

The approach to charging for customer project works depends on the nature of the service provided and a range of regulatory requirements.

Under the Connection Charge Guidelines, there are a number of requirements that may affect the costs of customer project works. The charge that a connection applicant will pay to TasNetworks is also dependent on the classification of the required works and any rebates that may apply. Important parameters underlying the Regulator's methodology for calculating charges for connection and related services are briefly listed below.

- Charges relating to the services where the assets are for a particular customer and regulated outside the revenue allowance set by the regulator are to be calculated separately. These are known as alternative control services (ACS).
- Charges relating to services that provide assets that are shared by all customers and are recovered through the revenue allowance, and ultimately network tariffs, are to be calculated separately. These are known as standard control services (SCS).

- Each connecting customer that will provide additional revenue, in the form of network tariff charges, will receive a rebate, or a reduction, in their standard control services connection charges, to reflect this new revenue stream. This is known as an incremental revenue rebate (**IRR**).
- There are also charges for the assets that have been previously funded by another customer as their dedicated connection assets. Because of a newly connecting customer, these assets will now form part of the shared distribution network. These are known as developer mains charges (**DM**).

The amount of any such charge is to be determined in accordance with the formula included in Attachment 1, and summarised in Table 2 below.

For more information see the AER's website at www.aer.gov.au for fact sheets and the Connection Charge Guideline.

Table 2: Customer connection charges

Charge		Category	Service Provided
=	ACS	**Alternative control service charge** Charges for any connection-related services provided only to serve that customer.	The following are services funded directly by the customer: • connection application charges • connection design charges • all basic connection services • augmentation services (large embedded generation only)
+	add		
	SCS	**Standard control service charge** Charges for connection and connection-related services that may serve: • only that customer and/or • a number of customers and form part of the shared distribution network. May include rates for existing network capacity.	This will include a charge for: • major connection services • extension services required to facilitate connection to the existing network • augmentation services in the shared network that will service that customer
-	less		
	IRR	**Incremental revenue rebate** A reduction in charges for future revenue.	A rebate equal to the present value of the estimated future revenue stream received from the connecting customer through the application of network tariffs.
+	add		
	DM	**Developer mains charges** Charges for connection-related services that were funded by another customer.	The contribution to refund an existing customer who previously funded the construction of connection-related assets.

4.2.1 Calculating customer specific charges for services classified as alternative control services

The first step is to determine whether there are any applicable customer specific charges. These are charges for connection-related services provided only to serve that customer and are not included as a component of the network tariffs charged to all customers.

Charges are calculated based on rates for particular services and/or input costs, in accordance with the methodology approved by the AER.

4.2.2 Calculating charges for standard control services that may form a component of the shared distribution network

There are two steps in calculating customer connection charges for those assets that may form part of the shared distribution network, namely:

1. Adding the costs of the connection and connection related services. These include charges for:
    (a) major connection services;
    (b) extension services; and
    (c) augmentation services.
2. Subtracting any applicable incremental revenue rebate from the amount calculated in in step 1.

Note:

The result of this calculation cannot be less than zero.

4.2.2.1 Major connection services

Major connection services necessitate the construction of assets that will form the connection assets required by that connection applicant to connect to the distribution network. These assets are particular to that customer and do not form part of the shared distribution network.

This could include:

- switches and cables that form the bridge between the shared distribution network (connection point) and the connecting property (point of supply));
- a dedicated transformer where the network is overhead; and
- a dedicated substation where the network is underground.

4.2.2.2 Extension services

Extension services necessitate the construction of the assets that are required to connect a connection applicant, that are beyond the boundaries of the existing distribution network and may form part of the shared distribution network.

This could include:

- new poles and wires between the existing shared distribution network and the connecting property (up to the connection point);
- a new transformer where the network is overhead; and
- a new substation where the network is underground.

Extension services are generally calculated on a full cost recovery basis.

4.2.2.3 Augmentation services

A connection applicant may be required to pay an augmentation charge, where their electricity demand is in excess of the applicable augmentation threshold allowance.

This charge may be required where TasNetworks is required to augment the shared distribution network to accommodate the connection, or where the customer is required to contribute to previous capacity built into the network.

Developers have generally funded the full cost of a new transformer/substation required within a new subdivision (noting the transformer/substation has been sized to meet their needs). In some situations however there may be spare capacity which can be used to support neighbouring developments, which may lead to some inequities..

The charges for network augmentation are based on the average cost of augmentation in the distribution network for each unit of added capacity (in demand) multiplied by the demand estimate (kVA) of the connection applicant.

The augmentation threshold allowance

TasNetworks is required to set an augmentation threshold such that connecting customers with an estimated demand below this threshold will be exempt from any augmentation charges.

The augmentation threshold allowance is:

(a) 25 kVA where a connection applicant's premises are supplied from the Single Wire Earth Return (SWER) network; and

(b) 70 kVA for all other instances.

Note:

Customers with a basic connection project are exempt from augmentation charges

Calculating the augmentation charge

A connection applicant's augmentation charge will be calculated by multiplying the connection applicant's demand and the sum of the applicable augmentation rates.

Detail on the calculation of augmentation charges is provided in Attachment 2.

4.3 Incremental revenue rebate

Most customers making a new connection to the distribution network will contribute to TasNetworks' network tariff revenues over time. An assessment of this incremental revenue is undertaken and offset against any contribution by the connecting customer. The revenue assessment will consider the relevant incremental revenue arising from the new connection.

The rebate applicable to a connection applicant towards the cost of the connection assets, extension and augmentation will be the present value (PV) of the forecast incremental revenue TasNetworks expects to receive from the connection over the following time periods:

- Residential customers – the PV of 30 years of annual incremental revenue.
- All other customers – the PV of 15 years of annual incremental revenue or as otherwise agreed ie where a more reasonable estimate of connection life is used.

Detail on the incremental revenue rebate is provided in Attachment 3.

4.3.1 Revenue rebate for real estate developments

A real estate developer is treated as a single customer for the purposes of calculating the incremental revenue for a development.

The incremental revenue rebate for real estate developments will be determined by TasNetworks and include the total amount of incremental revenue expected to be received from all of the sites/connection services within a real estate development.

In calculating the incremental revenue for a real estate development, consideration will be given to the demand to be applied to the individual residential sites in the development, the use of alternative energy sources, the expected revenue from non-residential sites and the expected take-up rate for connection services within a development.

4.4 Developer mains charge

The electricity laws require TasNetworks to operate a pioneer scheme. A pioneer scheme requires TasNetworks to refund any portion of a customer's connection charge that contributed towards extension assets, which are subsequently used (or shared) by a new connection applicant(s). TasNetworks uses the term Developer Mains Scheme in preference to pioneer scheme.

Under TasNetworks' Developer Mains Scheme, refunds will be provided where another customer connection is supplied using those assets within seven years of the construction and energisation of the originally constructed assets. The cost of the Developer Mains Scheme assets and, consequently, the applicable refund will be depreciated using a straight-line method over a 20 year period.

In addition, a customer's refund will take into account the portion of the shared Developer Mains Scheme assets (or extension) and the respective electricity demand used by the initial and subsequent customer(s).

Detail on TasNetworks' Developer Mains Scheme is provided in Attachment 4.

5 Customer Projects

5.1 Basic customer projects

The majority of TasNetworks' customers will only require a basic connection service to connect to the distribution network. These connections do not involve any network extension or augmentation, or contribution to a Developer Mains Scheme, but are a simple connection to the existing distribution network, either through an overhead or underground connection service. These connections are referred to as basic customer projects.

A basic customer project means a customer only requires a basic connection service to connect or alter their connection to the distribution network. A basic connection service requires the provision of a new, or the modification of, a service from the point of supply to connect a home, business or other premises to the distribution network.

Where the customer is located on the opposite side of the road from the shared overhead distribution network, the basic connection service may require the provision of a 'cross over' pole and service wire. TasNetworks will provide this cross-over service at no charge to the customer.

5.2 Standard customer projects

In some circumstances a customer may require a basic connection service and additional connection services to connect or modify their connection to the shared distribution network; or may have to contribute to a Developer Mains Scheme. For example TasNetworks may be required to extend the network up to the customer's connection point or augment the shared distribution network to connect the customer. This may involve the installation of a dedicated transformer if the network in the area is high voltage. These types of connection works are referred to as standard customer projects.

A customer requesting a connection service that requires an extension service should pay the direct costs associated with the provision of those assets, less any incremental revenue rebate.

Standard customer projects are always exempt from augmentation charges as they do not meet the augmentation threshold (this includes residential customers with standard customer projects).

5.2.1 Transformers

In some circumstances the connection of a customer requiring a standard customer project, may also require the provision of a new transformer as part of extension assets. For example where the density of customer connections is low, TasNetworks does not usually have any low voltage distribution network and relies on the provision of connection services by means of an extension to the high voltage network and/or the installation of an extension transformer.

Where the provision of extension services requires the installation of a transformer to service that connection, the customer connection charge for extension services is calculated in the following manner.

1. For low consumption installations (excludes residential connections) – total extension costs are calculated and the customer's incremental revenue rebate is applied against the total extension costs, including the installed transformer costs.
2. For all other customers – the customer's incremental revenue rebate is firstly checked against the installed transformer costs. Any installed transformer costs that are in excess of the incremental revenue rebate are to be subtracted from the total extension services charges.

Details of the calculation method and the components that are to be included as part of the calculation of the installed transformer costs are provided in Attachment 5.

5.3 Complex customer projects

Connections for large customers generally require a major connection service to connect to the existing distribution network.

In some circumstances to connect a customer to the existing distribution network may also require an extension service up to the connection point, or an augmentation service. These types of connections do not qualify as a basic connection service as their load requirements generally require connection at high voltage or are in excess of 100 amps per phase, low voltage.

These services are referred to as complex customer projects. A customer requesting a complex customer project should pay the direct costs associated with the provision of their connection service (including any dedicated transformer requirements) and any extension and augmentation services, less any incremental revenue rebate.

A large customer connection is required to contribute to the augmentation charge based on their expected maximum demand. Further information on augmentation charges is provided in Attachment 2.

5.4 Irrigation projects

In line with guidance from the State Government, TasNetworks will continue to support concessional arrangements for irrigation customer projects to underpin continued economic development of this sector.

The cost associated with the provision of required transformer capacity necessary to meet the pumping loads of irrigation customers and related irrigator equipment is generally the largest component of extension services charges. Where the provision of extension services requires the installation of a dedicated transformer(s) to service the irrigation connection, the irrigator connection charge for extension services will not include the installed costs of any dedicated transformer.

Details of the components that are to be included as part of the calculation of the installed transformer costs are provided in Attachment 5.

Other connection charges for irrigation projects are as per the size of the connection and whether the connection requirement(s) is equivalent to a basic, standard or complex customer project.

An irrigator requiring the equivalent of a basic customer project is required to pay the applicable connection charge.

An irrigator requesting a connection service that requires extension services (other than transformers) should pay the direct costs associated with the provision of those assets, less any incremental revenue rebate.

Irrigation projects below the augmentation threshold are exempt from any augmentation charges.

Irrigation projects above the augmentation threshold are required to contribute towards any augmentation services based on their expected maximum demand. Further information on augmentation charges is provided in Attachment 2.

5.5 Real estate developer connections

A real estate development is a development where:

1. two or more property titles are created from one or more allotments; or
2. multi-tenanted sites are constructed that contain three or more retail customers.

A developer requesting electricity reticulation for a new subdivision or development may require:

- the provision of connection services (major or basic);
- extension services;
- augmentation services, and
- street lighting services.

By their nature, developer connections will be a complex customer project.

Any developer requesting a complex customer project should pay the direct costs associated with the provision of the services required to accommodate that connection and any extension and augmentation services required, less any incremental revenue rebate.

For the purposes of this policy:

1. TasNetworks will deal with a developer that is seeking to develop a site for future use by electricity customers, as if that developer were a single customer for the purpose of calculating the customer connection charge (i.e. TasNetworks will take into account the load requested and any revenue assessment applicable); and

2. where a development is to proceed in stages, each stage will be considered as a separate project, provided the connection of that stage occurs more than five years after the connection of the previous stage.

The customer connection charges and incremental revenue rebate applicable for developers will depend on the level of infrastructure installed, the anticipated load of the final end-use customers and the expected take-up within the development.

For simplicity a pre-calculated assessment of the incremental revenue rebate applicable will generally apply, however alternative estimates may be negotiated, where initial estimates or the pre-calculated rate can't be agreed.

Where TasNetworks requires infrastructure (substations/ transformers) to be installed to a greater capacity than that required for a specific development or stage of a development, the real estate developer will only be required to fund the infrastructure required for that development. This will typically occur where future development is likely beyond the boundaries of the current development or stage of the development and it is prudent to provide additional capacity within the distribution network for these future connections.

TasNetworks may require the real estate developer to fund the extension of the high voltage network costs through their subdivision to cater for subsequent developers. These assets will be classified as a developer mains and the developer may be entitled to a refund in the future should another developer connect to these assets.

Developer projects will generally fall into three main categories, as requested by the developer, being serviced allotments, serviceable allotments and multi-tenanted allotments. These categories are described in more detail in Attachment 6.

5.6 Embedded generator connections

The approach to charging for the provision of embedded generation connections is similar to other connections and depends on whether the generation is classified as a:

- micro embedded generation connection; or
- large embedded generation connection.

The classification of an embedded generator is undertaken in accordance with Australian Standard AS 4777.

The following principles will apply for the provision of connection services for embedded generators.

- Micro embedded generation connections will be either a standard or basic customer project.
- Large embedded generation connections will be a complex customer project.

Solar (photo voltaic) connections account for the vast majority of micro embedded generation connections and generally require a basic connection service. Customers may also incur costs in order to comply with technical standards for their embedded generation.

All embedded generators are required to pay for any extension services that are necessary to facilitate their connection.

Large embedded generation connections are required to pay for any augmentation services. This is consistent with charging arrangements with other generation and specifically non-registered embedded generation. Sections 5A.E.1(b)(2) and 5A.E.3(c)(4) of the Rules provide that:

> Where an embedded generator requests the removal of a network constraint, and that removal necessitates the augmentation of the existing distribution network, the generator is to pay the full cost for the augmentation. Where the large embedded generator does not seek the removal of a network constraint, the generator's export to the network may instead be constrained.

There is no revenue associated with embedded generator connections, as the electricity laws do not allow TasNetworks to apply network tariff use of system charges to generators, therefore the incremental revenue rebate will not apply to these connections.

If the connection applicant is seeking a new load connection as well as the connection of a generator, the connection charge will be calculated based on the total cost of the works required to support both the generation (electricity output) and load components of the connection service, and there is no revenue rebate associated with the generation component.

A micro embedded generator requesting a modification to an existing connection should pay the direct costs associated with any modification of the connection assets required to accommodate that request.

A large embedded generator requesting a modification to an existing connection should pay the direct costs associated with any modification of connection assets required to accommodate that request and the direct costs associated with any augmentation services and extension services required to accommodate that request.

Embedded generators that are classified as registered participants, as defined in the Rules, and embedded generation connections above 10 MW, will have their applications assessed in accordance with Chapter 5 of the Rules.

5.7 Connection charging summary

Table 3 summarises the charging approach to connections services.

Table 3: Connection charging summary

Charge =	Component	Basic customer projects (residential, small business)	Standard customer projects (residential, small business, micro embedded generation)	Complex customer projects (large business, large embedded generation)	Complex customer projects (developer subdivisions)	Irrigation customer projects (irrigation)
ACS	Basic connection service	✓	✓	×	✓	✓ If applicable
+ SCS	Major connection service	×	×	✓	✓	✓ If applicable
	plus Extension services	×	✓	✓	✓	✓
	Dedicated Transformation / Substation	×	* To level of revenue assessment	✓	✓	× ++
	plus Augmentation services (*where in excess of augmentation threshold*)	×	×	✓	✓	✓ +++
	Transformer/substation upgrade	×	×	✓	✓	× ++
- IRR	less Incremental revenue rebate	×	✓ ⊗	✓ ⊗	✓	✓
+ DM	Contribution reimbursement towards any previous development	×	✓	✓	✓	✓

* Low Consumption Installations pay for transformation because they do not contribute required revenues

++ Reflects State Government policy – treatment of irrigation connections

+++ Irrigation projects with demand below the augmentation threshold (equivalent of a basic or standard customer project) are not required to contribute to augmentation services

⊗ Embedded generation will have an incremental revenue rebate of zero

6 Other connection related services

A customer project may require other services, for example, to remove or relocate existing assets or for the provision of public lighting schemes.

These services are typically provided where the nature and scope of the service is specific to an individual customer's project, and varies from customer to customer. As a consequence, the cost of providing the services cannot be estimated without first knowing the customer's specific requirements. It is not possible, therefore, to set a generic total fixed fee in advance for these services.

The following non-standard services may include, but are not limited to:

- temporary connection services;
- asset removal services;
- asset relocation services;
- above standard services; and
- street lighting services.

6.1 Temporary Connections

The connection charge associated with a temporary installation should include costs associated with:

- The installation of the connection assets required to connect the temporary installation.
- The removal of the connection assets associated with the temporary installation.
- The return (in good order) of any reusable equipment provided free of charge by TasNetworks (to a nominated TasNetworks depot or location).

A security fee or deposit may be charged for the security of this equipment in accordance with TasNetworks' Credit Policy.

Typical temporary connections, for example building sites, are provided on a fixed fee basis. Larger construction projects requiring temporary connection to the distribution network will be charged on a quoted basis.

6.2 Asset removal services

In some instances the provision of a connection service may necessitate the removal of some existing components of the distribution network. The provision of this removal service is additional to the provision of the connection service.

As this is an additional service to that being provided for connection, it is also an additional charge to the connection applicant.

The charge for the removal of existing distribution assets is to include all costs associated with the removal and disposal of the assets, less the depreciated value of any reusable materials.

6.3 Asset relocation services

In some instances the provision of a connection service may necessitate the relocation of some existing components of the distribution network. The provision of this relocation service is additional to the provision of the connection service.

As this is an additional service to that required for connection, it is also an additional charge to the connection applicant.

Asset relocation services are also commonly requested by parties other than a connection applicant such as a road authority or local council.

The charge for the relocation of existing distribution assets is to include all costs associated with the removal and disposal of assets, the construction costs of the new installed assets, less the accumulated depreciation of the assets that were removed.

Where TasNetworks chooses to upgrade, or augment, the newly constructed assets, the additional costs of this upgrade will be borne by TasNetworks.

6.4 Above standard services

Customers may choose to have TasNetworks construct assets to a higher specification than the least cost technically acceptable solution proposed by TasNetworks. The provision of these assets is an above standard service and is additional to the provision of the connection service.

As this is an additional service to that being provided for connection, it is also an additional charge to the connection applicant.

6.5 Street lighting services

6.5.1 Public lighting

The provision of public lighting in subdivisions, at the request of a developer (and in accordance with any council requirements) is additional to the provision of the connection service. These services are classified alternative control services and will be separately itemised as part of the connection offer.

6.5.2 Private contract lighting

Customers can request the installation of private contract lighting near their premises for example at the entrance of a driveway (and in accordance with any council requirements) at full cost to those customers.

6.6 Cost recovery for other connection related services

The provision of other connection related services is to be calculated in accordance with rates established in the AER's final distribution determination. Where no specific rates are specified, all other charges will be determined on a cost recovery basis.

6.7 Asset replacement

The cost of replacing assets at the end of their useful life will be borne by TasNetworks.

The replacement or removal of a customer's connection assets that are in serviceable condition at the request of that customer is considered as a request to modify that customer's existing connection.

6.8 Group applications for connection

Nothing in this policy prevents customers equitably sharing the costs of connection works common to each prospective customer's development.

6.9 Easements

TasNetworks will require an easement to be registered on a property title to ensure TasNetworks can lawfully perform the activities defined by the easement in respect to its distribution infrastructure.

Further detail on the requirements for easements is included under Attachment 7.

7 Other charges

7.1 Pre-connection services

Pre-connection services are the tasks associated with the administration of the connection application process and the preparation and finalisation of any asset construction design. While these costs are a precursor in establishing the final connection they will form a component of the costs that should be borne by a connecting customer.

7.1.1 Application and design fees

Where a customer's application requires a formal design to determine specific requirements for extension and augmentation services, the customer will be charged appropriate fees to cover the reasonably incurred expenses in assessing the application, preparing a design and making the connection offer.

The fee applicable will depend on the size and complexity of the proposed connection and subsequent design work and engineering studies to be carried out.

The connection applicant will be liable to pay all reasonable invoiced costs whether or not the final connection offer is agreed or accepted.

7.2 Application of overheads

Connection costs and charges include an allocation of overheads, which is determined by the application of TasNetworks' cost allocation methodology (CAM). Amongst other things, the CAM assigns overhead costs to a range of different services. TasNetworks' CAM is approved by the AER.

Rates are updated annually based on forecasts and can vary year on year.

7.3 Basic customer project charges

A customer is liable for a connection charge upon acceptance of the connection offer for a basic customer project.

Generally the customer will not be invoiced for any connection charges until after the connection has been established.

In most cases it is the customer's electricity retailer that will charge the customer for the connection, and pass payment to TasNetworks.

7.4 Standard and complex customer project charges

For standard and complex customer projects, depending on the timeframe for construction, a connection offer may require full or partial upfront payment and may include additional payments.

Generally the timing of payments depends on whether the total amount of the connection charge is less than a threshold amount, which is $5,811 for 2019-20,[1] [2] and whether;

(a) the construction work will not commence for three months or more after the connection offer is accepted; or

(b) the construction work can be logically segmented into distinct stages of construction.

If construction work is of the nature described in (a):

- TasNetworks can require payment at the time the connection offer is accepted for the costs that have been incurred and prepayment for any sunk costs that will be incurred immediately after the connection offer is accepted.
- The prepayment may include but is not limited to:
    - the costs of specialised or non-standard assets which need to be ordered by the distribution network service provider in advance and would not normally be required to perform a connection; and
    - design and administration costs.
- The balance of a connection charge that has not been recovered may be recovered no more than one month prior to the commencement of the construction work.

For connection services requiring multiple distinct stages of construction as contemplated in (b):

- TasNetworks will only require partial prepayment of the connection charge, prior to each construction stage (generally one month prior). Each prepayment will be reasonably reflective of the costs that will be incurred in each construction stage.
- A payment schedule will be included in the offer letter indicating the amount and the due date for payments.
- TasNetworks may negotiate alternative flexible payment arrangements with the connection applicant where appropriate.

In general, full payment must be received prior to final connection and energisation of the customer's premises, unless otherwise agreed with TasNetworks.

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[1] The threshold will be indexed annually on 1 July for the movement in the consumer price index (CPI). The CPI used is the Australian Bureau of Statistics' (ABS) Consumer Price Index All Groups, Weighted Average of Eight Capital Cities, March to March Quarter, (ABS Catalogue 6401.0).

[2] For the purposes of this draft Distribution Connection Pricing Policy future changes to CPI are set at 2.45 per cent consistent with the assumptions in TasNetworks' Regulatory Proposal. Once this document has been approved by the AER, the figure for 2019-20 will be updated with actual CPI prior to the commencement of that financial year and this footnote will be deleted.

8 Security fee

TasNetworks may require a security fee where TasNetworks believes there is a high risk of not collecting the estimated incremental revenue calculated as part of a connection offer (refer to section 4.3 of this policy and Attachment 3 for details about how the incremental revenue rebate is calculated). In practice this would generally be limited to large customer or developer connections where an incremental revenue rebate may fund substantial elements of a customer's extension, connection and/or augmentation services.

A security fee may be in the form of either a prepayment, a financial guarantee (bank guarantee), or a connection charge.

If applicable, a security fee will be included as a condition of acceptance of the connection offer.

TasNetworks' requirements for a security fee will accord with the principles under part 10 of the Connection Charge Guideline. At a minimum:

(a) The amount of the security fee will not be greater than the amount of the incremental revenue rebate which TasNetworks assesses as having a high risk of not being recovered.

(b) The security fee will not exceed the present value of the incremental costs TasNetworks will incur in undertaking any extension or augmentation services.

(c) Where the security fee is provided as an upfront payment, TasNetworks will rebate the security fee via annual instalments, with the annual rebate being the:

- interest earned on the security, calculated at the cost of debt approved by the AER; plus
- the lower of:
  - actual incremental revenue received from the customer for the year; and
  - the security fee that was paid for that year.

(d) Where the security fee has been provided as an upfront payment, TasNetworks will pay interest on the security fee, commensurate with the cost of debt approved by the AER. Interest is not payable on security held in the form of a bank guarantee.

(e) TasNetworks will not recover more from the security fee scheme than the total estimated incremental revenue. If the actual incremental revenue realised over the period of the security fee scheme exceeds the estimated incremental revenue, TasNetworks will refund the security fee in full.

(f) The connection applicant will not be rebated an amount greater than the security fee deposit plus interest, over the security fee period.

9 Dispute resolution

The following process will be adopted for resolution of any customer dispute relating to the provision of connection services.

1. An attempt will be made to resolve the dispute in accordance with TasNetworks' internal dispute resolution policy.
2. If the matter is not resolved to the satisfaction of the customer, the matter will be referred to the Energy Ombudsman Tasmania for resolution.
3. If the matter remains unresolved, the matter will be referred to the AER for final resolution.

The customer is entitled to seek to have the AER determine a dispute with TasNetworks. Details of how the AER will determine the dispute or terminate proceedings are set out in Part G of Chapter 5A of the Rules.

10 Connection Choice

Connection applicants requesting standard and complex customer projects that require an extension of TasNetworks' distribution network are able to choose the party that will undertake the design and construction components of the 'Contestable Works' portion of the extension works.

The 'Contestable Works' portion of extension works are those assets required to connect the connection applicant to the existing distribution network, where those assets can be built in isolation from TasNetworks' distribution network (Contestable Works).

Those parts of the extension works that relate to assets required to connect the contestable portion of the extension works to the existing distribution network must be performed by TasNetworks (Non-contestable Works).

Connection applicants can choose either TasNetworks, or an Accredited Electrical Designer to design, and/or an Accredited Electrical Constructor to construct, the 'Contestable Works' portion of the extension works.

TasNetworks is responsible for developing the scope of Contestable Works, reviewing and approving designs, auditing construction, completing work on the distribution network and completing the final connection of all works to the existing distribution network.

Any contractor that has both the technical capabilities and the safe systems of work to perform the requirements for design and/or construction may apply to TasNetworks for authorisation through the TasNetworks' accreditation schemes.

Connection applicants will still be required to comply with the connection process in accordance with Chapter 5A of the Rules.

Detail on the Connection Choice program is provided in Attachment 8.

11 Management of policy

The General Manager Customer Engagement and Network Operations administers the development, revision and publication of this policy.

12 References

- National Electricity Rules
- National Energy Customer Framework
- *Electricity Supply Industry Act 1995 (Tas)*
- Tasmanian Electricity Code
- TasNetworks' Credit Policy
- TasNetworks' Design and Construction manuals and standards
- TasNetworks' Service and Installation Rules

13 Disclaimer

While TasNetworks will periodically review this policy to account for the impact of any future changes to legislation or regulation, TasNetworks does not make any representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of this policy, or the information contained in it. It is the customer's responsibility to ensure that the arrangements applicable to a specific investment are confirmed with TasNetworks at the time that an application to connect is made.

14 Glossary

Unless the contrary intention appears the following definitions will apply throughout this policy.

Accredited Electrical Constructor

An external service provider that has been accredited by TasNetworks to undertake the construction of Contestable Works.

Accredited Electrical Designer

An external service provider that has been accredited by TasNetworks to undertake the design of Contestable Works.

AER

Australian Energy Regulator

Asset relocation service

The removal and relocation of existing distribution network assets where requested by a customer or where required to meet obligations.

Asset removal service

The removal of existing distribution network assets where requested by a customer or where required to meet obligations.

Augmentation service

Works to enlarge or increase the capacity of the existing distribution network (overhead and/or underground). This could include:

- A new or higher capacity transformer where the network is overhead.
- A new or higher capacity substation where the network is underground.
- Higher capacity poles and wires, which may include higher capacity conductor or an upgrade from single wire earth return (SWER) line to a three phase line.

Basic connection services

The provision of new or modified connection assets for a home, business or other premises:

- that operate at low voltage
- that are rated at no greater than 100 Amps per phase
- that do not require the completion of a formal design and
- that can be charged with a standard fee.

Connect, Connection, Connected

To form a physical link to or through the distribution network so as to allow the supply of electricity between electrical systems.

Connection alteration

An alteration to an existing connection including an addition, upgrade, extension, expansion, augmentation or any other kind of alteration. For the avoidance of doubt a connection alteration is not the same as a network augmentation for the purposes of calculating connection charges.

Connection assets

Those components of the distribution system that are used to provide connection services solely for a single customer. That is, those assets forming the connection between the connection point and the point of supply.

Connection applicant

Means an applicant for a connection service for one of the following customer types:

(a) retail customer;

(b) retailer or other person acting on behalf of a retail customer; or

(c) real estate developer.

Connection Charge Guidelines

The guidelines published by the AER in accordance with section 5A.E.3 of the Rules

Connection charges

Financial contributions by a customer or developer towards the costs associated with the creation of a new or modified connection to TasNetworks' distribution network or augmentation of the distribution network to support a new or modified connection.

Connection contract

Means a contract formed by the making and acceptance of a connection offer.

Connection offer

Means an offer by TasNetworks to enter into a connection contract with a:

(a) retail customer;

(b) retailer or other person acting on behalf of a retail customer; or

(c) real estate developer.

Connection point

The point where the connection assets connect to either the existing distribution network or assets forming an extension service.

Connection establishment services

Means either or both of the following:

- a service relating to a new connection between the existing distribution network and a premises and;
- a service relating to a connection alteration for a premises.

Connection works

The total works to connect a customer, including connection assets, network extensions and any network augmentation.

Customer

A person, including a developer, who requires customer project services.

Customer premises

Includes any building or part of a building, any structure or part of a structure, any land (whether built on or not) and any river, lake or other waters.

Developer, real estate developer

A person or entity who constructs subdivisions to allow the future provision of connection services to prospective customers.

Developer Mains Scheme (DM)

Includes any part of the distribution network:

- that necessitated an extension to the distribution network; and
- which was installed and has existed for less than seven years; and
- for which TasNetworks has required payment of a connection charge; and
- which was previously part of the connection assets of a single customer; and
- that requires payment of a connection charge greater than a threshold amount, which is $1,162 for 2019-20.[3] [4]

[3] The threshold will be indexed annually on 1 July for the movement in the CPI. The CPI used is the ABS' Consumer Price Index All Groups, Weighted Average of Eight Capital Cities, March to March Quarter, (ABS Catalogue 6401.0).

[4] For the purposes of this draft Distribution Connection Pricing Policy future changes to CPI are set at 2.45 per cent consistent with the assumptions in TasNetworks' Regulatory Proposal. Once this document has been approved by the AER, the figure for 2019-20 will be updated with actual CPI prior to the commencement of that financial year and this footnote will be deleted.

Developer Mains Scheme register

The register held by TasNetworks listing the full details of all existing Developer Main Schemes.

Direct costs

Those costs attributable to the customer project services associated with the creation of a new connection or modification of an existing connection to TasNetworks' distribution network, but only to the extent that those costs refer to optimally-sized infrastructure to effect the connection.

Distribution network

The distribution network as defined in section 3A of the ESI Act and owned and operated by TasNetworks under the terms of its licence issued by the Regulator under section 17 of the ESI Act.

Electricity laws

Includes the following:

- *Electricity Supply Industry Act 1995 (Tas)*
- National Electricity Law
- National Electricity Rules
- National Energy Retail Law
- National Energy Retail Regulations
- National Energy Retail Rules
- Tasmanian Electricity Code

Embedded generator

A person who engages in the activity of owning, controlling, or operating a generating system that supplies electricity to, or who otherwise supplies electricity to, a distribution network and who holds or is deemed to hold a licence or has been exempted from the requirement to obtain a licence under a regulation of the ESI Act.

ESI Act

Electricity Supply Industry Act 1995 (Tas).

Extension service

The provision of network assets beyond the existing boundaries of the distribution network, and up to the connection point that are required to connect a customer.

This could include:

- New poles and wires between the existing distribution network and the connecting property (up to the connection point).

- A new transformer where the network is overhead.
- A new substation where the network is underground.

High voltage (HV)

As defined in the ESI Act – generally greater than 1,000 Volts or higher.

Irrigation customer

A customer in respect of an installation for which all or a significant part (> 90%) of the anticipated load is required for the purposes of pumping water:

- to irrigate crops or pasture; or
- that is subsequently used as part of an irrigation scheme to irrigate crops or pasture.

Large customer

A customer is a large customer in respect of an installation if that installation is not a residential installation and takes supply at:

- high voltage; or
- low voltage at greater than 100 Amps per phase.

Large embedded generator

A generator that is not a micro embedded generator.

Load connection

A connection other than for a generator.

Low consumption installation

An installation for which the anticipated normal consumption is equal to or below 3,000 kWh per annum, but excluding a principal residential installation.

Low voltage (LV)

As defined in the ESI Act, generally less than 1,000 Volts.

Major connection service

The provision of a new or modified connection for a home, business or other premises to the existing distribution network, where that connection:

- is at either higher voltage or greater than 100 Amps per phase or low voltage; and
- requires the completion of a formal design; and
- a standard fee cannot be charged.

Micro embedded generator

A generator of the type contemplated by Australian Standard AS 4777 "Grid Connection of Energy Systems via Inverters". Often a PV (solar) system classifies as a Micro generator.

National Electricity Law (NEL)

The National Electricity Law contained in the Schedule (as amended from time to time) to the *National Electricity (South Australia) Act 1996 (South Australia)*.

National Electricity Rules

Has the same meaning as in the National Electricity Law.

National Energy Retail Law (NERL)

The National Energy Retail Law contained in the Schedule (as amended from time to time) to the *National Energy Retail Law (South Australia) Act 2011 (South Australia)*.

National Energy Retail Regulations

The Regulations published by the parliament of South Australia in accordance under section 12 of the National Energy Retail Law and the *National Energy Retail Law (South Australia) Act 2011 (South Australia)*.

National Energy Retail Rules (NERR)

Has the same meaning as in the National Energy Retail Law.

Point of Supply

Has the same meaning as in the Tasmanian Electricity Code

Prospective customer

A customer that is reasonably expected to connect an installation to the distribution network.

Prudential requirement

An arrangement to minimise the financial risks associated with a request for connection works.

Residential

An installation that is primarily used for residential purposes.

Retail Customer

Includes a non-registered embedded generator and a micro embedded generator.

Rules

National Electricity Rules

Shared distribution network

The distribution network owned by TasNetworks that can provide services to a number of customers.

Standard Connection Contract

Has the same meaning as in the National Energy Retail Law

Street lighting service

Provision of street lighting at the request of a customer, which may be to meet the requirements of a road authority (such as local council or State Growth).

Tasmanian Electricity Code (TEC)

Has the same meaning as "Code" in the ESI Act, and as issued by the Tasmanian Economic Regulator.

Temporary installation

An installation that is intended to exist for a period of less than 12 months.

Attachment 1: Connection and charging principles

Connection principles

The following principles are based on the Rules, adapted to TasNetworks' requirements, and will be used to guide the application of this policy:

1. This policy should be applied fairly and consistently in all cases.
2. An installation should be provided with only one point of supply.
3. TasNetworks will construct the least cost technically acceptable solution for TasNetworks and the entire customer base, necessary to meet the customer's requirements, unless otherwise requested by the connection applicant.
4. The choice of design approach and construction materials rests with TasNetworks.
5. If a change to design is requested by TasNetworks after an offer has been made, consideration will be given to ensure a change to design doesn't unfairly render the connection applicant worse off.
6. TasNetworks will build and operate the distribution network in accordance with good electricity industry practice. Where TasNetworks determines that supplementary network infrastructure should be installed to meet reliability standards, this work may be considered a network augmentation and generally funded by TasNetworks.
    (a) For example – to ensure that load transfer capacity is retained between feeders for a customer within a particular reliability area, a third feeder may need to be extended for connection within a new substation and this cost would be considered a network augmentation.
7. TasNetworks will connect customers utilising the existing distribution network infrastructure wherever possible, including avoiding connections across private property. Where an alternate service is requested by the customer, this service should be treated as an above standard service.
8. For all standard and complex customer projects, TasNetworks will undertake a revenue assessment taking into account an estimate of the connection applicant's anticipated consumption and demand.
9. All new basic connection services will be expedited (meaning the applicant is deemed to have accepted the model standing offer on application for the requested service).
10. All modifications to existing connections qualifying as basic connection services will be expedited.
11. Those customers who dot accept the standing offer for a basic connection service will be connected as a negotiated service

Charging principles

The following principles will be used to guide the application of this policy:

1. The intention of this policy is to appropriately share between all stakeholders the costs associated with the construction of the electrical infrastructure necessary to provide connection services.
2. The application of this policy should be simple, transparent and consistent in its application and meet the prescribed requirements under the Connection Charge Guidelines.
3. Charges for connection services should be reasonable and provide, without undue administrative cost, a user pays signal taking into account the efficient costs of providing the connection services arising from the new or modified connection, including extending and/ or augmenting the distribution network.
4. Charges for other customer project services should be reasonable and, without undue administrative cost, take into account the efficient costs of providing the services for the customer.
5. The connection of a new customer, or modification of an existing connection to the distribution network to meet the changed requirement of a customer, should not impose undue costs upon other customers of the shared distribution network. There should be limited cross-subsidisation of connection costs between different classes (or subclasses) of customer.
6. Connection charges will enable connection applicants to access network services under the standard suite of network tariffs.
7. Charges for components of a connection service that are classified by the AER as negotiated services or are unclassified will be calculated in accordance with section 3 of the Connection Charge Guideline.
8. Charges for components of a connection service that are classified by the AER as alternative control services will be calculated in accordance with section 4 of the Connection Charge Guideline.

Connection charge

In accordance with the Connection Charge Guidelines, the amount of any connection charge is to be determined in accordance with the following formula:

Connection Charge = ACS + SCS + DM

Where:

ACS —is the total charge payable to TasNetworks for all relevant alternative control connection services

SCS—is the total capital contribution (CC) payable to TasNetworks for all relevant standard control connection services.

DM —is the total charge payable to TasNetworks to account for any Developer Main Schemes applying to the assets to which the connection applicant connects.

$$CC = ICCS + ICSN - IRR(n=X)$$

Where:

CC = Capital Contribution for standard control services and $CC \geq 0$

ICCS = Incremental Cost Customer Specific—the incremental costs incurred by TasNetworks for standard control connection services, which are used solely by the connection applicant. This typically includes any major connection services, extension services or alterations to those connection services.

ICSN = Incremental Cost Shared Network—the costs incurred by the TasNetworks for standard control connection services, which are not used solely by the connection applicant. This may include any augmentation (insofar as it involves more than an extension service) attributable to the new connection.

IRR(n=X) = Incremental revenue expected to be received from the new connection—the present value of a X year revenue stream directly attributable to the new connection (Incremental Revenue Rebate).

Attachment 2: Augmentation charges

Calculation of an augmentation charge

The following sections detail the methodology that will be adopted by TasNetworks to calculate any augmentation charge (referred to in the Connection Charge Guidelines as a charge towards the incremental costs of the shared network (ICSN)).

The augmentation charge is determined on the basis of unit rates, as follows:

Augmentation charge = Unit Rate x Demand Estimate

Where:

Unit Rate =	Average cost of augmentation (other than an extension beyond a standard service line) per unit of added capacity, expressed as $/kVA
Demand Estimate =	Estimated maximum demand at the connection point, measured in kVA Generally the demand estimate will be based primarily upon the content of the connection application submitted by the customer or developer. However, TasNetworks reserves the right to use other methodologies where the information is not consistent with the load patterns of similar connection types for example.

Demand estimate subject to an augmentation charge

A connection applicant's maximum demand (in kVA) will be subject to an augmentation charge taking into account the applicable augmentation threshold allowance.

This means the connection applicant's demand up to the threshold will not be included in the calculation of an augmentation charge.

TasNetworks' Augmentation threshold allowance is:

(a) 25 kVA where a connection applicant's installation is supplied from the Single Wire Earth Return (SWER) network; and

(b) 70 kVA for all other instances.

Application to new connections (including real estate developer) – a connection applicant's maximum demand (in kVA) subject to an augmentation charge is the value specified by the customer (this should be reflective of the maximum demand that would be expected to apply for the customer's connection) minus the augmentation threshold allowance as stated above.

Application to Connection upgrades – the connection applicant's demand (in kVA) subject to an augmentation charge is based on the full increase in demand arising from the upgrade.

Unit rates

The unit rates to determine the augmentation charge are set out in the following tables.

A customer's augmentation charge will be calculated by multiplying the customer's demand by the sum of the applicable augmentation rates as detailed in Table 4 and Table 5 below.

Table 4: Augmentation rates for real estate developers (constructing residential subdivision)

	2019-20	2020-21	2021-22	2022-23	2023-24	Comments
Network Element	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	
Full unit rate						
Subtransmission	-	-	-	-	-	No additional capacity requirements forecast.
High voltage feeder	294	302	309	317	325	Applies if the connection is supplied via a shared distribution high voltage feeder or via a dedicated transformer.
Distribution transformer	1,130	1,158	1,187	1,217	1,247	Applies if connection is via the low voltage transformer terminals of a shared distribution transformer.
Low voltage mains	1,081	1,108	1,136	1,164	1,194	Applies if the connection is via shared low voltage mains, eg connected to the terminals of a low voltage service pillar
Zone substations	34	35	36	37	38	Additional to the applicable rate above and would apply if the demand is greater than 10% of the substation capacity.
Total unit rate	2,539	2,603	2,668	2,735	2,804	

Table 5: Augmentation rates for new business customers (including real estate developers constructing commercial subdivisions)

	2019-20	2020-21	2021-22	2022-23	2023-24	Comments
Network Element	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	
Full unit rate						
Subtransmission	-	-	-	-	-	No additional capacity requirements forecast.
High voltage feeder	247	253	259	266	273	Applies if the connection is supplied via a shared distribution high voltage feeder or via a dedicated transformer.
Distribution transformer	948	971	996	1,021	1,046	Applies if connection is via the low voltage transformer terminals of a shared distribution transformer.

	2019-20	2020-21	2021-22	2022-23	2023-24	Comments
Network Element	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	Unit Rate ($/kVA)	
Full unit rate						
Low voltage mains	907	930	953	977	1,001	Applies if the connection is via shared low voltage mains, eg connected to the terminals of a low voltage service pillar
Zone substations	29	30	30	31	32	Additional to the applicable rate above and would apply if the demand is greater than 10% of the substation capacity.
Total unit rate	2,131	2,184	2,238	2,295	2,352	

Provisional estimates for connection charges

Where TasNetworks and the connection applicant (other than a real estate developer) cannot reach agreement on the estimated demand for use in determining the connection charge payable for the connection point, TasNetworks will apply a provisional estimate.

Where a provisional estimate has been used to determine a connection charge, the connection applicant may be subject to an additional charge or a refund, for the difference between the actual demand and provisional estimates of demand. TasNetworks will assess the additional charge or refund payable within three years of the connection being energised. The amount of the additional charge or refund will be the difference between the actual connection charge paid and that calculated based on the actual demand.

Example

Large Customer Connection (complex customer project)

Customer requests 1,000 kVA connection in November 2019 which requires both high voltage augmentation works and a dedicated transformer as part of their extension services.

Demand estimate 1,000 kVA

Threshold allowance 70 kVA

Unit rate (HV) $247/kVA

The customer's contribution to the augmentation service is calculated by multiplying the demand estimate above the threshold allowance, by the applicable augmentation rate.

Contribution to augmentation service = (demand estimate – threshold allowance) x unit rate
= (1,000 – 70) x 247
= $229,710

Please note the final connection charge applicable to the connection will take into account an applicable Incremental Revenue Rebate.

Attachment 3: Revenue assessment

In accordance with chapter 5.3 of the Connection Charge Guideline, an estimate of the incremental revenue to be derived from a new or upgraded customer connection, or real estate development, will be assessed and taken into account in the connection offer.

There are five key elements that must be considered when undertaking this assessment.

1. The incremental revenue is the revenue attributable to the customer's connection and will be based on the expected distribution use of system charges recoverable from the connection applicant.
2. The incremental revenue must exclude revenue associated with the operation and maintenance, and augmentation of the distribution network.
3. The revenue estimate should use a 30 year connection life for residential customers and 15 years for business customers as a starting point.
4. The real pre-tax WACC rate applying during the current regulatory control period will be used to discount the revenue stream.
5. When estimating a connection applicant's incremental revenue, any calculation must:
    (a) use the price path set out in the relevant distribution determination that is applicable at the time of the connection offer, until the end of the relevant distribution determination, and
    (b) use a flat real price path after the end of the relevant distribution determination, for the remaining life of the connection. This flat price path is the expected real network tariff charges in the final year of the regulatory control period.

To simplify the process for customers a pre-calculated assessment, applicable for small, medium and large customers, will be taken into account in finalising a connection offer.

In some circumstances a 15 year assumed connection life may not be appropriate for non-residential customers. In these circumstances TasNetworks may, acting in good faith, apply an alternative assumed connection period for that connection service.

A connection charge for all standard control connection services will only be required if the incremental cost of the standard control connection services exceeds the estimated incremental revenue expected to be derived from the standard control connection services. No refunds are payable where the incremental revenue for the standard control connection service exceeds the incremental cost of the standard control connection services.

Note:

Where a connection applicant has chosen to source their works from an Accredited Electrical Designer and/or Accredited Electrical Constructor, there may be instances where TasNetworks is required to rebate a connection applicant the value of the incremental revenue rebate.

Estimating consumption and demand

Generally, consumption and demand estimates will be based primarily upon the content of the connection application submitted by the customer.

However, TasNetworks reserves the right to use other methodologies where the information provided is not consistent with similar connection types. TasNetworks will only use such estimates with agreement from the customer.

Provisional estimates for connection charges

Where TasNetworks and the connection applicant (other than a real estate developer) cannot reach agreement on the estimated demand and consumption for use in determining the connection charge payable for the connection point, TasNetworks will apply a provisional estimate.

Where a provisional estimate has been used to determine a connection charge, the connection applicant may be subject to an additional charge or a refund, for the difference between the actual consumption and demand and provisional estimates of consumption and demand. TasNetworks will assess the additional charge or refund payable within three (3) years of the connection being energised. The amount of the additional charge or refund will be the difference between the actual connection charge paid and that calculated based on the actual demand and consumption.

An additional charge or refund is only applicable where the connection applicant is still solvent and continuing to utilise the premises.

Attachment 4: Developer Mains Scheme

TasNetworks' Developer Mains Scheme requires customers to make reimbursements as part of their connection charge for connection works that provide a connection to their premises and which have been previously funded by another customer within a seven year period. TasNetworks will then refund the contribution to the customers eligible for a refund according to their share of the line or substation.

If:

1. within seven years an extension service ceases to be dedicated to the exclusive use of a customer; and
2. the customer is entitled, in accordance with the Connection Charge Guideline, to a refund of connection charges;

TasNetworks will make the refund and may recover the amount of the refund, by way of a connection charge, from the new users of the asset(s).

Applicability

The Developer Mains Scheme applies to all extension services which were funded by a customer and which will be used by another customer to connect to the distribution network within seven years from the original connection.

This scheme applies to all new or modified connections provided on or after 1 July 2017 that have attracted a contribution via a connection charge. The scheme will not be applied retrospectively to any connection previously provided, or to any part of the distribution network that existed before 1 July 2017. Existing schemes will transition to the new policy to ensure consistency with the Connection Charge Guidelines.

The scheme will calculate the contribution from a subsequent customer and refund to each customer already connected to an extension by:

(a) taking into account the length of line of the assets a subsequent customer uses of an extension asset relative to other customers already connected to the extension;

(b) taking into account the amount of electricity demand used by a subsequent customer uses relative to other customers already connected to the extension; and

(c) depreciating extension assets over 20 years using a straight line depreciation method.

In accordance with the Connection Charge Guidelines, the scheme will not apply if the contribution from a connecting customer is less than a threshold amount, which is $1,162 for 2019-20.[5] [6] .

To clarify, if no contributions are required because this threshold has not been reached, no refunds will be provided under the scheme. If no refunds are provided to customers already connected to the extension because of this threshold, TasNetworks will not charge the connecting customer for any costs calculated in accordance with this scheme.

If an Authorised Electrical Developer builds an extension and the cost of the extension is unknown to TasNetworks, TasNetworks will establish the scheme using an estimate of the amount TasNetworks would have charged the original customer to build the extension.

If an original customer requests a connection to be constructed to a higher standard or capacity than the least cost technically acceptable standard, then only the cost of constructing the connection to the least cost technically acceptable standard or capacity will be subject to the scheme.

Customer specific assets that other new customers will not be using are not included in the scheme

If TasNetworks requires an extension be built to a higher standard or capacity than required by an original customer, other than a real estate developer, the original customer will only pay for the extension to the standard required or capacity for its connection service and only the extension necessary for the original customer will be subject to the scheme.

If TasNetworks requires an extension to be built to a higher standard or capacity than required by a real estate developer, and TasNetworks charges a capital contribution for extension services to the network to allow for forecast load growth—as allowed by clause 5A.E.1(c) of the Connection Charge Guidelines—then the extension will be subject to the scheme, unless:

> The real estate developer and TasNetworks agree, as allowed by clause 5A.E.1(c), that TasNetworks only charge the real estate developer for the portion of the total cost attributable to the real estate developer.

[5] The threshold will be indexed annually on 1 July for the movement in the CPI. The CPI used is the ABS' Consumer Price Index All Groups, Weighted Average of Eight Capital Cities, March to March Quarter, (ABS Catalogue 6401.0).

[6] For the purposes of this draft Distribution Connection Pricing Policy future changes to CPI are set at 2.45 per cent consistent with the assumptions in TasNetworks' Regulatory Proposal. Once this document has been approved by the AER, the figure for 2019-20 will be updated with actual CPI prior to the commencement of that financial year and this footnote will be deleted.

Establishment and administration of schemes

A Developer Mains Scheme will be established and administered in accordance with the Connection Charge Guidelines. If the original customer's works included a distribution line and a substation, then one Developer Mains Scheme will be established for the distribution line and a separate Developer Mains Scheme will be established for the substation.

TasNetworks will bear the cost of establishing and administering any Developer Mains Schemes.

Reimbursements

Where a new customer pays an amount under a Developer Mains Scheme, that amount will, as soon as practicable after receiving that amount, be repaid to the current owner of the premises to which the original customer's works were connected.

Where two or more parties constitute the original customer, the repayment must be divided between those customers in accordance with the proportions in which they funded the works and consistent with the Connection Charge Guidelines.

Developers constructing subdivisions that are connected to a Developer Main Scheme, contribute to the Developer Mains Scheme, based on being a single customer.

When a new customer connects to the distribution network and a refund is required to customers already connected to the extension prior to receiving full payment from the connecting customer, TasNetworks will refund those customers the amount determined under this scheme and recover the applicable charge from the connecting customer.

Obligation to notify

All new customers who apply for customer connection services and who may be obliged to make reimbursements under an existing Developer Mains Scheme, will be advised of the existence of the Developer Mains Scheme and that as connecting customers they may be obliged to contribute towards reimbursement.

The current owner of the premises, to which a Developer Mains Scheme applies, will be advised of the existence of the Developer Mains Scheme and that they may be entitled to receive a reimbursement for subsequent connections.

Developer Mains Scheme exclusions

Temporary installations connected to the network are not required to contribute to the cost of the Developer Mains Scheme.

Augmentation services are generally excluded from Developer Mains Schemes since customers are only required to contribute their share of the costs. However, if a circumstance arises where augmentation services that have attracted a customer capital contribution should qualify for a re-imbursement, they may be considered a Developer Mains Scheme.

Developer Main Scheme reimbursement calculation:

Contribution required by a newly connecting customer – network extension

The contribution by a subsequent customer to network extension works previously funded by the original customer will be based on the physical attributes of the extension assets and the demand of a subsequent customer. The following sets out the method for calculating contributions and reimbursements provided for under the Developer Mains Scheme.

(a) Contributions

1. Calculate depreciated value of extension

   Depreciated value = Cost of original customer's extension x depreciation factor

   Where:

   Cost of original customer's extension – Where the original network extension was partially funded by a capital contribution, the amount of capital contribution paid by the original customer.

   Depreciation factor – Apply straight line depreciation to extension assets, over a twenty year asset life. The depreciation factor is determined as follows:

$$\frac{20 - \text{asset age of extension (years)}}{20}$$

   For example:

   Actual asset age is 2 years

   Depreciation factor is (20-2) / 20 or 0.9

2. Calculate share of the extension

   (i) For that part of the extension used by all connected customers, the share of the extension is:

$$\frac{\text{Length of original customer's extension to be used by all connected customers}}{\text{Total length of original customer's extension}}$$

   (ii) For those parts of the extension used by the newly connected customer and other connected customers, the share of the extension is:

$$\frac{\text{Length of original customer's extension to be used by multiple customers}}{\text{Total length of original customer's extension}}$$

   It may be necessary to repeat Step 2(ii) a number of times if multiple customers are connected to at various points along the extension.

   Where:

   Length of original customer's extension – The route length of the original customer's extension (this is nominally the number of spans for overhead extensions).

Length of original customer's extension used by all connected customers – The route length of the original customer's extension to which all customers are connected.

Length of original customer's extension used by multiple customers – The route length of the original customer's extension to which some, but not all, customers are connected.

3. Calculate share of electricity demand

(i) For that part of the extension used by all connected customers, the share of the electricity demand is:

$$\frac{\text{Demand required by new customer}}{\text{Sum of demand required by all customers connected to the extension}}$$

(ii) For those parts of the extension used by the newly connected customer and other connected customers, the share of the extension is:

$$\frac{\text{Demand required by new customer}}{\text{Sum of demand required by the customers connected to that share of the extension}}$$

It may be necessary to repeat Step 3(ii) a number of times if multiple customers are connected to at various points along the extension.

A customer's share of electricity demand will be treated equally with existing customers where the asset has been designed to the least cost standard and the subsequent customers derive similar network benefit.

In circumstances where a significant new load is connected to an extension or the original extension was built to a higher standard, the new customer's agreed maximum demand will be taken in account. In effect the new/existing demand is generally only considered where the subsequent customer's connection could be met by a lower rated line.

4. Calculate contribution for each share of the extension

(i) For that part of the extension used by all connected customers, the contribution for that share of the extension is:

Step 1 x Step 2(i) x Step 3(i)

(ii) For those parts of the extension used by the newly connected customer and other connected customers, the contribution for that share of the extension is:

Step 1 x Step 2(ii) x Step 3(ii)

It may be necessary to repeat Step 4(ii) a number of times if multiple customers are connected to at various points along the extension.

The total contribution will be the addition of Step 4(i) + Step 4(ii).

(b) Reimbursements

For the contribution that has been calculated for each share of the extension that is used by the newly connecting customer, the contribution will be refunded to the existing customer(s) that share that portion of the extension with the newly connecting customer, based upon their share of the demand for that section.

Refund for each shared section of the extension is therefore:

$$\frac{\text{Contribution by newly connecting customer} \times \text{Demand of customer entitled to a refund}}{\text{Total demand of all customers entitled to refund for that section}}$$

Contribution required by a newly connecting customer – substation

The contribution by a subsequent customer to substation works previously funded by the original customer will be based on the demand of a subsequent customer relative to other customers already connected to the substation.

(a) Contributions

1. Calculate depreciated value of extension

   Depreciated value = Cost of original customer's extension x depreciation factor

2. Calculate share of electricity demand

   Share of demand = Demand required by new customer / Sum of demand required by all customers connected to substation

3. Calculate contribution for each share of the extension

   The contribution for a newly connecting customer = Step 1 x Step 2

(b) Reimbursements

For the contribution that has been calculated for the newly connecting customer, the contribution will be refunded to the existing customer(s) based upon their share of the demand for that section.

Refund for each shared section of the extension is therefore:

$$\frac{\text{Contribution by newly connecting customer} \times \text{Demand of customer entitled to a refund}}{\text{Total demand of all customers entitled to refund}}$$

Example: Application of the Developer Main Scheme

The original customer (Customer A) requires a four span line extension and provides a contribution toward that extension of $20,000. Customer A demand is assumed to be 70 kVA.

A second customer (Customer B) connects to the line 2 years after Customer A. Customer B only uses the first span of the extension and demand is assumed to be 70 kVA.

Calculations of contributions and re-imbursements would be as follows.

Customer B

1. Calculate depreciated value of extension

Depreciated value = Cost of extension x depreciation factor

= $20,000 x (20 – 2) / 20

= $18,000

2. Calculate share of the extension

Share of extension = Length of extension used by Customer B / Total length of extension

= 1 / 4

= 0.25

3. Calculate share of electricity demand

Share of demand = each customer derive similar benefits from the line therefore this factor is shared equally.

= 0.50 used to split the cost by the number of customers only

4. Calculate contribution for Customer B

Contribution by B = Step 1 x Step 2 x Step 3

= $18,000 x 0.25 x 0.5

= $2,250

Customer A

In this case the refund due to Customer A equals the contribution provide by Customer B.

A third customer (Customer C) connects to the line 3 years after Customer A. Customer C uses the first three spans of the extension and demand is assumed to be 70 kVA. This means that Customer C shares one span with both Customers A & B and two additional spans with only Customer A.

Calculations of contributions and re-imbursements would be as follows.

Customer C

1. Calculate depreciated value of extension

Depreciated value = Cost of extension x depreciation factor

= $20,000 x (20 – 3) / 20

= $17,000

2. Calculate share of the extension used by all customers

(a) Share of extension used by A, B and C

Share of extension = Length of extension used by Customers A, B & C / Total length of extension

= 1 / 4

= 0.25

(b) Share of extension used by A and C

Share of extension = Length of extension used by Customers A & C / Total length of extension

= 2 / 4

= 0.50

3. Calculate share of electricity demand

(a) Share of extension used by A, B and C

Share of demand = split the cost by the number of customers only (since derive common benefit)

= 0.33 (3 customers)

(b) Share of extension used by A and C

Share of demand = split the cost by the number of customers only since derive only (since derive common benefit

= 0.50 (2 customers)

4. Calculate contribution for Customer C

Contribution by C = (Step 1 x Step 2a x Step 3a) + (Step 1 x Step 2a x Step 2b)

= ($17,000 x 0.25 x 0.33) + ($17,000 x 0.50 x 0.50)

= $1,417 + $ 4,250

= $5,667

Customer A

The refund due to Customer A is made up of the components of the contribution that Customer C has provided for that section C shares with A & B and that section C shares only with A. The refund due for that section shared between A, B & C will be equal to the contribution by C shared between A & B based upon their common use of the line. The refund for that section shared between A & C will be equal to the contribution by C.

Section shared by A, B & C

Refund to A = Contribution by C x Demand of A / (Demand of A + Demand of B)

= $1,417 x 0.5

= $708.50

Section shared by A & C

Refund to A	=	Contribution by C
	=	$4,250
Total refund to A	=	$708.50 + $4,250
	=	$4,958.50

Customer B

The refund due to Customer B is made up of the components of the contribution that Customer C has provided for that section C shares with A & B. The refund due for that section shared between A, B & C will be equal to the contribution by C shared between A & B based upon their demands.

Section shared by A, B & C

Refund to B	=	Contribution by C x Demand of B / (Demand of A + Demand of B)
	=	$1,417 x 0.5
	=	$708.50

Attachment 5: Transformer costs

Extension services involving the installation of a transformer

Under TasNetworks' previous policy, customers requiring a standard customer project, with the exception of low consumption installations, were exempt from funding any transformers required as part of their extension services. This approach is inconsistent with the Connection Charge Guidelines, which provide that customers are to contribute towards customer specific connection costs, including transformers.

The price impact of moving to full cost reflectivity for individual customers is significant. This is particularly true for small rural customers, as the cost of a transformer could add significantly to their individual connection charges.

A transitional approach has therefore been adopted for the majority of customers to move toward a fully cost-reflective approach.

With the exception of low consumption installations, the following steps are to be adopted when calculating the extension services charges for all other customers.

1. The installed costs of the transformer are to be calculated separately from the other extension services costs.
2. The incremental revenue rebate is to be calculated and checked against the calculated transformer installation costs.
3. Where the incremental revenue rebate is:
    (a) less than, or equal to, the calculated transformer installation costs, the transformer installation costs in excess of the incremental revenue rebate are to be subtracted from the total extension services charges; or
    (b) greater than the calculated transformer installation costs, the full transformer installation costs are to be included in the total extension services charges.
4. The incremental revenue rebate is then applied to the extension services charges that have been calculated in accordance with step 3 above.

Installed transformer costs

Overhead transformers

The following components are considered to be part of the installation costs of an overhead transformer:

- the transformer;
- the high voltage transformer fuses;
- the low voltage transformer fuses;
- any support assets associated with the fuses; and

- transformer earthing.

Note for clarification

The costs of supplying and installing any pole to which the transformer is attached are not part of the installation costs of an overhead transformer.

Ground type substations

The following components are considered to be part of the installation costs of ground type substations:

- the transformer;
- the high voltage switchgear;
- the low voltage switchgear and board;
- the substation enclosure and plinth (padmount); and
- transformer earthing.

Note for clarification

In addition to these costs a customer may need to fund specific requirements such as the costs associated with the construction of a building type substation, any installed fire suppression systems and fire doors.

Attachment 6: Developer connections

Developer projects will generally fall into three main categories, as requested by the developer.

Serviced allotments

In general, all new residential subdivisions provide serviced allotments. Developers providing serviced allotments will install all relevant underground or overhead electricity infrastructure necessary to facilitate the final connection of prospective customers. Relevant infrastructure will include the installation of backbone high voltage and low voltage network, transformers or substations, cabinets or turrets, street lighting and any other specific developer requirements. Land redevelopment sites will be treated in the same manner as a new development.

Prospective customers in a serviced allotment will generally only require a final connection service (basic or major depending on specific load requirements) to connect within the development.

The incremental revenue rebate for serviced developments will be based upon the typical customer loads of the prospective customers.

A real estate developer may request serviced allotments for a commercial subdivision, however generally the final load requirements of prospective customers is not known to the developer and therefore only backbone infrastructure is provided (refer to the following section on serviceable allotments for further information).

Serviceable allotments

Serviceable allotments are generally provided as part of a commercial development.

Serviceable allotments exclude the provision of the assets that are necessary to facilitate the final connection of prospective customers such as transformers or substations and cabinets or turrets. Developers will only provide the backbone infrastructure which generally comprises the high voltage network and its associated infrastructure.

Prospective customers will need to make an individual application for a connection service that will satisfy the specific electrical demand required for the connection and will therefore also be entitled to an individual incremental revenue rebate for that connection.

As the future revenue for the connecting customers is unknown, and each customer will receive their own incremental revenue rebate, developers will not receive any incremental revenue rebate for the provision of serviceable allotments.

Multi-tenanted allotments

Multi-tenanted allotments generally means TasNetworks provides a single service into a development and a corporation or property owner will be responsible for the low voltage service mains to individual customers within the property.

These developments typically include:

- apartment blocks,
- strata units,
- mixed use multi-levelled property, or
- retirement villages and the like.

Prospective customers will generally not require the provision of any connection service to receive their electricity. In these instances, connection service charges and incremental revenue rebates will be calculated in accordance with a total maximum demand for the site supplied by the developer in the same manner as for an individual retail customer's connection project.

Attachment 7: Easements

Requirement for an easement over private property

An easement is to be registered on a property title to ensure TasNetworks can lawfully perform the activities defined by the easement in respect to its distribution infrastructure.

Easements are required where:

- the construction of distribution infrastructure is required to provide customer project services and a portion of that distribution infrastructure crosses third party titled land owned by the Crown, Local Government or any other entity, or individual(s); and
- the distribution infrastructure will be located on property owned by the customer requesting a connection to the distribution network.

Design and construction

The distribution network will, wherever reasonably possible, be designed and constructed such that the distribution infrastructure to connect a customer crosses only:

- public land; and/ or
- property owned by the customer served by that distribution infrastructure.

Easements over property owned by a third party

In the event that distribution infrastructure to connect a customer must cross property owned by a third party, the responsibility for obtaining the easement from the third party on behalf of TasNetworks rests with the customer requesting the connection.

The conditions of the easement over the property owned by the third party should be in accordance with TasNetworks standard easement terms.

Construction of distribution infrastructure not to start without required easements

Construction of distribution infrastructure to connect a customer will not commence without the acquisition of any required easements or a legal undertaking thereof.

Costs associated with easements over private property

All costs for the acquiring of an easement associated with distribution infrastructure to connect a customer are the responsibility of the customer making the request for connection. This includes meeting costs associated with acquiring an easement over property of a third party.

Attachment 8: Connection Choice

Scoping required extension works

Where a connection applicant elects to use an Accredited Electrical Designer or Accredited Electrical Constructor, following the receipt of required information and payment of the applicable fee, TasNetworks will develop a scope for Contestable Works. TasNetworks may also prepare a second scope for any augmentation works required on the existing Network to accommodate the new connection (this work cannot be done by an Accredited Electrical Designer or an Accredited Electrical Constructor).

The purpose of the scopes is to set out the general design considerations and operating requirements for the works required to allow connection to the distribution network, including:

- connection voltage;
- minimum asset sizes;
- any other technical details or equipment requirements (including requirements for compatibility with the distribution network); and
- details of any additional work required (e.g. provisions for future developments).

These scopes are based on TasNetworks' Technical Requirements and Standards.

Where the TasNetworks' scope includes technical requirements for electrical infrastructure to be installed to a higher standard, or capacity, than a least cost, technically suitable solution, then TasNetworks will make arrangements to fund the additional cost of achieving the higher standard or capacity.

Timeframe for developing a scope of the extension works

Where practicable, TasNetworks will provide the scope to a connection applicant within 10 business days of receiving the connection application. Where the complexity of the scope means that this is not practicable, TasNetworks will agree a reasonable alternative timeframe with the connection applicant.

Choosing an Accredited Electrical Designer or Accredited Electrical Constructor

Using the scope provided, a connection applicant can choose to engage an Accredited Electrical Designer or an Accredited Electrical Constructor directly, or run their own tender process to engage an Accredited Electrical Designer for the design, and/or an Accredited Electrical Constructor for the construction, of the Contestable Works.

Any tender process undertaken will be the responsibility of the connection applicant.

There are critical stages of the connection process where TasNetworks will need to liaise with the connection applicant from design through to energisation and vesting of the assets on completion of the Contestable Works. It is important that there is adequate co-ordination of activities to ensure negotiated or agreed timeframes can be met.

Key aspects of the process must be discussed and agreed between TasNetworks and the connection applicant before commencing design and/or construction, including:

- the design of the extension including design terms and conditions;
- the program of works for construction of the extension;
- construction terms and conditions;
- fees and charges to be paid by the connection applicant to TasNetworks;
- securities or warranties required by TasNetworks in relation to the Contestable Works and constructed assets; and
- ownership and risk, including the transfer or vesting of the constructed assets to TasNetworks on completion of the Contestable Works.

The customer is responsible for ensuring that its contractual arrangements with their Accredited Electrical Designer or Accredited Electrical Constructor appropriately address the matters set out above.

Accepting the Extension Works

TasNetworks will only accept a design and/or construction of Contestable Works where:

1. the Contestable Work is completed by an Accredited Electrical Designer or an Accredited Electrical Constructor;
2. TasNetworks' design audit confirms the proposed design of the Contestable Assets conforms with the scope provided by TasNetworks; and
3. TasNetworks' construction audit confirms the construction of the Contestable Assets conforms to the approved design, the construction manuals (including requirements about Network compatibility) and all construction terms have been met.

Dispute resolution

Where a connection applicant has a dispute with TasNetworks relating to the provision of connection services, such disputes will be managed in accordance with section 9 of this policy or as otherwise contractually agreed.

Where a connection applicant has a dispute with an Accredited Electrical Designer or an Accredited Electrical Constructor, this is a matter between those parties, TasNetworks is not responsible for managing the dispute.

Attachment 9: Theoretical examples

The following examples are only intended to demonstrate how a connection charge is calculated in accordance with this Policy. These are fictitious examples and should not be relied on for estimating costs of a new connection project.

Example 1 – standard customer project

- Application requires completion of a formal design and offer – assume $1,000 application fees and design service charges
- Applicant requires a new overhead line extension to connect to the network at a total cost of $10,000
- As part of the extension the connection requires a new transformer at $8,000
- Final connection is below 100 amps per phase – therefore basic connection service charge applicable.
- No augmentation services are applicable
- Incremental Revenue Rebate – assumed to be $1,200
- No reimbursements are required but the value of the line extension contributed by the customer will be registered as a developer mains

Charge		Category			Service Provided
=	ACS	Alternative control service charge (ACS)	$1,000 $700		• Application fees and Design services • Basic Connection Service
		Total Contribution to ACS	**$1,700**	**$1,700**	
+	add		add	add	
	SCS	Standard control service charge (SCS)	$10,000 $1,200		• Extension service (overhead line) • $8,000 Extension transformer *Note the customer contribution to an extension transformer is up to the value of the rebate only ($1,200) final connection 100 amps or below*
			$11,200		
-	less		less		
	IRR	Incremental revenue rebate	$1,200		• Incremental revenue rebate
		Total Contribution to SCS	**$10,000**	**$10,000**	
+	add		add	add	
	DM	Developer mains charges	$0	$0	Note a developer mains will be registered in the owner's name for $10,000 and the customer may be entitled to a refund if another customer connects to the new line (time periods apply)
Total charges paid by the customer				**$11,700**	

Example 2 – complex customer project

- Application requires completion of a formal design and offer – assume $2,000 application fees and design service charges
- Applicant requires a new underground line extension to connect to the network at a total cost of $25,000
- As part of the extension the connection requires a new dedicated ground mounted substation at $60,000
- Final connection is above 500 amps at low voltage– therefore major connection service charges applicable
- No augmentation services are applicable – refer section 4.2.2.3 for more information
- Incremental Revenue Rebate – assumed to be $20,000
- No reimbursements are required but the value of the underground line extension contributed by the customer will be registered as a developer mains

Charge		Category			Service Provided
=	ACS	Alternative control service charge (ACS)	$2,000		• Application fees and Design services
		Total Contribution to ACS	$2,000	$2,000	
+	add		add	add	
	SCS	Standard control service charge (SCS)	$4,000 $25,000 $60,000		• Major connection service • Extension service (overhead line) • Extension substation
			$89,000		
-	less		less		
	IRR	Incremental revenue rebate	$20,000		• Incremental revenue rebate
		Total Contribution to SCS	$69,000	$69,000	
+	add		add	add	
	DM	Developer mains charges	$0	$0	Note: a developer mains will be registered in the owner's name for $25,000 and the customer may be entitled to a refund if another customer connects to the new line (time periods apply)
Total charges paid by the customer				$71,000	