10.01

Tariff structure statement

Ausgrid

Contents

1 Executive Summary

Ausgrid is pleased to include in our submission to the Australian Energy Regulator (AER) our Tariff Structure Statement (TSS), which describes our approach to pricing along with our proposed tariff structures and indicative tariffs for the 1 July 2019 to 30 June 2024 period.

Our proposed pricing reforms will deliver a 5.7% reduction in Ausgrid's component of network bills in 2019/20 and our costs will be stable for the remainder of the period. However, customers will experience smaller reductions in their total network bill which, in addition to recovering Ausgrid's network bill, must also recover the costs of TransGrid's transmission use of system (TUOS) service charge as well as the New South Wales Climate Change Fund (CCF).

While Ausgrid has control over its segment of the customer network bill, the other components of the network bill are not forecast to have similar cost reductions. Further, customers' actual reduction in network bills will vary depending on their own actual consumption levels and characteristics.

The National Electricity Rules (Rules) require Ausgrid to transition towards more efficient, cost reflective tariffs, where the nature and speed of our transition is guided by the corresponding impacts on our customers.

Therefore, we propose pricing reforms directed at striking an appropriate balance between:

- improving the efficiency of our pricing for the long-term interests of customers; and
- avoiding unacceptable customer bill impacts from year to year.

Our proposed pricing reforms build on recent improvements in our pricing to deliver more affordable and fair network prices that also promote reliable and sustainable outcomes for our customers.

1.1 Why are we proposing to change our pricing?

The electricity industry is undergoing a period of unprecedented change. This transformation is being driven by our customers, as they embrace new technologies, take control of their energy use and support action on climate change through, for example, the increased take up of distributed energy resources (DER). In recent years, an increasing number of our customers have also become energy producers as well as energy users, necessitating a shift away from historical network pricing practices that linked network bills to how much energy travelled in the 'traditional' one-way direction.

Put simply, the way customers use our network is changing and to ensure our network prices promote affordable, reliable and sustainable outcomes for our customers, we must change our approach to pricing too. It is also inherently important that our prices are 'fair' to all our customers. For example, it is our view that individual customers should not necessarily be treated differently because of their ability, or inability, to invest in DER; because they live in a house rather than an apartment; or because do they do or do not own an electric vehicle (EV). Rather, a customer's network bill should reflect the way they use our network (e.g., timing and extent of their use) and the cost of providing that service.

Our previous approach to pricing reflected the provision of a one-way transport service that did not provide customers with the information they needed to make decisions that best served their needs, for example, the actual cost of using our network at different times of the day.

In this context, better signalling to customers of the cost of using our network at peak times (such as hot summer afternoons when air conditioning load is at its highest) will encourage more efficient use of our network. Efficient price signals will also enable customers to decide whether an investment in DER could potentially meet their electricity needs at a lower overall cost.

On the other hand, customers should be encouraged to use our network outside of peak times, when the cost of providing network services is very low. For example, the use of air conditioners on summer nights when there is excess capacity imposes minimal additional costs on our network. The present rapid roll-out of smart meters also means that we can introduce fairer network pricing structures that reward customers

who actively manage their contribution to peak demand – particularly where such actions help us to avoid future network upgrades and lower network costs.

To facilitate the transformation of our network it is important that our prices reflect the connectivity service we provide. Focusing our pricing approach on connection to the grid, as opposed to electricity consumption, reflects the fact that the majority of our costs are stable in nature and are based on investments completed to meet the peak demand reliability needs of our customers. Further, this approach reflects the fact that the network provides access to a market for customers to buy or sell energy, rather than just buying energy.

Our new pricing approach also explicitly focusses on the cost of providing network connection services, not on how much energy flows one-way out of the grid. Our pricing will reflect these largely stable costs – which is similar to how customers pay for internet access – as well as the additional infrastructure costs associated with using the network when it is congested.

This new approach will also ensure that customers leading the investment in innovative energy solutions make an equitable contribution to the costs of being connected to a network that meets their individual network utilisation needs, including potentially serving as a platform through which they will buy and sell energy. Rebalancing our pricing approach away from consumption charges towards fixed daily charges also provides greater bill stability, and accounts for the way today's customers use the network to both buy and sell energy.

It is important to note that our proposed changes to pricing are specifically aimed at ensuring we adopt a neutral position and do not unnecessarily distort customers' decision making or attempt to pick technology winners.

We also recognise that not everyone can afford to invest in DER, and that some customers will be more affected by pricing reforms than others. Therefore, our transition to more cost reflective pricing must also be guided by the need to avoid unacceptable customer bill impacts. Where necessary, specific measures will be adopted to address the bill impacts arising from pricing reform.

In summary, the overarching principle guiding our pricing reforms is to place downward pressure on customers' prices, and make sure networks costs are shared fairly between our customers. We must achieve this by simultaneously responding to direct customer feedback for greater choice, control, and certainty with regards to network costs. To meet these objectives, we must strike a delicate balance between promoting the long-term interests of our customers through more efficient pricing, avoiding unacceptable bill impacts, improving fairness and affordability and reflecting customer preferences in our approach to pricing.

1.2 Our approach to pricing

Our aim is to strive towards prices that promote the efficient use of the network by our customers, as they continue to invest in innovative energy solutions. This approach will make our network services more affordable, sustainable and reliable, and in line with what our customers asked for during the consumer engagement process.

Table 1.1 - How pricing promotes affordable, sustainable and reliable network services

	How can pricing promote these outcomes?
Affordable	• Empower customers to actively manage their contribution to peak demand in order to keep costs low. • Encourage customers to use our network when the cost of doing so is very low. • Promote fairer outcomes between customers with different characteristics (e.g. DER and non-DER). • Ensure all customers make a fair contribution to the cost of the connection service they use.

	How can pricing promote these outcomes?
Reliable	• Reduce inefficient spikes in demand and network congestion at peak times. • Encourage a more responsive demand-side to deliver the reliability outcomes that our customers want at a lower cost.
Sustainable	• Empower customers to invest efficiently in DER that can provide the services they want at a lower cost. • Encourage further use of the network at times of the day when renewable generation is more prevalent. • Encourage customers to invest in DER that helps them to better manage their consumption at peak and non-peak periods. • Promoting the lowest cost transition to a lower carbon economy.

Source: Ausgrid 2018

We acknowledge there is currently no simple way to use pricing alone to achieve these outcomes, particularly given the importance of managing any transitional impacts on customer bills. Furthermore, there is considerable uncertainty and divergence in opinions regarding the impact of alternative pricing structures on our customer's future network use and investment decisions. This results in some uncertainty about the consequent effects on network diversity, maximum demand and our future network costs.

Against this backdrop of uncertainty and potential adverse effects on our network costs, our approach for the next regulatory period is:

- to make significant progress in areas where the appropriate next steps in pricing reform are clear; and
- to launch a Pricing Working Group and research program – framed by stakeholder feedback – to address potential pricing reforms and to make sure that, where appropriate, we are well-placed to fast-track their implementation.

Consistent with the framework established by the Rules, in practice, our approach to developing our proposed pricing reforms involved:

- contemplating the likely characteristics of a theoretically 'efficient' pricing strategy directed purely at the promotion of economic efficiency (the efficient reference point);
- developing reforms that better strike a balance between moving to more efficient pricing and avoiding unacceptable customer bill impacts, having regard to:
    - the likely characteristics of more cost reflective pricing;
    - feedback from our customers;
    - our assessment of customer bill impacts; and
- engaging with customers and stakeholders throughout this process.

The feedback we received through our extensive engagement with customers and stakeholders was instrumental in developing proposed reforms that strike an appropriate balance between the speed of our transition to more cost reflective prices and the avoidance of unacceptable customer bill impacts.

1.3 Our proposed pricing reforms:

We summarise our major pricing reforms for the 2019-24 period in the table below.

Table 1.2 - Summary of major pricing reforms over the 2019–24 period

Proposed reform	Description	Benefits for our customers
A demand price structure	Introduce a residential demand price structure with no customers initially assigned to it, which can be adopted in the next regulatory period, if supported by further research.	• Enables a fast-tracked transition to demand pricing, pending the outcome of our research program. • Allows us to expedite our transition to cost reflective pricing.
Price Rebalancing	Reduce non-peak variable energy charges, off-set by a network bill-neutral increase in fixed daily charges.	• Represents a first step in a potential future transition to residential capacity charges. • Compatible with a range of future price structures, eg, demand pricing and existing price structures. • Promotes efficient investment in DER, eg, west-facing solar PV installations. • Encourages use of the network when our costs are very low and renewable generation is more prevalent. • Avoids inequities between adopters and non-adopters of DER. • Reflects the nature of the connection service we provide. • Results in more stable network bills.
Safeguard measures	Introduce transitional and safeguard pricing to reduce network bill impacts for low energy users and vulnerable customers.	• Mitigates any unacceptable bill impacts from price rebalancing. • Enables a longer transition period for these customers.
An inclining block price structure	Replace the flat price structure with an inclining block price structure for customers with a basic meter.	• Mitigates bill impacts for low energy users. • Encourages high energy users to reduce consumption. • Provides incentives for large energy users to switch to a more cost reflective price structure.
New price structure for large residential and small business customers	Assign to a new more cost-reflective TOU capacity network price structure, all residential and small business customers consuming 15-40 MWh per annum and that have an interval meter.	• More cost reflective prices for larger energy users. • Provides stronger incentives to reduce maximum demand. • Avoids potential bill shock if customers use >40MWh per annum and are moved to another price structure.
Consistent winter peak period between residential and business customers	Shorten the winter peak period for business customers to 5-9pm.	• Provides more cost reflective peak price signals. • Reduces the times at which the winter peak price applies for business customers. • Enables better management of peak demand. • Aligns the residential and business winter peak periods.

Proposed reform	Description	Benefits for our customers
Opt-out price structure to become TOU	The opt-out transitional price structure for residential and small business TOU customers will move to a TOU structure, from a flat structure.	• More cost reflective prices for opt-out customers. • Assists in transitioning these customers to more cost reflective pricing. • Weakens the incentive to opt-out of the default TOU price structure.

Keynote reforms include:

- a residential demand price structure that will initially have no customers assigned to it, but that can be implemented during the regulatory period subject to the findings of a comprehensive research program to be developed collaboratively with stakeholders; and
- measures to significantly improve our approach to recovering the cost of the existing network by rebalancing prices away from non-peak variable energy charges and towards fixed daily charges.

We discuss each of these elements in turn.

1.3.1 An experiment in demand pricing to facilitate its future implementation

We propose to include in our TSS a residential demand price structure that will initially have no customers assigned to it.

The reason for this approach is that our engagement with customers and stakeholders made clear that:

- demand charges have the potential to deliver more affordable, reliable and sustainable outcomes for our customers, although stakeholders hold mixed, conflicting and strongly held views on the benefits, if any, of demand charges;
- there is also uncertainty and mixed views on whether demand price structures should be used to signal future network costs or to recover the cost of the existing network, or both; and
- there are different ways to structure a demand charge depending on its objective, each with differing effects on customer's decisions, network diversity and network costs.

In this context, we acknowledge the potential merits of demand price structures but consider there is a degree of uncertainty and a divergence of opinions regarding the impact of alternative pricing structures on our customer's future network use and investment decisions. For these reasons, the implementation of demand pricing is not in the best interests of our customers at this point in time. A further cause for caution is that Ausgrid, unlike other networks such as Endeavour Energy, has a significant number of customers on TOU pricing (approximately 330,000 residential customers), which is expected to double over the next five years. This means that inappropriately implementing or designing demand pricing could have material adverse implications on network costs and our customers.

Ausgrid is proposing to launch a comprehensive research plan to be developed collaboratively with stakeholders before any decision is made to assign customers to the demand tariff. The decision to assign customers to a demand tariff would be contingent on:

- the research program finding theoretical and empirical support for residential customers to be assigned to our demand price structure;
- pricing trials and customer engagement showing that demand pricing will deliver more affordable, reliable and sustainable outcomes for our customers, than other price structures; and
- written communication from the AER and the Consumer Challenge Panel (CCP) confirming acceptance of the design and eligibility criteria for any demand price structure proposed by Ausgrid following the completion of the research program.

In essence, this will reflect agreement between Ausgrid, customers and the AER on the appropriateness of demand pricing. We are targeting a decision on implementing a demand tariff no later than 2020/21.

Note, we are not proposing to introduce voluntary, opt-in demand pricing for residential customers at the outset of the 2019-24 period. Our assessment is, opt-in demand pricing is not an effective way to avoid future network costs.

1.3.2 Price rebalancing

In essence, cost reflective prices mean that the decisions of one customer do not negatively impact others. This makes for more efficient investment decisions – when taking the total cost of the system into account – and helps lower the costs for everyone.

In the forthcoming regulatory control period we propose to rebalance our tariffs by:

- decreasing our shoulder and off-peak charges towards cost reflective levels; and
- recovering our residual costs in a manner that least distorts customer's decisions, by increasing fixed daily and capacity charges.

Encouraging efficient use of the network

Cost reflective pricing encourages customers to use our network efficiently by signalling the future costs they will incur through further use of our network, which enables them to decide:

- whether using our network best meets their needs at the lowest possible cost; or
- whether investments in DER and energy efficiency initiatives can better meet their needs at a lower cost (whilst also factoring in overall system cost impacts). Ultimately this can benefit all network customers.

Importantly, the level of future costs that could be avoided varies considerably across the day. We estimate that avoidable costs:

- are equal to approximately $56/kW on the low voltage network during the peak period; but
- are close to zero outside of the peak period, ie, because there is excess capacity on our network at those times.

This means that, at a very high level, the cost of operating our network outside of the peak period will be relatively similar regardless of whether customers use our network more or less during that time. This means that we can enhance our customers welfare by encouraging them to use our network more outside of the peak period for little or no additional network costs.

By way of example, the additional network costs imposed by customers running their air conditioners on summer nights when there is excess capacity on our network is very low. If this is something customers value, we do not want to unnecessarily discourage them from using our network with an above-cost price signal.

It should be noted that, our current non-peak variable energy charges – the shoulder and off-peak price – significantly overstate the very low avoidable costs at the times they apply. Therefore, reducing shoulder and off-peak energy prices will better reflect the low additional costs of providing network services at those times, which will, in turn encourage the efficient use of our network.

Cost reflective price signals also play an important role in assisting our customers to make efficient investments in innovative energy solutions and undertake efficiency-enhancing activities. This is particularly important in the context of rapidly changing technology.

For example, lowering non-peak energy charges will encourage more efficient investments in DER, i.e., since it increases the incentive to reduce the use of the network during peak periods. By way of example, reducing shoulder charges creates an incentive to install west-facing solar PV installations that better assist in reducing the use of the network later in the day, during peak periods.

In summary, transitioning towards cost reflective charges will assist in transitioning to a decarbonised economy, encouraging the efficient use of our network and promoting efficient investments in DER while avoiding potential inequities between adopters and non-adopters of new technologies. In other words, our pricing will be technology agnostic.

Increases in fixed daily charges that leave network bills unchanged

To deliver to customers the efficiency, equity and decarbonisation benefits of reducing non-peak variable energy charges, we need to increase the price of another charging parameter so that the network bills paid by customers reflect the total efficient cost of providing services to those customers, consistent with the requirements of the Rules.

In essence, we provide a connection service to customers. The nature of this connection service will become increasingly relevant as our network transitions to a platform that enables bi-directional energy flows. Importantly, fixed daily charges reflect the nature of this connection service we provide to customers and therefore assists in facilitating peer-to-peer trading.

Should our collaborative research program identify that capacity charges (eg, a fixed daily charge that varies with the maximum capacity that a customer intends to draw from the network during a given period) are the best means by which to recover residual costs, our proposed price rebalancing will also provide a natural progression to these charges. For example, we will be well placed to offer lower fixed daily charges to those customers willing to accept a lower maximum capacity draw from the network. This approach may prove to be appropriate for signalling the costs of the network to customers and minimising distortions to electricity use in the future.

Consistent with the requirements of the Rules and economic literature, fixed daily charges also recover our historical costs in a manner that least distorts customers' decisions.

Therefore, we propose to offset the reduction in non-peak variable energy charges by increasing fixed daily charges in a way that leaves a typical customer's network bill unchanged.

Section 7.3 sets out our proposal to implement specific measures to avoid unacceptable network bill impacts on low energy users and vulnerable customers, who might otherwise be disproportionately affected by our proposed price rebalancing.

1.4 Feedback from our customers

The feedback we received from our customers and stakeholders was instrumental in shaping our proposed pricing reforms. As already discussed, our demand price structure supported by a research program in the next period is a direct response to the further consultation undertaken during the extension approved by the AER.

In light of feedback received, we have tempered the extent of our rebalancing to avoid unacceptable customer bill impacts and implemented specific measures (transitional and safeguard pricing) to protect low energy users and vulnerable customers. Through our Pricing Working Group, we will continue to engage with stakeholders to address any issues with this approach.

We note that the 'Pricing Directions: A Stakeholder Perspective'[1] document favoured the use of demand or capacity charges to recover our residual costs, rather than fixed daily charges. In this context, it is important to recognise that higher fixed daily charges are not necessarily an end-point in our transition to cost reflective pricing. Rather, it reflects a step towards the potential future recovery of residual costs from capacity charges or demand charges designed to be less variable in nature, an approach consistent with the stakeholder directions.

We include further detail on the feedback we received and assess our proposed reforms against the 'Pricing Directions: A Stakeholder Perspective' document in section 6 of our TSS. We summarise the

[1] For more information see Attachment 10.14.

compatibility of our key proposed reforms and the 'Pricing Directions: A Stakeholder Perspective' document in the table below.

Table 1.3 - Compatibility with "Pricing Directions: A Stakeholder Perspective"

Key reforms for residential customers	How the reform reflects the "Pricing directions: A Stakeholder Perspective"
A demand price structure for potential future implementation	• Adaptable to changing circumstances – it can be implemented if needed. • Provides scope for a potential mid-period introduction of demand prices during the regulatory period. • Facilitates potential transition to demand pricing, which is the stakeholders' expected end-point.
Price Rebalancing	• Adaptable to changing circumstances – it promotes efficient investment in new technologies. • Simplifies pricing structure – reducing non-peak variable energy charges. • Network specific – improvements in the recovery of historical costs, reflect limited growth. • Increase in the fixed daily charge facilitates P2P trading since it reflects the connection service provided by Ausgrid. • Extent of rebalancing guided by extensive modelling of customer bill impacts. • Promotes economic efficiency by recovering costs "through charges that have as little impact on behaviour as possible"[2].
Safeguard measures	• Directly addresses customer bill impacts.
An Inclining Block Structure	• Integrated with broader incentives and encourages large users to switch to TOU pricing. • Assists in avoiding unacceptable customer bill impacts for low energy users.
New TOU demand for large residential and small business customers	• Adaptable to changing circumstances - more cost reflective prices for larger energy users. • Assists in a transition to residential demand pricing, an approach consistent with stakeholders' expected end-point.

1.5 How we will manage transitional customer bill impacts

We present in this section the network bill impacts resulting from our indicative prices for residential customers. Our proposed indicative network prices and customer bill impacts are presented in sections 8 and 9, respectively.

1.5.1 Residential time of use pricing

For residential customers on time of use pricing that use more than 2MWh per annum, shoulder prices will decrease by 0.6% per annum on average over the 2019-24 period, accompanied by a 6.4% per annum increase in the fixed daily charge. This will leave a typical residential customer's network bill unchanged.

At present, a typical residential customer's network bill comprises approximately 29% fixed daily charges and 39% non-peak variable energy charges (shoulder and off-peak charges). Assuming no behavioural response over the next five years, in 2024 our proposed price rebalancing will mean that a typical residential customer's network bill will comprise approximately 37% fixed daily charges and 35% non-peak variable energy charges.

We present indicative prices in the table below.

[2] Attachment 10.14, Pricing Directions: A Stakeholder Perspective, February 2018, page 3 footnote 2.

Table 1.4 - Indicative residential time of use NUOS pricing ($, nominal)

Charging Parameter	2019/20	2020/21	2021/22	2022/23	2023/24
Fixed daily charge ($p.a.)	173.36	186.87	198.47	211.38	225.12
Seasonal peak charge (c/kWh)	24.07	24.14	23.93	23.87	23.67
Shoulder charge (c/kWh)	6.46	6.48	6.39	6.35	6.24
Off-peak charge (c/kWh)	2.55	2.56	2.53	2.52	2.50

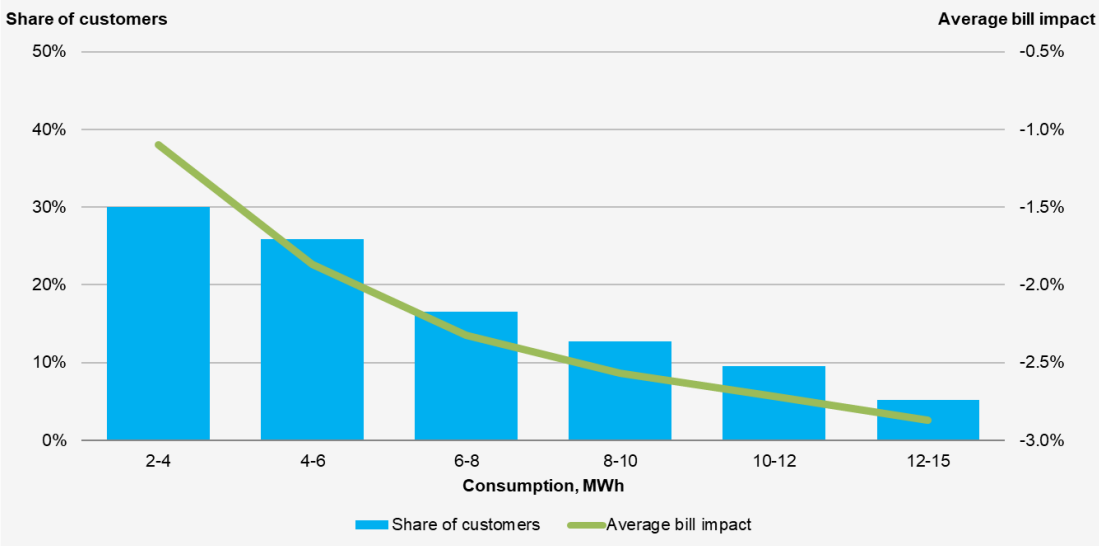
Note: Excludes GST, prices have been rounded.

To provide an incentive for customers to voluntarily opt-in to time of use pricing from the block structure, we designed our prices so that a typical residential customer would be approximately $63 better off on time of use pricing. Our proposed reforms for residential time of use pricing will deliver more affordable, reliable and sustainable pricing, consistent with customer feedback:

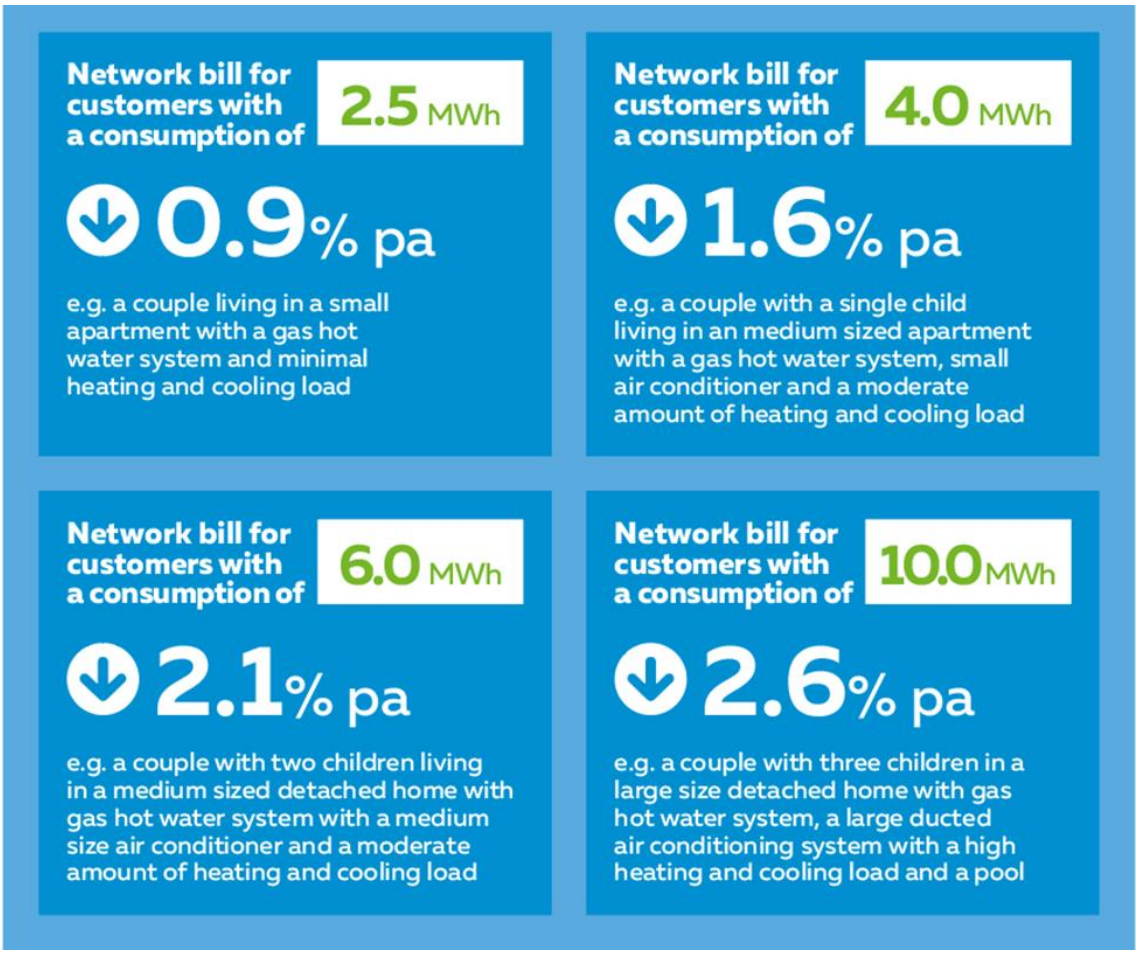
- by encouraging efficient use of our network;
- by promoting efficient investments in DER;
- by delivering equitable outcomes between adopters and non-adopters of new technologies; and
- by avoiding unacceptable customer bill impacts.

These prices will deliver a network bill reduction in 2019/20 for a vast majority of residential customers on time of use pricing. Further, network bills will be stable for the remainder of the regulatory period. We illustrate the network bill savings in 2019/20 below.

Figure 1.1 Residential TOU NUOS bill impact (%) in 2019/20



Further, our indicative prices will deliver in 2019/20[3]:



1.5.2 Residential inclining block pricing

We propose to replace the existing flat block structure or non-time of use pricing with an inclining block structure in 2019/20.

We propose to implement price rebalancing for these customers through increasing the fixed daily charge by approximately 11% per annum, off-set by a reduction in the price of block one. The relatively higher per annum increase in the fixed daily charge assists in bringing the fixed daily charges for time of use and non-time of use pricing into line. It also assists in providing an incentive for these customers to voluntarily opt-in to time of use pricing.

[3] In real terms. The indicative customers are assumed to have a load profile which is in line with the average residential customer load profile in Ausgrid region. The reduction level may differ according to the load profile.

We present indicative prices for our residential inclining block price structure below.

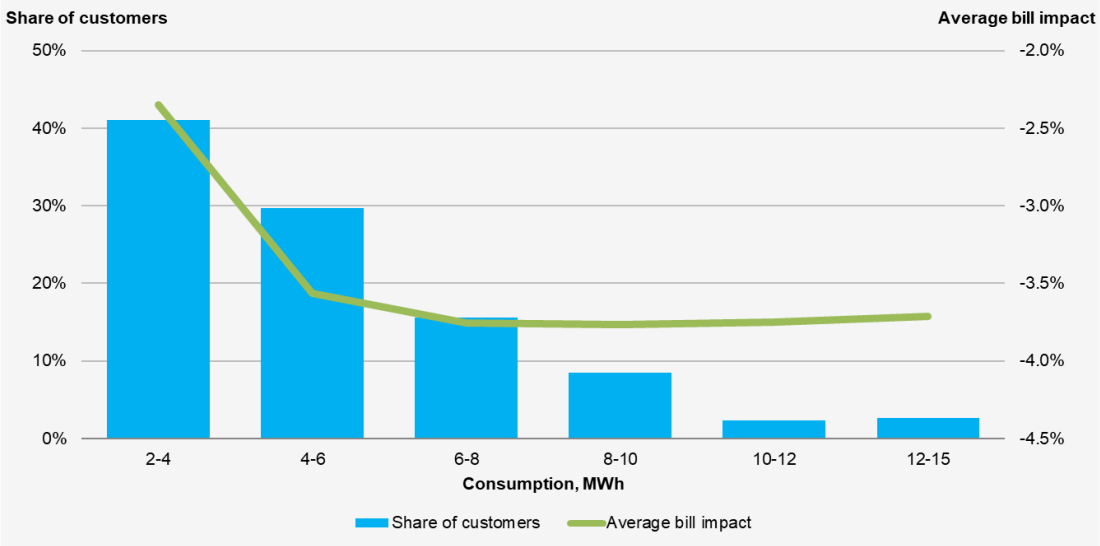
Table 1.5 - Indicative residential inclining block NUOS pricing ($, nominal)

Charging Parameter[4]	2019/20	2020/21	2021/22	2022/23	2023/24
Fixed daily charge ($p.a.)	149.68	168.85	185.23	203.75	224.13
First block charge (c/kWh)	9.56	9.36	9.06	8.79	8.48
Second block charge (c/kWh)	9.99	10.45	10.75	11.13	11.42
Third block charge (c/kWh)	10.03	10.49	10.80	11.19	11.48

Note: Excludes GST, prices have been rounded.

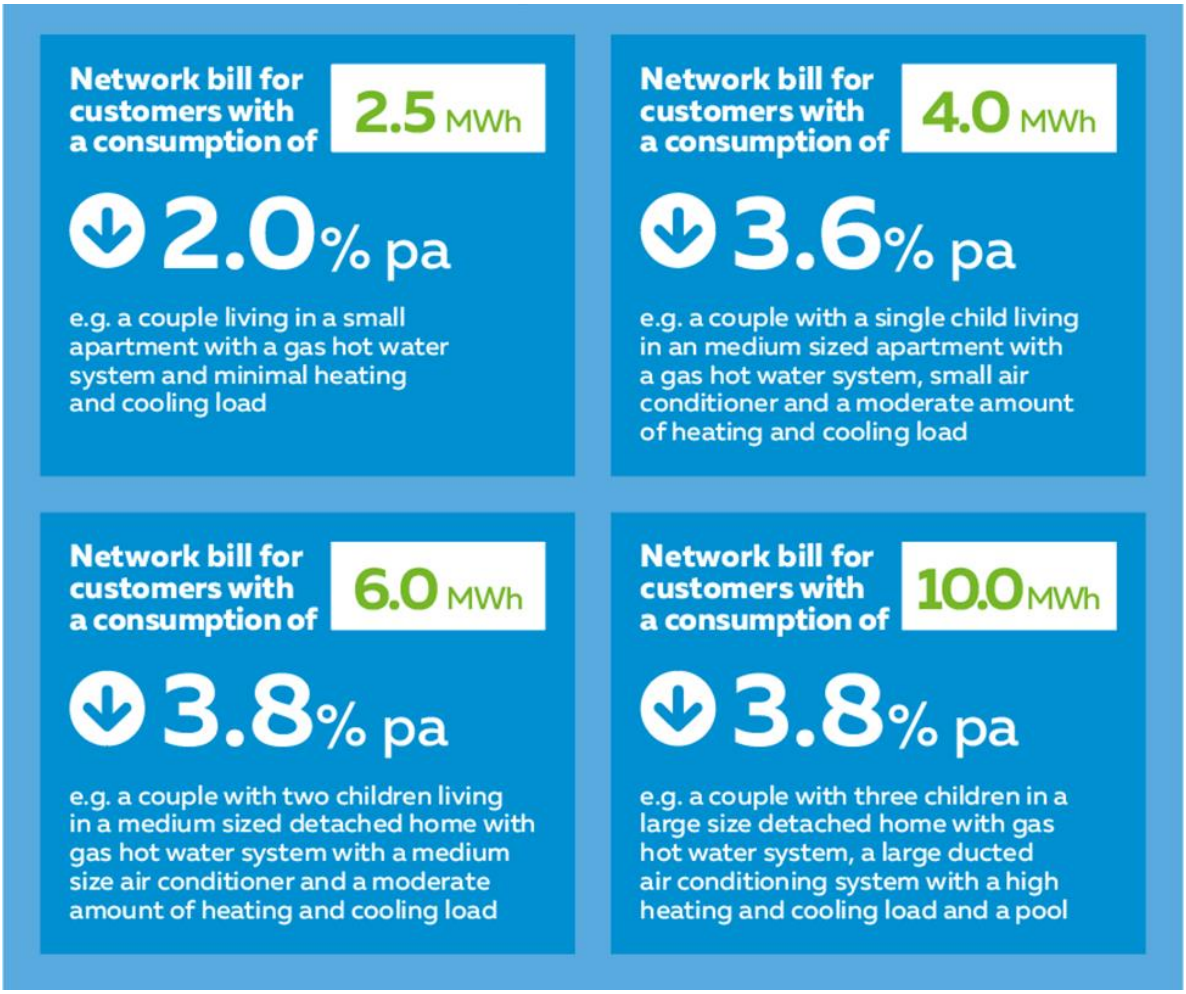
These prices will deliver a reduction in network bills for a vast majority of customers on our inclining block pricing in 2019/20. Further, network bills will be stable for the remainder of the regulatory period 2020/21-2023/24. We illustrate the network bill savings in 2019/20 in the following figure.

Figure 1.2 Residential inclining block NUOS bill impact (%) in 2019/20



[4] The block one price applies to the first 1,000 kWh of consumption per 91 days, the block two price applies to consumption greater than 1,000 kWh and less than 2,000 kWh per 91 days; and the block three price applies to all consumption above block 2.

Further, our indicative prices will deliver in 2019/20[5]:



Our proposed inclining block structure and price rebalancing for residential non-time of use pricing will deliver more affordable, reliable and sustainable pricing, consistent with customer feedback:

- by encouraging large energy users to switch to time of use pricing (by increasing the discount that a typical large customer receives from time of use pricing);
- by encouraging large energy users that do not switch to time of use pricing to reduce their consumption; and
- by avoiding unacceptable customer bill impacts for low energy users (they face a lower marginal price).

1.5.3 Transitonal pricing for residential and small business low energy users

Our modelling of the customer bill impacts arising from our proposed price rebalancing identified that, in the absence of specific measures, residential and small business customers using less than 2MWh per annum would be adversely affected. This is because these customers would benefit less from the reduction in non-peak variable energy charges.

So that we can still deliver to customers the significant decarbonisation, efficiency and equity benefits from price rebalancing, we propose to provide network bill discounts to customers using less than 2MWh per annum, in order to avoid unacceptable bill impacts. These measures are a direct response to listening to customer concerns about bill impacts.

[5] In real terms.

These discounts will apply for a period not exceeding ten years and will be progressively reduced over that period so as to transition these customers to more cost reflective pricing.

We understand from retailers that the transaction costs of establishing, marketing and implementing additional retail tariffs would be prohibitive, and so some retailers, such as EnergyAustralia, indicated strong support for the use of rebates to avoid unacceptable customer bill impacts from price rebalancing. Our proposed approach will enable retailers to leave customers assigned to the same retail tariff, but pass on the network bill discount/rebate provided by Ausgrid. We will work with retailers to calculate the amount of the rebate for each customer.

We present indicative prices for our inclining block transitional price structure for small business and residential customers in the following table.

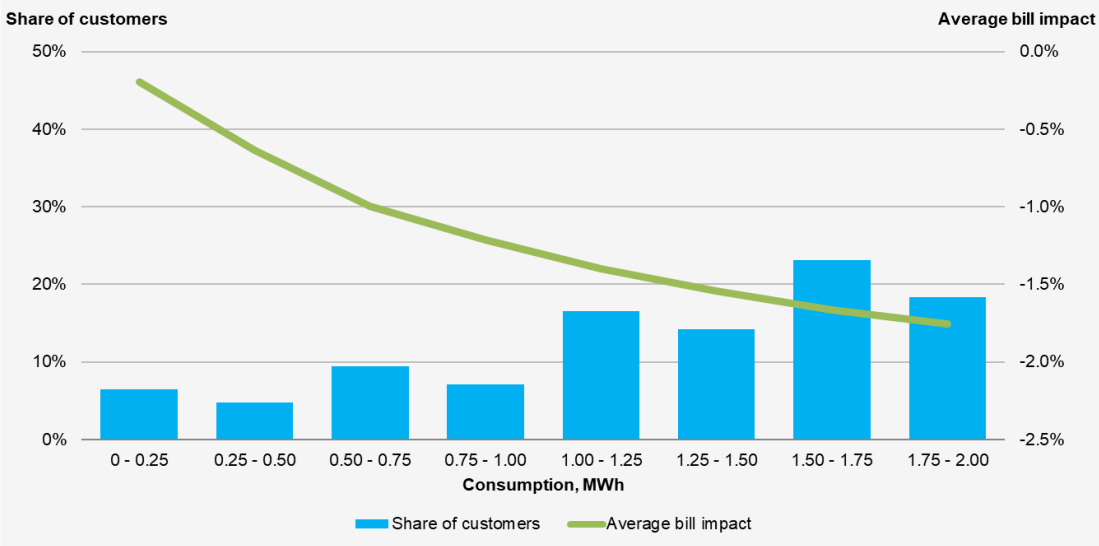
Table 1.6 - Indicative residential and small business transitional NUOS pricing ($, nominal)

Charging Parameter[6]	2019/20	2020/21	2021/22	2022/23	2023/24
Fixed daily charge ($p.a.)	136.38	140.85	144.68	149.02	153.49
First block charge (c/kWh)	10.09	10.46	10.69	10.99	11.20
Second block charge (c/kWh)	9.99	10.45	10.75	11.13	11.42
Third block charge (c/kWh)	10.03	10.49	10.80	11.19	11.48

Note: Excludes GST, prices have been rounded.

Most customers on this tariff will receive a network bill reduction in 2019/20 and network bills will be relatively stable thereafter. We present customer bill impacts for these customers below.

Figure 1.3 Residential and small business transitional NUOS bill impact (%) in 2019/20



[6] The block one price applies to the first 500 kWh of consumption per 91 days, the block two price applies to consumption greater than 500 kWh and less than 2,000 kWh per 91 days; and the block three price applies to all consumption above block 2.

1.5.4 Transitional safeguard pricing for vulnerable customers using <2MWh

We also propose to include transitional safeguard pricing to further avoid any potential unacceptable customer bill impacts to vulnerable residential customers.

We propose that this price structure is available to residential customers that hold either a Pensioner concession card issued by the DHS/DVA; a DHS Health Care Card; or a DVA Gold Card. Working with retailers we intend to implement a process for identifying and allocating customers to this tariff, which we will discuss with the Pricing Working Group.

We acknowledge these eligibility criteria could be improved to better target customers most affected by our proposed price rebalancing. Therefore, we propose that the eligibility criteria for this discount/rebate is determined in consultation with the CCC and stakeholders as part of the collaborative work program. We propose that any changes are addressed in the annual pricing proposal process and so approved by the AER before implementation.

We present indicative prices for our transitional safeguard pricing in the following table.

Table 1.7 - Indicative residential transitional safeguard NUOS pricing ($, nominal)

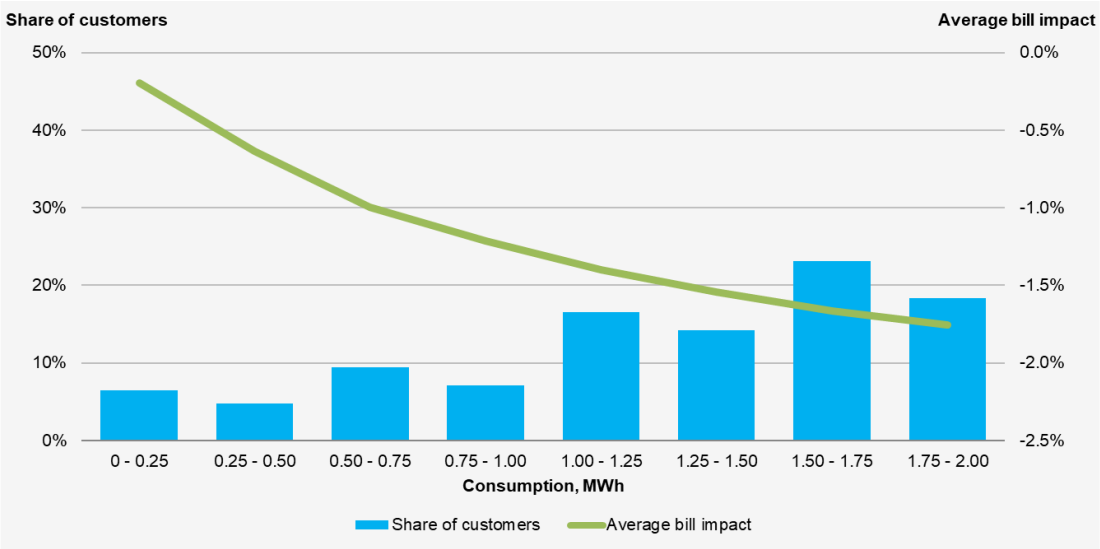
Charging Parameter[7]	2019/20	2020/21	2021/22	2022/23	2023/24
Fixed daily charge ($p.a.)	136.38	140.17	143.28	146.86	150.53
First block charge (c/kWh)	10.09	10.36	10.49	10.67	10.77
Second block charge (c/kWh)	9.99	10.45	10.75	11.13	11.42
Third block charge (c/kWh)	10.03	10.49	10.80	11.19	11.48

Note: Excludes GST, prices have been rounded.

[7] The block one price applies to the first 500 kWh of consumption per 91 days, the block two price applies to consumption greater than 500 kWh and less than 2,000 kWh per 91 days; and the block three price applies to all consumption above block 2.

We illustrate below that a vast majority of customers eligible for transitional safeguard pricing will receive a network bill reduction in 2019/20. Network bills will be relatively stable thereafter. Note that the bill impact for these customers in 2019/20 is identical to those on the transitional low energy pricing, although they differ over the rest of the regulatory period differ.

Figure 1.4 Residential transitional safeguard NUOS bill impact (%) in 2019/20



1.6 Feedback

Ausgrid's welcomes feedback from our customers and stakeholders and is pleased to invite feedback on our TSS to:

pricing@ausgrid.com.au; or

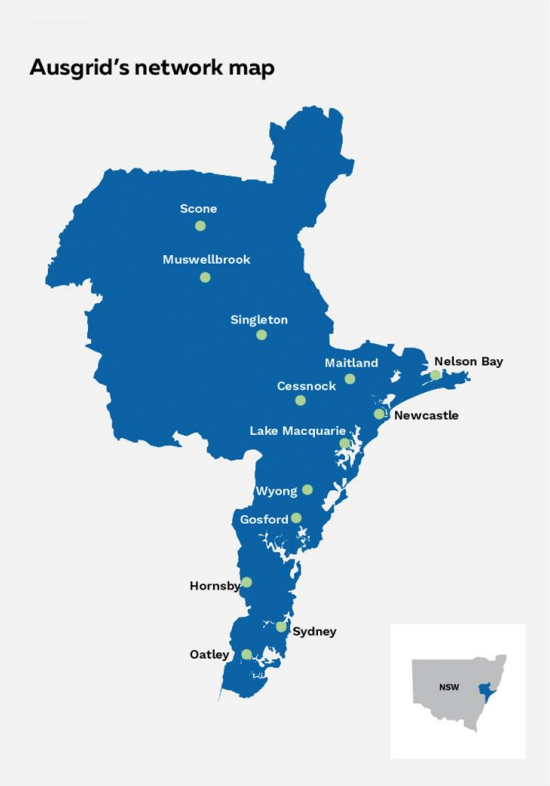
Head of Regulation
GPO Box 4009
Sydney NSW 2001.

Alternatively, customers may also like to make comments via Ausgrid's Facebook page at www.facebook.com/Ausgrid or via twitter.com/Ausgrid.

2 Introduction

2.1 Our electricity distribution network

Ausgrid is a key element of the electricity supply chain that delivers electricity to customers' premises. We're often called "the poles and wires". Once power is generated, it is transported as high-voltage electricity over long distances by TransGrid.



Customers
1.7 million

Area
22,275 km²

Number of power poles
500,000

Length of powerlines and underground cables
50,000 kms

Large electricity substations
230

Small distribution substations
30,000

Employees
3,600

Our network then transforms it into lower voltage electricity at sub-transmission and zone substations. This electricity is again transformed at local distribution substations, so it can be supplied to customers' premises. We manage more than 230 zone substations, 30,000 distribution substations, 50,000 kilometers of power lines and 500,000 power poles. These assets, along with our depots and other properties, are known as our regulated asset base and are worth approximately $15.7 billion.

The 1.7 million customers connected to the Ausgrid network have a diverse set of needs and preferences. Our customers range from small residential households consuming about 5 megawatt hours (MWh) per year, through to large industrial customers consuming more than 40 gigawatt hours (GWh) per year.

Residential customers make up 89% of our customers, but businesses account for 66% of energy consumption.

2.2 Regulatory and legal requirement for a TSS

On 1 December 2014, the Rules were amended to include new distribution network pricing arrangements, which included:

- new pricing objectives and principles mandating the use of cost-reflective tariffs;
- more transparency about how distributors develop network tariffs;
- greater consultation with consumers and retailers; and
- a new process with network tariffs determined as part of the five-year periodic revenue reset process.

Ausgrid is required under Section 6.8.2 of the Rules to submit a TSS to the AER. This document provides stakeholders with a comprehensive understanding of our proposed pricing strategy and an indication of how the structure and level of prices may change over the regulatory control period.

This document, along with the accompanying appendices, is Ausgrid's TSS.

2.3 Passing on recent cost efficiencies to customers

The AER regulates the services Ausgrid provides and sets the maximum revenue that Ausgrid can derive in each year of a regulatory control period. This amount is set at a level that is deemed, by the regulator, to equal the cost of providing an efficient service to meet customers demand.

It is worth noting that, since 2013 we have cut our operating cost base by 19%. Further, our opex proposal embeds a saving of a $100 million per year in real terms ($ 2018/19) that we have achieved from transforming our business. This saving is equivalent to approximately $76 per customer, per year.

Our cost cutting contributed to the average network cost as a proportion of electricity bills – falling from 53% in 2011/12 to 38% in 2017/18. Since 2014/15 network charges for a typical residential customer fell by 16%.

Because of the cost efficiencies we have achieved to date and the further efficiencies we propose to achieve over the 2019-24 period, if the AER approves our proposal we will deliver to customers a 5.7% decrease in the Ausgrid component of network bills to customers in 2019/20, and our costs will be stable for the remainder of the period. However, customers will experience smaller reductions in the network bill which, in addition to recovering Ausgrid's network bill, must also recover the costs of TransGrid's transmission use of system (TUOS) service charge as well as the New South Wales Climate Change Fund (CCF).

While Ausgrid has control over its segment of the customer network bill, the other components of the network bill are not forecast to have similar cost reductions. Further, customers' actual reduction in network bills will vary depending on their own actual consumption levels and characteristics.

Table 2.1 – Assumed annual total network revenue - next regulatory control period

Revenue component		Next regulatory control period ($m)				
	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Ausgrid distribution	1,493.3	1,516.6	1,554.5	1,593.4	1,633.2	1,674.1
Ausgrid transmission	262.3	180.1	184.6	189.2	193.9	198.8
Other transmission	249.1	255.1	261.1	267.4	273.8	280.3
CCF	99.9	132.9	133.9	134.1	134.1	134.1
Total	**2,104.60**	**2,084.7**	**2,134.2**	**2,184.1**	**2,235.1**	**2,287.3**

Table 2.1 shows that in 2019/20 Ausgrid's distribution and transmission revenues are expected to fall by 5.7% in real terms (assuming a 2.5% inflation rate). However, this is offset by a 8.5% real increase in forecast non-Ausgrid revenues which results in a net fall in total real network revenue of 3.4%.

2.4 Our costs are just one component of a customers electricity bill

It is important to remember that electricity network costs are just one component of our customer's retail electricity bill and, further, we control only a portion of network costs. The remainder is made up of contributions to the CCF and TransGrid's transmission costs.

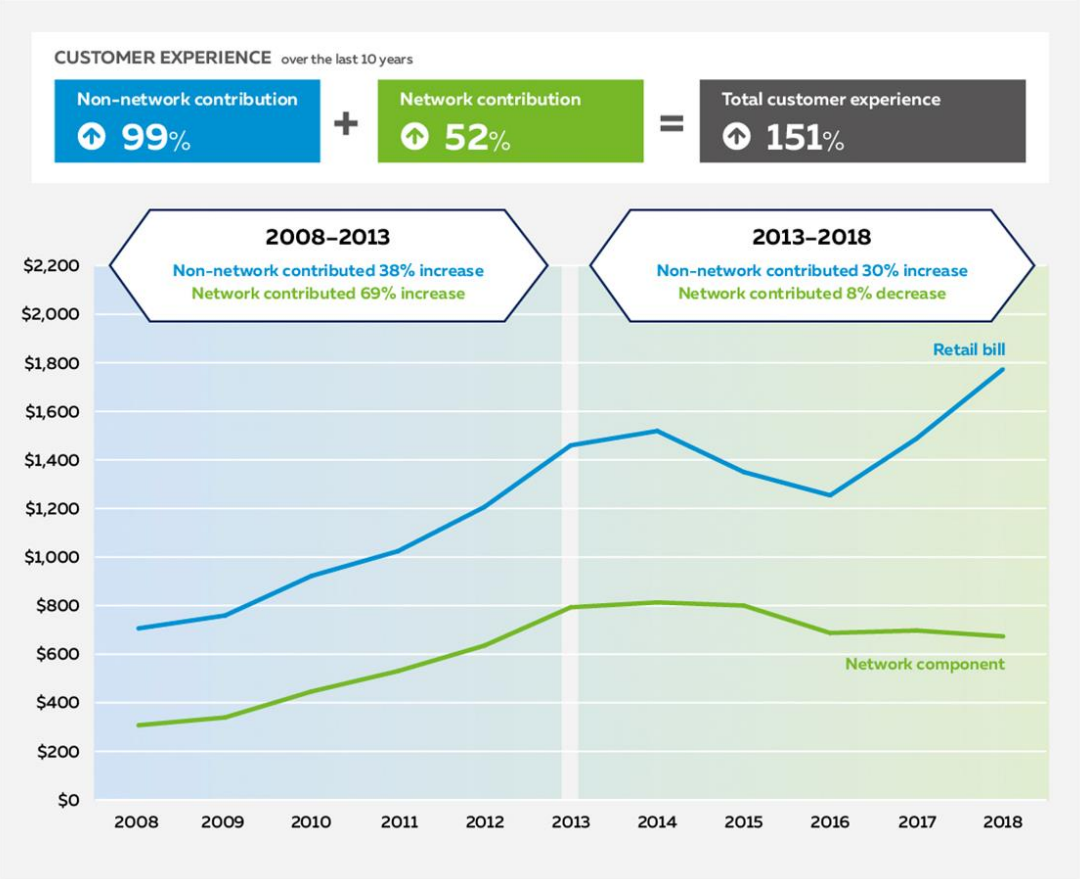
By way of example, for a typical retail electricity customer in 2017/18:

- 62% of their electricity bill was the retail component, which includes wholesale energy charges, green scheme costs and a retailer margin; and

- only 38% of their electricity bill comprised network costs (and Ausgrid's costs are approximately 81% of network costs).

Relevantly, since 2013 the retail component of a customer's bill has increased by 30%, as illustrated in the following figure.

Figure 2.1 – Comparison of retail bill and network bill 2007/08 – 2017/18 ($, nominal)



Source: Ausgrid analysis, based on regulated or standing offer retail prices. Non-network contribution includes electricity generation, green schemes and retailer margin.

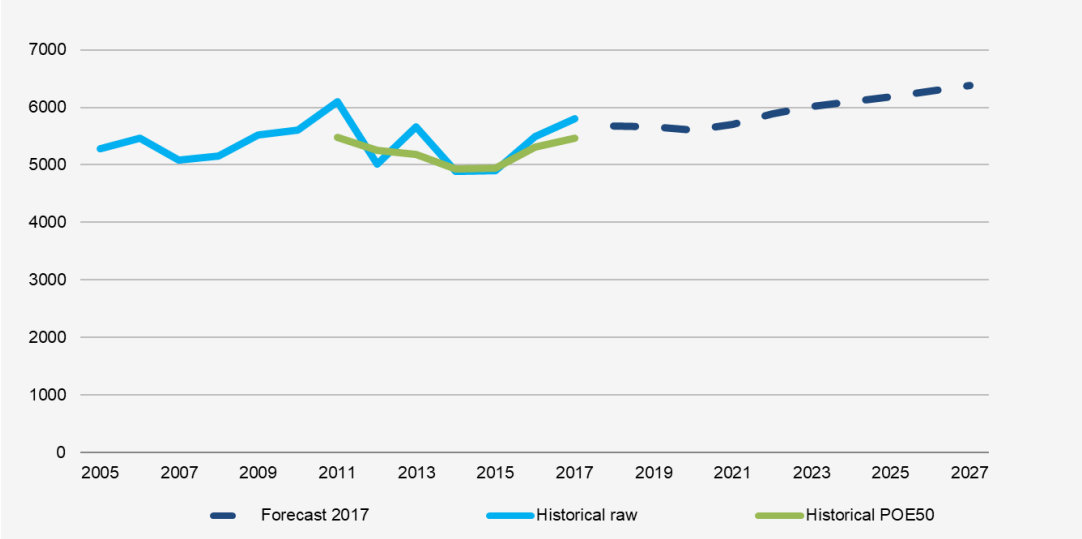
2.5 Broad trends in the use of our network

Peak demand is the principal driver of our network costs. Unprecedented annual take up of air conditioning appliances during the 2000's contributed to increases in peak demand. However, more recently, air conditioning penetration appears to have stabilised at around two thirds of all households in NSW and the average electrical efficiency of air conditioning appliances is substantially better than a decade ago due to Commonwealth Government initiatives including the Mandatory Efficiency Performance Standards (MEPS).

In the upcoming regulatory period, emerging technologies and major connections will play an important part in shaping peak demand. Major connections from road and rail construction projects are expected, as are a growth in income and customer numbers. This is expected to result in an upturn in peak demand in summer which will to a degree be offset by the energy efficiency measures and the uptake of solar PV and batteries. We expect that over the 2019-24 period maximum (peak) demand will increase by 1.5% per year.

The following figure shows the historical and forecast trends in annual system-wide peak demand in Ausgrid's network on a weather corrected basis.

Figure 2.2 – Historical and forecast trends – Ausgrid's system-wide peak demand



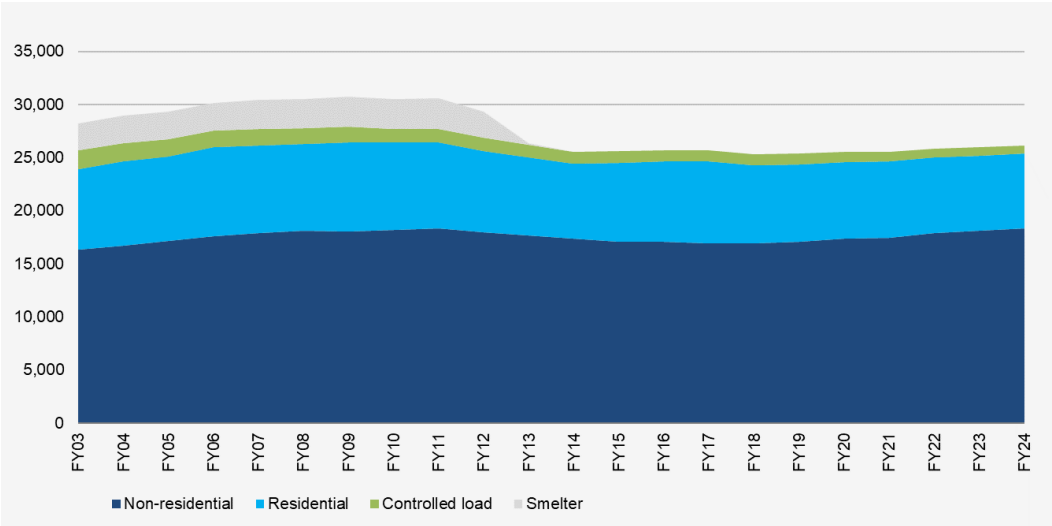
It is demand that drives our network costs, rather than the level of energy that flows through our network. It is for this reason that we are proposing to rebalance our prices away from less cost reflective energy charges, as explained in section 7.2.

Nevertheless, since we currently recover a large share of our revenue from energy charges it is helpful to provide some context on recent and expected future trends in energy flows on our network.

The energy that flows through our network decreased substantially between 2010/11 and 2013/14, driven by the decommissioning of an aluminium smelter in Ausgrid's network area (which was one of our largest industrial consumers), as well as the increased uptake of solar PV and successful energy efficiency measures. The level of energy flowing through our network has since stabilised, despite increasing population growth, increases in income, energy efficiency measures and investments in DER.

The energy flowing through our network in the future is expected to grow modestly, in line with growth in population in the next regulatory period. This will be offset by increasing solar PV penetration, the impacts of the NSW Energy Savings Scheme and ongoing building shell and electrical appliance efficiency improvements. We note that the contribution from electrical vehicles in the next regulatory period is expected to be limited, while major construction projects, mostly road and rail, will be online from 2017/18 onwards, increasing the non-residential demand considerably.

Figure 2.3 – Historical and forecast energy consumption



Source: Ausgrid Volume Forecast February 2018

2.6 Demand management and the interaction with network pricing

Over the last 15 years, Ausgrid has developed a suite of demand management, or non-network, solutions to complement network pricing in managing customer demand and maintaining supply reliability, at least cost. The demand management solutions currently available include the use of embedded generation, customer power factor correction, dynamic peak rebate offers and direct load control of customer appliances, e.g., hot water systems, pool pumps and air conditioners.

The load control of air conditioners in particular offers significant opportunities for reducing network costs since air conditioning load is a significant driver of peak demand. Ausgrid's CoolSaver air conditioner demand response trial[8] has both proven the viability of the demand response technology introduced as part of Australian Standard AS4755, and the willingness of customers to reduce their demand when faced with a modest incentive to do so. Further, changes in technology (e.g., energy storage, smart meters and energy management systems), are expected to increase the number of viable, cost effective solutions available to Ausgrid.

Ausgrid's demand management solutions are necessarily supported by network pricing structures, which encourage customers to make efficient decisions on how they use the network and provide a foundation upon which demand management programs can be introduced. Instances in which network pricing and demand management complement each other include the following, ie:

- **Controlled load pricing**, in conjunction with load control equipment, can be used to shift appliance usage from peak periods to off-peak periods. Ausgrid has around 500,000 customers on controlled load tariffs, which contributes to an overall system peak demand reduction of 300MW in winter and 100MW in summer. These tariffs offer the potential for modifications in scheduling where specific local needs are identified.

- **Time of use Capacity pricing** are mandatory for all medium to large business customers (>40 MWh p.a.), and account for approximately half of the electricity consumption from all Ausgrid customers. Importantly, these capacity charges provide a price signal to encourage customer investment in power factor correction, one of the lowest cost demand management solutions that can be implemented, and the availability of interval data supports the use of a dynamic peak rebate offer to customers.

- **Time-of-use tariffs** – Ausgrid first introduced TOU pricing over ten years ago and currently have over 440,000 customers (or 26% of our 1.7 million customers) on a TOU or TOU capacity tariff. Although the lack of remote communications from Type 5 metering has hampered the introduction of more innovative tariff options to certain customer segments, the penetration of smart-meters in the coming years is expected to offer significant opportunities for demand management. Rebate offers like the dynamic peak rebate, or air conditioner load control may be among the solutions that contribute to deferring network investment. The level of customers with interval or better metering is expected to increase to approximately 950,000 in 2024.

[8] *CoolSaver* is an initiate in which Ausgrid installs a signal receiver in a customer's air conditioner that allows Ausgrid to remotely activate the air conditioner's in-built power saving modes. Customers receive an upfront and ongoing reward for joining CoolSaver, The program began in summer 2013/14, and is being promoted in selected suburbs in the Central Coast, Lake Macquarie and Maitland parts of our network. The program is ongoing and further details can be found on our website including an interim report available on our website here.

2.7 Structure of our proposed TSS

The remainder of our TSS is structured as follows:

- in section 3 we present our proposed tariff classes;
- in section 4 we explain how we propose to assign customers to tariff classes and network tariffs;
- in section 5 we expand on the transition to cost reflective pricing and how we estimated long run marginal cost;
- in section 6 we summarise feedback from our customer engagement process;
- in section 7 we explain our proposed pricing reforms;
- in section 8 we present our indicative prices for the 2019-24 period;
- in section 9 we show that our proposed indicative prices give rise to no unacceptable network bill impacts for our customers;
- in section 10 we demonstrate that our prices give rise to no economic cross-subsidies between tariff classes, as required by the Rules;
- in section 11 we present a compliance checklist to assist the AER in evaluating our proposed TSS;
- in section 12 we provide a more detailed explanation of our proposed network tariffs; and
- in section 13 we include a glossary to assist interested parties in reading our proposed TSS.

We also include the following attachments:

- Technical Attachment 1: Residual Cost Recovery;
- Technical Attachment 2: HoustonKemp report on price elasticity of demand; and
- Technical Attachment 3: Deloitte study on Long Run Marginal Cost.

3 Proposed tariff classes

The Rules require us to group customers for direct control services into tariff classes, which represent a group of customers who are subject to a particular tariff or range of tariffs.[9] They also require us to define each tariff class having regard to the need to group retail customers together on an economically efficient basis to the extent it is desirable to do so, given the need to avoid unnecessary transaction costs.[10]

In essence, the purpose of tariff classes under the Rules arises from their role in:

- implementing price limits – there are restrictions on DUOS price increases at the tariff class level, and so the degree of flexibility afforded to a DNSP to re-balance DUOS tariffs is to some extent determined by the number of tariff classes; and
- avoiding economic subsidies – the revenue expected to be recovered from each tariff class must lie on, or between, the stand alone and avoidable cost of providing the relevant services.

That said, the diminished importance of the concept of tariff class under the recently amended distribution pricing principles, is highlighted by the comments made by AEMC in their Rule Determination:

> *"[However] it is unclear that there are efficiency benefits in having a larger number of tariff classes. A single tariff class can contain several tariffs... Each of those different tariffs can send customised network cost signals to different customers even if all of those consumers are in the same tariff class. Accordingly, rather than focusing on how tariff classes are determined, it is more important that DNSPs develop tariffs that are cost reflective and assign consumers to a tariff that sends the right pricing signals about the network costs caused by their usage."*[11]

3.1 Proposed tariff classes

We propose not to change the way we group retail customers into tariff classes in the next regulatory control period. Therefore, we propose to continue to group together retail customers that impose similar costs on the network, consistent with the approved tariff classes in our first TSS.[12] In accordance with the Rules, our proposed tariff classes promote efficient outcomes without imposing unnecessary transaction costs on Ausgrid, retailers or retail customers.

We present our five tariff classes in the following table, along with the tariffs for each tariff class.

[9] Chapter 10 and clause 6.18.1A(a)(1) of the Rules.
[10] Clause 6.18.3(d) of the Rules.
[11] AEMC 2014, Rule Determination, National Electricity Amendment (Distribution Pricing Arrangements) Rule 2014, Rule Proponents, COAG Energy Council, Independent Pricing and Regulatory Tribunal, 27 November, pages 181-182.
[12] NERA 2014, Economic Concepts for Pricing Electricity Network Services, A report for the Australian Energy Market Commission, 21 July, page 10.

Table 3.1 – Ausgrid's tariff class descriptions

Tariff Class	Definition	Default Primary Network Tariffs	Other Network Tariffs
Low Voltage	Applicable to separately metered low voltage (400V or 230V) connections, as measured at the metering point.	EA001 – LV <2 MWh EA025 – Residential TOU 2-15 MWh EA225 – Small business TOU 2-15 MWh EA211 – Residential TOU 15–40 MWh EA212 – Small business TOU 15–40 MWh EA302 – LV 40-160 MWh EA309 – LV >160 MWh	EA002 – Safeguard <2 MWh EA010 – Residential non-TOU *-closed* EA011 – Residential transitional TOU EA023 – LV residential TOU demand EA030 – Controlled load 1 EA040 – Controlled load 2 EA050 – Small business non TOU - *closed* EA051 – Small business transitional TOU EA325 – LV connection (standby) *closed* EA316 – Transitional 40-160 MWh EA317 – Transitional >160 MWh
High Voltage	Applicable to any connection at high voltage (11kV) level, as measured at the metering point.	EA370 – HV Connection (system) EA380 – HV Connection (substation)	EA360 – HV Connection (standby) - *closed* Individually calculated tariffs
Sub-transmission	Applicable to any connection at a sub-transmission voltage (132/66/33kV), as measured at the metering point.	EA390 – STV connection (system) EA391 – STV (substation)	Individually calculated tariffs
Unmetered	Applicable to any LV connection that is defined as an unmetered supply by Ausgrid in consultation with AEMO as per clause S7.2.3 (Item 5) of the Rules.	EA401 – Public lighting EA402 – Constant unmetered EA403 – EnergyLight	
Transmission	Applicable to any site that is connected to the electricity transmission network.	EA501 –Transmission tariff	Individually calculated tariffs

4 How we assign customers to tariff classes and tariffs

In this section we explain our proposed approach to assigning customers to tariff classes and to the tariffs that comprise each tariff class. We present a description of each of our proposed tariffs in section 12 of this document.

The box below contains some helpful definitions to assist customers in understanding our proposed procedures.

The definition of a residential customer

For the purpose of the network tariff assignment and re-assignment process set out in this TSS, a 'residential customer' is defined to be a customer that uses their connection to the low-voltage level of Ausgrid's network to supply electricity for domestic purposes, except where this purpose predominantly relates to a commercial activity, ie:

- a domestic purpose is defined as general household activities, such as watching television, personal computer usage, refrigeration, washing; and
- a commercial activity is defined as the use of their network for commercial financial gain, such as where the customer is a caravan park operator.

It should be noted that Ausgrid proposes to introduce on 1 July 2019 new network tariffs (residential and business) for LV-connected customers using between 15 MWh p.a. and 40 MWh p.a. Ausgrid proposes to apply this tariff to both residential and small business customers that satisfy this extent of usage criteria.

The definition of a small business customer

A 'small business customer' is defined as a customer connected to Ausgrid's low voltage electricity distribution network that does not satisfy the residential customer definition.

The definition of new and existing customers

For the purpose of the network tariff assignment and re-assignment process set out in this TSS, a 'new customer' is defined as a newly energised connection, i.e., a connection that is energised on or after 1 July 2019.

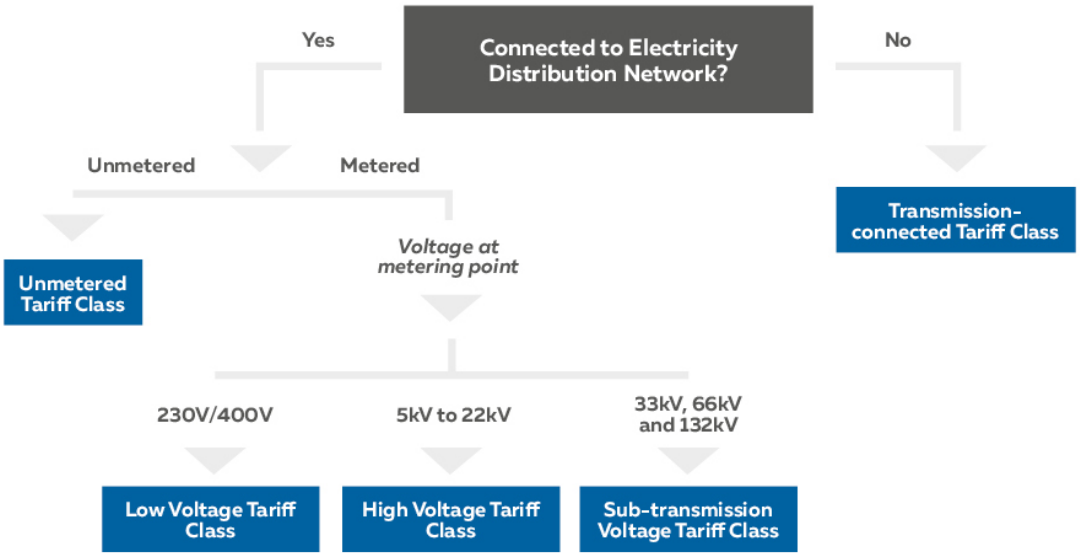
An 'existing customer' is defined to be a customer that exists at the time that Ausgrid undertakes the annual review and assessment for the 2019/20 pricing proposal.

4.1 Assigning customers to a tariff class

We are not proposing to make any changes to our existing approach to assigning customers to tariff classes, as previously approved by the AER. This is because our existing approach is consistent with the principles set out in the Rules.

We illustrate our proposed approach for assigning customers to a tariff class in Figure 4.1.

Figure 4.1 – Overview of proposed NUOS tariff class assignment procedure



We also propose to make minimal changes to our procedure for assigning customers within their applicable tariff class to an appropriate network tariff, mainly reflecting the need to take account of the proposed introduction of new default tariffs in the next regulatory control period and any changes that we propose to the tariffs that are available to customers on an opt-in basis.

Ausgrid's procedure for assigning new retail customers to a default NUOS tariff and for reassigning existing retail customers to another NUOS tariff is summarised below.

4.2 How we propose to assign customers to a tariff

We propose to assign retail customers to a tariff according to the nature of their connection, extent of their usage and metering type, consistent with the requirements of the Rules. We will continue to consider the customer bill impacts of assigning or reassigning customers to tariffs and depart from our proposed procedure to avoid unacceptable customer bill impacts from year to year, consistent with the customer impact principle in the Rules.

4.2.1 Our proposed approch for new retail customers

We propose to assign new retail customers (newly energised connections) to the most efficient tariff in the applicable tariff class according to a range of factors:

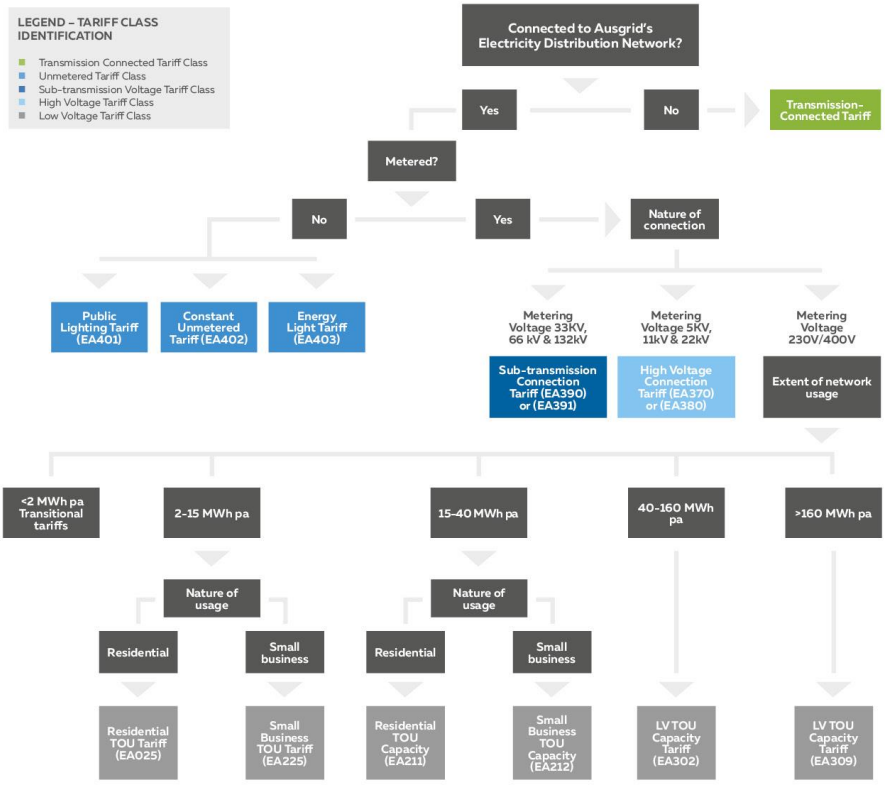
- the voltage level of supply as measured at the metering point;
- the type of metering installed, e.g. unmetered or metered;
- the nature of the network usage, e.g. residential or business; and/or
- the connection to Ausgrid's electricity network, e.g. distribution or transmission connected.

We propose that from 1 July 2019, new retail customers and small business customers are assigned to the applicable TOU tariff, but that these customers are no longer permitted to opt-out to the less cost reflective transitional tariff. This will increase the number of customers assigned to more cost reflective tariffs. Further, the transitional TOU tariffs will move to cost reflective levels and so the relevance of being able to opt-out of the cost reflective TOU tariff will rapidly diminish over the regulatory control period.

The only other changes to our proposed approach to assigning new customers to tariffs relates to the introduction of new default network tariffs, opt-in network tariffs and changes in tariff eligibility criteria.

We present an overview of our proposed approach to assigning retail customers to default tariffs in Figure 4.2.

Figure 4.2 – Overview of Ausgrid's default NUOS tariff assignment procedure



4.2.2 Our proposed approach for existing retail customers

In some cases, our annual review and assessment of network tariffs (undertaken as part of the annual pricing proposal) identifies that an existing retail customer is no longer eligible to remain assigned to their existing tariff, for example, because:

- they have changed their voltage level of supply as measured at the metering point to the extent that they are no longer eligible to remain assigned to their existing tariff class;[13]
- they are assigned to the correct tariff class, but have changed their usage of Ausgrid's electricity network to the extent that they are no longer eligible to remain assigned to their existing network tariff;[14] or
- they have changed from a basic accumulation meter to an interval (or better) meter and so are no longer eligible to remain assigned to a non-TOU network tariff.

In these circumstances, we propose to continue to re-assign these customers to the applicable tariff on the basis of the nature of their usage (residential or business), type of meter and/or the extent of their network usage.

Further, we propose to make the following reassignments for existing customers from 1 July 2019:

[13] In circumstances where Ausgrid's annual review and assessment identifies an existing retail customer that is no longer eligible to remain assigned to their existing tariff class, Ausgrid will re-assign the customer to another tariff class consistent with the procedure set out in Attachment 14 of the AER Final Decision.

[14] Customers connected to our electricity distribution network with historical network usage of more than 10 MW or 40 GWh p.a. are permitted to apply to be assigned to an individually calculated site-specific tariff.

- all existing residential and small business customers with historical annual electricity consumption less than 2 MWh p.a.[15] will be reassigned to the new transitional < 2 MWh p.a. tariff or the new transitional safeguard <2MWh p.a. tariff (as discussed in section 7.3);
- existing customers with historical annual electricity consumption between 15 MWh p.a. and 40 MWh p.a. and an interval meter (or better) will be assigned to new TOU capacity tariffs:
    - LV Residential TOU capacity 15-40 MWh p.a. tariff (EA211) for residential customers; and
    - LV Small Business TOU capacity 15-40 MWh p.a. tariff (EA212) for small business customers.

We present a summary of our proposed tariff reassignment procedure for existing customers at the end of this section. However, we first expand on a few particular scenarios below.

4.2.2.1 Existing customer with a basic accumulation meter

At present, an existing residential or small business customer with a basic accumulation meter have been assigned to an applicable non-TOU tariff given the nature of their usage (residential or business).

If these customers have historical annual electricity consumption less than 2 MWh p.a., we propose to re-assign them to the new transitional < 2 MWh p.a. tariff (EA001) or the new transitional safeguard <2MWh p.a. tariff (EA002) from 1 July 2019 (as discussed in section 7.3).

For the avoidance of doubt, we note that existing customers on non-TOU tariffs that had an interval (or better) meter were assigned to a transitional TOU tariff from 1 July 2018, consistent with our first approved TSS.

4.2.2.2 Existing customer with a basic accumulation meter that changes to an interval (or better) meter

If an existing customer consuming more than 2 MWh p.a. with a basic accumulation meter changes their meter to an interval (or better) meter after 1 July 2019, Ausgrid proposes to re-assign this customer from their existing network tariff to a new network tariff as follows:

- a customer using between 2 MWh p.a. and 15 MWh p.a. will be re-assigned to an applicable cost reflective TOU tariff given the nature of their usage, and are permitted to voluntarily opt-out of this tariff to an applicable transitional TOU tariff given the nature of their usage;
- a customer with historical annual electricity consumption between 15 MWh p.a. and 40 MWh p.a. will be assigned to new TOU capacity tariffs, ie:
    - LV Residential TOU capacity 15-40 MWh p.a. tariff for residential customers; and
    - LV Small Business TOU capacity 15-40 MWh p.a. tariff for small business customers;
- a customer using between 40 MWh p.a. and 160 MWh p.a. will be re-assigned to (EA316) Transitional 40-160 MWh p.a. Tariff. These customers will be allowed to voluntarily opt-out of this tariff to the cost reflective EA302 LV TOU capacity tariff.

Customers re-assigned to the cost reflective tariff option will be allowed to opt-out of this tariff to an applicable transitional tariff. We believe that this approach will mitigate any potential adverse bill impacts arising from our proposed tariff reassignment procedure, while providing opportunities for customers to understand their energy use patterns.

[15] To avoid re-assigning customers that consume less than 2 MWh p.a. due to temporary factors, Ausgrid proposes to make this assessment on the basis of a two complete financial years of historical energy consumption.

4.2.2.3 Existing customer with an interval (or better) meter on a TOU tariff or a TOU Capacity tariff

Existing customers with an interval (or better) meter that are on a TOU tariff or a TOU capacity tariff from 1 July 2019 will be treated as follows:

- if they have been identified as having annual electricity consumption of less than 2 MWh p.a., Ausgrid proposes to re-assign these customers to the new transitional < 2 MWh p.a. tariffs (as discussed in section 7.3);
- if they have been identified as having annual electricity consumption of between 15 MWh p.a. to 40 MWh p.a., Ausgrid proposes to re-assign these customers to:
    - LV Residential TOU capacity 15-40 MWh p.a. tariff (EA211) for residential customers; and
    - LV Small Business TOU capacity 15-40 MWh p.a. tariff (EA212) for small business customers;
- if they have been identified as having annual electricity consumption of between 40 MWh p.a. to 160 MWh p.a. and have an interval meter, Ausgrid proposes to re-assign these customers to the (EA316) Transitional 40-160 MWh tariff; and
- if they have been identified as having annual electricity consumption of between 160 MWh p.a. to 750 MWh p.a. they will be reassigned to a new TOU capacity tariff EA309 (which replaces the former EA305 and EA310 tariffs), unless there are unacceptable bill impacts, in which case they will be assigned to the Transitional >160 MWh tariff (EA317).

The remaining customers with an interval meter will remain assigned to their existing TOU tariff or TOU capacity tariff, unless they change their voltage level of supply such that they are no longer eligible to remain assigned to their existing tariff class or, in some circumstances if they change their usage of the network such that they are no longer eligible to remain assigned to their existing tariff.

4.2.2.4 Summary

The following table describes the network tariff assignment and reassignment for customers assigned to the low voltage tariff class should their individual circumstance change – say due to upgrading their meter – they can determine the tariff that will apply to them from 1 July 2019, and the options available to them, by identifying the scenario (or row) with the ‘customer type’/’meter type’/’existing tariff’ combination that reflects their particular circumstances.

Table 4.1 – Tariff reassignments for existing low voltage customers from 1 July 2019 – Select appropriate scenario to identify tariff

Scenario	Historical annual consumption	Meter type	Existing tariff in 2018/19	Proposed tariff from 1 July 2019	Description	Available options
A	Less than 2 MWh p.a.	Basic Meter	Non-TOU tariff	Transitional < 2 MWh p.a. tariff	Fixed daily charge and an Inclining block usage charge. The first step is 2 MWh p.a. and the second step is 8 MWh p.a.	If they meet the eligibility criteria, these customers can opt-in to the transitional safeguard < 2 MWh p.a. tariff. Or These customers can opt-in to an applicable cost reflective TOU tariff given the nature of their usage. May require a meter upgrade.
		Interval or better	Cost reflective TOU or Transitional TOU tariff			
B	2 MWh p.a. to 15 MWh p.a.	Basic Meter	Non-TOU tariff	No change	Fixed daily charge and an Inclining block usage charge. The first step is 4 MWh p.a. and the second step is 8 MWh p.a.	These customers can opt-in to an applicable cost reflective TOU tariff given the nature of their usage. Requires a meter upgrade.
		Interval or better	Cost reflective TOU or Transitional TOU tariff	No change	Fixed daily charge and a price for energy consumption in the seasonal peak, shoulder and off-peak period	N/A
C	15 MWh p.a. to 40 MWh p.a.	Basic Meter	Non-TOU tariff	No change	Fixed daily charge and an Inclining block usage charge. The first step is 4 MWh p.a. and the second step is 8 MWh p.a.	These customers can opt-in to an applicable cost reflective TOU capacity tariff given the nature of their usage. Requires a meter upgrade.
		Interval or better	Cost reflective TOU or Transitional TOU	LV TOU Capacity 15-40 MWh tariff	Fixed daily charge and a price for energy consumption in the seasonal peak, shoulder and off-period and a KW capacity charge.	N/A
D	40 MWh p.a. to 160 MWh p.a.	Interval or better	Cost reflective TOU or Transitional TOU or Cost reflective TOU capacity	LV TOU Capacity 40-160 MWh tariff	Fixed daily charge and a price for energy consumption in the seasonal peak, shoulder and off-peak period and a KW capacity charge.	These customers can opt-in to an applicable cost reflective LV TOU capacity tariff given the extent of their network usage.
E	Greater than 160 MWh p.a.	Interval or better	Cost reflective TOU or Transitional TOU or Cost reflective TOU capacity	LV TOU Capacity >160 MWh Tariff	Fixed daily charge and a price for energy consumption in the seasonal peak, shoulder and off-peak period and a KVA capacity charge.	These customers can opt-in to an applicable cost reflective LV TOU capacity tariff given the extent of their network usage.

Source: Ausgrid 2018

Existing customers (and new) customers in the high voltage or sub-transmission tariff classes will continue to have an interval (or better) meter and so will be assigned to a default TOU capacity tariff in accordance with our proposed tariff assignment procedure, as set out in the figure above. A default TOU capacity tariff comprises a fixed daily charge, a TOU usage charge and a capacity charge, where the price for the capacity charge is applied to the highest maximum demand in the peak period over the previous 12 months. Further, these customers may voluntarily opt-in to a more cost reflective individually calculated site-specific (locational) tariff or, in some circumstances, a sub-station connected tariff.

Finally, if they are found to satisfy the eligibility criteria, Ausgrid will re-assign customers connected to our electricity transmission network to an individually calculated site-specific network tariff as part of Ausgrid's annual pricing process.

4.2.3 Re-assigning existing retail customer to another NUOS tariff as a result of a tariff change application

We are required by clause 6B.A3.2(a) of Chapter 6B of the Rules to review the NUOS tariff that a retail customer is assigned to in response to a request from a retailer in the following circumstances:

- if a shared customer[16] informs the retailer of a change in use of electricity consumption at the customer's premises as a result of which the retailer reasonably considers that the existing tariff applying to the customer should no longer apply; or
- for any other reason, but not more than once in any 12-month period in respect to the same premise.

We propose to satisfy this obligation in the following manner:

- maintain a document on our website that sets out the criteria applying to each published NUOS tariff – this will ensure that a retailer is sufficiently informed to accurately assess whether the retail customer is eligible to apply to be re-assigned to another NUOS tariff; and
- maintain on our website a tariff change application form and explanation of the process that Ausgrid follows to assess these applications (including dispute resolution procedure).

[16] Defined as a person who is a customer of the retailer and whose premises are connected to the distributor's distribution system.

5 Our transition to efficient pricing

Broadly, the framework established by the Rules necessitates the development of a theoretically efficient tariff, and then, an assessment of whether there exists a need to transition to those 'efficient' tariffs over a period of one or more regulatory control periods.

Specifically, the Rules require Ausgrid to consider the impact on retail customers of changes in tariffs from one year to the next, and permits it to vary tariffs from the theoretically efficient levels having regard to:

- the desirability for tariffs to comply with the pricing principles, albeit after a reasonable period of transition (which may extend over more than one regulatory control period);
- the extent to which retail customers can choose the tariff to which they are assigned; and
- the extent to which retail customers are able to mitigate the impact of changes in tariffs through their usage decisions.

In this regard, the AEMC explained that:[17]

> *"DNSPs must manage the impact of annual changes in network prices on consumers, eg by transitioning consumers to new network prices over one or more regulatory periods."*

In light of this framework, it is helpful as a first step in our pricing process to consider the efficient reference tariff that would be implemented if there were no constraints on customer bill impacts etc. This efficient reference point then assists in informing our transition path and speed, subject to avoiding unacceptable customer bill impacts.

5.1 Theoretically efficient pricing

Future network costs that could be avoided are driven by further use of our network at particular times and in particular locations. From a purely theoretical perspective, the efficient reference tariff would therefore involve a location-specific charge that signals our future network costs and that applies only at those times when the network is constrained. In other words, it would be dynamic and localised.

Since this charge would apply only at those times when the network approaches a constraint, it could be either a demand charge or an energy charge. This is because the distinction between the price signal arising from a demand charge versus a time of use energy charge diminishes as the period over which it is signalled shortens.

Since the level of future avoidable costs would be low when the network is not approaching a constraint, the efficient price signal at other times and/or in other locations would be very low.

From a purely theoretical perspective, minimising distortions to the efficient customer decisions elicited by the above mentioned efficient price signals would involve recovering residual costs from fixed daily charges or capacity charges based on the size of a customer's connection. The efficiency properties of these charges draw from their lack of variability and the consequent minimal effect on customer behaviour, which we explain in more detail in sections 5.2.2 and 7.2.

In summary, the efficient reference tariff would likely involve very high dynamic locational charges to signal future potentially avoidable costs and relatively high fixed daily or capacity charges to recover the historical cost of the network.

Again, we emphasise that this is a hypothetical, theoretically efficient reference tariff that would likely be infeasible to implement in the short term, given the importance of a pricing strategy that reflects customer preferences and avoids unacceptable customer bill impacts, while also reflecting practical constraints such as metering technology.

[17] AEMC 2014, Rule Determination, National Electricity Amendment (Distribution Pricing Arrangements) Rule 2014, Rule Proponents, COAG Energy Council, Independent Pricing and Regulatory Tribunal, 27 November, page x.

5.2 Our transition to more cost reflective pricing

Bearing in mind the impacts on customers arising from the implementation of strictly efficient tariffs, there is a clear need for Ausgrid to transition to efficient tariffs and to achieve this progress in a manner that best promotes the interests of our customers. A number of our stakeholders indicated a preference for understanding the likely duration of Ausgrid's transition to efficient tariffs.

In addressing this request, it is important to note that the efficient pricing outcome is constantly changing and cannot be objectively determined. Our customers' preferences and technology are changing, thereby altering the way our customers use our network, the costs imposed on our network and the most efficient means of providing the services our customers demand. In practical terms, tariff efficiency is an objective that Ausgrid may be constantly working towards, without every achieving in full, since the efficient frontier is itself always moving.

Against this backdrop, even holding constant customer preferences and technology, the likely form and speed of Ausgrid's transition to efficient tariffs is uncertain. There stands before Ausgrid a process of learning how customers respond to changes in the structure and level of tariffs, the results of which will guide the speed and nature of the transition to efficient tariffs. Similarly, customers require time to understand new tariff structures and how tariff reform enables them to take control of their network bills.

That said, we propose to launch a comprehensive research program, to be developed collaboratively with stakeholders, to better define the likely end-point in our transition and the appropriate nature and speed of our transition to that end point. We also propose to include a degree of flexibility in our TSS so as to enable us to fast-track our transition to more cost reflective pricing, subject to the findings of our research plan.

In the meantime, given the emphasis we place on developing a pricing strategy that reflects customer preferences and avoids unacceptable bill impacts, while also having regard to other constraints such as metering technology, it is important to consider the characteristics of the efficient reference point that we should endeavour to reflect in our pricing strategy for the next regulatory control period.

From a more practical perspective, there are two important dimensions to a more cost reflective pricing strategy in the near-term, i.e., how best:

- to signal to customers future network costs that could be avoided; and
- to recover the historical cost of the network in a manner that has as little effect on customer behaviour as possible.

5.2.1 Signalling future avoidable costs to customers

Our extensive engagement with customers illustrated a significant divergence of opinion on whether potentially avoidable future network costs should be signalled to customers using demand or TOU energy charges.

We have signalled future avoidable costs to our customers using a peak energy price signal for a number of years and we currently have approximately 440,000 customers on TOU tariffs, which is expected to more than double to approximately 950,000 customers by 2023/24. We therefore have a deep understanding of how our customers respond to peak energy price signals.

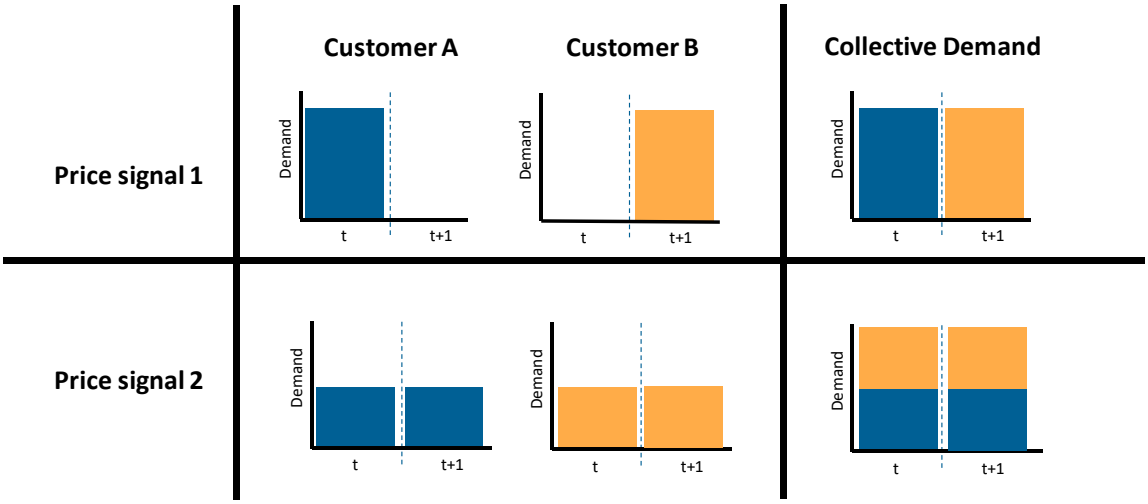
On the other hand, the design and implementation of demand charges in Australia is in its relative infancy and our engagement with customers and stakeholders made clear that there are mixed, conflicting and strongly held views between customers, customer advocates, Ausgrid and pricing experts on:

- the appropriate objective for demand pricing, i.e., whether demand pricing should be used to signal forward looking costs and/or in the recovery of residual costs;
- how best to design a demand tariff to achieve the intended objective, given the myriad of design options; and
- the optimal approach to introducing demand pricing for residential customers.

The effects of the large-scale implementation of demand pricing on network diversity are also uncertain. A demand charge that encourages customers to smooth their peak consumption may be intuitively appealing but, given diversity in the timing of customers' demand, it may be ineffective at reducing peak demand and so avoiding future costs.

By way of example, the illustrative example shown in figure 5.1 highlights that, although price signal two encourages individual customers to smooth their demand, it may be ineffective at reducing their collective demand and so avoiding future network costs.

Figure 5.1 – The relationship between network diversity and demand



Although this is an extremely simplified example, it goes some way to illustrating the complexity involved in designing demand pricing. Indeed, demand pricing encourages customers to smooth their consumption but does not necessarily incentivise them to shift their consumption outside of peak periods. On the other hand, peak energy pricing encourages customers to shift consumption out of the peak period, but provides a relatively weaker incentive to smooth consumption.

The appropriate approach to implementing demand pricing is also critically important to an effective demand pricing strategy. For example, the Victorian DNSPs proposed introduction of demand pricing led to a jurisdictional obligation that significantly, if not indefinitely, delayed the large-scale implementation of demand pricing in Victoria.[18]

Against this backdrop, we acknowledge the potential benefits of demand pricing in the short term but, given present uncertainty as to the optimal design and implementation of demand pricing, our view is that further research is required to sufficiently design the efficient strategy that we should potentially be transitioning towards. We discuss our approach to mitigating this uncertainty and fast-tracking the potential implementation of demand pricing in section 7.

[18] Victoria Government Gazette, No. G 15 Thursday 14 April 2016.

5.2.2 Recovering the historical costs of the network

The Rules require us to recover our residual costs in a manner that minimises distortions to the price signals that encourage efficient decisions by customers.[19]

It is well-accepted in economics that the least distortionary approach to allocating residual costs involves an allocation in inverse proportion to customers' responsiveness to changes in price, or price elasticity. As the '*Pricing Directions: A Stakeholder Perspective'* explain in simple terms:[20]

> *…economic efficiency is enhanced if the remaining revenue [residual costs] are raised through charges that have as little impact on behaviour as possible.*

Our view at present is that the first-best approach to recovering residual costs is by means of the fixed daily charges, which are least likely to affect a customer's behaviour. That said, we acknowledge the potential merits of recovering residual costs through capacity charges. A pure capacity charge would be based on the size of a customer's connection and is substantially equivalent to a fixed daily charge.

Alternatively, a charge could be designed such that it has characteristics similar to a capacity charge, but is more variable, in other words, similar to our existing capacity charges for large customers.

5.3 Our proposed departure from efficient pricing

We explain below the key departures from theoretically efficient pricing implicit in our proposed pricing strategy.

We propose to depart from theoretically efficient tariffs by continuing to adopt postage-stamp pricing, since customers do not support the prospect of locational pricing. Similarly, given present uncertainty, we propose to delay the potential implementation of demand pricing until we have undertaken the requisite research and trials necessary to establish that it is in the long-term interests of our customers, as explained in sections 5.2.1 and 7.1.

Similarly, we propose to gradually recover a smaller proportion of historical costs from variable energy charges. The pace of this transition is determined by our desire to avoid any unacceptable customer bill impacts and allow us time to properly evaluate the respective merits and shortcomings of connection charges (fixed daily charges) and capacity charges. That said, our proposed price rebalancing is compatible with the future recovery of residual costs from either fixed daily or capacity charges.

We also propose to transition our peak prices to efficient long-run marginal cost (LRMC) based price levels through time so as to avoid unacceptable customer bill impacts and smooth changes in LRMC through time.

We explain our approach to estimating LRMC in the following section.

5.4 How we estimated efficient peak price levels based on LRMC

The Rules requires each tariff to be based on the LRMC of providing the relevant service to the retail customers assigned to that tariff.

LRMC is a forward-looking concept and amounts to a measure of the additional cost incurred as a result of a relatively small increase in output, assuming all factors of production are able to be varied. Setting network tariffs by reference to LRMC encourages customers to use our services where the benefit they derive exceeds the cost of providing the relevant services.

Since LRMC is a forward-looking concept concerned with the cost of an incremental increase in output, it does not reflect historical costs associated with the existing network. Therefore, setting prices equal to LRMC, generally, would not allow the recovery of Ausgrid's efficient costs. In other words, if each tariff was set equal to LRMC there would be a residual amount of efficient costs to be recovered.

[19] Clause 6.18.5 (f)-(g) of the Rules.
[20] Attachment 10.14, Pricing Directions: A Stakeholder Perspective, 2018, page 3.

A standard method for estimating LRMC is the average incremental cost (AIC) approach. An AIC approach estimates LRMC by equating, in present value terms, the average change in forward looking growth and connections expenditure resulting from a change in demand. Our estimate of LRMC for different tariff groups connected to our network using the AIC approach is set out below in table 5.1.

Table 5.1 – LRMC estimates (growth and connections)

Tariff group	Customer type	Metering type	LRMC ($/kW)	No. of peak hours	LRMC Peak (c/kWh)	LRMC Anytime (c/kWh)
Low voltage	Residential & Business	Basic	56.2	8,766		0.64
Low voltage	Residential & Business	Interval	56.2	880	6.39	
High voltage	Business	Interval	36.0	880	4.09	
Sub-transmission voltage	Business	Interval	6.4	880	0.73	

In response to feedback from the AER on whether avoidable replacement expenditure should be included in our estimate of LRMC, we engaged Deloitte to develop a new methodology that estimates the LRMC associated with replacement capital expenditure. Our proposed approach to estimating LRMC is set out in the Deloitte report included at Technical Attachment 3 to this TSS.

Using this methodology, we derived estimates of LRMC for replacement capex by tariff group using a perturbation approach and converted those estimates into seasonal peak prices (consistent with our proposed charging windows for all customers – see section 12). We present these estimates and efficient seasonal TOU price levels in the table below.

Table 5.2 – LRMC estimates (replacement)

Tariff Group	Customer type	Metering type	LRMC Peak (c/kWh)	LRMC Shoulder (c/kWh)	LRMC Off Peak (c/kWh)	LRMC Anytime (c/kWh)
Low voltage	Residential & Business	Basic				1.41
Low voltage	Residential	Interval	3.14	1.70	0.55	
Low voltage	Business	Interval	3.14	2.08	0.72	
High voltage	Business	Interval	3.14	2.08	0.72	
Sub-transmission voltage	Business	Interval	1.25	0.83	0.29	

These two approaches for estimating the forward looking LRMC of Ausgrid's network are broadly additive. However, a difference in the causal relationship between demand and expenditure means that the results of the two LRMC approaches should be interpreted differently. That is:

- under the AIC approach, there is a clear causal relationship between demand growth and the new growth and connections expenditure, i.e., growth and connections expenditure is triggered by demand growth; while
- under a perturbation approach, demand is one of a range of factors (including health, safety and environmental considerations) that determine the timing of when existing assets are replaced, i.e.,

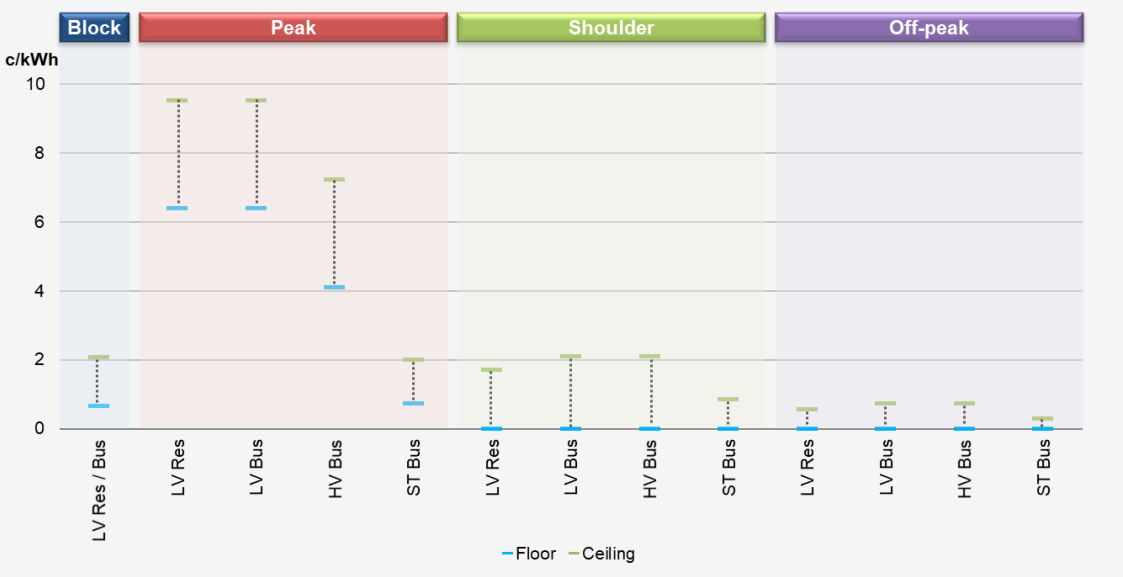
the decision to replace an asset will depend on a range of factors include, the level of unserved energy, the health and safety of staff and public as well as our obligation to protect the environment.

This difference in the causal relationship between demand and expenditure means that:

- the AIC approach provides a lower bound (floor) for the LRMC estimate for Ausgrid's network since there is a clear nexus between growth in peak demand and requirement for future expenditure on growth and connections assets; while
- the AIC LRMC estimate plus perturbation LRMC estimate together should be interpreted as an upper bound (ceiling) for the LRMC of Ausgrid's network as the perturbation approach estimates the LRMC under the assumption that replacement expenditure is solely driven by considerations of unserved energy (with no weight given to health, safety and environmental considerations).

As a consequence, our approach does not provide a point estimate of the LRMC for our network. Instead our approach estimates a reasonable range for the LRMC. Figure 5.2 we set out a reasonable range for the LRMC for different tariff groups connected to our network.

Figure 5.2 – LRMC range for different tariff groups



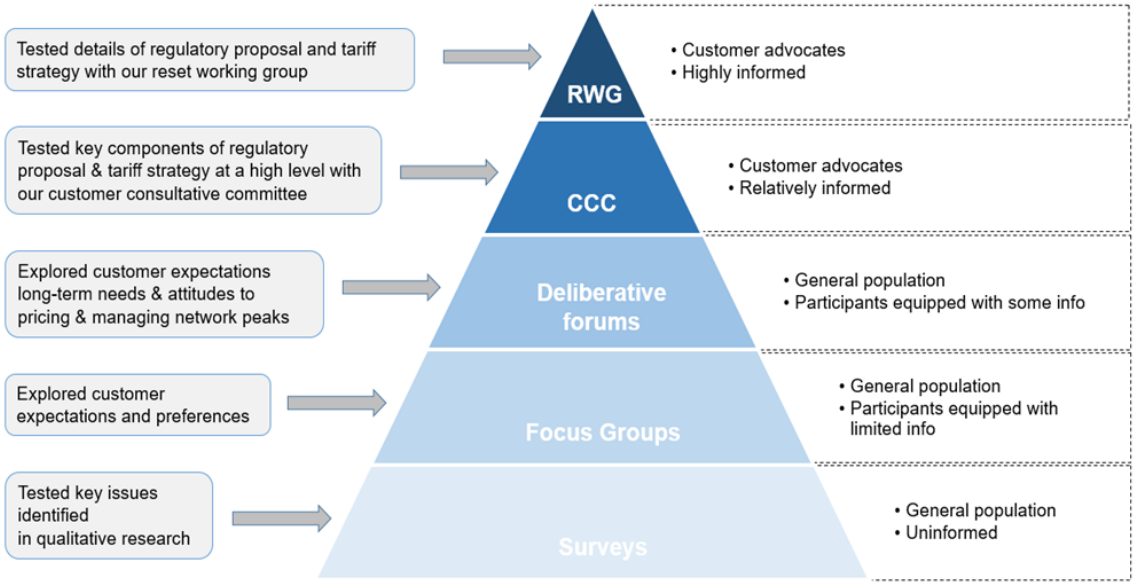
6 What our customers told us about pricing

The feedback we received from our customers and stakeholders was instrumental in shaping our proposed pricing reforms. We present a detailed summary of our engagement with customers in attachments 2.01 Extended Stakeholder Consultation Report and 2.02 Customer and Stakeholder Engagement prior to December 2017 to our regulatory proposal. We include below a brief overview of our approach to customer engagement and key feedback on pricing, below.

6.1 How we sought our customers' views

Many of the components of our pricing proposal are complex and difficult to succinctly describe. Therefore, it is difficult to provide customers with the necessary information to enable them to contribute in an informed way on every issue. To address this problem, we developed a layered approach to seeking customer input. This is summarised in the diagram below and discussed in more detail in this attachment.

Figure 6.1 – How we sought our customers' views



For the purpose of developing our 2019-24 revenue proposal, in collaboration with our Customer Consultative Committee, we developed a new Reset Engagement and Empowerment Framework to guide engagement specifically as part of the regulatory reset process. The key features of the framework are:

- **customer focused:** ensure that the primary focus is on the long-term interests of consumers;
- **accountable and transparent:** key decisions are supported by robust evidence, with an open and transparent process and stakeholders' views clearly taken into account; and
- **respectful and collaborative:** relevant stakeholders consulted and involved at each key stage in respectful two-way conversation with information provided in a simple format.

The CCC is the main consultative body that Ausgrid uses to provide customer and external stakeholder perspectives around:

- Ausgrid's plans, policies and service delivery;
- Ausgrid's regulatory submissions and the regulatory framework; and
- ensuring appropriate and effective customer and stakeholder engagement.

Box 1 sets out the current CCC members and observers.

Box 1: CCC Members and observers

- Council on the Ageing NSW
- Energy & Water Ombudsman NSW
- Energy Consumers Australia
- Ethnic Communities Council NSW
- Major Energy Users
- NSW Council of Social Services
- Public Interest Advocacy Centre
- St Vincent de Paul Society
- Total Environment Centre
- Consumer Challenge Panel (observer)

We have been consulting with the Customer Consultative Committee (CCC) and sub-group, the Reset Working Group (RWG), since late 2016.

The Customer at the Centre project was a key, multiphase initiative incorporating: customer focus groups, deliberative forums and a quantitative survey of 2,360 customers. Participants in the project reflected the diversity of Ausgrid's customers, including culturally and linguistically diverse individuals, older and younger people, the vulnerable and businesses.

After receiving the AER's approval to extend our submission deadline to 30 April 2018, we expanded our consultation program to allow an even greater level of community and stakeholder engagement. Between 1 February 2018 and 23 March 2018 we delivered a series of consultation sessions with stakeholders from the following organisations:

- AER Consumer Challenge Panel
- AER representatives
- Councils on the Ageing NSW (COTA)
- Energy Consumers Australia (ECA)
- Energy Users Association Australia (EUAA)
- Energy Water Ombudsman NSW (EWON)
- Ethnic Communities Council of NSW (ECCNSW)
- NSW Council of Social Services (NCOSS)
- Public Interest Advocacy Centre (PIAC)
- Retailer representatives
- South Sydney Regional Organisation of Councils (SSROC)
- Total Environment Centre (TEC)
- Urban Development Institute of Australia (UDIA)

Pricing was a key focus of our customer engagement. For example, in addition to our deep-dive sessions (which included a detailed look at pricing) undertaken as part of our extended consultations, we provided written answers to 270 individual questions from stakeholders, of which approximately 90 questions concerned pricing.

6.2 Customer and stakeholder feedback on pricing

The key feedback we received from stakeholders on our pricing strategy related to:

- the potential implementation of demand pricing;
- our proposed price rebalancing;
- our approach to providing network bill discounts to low energy users; and
- our speed of transition to cost reflective pricing.

6.2.1 Demand pricing

Our engagement with customers and stakeholders made clear that there are mixed, conflicting and strongly held views between customers, customer advocates, Ausgrid and pricing experts on whether demand price structures will deliver more affordable, reliable and sustainable outcomes for our customers.

Further, there is also uncertainty and mixed views on whether, if appropriate, demand price structures should be used to signal future network costs or to recover the cost of the existing network, or both. Similarly, there are a myriad of ways to structure a demand charge depending on its objective, each with differing effects on customers' decisions, network diversity and network costs.

It is also relevant to note that in contrast to other networks, such as Endeavour Energy, Ausgrid has a significant number of customers on TOU pricing (approximately 330,000 residential customers), which is expected to double over the next five years. This means that inappropriately implementing or designing demand pricing could have material adverse implications on network costs and our customers.

In light of this uncertainty, the potential implications of demand pricing for network costs (both positive and negative) and the feedback we received from customers, we propose:

- to launch a research program, to be developed collaboratively with stakeholders, of which a key focus will be whether demand pricing will lead to more affordable, reliable and sustainable outcomes for our customers; and
- to include in our TSS a demand pricing structure to give us the potential to fast-track a mid-period implementation if our research program indicates it is appropriate.

We explain these elements of our proposal in section 7 and highlight that they are a direct response to the further consultation undertaken during the extension approved by the AER.

We also note that some stakeholders indicated support for voluntary opt-in demand pricing and we explain in section 7.1.2 why we are not proposing to introduce it.

6.2.2 Price rebalancing

Customer feedback on the transition to a higher fixed daily charge component of network bills has been mixed. Our research indicated support for rebalancing provided there were no unacceptable customer bill impacts and adequate safeguards are put in place for low energy users and vulnerable customers.

In light of feedback received, we tempered the extent of our rebalancing to avoid unacceptable customer bill impacts and implemented specific measures (transitional and safeguard pricing) to protect low energy users and vulnerable customers, which we explain in section 7.3.

We note that the 'Pricing Directions: A Stakeholder Perspective' document favoured the use of demand or capacity charges to recover our residual costs, rather than fixed daily charges. In this context, it is important to recognise that higher fixed daily charges may not be an end-point in our transition to cost reflective pricing. Rather, it may reflect a step towards the potential future recovery of residual costs from capacity charges, consistent with the stakeholder directions.

6.2.3 Protecting low energy users from unacceptable customer bill impacts

As mentioned above, our engagement with customers and stakeholders marked the importance of measures to ensure that price rebalancing does not have adverse effects on low energy users, who benefit less from a reduction in energy consumption charges.

We also acknowledge feedback from the AER that these customers should still be transitioned to more cost reflective tariffs and we therefore propose that these discounts will apply for a period not exceeding ten years and will be progressively reduced over that period so as to transition these customers to more cost reflective pricing.

Our engagement with retailers indicated that they were concerned with such measures, namely because the transaction costs of establishing, marketing and implementing additional retail tariffs would be prohibitive. For this reason, some retailers, such as EnergyAustralia, indicated strong support for the use of rebates to avoid unacceptable customer bill impacts from price rebalancing. It is for this reason that our proposed approach – which we explain in section 7.3 – enables retailers to leave customers assigned to the same retail tariff, but still to pass on the network bill discount/rebate provided by Ausgrid.

6.2.4 Our speed of transition to cost reflective pricing

Some stakeholders questioned the speed of our transition to cost reflective pricing and contended that we are not transitioning fast enough. On this subject, we agree with the '*Pricing Directions: A Stakeholder Perspective*' that the end-point for pricing reform is a perpetually moving target that changes through time to reflect changing circumstances, new information and evolving customer preferences.

In section 5.2 we provide context to our views on the optimal means by which to: provide efficient price signals; and recover our residual costs in a way that avoids customer bill impacts and reflects customers preferences. That said, we also comment on the inherent uncertainty that exists in that regard and that, as a consequence, we are launching a collaborative research plan, to be developed with stakeholders, that will be focused on shedding light on the likely end-point and the best next steps in tariff reform.

Further, we include in our proposal a structure that can be used to facilitate and fast-track, if required, the implementation of demand pricing during the forthcoming regulatory period.

7 Our proposed pricing reforms

This section explains the approach that Ausgrid will take to setting tariffs in each pricing proposal during the forthcoming regulatory control period.

We propose to significantly reform our pricing to provide customers with more cost reflective price signals, which will deliver more affordable, reliable and sustainable outcomes for our customers. We propose to achieve this by:

- introducing a demand tariff to which no customers will initially be assigned, accompanied by a commencement of a research program to investigate alternative specifications for this new tariff with the possibility of assigning customers to this tariff within the regulatory period;
- improving how we recover the historical cost of our existing network;
- putting in place measures to protect low energy users from unacceptable network bill impacts;
- moving to an inclining block tariff (IBT) structure for non-TOU customers;
- implementing new TOU capacity tariffs for larger residential and small business customers; and
- aligning the definition of our winter peak period for residential and business customers.

Although not a reform in itself, our proposed collaborative research program is a foundational element of our proposed pricing reforms. We recognise that the design and implementation of demand charges in Australia is in its infancy, and so we believe that it is appropriate to consider a number of alternative demand structures before settling on a preferred structure that is consistent with promoting the long-term interests of consumers.

The nature and scope of this research program will be developed collaboratively with stakeholders. A key focus of the collaborative research plan will be the appropriateness, optimal design and implementation of demand charges in transitioning to cost reflective tariffs. A planning and scoping session is scheduled for June 2018.

7.1 A demand tariff to facilitate fast-tracking demand pricing

Our extensive engagement with customers and stakeholders made clear that there is at present uncertainty and mixed views between customers, customer advocates, Ausgrid and pricing experts on whether demand pricing will deliver more affordable, reliable and sustainable outcomes for our customers.

Ausgrid is not willing to postpone the implementation of demand pricing if our research program indicates that it is the best means of transitioning to cost reflective prices. To ensure that a residential demand tariff can be introduced in the forthcoming regulatory control period, we propose to include in our TSS a residential demand price structure that will initially have no customers assigned to it.

We designed our demand tariff so as to afford us flexibility to put into action the findings of our collaborative research plan, whatever they may be. However, there is an inherent tension between the inclusion of flexibility and the AER's preference for an explicitly defined tariff that it can assess against the requirements of the Rules. We therefore designed a demand tariff structure that is sufficiently flexible to strike a balance between these priorities, and would be capable of drawing on stakeholder feedback, potential objectives for demand charges, and the experience of other DNSPs.

We propose that our demand tariff comprises a number of structures (consistent with those structures used by other DNSPs), namely:

- a fixed daily charge;
- a fixed daily charge that differs based on predetermined maximum demand bands;
- a peak and non-peak variable energy charge;
- a monthly demand charge, where demand is measured in the peak period;

- a monthly demand charge, where demand is measured anytime; and
- a monthly demand charge, where demand is measured anytime over the preceding 12 months.

The inclusion of several demand charge parameters affords us flexibility to use demand charges concurrently to signal forward looking costs and recover residual costs. It will allow us to set some parameters to zero should a clear price structure be preferred as a consequence of our research program.

Similarly, the inclusion of peak and non-peak variable charges affords us flexibility to implement a flat energy charge (by setting them both equal) to assist in recovering residual costs or, alternatively, using a peak energy charge to assist in transitioning a peak demand charge to a fully cost reflective price level.

7.1.1 Flexibility to assign customers to demand pricing

Ausgrid agrees with the "*Pricing Directions: A Stakeholder Perspective*" that it is important that our pricing strategy is adaptive to change as new information comes to light and that:[21]

> *…mid-point reviews of elements of the TSS are essential to build in adaptability in pricing strategies.*

However, the framework established by the Rules would appear not well-suited to amending a TSS mid-period to take advantage of contemporary knowledge on optimal tariff design, other than in certain prescribed circumstances. Specifically, the Rules permit us to request an amendment to our approved TSS if an event occurs that:[22]

- was beyond the reasonable control of the DNSP; and
- could not reasonably have been foreseen by the DNSP at the time its TSS was approved by the AER.

In the absence of a formal mechanism to re-open the TSS mid-period, Ausgrid proposes a residential demand tariff that will initially have no customers assigned to it. We propose that the trigger for the assignment of customers to the demand tariff would be, written communication from the AER and the CCP to Ausgrid confirming support for a proposed implementation of the demand tariff, which will be developed collaboratively with stakeholders and made public at an appropriate time. In essence, this will reflect agreement between Ausgrid, customers and the AER on the appropriateness of demand pricing.

We expect that theoretical and empirical research, customer trials and further customer engagement will be required to adequately investigate the appropriateness of demand pricing, as compared with other price structures. Of course, the completion date of the requisite research (which is yet to be developed with stakeholders) is uncertain. That said, we are targeting a decision on whether to assign customers to the demand tariff to no later than 2020/21.

We would then fast-track demand pricing by means of the eligibility criteria in the annual pricing process. In other words, following the findings of the collaborative research plan and the engagement undertaken as part of that process, the eligibility criteria in our annual pricing proposal would be refined to begin assigning customers to demand pricing.

7.1.2 Why we are not proposing to implement opt-in residential demand pricing

During our engagement with customers and stakeholders, some participants expressed the view that customers should be allowed to opt-in to the new demand tariff. Therefore, it is instructive at this point to address why we are not proposing to introduce voluntary, opt-in demand pricing for residential customers at the outset of the 2019-24 period.

The potential benefits of demand pricing result from encouraging customers to change the way they use our network in a manner that enables the avoidance of future network costs, which benefits all customers.

[21] Attachment 10.14, Pricing Directions: A Stakeholder Perspective, 2018, pages 1-2.
[22] Clause 6.18.1B of the Rules.

Proponents of demand pricing contend that it would be more effective at encouraging our customers to reduce their peak demand, which is the principal driver of our future costs.

Customers will generally voluntarily opt-in to a tariff if they expect to benefit financially. Therefore, it is unlikely customers with particularly peaky demand would voluntarily opt-in to demand pricing. Unless they change their behaviour, these customers would likely be relatively worse off under demand pricing. For this reason, we expect that opt-in demand pricing would have only a limited effect on future network costs that could be avoided.

On the other hand, the customers most likely to opt-in to demand pricing are those with existing load profiles that would enable them to receive a network bill reduction from demand pricing. By opting into demand pricing, these customers would receive a network bill reduction without any change in behaviour and so a corresponding reduction in future network costs.

In this context, even if it was assumed that demand pricing is appropriate, we expect the benefits of pre-emptively introducing opt-in demand pricing to be limited.

That said, we acknowledge that some of our customers would opt-in to demand pricing regardless of any positive or negative financial incentive to do so because they view it as 'the right thing to do'. However, in light of the expected limited avoided future network costs, we are not proposing to introduce voluntary opt-in demand pricing at the outset of the regulatory period.

Instead, we propose to fast-track the research required to make significant strides towards more cost reflective price structures once we are confident that the transition path will deliver more affordable, reliable and sustainable outcomes for our customers.

7.2 Rebalancing away from inefficient non-peak variable energy charges

We propose to rebalance our prices away from inefficient, non-peak variable energy charges and towards fixed daily charges in a manner that leaves a typical customer on the relevant tariff no worse off.

In essence, cost reflective prices encourage customers to make decisions about their use of our network, investments in distributed energy resources and energy efficiency initiatives that best meet their needs at the lowest possible cost. Importantly, cost reflective prices mean that these efficient decisions by individual customers benefit not only them, but all customers.

7.2.1 Encouraging efficient use of the network

Cost reflective pricing encourages customers to use our network efficiently by signalling to them the future costs arising from further use of our network, which enables them to decide:

- whether using our network best meets their needs at the lowest possible cost; or
- whether investments in distributed energy resources and energy efficiency initiatives can better meet their needs at a lower cost, which benefits all customers.

Importantly, the level of future costs that could be avoided varies considerably across the day. We estimate that avoidable costs:

- are equal to approximately $56/kW during the peak period; but
- are very close to zero outside of the peak period, i.e., because there is excess capacity on our network at those times.

This means that, at a very high level, the cost of operating our network will be relatively similar regardless of whether customers use our network more or less outside of the peak periods, i.e., before 2pm or after 8pm on summer working weekdays and before 5pm or after 9pm on winter working weekdays. This means that we can enhance our customers welfare by encouraging them to use our network more outside of the peak period for little or no additional network costs.

By way of example, the additional network costs imposed by customers running their air conditioners on hot summer nights after 8pm (when there is excess capacity on our network) is low. If this is something

customers value, we do not want to unnecessarily discourage them from using our network by sending them above-cost reflective price signals.

Relevantly, our current non-peak variable energy charges – the shoulder and off-peak price – significantly overstate the very low level of future avoidable network costs in the shoulder and off-peak periods.

Therefore, reducing shoulder and off-peak energy prices will better reflect the additional costs of providing network services at those times, which will encourage the efficient use of our network.

7.2.2 Encouraging efficient investments in new technologies

Cost reflective price signals also play an important role in assisting our customers to make efficient investments in DER and undertake efficiency-enhancing activities. This is particularly important in the context of rapidly changing technology.

Network prices signal to customers the network bill savings they could realise from an investment in DER. A customer will invest in DER if the cost of that investment is less than the expected total bill savings through time, and therefore, if there is a positive net pay-off for them, which includes a reduction in network charges as well as generation and retail costs reflected in their electricity bill. It follows that, if our pricing is cost reflective, customers will invest in DER when the cost of that investment is less than the avoided network costs plus generation and retail costs resulting from that investment (their total bill saving). This is an efficient investment in DER because it better meets that customer's needs at a lower cost. The benefits from investing in DER is that other customers also benefit as total network costs are lower.

However, if our prices are above cost reflective levels then we signal to customers that the future network costs that could be avoided by an investment in DER are much higher than they really are. This means that a customer investing in DER may realise a network bill reduction that exceeds the resulting reduction in our future network costs. This is an inefficient investment in DER since our network could have provided the services our customers want at a lower cost.

The marked adverse implications of inefficient investment in DER are particularly relevant in the context of relatively high shoulder charges and investments in solar PV that, in the absence of battery technology, reduce the use of our network in non-peak periods.

We have explained that reductions in the use of our network outside the peak period generally result in very low, if any, avoided future network costs. However, our shoulder price in particular is significantly above the cost reflective level at present. Since the vast majority of solar PV generation occurs outside the peak period, this means that future investors in solar PV will receive a network bill reduction that exceeds the resulting avoided future network costs. The difference must then be recovered from other customers, which creates inequities between adopters and non-adopters of solar PV and other DER.

On the other hand, lowering non-peak energy charges will encourage efficient investments in distributed energy resources, i.e., since it provides incentives to invest in DER targeted at reducing the use of our network during peak, rather than non-peak periods. By way of example, reducing shoulder charges encourages customers to install west-facing solar PV installations that better assist in reducing the use of the network later in the day, i.e., during peak periods.

By reducing our non-peak prices and, in so doing, encouraging customers to use our network more outside of peak times, we can also assist in transitioning to a decarbonised economy since renewable generation is more prevalent at those times of the day.

In summary, reducing non-peak variable charges will encourage efficient investments in DER and avoid potential inequities between adopters and non-adopters of new technologies. Therefore, our pricing will be technology agnostic.

7.2.3 Minimising distortions to efficient price signals

It is well-accepted in economics that any such distortions are minimised by recovering residual costs in a manner that is least likely to affect a customer's decisions about how much and when to use electrical appliances, i.e., the 'Stakeholder Directions: A Customer Perspective' note that:[23]

> *Economic efficiency is enhanced if the remaining revenue [residual costs] are raised through charges that have as little impact on behaviour as possible.*

Relevantly, a study of the price elasticity of demand by HoustonKemp identified that our customers are most responsive to changes in price during the shoulder period. HoustonKemp stated that:

> *We find that consumption in the shoulder period is towards the more price-responsive end of the range of estimated price elasticities, which suggests that, from a theoretical perspective, it is generally less suited to the recovery of residual costs.*
>
> *We understand that Ausgrid is transitioning down the price of the shoulder period to a level commensurate with the off-peak period. Our results show that the implicit reduction in the proportion of residual costs recovered from the shoulder period is consistent with the promotion of economic efficiency.*

In other words, the shoulder period is the charging parameter least suited to the recovery of our residual costs. Therefore, our proposed reduction in non-peak energy charges (namely the shoulder price) is consistent with the requirements of the Rules and recent empirical evidence on how to avoid distorting customers' decisions.

7.2.4 Increases in fixed daily charges that leave network bills unchanged

The Rules require us to set prices such that the sum of the network bills of customers assigned to a particular tariff reflects the total efficient cost of providing services to those customers. To deliver to customers the efficiency, equity and decarbonisation benefits of reducing non-peak variable charges, we therefore need to increase the price of another charging parameter so that customer's networks bills still reflect the total efficient cost of providing the relevant service.

In essence, we provide an connection service to customers. The nature of this connection service will become increasingly relevant as our network transitions to an energy trading platform. We consider that fixed daily charges best reflect the nature of the connection service we provide to customers and will also assist in facilitating peer-to-peer trading.

Should our collaborative research program identify that capacity charges (eg, a fixed daily charge that varies with the maximum capacity that a customer intends to draw from the network during a given period) are the best means by which to recover residual costs, our proposed price rebalancing will also provide a natural progression to these charges. For example, we will be well placed to offer lower fixed daily charges to those customers willing to accept a lower maximum capacity draw from the network. This approach may prove to be appropriate both for signalling the costs of the network to customers and minimising distortions to electricity use in the future.

Consistent with the requirements of the Rules and economic literature, fixed daily charges also recover our historical costs in a manner that least distorts customer's decisions because they are least likely to have an impact on our customer's behaviour.

For these reasons, we propose to offset our proposed reduction in inefficient non-peak variable prices by increasing fixed daily charges in a way that leaves a typical customer on each tariff no worse off. This outcome is shown in section 9 – *Indicative customer impacts* of this report which show that a vast majority of our customers will receive a real decrease in network bills.

[23] HoustonKemp, How do electricity customers respond to price signals?, 7 December 2017, page 20.

We explain in the following section that we propose to implement specific measures to avoid unacceptable network bill impacts on low energy users, who might otherwise be disproportionately affected by our proposed price rebalancing since they benefit less from the reduction in consumption charges.

7.2.5 Customer's ability to control their network bills

We summarise customer feedback on our proposed price rebalancing in section 6. However, it is helpful at this point to draw attention to an assertion put forward by some stakeholders that increasing fixed daily charges reduces a customer's ability to control their network bill.

We entirely support our customers' having control of their network bills by changing their behaviour in a way that avoids future network costs. The principal means by which customers can achieve this is by reducing their use of our network during peak periods, which drives our costs. It is for this reason that our peak prices are based on an estimate of the LRMC of using our network during the peak period.

However, inequities arise if customers change their behaviour in a manner that reduces their network bill, but where there is a lesser reduction in our network costs. These circumstances arise from unnecessarily high non-peak energy charges, which allow some customers to take control of their bill by reducing non-peak consumption, but where there are little or no avoided future network costs.

It is for this reason that unnecessarily high non-peak variable energy charges encourage customers to take control of their network bill in a manner that results in little or no reduction in our future network costs and, therefore, creates inequities between customers. As a result, we do not support an approach to pricing that enables customers to take control of their bill by reducing non-peak use of the network.

Rather, our proposed price rebalancing encourages customers to take control of their network bill by changing their behaviour in a way that reduces their use of the network during the peak period which assists in avoiding future network costs.

7.3 Transitional pricing to protect low energy users (residential and small business)

Our modelling of the potential customer bill impacts arising from our proposed price rebalancing identified that, in the absence of specific measures, residential and small business customers using less than 2MWh per annum would be adversely affected.[24] This is because these customers would receive a relatively lower benefit from our proposed reduction in non-peak variable energy charges.

So that we can still deliver to customers the significant decarbonisation, efficiency and equity benefits from price rebalancing, we propose to provide network bill discounts to customers using less than 2MWh per annum, i.e., so as to avoid unacceptable bill impacts.

These discounts will apply for a period not exceeding ten years and will be progressively reduced over that period in order to transition these customers to more cost reflective pricing.

We understand from retailers that the transaction costs of establishing, marketing and implementing additional retail tariffs would be prohibitive, and so some retailers, such as EnergyAustralia, indicated strong support for the use of rebates to avoid unacceptable customer bill impacts from price rebalancing.

It is for this reason that our proposed approach enables retailers to leave customers assigned to the same retail tariff, but still to pass on the network bill discount/rebate provided by Ausgrid. We will work with retailers to calculate the amount of the rebate for each customer.

From the perspective of the Rules, we propose to achieve these arrangements by implementing:

- a transitional tariff for customers using less than 2 MWh p.a.; and
- a transitional safeguard tariff for vulnerable customers using less than 2MWh p.a.

[24] The results of our modelling are in section 9.

7.3.1 Network bill discounts for customers using less than 2 MWh p.a.

We propose to provide network bill discounts to all existing residential and small business customers consuming less than 2 MWh p.a. to ensure these customers do not receive unacceptable network bill impacts from our proposed price rebalancing.

In practice, we will achieve this by re-assigning these customers to a new transition <2 MWh tariff (EA001) commencing in 2019/20. We propose that this transitional tariff is an IBT structure where the block one energy price applies to energy consumption up to 2 MWh p.a. An IBT structure will ensure these customers' network use and investment decisions are not distorted by the transitional nature of this proposed tariff. For example, an IBT structure will ensure that a customer assigned to this transitional tariff that materially increases their consumption, say from investing in an air conditioner, will still have the incentive to voluntarily switch to our more cost reflective TOU tariff due to the higher marginal price applying to consumption above 2MWh p.a.

Customers on this transitional tariff that increase their energy consumption above the 2 MWh p.a. eligibility criteria, will face the same marginal network price as similar customers on the standard non-TOU tariff.

If a customer assigned to this tariff is identified during our annual tariff review process as having increased their annual energy consumption above 2 MWh p.a., we will re-assign the customer to the applicable standard network tariff given the nature of their usage (residential or business) and metering. New customers that connect to our network during the next regulatory control period may be assigned to this tariff if they can adequately demonstrate that their historical annual energy consumption is below 2 MWh p.a. Similarly, the re-assignment of customers to a standard network tariff in this circumstance is not expected to result in unacceptable network bill impacts, given that the new LV 2 MWh p.a. tariff will be structured as an IBT with the first consumption threshold set at 2 MWh p.a.

This proposed approach strikes an appropriate balance between achieving the significant benefits arising from price rebalancing and avoiding unacceptable customer bill impacts, consistent with the framework established by the Rules.

7.3.2 Network bill discounts for vulnerable customers using less than 2 MWh p.a.

We have made a policy decision to propose a relatively larger network bill discount/rebate to further assist vulnerable customers that use less than 2 MWh p.a. [25]

We will achieve this by implementing a new voluntary transitional safeguard <2 MWh tariff (EA002) on 1 July 2019 that is specifically designed to protect low energy users that might be more markedly affected by our proposed price rebalancing.

To minimise transaction costs for retailers and customers, we propose to adopt the same eligibility criteria as the NSW Government Low Income Household Rebate. Therefore, they must:

- be a resident of NSW; and
- a customer of the retailer; and
- hold either a:
  - pensioner concession card issued by the DHS/DVA; or
  - DHS Health Care Card; or
  - DVA Gold Card.

We will work with retailers to put in place a streamlined approach to verifying that the customers that retailers assign to the transitional safeguard <2 MWh tariff meet the eligibility criteria since we do not have access to customer's personal information, and that retailers assign all eligible customers to this tariff.

[25] Ausgrid proposes to require that customers have at least a complete financial year of historical annual energy consumption less than 2 MWh p.a. to qualify for this proposed opt-in tariff.

We acknowledge these eligibility criteria could be improved to better target vulnerable customers most affected by our proposed price rebalancing. Therefore, we propose that the eligibility criteria for this discount/rebate is determined at our discretion and in consultation with the Pricing Working Group, CCC and stakeholders, as part of the collaborative program. We would also work with retailers and the Pricing Working Group to investigate ways to automate the assignment of eligible customers. We propose that any changes are addressed in the annual pricing proposal process and so approved by the AER before implementation.

We propose that this tariff has the same IBT structure as the proposed transitional < 2 MWh tariff discussed above. This allows us to offset our proposed increases in fixed daily charges by reducing the block one price for energy consumption less than 2 MWh p.a. The IBT structure also means that a customer assigned to this tariff that increases their consumption above 2MWh p.a. will pay the same marginal price as the standard non-TOU tariff (EA010).

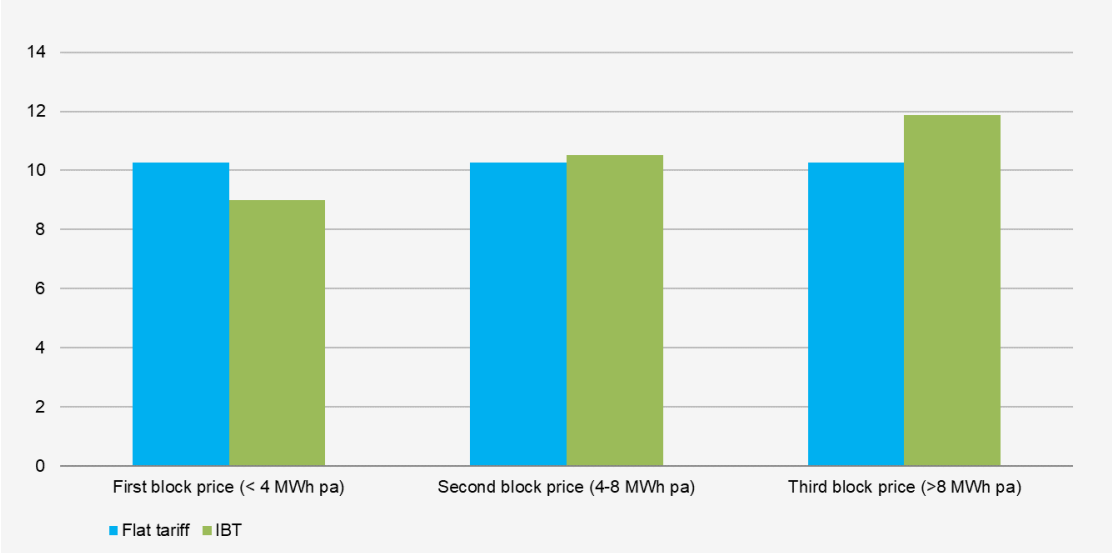
This proposed approach strikes an appropriate balance between achieving the significant benefits arising from price rebalancing (as discussed in section 7.2) and avoiding unacceptable customer bill impacts, consistent with the framework established by the Rules.

7.4 An inclining block structure for customers with a basic meter

At present, existing residential and small business customers with basic metering are assigned to a flat tariff. From 1 July 2019 we propose to replace these flat tariffs with an IBT structure.

In simple terms, under an IBT the marginal price is applied to consumption at higher levels, as illustrated below.

Figure 7.1 – Proposed inclining block tariff in 2019/20



There are two principal benefits arising from an IBT structure in the context of Ausgrid's transition to more cost reflective tariffs:

- the lower price applied to the first block of consumption assists in avoiding unacceptable customer bill impacts from price rebalancing; and
- the higher price applied to the third block provides an incentive for high energy users to reduce their consumption or to voluntarily opt-in to a more cost reflective TOU tariff.

Providing incentives for customers, and particularly those with high energy use, to reduce their consumption or to opt-in to a more cost reflective tariff is a central part of our pricing strategy. Relevantly,

an empirical study of the price elasticity of demand by HoustonKemp identified that customers were most responsive to changes in price in the final consumption block, which means that:[26]

> *…for every dollar of residual cost to be recovered from customers on Ausgrid's block tariffs, a relatively greater reduction in consumption will arise from recovering that dollar from a later consumption block.*

In summary, replacing our flat tariffs with an IBT structure will assist in encouraging large users to reduce their use of the network or to switch to a more cost reflective tariff and also assist in avoiding unacceptable customer bill impacts, consistent with the requirements of the Rules.

7.5 TOU capacity pricing for larger residential and small business customers

We propose to introduce two new TOU capacity tariffs for residential and small business customers with interval meters using 15-40 MWh p.a. This will provide larger residential and small business customers with more cost reflective price signals, which will reduce our future network costs by encouraging them to use our network more efficiently and to make efficient investments in DER.

The customer bill impacts from moving these residential and small business customers to the same tariff are currently unacceptable. However, over time, we plan to transition these two tariffs to equivalent price levels so that they can be merged into a single tariff for both residential and small business customers. This reflects feedback form the NSW Chamber of Business indicating a preference for the equivalent treatment of residential and small business customers.

7.6 Refining and aligning the winter peak period for business customers

In our first TSS, the AER approved the introduction of seasonal TOU pricing on 1 July 2018. It also approved refining the timing of the winter peak period for residential customers so as to better align with the timing of peak demand in the winter months. In this TSS we propose to refine (shorten) the winter peak period for business customers so as to align with that for residential customers. This will better signal to business customers the timing of peak demand in the winter months and so improve the cost reflectivity of our business tariffs.

Specifically, we propose to narrow the peak charging window for business customers to 5pm to 9pm on working days in the winter months, as shown in the table below:

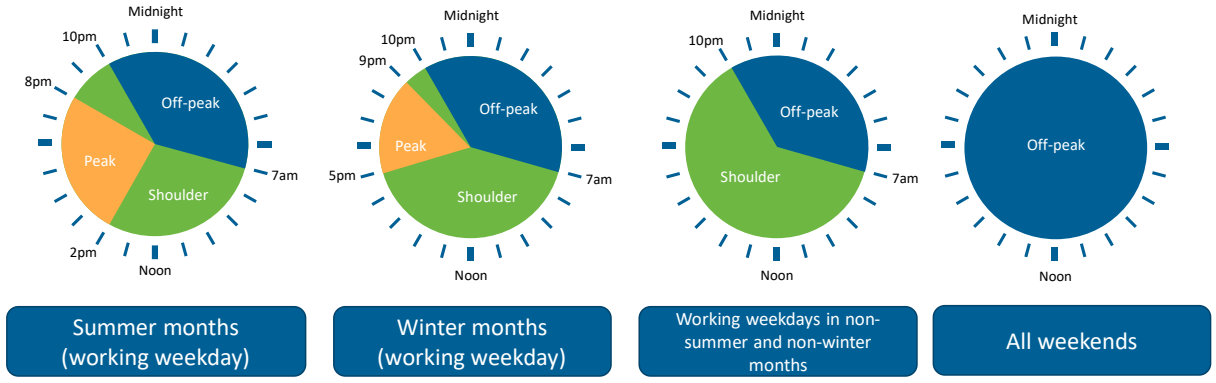
Table 7.1 – Proposed TOU charging window for business customers

Time Period	AER approved existing definition in 2018/19	Proposed seasonal peak period definition from 1 July 2019
Summer peak period	From 2pm – 8pm on working weekdays during 1 November and 31 March (inclusive) – the "summer months"	No change
Winter peak period	From 2pm – 8pm on working weekdays during 1 June and 31 August (inclusive) – the "winter months"	From 5pm – 9pm on working weekdays in the winter months

[26] HoustonKemp, How do electricity customers respond to price signals?, 7 December 2017, page 19.

Time Period	AER approved existing definition in 2018/19	Proposed seasonal peak period definition from 1 July 2019
Shoulder period	From 7am – 2pm and 8pm – 10pm on working weekdays	On working weekdays in the summer months: • from 7am to 2pm; and • from 8pm to 10pm, On working weekdays in the winter months: • from 7am to 5pm; and • from 9pm to 10pm; On working weekdays in the non-summer and non-winter months, from 7am to 10pm.
Off-peak period	All other times	No change

Figure 7.2 – Proposed TOU charging windows for business customers from 1 July 2019



7.7 Increasing the number of residential and small business customers on the more cost reflective seasonal TOU tariff

It is in the collective long-term interests of our customers to increase the number of customers on more cost reflective pricing, where the economic benefits of improved efficiency can be realised without delivering unacceptable impacts.

To achieve this outcome, we propose to introduce the following reforms from 1 July 2019:

- new residential and small business customers continue to be assigned to the relevant cost reflective TOU tariff, but are no longer permitted to opt-out to the transitional TOU tariff (see section 4.1);
- all existing customers on a non-TOU tariff that get a meter replacement will be assigned to the cost reflective TOU tariff, with the option to opt-out to the transitional TOU tariff;
- to replace the existing flat structure for the transitional TOU tariff with a TOU structure that will transition to the cost reflective level which will result in customers will be re-assigned to the cost reflective TOU tariff.

For the avoidance of doubt, we will continue to assign all new residential and small business customers to the cost reflective TOU tariff. These customers cannot opt-out to the transitional TOU tariff.

We explain our approach to assigning customers to tariffs, including our proposed new tariffs in section 4.

7.8 Pricing Directions: A Stakeholder perspective

We are grateful for the effort of the ECA, PIAC, CCP and the TEC in developing the 'Pricing Directions: A Stakeholder Perspective'. These directions provide guidance on the design of an efficient pricing structure, and the matters that networks should take into account when designing them.

As outlined in this section we have agreed with the overwhelming majority of the views set out in the stakeholder directions and are confident they represent a foundational reference point for further working together with stakeholders on our transition to more cost reflective pricing. Of course, there will likely always be differing views between parties, at least to some extent, and a key focus of the collaborative pricing research plan will be on investigating such points of difference, for example the specific design of a demand pricing structure.

We present in the table below a high level summary of our take on the themes of the Pricing Directions: A Stakeholder Perspective' that are reflected in our proposed reforms, which we discussed in this section.

Table 7.2 – Compatibility with "Pricing Directions: A Stakeholder Perspective"

Key reforms for residential customers	How the reform reflects the "Pricing directions: A Stakeholder Perspective"
A demand price structure	• Adaptable to changing circumstances – it can be implemented if needed. • Provides scope for a potential mid-period introduction of demand prices during the regulatory period. • Facilitates potential transition to demand pricing, i.e., our stakeholders' expected end-point.
Price Rebalancing	• Adaptable to changing circumstances – it promotes efficient investment in new technologies. • Simplifies pricing structure – reducing non-peak variable energy charges. • Network specific – improvements in the recovery of historical costs reflect limited growth. • Increase in fixed daily charge facilitates P2P trading since it reflects connection service provided by Ausgrid. • Extent of rebalancing guided by extensive modelling of customer bill impacts. • Promotes economic efficiency by recovering costs "through charges that have as little impact on behaviour as possible".[27]
Safeguard measures	• Directly addresses customer bill impacts.
An Inclining Block Structure	• Integrated with broader incentives which encourage large users to switch to TOU pricing. • Assists in avoiding unacceptable customer bill impacts for low energy users.
New TOU demand for large residential and small business customers	• Adaptable to changing circumstances - more cost reflective prices for larger energy users. • Assists in a transition to residential demand pricing, an approach consistent with stakeholders' expected end-point.

[27] Attachment 10.14, Pricing Directions: A Stakeholder Perspective, February 2018, page 3 footnote 2.

7.9 Pricing Working Group

Throughout the course of our engagement, feedback received indicated that most stakeholders see an urgent need for pricing reform in order to deliver more equitable cost sharing and efficient network price signals. However, stakeholders have different views as to the nature, and extent, of pricing reforms that should be pursued by Ausgrid.

In order to progress pricing reform effectively, Ausgrid is keen to engage further with customers, stakeholders and the AER, to create a shared understanding of price design changes and to also research potential implementation issues. This includes, introduction, timing, identifying solutions to mitigate unintended consequences as well as to ensure safeguards are put in place for low energy users and vulnerable customers.

To pursue this outcome, Ausgrid is setting up a new Pricing Working Group. This working group will be formed with the assistance of customers and stakeholders and be specifically tasked with framing the principles for Ausgrid's price reform, designing our overall pricing research program and methodology, and helping to shape the implementation of cost reflective prices.

Additionally, the Pricing Working Group will assess and facilitate opportunities to align Ausgrid's prices with other NSW and national distribution network price reform processes. Ultimately, it is hoped that the Pricing Working Group will help Ausgrid deliver a pricing strategy that fairly recovers the costs of providing network services, whilst also giving customers transparent price signals that enable them to benefit from a more efficient use of the network.

8 Indicative prices

The setting of prices under the new distribution pricing framework established by the Rules is a two-stage process:

- Stage one – Undertake consultation on potential tariff reforms, develop a TSS document and an indicative pricing schedule for submission to the AER; and
- Stage two – Develop and submit to the AER an annual pricing proposal for assessment against the requirements of the Rules.

The indicative prices in the TSS are directed at providing stakeholders with an understanding of the potential pricing outcomes arising under this proposed approach.

Bearing in mind that the prices presented in the TSS are indicative only, the prices submitted in the annual pricing proposal may differ from those indicative prices presented here. However, Ausgrid is required to explain any material variations between the indicative prices in the TSS and the prices in the annual pricing proposal.

8.1 Our approach to developing indicative prices

At the time of preparing this TSS, there exists uncertainty as to the applicable revenue requirement in the 2014/15-2018/19 regulatory control period following the decision by the Australian Competition Tribunal that the AER remakes its determination on the allowed return on debt and operating expenditure allowance elements of its previous determination for the 2014/15-2018/19 regulatory control period.

This is the subject of ongoing consultation with the AER and consumer groups and, depending on the outcome of this process, there may be positive or negative revenue increments applied to our proposed revenues for the 2019-24 regulatory period. Any adjustment amount will reflect the difference between actual revenues recovered over the 2014/15-2018/19 period and the remade determination revenues for 2014/15-2018/19.

8.2 Indicative prices for our customers

Tables 8.1 to 8.5, overleaf, sets out the network tariffs by charging parameter for each year of the 2019-24 period.

Table 8.1 – Ausgrid's network tariffs by charging parameter (exclusive of GST) – Indicative – 2019/20

Tariff Class	Tariff Code	Tariff Name	Network Access Charge	Network Energy Prices							Daily Capacity Prices	
				Non-TOU	Peak	Shoulder	Off-peak	Block 1	Block 2	Block 3	Peak	Peak
			c/day	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kW/day	c/kVA/day
Low Voltage	EA001	LV <2 MWh	37.36					10.09	9.99	10.03		
	EA002	Safeguard <2 MWh	37.36					10.09	9.99	10.03		
	EA010	Residential non-TOU - *closed*	41.01					9.56	9.99	10.03		
	EA011	Residential transitional TOU	37.97		10.72	10.19	10.18					
	EA025	Residential TOU 2-15 MWh	47.50		24.07	6.46	2.55					
	EA030	Controlled load 1	0.16	1.69								
	EA040	Controlled load 2	11.40	4.45								
	EA050	Small business non-TOU -*closed*	135.32					9.75	10.06			
	EA051	Small business transitional TOU	133.37		10.04	9.65	9.63					
	EA211	Residential TOU 15-40 MWh	47.50		24.07	6.41	2.54				0.10	
	EA212	Small business TOU 15-40 MWh	131.49		19.29	9.47	3.11				0.10	
	EA225	Small business TOU 2-15 MWh	131.49		19.29	9.47	3.11					
	EA302	LV 40-160 MWh	664.89		5.82	2.62	1.28				37.37	
	EA309	LV >160 MWh	2,021.72		4.21	2.27	1.15					37.37
	EA316	Transitional 40-160 MWh	131.49		22.37	11.27	2.06					
	EA317	Transitional 160-750 MWh	131.49		22.37	11.27	2.06					
	EA325	LV Connection (standby) *closed*	2,021.72		6.53	9.90	2.19					0.37
High Voltage	EA360	HV Connection (standby) *closed*	2,089.37		8.14	4.76	2.51					0.54
	EA370	HV Connection (system)	4,966.13		3.59	1.99	1.34					19.77
	EA380	HV Connection (substation)	4,966.13		3.17	1.80	1.24					16.94
Sub-transmission	EA390	ST Connection	6,220.73		2.56	1.76	1.15					6.22
	EA391	ST Connection (substation)	6,220.73		2.31	1.51	1.07					5.43
Unmetered	EA401	Public lighting		7.76								
	EA402	Constant unmetered		9.35								
	EA403	EnergyLight		7.14								
Transmission	EA501	Transmission-connected	18,288.24									0.59

Please note that the prices in the table above have been rounded to two decimal places in the pricing proposal document.

Table 8.2 – Ausgrid's network tariffs by charging parameter (exclusive of GST) – Indicative – 2020/21

Tariff Class	Tariff Code	Tariff Name	Network Access Charge	Network Energy Prices							Daily Capacity Prices	
				Non-TOU	Peak	Shoulder	Off-peak	Block 1	Block 2	Block 3	Peak	Peak
			c/day	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kW/day	c/kVA/day
Low Voltage	EA001	LV <2 MWh	38.48					10.46	10.45	10.49		
	EA002	Safeguard <2 MWh	38.30					10.36	10.45	10.49		
	EA010	Residential non-TOU - *closed*	46.13					9.36	10.45	10.49		
	EA011	Residential transitional TOU	41.23		11.92	10.07	10.07					
	EA025	Residential TOU 2-15 MWh	51.06		24.14	6.48	2.56					
	EA030	Controlled load 1	0.16	1.81								
	EA040	Controlled load 2	11.97	4.79								
	EA050	Small business non-TOU *-closed*	144.12					9.55	10.33			
	EA051	Small business transitional TOU	140.97		11.04	9.55	9.53					
	EA211	Residential TOU 15-40 MWh	51.06		24.14	6.48	2.56				0.50	
	EA212	Small business TOU 15-40 MWh	139.38		19.23	9.48	3.11				0.50	
	EA225	Small business TOU 2-15 MWh	139.38		19.23	9.48	3.11					
	EA302	LV 40-160 MWh	681.51		5.97	2.60	1.28				39.22	
	EA309	LV >160 MWh	2,072.26		4.31	2.23	1.16					39.22
	EA316	Transitional 40-160 MWh	139.38		23.01	10.87	2.13					
	EA317	Transitional 160-750 MWh	139.38		23.01	10.87	2.13					
	EA325	LV Connection (standby) *closed*	2,072.26		6.73	9.34	2.20					0.39
High Voltage	EA360	HV Connection (standby) *closed*	2,152.05		8.19	4.85	2.53					0.55
	EA370	HV Connection (system)	5,115.11		3.68	1.98	1.33					20.55
	EA380	HV Connection (substation)	5,115.11		3.25	1.79	1.23					17.60
Sub-transmission	EA390	ST Connection	6,407.35		2.55	1.76	1.14					6.45
	EA391	ST Connection (substation)	6,407.35		2.30	1.51	1.06					5.63
Unmetered	EA401	Public lighting		7.74								
	EA402	Constant unmetered		9.32								
	EA403	EnergyLight		7.12								
Transmission	EA501	Transmission-connected	19,761.88									0.63

Please note that the prices in the table above have been rounded to two decimal places in the pricing proposal document.

Table 8.3 – Ausgrid's network tariffs by charging parameter (exclusive of GST) – Indicative – 2021/22

Tariff Class	Tariff Code	Tariff Name	Network Access Charge	Network Energy Prices							Daily Capacity Prices	
				Non-TOU	Peak	Shoulder	Off-peak	Block 1	Block 2	Block 3	Peak	Peak
			c/day	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kW/day	c/kVA/day
Low Voltage	EA001	LV <2 MWh	39.64					10.69	10.75	10.80		
	EA002	Safeguard <2 MWh	39.25					10.49	10.75	10.80		
	EA010	Residential non-TOU - *closed*	50.75					9.06	10.75	10.80		
	EA011	Residential transitional TOU	44.81		13.23	9.97	9.97					
	EA025	Residential TOU 2-15 MWh	54.38		23.93	6.39	2.53					
	EA030	Controlled load 1	0.17	1.91								
	EA040	Controlled load 2	12.57	5.09								
	EA050	Small business non-TOU -*closed*	152.76					9.24	10.55			
	EA051	Small business transitional TOU	145.15		11.79	9.46	9.44					
	EA211	Residential TOU 15-40 MWh	54.38		23.93	6.39	2.53				1.00	
	EA212	Small business TOU 15-40 MWh	147.75		19.04	9.33	3.07				1.00	
	EA225	Small business TOU 2-15 MWh	147.75		19.04	9.33	3.07					
	EA302	LV 40-160 MWh	698.54		6.12	2.53	1.26				40.96	
	EA309	LV >160 MWh	2,124.07		4.42	2.19	1.15					41.22
	EA316	Transitional 40-160 MWh	147.75		23.52	10.68	2.17					
	EA317	Transitional 160-750 MWh	147.75		23.52	10.68	2.17					
	EA325	LV Connection (standby) *closed*	2,124.07		7.06	8.98	2.16					0.41
High Voltage	EA360	HV Connection (standby) *closed*	2,205.85		8.15	4.86	2.54					0.56
	EA370	HV Connection (system)	5,242.99		3.77	1.91	1.32					21.53
	EA380	HV Connection (substation)	5,242.99		3.33	1.73	1.21					18.44
Sub-transmission	EA390	ST Connection	6,567.53		2.51	1.74	1.14					6.74
	EA391	ST Connection (substation)	6,567.53		2.26	1.49	1.05					5.88
Unmetered	EA401	Public lighting		7.70								
	EA402	Constant unmetered		9.28								
	EA403	EnergyLight		7.09								
Transmission	EA501	Transmission-connected	21,071.08									0.68

Please note that the prices in the table above have been rounded to two decimal places in the pricing proposal document.

Table 8.4 – Ausgrid's network tariffs by charging parameter (exclusive of GST) – Indicative – 2022/23

Tariff Class	Tariff Code	Tariff Name	Network Access Charge	Network Energy Prices							Daily Capacity Prices	
				Non-TOU	Peak	Shoulder	Off-peak	Block 1	Block 2	Block 3	Peak	Peak
			c/day	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kW/day	c/kVA/day
Low Voltage	EA001	LV <2 MWh	40.83					10.99	11.13	11.19		
	EA002	Safeguard <2 MWh	40.24					10.67	11.13	11.19		
	EA010	Residential non-TOU - *closed*	55.82					8.79	11.13	11.19		
	EA011	Residential transitional TOU	48.37		14.54	9.87	9.87					
	EA025	Residential TOU 2-15 MWh	57.91		23.87	6.35	2.52					
	EA030	Controlled load 1	0.18	2.02								
	EA040	Controlled load 2	13.19	5.42								
	EA050	Small business non-TOU -*closed*	160.40					8.94	10.85			
	EA051	Small business transitional TOU	151.22		12.83	9.36	9.35					
	EA211	Residential TOU 15-40 MWh	57.91		23.87	6.35	2.52				1.25	
	EA212	Small business TOU 15-40 MWh	155.13		18.94	9.26	3.06				1.25	
	EA225	Small business TOU 2-15 MWh	155.13		18.94	9.26	3.06					
	EA302	LV 40-160 MWh	716.01		6.27	2.48	1.24				42.81	
	EA309	LV >160 MWh	2,177.17		4.53	2.15	1.15					43.34
	EA316	Transitional 40-160 MWh	155.13		24.20	10.50	2.25					
	EA317	Transitional 160-750 MWh	155.13		24.20	10.50	2.25					
	EA325	LV Connection (standby) *closed*	2,177.17		7.37	8.60	2.16					0.43
High Voltage	EA360	HV Connection (standby) *closed*	2,261.00		8.16	4.90	2.54					0.58
	EA370	HV Connection (system)	5,374.06		3.86	1.88	1.30					22.57
	EA380	HV Connection (substation)	5,374.06		3.42	1.70	1.19					19.32
Sub-transmission	EA390	ST Connection	6,731.72		2.49	1.73	1.13					7.03
	EA391	ST Connection (substation)	6,731.72		2.24	1.48	1.05					6.13
Unmetered	EA401	Public lighting		7.68								
	EA402	Constant unmetered		9.25								
	EA403	EnergyLight		7.07								
Transmission	EA501	Transmission-connected	22,512.27									0.72

Please note that the prices in the table above have been rounded to two decimal places in the pricing proposal document.

Table 8.5 – Ausgrid's network tariffs by charging parameter (exclusive of GST) – Indicative – 2023/24

Tariff Class	Tariff Code	Tariff Name	Network Access Charge	Network Energy Prices							Daily Capacity Prices	
				Non-TOU	Peak	Shoulder	Off-peak	Block 1	Block 2	Block 3	Peak	Peak
			c/day	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kWh	c/kW/day	c/kVA/day
Low Voltage	EA001	LV <2 MWh	42.05					11.20	11.42	11.48		
	EA002	Safeguard <2 MWh	41.24					10.77	11.42	11.48		
	EA010	Residential non-TOU - *closed*	61.41					8.48	11.42	11.48		
	EA011	Residential transitional TOU	52.35		15.06	9.77	9.77					
	EA025	Residential TOU 2-15 MWh	61.68		23.67	6.24	2.50					
	EA030	Controlled load 1	0.19	2.11								
	EA040	Controlled load 2	13.85	5.70								
	EA050	Small business non-TOU *-closed*	168.42					8.58	11.12			
	EA051	Small business transitional TOU	155.73		13.63	9.27	9.25					
	EA211	Residential TOU 15-40 MWh	61.68		23.67	6.24	2.50				1.50	
	EA212	Small business TOU 15-40 MWh	162.89		18.81	9.09	3.03				1.50	
	EA225	Small business TOU 2-15 MWh	162.89		18.81	9.09	3.03					
	EA302	LV 40-160 MWh	733.91		6.43	2.40	1.21				44.73	
	EA309	LV >160 MWh	2,231.60		4.65	2.11	1.14					45.56
	EA316	Transitional 40-160 MWh	162.89		24.82	10.35	2.30					
	EA317	Transitional 160-750 MWh	162.89		24.82	10.35	2.30					
	EA325	LV Connection (standby) *closed*	2,231.60		7.79	8.25	2.12					0.45
High Voltage	EA360	HV Connection (standby) *closed*	2,317.52		8.06	4.87	2.52					0.58
	EA370	HV Connection (system)	5,508.41		3.96	1.81	1.28					23.64
	EA380	HV Connection (substation)	5,508.41		3.50	1.64	1.17					20.23
Sub-transmission	EA390	ST Connection	6,900.01		2.44	1.71	1.12					7.02
	EA391	ST Connection (substation)	6,900.01		2.20	1.46	1.04					6.13
Unmetered	EA401	Public lighting		7.66								
	EA402	Constant unmetered		9.22								
	EA403	EnergyLight		7.05								
Transmission	EA501	Transmission-connected	23,713.11									0.76

Please note that the prices in the table above have been rounded to two decimal places in the pricing proposal document.

9 Indicative customer impacts

This section provides the results of our analysis of the customer impact of our indicative network tariffs in the next regulatory control period for the major customer segments. This is an important section of our TSS proposal because it demonstrates that we have appropriately balanced the need to improve the efficiency of our network tariffs against the important requirement to have regard for the impact of these tariff reforms on our customers.

The impact on customers of our proposed network tariff reforms in the next regulatory control period will vary depending on the customers energy consumption level and profile, metering type and voltage level. The customer impact of our tariff reforms will also be influenced by the extent that retailers pass through our network price signals to end-customers and the extent that these customers are willing and able to respond to the proposed changes in the level and structure of our network tariffs.

To provide an understanding of the customer impacts associated with the indicative network prices, Ausgrid has estimated the annual network bill outcomes on the basis of the historical energy consumption and, if applicable, maximum demand for a representative sample of customers in each major customer segment. The key insights from this customer impact analysis are discussed below.

9.1 Impact on residential and small business customers using < 2 MWh p.a.

Ausgrid proposes to re-assign all existing residential and small business customers using less than 2 MWh p.a. to a proposed transitional tariff on 1 July 2019. This will ensure that the fixed daily charge for these customers is able to be transitioned to cost reflective levels over more than one regulatory control period.

It is clear from the figure below that our proposal to assign existing customers using less than 2 MWh p.a. to a proposed transitional tariff, will not result in unacceptable network bill outcomes for these customers in 2019/20.

Figure 9.1 Impact in 2019/20 on small customer <2 MWh p.a.: transitional (green); safeguard (blue)

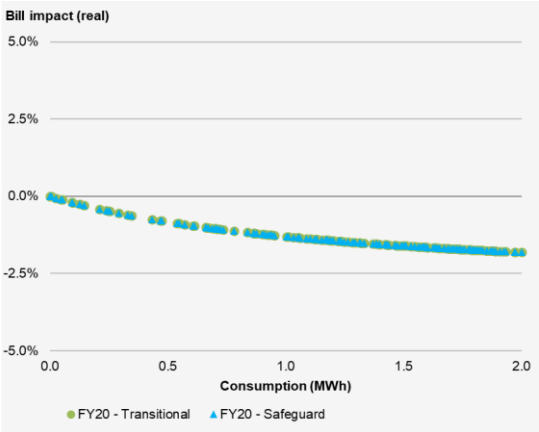
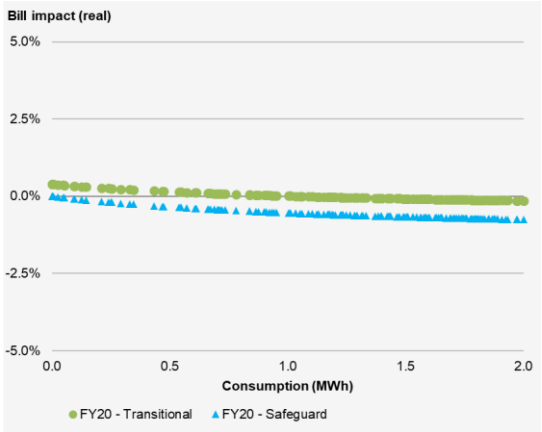


Figure 9.2 Impact over 2019-24 on small customer: transitional (green); safeguard (blue)



9.2 Impact on residential and small business customers using 2-15 MWh p.a.

The customer impact of our network tariff reforms in this customer segment will vary depending on whether the customer is on a seasonal TOU tariff or an IBT. The customer impacts in relation to our seasonal TOU tariff will also be more variable across different levels of annual energy consumption, reflecting differences in the load profiles between customers. The key insights of our customer impact under both tariff structures are discussed below.

9.2.1 Proposed seasonal TOU tariff

The figure below shows the potential distribution of estimated network bill impact under our proposed seasonal TOU tariffs on the basis of a representative sample of existing TOU customers. It is clear from this figure that our proposed reforms to the seasonal TOU tariff will not result in unacceptable network bill outcomes for customers using between 2-15 MWh p.a. during the next regulatory control period.

Figure 9.3 Impact in 2019/20 on small residential 2-15 MWh p.a. (EA025)

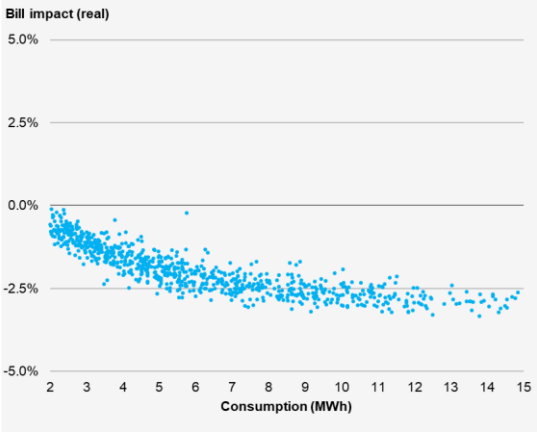


Figure 9.4 Impact in 2019/20 on small business 2-15 MWh p.a. (EA225)

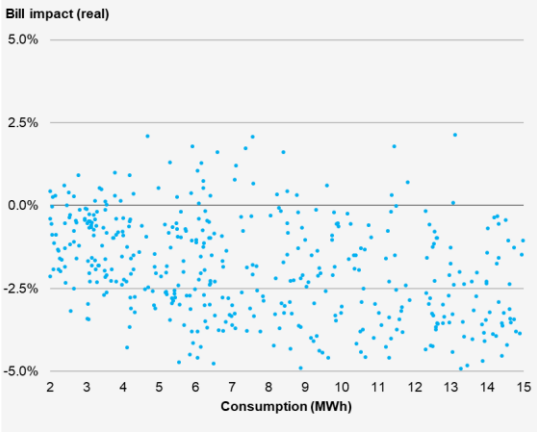


Figure 9.5 Impact over 2019-24 on small residential 2-15 MWh p.a. (EA025)

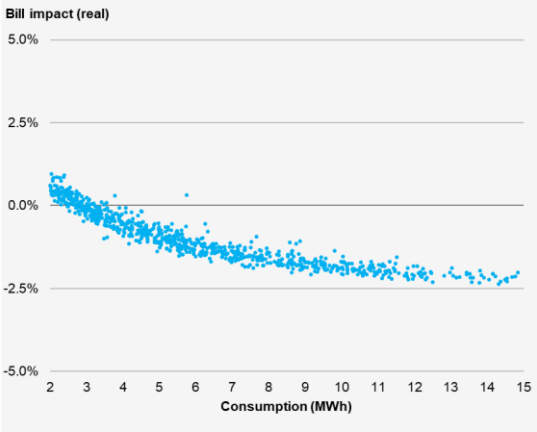
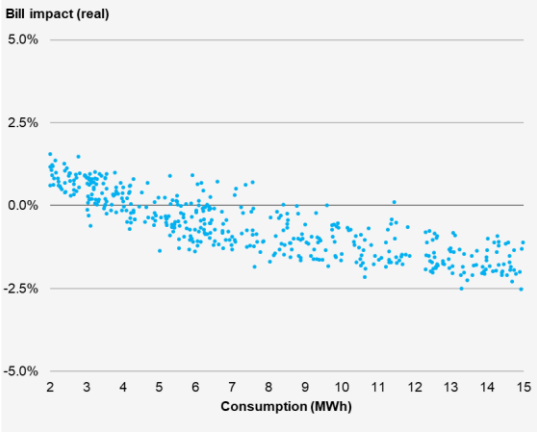


Figure 9.6 Impact over 2019-24 on small business 2-15 MWh p.a. (EA225)



9.2.2 Proposed inclining block tariff

Ausgrid proposes to replace the flat tariff with an IBT on 1 July 2020 for both residential and small business customers with a basic accumulation meter installed. Our customer analysis shows that this reform proposal will not result in unacceptable network bill outcomes, even for the larger energy users with a higher proportion of their annual energy consumption in the more expensive blocks under the IBT structure.

Figure 9.7 Impact in 2019/20 on non-TOU small residential (EA010)

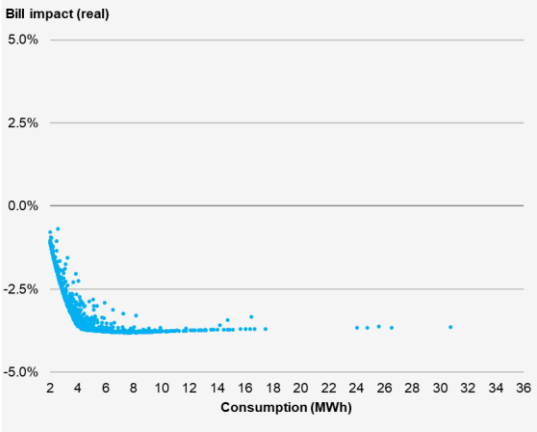


Figure 9.8 Impact in 2019/20 on non-TOU small business (EA050)

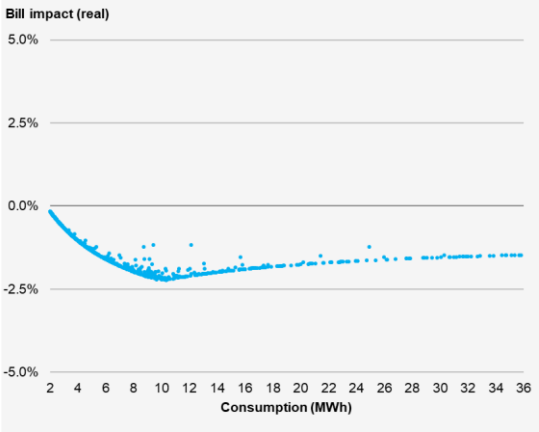


Figure 9.9 Impact over 2019-24 on non-TOU small residential (EA010)

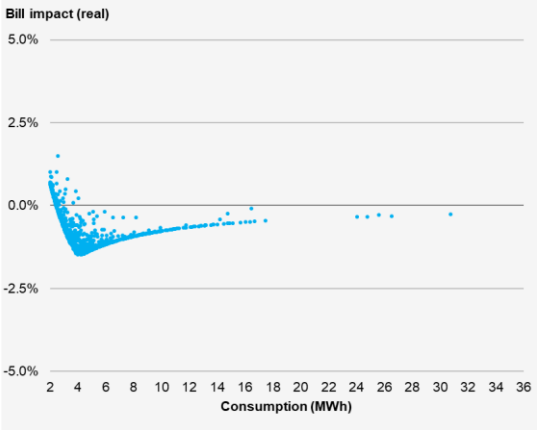
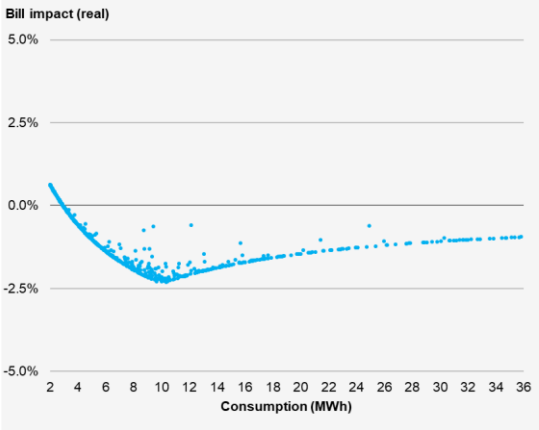


Figure 9.10 Impact over 2019-24 on non-TOU small business (EA050)



It is also important to note that customers on the IBT have the option of mitigating the impact of our proposal to increase the second and third blocks under the IBT by voluntarily opting onto the more cost reflective seasonal TOU tariff. The figure below shows the annual dollar difference in network bills between TOU and IBT across a range of annual energy consumption levels. It is clear from this figure that many of our IBT customers could be better off under our seasonal TOU tariff, particularly if they are willing to shift load away from the more expensive summer and winter peak times.

Figure 9.11 Average discount in 2019/20 between TOU and IBT

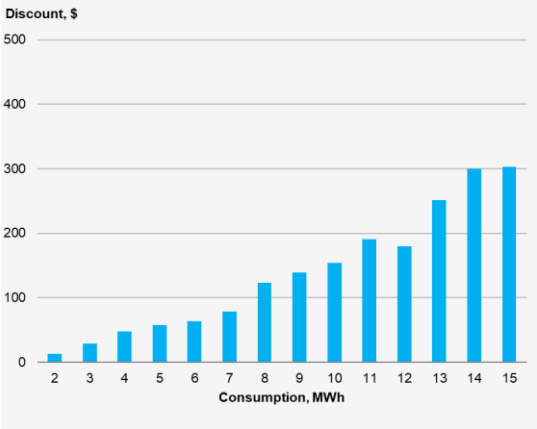
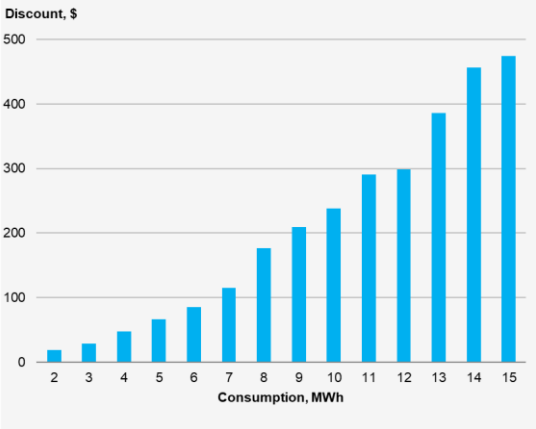


Figure 9.12 Average discount over 2023/24 between TOU and IBT



9.3 Impact on residential and small business customers using 15-40 MWh p.a.

The figure below shows that the network impact of our proposal to re-assign existing customers on a TOU tariff with interval metering using between 15-40 MWh p.a. to a proposed LV TOU capacity tariff will not result in an unacceptable network bill outcomes during the next regulatory control period.

Figure 9.13 Impact in 2019/20 on residential customer using 15-40 MWh p.a. (EA025)

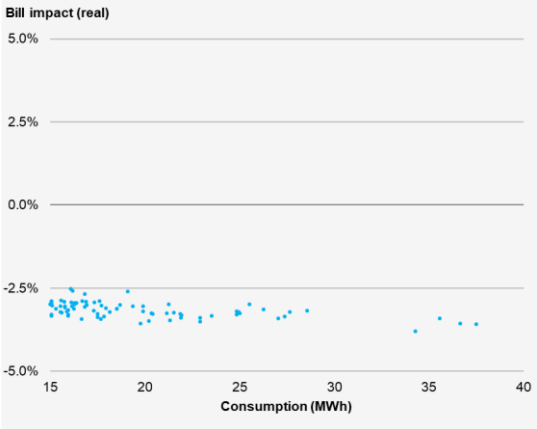


Figure 9.14 Impact in 2019/20 on business customer using 15-40 MWh p.a. (EA225)

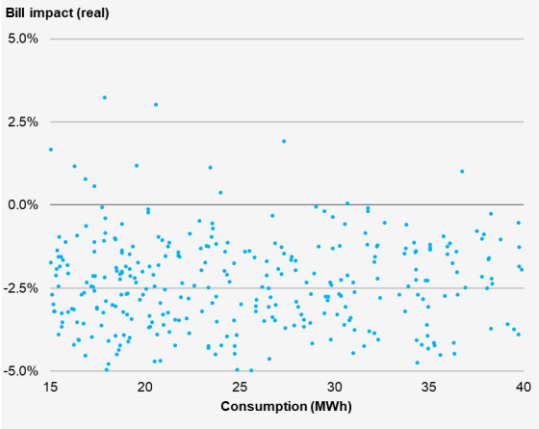


Figure 9.15 Impact over 2019-24 on residential customer using 15-40 MWh p.a. (EA025)

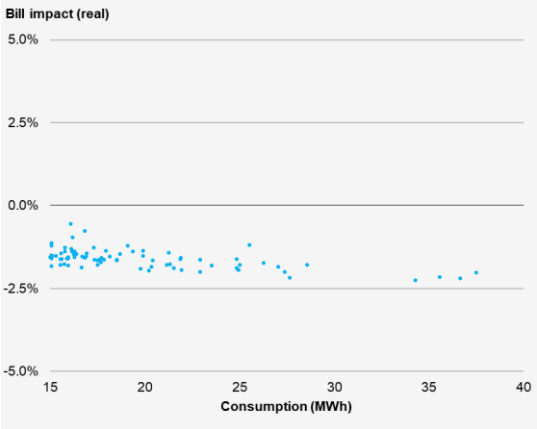
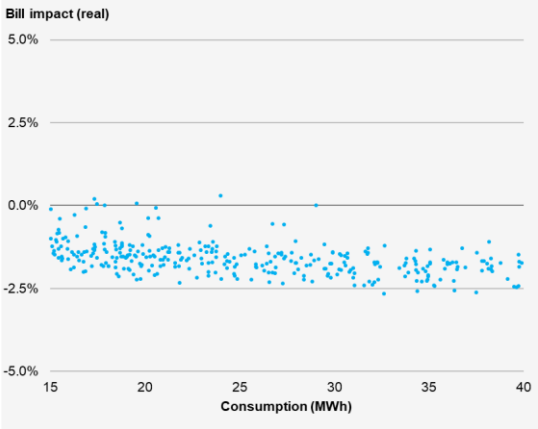


Figure 9.16 Impact over 2019-24 on business customer using 15-40 MWh p.a. (EA225)



9.4 Impact on medium sized business customers

Ausgrid's proposed reforms to our network tariffs for customers connected to the low voltage level of our electricity network using above 40 MWh p.a. are not expected to result in unacceptable network bill outcomes in the next regulatory control period.

The network bill outcomes for existing customers assigned to our LV TOU tariff for customers using 40-160 MWh p.a. are acceptable as shown in the figure below:

Figure 9.17 Impact in 2019/20 on business customer using 40-160 MWh p.a. (EA302)

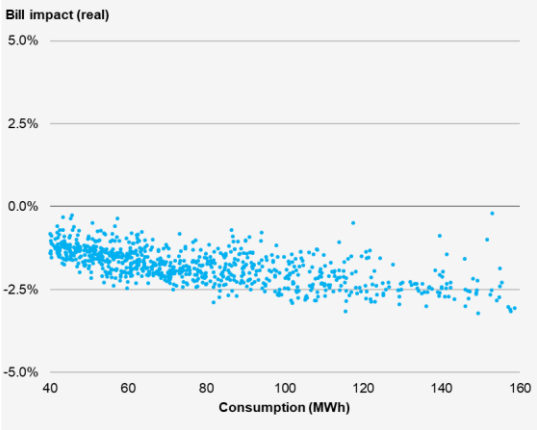
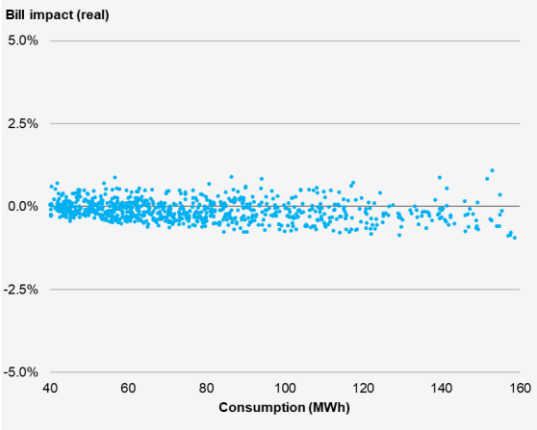


Figure 9.18 Impact over 2019-24 on business customer using 40-160 MWh p.a. (EA302)



It is also clear from our analysis that existing customers assigned to our proposed LV TOU tariff for customers using above 160 MWh p.a. will not face unacceptable network bill outcomes, as shown in the figure below:

Figure 9.19 Impact in 2019/20 on business customer using >160 MWh p.a. (EA309) [28]

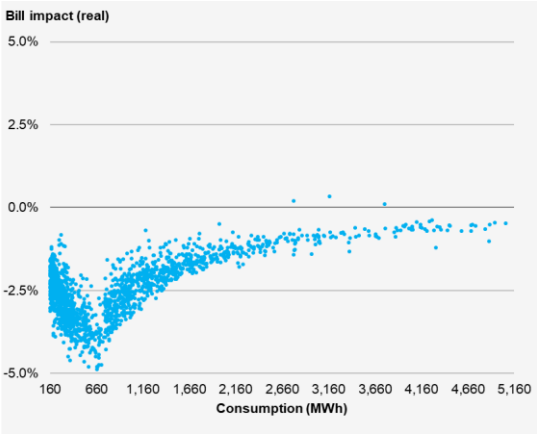
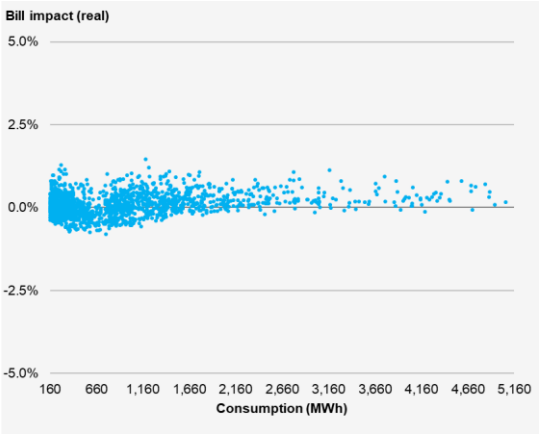


Figure 9.20 Impact over 2019-24 on business customer using >160 MWh p.a. (EA309)



9.5 Impact on large business customers

9.5.1 High voltage connected customers

The network bill outcomes for existing customers assigned to our HV TOU tariff are acceptable as shown in the figure below:

Figure 9.21 Impact in 2019/20 for HV business customers (EA370)

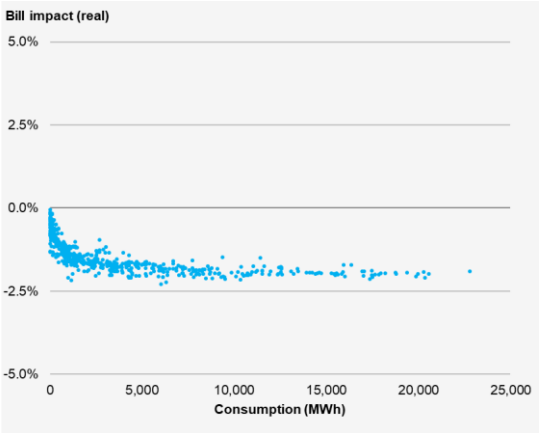
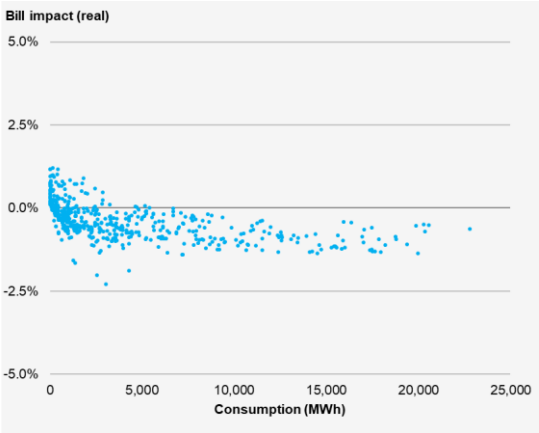


Figure 9.22 Impact over 2019-24 for HV business customers (EA370)



[28] The customers on the new EA309 tariff have been re-assigned from both EA305 and EA310.

9.5.2 Sub-transmission voltage connected customers

The network bill outcomes for existing customers assigned to our STV TOU capacity tariff are acceptable as shown in the figure below:

Figure 9.23 Impact in 2019/20 for ST business customers (EA390)

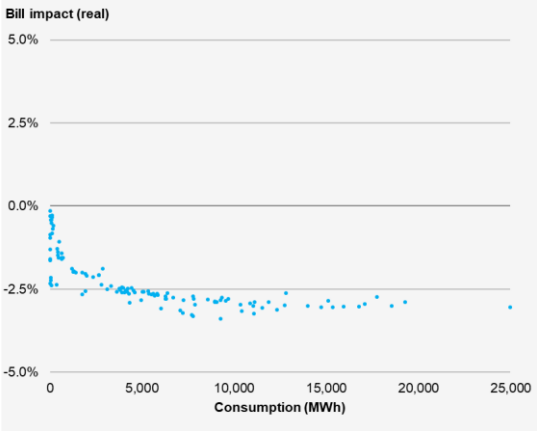
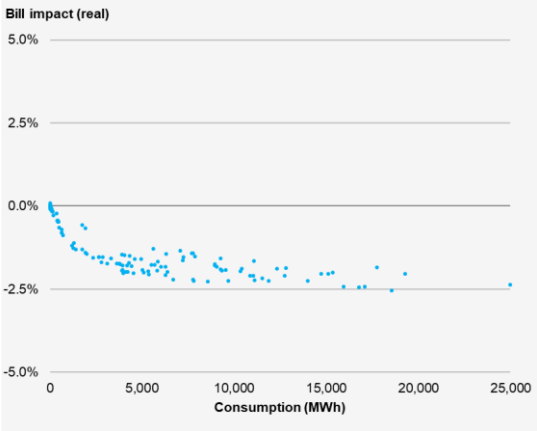


Figure 9.24 Impact over 2019-24 for ST business customers (EA390)



10 Assessment of economic cross-subsidies

10.1 Rule requirement

Ausgrid is required under Section 6.18.5(a) of the Rules to develop annual indicative prices over the regulatory control period that are free of economic subsidy at the tariff class level. Ausgrid proposes to satisfy this obligation by demonstrating that these prices are expected to produce DUOS revenue at the tariff class level in each year that lies on or between:

- an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and
- a lower bound representing the avoidable cost of not serving those retail customers.

This section also aims to provide our stakeholders with an understanding of the broader issue of cross-subsidy at the individual tariff level using the total economic cost concept from Chapter 6 of the Rules. While estimating cross-subsidies at the individual tariff level is a highly subjective exercise given that residual costs typically account for a very high proportion of total efficient costs in a given year, Ausgrid believes that it may provide some insights into this issue and assist stakeholders to better understand the complexities associated with estimating them.

10.2 Economic concept of subsidy

The purpose of applying stand alone and avoidable cost bounds on expected tariff revenues is to ensure that the distribution business is not pricing each tariff class outside the bounds defined by economic efficiency. These bounds, stand alone and avoidable costs, are the highest and lowest theoretical prices that a distributor could charge a customer class without imposing costs on other classes or having the customer pursue alternative forms of supply. In other words, pricing outside these efficient bounds implies cross-subsidisation between tariff classes if the business is recovering its costs.

It was noted in a NERA Economic Consulting report for the Ministerial Council on Energy (MCE) that the Rule aims to achieve "the economic objectives of ensuring that the revenue expected to be recovered from each tariff class is calibrated so as to discourage inefficient bypass and to avoid customer subsidies. [29]

This point was also articulated by the economist John Vickers who stated that the stand alone cost test has been argued to result in 'subsidy-free' prices because consumers of each product at least cover the extra costs that their consumption causes, so no financial burden is placed on others, and no consumers pay more than they would pay if they broke away and went to an alternative supplier with access to the same technology.[30]

10.2.1 Definition of stand alone cost

Stand alone cost represents the cost that would be required to replicate or bypass the network. It follows that if customers were charged above stand alone costs it would be beneficial for that group of customers to bypass the network or be provided by a new entrant. Therefore, these costs are comprised of the assets and operating costs that would be required to provide services to that tariff class on a dedicated basis (i.e. without sharing costs with other tariff classes).

10.2.2 Definition of avoidable cost

Avoidable cost represents the cost that would be avoided if the network business no longer provided services to that group of customers. If the business charges less than avoidable cost to that group of customers it follows that it would be beneficial for it to not provide services to those customers since the costs would be greater than the expected revenues.

[29] NERA Economic Consulting, Distribution Pricing Rule Framework, Network Policy Working Group, December 2006
[30] Vickers, John (1997), "Regulation, Competition and the Structure of Prices", Oxford Review of Economic Policy, 13:1.

Short run avoidable costs represent the costs that the business should be recovering in the short run, where only variable – predominantly operating – costs can vary. This is differentiated from long run avoidable costs where planned capital investments should be included. Given that tariffs are to be designed with regard to long-run marginal cost it follows that the lower bound for efficient tariffs should be long-run avoidable costs.

10.3 Efficiency bounds test at tariff class level

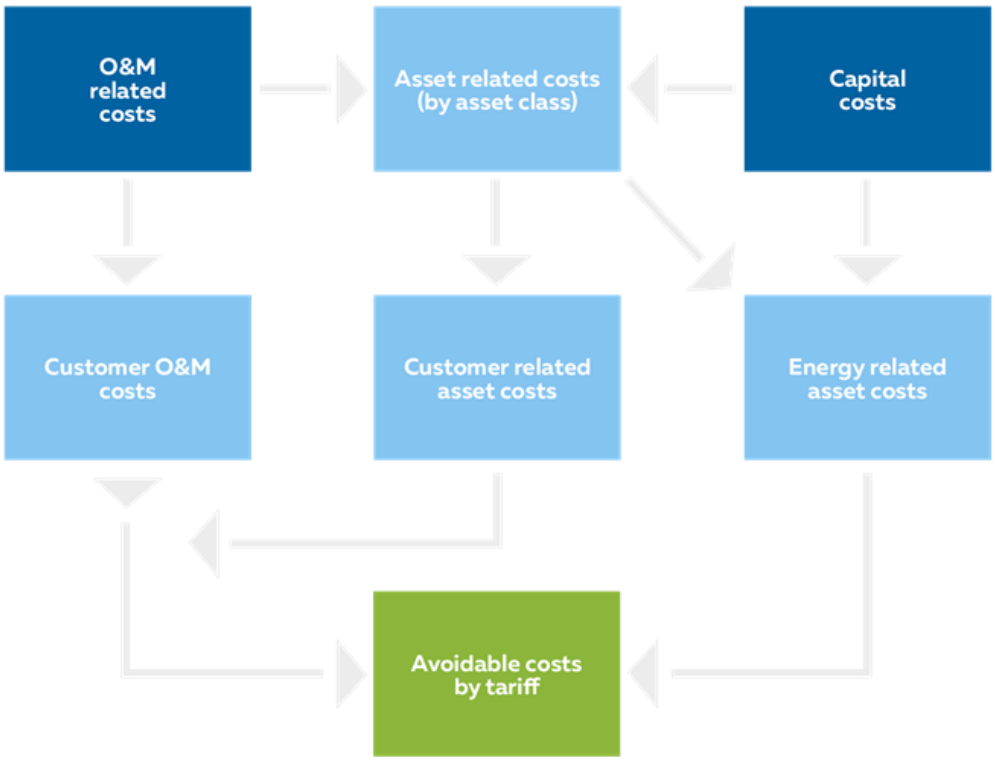
To satisfy our obligations under Chapter 6 of the Rules to demonstrate that the pricing outcomes set out in the TSS are free of economic subsidy, Ausgrid proposes to demonstrate that these prices are expected to produce DUOS revenue at the tariff class level in each year that lies on or between an upper bound representing the stand alone cost of serving the retail customers who belong to that class and a lower bound representing the avoidable cost of not serving those retail customers.

10.3.1 Methodology for estimating stand alone and avoidable costs for each tariff class

Ausgrid has estimated the annual stand alone and avoidable costs of electricity distribution service provision at the tariff class level over the regulatory control period on the basis of a detailed disaggregated analysis of our annual cost to serve. While it is clear that our approach will need to rely to a large extent on the exercise of professional judgment in relation to the allocation of costs, Ausgrid believes that our approach is acceptable at this stage given that the prohibitive cost of obtaining more robust engineering estimation of the costs is likely to outweigh the benefits of doing so.

A high-level understanding of our methodology for estimating avoidable costs at the tariff class level over the regulatory control period is provided by the figure below:

Figure 10.1 Calculating avoidable costs



In the context of the Rules, the concept of stand alone cost is readily applicable as an estimate of the costs of serving a tariff class alone. Ausgrid has estimated the stand alone cost for each tariff class by assessing and categorising its capital and operating costs on the basis of the following two dimensions as follows:

- **Whether costs are direct or indirect** – where capex and operating costs are categorised as:
    - ‘direct’ or ‘avoidable’, i.e., the cost can be attributed to a specific group of users and would not be incurred but for those users; or
    - ‘indirect’ or ‘shared’, i.e., the cost is common to multiple groups of users.

    For example, customer operations is directly attributable to individual customers. In contrast, operational expenditure costs are generally indirect, eg, the cost of debt raising cannot be attributed to specific customers or customer groups.

- **Whether costs are fixed or variable** – where capex and operating costs are categorised as either:
    - ‘’variable’, i.e., the cost tends to increase in proportion to the scale at which the service is provided; or
    - ‘fixed’, i.e., the cost is independent of the scale at which the service is provided.

    For example, maintenance and repair costs are considered variable as they are likely to be highly dependent on the physical size of the network. In contrast, incentive payments are likely to be relatively independent of network characteristics such as the number of customers or maximum demand.

Having categorised individual costs, the next step would be to use a weighting mechanism such as customer numbers or consumption to attribute cost categories to each tariff class. In equation form, this process can be expressed as follows:

$$Stand\text{-}alone\ cost_i = \ Avoidable\ cost_i + \ Fixed\ indirect\ costs + \sum_{j=1}^{n} \beta_{i,j} Variable\ indirect\ costs_j$$

Where:

- i represents each of Ausgrid’s tariff classes;
- $Stand\ alone\ cost_i$ is the stand-alone cost to serve customers on tariff class i;
- $Avoidable\ costs_i$ is the avoidable cost to serve customers on tariff class i;
- $Variale\ indirect\ costs_j$ j represents each of Ausgrid’s variable indirect operating and capital cost categories; and
- $\beta_{i,j}$ is the scaling factor (some value between zero and one) applied to cost category j.

10.3.2 Are our efficient tariffs free of economic subsidy at the tariff class level?

Ausgrid is satisfied that our efficient tariff outcomes are free of economic subsidy since the revenue outcomes based on these prices lie on or within the bounds of stand alone and avoidable cost at the individual tariff class level.

10.3.3 Are our indicative tariffs free of economic subsidy at the tariff class level?

Ausgrid is satisfied that the indicative prices are free of economic subsidy given that our analysis in Table 10.1 shows that the revenue outcomes based on these prices lie on or within the bounds of stand alone and avoidable cost at the individual tariff class level.

Table 10.1 – Comparison of Ausgrid's expected DUOS outcome vs stand alone and avoidable cost by tariff class – indicative pricing schedule ($m)

Tariff Class	2019/20			2020/21		
	Avoidable cost	Expected DUOS revenue	Stand alone cost	Avoidable cost	Expected DUOS revenue	Stand alone cost
Low Voltage	255.52	1,413.44	1,430.06	281.67	1,448.15	1,492.28
High voltage	15.73	55.20	903.11	17.95	56.89	932.56
Sub-transmission voltage	26.59	37.89	339.67	31.33	39.45	353.93
Unmetered	1.54	10.09	1,176.07	1.75	10.05	1,212.36

Table 10.2 – Comparison of Ausgrid's expected DUOS outcome vs stand alone and avoidable cost by tariff class – indicative pricing schedule ($m)

Tariff Class	2021/22			2022/23		
	Avoidable cost	Expected DUOS revenue	Stand alone cost	Avoidable cost	Expected DUOS revenue	Stand alone cost
Low Voltage	309.38	1,481.86	1,544.63	335.42	1,516.77	1,602.60
High voltage	20.17	58.94	953.43	22.24	60.94	979.61
Sub-transmission voltage	37.21	42.48	366.49	43.20	45.43	380.97
Unmetered	1.96	10.13	1,237.21	2.16	10.10	1,269.34

Table 10.3 – Comparison of Ausgrid's expected DUOS outcome vs stand alone and avoidable cost by tariff class – indicative pricing schedule ($m)

Tariff Class	2023/24		
	Avoidable cost	Expected DUOS revenue	Stand alone cost
Low Voltage	342.35	1,554.48	1,621.77
High voltage	22.36	63.08	989.08
Sub-transmission voltage	44.20	46.37	385.54
Unmetered	2.18	10.14	1,281.59

11 Compliance check list

To assist the AER and stakeholders in understanding how the tariffs in our proposed TSS comply with the requirements of Chapter 6 of the Rules, Ausgrid has provided a detailed compliance checklist in the tables below.

Table 11.1 – Regulatory proposal and proposed tariff structure statement – 6.8.2 – Submission of tariff structure statement

Rule provision	Amending clause	Requirement	Section in main TSS	Other documents
6.8.2(a)	11.73.2(a)	A Distribution Network Service Provider must, whenever required to do so under paragraph (b), submit to the AER a regulatory proposal and a proposed tariff structure statement related to the distribution services provided by means of, or in connection with, the Distribution Network Service Provider's distribution system.	Entire document	
6.8.2(b)	11.73.2(a)	A regulatory proposal and a proposed tariff structure statement must be submitted: by 30 April 2018.	Entire document	
6.8.2(c)	11.73.2(a)	A proposed tariff structure statement must be accompanied by information that contains a description (with supporting materials) of how the proposed tariff structure statement complies with the pricing principles for direct control services.	Entire document	
6.8.2(c1a)	11.73.2(a)	The proposed tariff structure statement must be accompanied by an overview paper which includes a description of how the Distribution Network Service Provider has engaged with retail customers and retailers in developing the proposed tariff structure statement and has sought to address any relevant concerns identified as a result of that engagement		Regulatory Proposal
6.8.2(d1)		The tariff structure statement must be accompanied by an indicative pricing schedule.	Section 8	
6.8.2(d2)		The tariff structure statement must comply with the pricing principles for direct control services.	Entire document	
6.8.2(e)		If more than one distribution system is owned, controlled or operated by a Distribution Network Service Provider, then, unless the AER otherwise determines, a separate tariff structure statement is to be submitted for each distribution system.	Not applicable	
6.8.2(f)		If, at the commencement of this Chapter, different parts of the same distribution system were separately regulated, then, unless the AER otherwise determines, a separate tariff structure statement is to be submitted for each part as if it were a separate distribution system.	Not applicable	

Table 11.2 – Distribution Pricing Rules – 6.18.1A –Tariff Structure Statement

Rule provision	Amending clause	Requirement	Section in main TSS	Other documents
6.18.1A(a)(1)		The tariff structure statement must include the tariff classes into which retail customers for direct control services will be divided during the relevant regulatory control period.	Section 3	
6.18.1 A(a)(2)		The tariff structure statement must include the policies and procedures the Distribution Network Service Provider will apply for assigning retail customers to tariffs or reassigning retail customers from one tariff to another (including any applicable restrictions).	Section 4	
6.18.1A(a)(3)		The tariff structure statement must include the structures for each proposed tariff.	Section 8	
6.18.1A(a)(4)		The tariff structure statement must include the charging parameters for each proposed tariff.	Section 8	
6.18.1A(a)(5)		The tariff structure statement must include a description of the approach that the Distribution Network Service Provider will take in setting each tariff in each pricing proposal during the relevant regulatory control period in accordance with clause 6.18.5 (pricing principles).	Section 5 to 8	
6.18.1A(b)		The tariff structure statement must comply with the pricing principles for direct control services.	Entire document	
6.18.1A(e)		A tariff structure statement must be accompanied by an indicative pricing schedule which sets out, for each tariff for each regulatory year of the regulatory control period, the indicative price levels determined in accordance with the tariff structure statement.	Section 8	

Table 11.3 – Distribution Pricing Rules – 6.18.1A –Tariff Classes

Rule provision	Amending clause	Requirement	Section in main TSS	Other documents
6.18.3(b)		Each customer for direct control services must be a member of 1 or more tariff classes.	Section 3	
6.18.3(c)		Separate tariff classes must be constituted for retail customers to whom standard control services are supplied and retail customers to whom alternative control services are supplied (but a customer for both standard control services and alternative control services may be a member of 2 or more tariff classes).	Section 3	
6.18.3(d)		A tariff class must be constituted with regard to: (1) the need to group retail customers together on an economically efficient basis; and (2) the need to avoid unnecessary transaction costs.	Section 3	

Table 11.4 – Distribution Pricing Rules – 6.18.1A – Principles governing assignment or re-assignment of retail customers to tariff classes and assessment and review of basis of charging

Rule provision	Requirement	Section in main TSS	Other documents
6.18.4(a)	In formulating provisions of a distribution determination governing the assignment of retail customers to tariff classes or the re-assignment of retail customers from one tariff class to another, the AER must have regard to the following principles:	Section 4	
6.18.4(a)(1)	Retail customers should be assigned to tariff classes on the basis of one or more of the following factors: (i) the nature and extent of their usage; (ii) the nature of their connection to the network; (iii) whether remotely-read interval metering or other similar metering technology has been installed at the retail customer's premises as a result of a regulatory obligation or requirement;	Section 3 and 4	
6.18.4(a)(2)	Retail customers with a similar connection and usage profile should be treated on an equal basis;	Section 3 and 4	
6.18.4(a)(3)	However, retail customers with micro-generation facilities should be treated no less favourably than retail customers without such facilities but with a similar load profile;	Section 3 and 4	
6.18.4(a)(4)	A Distribution Network Service Provider's decision to assign a customer to a particular tariff class, or to re-assign a customer from one tariff class to another should be subject to an effective system of assessment and review. Note: If (for example) a customer is assigned (or reassigned) to a tariff class on the basis of the customer's actual or assumed maximum demand, the system of assessment and review should allow for the reassignment of a customer who demonstrates a reduction or increase in maximum demand to a tariff class that is more appropriate to the customer's load profile.	Section 3 and 4	
6.18.4(b)	If the charging parameters for a particular tariff result in a basis of charge that varies according to the usage or load profile of the customer, a distribution determination must contain provisions for an effective system of assessment and review of the basis on which a customer is charged.	Section 3 and 4	

Table 11.5 – Distribution Pricing Rules – 6.18.1A – Network Pricing Objective and Pricing Principles

Rule provision	Requirement	Section in main TSS	Other documents
6.18.5(a)	The network pricing objective is that the tariffs that a Distribution Network Service Provider charges in respect of its provision of direct control services to a retail customer should reflect the Distribution Network Service Provider's efficient costs of providing those services to the retail customer.	Entire document	
6.18.5(b)	Subject to paragraph (c), a DNSP's tariffs must comply with the pricing principles set out in paragraphs (e) to (j).	Sections 3 to 10	
6.18.5(c)	A Distribution Network Service Provider's tariffs may vary from tariffs which would result from complying with the pricing principles set out in paragraphs (e) to (g) only: (1) to the extent permitted under paragraph (h); and (2) to the extent necessary to give effect to the pricing principles set out in paragraphs (i) to (j).	Sections 3 to 10	
6.18.5(d)	A Distribution Network Service Provider must comply with paragraph (b) in a manner that will contribute to the achievement of the network pricing objective.	Sections 3 to 10	

Table 11.6 – Distribution Pricing Rules – 6.18.1A – Application of the Pricing Principles

Rule provision	Requirement	Section in main TSS	Other documents
6.18.5(e)	For each tariff class, the revenue expected to be recovered must lie on or between: (1) an upper bound representing the stand alone cost of serving the retail customers who belong to that class; and (2) a lower bound representing the avoidable cost of not serving those retail customers.		
6.18.5(f)	Each tariff must be based on the long-run marginal cost of providing the service to which it relates to the retail customers assigned to that tariff with the method of calculating such cost and the manner in which that method is applied, to be determined having regard to: (1) the costs and benefits associated with calculating, implementing and applying that method as proposed; (2) the additional costs likely to be associated with meeting demand from retail customers that are assigned to that tariff at times of greatest utilisation of the relevant part of the distribution network; and (3) the location of retail customers that are assigned to that tariff and the extent to which costs vary between different locations in the distribution network.	Section 5	Technical Attachment 3
6.18.5(g)	The revenue expected to be recovered from each tariff must: (1) reflect the Distribution Network Service Provider's total efficient costs of serving the retail customers that are assigned to that tariff; (2) when summed with the revenue expected to be received from all other tariffs, permit the Distribution Network Service Provider to recover the expected revenue for the relevant services in accordance with the applicable distribution determination for the Distribution Network Service Provider; and (3) comply with sub-paragraphs (1) and (2) in a way that minimises distortions to the price signals for efficient usage that would result from tariffs that comply with the pricing principle set out in paragraph (f).	Sections 7, 8 and 9	Technical Attachment 1 and 2

Table 11.7 – Distribution Pricing Rules – 6.18.1A – Application of the Pricing Principles (continued)

Rule provision	Requirement	Section in main TSS	Other documents
6.18.5(h)	A Distribution Network Service Provider must consider the impact on retail customers of changes in tariffs from the previous regulatory year and may vary tariffs from those that comply with paragraphs (e) to (g) to the extent the Distribution Network Service Provider considers reasonably necessary having regard to: (1) the desirability for tariffs to comply with the pricing principles referred to in paragraphs (f) and (g), albeit after a reasonable period of transition (which may extend over more than one regulatory control period); (2) the extent to which retail customers can choose the tariff to which they are assigned; and (3) the extent to which retail customers are able to mitigate the impact of changes in tariffs through their usage decisions.	Section 5 to 10	
6.18.5(i)	The structure of each tariff must be reasonably capable of being understood by retail customers that are assigned to that tariff, having regard to: (1) the type and nature of those retail customers; and (2) the information provided to, and the consultation undertaken with, those retail customers.	Sections 3 and 4	
6.18.5(j)	A tariff must comply with the Rules and all applicable regulatory instruments.	Entire Document	

12 Description of tariff structure and charging parameters

This section provides a description of Ausgrid's network use of system tariffs to apply over the next regulatory control period.

We present the existing TOU charging windows for residential customers in the table below, which we are not proposing to change.

Table 12.1 – TOU charging windows for residential customers (unchanged)

Customer type	Time of Use period definition
The peak period	• From 2pm to 8pm on working weekdays during 1 November and 31 March (inclusive) – the "summer months"; and • From 5pm to 9pm on working weekdays during 1 June to 31 August (inclusive) – the "winter months".

The shoulder period	In simple terms, the shoulder period applies from 7am to 10pm every day, except where a peak period applies during that period.
	Specifically, it applies:
	• from 7am to 10pm on all weekends and public holidays;
	• on working weekdays in the summer months:
	  ○ from 7am to 2pm; and
	  ○ from 8pm to 10pm,
	• on working weekdays in the winter months:
	  ○ from 7am to 5pm; and
	  ○ from 9pm to 10pm;
	• on working weekdays in the non-summer and non-winter months, from 7am to 10pm.

The off-peak period	All other times, i.e., 10pm to 7am.

Note: All times take into account daylight saving during the period gazetted by the NSW Government, generally from 3am on the first Sunday in October to 2am on the first Sunday in April.

We present our proposed TOU charging windows for business customers in the table below.

Table 12.2 – Proposed TOU charging windows for business customers

Time period	AER approved existing definition in 2018/19	Proposed seasonal peak period definition from 1 July 2019
Summer peak period	From 2pm – 8pm on working weekdays during 1 November and 31 March (inclusive) – the "summer months"	No change
Winter peak period	From 2pm – 8pm on working weekdays during 1 June and 31 August (inclusive) – the "winter months"	From 5pm – 9pm on working weekdays in the winter months
Shoulder period	From 7am – 2pm and 8pm – 10pm on working weekdays	On working weekdays in the summer months: • from 7am to 2pm; and • from 8pm to 10pm, On working weekdays in the winter months: • from 7am to 5pm; and • from 9pm to 10pm; On working weekdays in the non-summer and non-winter months, from 7am to 10pm.
Off-peak period	All other times	No change

Note: All times take into account daylight saving during the period gazetted by the NSW Government, generally from 3am on the first Sunday in October to 2am on the first Sunday in April.

For brevity, we do not repeat these tables again in the remainder of this section.

12.1 Residential non-TOU (EA010) tariff (closed from 1 July 2018)

This tariff applies to existing residential customers connected to Ausgrid's electricity network with a basic accumulation meter installed.

Metering requirements

This tariff is only applicable to existing distribution customers in Ausgrid's network area with Type 6 metering; please refer to our ES3 Metering Installations document for more information on this matter.[31]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge; and
- First Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) up to the specified consumption threshold of 1000 kWh per 91 days.
- Second Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess

[31] This document is available to be downloaded from www.ausgrid.com.au

of the specified first block consumption threshold, but less than the specified second block consumption threshold of 2,000kWh per 91 days.

- Third Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified second block consumption threshold.

12.2 Transitional < 2 MWh p.a. non-TOU (EA001) tariff

This tariff is a transitional tariff applicable to eligible residential and small business customers using less than 2 MWh p.a.

Metering requirements

This tariff is only available to distribution customers in Ausgrid's network area with Type 6 or better metering; please refer to our ES3 Metering Installations document for more information on this matter.[32]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge; and
- First Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) up to the specified consumption threshold of 500 kWh per 91 days.
- Second Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified first block consumption threshold, but less than the specified second block consumption threshold of 2,000kWh per 91 days.
- Third Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified second block consumption threshold.

12.3 Residential safeguard (EA002) tariff

This tariff is a transitional tariff applicable to eligible residential customers using less than 2 MWh p.a.

Metering requirements

This tariff is only available to distribution customers in Ausgrid's network area with Type 6 or better metering; please refer to our ES3 Metering Installations document for more information on this matter.[33]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge; and
- First Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) up to the specified consumption threshold of 500 kWh per 91 days.
- Second Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified first block consumption threshold, but less than the specified second block consumption threshold of 2,000kWh per 91 days.

[32] This document is available to be downloaded from www.ausgrid.com.au
[33] This document is available to be downloaded from www.ausgrid.com.au

- Third Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified second block consumption threshold.

12.4 Residential transitional TOU (EA011) tariff (open from 1 July 2018)

From 1 July 2018, existing residential customers on the non-TOU tariff (EA010) that have a Type 5 (or better) meter – including due to a meter upgrade – will be reassigned to this tariff.

Metering requirements

This tariff is only available to distribution customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more information on this matter.[34]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Seasonal Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period; and
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period.

Definition of time of use periods

Presented at the start of this section.

12.5 Residential time of use (TOU) (EA025) tariff

This tariff is only available to residential distribution customers in Ausgrid's electricity network area that are assigned to the low voltage tariff class and are assessed to satisfy the extent of usage eligibility criteria of between 2 and 15 MWh p.a.

Metering requirements

This tariff is only available to distribution customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[35]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Seasonal Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period; and
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period.

Definition of time of use periods

Presented at the start of this section.

[34] This document is available to be downloaded from www.ausgrid.com.au
[35] This document is available to be downloaded from www.ausgrid.com.au

12.6 Residential time of use (TOU) (EA023) demand tariff

This tariff will only be available to residential distribution customers in Ausgrid's electricity network area. Elements of this network tariff will be specified following consultation and agreement with the AER and CCP.

Metering requirements

This tariff will only be available to distribution customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[36]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Seasonal Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period;
- Peak kW Capacity Charge– This tariff component is a network use of system charge applied to the maximum kW demand in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months; and
- Peak kW Demand Charge – The specification of this tariff component will be a key focus of our research program and will only be set following consultation and agreement by the AER and CCP.

Definition of time of use periods

Presented at the start of this section.

12.7 Controlled load (EA030/EA040) tariffs

Ausgrid's controlled load network tariffs are secondary network use of system tariffs that apply to separately metered loads used for operating storage water heaters, thermal storage space heaters and other approved appliances, which are controlled or interrupted by Ausgrid. For a full list of equipment that Ausgrid allows to be under a control load tariff; please refer to our ES7 Network Use of System Tariff – Terms and Conditions. [37]

These tariffs are only available to distribution customers in Ausgrid's network area assigned to one of the following primary network use of system tariffs:

- Residential non-TOU (EA010) tariff;
- Residential <2 MWh non-TOU (EA001) tariff;
- Residential safeguard (EA002) tariff;
- LV residential TOU (EA211) tariff;
- LV business TOU (EA212) tariff;
- Small business non-TOU (EA050) tariff;
- Residential TOU (EA025) tariff;
- Small business TOU (EA225) tariff;

[36] This document is available to be downloaded from www.ausgrid.com.au
[37] This document is available to be downloaded from www.ausgrid.com.au

- Low voltage 40–160 MWh (EA302) tariff; and
- Low voltage transitional 40-160 MWh closed (EA316) tariff.

Please note that Ausgrid currently only allows a distribution customer in Ausgrid's network area to be assigned to one controlled load network tariff.

(i) Time Period Definitions

The time periods where supply is available under Ausgrid's controlled load network tariffs are shown below:

Network Use of System Tariff	Tariff Code	Time period
Controlled load 1	EA030	Supply is usually available for six hour duration between 10pm and 7am.
Controlled load 2	EA040	Supply is usually available for sixteen hours per day including more than six hours between 8pm and 7am and more than four hours between 7am and 5pm.

12.8 LV residential time of use (TOU) capacity 15-40 MWh p.a. (EA211) tariff

This tariff is only available to residential customers in Ausgrid's electricity network area that are assigned to the low voltage tariff class and are assessed to satisfy the extent of usage eligibility criteria of between 15 and 40 MWh p.a.

Metering requirement

This tariff is only available to distribution customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[38]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Seasonal Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kW Capacity Charge– This tariff component is a network use of system charge applied to the maximum kW demand in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

[38] This document is available to be downloaded from www.ausgrid.com.au

12.9 LV business time of use (TOU) capacity 15-40 MWh p.a. (EA212) tariff

The structure and eligibility of this tariff is that same as that for EA211, except EA212 is for business customers. It also has different price levels, but our intention is to align these tariffs through time and then merge them into a single tariff. The resulting customer bill impacts means that we cannot achieve this over the 2019-24 period.

12.10 Small business non-TOU (EA050) tariff (closed from 1 July 2018)

This tariff applies to existing small business customers connected to Ausgrid's electricity network with a basic accumulation meter installed.

Metering requirement

This tariff is only applicable to existing distribution customers in Ausgrid's network area with Type 6 metering; please refer to our ES3 Metering Installations document for more information on this matter.[39]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- First Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) up to the specified consumption threshold of 2500 kWh per 91 days.
- Second Block Energy Consumption Charge – This tariff component is a network use of system charge applying to all energy consumed per standard quarterly billing cycle (being 91 days) in excess of the specified first block consumption threshold.

12.11 Small business transitional TOU (EA051) tariff (open from 1 July 2018)

From 1 July 2018, existing small business customers on the non-TOU tariff (EA050) that have a Type 5 (or better) meter – including due to a meter upgrade – will be reassigned to this tariff.

Metering requirement

This tariff is only available to distribution customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more information on this matter.[40]

Network use of system tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Seasonal Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period; and
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period.

Definition of time of use periods

Presented at the start of this section.

[39] This document is available to be downloaded from www.ausgrid.com.au
[40] This document is available to be downloaded from www.ausgrid.com.au

12.12 Small business time of use (EA225) tariff

This tariff is only available to distribution customers in Ausgrid's electricity network area that are assigned to the low voltage tariff class and are assessed to satisfy the extent of usage eligibility criteria of between 2 and 15 MWh p.a.

Metering requirement

This tariff is only available to customers in Ausgrid's network area with Type 5 or Type 4 metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[41]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period; and
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period.

Proposed definition of time of use periods

Presented at the start of this section.

12.13 Low voltage (LV) TOU capacity 40-160 MWh (EA302) tariff

This tariff is only available to distribution customers in Ausgrid's electricity network area that are assigned to the low voltage tariff class and are assessed to satisfy the extent of usage eligibility criteria of between 40 and 160 MWh p.a.

Metering requirement

This tariff is only available to business customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[42]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kW Capacity Charge– This tariff component is a network use of system charge applied to the maximum kW demand in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

[41] This document is available to be downloaded from www.ausgrid.com.au
[42] This document is available to be downloaded from www.ausgrid.com.au

12.14 Low voltage (LV) transitional TOU capacity 40-160 MWh (EA316) tariff

This tariff is the transitional network use of system tariff for all business distribution customers that satisfy the criteria to be assigned to the low voltage network tariff class and are assessed to satisfy the extent of usage eligibility criteria of between 40 and 160 MWh p.a.

Metering requirement

This tariff is only available to business customers in Ausgrid's network area with Type 5 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[43]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kW Capacity Charge– This tariff component is a network use of system charge applied to the maximum kW demand in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.15 Low voltage TOU capacity >160 MWh (EA309) tariff

This tariff is only available to distribution customers in Ausgrid's electricity network area that are assigned to the low voltage tariff class and are assessed to satisfy the extent of usage eligibility criteria of greater than 160 MWh p.a.

Metering requirement

This tariff is only available to business distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy. [44]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and

[43] This document is available to be downloaded from www.ausgrid.com.au
[44] This document is available to be downloaded from www.ausgrid.com.au

- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.16 Low voltage transitinal TOU capacity >160 MWh (EA317) tariff

This tariff is the transitional network use of system tariff for all business distribution customers that satisfy the criteria to be assigned to the low voltage network tariff class and are assessed to satisfy the extent of usage eligibility criteria of greater than 160 MWh p.a.

Metering requirement

This tariff is only available to business distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[45]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.17 High voltage TOU capacity (system) (EA370) tariff

This tariff is the default network use of system tariff for all new business distribution customers in Ausgrid's network area that satisfy the eligibility criteria to be assigned to the high voltage network tariff class.

Metering requirement

This tariff is only available to business distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more information.[46]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;

[45] This document is available to be downloaded from www.ausgrid.com.au
[46] This document is available to be downloaded from www.ausgrid.com.au

- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

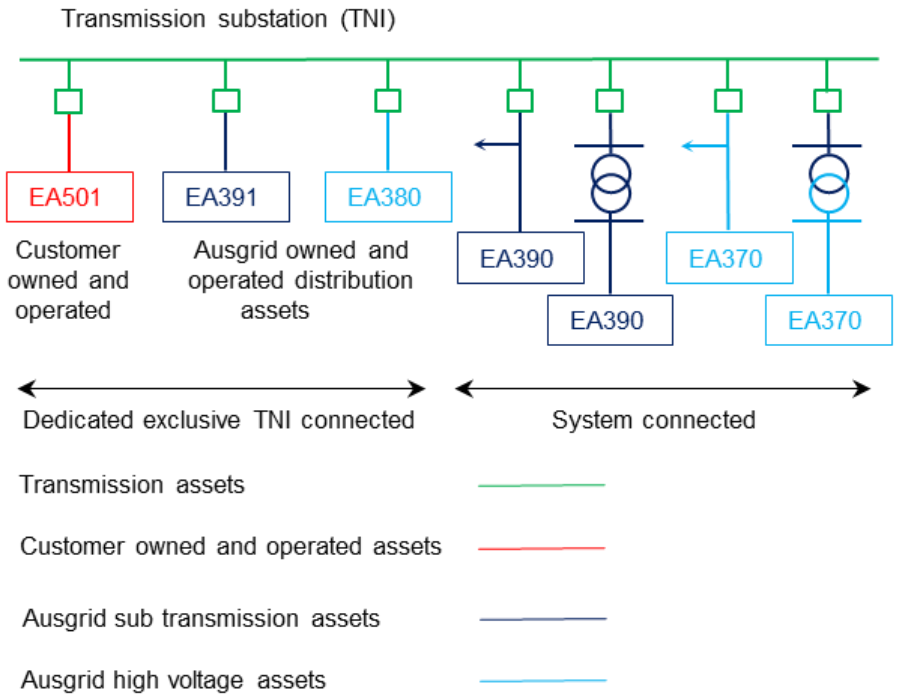
Definition of time of use periods

Presented at the start of this section.

12.18 High voltage TOU capacity (substation) (EA380) tariff

This tariff is an optional primary network use of system tariff available to all distribution customers in Ausgrid's network area that satisfy the eligibility criteria to be assigned to the high voltage network tariff class and which have an exclusive dedicated feeder connection(s) to a Transmission Node Identity (TNI) transmission substation, see figure below:

Figure 12.1 – Transmission, sub transmission and high voltage tariff assignment



Metering requirement

This tariff is only available to business distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[47]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;

[47] This document is available to be downloaded from www.ausgrid.com.au

- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.19 Sub-transmission voltage TOU capacity (system) (EA390) tariff

This tariff is the default primary network use of system tariff for all new distribution customers in Ausgrid's network area that satisfy the eligibility criteria to be assigned to the sub-transmission network tariff class.

Metering requirement

This tariff is only available to business customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[48]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

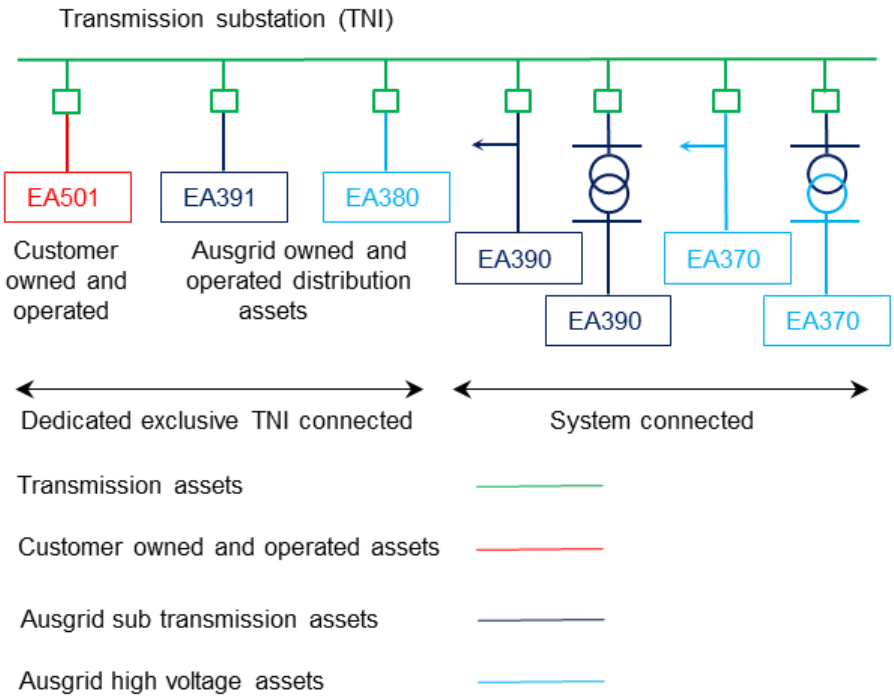
Presented at the start of this section.

[48] This document is available to be downloaded from www.ausgrid.com.au

12.20 Sub-transmission voltage TOU capacity (substation) (EA391) tariff

This tariff is an optional primary network use of system tariff available to all distribution customers in Ausgrid's network area that satisfy the eligibility criteria to be assigned to the Sub-transmission network tariff class and which have an exclusive dedicated feeder connection(s) to a Transmission Node Identity (TNI) transmission substation, see the figure below.

Figure 12.2 – Transmission, sub transmission and high voltage tariff assignment



Metering requirement

This tariff is only available to distribution customers in Ausgrid's network area with Type 3 or better metering, please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[49]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge – This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

[49] This document is available to be downloaded from www.ausgrid.com.au

12.21 Transmission connected TOU capacity (EA501) tariff

This tariff will be the default primary network use of system tariff available to all new transmission connected customers in Ausgrid's network area that satisfy the eligibility criteria to be assigned to the transmission connected tariff class. Transmission connected customers do not use any Ausgrid distribution assets. The connection point is at a TNI's Transmission Connection Point (TCP).

Metering requirement

This tariff is only available to transmission connected customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[50]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.22 Individually calculated network tariffs

Ausgrid's individually calculated tariffs are an individually calculated network use of system tariff. This network tariff is available to all existing customers in Ausgrid's network area that either:

- satisfy the eligibility criteria to be assigned to the transmission connected tariff class, please refer to section 8 of this document; or
- satisfy the eligibility criteria to be assigned to the high voltage tariff class or sub-transmission voltage tariff class and consume more than 40 GWh p.a. or have a maximum demand in excess of 10 MW.

Metering requirement

The individually calculated tariff is only available to distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[51]

Eligibility criteria

The eligibility criteria to be assigned or re-assigned to an individually calculated network tariff are:

- Distribution Customer - To be re-assigned from a published network use of system tariff to an individually calculated tariff a customer currently assigned to the high or sub-transmission voltage network tariff class must have at least 12 months of load data available under their current network use of system tariff and must satisfy the following eligibility criteria:

[50] This document is available to be downloaded from www.ausgrid.com.au
[51] This document is available to be downloaded from www.ausgrid.com.au

- Have a recorded demand history of 10 MW or more in at least three months over the 12-month period prior to the assessment.
- Have a recorded annual consumption that exceeds 40 GWh over the 12-month period prior to the assessment.

- Transmission Customer - an existing customer that satisfies the following criteria to be assigned to the transmission voltage tariff class, namely:
  - A site that is directly connected to a TNI substation Transmission Connection Point (TCP) in Ausgrid's network area.[52]

Network tariff components

Ausgrid's individually calculated tariff may be comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.23 LV connection (stand-by) (EA325) tariff (closed)

This tariff is closed to customers in Ausgrid's network area. It is currently being transitioned to align with Ausgrid's LV >160 MWh (System) Network Tariff.

Standby supplies are loads not normally connected to the electrical supply system but increase the capacity requirements on the upstream system that must be capable of supplying the standby load in addition to normally supplied loads. In accordance with the current AEMO National Metering Identifier Procedure (NMI) document, the standby connection point must be assigned a separate NMI to the normal supply point.

Metering requirement

The existing distribution customers assigned to this tariff are required to have Type 4 or better metering, please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[53]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;

[52] Note: To be eligible for the transmission voltage tariff class, the site must not require the use of any distribution assets.
[53] This document is available to be downloaded from www.ausgrid.com.au

- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

12.24 HV connection (stand-by) (EA360) tariff (closed)

This tariff is closed to distribution customers in Ausgrid's network area. This network use of system tariff is currently being transitioned to align with Ausgrid's HV (System) Network Tariff.

Standby supplies are loads not normally connected to the electrical supply system but increase the capacity requirements on the upstream system which must be capable of supplying the standby load in addition to normally supplied loads. In accordance with the current AEMO National Metering Identifier Procedure (NMI) document, the standby connection point must be assigned a separate NMI to the normal supply point.

Metering requirement

This tariff is only available to business distribution customers in Ausgrid's network area with Type 3 or better metering; please refer to our ES3 Metering Installations document for more up to date information on Ausgrid's metering policy.[54]

Network tariff components

The tariff is comprised of the following tariff components:

- Network Access Charge – This tariff component is a fixed daily charge;
- Peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the peak period;
- Shoulder Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed during the shoulder period;
- Off-peak Energy Consumption Charge – This tariff component is a network use of system charge for energy consumed in off-peak period; and
- Peak kVA Capacity Charge– This tariff component is a network use of system charge applied to the maximum kVA demand recorded in any half hour interval between 2pm and 8pm on a working weekday in the previous 12 months.

Definition of time of use periods

Presented at the start of this section.

[54] This document is available to be downloaded from www.ausgrid.com.au

12.25 Unmetered network (EA401/EA402/EA403) tariffs

A business customer in Ausgrid's network area assigned to the unmetered network tariff class is required under Chapter 6 of the Rules to be assigned to one of the following primary network use of system tariffs:

- Public Lighting (EA401) Tariff
- Constant Unmetered (EA402) Tariff
- EnergyLight (EA403) Tariff

Metering requirement

The unmetered network use of system tariffs are only available to business distribution customers in Ausgrid's network area with Type 7 metering, please refer to ES3 for more up to date information on Ausgrid's metering policy.

Eligibility criteria for unmetered tariffs

Ausgrid allows a new distribution customer in Ausgrid's network area to be assigned to an unmetered network use of system tariff if they satisfy the eligibility requirements of the unmetered tariff class, please refer to section 3 of our TSS.

13 Glossary

Ancillary network services	Non-routine services provided to individual customers on an “as needs” basis. Examples of these services include providing design related information for connections to be made to our network, special meter reads and site establishment fees.
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Basic accumulation metering	Accumulation meters keep track only of the total accumulated electricity usage. Customers are charged the same amount regardless of when the electricity is used.
Block Tariff	A tariff with a structure that applies a different price for energy consumption beyond specified energy consumption threshold or thresholds.
CCF	Climate Change Fund
Charging parameter	Pricing component that makes up a tariff.
CRNP	Cost Reflective Network Price. An individually calculated “customised” tariff that is available to transmission-connected sites or certain large loads.
Current Transformer (CT) connection	A connection where the transformer for use with meters and/or protection devices in which the current in the secondary winding is, within prescribed error limits, proportional to and in phase with the current in the primary winding.
Customer class	Refer to Tariff class
Determination	A decision by the AER that determines the revenue allowance for network service providers under the Rules.
Distributed Energy Resources	Small-scale energy resources such as advanced renewable energy generation and energy storage technologies
Distribution Network Service Providers	A person who engages in the activity of owning, controlling or operating a transmission or distribution system and who is registered by AEMO as a Network Service Provider.
Distribution-connected sites	Customers that are connected to the electricity distribution network.
DUOS	Distribution Use of System
Dynamic peak prices	This is a charging parameter that applies a price, expressed on a cents per kWh basis to energy consumption during a dynamic peak event.
Dynamic peak event	The dynamic peak energy charge is applied to consumption during the specific peak period (e.g. 1pm to 8pm) during the dynamic peak event. There are typically only around 12 dynamic peak events called in a financial year.
Efficiency	Signifies a level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs.

Fixed daily charge	A charging parameter expressed in cents per day. Also known as Network Access Charge.
High voltage tariff	A tariff that applies to connections that are connected at high voltages 5kV, 11kV or 22kV (as measured at the metering point) that is neither a Sub-transmission nor a CRNP tariff.
Interval meter	A meter that records how much electricity is used every 30 minutes.
Low voltage tariff	A tariff that applies to connections that are connected at low voltages 230V or 400V (as measured at the metering point).
LRMC	Long Run Marginal Cost
Metering point	The physical point of connection between the Consumers Mains and the electrical network. Each separate overhead or underground service is a separate connection point. Each separate busbar or direct cable supply from a single substation is a separate connection point, e.g. two busbar supplies equal two connection points.
Metering services	Services that measure the customers' energy consumption and can assist customers to better understand and manage their energy usage.
National Electricity Law	The National Electricity Law set out in the schedule to the National Electricity (South Australia) Act 1996 (SA) and applied in each of the participating jurisdictions.
National Electricity Rules	Refers to the National Electricity Rules (Rules) which governs the operation of the National Electricity Market. The Rules have the force of law and are made under the National Electricity Law.
Network services	Transmission service or distribution service associated with the conveyance, and controlling the conveyance, of electricity through the network.
NUOS	Network Use of System price, which is composed of DUOS, TUOS and CCF prices.
Phase	As defined in the *Service and Installation Rules of New South Wales August 2012.*
Price cap	A price control mechanism
Primary tariff	A network use of system tariff payable by a customer that relates to the principal load of a Distribution Customer
Public lighting services	Services that involve maintaining and improving the standards of streetlights on behalf of local councils, community associations and statutory authorities across Ausgrid's network.
Single phase connection	Refer to Phase
Sub-transmission voltage tariff	A tariff that applies to connections that are connected at sub-transmission voltages 33kV or greater (as measured at the metering point).
Tariff	The monetary value assigned to individual charging parameters (i.e. cents per kVA or cents per day).
Tariff class	A class of retail customers for one or more direct control services who are subject to a particular network tariff or particular network tariffs as defined in the Rules.

Tariff code	A unique code that identifies each different network tariff.
TSS	Tariff Structure Statement referred to in clause 6.18.1A in the Rules that has been approved by the AER for that Distribution Network Service Provider.
Three phase connection	Refer to Phase
Time of Use (TOU) tariff	A tariff with a structure that applies a different price for energy consumed at times of the day.
Transitional tariff	A tariff that may be available for a defined period following changes in the network pricing structures.
Transmission-connected sites	Customers that are connected to the electricity transmission network.
TUOS	Transmission Use of System
Type 5 meter	A metering installation containing an electronic meter, or meters, capable of recording electrical energy consumption in 30 minute market intervals in accordance with the Rules. Such meters are read manually by meter readers. Data is down-loaded via probes into a hand-held data collection device carried by Ausgrid meter readers. Also known as an MRIM, TOU or interval meters.
Type 6 meter	A metering installation containing a meter, or meters, (electronic or electromechanical) capable of recording cumulative electrical energy consumption only. Such meters are read manually by Ausgrid meter readers who record the total cumulative consumption readings displayed on the Type 6 meter register. All meters can support a Type 6 Installation, but they are predominantly installed with mechanical meters or simple electronic meters. Also known as BASIC, Flat Rate or accumulation meters.
Unmetered tariff	A tariff for unmetered supply

14 Technical Attachment 1: Residual Cost Recovery

14.1 Rule requirements

Section 6.18.5(g) of the Rules requires that the revenue expected to be recovered from each tariff must:

- reflect the Distribution Network Service Provider's total efficient costs of serving the retail customers that are assigned to that tariff;
- when summed with the revenue expected to be received from all other tariffs, permit the Distribution Network Service Provider to recover the expected revenue for the relevant services in accordance with the applicable distribution determination for the Distribution Network Service Provider; and
- comply with sub-paragraphs (1) and (2) in a way that minimises the distortion to the price signals for efficient usage that would result from tariffs based on long run marginal cost, as required under Section 6.18.5(f) of the Rules.

This attachment explains the approach that we propose to use to allocate residual costs for the purpose of setting the fixed daily charge of our efficient reference tariffs in each year of the next regulatory control period. This proposed residual cost allocation process will produce an indication of the efficient level of fixed daily charges for each of our network tariffs, which in turn will be used by Ausgrid as a reference point to guide our annual price-setting process during the next regulatory control period.

14.2 Principles for residual cost recovery

Ausgrid proposes to develop an approach to the recovering of residual costs from customers in accordance with the following principles:

- **Economic Efficiency**: residual costs should be recovered in a way that is consistent with the promotion of economic efficiency and does not distort efficient LRMC based network prices, as required under Section 6.18.5(g)(3) of the Rules.
- **Fairness**: there is no single accepted interpretation of fairness, but the concept typically involves the desire for customers to contribute towards the recovery of costs in proportion to the extent that their network usage has caused these costs to be incurred.
- **Gradualism**: Prices should change gradually to avoid customer bill shock, as required under Section 6.18.5(f) of the Rules.

14.3 Potential approaches to residual cost recovery

There are a number of approaches that Ausgrid could adopt to recover residual costs. Importantly, some of these approaches are designed pre-dominantly to promote economic outcomes, while other approaches promote fairness outcomes but often at the expense of economic welfare. All of these approaches could be argued to be consistent with the gradualism principle if implemented on a transitional basis. These approaches are summarised below:

- to efficiently recover residual costs from customers by only applying a mark-up above long run marginal cost to charging parameters where the volumes are expected to show little if any response to changes in the price level, e.g. fixed daily and capacity charges;
- to equitably recover residual costs by applying a mark-up above long run marginal cost that results in:
    - all customers in total or for a given class paying the same average mark-up above long run marginal costs, expressed in cents per kWh, $ per kW, or some combination thereof; and
    - all customers contributing to the recovery of these costs to the extent that their network usage has caused these costs to be incurred.

Ausgrid agrees with the Brattle Group that there is no single "best" approach to recovering residual costs.[55] It is for this reason that Ausgrid proposes to allocate residual costs using a range of parameters to ensure that the recovery of residual costs from customers in a manner that reflects an appropriate balance between the often conflicting objectives of economic efficiency, fairness and gradualism.

14.4 Proposed methodology for allocating residual costs

Our proposed residual cost allocation methodology involves a number of key steps, as set out below:

- Step 1: An assessment of whether the derived allocation of residual cost at the tariff class level complies with side constraint and economic efficiency test requirements set out in Chapter 6 of the Rules;
- Step 2: Allocation of total annual residual cost to each individual tariff; and
- Step 3: Allocation of residual costs for each tariff to each individual charging parameter.

A detailed explanation of each of the steps in our proposed methodology for allocating residual costs is provided in the sections below.

14.4.1 Proposed approach to the calculation of total residual cost

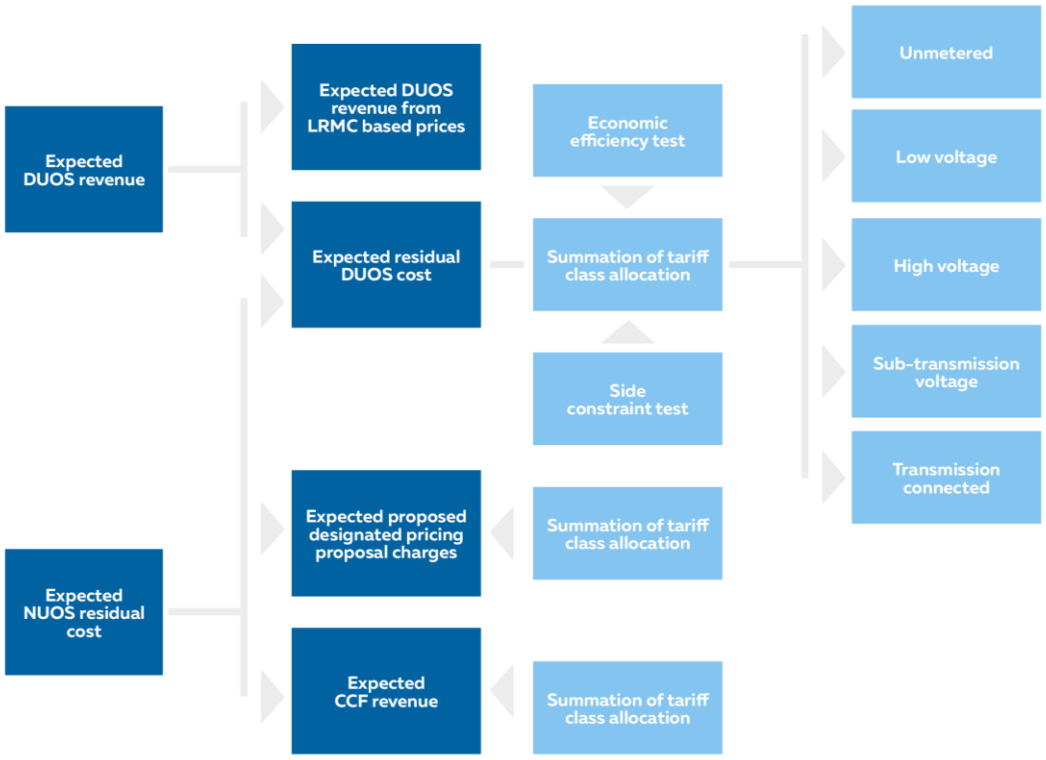
Ausgrid proposes to calculate the residual cost in a given financial year in the following manner:

- Residual costs at the DUOS level – this is calculated by subtracting the revenue expected to be earned from marginal cost based prices from the expected total DUOS revenue calculated in accordance with the AER Final Decision.[56]
- *Plus* other residual costs - expected revenue for a given financial year in respect to designated pricing proposal charges and climate change fund contribution, as calculated in accordance with the AER Final Decision. [57]

Ausgrid proposes to continue with the existing methodology that was approved by the AER in their final decision on our current TSS proposal. An understanding of Ausgrid's proposed methodology to allocate residual cost to individual tariff classes in each financial year is provided by the figure below.

[55] Brattle Group 2014, Structure of Electricity Distribution Network Tariffs: Recovery of Residual Costs, prepared for Australian Energy Market Commission, August, page 46.
[56] AER 2015, Final Decision – Ausgrid distribution determination 2015/16 to 2018/19 – Attachment 14, April, Appendix A, page 22.
[57] AER 2015, Final Decision – Ausgrid distribution determination 2015/16 to 2018/19 – Attachment 14, April, Appendix A page 22 and B page 24.

Figure 14.1: Overview of Ausgrid's proposed method for allocating residual cost to tariff class



Source: Ausgrid 2018

As highlighted in the figure above Ausgrid's proposed methodology will ensure that the annual residual cost allocation outcome at the individual tariff class level complies with the requirements under the Rules that:

- free of economic subsidy - the expected revenue for a tariff class may lie or on between the upper bound of stand alone cost and the lower bound of avoidable cost for that particular tariff class, as per section 6.18.5 (e) of the Rules; and
- side constraints – the weighted average movement in annual DUOS prices at individual tariff class must not exceed the permissible percentages outlined in section 6.18.6 (c) of the Rules.

14.4.2 Proposed approach to the allocation of total residual cost to tariff level

When allocating annual residual cost to individual tariffs with a tariff class Ausgrid has regard to a range of factors and seeks to at the individual tariff level reflect an appropriate balance between the often, conflicting principles of economic efficiency, commerciality and fairness.

Ausgrid proposes to have regard to:

- price elasticity of demand of our customers at tariff level;
- minimising customer network bill impacts; and
- the objective of transitioning to cost reflective prices.

14.4.1 Proposed approach to the allocation of residual cost to charging parameter

There are a number of methodologies that Ausgrid could adopt to allocate the residual cost from the tariff level to each individual charging parameter according to economic principles. The key options available to Ausgrid, as identified by the Brattle Group[58] are:

- postage stamp approach;
- setting volumetric charges equal to LRMC and recovering residual costs through the fixed daily charge;
- introducing LRMC demand-based charges and sharing residual cost recovery between fixed daily and usage charging parameters; and
- recovering residual costs through charging parameters that are inelastic.

Ausgrid believes that the efficient reference tariff should be based on the recovery of residual costs through the fixed daily charge to the extent that this approach does not lead to inefficient grid defection or by-pass. Given the associated customer impact concerns, it is clearly necessary to transition the fixed daily charge to efficient levels over a reasonable time frame. Therefore, the challenge is to ensure that the economic welfare loss associated with this transition is minimised to the extent possible given metering functionality constraints and customer impact considerations. Ausgrid believes that this outcome is best achieved by allocating residual costs within the variable energy components of the tariff structure on the basis of relative price elasticity of demand.

Ausgrid notes that, the AER approved in its final decision for the current TSS our residual cost allocation methodology, however it raised concerns about our use of volume risk as a proxy for price elasticity of demand.[59] Ausgrid agrees with the AER that this is a shortcoming of our residual cost allocation methodology. It is for this reason that HoustonKemp were engaged to undertake a major empirical study of the price elasticity of demand of our customers at the charging parameter and tariff level, refer to our Technical Attachment for more information about this study. Ausgrid proposes to adopt the HoustonKemp estimates of price elasticity of demand at the individual charging parameter level. We believe that this proposed improvement to our residual cost allocation methodology addresses the AER concerns and will ensure that the transition away from inefficient variable energy charges to the more efficient fixed daily charge from a residual cost allocation perspective will be undertaken in a manner that minimises the distortion to efficient network usage. It should also be noted that this approach is also consistent with the principle of gradualism if prices are transitioned to more efficient levels over time.

[58] Brattle Group 2014, Structure of Electricity Distribution Network Tariffs; Recovery of Residual Costs, Report prepared for the Australian Energy Market Commission, page 46.

[59] AER, Draft Decision | Tariff structure statement proposals | Ausgrid, Endeavour Energy, Essential Energy, August 2016, page 50.

15 Technical Attachment 2: HoustonKemp report on price elasticity

REFER TO ATTACHED REPORT

16 Technical Attachment 3: Deloitte report on LRMC

REFER TO ATTACHED REPORT