

Power Networks

Overview of our
tariff structure statement





Summary

Power and Water Corporation has reduced our overall operating costs and required revenue for the benefit of all Territorians.

This has involved introducing demand prices where customers have suitable metering installed, and removing declining block pricing structures.

Our move to cost reflective pricing will ultimately drive better outcomes for our customers.

Most customers will see no impact on their retail bill due to retail price protections provided by the Northern Territory (NT) Government, and we are managing the transition for the large energy users who may see bill impacts.

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1 Your bill and our share of it

Power and Water Corporation is responsible for delivering energy from the power generators to your homes and businesses in a safe and reliable way. While your retailer (for example Jacana Energy, Rimfire Energy, Next Business Energy or QEnergy) charges you for your energy usage, they pay us – on your behalf – for our services.

For most customers, changes in our prices have no impact on their bills. This is because retail pricing protection applies under the NT Government’s Electricity Pricing Order (the Pricing Order).

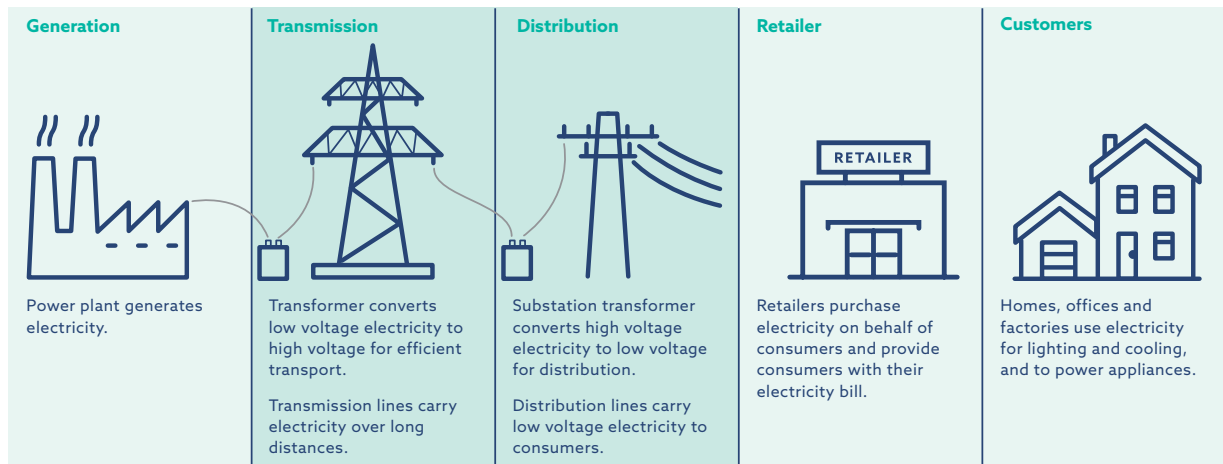
Our prices, also known as network tariffs (tariffs), account for approximately:

- 44% or around \$1,050 of the average annual household bill
- 35% or around \$4,050 annually for the average small business customer.

While these percentages will differ, depending on how much energy you use (and, for large energy users, the prices in your retail offer), they help to illustrate our impact on your bill.

Our tariffs recover the costs of building and maintaining the poles and wires, and the support staff needed to keep the energy network operating. This includes restoring power when faults and emergencies happen, as a result of severe weather events and other causes beyond our control.

The revenue we can recover is regulated and must be approved by the Australian Energy Regulator (AER) every five years. The next regulatory control period will be from 1 July 2019 to 30 June 2024.



2 Our tariff structure statement

The tariffs we can charge are regulated and our tariff structure statement (TSS) forms part of the regulatory requirement. It explains our five-year tariff strategy, outlining what tariffs we will charge and who will be charged which tariffs.

The AER will approve the TSS, which covers our approach for the next five years. Actual tariffs are approved by the AER each April or May and take into account a number of updates such as inflation and revenue cap reconciliation.

The TSS is a requirement of the NT National Electricity Rules (the Rules). We must seek the AER's approval of our TSS for compliance with the network pricing rule requirements.

This means our tariff structures must support the network pricing objective that:

The tariffs that we charge for providing regulated network services to a retail customer should reflect our efficient costs of providing those services.

This objective is designed to support our customers' long-term interests. Research by the CSIRO and Energy Networks Australia shows that billions of dollars' worth of energy infrastructure investment can be saved across Australia if we get this right and support our customers to make informed choices about how they source and use electricity. This is particularly vital as the energy sector transforms through new technologies and energy decarbonisation policies.

By setting out our pricing plans for the upcoming five-year regulatory period, our TSS provides greater transparency and certainty for our customers.

Our large energy users have told us this is extremely important to their future planning and budgeting activities. Our TSS and our accompanying TSS explanatory statement also provides evidence to the AER that we have complied with the Rules. In the next section we explain the price setting rule concepts and demonstrate our compliance with them.

Once approved by the AER, our future annual tariff proposals must align with our TSS within the 2019-24 regulatory period. The AER will cross check this before approving those annual tariff proposals.

The AER has applied a two-step consultative process for reviewing and approving our TSS. We initially submitted a TSS proposal in January 2018 which the AER ran public consultation on, reviewed, asked us clarifying questions about, and then made a public draft decision on.

The Draft Decision substantively approved the material aspects of our proposed tariff strategy. However the AER rejected our proposed TSS, requiring that our revised TSS provide our updated approach to public lighting tariffs, and greater detail on how we would apply individually calculated tariffs for very large customers, and conduct our annual tariff setting process within the TSS period.

Our revised TSS proposal addresses these matters.

TSS scope | Our TSS and accompanying TSS explanatory statement sets out for our customers:

- How we have engaged with our customers when setting our pricing plans
- The way we group customers for pricing purposes – our tariff classes
- The way we decide which customers go on which tariffs – our tariff assignment policy
- What our tariff charges are and how they are applied
- How we have designed our tariffs to meet the Rule requirements.

3 What we are trying to achieve

We are focused on developing easy to understand, cost reflective network tariffs. Coupled with this objective, we are also encouraging customers to understand and manage their energy usage, especially during periods when the demand on the network is high, to encourage efficient use of the network. This will help to defer or avoid future spending to augment the network and ensure customers who choose to use energy during times of peak demand are paying a fair price.

Our second important objective is to develop tariffs that can adapt to emerging renewable energy and distributed energy technologies such as battery storage or the anticipated uptake of electric vehicles.

When designing our network tariffs to comply with the Rules, we have been guided by the following pricing objectives and principles:

- **Pricing efficiency** – an efficient network price is one that signals to the customer their contribution to the cost of providing network services with consideration to limiting the impact on some customer groups.
- **Customer equity** – customers should pay what it costs to supply them.
- **Pricing simplicity** – price structures should be easily understood, straightforward and transparent.
- **Revenue sufficiency** – prices are formulated to recover the allowed revenue approved by the Regulator.



4 Our customer engagement

We have engaged and consulted with our stakeholders and customers to develop our first TSS. This program included customer focus groups, forums, in-depth interviews, the establishment of our Customer Advisory Council and consultation with retailers and other major stakeholders. Our engagement program has focused on two distinct groups of retail customers, recognising the differing tariff impacts:



1. Customers who use less than 750 Megawatt hours (MWh) per year

These are most of our 85,000 customers, and comprise households and small to medium businesses. These customer groups are currently subject to retail pricing protection through the Pricing Order. The Pricing Order regulates the retail prices for these customers. Therefore, the impact of the AER's decision on our TSS will not directly affect their retail electricity bills as our network tariffs are not currently listed as separate charges on their bill.



2. Customers who use more than 750 Megawatt hours (MWh) per year

These are our 200 largest energy users. They generally see our network tariffs as a separate charge on their retail bill and the impact of the AER's decision on our TSS will directly affect this customer group.

This fundamental difference in how our tariffs will affect the two distinct customer groups over the 2019-24 regulatory control period was a primary driver in the design of our engagement program and research questions.

Our engagement with representatives of the less than 750MWh per year customer group tested their understanding and acceptability of our tariff design thinking and draft plans. The results identified that:

- these representatives understood their bills will not be affected by any changes we make to our tariffs in making them more cost reflective
- over half would likely shift some of their energy use to off-peak times in the future if they were to see peak demand charges on their retail bill and respond to our proposed zero off-peak rate

- the majority were in favour of better aligning the share of our revenue received from larger energy users to reflect their share of our total costs.

Our engagement with representatives of the more than 750MWh per year customer group focused on specific tariff changes, options, and any impacts for these customers. The results identified that:

- these representatives supported the cost reflective option, with more than half favouring our 'Fully Cost Reflective' tariff option as their first preference. This option removes the declining block in our demand and energy charges and adds a charge for customers with a poor power factor (as defined in section 8.2)
- around half understood their bill impacts and the other half partially understood as they needed to understand the final retail impact from their retailer
- most wanted time to correct their power factors. Some customers requested more time to prepare for the introduction of poor power factor surcharges, asking that these start later in the period instead of from 1 July 2019 to allow time to design and budget for their power factor correction solutions.

Energy industry

We also consulted with NT energy retailers and our Customer Advisory Council, including through consultation papers, a retailer forum and direct engagement with local councils and the Local Government Association of the Northern Territory (LGANT) to obtain their views on our draft plans and a range of pricing options and issues.

These industry stakeholders support us in our move to more sustainable pricing arrangements which will lower network costs over time, and better prepare the NT for future changes in how customers source and use energy. We have worked with LGANT to ensure our proposed network tariffs for public lighting (unmetered supply) do not discourage innovation and energy efficiency in how councils provide this important community service.

Full details of our engagement program, research findings and how this has influenced our regulatory proposal are set out in our TSS along with our network regulatory proposal.

5 Our tariff classes

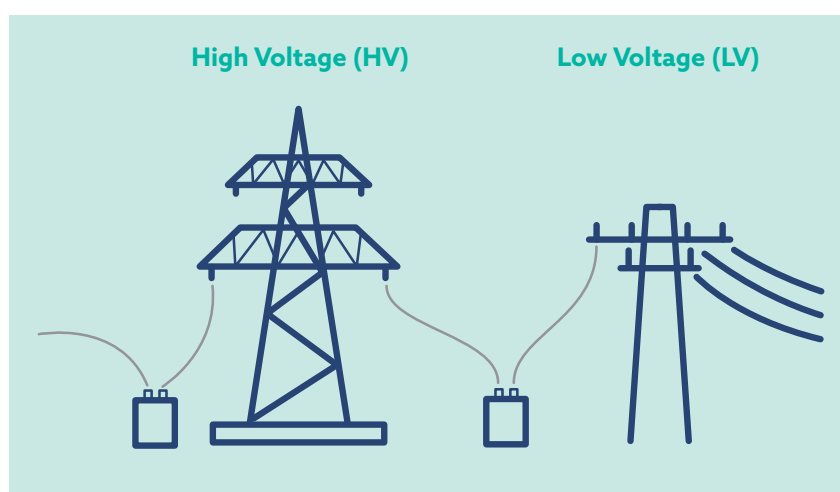
We have kept the number of tariff classes to a minimum, to avoid unnecessary transaction costs. In addition, customers have been efficiently grouped together, recognising the material differences between customers arising from:

- the pattern and level of network usage as between residential and non-residential customers, which have different usage patterns and average consumption, and

- the nature of the plant or equipment required to provide the network access service, in the case of the HV tariff class, as these customers do not make use of the low voltage network or distribution substations.

The three tariff classes are shown in the table below. These tariff classes mean a customer's tariff assignment is based on the voltage level they connect at and their annual energy usage.

Tariff Class	Description of tariffs
LV <750MWh	Residential customers consuming <750MWh pa with standard accumulation meters
	Non-residential customers consuming <750MWh pa with standard accumulation meters
	Customers consuming <750MWh pa with smart meter
	Unmetered supply (for street lighting, traffic lights and other unmetered devices)
LV >750MWh	Customers consuming >750MWh pa connected to the LV network
HV	Customers connected to the HV network



6 How we assign customers to tariffs

Our tariff assignment policy determines which customers should be on which tariff. This policy considers:

- in which tariff class they belong (that is how much energy they use per year and what parts of our network they use)
- whether they are a residential customer or a non-residential customer (for example a business or government agency)
- what type of metering they have installed at their property to measure the way they use energy
- whether they are a large energy user that may place bespoke demands on our system requiring special connection and capacity arrangements along with a dedicated tariff offering.

Our meter types and capabilities

In the past, most customers have had meters that simply measured the total amount of energy used between meter reads. We call these accumulation meters.

Our largest energy users have had meters which are designed to measure the amount of energy used in 15 minute intervals.

This detail provides information on their usage during our network peak times and off peak times. These meters also have communications capabilities which allow us to access meter data more frequently than once per month or quarter. We call these smart meters.

By 1 July 2019 all customers who use more than 40MWh of energy per year will have had a smart meter installed at their property, capable of being remotely read.

From 1 July 2019 we plan to only install smart meters for new connections or when replacing a meter which has reached the end of its service life.

Smart meter

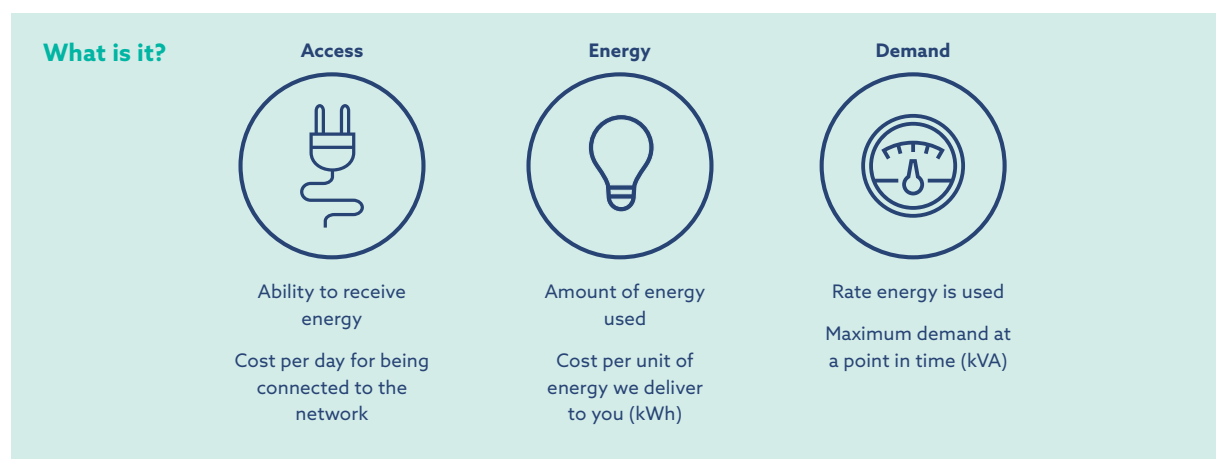


Old meter





7 Tariff components



Our tariffs are made up of three key components:

- fixed system access charge (\$/day)
- demand charge to send a price signal reflecting how the rate of energy use drives our growth costs (\$/kVA)
- volume charge (c/kWh) to cover the residual contribution to costs not covered by the other two elements.

Not all customer tariffs have a demand charge. However, all tariffs have an access charge and a volume charge. In future, it is proposed that tariffs for customers consuming more than 40MWh per year with smart meters may also have an excess kilovolt amperes reactive (kVAr) charge (\$/kVAr). This charge is designed to send a price signal to those customers who have a poor power factor which does not meet our systems technical requirements outlined in our Network Technical Code.

8 Our proposed tariffs

Our tariff structures were previously designed for a vertically integrated electricity business, providing end-to-end services from generation through to retail. Therefore, most of our legacy tariff structures do not reflect the drivers of our network costs. For some customers, they actually provided discounted demand tariffs at the times when our costs are highest.

These legacy tariffs need to be changed to promote efficiency within Power and Water, which will ultimately benefit all customers. Our prices have been designed to comply with the Rules. Our move to cost reflectivity will ultimately drive better outcomes for our customers.

What is cost reflectivity? The amount customers pay should reflect their usage and demand placed on the network, including:

- the cost of them being connected to the network
- the demand they put on the network (particularly at peak times which drives increases in our costs).

What does cost reflectivity mean when setting our tariffs? Cost reflective pricing requires consideration of:

- how our customers use the network ensuring it is reflected in how they are charged. We call this the tariff structure, which identifies what components there are in a bill and how they relate to types of use and ultimately our costs
- how much (i.e. what share of costs) different customer groups pay based on how much of our total costs they account for. We call this our revenue share.

We have captured these requirements in our pricing design principles of 'simple, stable, fair and enough' in developing our 2019-24 TSS and proposed tariffs. Our proposed tariffs will help to ensure:

- the amount paid by different customer groups will reflect how much of our costs they drive
- the way our customers use the network will be reflected in how they are charged, including:

- > demand charges to be introduced for all customers with suitable meters
- > peak demand tariffs to be set at flat levels to encourage efficient energy use (not declining blocks), and energy tariffs will be set at flat levels and will not provide discounts for high energy users
- > reducing our reliance on energy charges over time to avoid distorting energy usage decisions
- > our peak charging period will be better aligned to our current and predicted peak load profile
- > from 1 July 2021, our customers with a power factor that does not meet our systems' technical requirements will be encouraged to implement corrective measures or pay a fair price if they decide not to.

8.1 Aligning our revenue shares

We are planning to better align the share of revenue we receive from each tariff class with how much they cost to supply. Our detailed analysis shows that non-residential tariffs have recovered a lower revenue share than their relative contribution to our total costs.

Our forecast revenue is expected to fall, compared to the current period, providing us with an opportunity for revenue alignment without price increases. Falling revenue means we can achieve a fairer sharing of our costs by:

- reducing the amount of revenue collected from residential customers
- maintaining the amount of revenue collected from non-residential customers, at the current level.

This will allow us to recover our regulated revenue in a way that is less likely to distort our customers' decisions to use energy efficiently.

8.2 Setting our tariff structures

Our proposed tariff classes, tariff assignment and tariff structures are summarised in the table below.

Tariff Class	Tariff structure					
	Tariff assignment	Consumption	Access	Energy	Demand*	Power factor
LV <750MWh pa	Residential Accumulation Meter	0-750MWh pa	Flat	Flat	-	-
	Non-residential Accumulation Meter	0-750MWh pa	Flat	Flat	-	-
	Smart Meter LV	0-750MWh pa	Flat	Flat	Flat 12pm - 9pm peak only, seasonal Time of Use (Oct - Mar), max demand	Excess kVAr (>40MWh pa)
	Unmetered	Unmetered supply	-	Flat		
LV >750MWh pa	Customers consuming >750MWh pa connected to the LV network	>750MWh pa	Flat	Flat	Flat 12pm - 9pm peak only, year round, max demand	Excess kVAr
	Individually calculated customers tariff >750MWh pa customers with extremely large or unique load characteristics		Large customers or those with unique characteristics will be offered an individually calculated tariff			
HV	Customers connected to the HV network	0-750MWh pa and >750MWh pa	Flat	Flat	Flat 12pm - 9pm peak only, year round, max demand	Excess kVAr (>40MWh pa)
	Individually calculated customers tariff >750MWh pa customers with extremely large or unique load characteristics	>750MWh pa	Large customers or those with unique characteristics will be offered an individually calculated tariff			

Introducing demand tariffs for all smart meter customers

Our business priority is to provide energy delivery capacity to our customers in a safe and reliable manner, where and when they need it. This means our costs are driven by the size of the network needed for the times when demand is at its peak. For this reason, our large energy users have always been charged for their demand on our network.

The amount of energy delivered is not a driver of growth in our costs. This means customers who only pay an access charge and an energy usage charge do not receive any signal to indicate how their rate of use of our network at peak times affects our costs.

Equally, there is no incentive for these customers to manage their peak energy use and help minimise our costs, and subsequently help minimise network tariffs.

Demand charges will be introduced for all customers who have a smart meter. This change will apply to customers who use less than 750MWh per year but will not affect their retail price, as they are currently protected by the Pricing Order. This will not increase our total revenue as we will reduce our energy charges commensurately to achieve an overall balance.

Removing the declining block tariff structure and reducing reliance on energy charges

Our costs do not decrease when more energy is used on our network. Our current 'legacy' tariffs feature declining block tariffs, which become cheaper the more energy used and the higher demand in our peak periods. This creates a bulk discount incentive which is not cost reflective and discourages customers from managing their energy demand to help reduce pressure on our network costs.

We propose to remove these declining block tariffs and make the tariffs a flat rate in this TSS. This will not directly impact customers who use less than 750MWh per year. However, it will be reflected in the bills of our large energy users, which is why we consulted with them as part of the initial proposal, to test option preferences to manage bill impacts.

The preferred options resulted in less than two-thirds of our large energy users having either no bill increase or a bill decrease.

We are also seeking to recover less of our costs through energy consumption charges which do not have a link to the way we incur costs, and can therefore distort our customers' decisions about how they use and source their energy.

Shortening our peak charging window

Over time and as a result of changes in the way customers source and use energy, our peak system load profile has changed. We propose adjusting our peak periods to reflect current and forecast future peak demand times within the regulated networks. This will involve shortening the peak window by 39 hours per week from:

- the **current peak period** of 6am to 6pm, seven days a week; to
- the **new peak period** of 12pm to 9pm, week days only.

For our large energy users this peak window will continue to apply all year round, as it does now, reflecting the size of the maximum system capacity we need to make available to them all year round. For small customers using less than 750MWh per year (excluding HV customers), this peak period will only apply during the wet/summer season from October to March (inclusive), with the dry/winter season treated as off peak for these customers. The charts below show the shortening of our peak charging window.

System hourly demand curves



Encouraging power factor correction

What is power factor

Power factor is a value between 0 and 1 that shows how efficient a customer's power consumption is. It shows us:

- how much power is used to actually achieve results like, heat or motion – called 'real power'
- how much power is used to maintain the electromagnetic fields of equipment such as air-conditioners, motors or welders – called 'reactive power'

Real power and reactive power, together, make-up apparent power which is measured in kilovolt amperes (kVA) and is the measurement used to determine overall network capacity.

Power factor is a measure of how efficiently customers use the power delivered via our network. If a customer's power factor is too low (below 0.9), we need to invest in more system capacity than what is needed to deliver usable energy to them. Currently, under the Network Technical Code, a power factor of at least 0.9 is required from all customers. However, we are aware of customers who don't achieve this minimum level. This drives

additional network capacity requirements and increases costs for all customers.

We plan to introduce a new surcharge for customers with a poor (non-compliant) power factor during the latter part of the 2019-24 regulatory period. This will allow a 'notice period' for these customers to correct their power factor. For further information, please view our power factor factsheet at powerwater.com.au/powerfactor

8.3 Complying with the Rules

We have designed our tariffs to ensure we meet the requirements in the Rules by:

- designing tariffs that reflect the efficient costs of servicing our different tariff classes (see section 8.1)
- recovering our total regulated costs, and doing so in a way that does not distort our customers' decisions to use energy more efficiently and the subsequent impact on our network, by recovering our fixed costs (or residual costs) from our fixed access charges and new flat rate energy charges
- factoring in our long run marginal cost when designing our demand tariffs, which is the charging method most closely aligned to the part of our customer's network use that drives our demand growth costs
- ensuring our revenues from each tariff class stay within the efficient pricing bounds of being less than the standalone costs and more than avoidable costs.

Details of how we meet these requirements are provided in our 2019-24 TSS and the accompanying explanatory statement.

8.4 Indicative tariffs

The following tables outline the applicable charging parameters and indicative tariffs for the 2019-20 financial year. Tariffs for 2019-20 will be finalised by the AER in April 2019. We note that tariffs during the 2019-24 regulatory control period will change.

Going forward, annual tariffs will be approved by the AER each April and will take into account the latest available information.

	\$ per day per NM ¹	\$/kVA peak ²	c/kWh anytime	\$/kVA ³
Indicative tariffs for HV customers with consumption above 750MWh per year (ex GST)				
System availability charge	70.000			
Plus charges related to monthly demand		8.270		
Plus charges related to energy metered			2.550	
Plus charges related to excess kVA				0.000
Indicative tariffs for LV customers with consumption above 750MWh per year (ex GST)				
System availability charge	70.000			
Plus charges related to monthly demand		11.000		
Plus charges related to energy metered			2.550	
Plus charges related to excess kVA				0.000

[1] National Meter Identifier which is allocated to each customer's connection.

[2] The peak period rates apply to usage between 12pm and 9pm on any weekday, including public holidays. Off-peak kVA will not be charged.

[3] Excess kVA charge is expected to be implemented from 1 July 2021.


Indicative tariffs for customers with consumption less than 750MWh per year

System availability charge	(\$/day)
Dollars per day per NMI – LV Residential Accumulation ¹	0.640
Dollars per day per NMI – LV Non-residential Accumulation ¹	1.350
Dollars per day per NMI – LV Smart Meter ¹	1.350
Dollars per day per NMI – HV <750MWh ¹	1.350
Energy charges	(¢/kWh)
LV Residential Accumulation	6.824
LV Non-residential Accumulation	9.570
LV Smart Meter	1.540
HV <750MWh	1.540
Unmetered supply	(¢/kWh)
Unmetered Supply	5.506
Demand charges	(\$/kVA)
LV Smart Meter Peak ²	20.510
LV Smart Meter Off Peak ²	0.000
HV <750MWh Peak ³	9.500
HV <750MWh Off Peak ³	0.000
Excess kVA	(\$/kVA)
>40MWh LV Smart Meter	0.000
>40MWh HV	0.000

[1] National Meter Identifier which is allocated to each customer's connection.

[2] The peak period rates apply to usage between 12pm and 9pm on any weekday, including public holidays from 1 October through 31 March. Off-peak kVA will not be charged.

[3] The peak period rates apply to usage between 12pm and 9pm on any weekday including public holidays all year round. Off-peak kVA will not be charged.



8.5 Indicative bill impacts

This table shows indicative bill impacts for our different customer types. These impacts are based on our proposed revenue forecasts and the tariffs set out in the TSS.

Customer type	Network bill		Bill movement	
	2018-19*	2019-20	\$	%
Small Residential – average energy – Accumulation Meter (8,500kWh pa)	1,093	875	(219)	(20%)
Small Residential – average energy – Smart Meter (8,500kWh pa)	1,093	957	(71)	(7%)
Large Residential Accumulation Meter (15,000kWh pa)	1,808	1,319	(489)	(27%)
Large Residential Smart Meter (15,000kWh pa)	1,808	1,381	(427)	(24%)
Non-residential Accumulation Meter (30,000kWh pa)	3,407	3,425	18	1%
Smart Meter (30,000kWh pa) (non-residential)	3,407	2,343	(1,065)	(31%)
Industrial (1,000,000kWh pa)	90,547	92,579	2,033	2%
Large Industrial HV (6,000,000kWh pa)	290,369	271,783	(18,586)	(6%)

Note: *Excludes Alternative Control Services (ACS) Metering

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