AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2022-26

Part IV

Submitted: 31 January 2020

About AusNet Services

AusNet Services owns and operates key regulated electricity transmission and electricity and gas distribution assets located in Victoria, Australia. These assets include:

- A 6,685 kilometre electricity transmission network that services all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 737,000 customer connection points in an area of more than 80,000 square kilometres of eastern Victoria; and
- A gas distribution network delivering gas to approximately 710,000 customer supply points in an area of more than 60,000 square kilometres in central and western Victoria.

AusNet Services' vision is to create energising futures by delivering value to our customers, communities and partners.

For more information visit: www.ausnetservices.com.au

Contact

This document is the responsibility of the Regulated Energy Services division of AusNet Services. Please contact the indicated owner of the document below with any inquiries.

Charlotte Eddy
Manager Economic Regulation
AusNet Services
Level 31, 2 Southbank Boulevard
Melbourne Victoria 3006
Tel: (03) 9695 6000

Table of Contents

19 Metering services

19.1 Key points

- We support the meter service classifications and forms of control proposed by the AER in its Framework and Approach Paper (F&A).
- Our metering proposal has been tested with the Customer Forum through extensive negotiations and deep dive sessions. In addition, we have received feedback from the Consumer Challenge Panel and other stakeholders in response to our Draft Regulatory Proposal. We have taken this feedback into account in preparing our metering proposal.
- In its interim report, the Customer Forum concluded that our Draft Regulatory Proposal represented value for money in relation to metering, given the annual average metering charge is falling and customer benefits are increasing. In this Regulatory Proposal, we have reduced our metering charges by a further $7 per customer per annum (in real $2021 terms) compared to our Draft Regulatory Proposal. This demonstrates that our metering proposal represents a very good outcome for customers.
- For the 2022-26 regulatory period, we are proposing to reduce our average annual metering charge for residential and small business customers by 31%, from $96 to $66 per customer (in real $2021 terms) compared to the 2016-20 regulatory period. These savings reflect an increased maturity in the provision of metering services, which has enabled us to deliver substantial operating expenditure savings.
- Our research shows that smart meters are highly valued by customers, providing that the customer benefits are properly explained. The Customer Forum and the Consumer Challenge Panel have also highlighted the importance of explaining more clearly how customers benefit from smart meters. This feedback has helped us to understand the importance of articulating the benefits that customers already enjoy from smart meters, and our plans to secure additional future benefits for our customers. To assist customers and stakeholders to understand the value of smart meters in Victoria, we have provided detailed information on the customer benefits of smart meters, now and into the future within this chapter.
- Our network is now making much greater use of smart metering data and systems. Technology and data is being used to drive improvements in the provision of distribution services for the benefit of customers. We have therefore revisited the previous allocation of costs between metering services and distribution network services to reflect the growing dependence of distribution services on smart meter technology and data. This change is necessary to ensure that charges for metering services are cost reflective, but it does not affect customers' aggregate metering and network charges.
- Our approach to setting exit fees, type 7 metering charges and ancillary metering services is unchanged from the 2016-20 regulatory period, with one important distinction. Following discussions with the Customer Forum, we have actively advocated that the Victorian distributors should collectively abolish the move-in move-out fees that apply when customers change premises. Smart metering technology has enabled the Victorian distributors to provide this service remotely at a significantly reduced cost. Our proposal has been accepted by the other Victorian businesses, which means that Victorian electricity customers with smart meters will no longer pay move-in or move-out fees. This initiative provides a tangible example of the benefits from smart meters, and one that Victorian customers will no doubt welcome.

19.2 Chapter structure

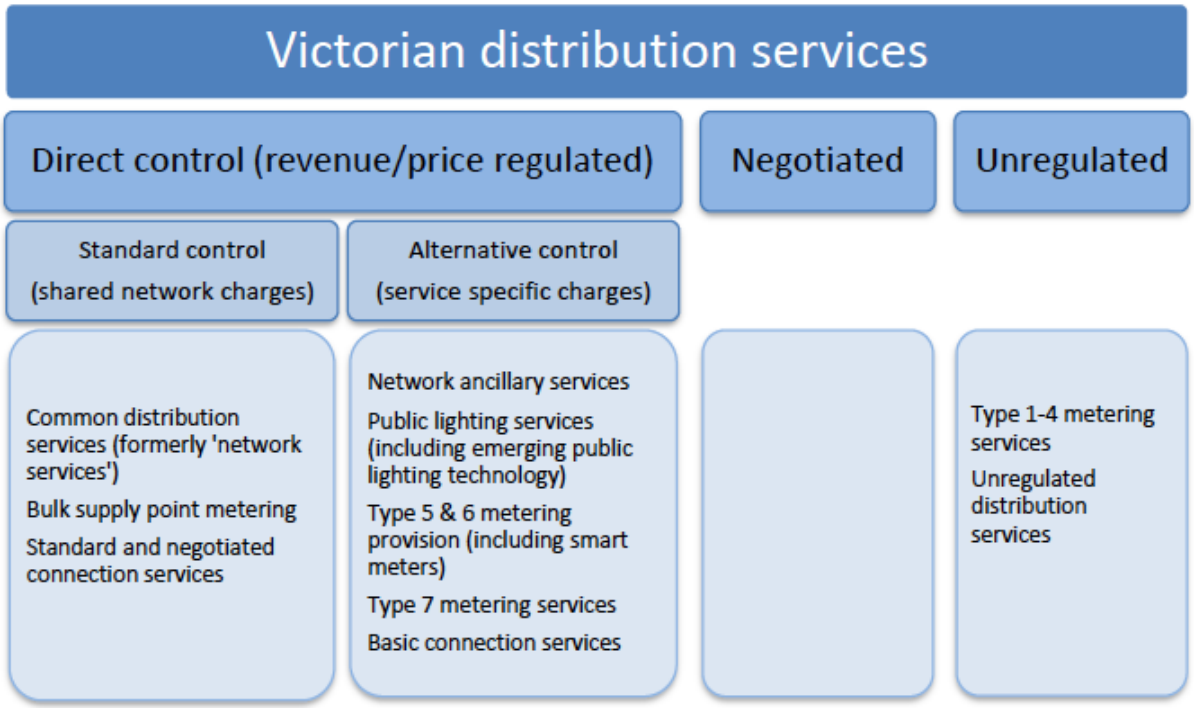
The remainder of this chapter is structured as follows:

- Section 19.3 explains the regulatory framework that applies to metering services in Victoria;
- Section 19.4 provide the proposal for Type 5 and 6 metering services, which was negotiated and agreed with the Customer Forum. This section discusses:
    - Feedback we received from the Customer Forum and the Consumer Challenge Panel in developing our metering services proposal. It also explains the downward revision of our expenditure plans and charges since the publication of our Draft Regulatory Proposal; and
    - Current and potential customer benefits from leveraging our AMI network.
    - The allocation of shared system costs between distribution network services and metering services, which has been updated to reflect the increasing reliance of the distribution network on smart meter data and systems;
    - The building block components and our proposed charges for the provision of Type 5 and 6 metering services; and
    - The proposed approach to calculating meter exit fee for each meter type.
- Section 19.5 sets out our proposed charges for Type 7 metering services;
- Section 19.6 describes our auxiliary metering services and the basis of our proposed fees; and
- Section 19.7 sets out the relevant supporting documentation for this chapter.

19.3 Regulatory arrangements applying to metering services

The AER's F&A confirms that the classification of metering services will be unchanged from current arrangements, as shown below.

Figure 19–1: AER's classification of distribution services



We support the AER's service classification and forms of control for metering services and auxiliary metering services. The AER's proposed service classification is:

- **Type 1 to 4 metering services**

  Type 1 to 4 meters provide a range of additional functions compared to other meters. Type 1 to 4 meters are competitively available and are not regulated in Victoria (or in most other jurisdictions). For this reason, these services are not classified and are therefore unregulated electricity services.

- **Type 5 and 6 metering services**

  In 2006, the Victorian Government initiated a roll-out of smart meters to all households and small businesses with electricity use of up to 160 MWh per annum under the Advanced Metering Infrastructure (AMI) program. Pursuant to a Victorian government derogation, AMI meters are classified as Type 5 and 6 meters.

  The Power of Choice reforms that introduced metering contestability to residential electricity consumers in other jurisdictions do not apply in Victoria. In 2017, the Victorian Government deferred metering competition in Victoria through an Order-In-Council. Consequently, Victorian distributors are the exclusive providers of metering services to residential and small business customers consuming up to 160 MWh of electricity per annum.

- **Type 7 metering services**

  Type 7 metering services are unmetered connections with a predictable energy consumption pattern - for example, public lighting connections. Charges associated with Type 7 metering services relate to the process of estimating electricity usage. As there is no potential to develop competition in the provision of Type 7 metering services, these services continue to be classified as Alternative Control Services.

- **Auxiliary metering services**

  AusNet Services also provides a range of metering related services to customers on request, such as meter testing and additional meter reads or equipment alterations. These services are classified as Alternative Control Services.

- **Metering exit fees**

  Metering exit fees allow the distributor to recover the written down value of, as well as the efficient costs of removing and disposing of, AMI meters. This currently occurs when brownfield sites become embedded networks, requiring the removal of the existing meters. If competition in the provision of AMI meters was introduced and an existing AMI meter was removed, metering exit charges would also apply.

  As metering exit fees are related to the provision of metering, the AER classifies these services as auxiliary metering services (rather than metering services). We explain our proposed metering exit fees in section 19.4.10.

19.4 Type 5 and 6 meters (including smart metering)

19.4.1 Form of control

In addition to classifying metering services, the F&A specifies the form of control that will apply to these services. For the 2022-26 regulatory period, the AER has decided to apply:[1]

[1] Full details of the AER's proposed forms of control are provided in section 2.4.6 of its Final Framework and Approach, January 2019.

- a revenue cap, including a pass through provision, to the provision of Type 5 and 6 metering services; and
- price caps for all other metering services, including auxiliary metering services.

These forms of control are unchanged from the current arrangements.

We generally agree with the positions taken in the AER's F&A. However, the transition to financial year regulatory periods has resulted in the need for adjustments to be made to the form of control formulae.

19.4.2 Price control mechanism

A revenue cap means that we have no scope to recover more or less from our tariffs than the total revenue allowed by the AER. Where tariff levels and actual demand levels result in an under- or over-recovery of revenue in any one year (year t-2), it must be adjusted in the next year's (year t) tariffs to correct this.

Table 19–1: Benefits currently provided by smart meters

Revenue Cap Formula		
1	$TARM_t \geq \sum_{i=1}^{n} \sum_{j=1}^{m} p_t^{ij} q_t^{ij}$	i=1,..,n and j=1,..,m and t=1,..,5
2	$TARM_t = AR_t + B_t + C_t$	t = 1, 2, …,5
3	$AR_t = ASR_t$	t=1
4	$AR_t = AR_{t-1} \times (1 + \Delta CPI_t) \times (1 - X_t)$	t = 2, 3, 4, 5

where:

$TARM_t$	is the total annual revenue for annual metering charges in year t.
p_t^{ij}	is the price of component 'j' of tariff 'l' in year t.
q_t^{ij}	is the forecast quantity of component 'j' of tariff 'i' in year t.
t	is the regulatory year.
AR_t	is the annual revenue requirement for year t.
ASR_t	Is the annual smoothed revenue requirement for year t in the Post Tax Revenue Model
AR_{t-1}	is the AR_t from the previous year
B_t	is the sum of annual adjustment factors in year t for the overs and unders account.
C_t	is the sum of approved cost pass through amounts (positive or negative) with respect to regulatory year t, as determined by the AER. It will also include any end-of-period adjustments in year t. To be decided in the distribution determination.
CPI_t	is the percentage increase in the consumer price index. To be decided in the final decision. CPI for the regulatory period will change to

	$\Delta CPI_t = \frac{CPI_{Dec\ t-1}}{CPI_{Dec\ t-2}} - 1$ This will reflect most recent CPI figures at the time of pricing proposals
X_t	is the X-factor in real terms in year t, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary. To be decided in the final determination.

Table 19–2: Side constraint formulae

Side constraint formula
$\frac{(\sum_{i=1}^{n}\sum_{j=1}^{m} d_t^{ij} q_t^{ij})}{(\sum_{i=1}^{n}\sum_{j=1}^{m} d_{t-1}^{ij} q_t^{ij})} \leq (1+\Delta CPI_t) \times (1-X_t) \times (1+2\%) + B_t'$

where:

d_t^{ij} is component 'j' of tariff 'i' for year t

d_{t-1}^{ij} is the price charged for component 'j' of tariff 'I' in year t–1

q_t^{ij} is the forecast quantity of component 'j' of the tariff class in year t

ΔCPI_t CPI for the regulatory period will change to

$$\Delta CPI_t = \frac{CPI_{Dec\ t-1}}{CPI_{Dec\ t-2}} - 1$$

This will reflect most recent CPI figures at the time of pricing proposals

X_t is the X-factor in year t, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary. To be decided in the distribution determination.

$B_t^{'}$ is the sum of annual adjustment factors in year t. Likely to incorporate but not limited to adjustments for the unders and overs account. To be decided in the distribution determination.

We have adopted the control mechanisms as set out in the AER's F&A, with amendments made to allow for a transition to a financial year regulatory period. This mechanism allows for the modification of elements in the formula as they are identified during the price reset consultation phase.

19.4.3 Feedback from the Customer Forum and Consumer Challenge Panel

Our metering proposal was negotiated with the Customer Forum although it was not within the original scope of our negotiations. Specifically, we sought the Customer Forum's views on:

- the reasonableness of our proposed metering charges and whether they represent value for customers, having regard to the benefits provided; and
- the customer experience initiatives that we are targeting to deliver through smart meters.

In our Draft Regulatory Proposal, we indicated that our annual metering charges would be approximately $78 per customer over the forthcoming period (after inflation). This represents a 13% reduction from an average annual charge of $89 per customer in the 2016-20 regulatory period. We explained that our lower revenue requirement reflects the maturity of our smart metering services, which can now be provided at lower levels of operating expenditure (opex).

In its Interim Report, the Customer Forum concluded that our draft metering proposal represented value for money, given the annual average metering charge is falling and customer benefits are increasing. However, the Customer Forum queried our forecast $10 million capital expenditure (capex) to facilitate Telstra's planned transition from 3G to 4G, which will permit continuous smart meter functionality, from 2021. The Customer Forum questioned the timing of this expenditure, given the uncertainty of Telstra's changeover and the possibility of delay. It also commented that customers deserve more robust information from Telstra regarding the changeover date.

In response to the Customer Forum's comments, we pressed Telstra to provide more information on the changeover timing. While Telstra publicly announced on 9 October 2019 the closure of its 3G network will occur in 2024, uncertainties remain on the specific transition approach and it is clear that:

- we must continue to meet our regulatory obligations to the market during Telstra's transition to 3G closure and beyond;
- we anticipate service degradation on areas of the 3G network as Telstra progress towards closure in 2024; and
- we require at least 12 months to transition our meter fleet to the 4G network, as the implementation lead-times must allow us to design and procure equipment for the 4G upgrade.

Given the information currently available, we have developed an indicative timeline that shows the process and lead-times involved in transitioning to 4G.

Figure 19–2: 3G to 4G transition timetable

The timeline above indicates that the required work must commence no later than Q1 2021 to enable completion of the required work during 2022. We can also confirm that the above timeframe is aligned with that of the other Victorian distribution businesses.

The Customer Forum also asked whether it is possible to transition from 3G to 5G to avoid further transition costs. We advised the Customer Forum that, given the reach of our network and the limited coverage of the 5G network for the foreseeable future, 5G is not a practical solution. While some carriers have commenced a limited rollout of 5G in metropolitan areas, the 4G communication spectrum will provide full coverage across our network area.

The Consumer Challenge Panel also provided important feedback on behalf of customers in response to our draft metering proposal and the Customer Forum's Interim Engagement Report. In particular, the Consumer Challenge Panel:

- questioned how much of our proposed reduction in metering charges is driven by the reallocation of costs to the distribution business, rather than efficiency savings;
- commented that there are few customer experience improvements that would not already be delivered by the commencement of the next regulatory period; and
- expected to see explicit reference in the capex and opex proposals for the distribution network to savings achieved as a result of smart metering.

The Customer Forum also commented that we needed to better explain to customers the benefit they receive from smart metering technology and data.[2] We agree that it is important to explain the drivers for the cost savings in metering charges and the further customer benefits that smart meters can deliver. Sections 19.4.4 and 19.4.5 provide further information in response to this feedback.

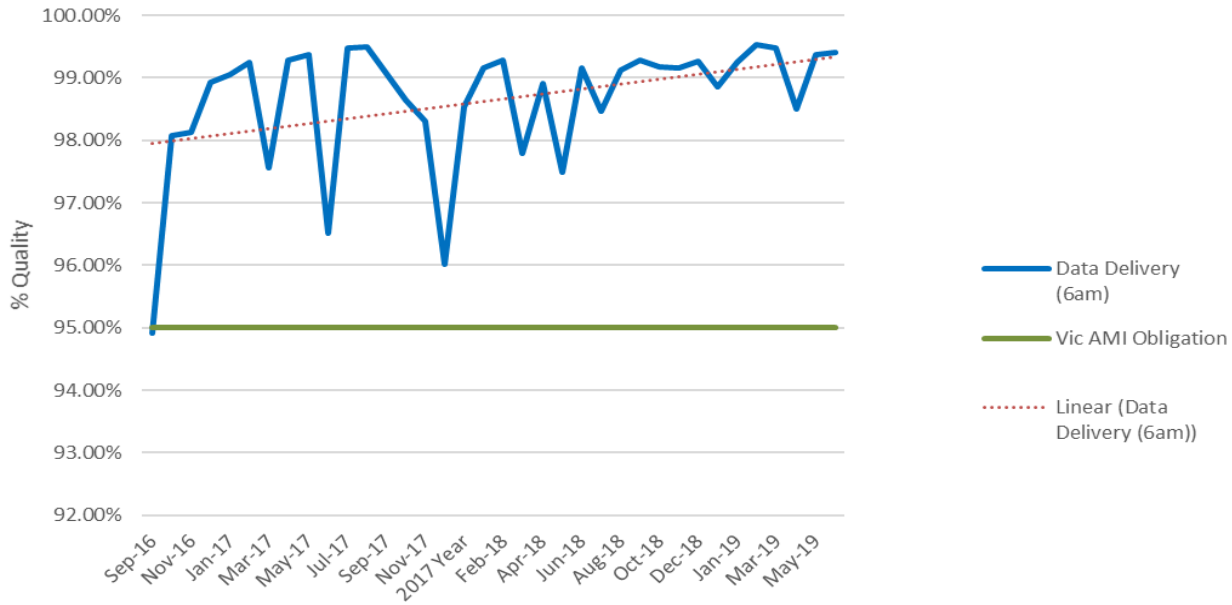
Since the publication of our Draft Regulatory Proposal, we have identified further savings that we will pass on to customers in the 2022-26 regulatory period. Detailed information regarding our proposed metering case is provided in section 19.4.7.

19.4.4 Improving market and customer outcomes

Throughout the current regulatory period, our metering business continues to improve operational performance, delivering better outcomes for our customers while driving down our cost to serve per customer.

We remain steadfast in our commitment to performing actual reads to ensure customers' retail bills are based on actual metering data, thereby reducing the risk of customers experiencing 'bill shock' when estimated bills are re-calculated using actual metering data. Our next day '6am' data delivery performance has consistently improved throughout the current regulatory period and remains well above our obligations in the 'VIC AMI Minimum Specification'. This ensures our customers have actual reads available on a next day basis and retailer bills are based on actual reads, as illustrated in the figure below.

Figure 19–3: Next Day (6am) Data Delivery Performance)



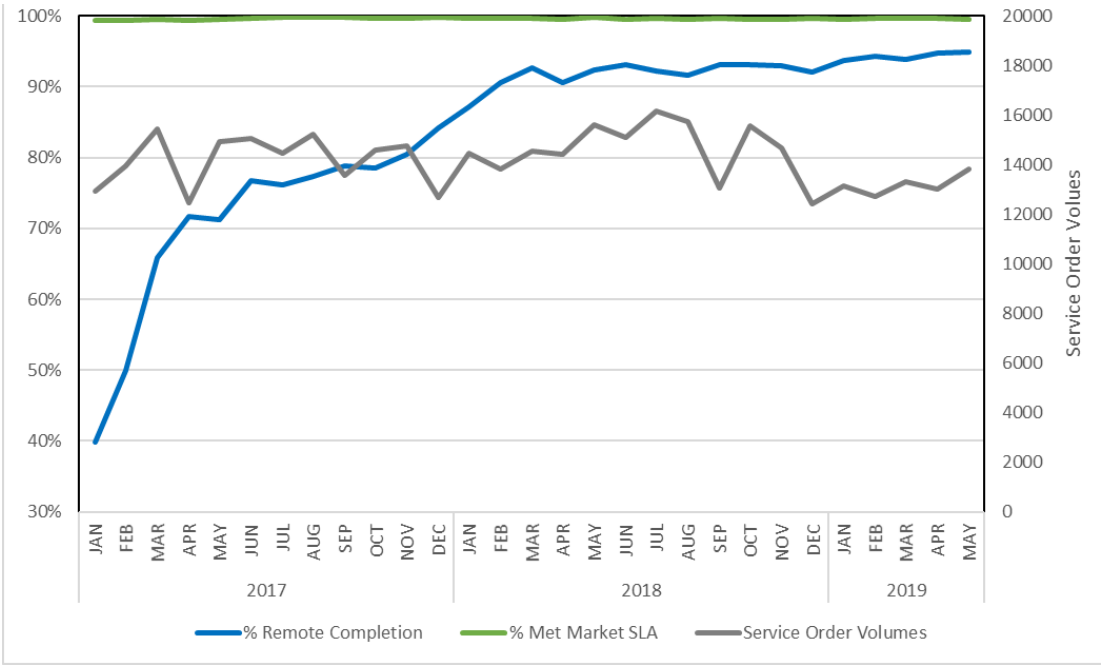
Source: AusNet Services

[2] Customer Forum, Interim Engagement Report, AusNet Services 2021-2025 Electricity Distribution Price Review, 6 February 2019.

We continue to pursue adoption of AMI meters by 100% of our customer base. AMI meters give customers access to 30 minute interval data to support their selection of the most appropriate retail offer for them, and their decisions to invest in Distributed Energy Resources (DER). As at July 2019, 98.9% of our active customers have AMI meters providing interval data, up from 95% in 2017.

We have also increased the number of re-connection (move-in) and disconnection (move-out) services completed remotely via our AMI network. Customers value on-time completion of work and providing connection services remotely allows us to meet this expectation. Further, we can provide the services for 65% of the cost of having a service technician visit the property. Our remote re-connections increased from around 40% at the beginning of 2017 to 95% in November 2019. We expect to maintain this performance throughout the next regulatory period, although we note that a small number of services will continue to require a field technician due to individual metering complexities. The figure below outlines our remote connection performance.

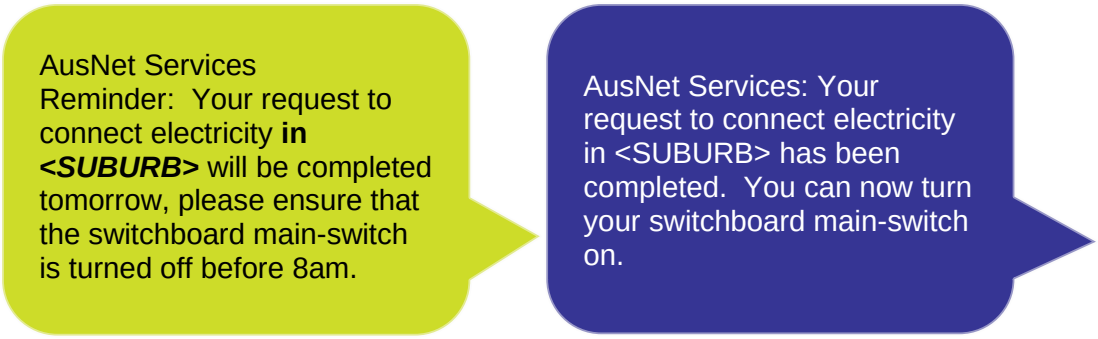
Figure 19–4: Remote Connection Performance



Source: AusNet Services

We have invested in improving our communication with customers when they are moving properties. We now send SMS notifications to confirm we have received their reconnection order, advising them of any technical issues experienced on the day of their requested disconnection or reconnection, and confirming once the work has been successfully completed. Customers have indicated that they value this type of communication. The examples below are SMS notifications that are issued to customers when connecting electricity.

Figure 19–5: Examples of SMS notifications



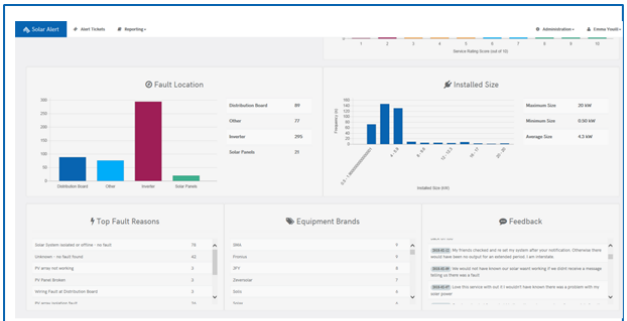
Source: AusNet Services

Smart meters are also making significant contributions to making our services safer and assisting customers in making savings in their energy bills. Key initiatives include:

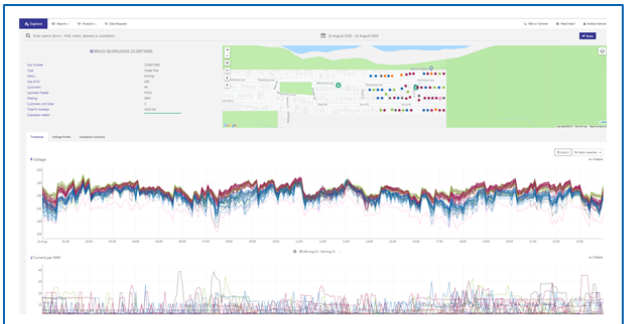
- Meters on our AMI meter network alert our business operations teams to investigate and resolve potential safety issues or meter faults before they occur. This important function ensures our meter fleet remains safe, fully operational and accurately records a customer's energy consumption.
- Our AMI network provides customer consumption data for our 'My Home Energy' customer portal, which allows customers to view and download their data. Our portal is integrated with the Victorian Government "Energy Compare" website so customers can easily compare and select the best retail electricity product. Access to this data also allows customers to better understand their usage habits and provides the ability to monitor changes in usage over time.

The data collected by our AMI network has been progressively integrated in business operations through several dashboards, safety alerts and monitoring tools. One example is 'Explore' which has been demonstrated live to the Customer Forum and which is illustrated in the figure below.

Figure 19–6: Operational Dashboards - Enabled by AMI data

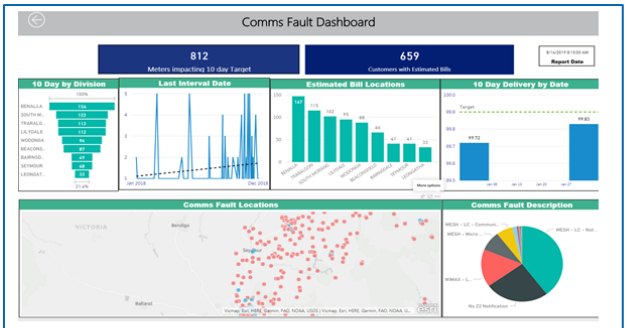


AusNet Services Solar Alert tool that identifies customers who's solar panels have stopped generating.



AusNet Services Explore dashboard that provides operational teams and network engineers visibility of near real-time individual customer and aggregated power quality data

AusNet Services My Home Energy portal providing customers with the ability to view historical usage and integrated with Victorian Energy Compare website.



AusNet Services AMI communication fault dashboard providing visibility of faults locations and meter communication status.

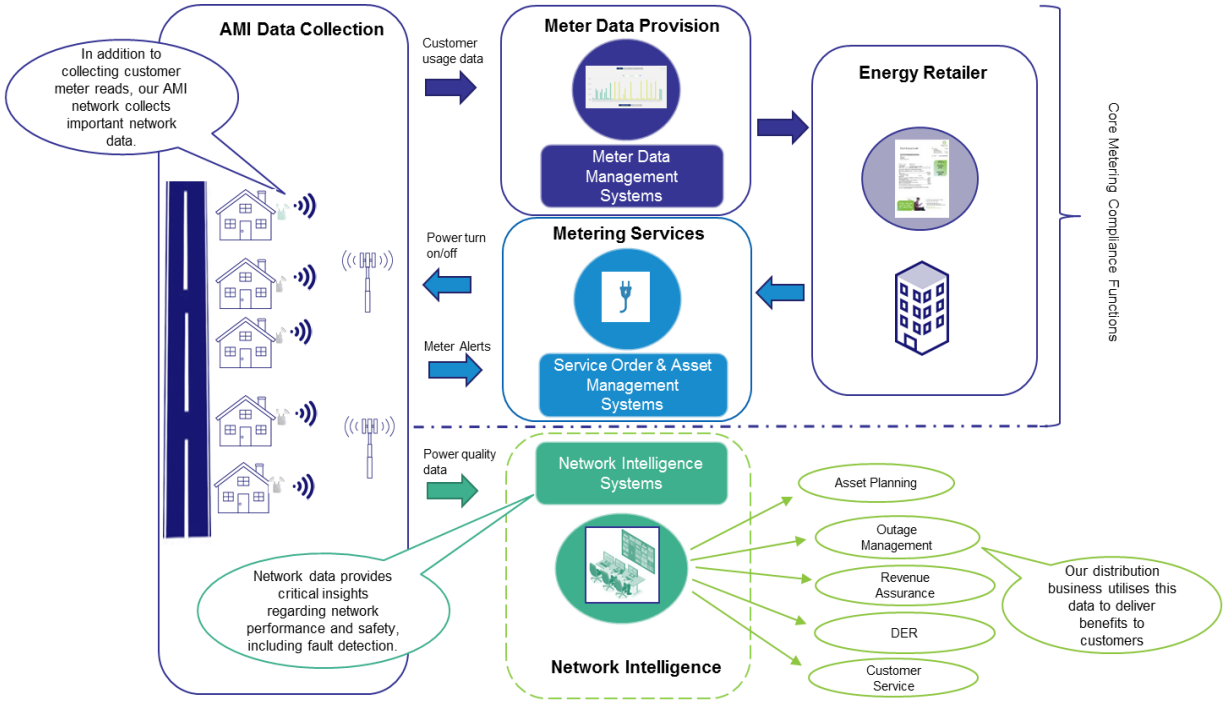
Source: AusNet Services

19.4.5 Driving customer benefit initiatives

As explained in the previous section, in addition to supporting core metering functions, our AMI metering network has been enhanced to collect a range of important distribution network data that can be utilised to provide insights into the performance, safety and maintenance aspects of our distribution network assets.

The figure below shows the different roles of AMI technology and data in delivering services that our customers rely on and value.

Figure 19–7: The role of our AMI network in delivering value to our customers



Source: AusNet Services

Using this information in this way can directly improve the customer experience. The customer benefits that are currently being delivered through our AMI network are set out in the table below.

Table 19–3: Benefits currently provided by smart meters

Benefit type	Initiative	Description	How does the AMI network enable this initiative?	Metrics
Keeping your energy prices down	Alerts for when your solar stops working	We send customers an SMS when their solar system has stopped working so that they get their system reviewed and quickly resolve the issue. This means they are able to continue generating electricity to receive the benefits of their feed in tariff and/or offset their own consumption. We send them another message to notify them that solar generation has re-started so they are aware that they are back on.	Our AMI network collects the quantity of energy exported for our solar customers which is analysed to identify customers where no energy is being exported.	Over 6,000 customers notified of an issue with their solar system, enabling the issue to be addressed and generation restored.
	Reducing energy theft	We are able to monitor electricity use to determine if energy is being stolen. Detecting and shutting down these illegal and unsafe premises allows us to prevent further losses which would otherwise be paid by all customers.	Our network intelligence system utilises voltage data collected by our AMI network to identify sites where electricity theft is occurring.	In excess of $2 million of stolen electricity has been detected and shut down since 2015.
	An online webpage to allow you to see your energy use	Our meter data portal enables customers to understand when they are using energy and therefore how to manage their consumption. This was integrated into the Victorian Government Energy Compare website so that customers could use their energy data to get the best deal from their energy retailer.	Customer energy consumption and solar export is collected by our AMI network and provided to our My Home Energy portal for customers to view and download.	Over 22,000 customers registered with average 55 logins per day. Customers on average save $223 through switching electricity retailers.

Benefit type	Initiative	Description	How does the AMI network enable this initiative?	Metrics
Keeping you and your community safe	Identifying and fixing faults before they become safety issues	We can pro-actively identify faults on the network (low voltage service neutral faults) that can lead to electrocution, so we are able to fix them before any customers are harmed.	Our network intelligence system utilises data collected by our AMI network to identify low voltage service neutral faults.	Approximately 300 electric shocks have been prevented since 2013. Over 200 loss of neutral truck visits in 2019.
	Prioritising life support customers in an outage	In the event of an unplanned outage, we can specifically detect when life-support customers are off supply so that we can rapidly respond and prioritise restoring supply to their property and provide advice to follow their emergency plan in the event of any delays.	Our AMI meters have been configured to send alerts when life support customers experience a power outage	100% life support alerts actioned.
Ensure you are kept accurately informed in the event of an electricity outage	Correct mapping of the network to understand who is on and off supply	We are working to ensure that our data is constantly updated and accurate so that we are able to identify which customers will be off supply when we have a planned outage. This ensures accurate notification of outages so customers can plan accordingly.	Our AMI network collects voltage data that enables our asset management team to accurately identify each customer's substation to ensure outage notifications are accurate.	50% reduction in planned outage notification breaches since implementation (9 months)
	Enabling our call centre staff to view meter supply status	When customers call we are able to use the smart network to check real time if a customer's meter is on supply and therefore if the supply issue is caused by an AusNet Services network outage, or caused within the house. This means our call centre staff can provide timely, accurate information to customers about whether we will restore supply or if the customer needs to contact an electrician. This reduces the likelihood of wasted truck visits that are paid for by customers.	Our AMI network enables our meters to be 'pinged' real-time to support our customer service team to check the supply status of a meter.	Average of 88 'pings' per day with peaks of over 300 during storm events.
Responding to your solar or battery application quickly	More accurate and timely approvals for solar and battery applications	Our relaunched online pre-approval tool reduces wait times and now provides the maximum amount the customer is able to export as well as the inverter capacity allowed for the system. The tool combines business rules with AMI data to provide an accurate assessment for each customer in real-time.	Our DER approval tool uses data collected by our AMI network to provide an accurate assessment of DER capacity available to be installed at a customer's property.	Average of over 100 pre-approval requests per day with consistent 90%+ online pre-approval rate.

Source: AusNet Services

The Customer Forum emphasised the importance of explaining these benefits to customers. We have already taken steps to improve our communication of these benefits through our customer experience roadmap and providing additional information on our corporate website.

As explained in Part II of this Regulatory Proposal, we have proposed new initiatives to deliver further benefits and services to customers from smart meters. The Customer Forum's view, which is supported by our internal research, is that our customers would value the customer experience improvement provided by these initiatives and, therefore, derive more value from the metering charges they pay.

The initiatives, which are categorised by the nature of the customer benefit they will deliver (e.g. keeping energy prices down), are described in the table below. We also show how they relate to our customer experience (CX) road map initiatives, which are targeting tangible improvements in the services we provide to our customers. It is important to note that we are not delaying the introduction of these initiatives until the start of the 2022-26 regulatory period.

Rather, we are acting now to deliver further customer benefits from smart meters as soon as practicable.

Table 19–4: Proposed future benefits to be provided through smart meters

Benefit type		Initiative	CX Roadmap Program of Work Initiative (Year Planned)	Description	How does the AMI network enable this initiative?
Keeping your energy prices down		Notifying you when your energy use is unusual	• Service Delivery Personalisation (2022-2025)	A notification will be sent to the customer when their usage is significantly higher than normal, so that they are aware that their usage has changed and will likely impact their bill. This gives customers an opportunity to manage their consumption ahead of any bill shock.	Our network intelligence system will analyse customers' energy consumption data collected by our AMI network to identify unusual usage patterns
		Solar Express	• DER Connections (2019)	We will fast track requests to setup a customer's meter for solar once paperwork has been submitted by a retailer and out-perform the current regulatory timeframe .	Network data collected by our AMI network will enable real-time assessment of solar applications against network capacity.
Keeping you and your community safe		Identifying and fixing faults before they become safety issues	• Unplanned Outages (2021/2022)	In addition to regular maintenance and inspection programs, we will be able to detect if certain areas in the network are at a higher risk of safety issues such as fires from fuse candling. We can pro-actively investigate and mitigate these risks before issues occur.	Power quality data collected by our AMI network will be processed by our network intelligence system to determine areas of our network that are at risk of fuses "candling".
		Keeping critical customers on supply in an outage	• Unplanned Outages (2021/2022)	In periods where there is high demand on the network, we can reduce supply to non-critical infrastructure in order to maintain supply to critical community infrastructure and customers e.g. life support customers, traffic lights, police stations and nursing homes.	Our AMI network will enable our distribution control centre to deploy targeted energy supply reductions, enabling vulnerable customers and other critical load to retain power supply during widespread outages.
Ensure you are kept accurately informed in the event of an electricity outage		Detailed view of customers in outages	• Unplanned Outages (2021/2022) • Planned Outages (2021)	This allows us to detect outages for individual customers. We can use this capability to ensure all customers' supply has been restored after an outage and, if not, which individual customers require assistance.	Our AMI network will allow our control centre to view the supply status for all customers in real time and pro-actively initiate a site visit to restore supply where required.
		Enhance outage notifications and alerts utilising AMI data	• Unplanned Outages (2021/2022) • Planned Outages (2021) • Complaints and Claims (2020)	We will embed AMI data throughout our unplanned outage processes to improve notifications, monitoring and accuracy of reporting regarding outage timeframes.	Customer consumption data, events provided by our meters and network data collected by our AMI network will be utilised to improve communications sent to customers before, during and after outage events, and to improve accuracy of reporting of total minutes off supply for customers.

Benefit type		Initiative	CX Roadmap Program of Work Initiative (Year Planned)	Description	How does the AMI network enable this initiative?
Reducing the interruption to your day to day by reducing the duration of an electricity outage		Accurate and quick response to wire faults	• Unplanned Outages (2021/2022)	We are able to detect in real time where a wire is down on our network. This allows us to give our trucks the specific location of the fault, rather than waiting for customers to call, thereby improving restoration time.	Power quality data collected by our AMI network will be processed by our network intelligence system to determine when a wire is down.
Responding to your solar or battery application quickly		More accurate information for customers energy export limits	• DER Connections (2019) • DER Connections EV Focus (2022)	This capability will expand our existing solar approval process to allow customers to obtain a real-time accurate assessment of the amount of solar and battery storage that can be installed at their property. This capability will be integrated with our online DER connection approval process and will be rolled out across our network for all customers.	Our online DER approval tool will be enhanced to use network data collected by our AMI network to provide an accurate assessment of DER capacity that can be safely installed at a specific property.

Source: AusNet Services

The table above illustrates that there are significant opportunities to leverage additional customer benefits from smart meter data and systems. We are already making greater use of the smart meter technology and data to improve the service for our customers. As discussed in the next section, this means it is appropriate to reallocate a portion of our AMI metering costs to standard control services.

Looking forward, we expect the use of smart meter technology and data will continue to evolve to make better use of the information that can be captured by our AMI fleet, for the benefit of our customers.

19.4.6 Allocation of costs between standard control and smart metering services

In the 2016-20 regulatory period, we allocated 100% of all costs related to the following system to Alternative Control Services, as these costs were incurred for the purpose of providing metering services only:

- AMI Network Head End Solution (WiMAX and Mesh);
- Meter Data Management System (MDMS) – EnergyIP;
- Telstra costs for data usage to transport data from our AMI network; and
- Labour and support of the above systems.

As explained in the previous section, we are now utilising these systems to carry out several distribution functions, including network planning, call centre operations, and outage management. In addition, we now collect additional (non-metering) data from our meters, commonly known as Power Quality data, which is solely utilised to provide standard control services.

For us, smart metering will increasingly become a fundamental tool underpinning the delivery of:

- improvements in customer experience (including to support the initiatives we will deliver before the start of the 2022-26 regulatory period), such as the management and communication of planned and unplanned outages;

- the innovation programs being delivered now and planned for the 2022-2026 regulatory period, including trialling approaches that unlock the benefits of solar and battery technology for customers and the energy system as a whole;
- more flexible management of the network that will save network costs and allow customers to maximise their returns from investments in solar panels and batteries; and
- pricing reforms, including fairer, more cost reflective pricing that will help drive down the longer term costs of providing the energy services that customers want.

In future, the distribution network will rely increasingly on smart meter data and supporting systems to sustain our current cost and service performance. The need to leverage our systems and data is driven partly by the projected growth in DER and solar capacity, which is creating new technical challenges for our network. Therefore, it is appropriate to recognise the joint reliance of both the standard control and metering services on smart metering data and systems. While the allocation of system costs based on a cost causation model cannot be calculated with precision, we estimate that an equal apportionment is the most appropriate allocation. The basis of our allocation is explained in Appendix 9E.

It is important to note that the reallocation of costs between alternative control services and standard control services has no impact on the total revenue that we earn from the provision of direct control services. The benefit of the change is that the charges for providing these services will be more cost reflective, which is consistent with the Cost Allocation Principles[3] and the network pricing objective in the Rules[4].

As a result of the cost reallocation and as explained in Part II, a number of changes are required to the costs associated with the provision of standard control services including:

- an adjustment to the opening regulatory asset base (RAB) and the forecast RAB over the 2022-26 regulatory period to reflect the change in asset allocation, capex and depreciation;
- a change to forecast ICT capex; and
- a change in forecast opex.

As already noted, corresponding changes are proposed to the metering service charges which means that customers are not affected by the revised allocations. In addition, we expect to achieve longer-term savings as a result of prices being more cost reflective.

19.4.7 Proposed revenue

In accordance with the building block approach mandated by the Rules, our smart metering charges reflect:

- the return on and of capital associated with the metering RAB and continued capex associated with new customers and replacement of existing meters;
- the return on and of capital associated with the Meter Management System RAB and continued capex associated with maintaining and renewing that system;
- the opex associated with maintenance, meter reading and metering data services. Metering data services involve the collection, processing, storage, delivery and management of metering data; and
- any tax liability that arises over the period.

3 National Electricity Rules, clause 6.15.2.

4 National Electricity Rules, clause 6.18.5(a).

Details of these building blocks are set out below, together with an explanation of the differences between our Draft Regulatory Proposal and this final proposal.

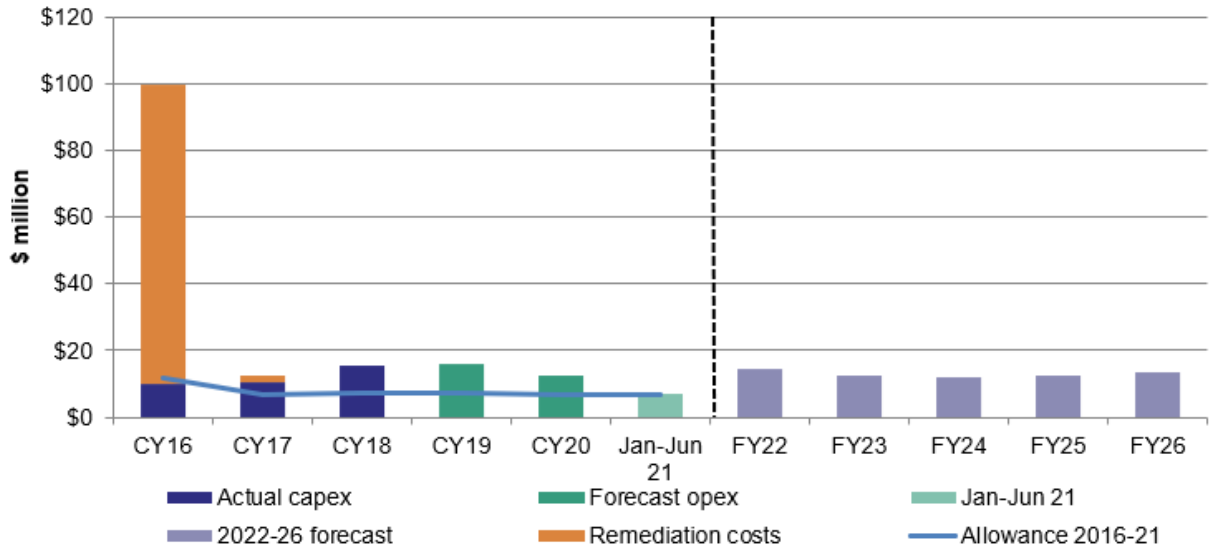
19.4.7.1 Proposed capex

Our meters require ongoing investment to maintain the provision of reliable metering services to our customers. This investment includes capex to meet customer growth and to maintain the metering service as current technologies become obsolete or technically unsupported over the period. In particular, the forecast includes:

- capex to maintain the performance of the communications network; and
- investment in meter management IT systems.

The metering business is expected to incur a higher level of capex in the early years of the 2022-26 regulatory period as a result of the need to transition the meter communication systems from 3G to 4G (in line with Telstra's expected timetable). As explained in section 19.4.3, we have engaged with Telstra to better understand the timeframes for decommissioning the 3G network. As already noted, Telstra's 3G network will close in 2024 and, therefore, we expect our AMI communications network to be impacted from 2022 as decommissioning activities commence. The lead time to transition to 4G requires the capex to commence in 2021.

Figure 19–8: Historical and forecast Type 5 and 6 Capex ($m, real $2021)



Note: Jan to June 2021 is presented on an annualised basis. The remediation costs shown in orange are not being recovered from customers but have been absorbed by AusNet Services.

Source: AusNet Services

The following points should be noted in the above figure:

- The increase in capex in 2019 is the result of an accounting rule change which results in the capitalisation of leasing costs;
- The Global Settlements rule change[5] will lead to higher metering capex in 2019 and 2020, as meters will need to be installed at previously unmetered premises;
- The capex forecast for the January to June 2021 financial period consists of approximately $7 million of costs associated with the transition from 3G to 4G. This represents 79% of the

5 *National Electricity Amendment (Global settlement and market reconciliation) Rule 2018 No. 1.*

total 3G transition costs, and is primarily for the procurement of equipment. Installation costs will be incurred from July 2021 to December 2022;

- Since preparing the Draft Regulatory Proposal, we undertook a secondary review of the AMI Mesh Network 4G transition costs. This has reduced our capex forecasts by approximately 19%; and
- Our meter replacement capex forecast has also been revised down, based on updated fault rate data.

Our proposed metering capex is set out in the table below.

Table 19–5: Proposed Type 5 and 6 Metering Capex ($m, real $2021)

Real $2020 ($M)	2021-22	2022-23	2023-24	2024-25	2025-26
Meters	6.76	7.48	8.23	8.99	9.65
IT	1.51	1.02	0.18	-	0.19
Communications	5.90	3.97	3.38	3.56	3.50
Leases capitalised	0.05	-	-	0.08	0.10
Total	**14.22**	**12.47**	**11.79**	**12.63**	**13.44**

Source: AusNet Services

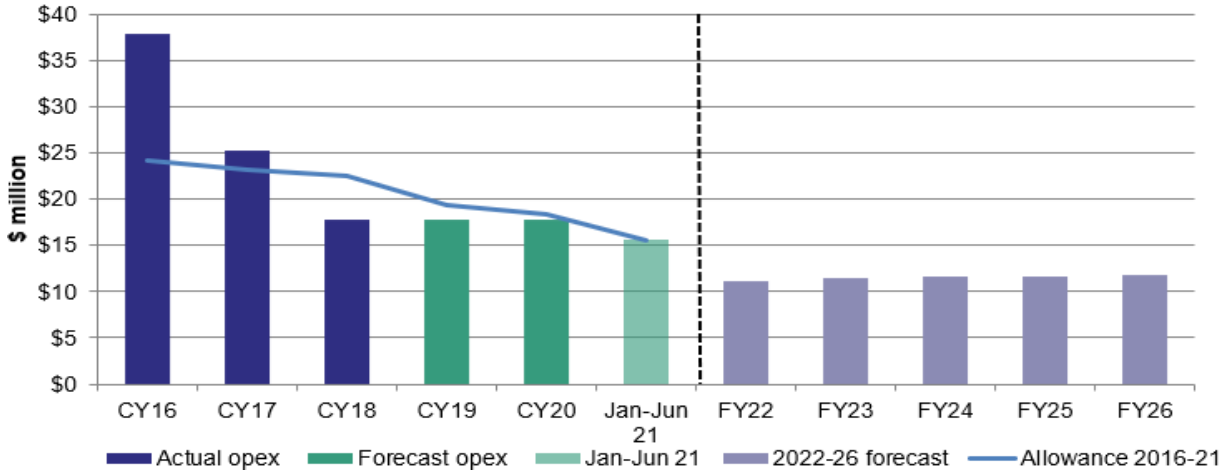
Detailed information in support of the capex forecast is provided in the supporting materials.

19.4.7.2 Proposed opex

Our meters require continued operating and maintenance expenditure to ensure ongoing compliance with our regulatory obligations. In particular, the forecast includes opex relating to:

- manual reading of smart meters where the communications have not been installed due to customer refusals or economic considerations;
- meter data management and ongoing maintenance of the meters; and
- management of the metering business, including asset management of the meters and the meter management IT system.

Figure 19–9: Historical and forecast Type 5 and 6 Metering Opex ($m, real $2021)



Note: Jan to June 2021 is presented on an annualised basis

Source: AusNet Services

The following points are noted in relation to the figure above:

- actual opex was at historically high levels in 2016 as we experienced delays in our transition from manual to remote meter reading;
- efficiencies achieved in 2018 are expected to continue throughout the remainder of the current regulatory period; and
- the step down in forecast opex from 2020 to 2021 (excluding the January to June 2021 financial period) is due to:
    - achieving further operating efficiencies that build on those already achieved in 2018; and
    - the reallocation of system costs between the alternative control and standard control services.

Our proposed metering opex is set out in the table below.

Table 19–6: Proposed type 5 and 6 metering opex ($m, real $2021)

Real $2021 ($m)	2021-22	2022-23	2023-24	2024-25	2025-26
Metering services	3.37	3.38	3.39	3.40	3.41
Metering maintenance	1.20	1.20	1.20	1.21	1.21
IT & communications maintenance and support	13.22	13.25	13.29	13.32	13.35
5 minute settlement	0.08	0.36	0.58	0.66	0.74
Metering - reallocation to Standard Control Services	(5.74)	(5.81)	(5.95)	(6.12)	(6.18)
Service classification and capitalisation adjustment	(1.13)	(1.13)	(1.13)	(1.13)	(1.13)
Total	**11.00**	**11.26**	**11.39**	**11.35**	**11.40**

Source: AusNet Services

Detailed information in support of the opex forecast is provided in the supporting materials.

19.4.7.3 RAB

We have not sought to modify the asset lives established under the AMI Cost Recovery Order in Council for depreciation purposes. In line with the AER's building block model, there is no depreciation in the first year and capex is inflated by a half year WACC, with this inflated amount depreciated over the useful life of the asset.

We are, however, proposing to amend the depreciation methodology for metering for the 2022-26 period to be consistent with the AER's most recent determination for our electricity distribution business covering the 2016-20 period as well as the 2022-26 proposed methodology for our electricity distribution business. This approach is summarised as follows:

- Apply straight-line depreciation to assets contained in the opening RAB using the year-by-year tracking approach; and
- Apply straight-line depreciation to new assets that will be added to the RAB over the 2022-26 period according to their standard lives.

The proposed metering RAB, including forecast capex and depreciation, is set out in the table below.

Table 19–7: Forecast type 5 and 6 metering RAB ($m, real $2021)

Real $2021 ($M)	2021-22	2022-23	2023-24	2024-25	2025-26
Opening RAB	231.40	212.39	189.15	164.65	140.25
Net Capex	14.89	12.61	11.91	12.76	13.56
Economic Depreciation	(33.90)	(35.85)	(36.41)	(37.16)	(37.66)
Closing RAB	**212.39**	**189.15**	**164.65**	**140.25**	**116.15**

Source: AusNet Services

19.4.7.4 Return on capital

We are proposing the same WACC and gamma values for the metering service as for the standard control services set out in Part I.

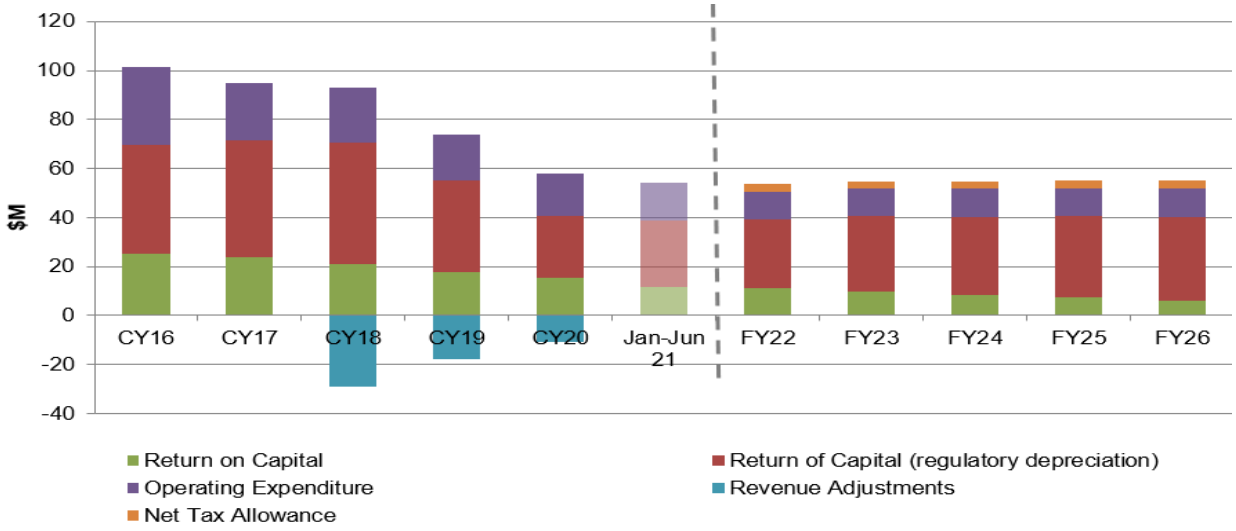
19.4.7.5 Revenue and customer bill impacts

In real $2021 terms, we are proposing an average annual metering charge of $66 per customer over the 2022-26 regulatory period, which is a reduction of 31% compared to the average charge of $96 per customer in the 2016-20 regulatory period.

As explained above, this reduction has been achieved primarily through efficiency gains in metering operations. The revised allocation of system costs contributed $7 (real $2021) of the total reduction of $30 per customer.

The total forecast revenue, split into the building block elements for the 2016-20 and the 2022-26 regulatory periods is shown the figure below.

Figure 19–10: Total revenue and building blocks ($m, real $2021)

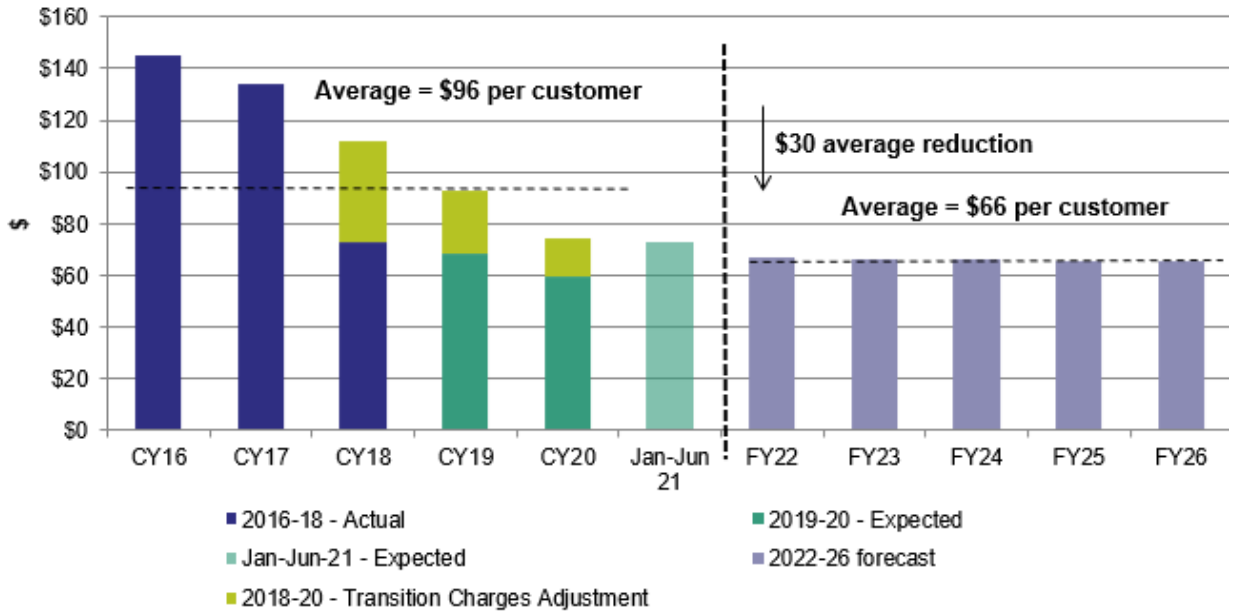


Note: The revenue adjustments in 2018-20 are due the return to customers of over-recovered revenue from the 2014-15 period. As we are in a tax loss position until 2020, there is no tax allowance in the 2016-20 regulatory period. Jan to June 2021 is presented on an annualised basis.

Source: AusNet Services

The average annual revenue per customer in real $2021 terms is depicted below.

Figure 19–11: Revenue per customer real $2021

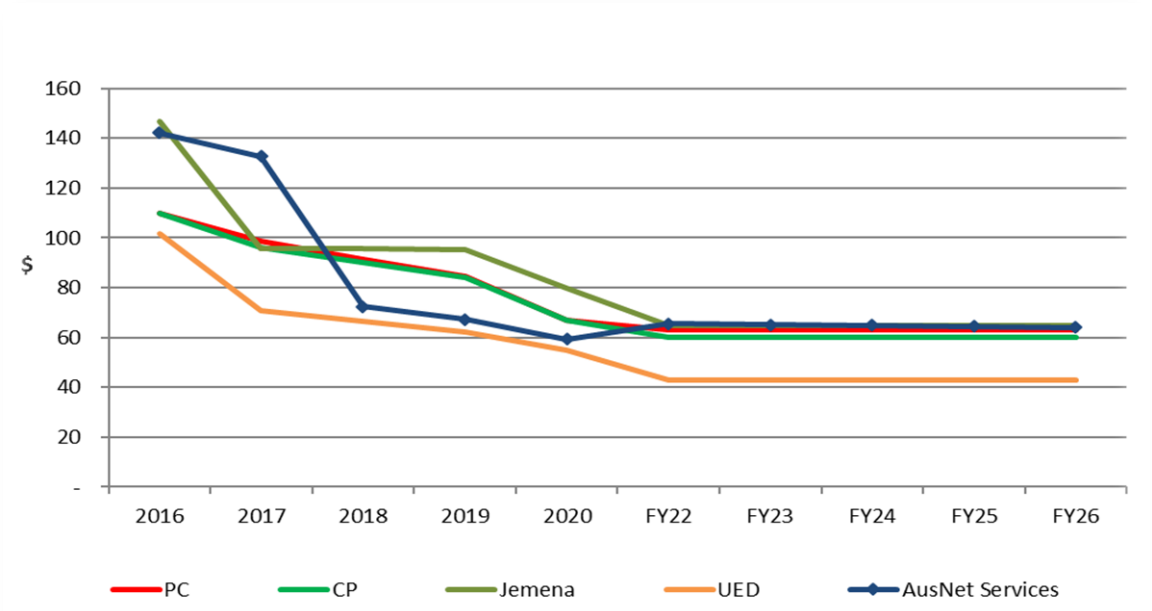


Note: Jan to June 2021 is presented on an annualised basis.

Source: AusNet Services

When compared to the other Victorian distribution businesses' Draft Proposal, our metering revenue per customer is on par with the Victorian businesses, at $62 in 2021. Jemena has the highest revenue per customer in 2021 at $65 and United Energy the lowest at $43.

Figure 19–12: Revenue per customer real $2020 - AusNet Services and other Victorian Distributors



Source: AusNet Services, AER 2016-20 EDPR Final Decision and Victorian businesses' 2021-25 Draft Proposals.

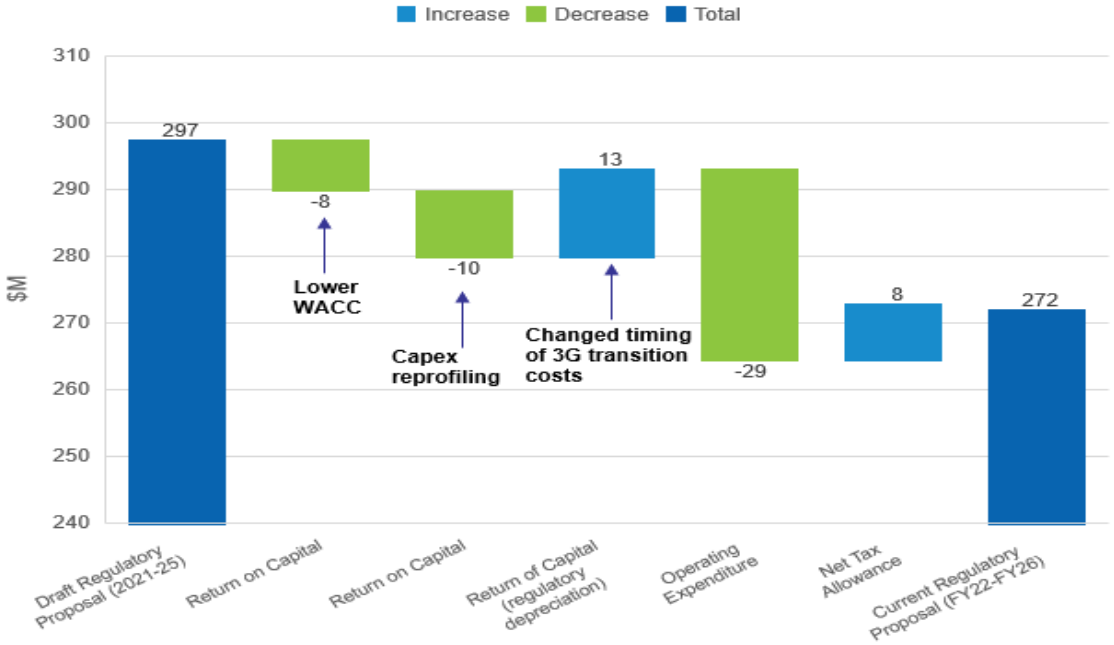
19.4.8 Key changes since our Draft Regulatory Proposal

In our Draft Regulatory Proposal, we proposed an average metering charge of $73 (in real $2021 terms) per customer. Following our review of that proposal, we have adopted final

metering expenditure forecasts in this Regulatory Proposal equating to an average metering charge of $66 (in real $2021 terms) per customer.

The figure below shows the changes in our total revenue building blocks compared to our Draft Regulatory Proposal.

Figure 19–13: Further reductions compared to our Draft Regulatory Proposal (real $2021)



Source: AusNet Services

The figure above shows that opex is the main contributor to the reductions in our forecast total metering revenue requirement that we identified since our Draft Regulatory Proposal.

19.4.9 Indicative metering charges

Based on the forecast annual revenue requirements and meter volumes for the 2022-26 regulatory period and applying the metering services revenue cap formula as the 2016-20 regulatory period, the indicative metering charges are shown in the table below.

Table 19–8: Indicative alternative control metering services charges ($ nominal)

Meter type ($)	2021-22	2022-23	2023-24	2024-25	2025-26
Single phase single element	59.53	60.46	61.39	62.38	63.39
Single phase two element with contactor	71.30	72.60	73.92	75.27	76.64
Multiphase	85.90	87.30	88.72	90.17	91.64
Multiphase with contactor	95.20	96.80	98.43	100.08	101.76
Multiphase CT connected	118.00	119.20	120.41	121.64	122.87

Source: AusNet Services

19.4.10 Meter exit fees

Metering exit fees allow us to recover the written down value of an AMI meter and the efficient costs of removing and disposing of the meter, when the meter is no longer required at an existing site. This typically occurs when a brownfield site becomes an embedded networks, necessitating the removal of the existing meters.

The AER's F&A proposed that metering exit services be regulated in the forthcoming regulatory period as an alternative control service.[6]

This section:

- Describes the model that we have used to derive its proposed exit fees, which is unchanged from its approach in the current period;
- Describes the other, non-meter costs, associated with removing a metering installation that is reflected in our exit fee; and
- Summarises our proposed exit fees for the forthcoming regulatory period.

19.4.10.1 Description of our model for deriving our proposed exit fees

Our modelling of the metering exit fee is unchanged from the approach adopted in the current regulatory period. In particular, the model that we have used to calculate its proposed exit fee:

- Requires historical and forecast capex (by meter category, and for IT and communications) to be inputted in nominal terms,
- Converts these nominal expenditures into real $2021 based on inputted escalation factors that are consistent with those that have been used throughout other parts of this regulatory proposal;
- Depreciates this real $2021 capex using the method that underpins the AER's building block model (which provides for no depreciation in the first year, but for capex to be inflated by a half year WACC, with this inflated amount depreciated over the useful life of the asset);
- Calculates the average WDV in each year, by meter category, based on the average of the start and end year WDVs for that meter category, with the end year WDV figure based on the:
    - Starting WDV for that year (in real $2021 terms),
    - *Plus* the capex incurred in that year (in real $2021 terms, inflated by a half year WACC if that expenditure is forecast to occur from 2022 onwards),
    - *Less* the depreciation methodology outlined above;
- *Divides* the average WDV of each meter category in each year, by the average number of meters in that meter category that were (or are expected to be) in situ in that year;
- *Adds* the average WDV of IT and communications based on the same methodology as outlined above, and
- *Adds* in other costs such as, but not limited to, administration and removal costs to determine the final exit fee per meter (by meter category).

6 AER, *Final Framework and Approach Paper*, January 2019, p. 46.

The key inputs into the model are therefore:

- **Historical capex** (by meter category): This is based on the opening RAB for the forthcoming regulatory period. However, these costs have been split into meter categories for the purposes of modelling the exit fee, as opposed to the broader capital expenditure category of 'remotely read interval meter'.
- **Forecast capex** (by meter category): This is based on the forecast costs included in other parts of this Regulatory Proposal that have been allocated to the provision of metering services to customers less than 160MWh. Again, these costs have been split out by meter category.
- **Depreciation lives**: These have been sourced from the Metering Post Tax Revenue Model, but generally, the capital and installation costs of the meters have been depreciated over 15 years, while the communications and IT costs have been depreciated over 7 years.
- **Other costs** associated with the removal of the metering installation. These are discussed in more detail in the following section.

19.4.10.2 Other costs associated with the removal of the metering installation

The exit fee includes the reasonable and efficient costs of removing the metering installation for which AusNet Services was the metering coordinator.

To estimate these costs, we have developed a generic process for removing the metering installation. It has then estimated the incremental cost that it will incur as a result of having to complete this process.

The following table identifies the key steps in this process, and the basis for costing up this process. This approach is unchanged from the current regulatory period.

Table 19–9: Process for removing the metering installation

Step	Description	Costing Methodology
1	Back office processing, final read and billing activities	Reviewed back office tasks and the associated time required to perform those tasks. Only labour costs are involved.
2	Removal of meter and return of meter to store	Reviewed the tasks associated with removing the meter and returning it to the store, and the associated time required to perform those tasks. Only labour costs are involved.

The cost per meter (in real $2021 terms) attributable to removing the metering installation is $110.27.

19.4.10.3 Summary of our proposed exit fees

The following table summarises our proposed exit fees for each of our relevant meter categories, for each year of the forthcoming regulatory period.

Table 19–10: Proposed exit fee by meter type ($ nominal)

Meter type ($)	2021-22	2022-23	2023-24	2024-25	2025-26
Single phase single element	390.38	367.78	341.94	314.89	287.57
Single phase two element with contactor	387.01	364.86	339.46	312.84	287.57
Multiphase	388.91	366.53	340.89	314.03	287.57
Multiphase with contactor	388.91	366.53	340.89	314.03	287.57
Multiphase current transformer connected	389.10	366.68	341.02	314.14	287.57

Source: AusNet Services

19.5 Unmetered installations

We provide meter data services to customers with unmetered supplies including public lighting customers.

The charges for the provision of the service are in two parts: a charge in respect of each NMI for which the data stream is calculated, and a charge for each light that is recorded on the Inventory table of lights for each public lighting customer. Consistent with historical practice, we propose that the charges for both parts be adjusted by the CPI each year. The following table sets out the charges for the regulatory period.

Table 19–11: Proposed Type 7 metering charges ($ nominal)

Type 7 metering charge ($)	2021-22	2022-23	2023-24	2024-25	2025-26
Per NMI	30.00	30.74	31.49	32.26	33.05
Per Light	1.78	1.82	1.86	1.91	1.96

Source: AusNet Services

19.6 Auxiliary metering services

The AER has set out its proposed auxiliary metering service classifications in the Final F&A for the Victorian Electricity Distributors, as set out below.

Table 19–12: Proposed alternative control auxiliary metering services

Service	Description of activities
Auxiliary metering services (Type 5 to 7 (including smart meter) where the distributor remains responsible	Activities include: • requests to test, inspect and investigate, or alter an existing type 5 or 6 metering installation • testing and maintenance of instrument transformers for type 5 and 6 metering purposes • non-standard metering services for Type 5 to 7 meters and any other meter types introduced • works to re-seal a type 5 or 6 meter due to customer or third party action (e.g. by having electrical work done on site) • change distributor load control relay channel on request that is not a part of the initial load control installation, nor part of standard asset maintenance or replacement • remote meter configuration • field based special meter read • office based special meter read • non-standard AMI data request for customer or authorised parties who require meter measurement data • manual meter reading for customers who have requested to retain a basic meter • priority re-energisation for customers requiring this service on a weekend or public holiday • metering exit services

In the current regulatory period, charges apply for remote energisation and re-energisation. Following discussions with the Customer Forum, we led an initiative across the Victorian distributors to abolish charges that apply when customers move in or move out of premises. As a result of this initiative, Victorian customers with smart meters will no longer pay these charges.

This outcome provides a tangible example of the benefits that smart meters are delivering to customers. Specifically, the technology has improved the timeliness and convenience of the service as well as reducing the costs of providing it. The abolition of the de-energisaton and re-energisation charges is a good outcome for customers.

The following tables lists the key assumptions used to calculate the alternative control auxiliary metering services charge.

Table 19–13: Remote special meter reading assumptions

Assumptions	
Service Orders meeting the eligibility criteria for remote special meter read	10,365 per annum
Manual validation for remote special meter read (5 minutes)	8% of eligible Service Orders
Hourly cost for manual intervention (10 minutes)	$78.24 per hour

Assumptions	
Service Orders successfully performed remotely (92% of eligible Service Orders)	9,536 per annum

Source: AusNet Services

The following table lists the key assumptions used to calculate the remote meter reconfiguration charge.

Table 19–14: Remote meter reconfiguration assumptions

Assumptions	
Service Orders for remote meter reconfiguration received	15,406 per annum
Manual validation for remote meter reconfiguration (10 minutes)	100% of Service Orders received
Service Orders meeting the eligibility criteria for remote meter reconfiguration	13,865 per annum
System timeout intervention for remote meter reconfiguration (5 minutes)	10% of eligible Service Orders
Hourly cost for manual intervention (5 minutes)	$78.24 per hour
Service Orders successfully performed remotely (90% of eligible Service Orders)	13,865 per annum

Source: AusNet Services

We propose the following charges to apply from 1 July 2022 and it is also proposed that the charges be adjusted by the CPI each year. The following table sets out the charges for the forthcoming regulatory period.

Table 19–15: Field officer visit assumptions

Assumptions	
Service Orders for physical completion by a field officer (re-configuration, de-energisation, re-energisation & special read)	7,605 per annum
Total field visits for field officers	81,340 per annum
Hourly cost per dispatch per field office visit (10 minutes)	$78.24
Overtime loading for after-hours work	200%

We propose to introduce a new data request service during the regulatory period that will allow for customers or 3rd parties to request for the provision of electricity network data or consumption data outside legislative obligations. This new service will improve customers and third parties access to metering and measurement data and will be offered as a subscription.

Table 19–16: Non-standard AMI charge

Assumptions	
Non-standard AMI data request service offering commencement year	2023
Customer Volumes	1,000 increasing up to 20,000 by 2025
Total labour costs to manage and support new data interfaces	$180,000 per annum (increasing by CPI each year)

Source: AusNet Services

Table 19–17: Proposed auxiliary metering services charges ($ nominal)

Name of service ($)	2021-22	2022-23	2023-24	2024-25	2025-26
Remote Special Meter Read	1.16	1.18	1.21	1.24	1.27
Remote Re-energisation	N/A	N/A	N/A	N/A	N/A
Remote De-energisation	N/A	N/A	N/A	N/A	N/A
Remote Meter Reconfiguration	15.11	15.49	15.86	16.25	16.65
Field Officer Visit Business Hours (Mon-Fri)	34.80	35.66	36.53	37.43	38.34
Field Officer Visit After Hours (Mon-Fri)	69.61	71.31	73.06	74.85	76.69
Manual Meter Reading Fee (per annum)	34.80	35.66	36.53	37.43	38.34
Priority Re-energisation	33.69	34.71	35.74	36.76	37.79
Non-standard AMI data subscription (per month)	0.00	15.08	1.58	0.85	0.61

Source: AusNet Services

19.7 Supporting documentation

In addition to the RIN templates submitted with this proposal, the following documents are provided in support of this chapter:

- Metering Asset Management Strategy;
- Metering capex model;
- Metering opex model;
- Metering charges model;
- Metering Post-Tax Revenue model (PTRM);
- Exit fee model (included in the PTRM model);

- Metering roll forward model;
- Metering depreciation model;
- Metering reallocation calculation – capex opex; and
- Auxiliary metering services charges model.

20 Alternative Control Service: Public lighting

20.1 Key points

- We have meaningfully engaged with our public lighting customers in developing and refining our proposal to meet the needs of our public lighting customers.
- Councils will benefit from our proposal through lower maintenance and energy lighting fees, and these benefits will continue into future periods.
- Our Public Lighting Model has been updated to more accurately reflect the efficient costs of providing public lighting services. This includes aligning the model with competitively tendered market rates and actual lighting fault rates.
- Our proposal will improve efficiency due to the replacement of Mercury Vapour public lights with more energy efficient lights. In addition, the amount of electricity consumed from our public lighting assets will be reduced by the equivalent of more than 10 thousand tonnes of carbon dioxide per year.

20.2 Chapter structure

The remainder of this chapter is structured as follows:

- Section 20.3 provides an overview of our public lighting forecasts;
- Section 20.4 explains the regulatory classification of public lighting services;
- Section 20.5 discusses our customers' preferences in relation to capital expenditure (capex) outcomes; the feedback we received on our Draft Regulatory Proposal; and how this feedback has been reflected in our updated capex plans in this Regulatory Proposal;
- Section 20.6 sets out the key inputs and assumptions our public lighting forecasts are based on;
- Section 20.7 explains the key drivers for our proposed expenditure;
- Section 20.8 outlines our proposed prices;
- Section 20.9 sets out the Form of Control for public lighting charges; and
- Section 20.10 lists the supporting documents for this chapter.

20.3 Summary of our public lighting expenditure forecasts

This chapter, which sets out our regulatory proposal for public lighting services for the 2021-FY2026 period, has been prepared following consultation with Councils (to whom we provide these services) and interested local community groups.

Public lighting fees are ultimately reflected in Council rates and involve:

- The cost of replacing public light lanterns and poles (which is capex). These costs represent around 13% of total public lighting costs in 2020 and are expected to represent around 18% of costs in FY2026.
- The ongoing cost of operating and maintaining public lights (which is operating expenditure (opex)). These costs represent around 22% of public lighting costs in 2020 and are expected to represent 27% of costs in FY2026.

- Energy cost, including use of network, retail and wholesale generation costs. These costs represent around 65% of total public lighting costs in 2020 and are expected to reduce to approximately 55% in FY2026.

In developing our proposal we have:

- reviewed key inputs and assumptions underpinning the Public Lighting Model; and
- updated several key assumptions in the Public Lighting Model to more accurately reflect the efficient costs of providing public lighting services. For example, by updating the costs so that they are consistent with competitively tendered market rates and actual lighting fault rates, we are improving the efficiency of our public lighting services and are helping Councils make efficient investment decisions on initiating bulk replacement programs.

We have also continued our work with Councils who, over the past decade, have been reducing their greenhouse emissions and lighting costs by facilitating the replacement of Mercury Vapour public lights with more energy efficient lights. Councils' investment in energy efficient lights since 2011 has reduced their overall public lighting cost, in terms of reduced energy consumption and lower public lighting charges.

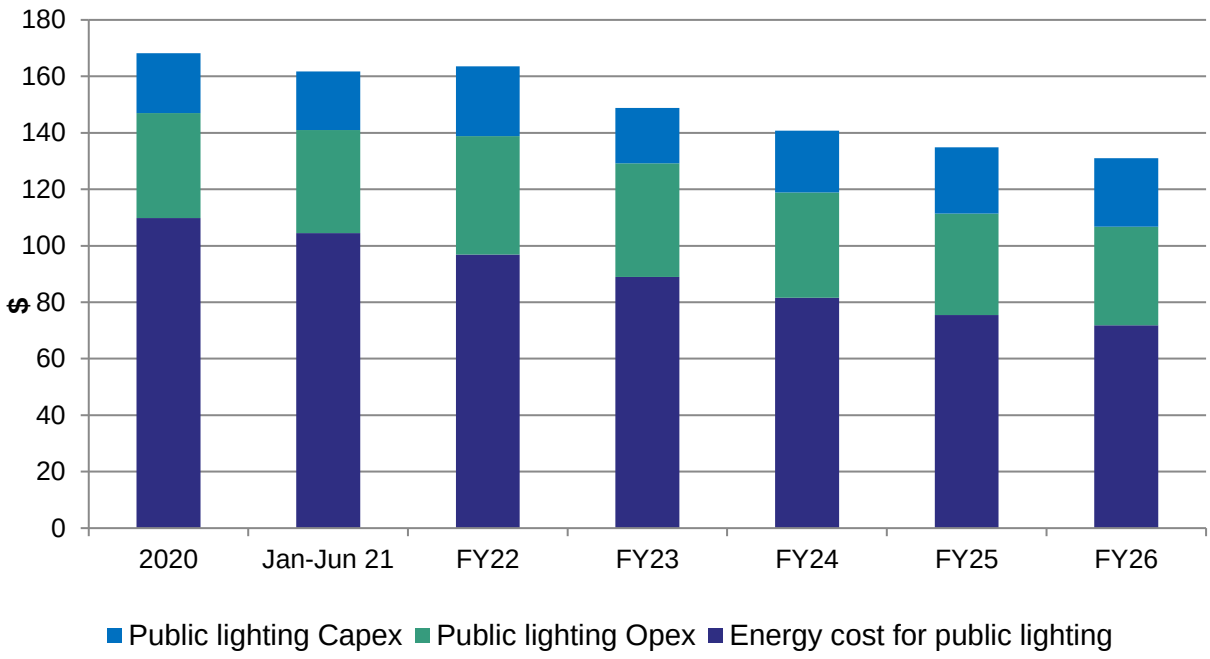
In the forthcoming period, the effect of aligning fees with our actual costs and making a significant investment to replace existing lights with energy efficient light-emitting diode (LED) lights will mean individual lighting fees will need to increase, on average, by 11% per year from 2020 to FY2026. However, the overall public lighting cost impact on Councils is expected to be much lower, with the average costs per light to be below 2020 averages by the end of the regulatory period.

Our proposal involves replacing more than 23,600 (out of the remaining 29,000) Mercury Vapour public lights during the years 2021-25 with more energy efficient LED lights. Councils funding the remaining (5,400 replacements). Importantly, recognising that some Councils had already undertaken significant replacement programs of Mercury Vapour public lights, and wanting to ensure that no Council was worse off by funding the replacement of other Councils' remaining Mercury Vapour public lights, our proposal also involves:

- funding up to the average proportion of non-standard Mercury Vapour light replacements in all Council and municipal areas; and
- sharing the cost with Councils with higher than average rates of non-standard Mercury Vapour lights.

Our analysis shows that the cost per light will reduce in real terms from 2020 to FY2026, following an initial increase in FY2022, which reflects updated bulk replacement and maintenance cost assumptions. The figure below shows the comparison of lighting cost components and impact of the bulk replacement costs and energy savings from 2020 to FY2026.

Figure 20.14: Average total public lighting costs, expressed as $ per light, 2020 to FY2026 (real June 2021 $s)



Note 1: Our public lighting charges are separated into: (1) capex price component; (2) opex price components; and (3) energy cost for public lighting (which includes wholesale energy, distribution network use of system charges and retail charges).

Note 2: The period Jan 20 to June 21 is provided on an annualised basis.

Under our proposal, all Councils will benefit from the lower maintenance and energy lighting fees that are charged for these more efficient replacement lights, with cost savings to continue into future periods.[7] Our combined investment with the Councils in efficient lighting in the coming regulatory period will also reduce more than 10 thousand tonnes of carbon dioxide per year from FY2026.[8]

20.4 Classification of public lighting services

We provide Public Lighting services to local councils and other authorities such as Vic Roads. These services are provided in accordance with Victorian Public Lighting Code.[9] The services provided are:

- operation, maintenance, repair and replacement of shared public lighting assets;
- operation, maintenance and repair – watchman or security lighting;[10]
- provision of new public lights (including emerging public lighting technology); and
- alteration and relocation of public lighting assets.

7 Four Councils with small proportions of Mercury Vapour lights could be worse off, but we will undertake more High Pressure Sodium light replacements in these municipal areas to ensure a fair distribution of energy savings.

8 Assuming a carbon emissions intensity of 1.08 kg CO2 per kWh for electricity consumed in Victoria, Department of Environment and Energy, National Greenhouse Accounts Factors, August 2019, p. 20.

9 This is available via the Essential Services Commission's web site: www.esc.vic.gov.au.

10 We no longer offer security and watchmen lights as a new service. All new security and watchmen lights must be established as part of a metered electrical installation.

Consistent with the classification in the AER's Framework and Approach, the table below outlines our proposed alternative control public lighting services for the forthcoming regulatory period. The classifications allow for the ongoing provision of regulated services including new lights, while still facilitating competition where Councils or road authorities wish to provide and manage their own lights, in accordance with applicable safety and metering requirements.

Table 21.2: Classification of public lighting services

Public Lighting Service	Classification
Operation, maintenance, repair and replacement – public lighting assets	Alternative control (fee-based)
Operation, maintenance and repair – watchman or security lighting	Alternative control (fee-based)
Provision of new public lighting assets (including emerging public lighting technology)	Alternative control (quoted)
The alteration and relocation of public lighting assets	Alternative control (quoted)

20.5 Customer preferences and feedback

20.5.1 Our engagement approach

As we care about our public lighting customers and the public amenity our services provide to our customers, in preparing this proposal we:

- provided Councils, road authorities and interested local community groups with a public lighting services Draft Electricity Distribution Regulatory for consultation in March 2019; and
- hosted (on 27 February 2019) a Deep Dive Workshop on public lighting.
- The key themes of this engagement were:
- price changes and the impact of efficient light replacements;
- cost drivers for us and for Councils; and
- how can we work together?

Councils broadly welcomed our workshop as it provided scope for us to explain how public lighting plans and prices are established. The workshop also provided a significant opportunity to discuss our customer services in respect to public lighting, that was acknowledged as "doing a lot more" than some other networks. At the workshop, we noted the areas for potential, and opportunities for collaboration, and committed to incorporate this valuable feedback into our customer centricity improvement programs.

20.5.2 Price changes and cost drivers

In the consultation document and our presentation, we presented the need to increase fees public lighting fees to better reflect actual contracted unit costs, higher failure rates and to fund LED bulk replacements mandated by the Minamata Convention. It was discussed that our current fees are on average lower than other Victorian distribution networks, see the table below.

Table 20.3: Published 2019 public lighting fees (prices quoted in terms of June 2021 $s)

	AusNet Services Central Region	AusNet Services North & East Region	Average fee across other Victorian distribution networks
Mercury Vapour 80W	44.20	50.20	60.62
HP Sodium 150W	104.95	119.41	100.45
T5 2X14W	36.58	41.63	39.33
LED 18W	17.22	17.69	27.57
Compact Fluorescent 32W	32.46	37.05	37.25

At the Deep Dive workshop, we highlighted that the prices in the current 2016-2020 regulatory period were not meeting revenue requirements due to:

- contract rates, and actual failure rates, exceeding the assumptions embedded in the current period charges; and
- the need to replace Mercury Vapour lights due to Public Lighting Code obligations to replace globes and the Minamata Convention banning the import of Mercury Vapour globes.

Some stakeholders commented that our actual LED and other failure rates seemed high based on their experience and understanding of failure rates for other distribution businesses. We committed to provide further information on failure incident rates and did so in April 2019. Failure rates are a key cost driver and are discussed in section 20.7.4.

At the Deep Dive workshop, we also highlighted that our proposed charges are higher than those applied in the current regulatory period. While these individual lighting price increases are significant, we indicated that we expect that our proposed fee increase will have a much lower total cost impact for a typical Council, with no material impact to the average cost per light paid by Councils over the period. This lower total cost increase arises as more expensive inefficient lights, such as Mercury Vapour lanterns, will be replaced with lower cost LED lights. For example, we are planning 29,000 such replacements (with 5,400 of those replacements being funded by Councils) in the 2022-26 regulatory period, which means that Councils will benefit from these lights being charged at a lower fee compared to Mercury Vapour lanterns.

Table 20.4 (below) shows the price differences between the most common types of light lanterns and energy efficient light lanterns that we are proposing to replace them with. Councils will benefit from paying lower fees for any existing light replaced during the period. In addition, Councils will also benefit from lower energy costs due to the use of more efficient lighting.

Table 20.4: Selection of proposed Public lighting fees showing the price reductions associated with proposed light replacements (prices quoted in terms of June 2021 $s)

Central Region	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
Mercury Vapour 80W	46.67	61.41	43.82	43.95	44.16	44.12
HP Sodium 250W	110.57	113.96	92.46	92.21	92.30	92.38
Equivalent energy efficient light types						
LED 18W standard power	17.53	30.78	35.15	37.78	39.77	40.77
LED 155W-250W (L2)	26.18	46.50	52.85	57.22	60.09	60.77
Fee reductions associated with the change in light types						
Yearly cost saving for a Mercury Vapour 80W replaced with a LED 18W	29.14	30.63	8.67	6.16	4.39	3.35
Yearly cost saving for a HP Sodium 250W replaced with a LED 155W-250W	84.40	67.46	39.61	34.99	32.21	31.61

Table 20.5 (below) shows the forecast total costs of public lighting services for Councils, which comprises:

- our public lighting fees (as discussed above);
- distribution use of system charges (DUOS); and
- wholesale costs, being primarily the retail energy costs.[11]

It also shows the average cost per light and the percentage change over the period.

11 Net retail cost assumed to be 25 cents/kWh, which we consider is reasonable based on extrapolated ASX VIC baseload future prices, the total loss factor for lights in our network, DUOS charges, typical retailer margins and other costs.

Table 20.5: Total costs of public lighting services 2020 to FY2026 (real June 2021 $s)

	2020	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
Public lighting fees	10,705,936	10,496,015	12,495,598	11,225,416	11,097,940	11,154,960	11,098,879
Energy costs (network, retail and generation)	20,123,082	19,147,436	18,178,997	16,682,404	15,304,056	14,154,036	13,477,980
Total costs	**30,829,018**	**29,643,452**	**30,674,595**	**27,907,820**	**26,401,996**	**25,308,996**	**24,576,859**
Total costs per light	168.21	161.75	163.51	148.76	140.74	134.91	131.01
Percentage change in costs per light		-3.85%	1.09%	-9.02%	-5.40%	-4.14%	-2.89%

Note: Jan to June 2021 is presented on an annualised basis

Table 20.5 (above) puts our proposed fee increase in a broader context, which considers the total costs that Councils are expected to incur in relation to public lighting services. For example, it shows that the average cost per light is expected to decline between FY2022 and FY2026, albeit after an initial increase in FY2022 (due to revised bulk replacement and maintenance assumptions (opex)).

While the cost impact of our proposal will vary across Councils, analysis indicates that the planned installation of a greater number of efficient LED lights will deliver significant savings to Councils that will offset our proposed increase in lighting fees (see Figure 20.15 above).

20.5.3 Stakeholder comments regarding our proposed price changes

Stakeholders at our Deep Dive workshop, and one Council in response to our consultation paper, were concerned that the proposed price increases, which are above the ABS' consumer price index (CPI), may adversely impact council budgets. Specific concerns were that:

- Councils may need to raise their rates, which will have flow on effects for residents; and
- some Councils may not be able to fully recover the cost increases beyond CPI.

In addition, Councils expressed concerns that our proposal may not be equitable to all Councils, especially for those Councils that had already undertaken significant replacement programs of Mercury Vapour public lights. It was discussed that these Councils should not be worse off in funding the replacement of other Councils remaining Mercury Vapour public lights.

Given the different historical expenditures already undertaken by Councils in replacing Mercury Vapour public lights, we discussed options regarding how the cost of our replacement program could be shared equitably across the Councils. Following the forum, we also considered a suggestion that new classes of efficient lighting tariffs (and a new RAB) should be established for network-initiated replacements of Mercury Vapour and other lights that are no longer

suitable. However, analysis showed that the costs of administering such an approach would be significant and that a more cost-effective solution was required.

To address this equity issue, we are proposing to:

- fund up to the average proportion of non-standard Mercury Vapour lights in all Council and municipal areas; and
- share the cost with four Councils with higher than average rates of non-standard (decorative) Mercury Vapour lights.

All Councils will benefit from the lower maintenance and energy lighting fees that are charged for these more efficient replacement lights, with cost savings to continue into future periods.[12] Our proposal is discussed in more detail in section 20.7.2 (below).

In our discussions with Councils following the workshop, we met with Councils with the larger than average populations of MV lights and agreed in principle with the proposal. Having listened to Councils and other stakeholders and agreed an approach, our proposal will facilitate a fair distribution of energy savings across all municipal areas to offset increases in prices. We have written to all Councils and relevant roads authorities updating them of the revised approach and proposed changes, along with an offer to discuss and show them our cost modelling.

20.5.4 How can we work together?

We identified the need for improving our communications with Councils and the need for better communications between us and Councils. Topics discussed at the 27 February 2019 Deep Dive workshop included:

- Improving notifications of outages impacting public lights, including where exactly they are located and when they are fixed.
- Developing an application / web portal to report faults. It was noted that some networks already have or are in the process of developing such an application.
- The need for an electronic system for fault reporting. Some Council representatives indicated that they had to email individual AusNet Services staff members to report faults.
- Developing a web portal to provide timeframes and updates on progress on jobs, where we are constructing public light poles.
- The ability to work together on smart photo electric (PE) technology related trials.

We welcome these opportunities for collaboration and plans to improve our engagement with Councils for our mutual benefit. We will deliver the necessary information and communications technology (ICT) changes to support the initiatives described above.

In the 2022-26 regulatory period, we are proposing to fund the Public Lighting customer centricity change program to better meet these needs, in a similar manner, to how Graphical Information Systems (GIS) costs were apportioned to public lighting and funded in the current allowance. This avoids the need to fund IT systems dedicated for public lighting with standard control services.

12 Two Councils with small populations of Mercury Vapour lights would be worse off, but we will undertake more HP Sodium replacements in these municipal areas to ensure a fair distribution of energy savings.

20.6 Key inputs, assumptions and forecasting approach

Consistent with the other four Victorian distribution businesses, we have used the AER's Public Lighting model to forecast our proposed fee based charges to apply to our public lighting assets for the 2022-26 regulatory period. These rates apply to all public lighting installations that are owned by us and utilise either wholly or in part the shared distribution network assets in the provision of the lighting service.

We have separate pricing structures for the Central Region and for the North and East Regions. These price structures take account of the higher costs associated with the provision of the services in these regions due to the higher costs of servicing lights in lower light density areas and greater distances travelled by contractors and service agents.

In forecasting our proposed fee-based charges, we have used actual contracted unit rates to determine key inputs in the AER's Public Lighting Model. In 2015, we undertook a tender for all public lighting services of globe and luminaire replacements (bulk replacement and fault response). Since then, we have run other competitive tender processes for pole replacements.

Additionally, we have updated:

- other unit rates based on material and labour costs from our contractors escalated with CPI and light replacement volumes forecasted;
- the number of repairs that one crew can undertake in a day to reflect the need for additional traffic management when working on category V lights; and
- the price factor for Compact Fluorescent lights after calculating the impact of material price changes and actual fault rates.

20.7 Key cost drivers

20.7.1 Contract unit rates are higher than rates currently approved

For the current regulatory period, bulk replacement and individual light replacement costs were under-estimated and did not include updated OH&S requirements (such as traffic management) on public lighting works. While it is important to actively manage outsourced contracts, particularly to ensure that service quality is maintained, competitive tendering provides a strong assurance that the costs we incur are efficient. Furthermore, our competitively tendered contract rates provide direct information on the efficient cost of providing public lighting services.

Our previous regulatory proposal for the current regulatory period was not informed by these market tested rates, which are more than double the previously approved forecast for the current period.

20.7.2 Phasing out hazardous mercury lights

Under the Public Lighting Code, Victorian Distribution Businesses must maintain public lighting assets in accordance with minimum standards specified in the Victorian Public Lighting Code. This includes replacing fittings and lights when required, and providing bulk replacement and patrol programs. When an existing but no longer suitable public lighting asset fails or needs a bulk replacement, a suitable alternative replacement must be made.

The Australian government signed the "Minamata Convention on Mercury" in October 2013, that became effective August 2017, and Australia has committed to ratify the Convention in 2020. The Convention is a multilateral environmental agreement requiring practical actions to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds. Under this convention the import, export and manufacture of Mercury Vapour public lights will be banned from 1 January 2021. With the prohibition, the Public Lighting Code would require the replacement of such lights with another light type. As a

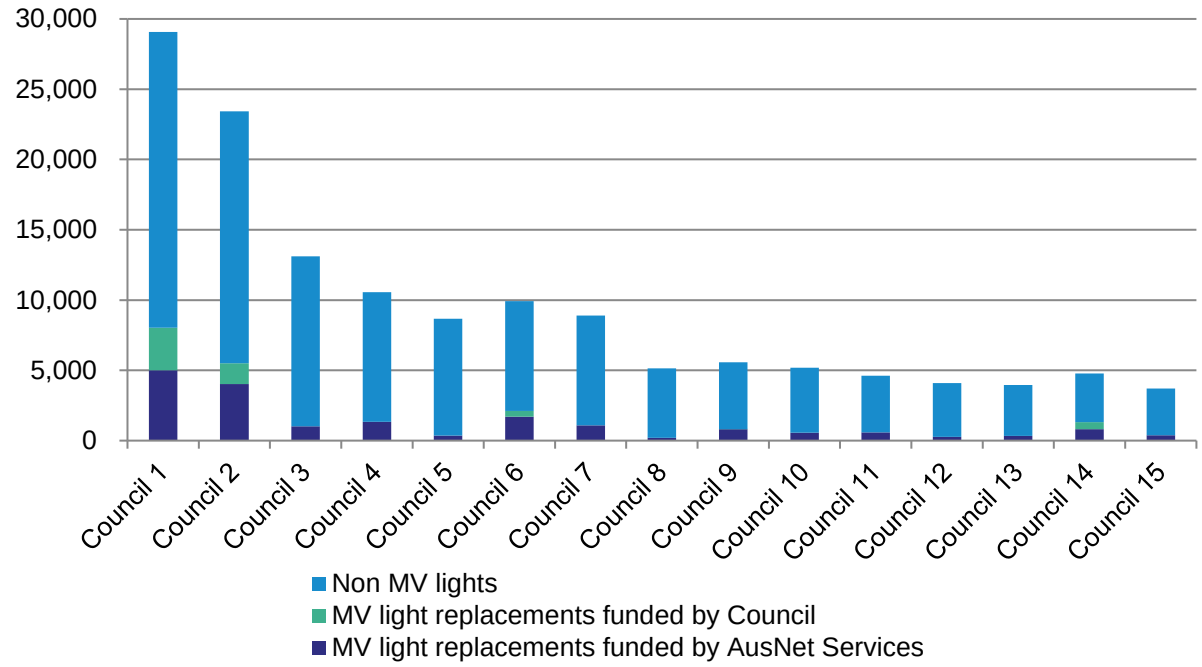
consequence, our proposed lighting charges for the forthcoming regulatory period will need to reflect the expected costs of the bulk replacement of Mercury Vapour lanterns.

LED lighting products contain no Mercury, are the most energy efficient technology and have the lowest operating and maintenance costs. At this stage, we are therefore planning to replace all remaining Mercury Vapour lights with equivalent LED lighting products between 2021 and FY2026 in accordance with our expected regulatory obligations and our social and environmental responsibilities.

As explained in section 20.5.3, we have engaged with Councils and developed a proposal to fund up to the average proportion of non-standard (decorative) Mercury Vapour lights in all Council and municipal areas. All Councils have at least some Mercury Vapour lights and the majority of these are non-standard (decorative) Mercury Vapour lights, see Figure 20.15 (below).

In respect to standard (non-decorative) Mercury Vapour public lights it is clearly our obligation to undertake the replacement, while in the case of non-standard lights both us and Council have responsibilities to ensure replacement globes are available for 4 yearly bulk replacements. For every dollar price increase associated with our replacement program, Councils on average are expected to receive a $2 saving and also benefit in energy lower maintenance fees.

Figure 20.15: Council Mercury Vapour (MV) light populations and proposed funding



Note: Non MV – non standard decorative Mercury Vapour lights. MV – Mercury Vapour lights.

We expect all Councils will benefit from the lower annual lighting changes and reduced energy costs for lighting. Four Councils with very small populations of Mercury Vapour lights would be worse off, if not for their large proportions of High Pressure Sodium lights aged beyond 20 years. We are proposing to replace these aged assets with equivalent LED lights as part of our proposal.

20.7.3 Rationalising the number of lighting technologies on our network

As a result of historical investment decisions, we currently have six different types of lighting technologies. This number of technologies tends to increase the complexity and costs of providing public lighting services, which ultimately is paid for by our customers.

We want to improve our cost efficiency by rationalising the number of lighting technologies on our network. During the 2022-26 regulatory period we, therefore, plan to replace all Metal Halide and Mercury Vapour lights, which would consolidate our current six lighting technologies to four.

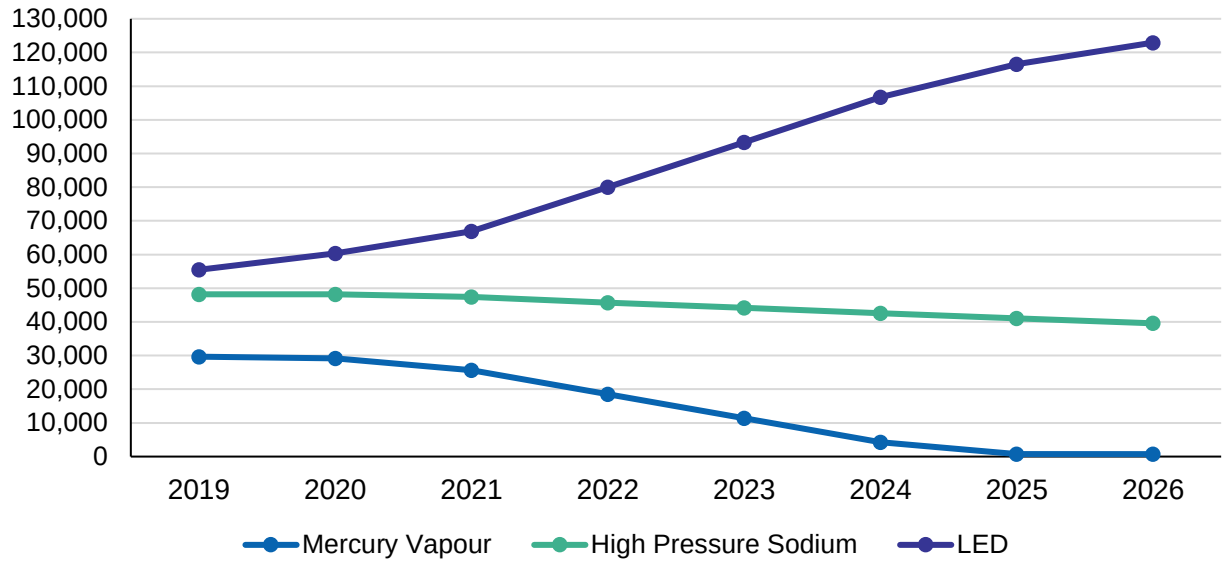
While the increased replacement activity over the 2022-26 regulatory period will lead to higher costs in the immediate future, the expenditure is warranted in terms of future cost savings, particularly in rural and remote areas. As noted in the previous section, the replacement of Mercury Vapour lanterns will deliver energy cost savings.

Given the benefits of rationalising the lighting technologies, as inefficient luminaires fail we intend to replace them with the equivalent LED technology. This replacement plan will apply to the lighting technologies below, which are expected to become obsolete within the following timeframes:

- Compact Fluorescent lights by 2026;
- T5 lights by 2028; and
- High Pressure Sodium lights by 2030.

The alternative approach of maintaining these lights by undertaking like-for-like replacement would not be prudent and efficient as quality replacement globes will become increasingly costly to source. Quality issues with T5 and compact fluorescent light globes are already adversely impacting maintenance costs. In addition, the replacement of inefficient lights with LED lights will provide on-going energy cost savings for customers.

Figure 20.16: Forecast light numbers of different technologies



In the case of High Pressure Sodium lanterns, in addition to the high maintenance costs and high failure rates, there is also a risk of these lights igniting fires. The replacement of failed High Pressure Sodium lanterns with equivalent LED lights in advance of the 2030 obsolescence date will therefore minimise the costs to our customers and improve safety.[13] Figure 20.16 (above) shows the effect of these replacements on our light volumes.

13 We note the full replacement of functioning High Pressure Sodium would only occur after the obsolescence date.

In summary, our proposal to replace inefficient and obsolete technologies will result in a safer and more efficient service. In addition, by working closely with Councils we will deliver the lighting services they prefer while also meeting our compliance obligations.

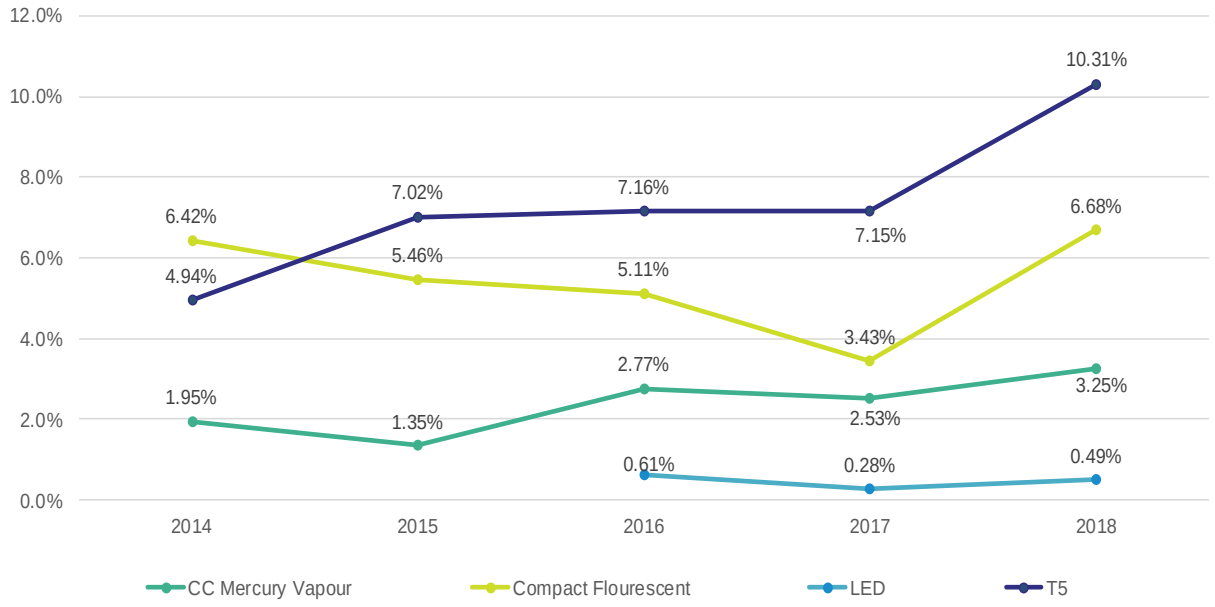
20.7.4 Increasing failure rates

Following our Public Lighting Stakeholder Workshop, we provided more detailed information to attendees on failure incident rates. Our incident and maintenance data was assigned to each lighting categories and incorporated failure data between 2014 and 2018. Subsequently in meetings with stakeholders (Councils and their consultants) we displayed the raw data and explained our analysis.

Figure 20.17 and Figure 20.18 (below) show our revised failure data analysis for both luminaire replacements, and globe or PE cell only minor replacements. In addition to globe or PE cell minor replacements, we also have to make "other repairs".

In our 2016-20 regulatory proposal, we forecasted zero luminaire failure rates for all new lighting technologies, including T5 and Compact Fluorescent lights. This assumption was reflected in the zero capital expenditure allowance for efficient lighting in our allowance in the current regulatory period.

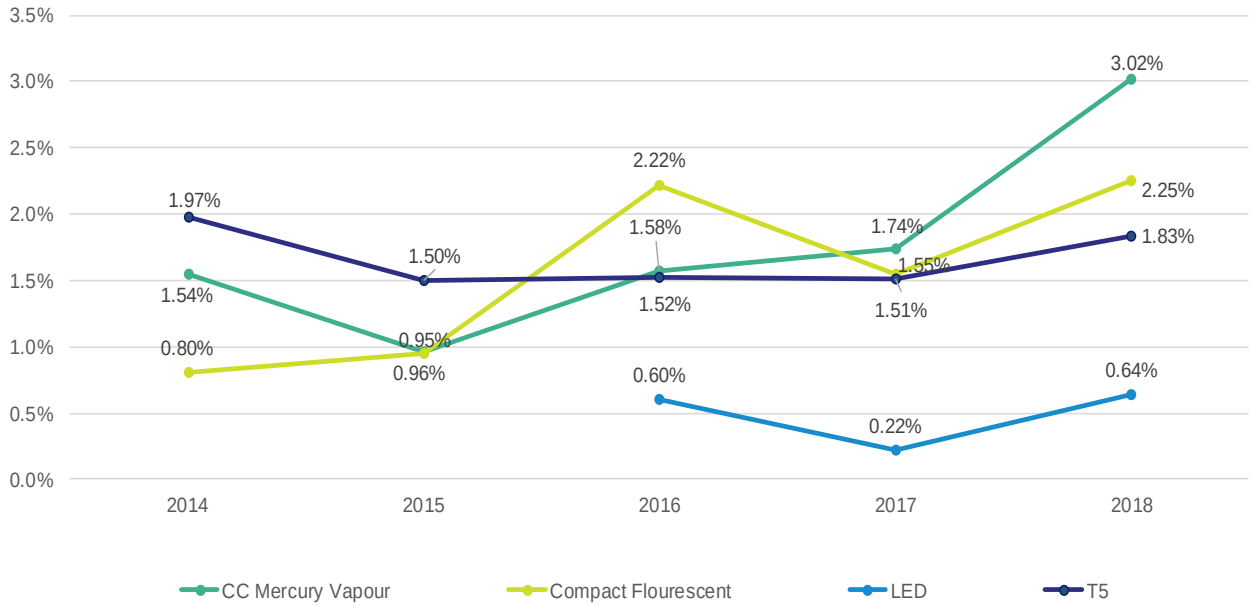
Figure 20.17: Graphic representation of yearly failure rates of globes and PE cells



Actual globe and PE Cell failure rates for all new lighting technologies are significantly higher than previously forecasted in our 2016-20 regulatory proposal. Particularly high are T5 and Compact Fluorescent lights for which our average failure rates (globes, PE cells and other repairs) are 10.3% and 8.0%, respectively. Of particular concern is the LED light failure rate, which is1.09%, comprising of 0.49% luminaire replacements, 0.46% PE cell replacements, and 0.14% other repairs.[14]

[14] LED lighting failure data before 2016 not shown because the population was too small.

Figure 20.18: Graphic representation of yearly failure rates of Luminaires



The average luminaire failure rates over the 4 years are applied as the average expected failure rate, while average globe and luminaire replacement and other failure rates are incorporated into the operational expenditure forecasts.[15] The failure rate analysis demonstrated the need for an increase in our operational costs for public lighting categories (opex) and the need for ongoing replacement expenditure (capex).

[15] Other repairs are not directly associated with the light technology categories, and we have used the same assumption as in previous AER determinations public lighting models and uniformly allocated "other repairs" failure data across all light categories.

20.8 Proposed fees for public lighting services

The tables below set out the prices for fee-based services for the 2021 to FY2026 regulatory period.

Table 20.6: Public lighting fees (prices quoted in terms of June 2021 $s)

Central Region	2020	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
Mercury Vapour 80W	$47.17	$46.67	$61.41	$43.82	$43.95	$44.16	$44.12
HP Sodium 150W	$110.66	$109.48	$112.11	$91.04	$90.95	$91.16	$91.24
HP Sodium 250W	$111.77	$110.57	$113.96	$92.46	$92.21	$92.30	$92.38
Mercury Vapour 50W	$72.17	$71.40	$93.96	$67.05	$67.24	$67.57	$67.50
Mercury Vapour 125W	$69.34	$68.60	$90.28	$64.42	$64.60	$64.92	$64.85
Mercury Vapour 250W	$117.36	$116.10	$119.65	$97.08	$96.82	$96.92	$97.00
Mercury Vapour 400W	$121.83	$120.53	$124.21	$100.78	$100.51	$100.61	$100.69
HP Sodium 100W	$118.41	$117.14	$119.96	$97.41	$97.32	$97.54	$97.63
HP Sodium 400W	$158.71	$157.01	$161.82	$131.29	$130.94	$131.07	$131.18
Metal Halide 70W	$205.90	$203.70	$268.08	$191.28	$191.84	$192.78	$192.57
Metal Halide 100W	$264.22	$261.40	$267.68	$217.37	$217.16	$217.67	$217.86
Metal Halide 150W	$300.18	$296.97	$304.10	$246.95	$246.71	$247.28	$247.50
Energy Efficient Lights							
T5 2X14W	$38.10	$37.69	$56.79	$61.69	$60.05	$60.94	$61.19
T5 2X24W	$44.94	$44.46	$59.11	$61.18	$62.63	$63.35	$62.64
LED 18W standard power	$17.72	$17.53	$33.13	$35.98	$37.91	$39.19	$39.52
LED 14W low output non-standard	$17.72	$17.53	$35.26	$38.11	$40.03	$41.31	$41.65

Central Region	2020	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
LED 70W-125W (L1)	$25.67	$25.40	$44.49	$50.09	$53.95	$56.48	$57.09
LED 155W-250W (L2)	$26.46	$26.18	$46.50	$52.85	$57.22	$60.09	$60.77
LED 275W-400W (L4)	$28.11	$27.81	$57.92	$65.01	$69.86	$73.06	$73.81
Compact Fluorescent 32W	$33.81	$33.45	$49.96	$54.26	$52.82	$53.60	$53.83
Compact Fluorescent 42W	$33.81	$33.45	$49.96	$54.26	$52.82	$53.60	$53.83

Table 20.7: Public lighting fees (prices quoted in terms of June 2021 $s) – North and East

North & East	2020	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
Mercury Vapour 80W	$53.52	$52.95	$70.43	$49.03	$49.15	$49.28	$49.31
HP Sodium 150W	$125.81	$124.47	$131.83	$109.14	$106.35	$107.95	$108.03
HP Sodium 250W	$124.47	$123.14	$130.54	$107.68	$105.18	$105.26	$105.34
Mercury Vapour 50W	$79.21	$78.36	$104.23	$72.56	$72.74	$72.93	$72.98
Mercury Vapour 125W	$79.21	$78.36	$104.23	$72.56	$72.74	$72.93	$72.98
Mercury Vapour 250W	$129.44	$128.06	$135.76	$111.99	$109.39	$109.47	$109.56
Mercury Vapour 400W	$133.18	$131.76	$139.68	$115.22	$112.54	$112.63	$112.72
HP Sodium 100W	$134.62	$133.18	$141.06	$116.78	$113.79	$115.51	$115.59
HP Sodium 400W	$176.74	$174.85	$185.36	$152.91	$149.36	$149.47	$149.59
Metal Halide 70W	$203.61	$201.43	$267.93	$186.52	$186.98	$187.48	$187.60
Metal Halide 100W	$266.48	$263.63	$279.22	$231.17	$225.25	$228.65	$228.82
Metal Halide 150W	$302.75	$299.51	$317.22	$262.63	$255.90	$259.76	$259.96
Energy Efficient Lights							
T5 2X14W	$43.39	$42.92	$66.85	$69.59	$67.53	$68.17	$68.42
T5 2X24W	$51.11	$50.56	$70.33	$72.31	$70.95	$71.50	$70.95

North & East	2020	Jan-Jun 21	2021-22	2022-23	2023-24	2024-25	2025-26
LED 18W standard power	$18.21	$18.02	$36.31	$39.15	$40.43	$41.71	$42.04
LED low output non-standard	$18.21	$18.02	$38.13	$40.97	$42.19	$43.46	$43.80
LED 70W-125W (L1)	$26.29	$26.00	$49.99	$55.59	$58.59	$61.12	$61.73
LED 155W-250W (L2)	$27.07	$26.78	$52.00	$58.34	$61.87	$64.73	$65.40
LED 275W-400W (L4)	$28.68	$28.38	$66.65	$73.73	$76.88	$80.08	$80.84
Compact Fluorescent 32W	$38.61	$38.19	$58.80	$61.22	$59.40	$59.96	$60.19
Compact Fluorescent 42W	$38.61	$38.19	$58.80	$61.22	$59.40	$59.96	$60.19

Table 20.8: Private security lighting fees (prices quoted in terms of June 2021 $s)

	2020	Jan Jun-21	2021-22	2022-23	2023-24	2024-25	2025-26
Security and watchmen lights	$0.00	$0.00	$30.49	$29.64	$28.92	$28.34	$27.54

20.9 Form of control

20.9.1 Fee based services

In the AER's F&A it states that it will apply the formula below to the Victorian distributors' public lighting.

We accept the formula the AER proposes to apply to fee based Alternative Control Services (fee based).[16] This formula is:

$$\bar{p}_t^i \geq p_t^i \qquad i=1,...,n \text{ and } t=1,2,3,4$$

$$\bar{p}_t^i = \bar{p}_{t-1}^i(1+\Delta CPI_t)(1-X_t^i)+A_t^i$$

Where:

$\bar{p}_t^i$ is the cap on the price of service *i* in year *t*

p_t^i is the price of service *i* in year *t*. The initial value is to be decided in the distribution decision.

16 AER, *Final Framework and approach | Victorian Electricity Distributors Regulatory control period commencing 1 January 2021*, 31 January 2019, p. 70.

$\bar{p}_{t-1}^{i}$ is the cap on the price of service *i* in year *t*-1

ΔCPI_t is the annual percentage change in the ABS consumer price index (CPI) All Groups, Weighted Average of Eight Capital Cities from the December quarter in year *t*–2 to the December quarter in year *t*–1.

X_t^i is the X-factor for service *i* in year *t*, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary.

A_t^i is the sum of any adjustments for service *i* in year *t*. Likely to include, but not limited to adjustments for any approved cost pass through amounts (positive or negative) with respect to regulatory year *t*, as determined by the AER.

20.9.2 Quoted services

We are proposing a modification to the AER's formula for quoted services in its Framework and Approach Paper to include a margin and an allowance for tax. The reasons for these proposed changes are explained in section 21.8.2.

20.10 Supporting documentation

In addition to relevant parts of the RIN templates the following public lighting documents are provided in support of this chapter:

- AER's Public Lighting Model – FY2022 to FY2026;
- Appendix 20A – Public lighting services Draft Electricity Distribution Regulatory for consultation;
- Appendix 3L – Deep Dive Workshop Two – Summary Report for 27 February 2019 workshop;
- ASD - AMS 20-73 Public Lighting; and
- Public Lighting Fault Analysis based on 2019 data.

21 Alternative Control Service: Connection and ancillary network services

21.1 Key points

- The prices and unit rates we are proposing to apply to our Alternative Control Services from 1 July 2021 to 30 June 2026, based on new contract unit rates or alternatively escalated labour rates, are set out in this chapter.
- We are introducing new quoted Alternative Control Services descriptions that were recently agreed in the AER's Framework and Approach Paper (F&A).
- The unit rates proposed for Alternative Control Services in the forthcoming regulatory period are based upon the form of control agreed in the F&A.
- The F&A does not explicitly state how large embedded connection services should be classified. We have treated these services as Standard Control Services in this proposal, which is consistent with the F&A. However, given the AER's recent draft decision for SA Power Networks, there is now a strong case for classifying these services as Alternative Control Services. We will therefore reconsider this matter in our revised Regulatory Proposal; and
- The formula for the Alternative Control Services control mechanism specified in the F&A needs to be amended to include a margin, given the AER's recent draft decision for SA Power Networks. In addition, the service classification issues raised in this proposal highlight that tax costs should also be included in that formula.
- Our Connections Policy[17] and Model Standing Offers can be found on our website.[18]

21.2 Chapter structure

The remainder of this chapter is structured as follows:

- Section 21.3 summarises our approach to charging fees for connection and ancillary network services;
- Section 21.4 outlines our key inputs, assumptions and methodology of using competitively unit rates to determine proposed fees;
- Section 21.5 outlines our proposed fee based Connection Services, the basis for developing the fees for those services, and the proposed fees;
- Section 21.6 outlines our proposed fee based Ancillary Network Services, the basis for determining the fees, and the proposed fees;
- Section 21.7 outlines the Alternative Control Services that we propose be determined based on quoted rates, the basis for determining those quoted rates, and the proposed quoted rates;
- Section 21.8 explains our proposed form of control for Alternative Control Services, which addresses the change of circumstance arising from the AER's recent draft decision for SA Power Networks; and

17 Draft Distribution Connection Policy Effective from 1 July 2021.

18 https://www.ausnetservices.com.au/New-Connections.

- Section 21.9 lists the supporting documents for this chapter.

21.3 Summary of our connection and ancillary network service fees

Alternative Control Services are services that are provided by means of or in connection with a distribution system. Alternative control services are customer specific or customer requested services. A number of these services also have the potential to be provided on a competitive basis, rather than by the local distributor.

The cost of providing Alternative Control Services is not recovered through revenue earned from distribution use of system tariffs. Rather, it is recovered, via regulated fees, directly from the customer requesting the service.

We endorse the classification of services set out in the AER's F&A, including the service groups established.

21.4 Key inputs, assumptions and methodology for deriving fee based service prices

We provide connection services and network ancillary services to customers across three broad geographic regions:

- Central region: this region covers those predominately urban and semi urban areas in and around our north and east growth corridors (e.g., Beaconsfield and South Morang);
- North Region: this region covers those predominately rural and semi-rural towns and regions in the northern part of our service territory; and
- East Region: this region covers those predominately rural and semi-rural towns and regions in the eastern part of our service territory.

We competitively tender, and intend to periodically go to market, for the provision of connection services and some network ancillary services for all regions. Competitive tendering, and the active management of outsourced contracts, provides us assurance that the costs we incur are efficient and that service quality is maintained.

Our competitively tendered contract rates provide direct information about the efficient cost of providing premise connection services and network ancillary services. As these rates are market tested, we consider it reasonable to assume that they represent the efficient cost of providing those services. These new rates will apply from FY2022 onwards.

The prices proposed for our most common connections services for single phase overhead and underground connections during Business Hours have not increased in aggregate. However, the proposed charges for other services from FY2022 involve substantial increases on the 2020 charges due to:

- The previous after-hours rates were based on line-worker after-hours unit rates and did not consider the longer travel times and higher support costs associated with low frequency after-hours work. These rates did not previously incorporate market tested after hours unit rates; and
- In this forthcoming regulatory period, we are proposing service charges for work that requires a Licensed Electrical Inspector (LEI) to confirm a Current Transformer (CT) metering or group metering panel meets all applicable Victorian Service Installation rules and Victorian safety standards. The cost of providing a separate LEI visit is additional to the connection costs for connections involving a group metering panel or CT.

In deriving our proposed quoted rates, we used a base-trend approach where:

- actual rates per hour are calculated for each labour category from 2020; and
- the starting 2020 year price, real labour cost escalators are forecast for FY2022 (consistent with the labour escalation rates applicable for standard control services) and applied to the base year prices.

21.5 Proposed fees for Alternative Control Services for connections - fee based

Consistent with the classification in the AER's F&A for the forthcoming regulatory period, we are proposing fee-based connection services for our routine connection services to customers at a new premise or altering their connection to the network, which include:

- routine connection of new premises that qualify as basic connection services;
- temporary connections (e.g. metered connection to a builder's pole);
- connections involving an inspection of CT or group metering installation by a Licensed Electrical Inspector prior to initial energisation;
- energisation and de-energisation at the pole or pit; and
- pre-approval of a PV or small generator installation.

Table 21.9 (below) sets out the prices for connection services classified as fee based Alternative Control Services for FY2022. Our proposed charges for the remainder of the regulatory period (FY2023 to FY2026) will then be set by incrementing the FY2022 prices by CPI as per the form of control formula.

While some categories of connection services increase significantly between 2020 and 2021-22, the proposed fees are efficient as they:

- are based on competitively tendered contracted rates; and
- benchmark well relative to our peers.

Table 21.9: Proposed Alternative Control Services for connection fees (prices quoted in terms of real June 2021 $s)

Connection service	2020	2021-22
Single Phase Overhead – Business Hours	437.66	482.29
Single Phase Overhead – After Hours	527.77	1276.03
Single Phase underground – Business Hours	227.30	209.63
Single Phase underground with a directly connected meter on group metering panel – Business Hours	NA	460.94
Single Phase underground – After Hours	290.74	1276.03
Multi-phase overhead with a directly connected meter – Business Hours	467.75	552.80
Multi-phase overhead with a directly connected meter – After Hours	564.06	1276.03
Multi-phase overhead with a CT connected meter – Business Hours	627.98	1055.42

Connection service	2020	2021-22
Multi-phase overhead connection with a CT connected meter – After Hours	758.16	1778.65
Multi-phase underground with a directly connected meter – Business Hours	340.14	338.81
Multi-phase underground with a directly connected meter on group metering panel – Business Hours	NA	590.12
Multi-phase underground with a directly connected meter – After Hours	421.27	1276.03
Multi-phase underground with a CT connected meter – Business Hours	490.75	841.42
Multi-phase underground connection with a CT connected meter – After Hours	607.79	1778.65
95mm^2 overhead service from LVABC – Business Hours	721.27	832.10
95mm^2 overhead service from LVABC – After Hours	903.55	2108.14
Establish temporary supply connection – Business Hours	368.25	482.29
Establish temporary supply connection – After Hours	467.70	1276.03
Appointment – inspection of group or CT metering prior to connection – Business Hours	NA	502.62
Service truck - Disconnect / Reconnect at pole or pit – Business Hours	368.25	553.84
Service truck - Disconnect / Reconnect at pole or pit – After Hours	467.70	NA

21.6 Proposed fees for network ancillary services - fee based

Consistent with the classification in the AER's F&A, we are proposing both fee based and quoted services for network ancillary services.

Table 21.10 (below) sets out the prices for network ancillary services classified as fee based Alternative Control Services for FY2022. Our proposed charges for the remainder of the regulatory period (FY2023 to FY2026) will then be set by incrementing the FY2022 prices by CPI.

For meter equipment tests conducted during business hours, we have applied our proposed quoted services hourly rate for a technical officer to the:

- estimated time on-site to complete a meter equipment test – which differs between single phase and multi-phase meters; and
- estimated time required to get to and from site in each of our three service regions (with this based on the same analysis as was described above for connection services).

Meter equipment test fees are charged only if metering equipment is not found defective or non-compliant.

Table 21.10: Proposed network ancillary services - fee based (prices quoted in terms of real June 2021 $s)

Network ancillary services	2020	2021-22
Meter equipment test – Single Phase	173.39	297.72
Meter equipment test – Single Phase - each additional meter at same site	64.59	66.40
Meter equipment test – Multi Phase	205.71	359.85
Meter equipment test – Multi Phase - each additional meter at same site	96.89	98.37
Wasted Truck Visit – customer not ready for their requested works	209.54	205.99
Manual assessment of PV & small generator installation enquiry, 4.6kW to 15kW.	161.49	318.00
Manual assessment of PV & small generator installation enquiry, 15kW to 30kW.	214.10	318.00

21.7 Quoted ancillary network services

Quoted services are customer specific or customer requested services for which the labour and materials costs vary from job to job. A customer's final charge consists of a regulated charge per hour for each labour type used plus any materials and any vehicle costs (otherwise reflected in the underlying hourly rate). Our financial systems track the revenues received from quoted services and associated costs. New quoted Alternative Control Services descriptions, consistent with the AER's F&A, are proposed.

Table **21.11** (below) outlines the Alternative Control Services that we propose to offer as quoted services. This is subject to clarifying the treatment of connection for large embedded generators, which is discussed shortly.

Table 21.12 shows the applicable labour rates for quoted services for FY2022. Labour rates for the remainder of the regulatory period (FY2023 to FY2026) are then set by incrementing the FY2022 prices by CPI.

Table 21.11: ACS service groups and proposed services

Service Group	Further description from the AER's F&A	Examples
Access permits, oversight and facilitation	Activities include: • a distributor issuing access permits or clearances to work to a person authorised to work on or near distribution systems including high and low voltage; • a distributor issuing confined space entry permits and associated safe entry equipment to a person authorised to enter a confined space; • a distributor providing access to switch rooms, substations and other network equipment to a non-Local Network Service Provider party who is accompanied and supervised by a distributor's staff member; and • facilitation of activities within clearances of distributor's assets, including physical and electrical isolation of assets.	Processing access permit applications; Accompanied access for purposes of metering activities within distributor facilities; and Clearance assessment.
Network related property services	Activities include: • Network related property services such as property tenure services relating to providing advice on, or obtaining: deeds of agreement, deeds of indemnity, leases, easements or other property tenure in relation to property rights associated with a connection or relocation. • Conveyancing inquiry services relating to the provision of property conveyancing information at the request of a customer.	Property admin and conveyancing inquiries.

Service Group	Further description from the AER's F&A	Examples
Notices of arrangement and completion notices	Examples include: • Work of an administrative nature where a local council requires evidence in writing from the distributor that all necessary arrangements have been made to supply electricity to a development. This includes: receiving and checking subdivision plans, copying subdivision plans, checking and recording easement details, assessing supply availability, liaising with developers if errors or changes are required, and preparing notifications of arrangement. • Provision of a completion notice (other than a notice of arrangement). This applies where the real estate developer requests the distributor to provide documentation confirming progress of work. Usually associated with discharging contractual arrangements (e.g. progress payments) to meet contractual undertakings.	This service group is not offered as a standalone service.
Network safety services	Customers or third parties requesting the provision of network safety services in order to safely undertake construction work or the transportation of high loads.	Provision of safety observer services; Fitting of tiger tails, possum guards, HiVis flags, and aerial markers; High load escorts; Site visit assessing location of underground cables; and De-energising shared network lines for safe approach.

Service Group	Further description from the AER's F&A	Examples
Connection application and management services	Works initiated by a customer or retailer that are specific to the connection point. This includes, but is not limited to: • supply enhancement or undergrounding; • non basic supply abolishment or reposition non-basic connection; • customer requested change requiring primary and secondary plant studies for safe operation of the network; • assessing connection applications or a request to undertake relocation of network assets as contestable works and preparing offers; • customer requested protection and power quality assessment or change requiring primary and secondary plant studies; • site inspection in order to determine the nature of the connection service sought by the connection applicant; • calculation of a site specific distribution loss factor on request; and • rectification of illegal connections or damage to overhead or underground service cables.	Abolishment of connection with a capacity greater 100A; Establishing premises connection assets with a capacity greater 100A; Manual assessment of PV & small generator installation enquiry greater than 30 kW; Manual assessment of connection applications and preparing offers; Site inspection required to provide a connection offer; Rectification of damage to overhead or underground cables; and Upgrade from a single phase connection to multi-phase connection, where the required multiphase supply isn't available at the point of connection.
Community network upgrades	Collective customer requested network enhancement. Activities related to community requests to augment the network to enable higher PV exports.	Creating a community PV generator opportunity map; and Augmenting shared network to create greater network capacity.
Provision of training to third parties for network related access	Training services provided to third parties that result in a set of learning outcomes that are required to obtain a distribution network access authorisation specific to a distributor's network. Such learning outcomes may include those necessary to demonstrate competency in the distributor's electrical safety rules, to hold an access authority on the distributor's network and to carry out switching on the distributor's network. Examples of training might include high voltage training, protection training or working near power lines training.	Training days to individual employees of third party service providers.

Service Group	Further description from the AER's F&A	Examples
Authorisation and approval of third party service providers design, work and materials	Activities include: • authorisation or re-authorisation of individual employees and subcontractors of third party service providers to design, construct, audit or tie in distributor's network assets; • acceptance of third party designs and works; and • assessing an application from a third party to consider approval of alternative material and equipment items that are not specified in the distributor's approved materials list.	Authorisation or re-authorisation of individual employees of third party service providers to become accredited to undertake design, construct, audit or tie in distributor's network assets for customer connections; and Assessing new public lighting assets for use as standard lighting.
Customer initiated network asset relocations	Relocation of assets that form part of the distribution network in circumstances where the relocation was initiated by a third party (including a customer).	Relocating power lines.
Customer requested supply outage	Examples include customer-initiated network outage (e.g. to allow customer and/or contractor to perform maintenance on the customer's assets, work close to or for safe approach, which impacts other networks users)	Customer, or other authorised party, requested supply outage for multiple connection points.
Customer requested provision of electricity network data	Complicated data requests by customers or third parties including requests for the provision of electricity network data or consumption data outside of legislative obligations.	Complicated requests for de-identified metering data from multiple sites and other analysis by third party.
Enhanced connection services	Other or enhanced connection services provided at the request of a customer or third party that include those that are provided with higher quality of reliability standards, or lower quality of reliability standards (where permissible) than required by the NER or any other applicable regulatory instruments. This includes reserve feeder installation and maintenance in excess of levels of service or plant ratings required to be provided by the distributor	Provision and maintenance of reserve feeder and backup supply; and Provision and maintenance of isolation transformer or harmonic filtering equipment at a customer's premises.

In relation to 'enhanced connection services', the service description in the table above is consistent with that provided in appendix B of the AER's F&A. However, this description contrasts with the AER's Electricity Distribution Service Classification Guideline, which includes large embedded generation connections in the description of enhanced connection services:[19]

> *Other or enhanced connection services provided at the request of a customer or third party that include those that are:*
>
> - *provided with higher quality of reliability standards, or lower quality of reliability standards (where permissible) than required by the NER or any other applicable regulatory instruments*
> - *in excess of levels of service or plant ratings required to be provided by the distributor*
> - *for large embedded generators (30 kW 3 phase or above and 5 kW 1 phase or above).*

The AER's recent draft decision for SA Power Networks also included large embedded generation connections within the 'enhanced connection service classification.[20]

In relation to this service description, therefore, the AER's F&A differs from the AER's Service Classification Guidelines and its draft decision for SA Power Networks. However, we recognise that the F&A explains that the AER's service descriptions are not exhaustive[21] and that it may have been its intention to include embedded generation connections within the 'enhanced connection service' category.

For the purpose of this submission we have treated connection services for large embedded generators as a Standard Control Service, which is consistent with the F&A and the current service classification.[22] However, as noted above, the AER's most recent draft decision and its earlier Guidelines suggests there is a strong case for classifying this service as an Alternative Control Service.

While our preference is to classify large embedded generation connections as an Alternative Control Service, this is dependent on the development of appropriate pricing arrangements. In particular, the AER's proposed formula for Alternative Control Services in its F&A does not provide any allowance for the tax liability incurred on the capital contribution. This is significant as capital contributions have material tax implications for distribution networks, as the contribution is treated as income for tax purposes.

The AER's PTRM addresses the tax implications arising from capital contributions by treating the contribution as taxable income. However, if embedded generation connections are classified as an Alternative Control Service, there is no provision in the price control formula in the F&A for recovering the tax costs from the connecting party. Such an outcome would be unreasonable as it is accepted that tax, net of imputation credits, is a legitimate cost to be recovered by network companies.

In summary, we support the treatment of large embedded generation connections as an Alternative Control Service, providing that the formula for quoted services allows tax costs to be

---

19 AER, Electricity Distribution Service Classification, September 2018, Appendix A, p. 8.

20 AER draft decision, SA Power Networks Distribution Determination 2020 to 2025, Attachment 12 Classification of services, p. 12-25.

21 AER's framework & approach, AusNet Services, CitiPower, Jemena, Powercor and United Energy, January 2019, footnote 349, p. 98.

22 There is also interplay between the F&A and our proposed Connection Policy, which currently classifies these services as 'negotiated connection services', which are defined as Standard Control Services in the F&A. As such, our Connection Policy may also need amending, noting that it has not yet been approved by the AER.

recovered from the connecting party. If this change to the formula is not permitted, these services ought to remain classified as a Standard Control Service. Our proposed formula for quoted services is explained in section 21.8.2. We would welcome further discussion with the AER on this issue during its review process.

Table 21.12: Quoted Alternative Control Services rates for FY2022 (fees quoted in real June 2021 $s)

Labour category	Service description	2021-22 $/hour rate - BH	2021-22 $/hour rate - AH
Labour—wages	Construction Overhead Install	114.12	138.61
Labour—wages	Construction Underground Install	111.47	135.38
Labour—wages	Construction Substation Install	111.47	135.38
Labour—wages	Electrical Tester Including Vehicle & Equipment	199.28	224.68
Labour—wages	Planner Including Vehicle	153.20	N/A
Labour—wages	Supervisor Including Vehicle	153.20	N/A
Labour—design	Design	130.81	158.87
Labour—design	Drafting	100.52	122.08
Labour—design	Survey	118.40	143.81
Labour—design	Tech Officer	118.40	143.81
Labour—design	Line Inspector	114.12	138.61
Labour—design	Contract Supervision	118.40	143.81
Labour—design	Protection Engineer	130.81	158.87
Labour—design	Maintenance Planner	118.40	143.81

21.8 Form of control

21.8.1 Fee based services

In the AER's F&A, the AER states that it will apply Victorian distributors' fee based connection services and network ancillary services.

AusNet Services accepts the formula the AER proposes to apply to fee based Alternative Control Services (fee based).[23] This formula was:

$$\bar{p}_t^i \geq p_t^i \qquad i=1,...,n \text{ and } t=1,2,3,4$$

$$\bar{p}_t^i = \bar{p}_{t-1}^i(1+\Delta CPI_t)(1-X_t^i)+A_t^i$$

[23] AER, *Final Framework and approach | Victorian Electricity Distributors Regulatory control period commencing 1 January 2021*, 31 January 2019, p. 70.

Where:

$\bar{p}_t^i$ is the cap on the price of service *i* in year *t*

p_t^i is the price of service *i* in year *t*. The initial value is to be decided in the distribution decision.

$\bar{p}_{t-1}^i$ is the cap on the price of service *i* in year *t*-1

ΔCPI_t is the annual percentage change in the ABS consumer price index (CPI) All Groups, Weighted Average of Eight Capital Cities from the December quarter in year *t*–2 to the December quarter in year *t*–1.

X_t^i is the X-factor for service *i* in year *t*, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary.

A_t^i is the sum of any adjustments for service *i* in year *t*. Likely to include, but not limited to adjustments for any approved cost pass through amounts (positive or negative) with respect to regulatory year *t*, as determined by the AER.

21.8.2 Quoted services

We propose that the formula specified in the F&A for quoted services be amended to include a margin and an allowance for tax. This is required due to the following change of circumstance, in accordance with clause 6.12.3(c1) of the Rules:

- The AER's draft decision for SA Power Networks, published in October 2019, which accepted that it is appropriate for a margin to be included in the formula; and
- The issues raised in section 21.7 (above), which highlights the implications of large embedded generation connections being classified as an Alternative Control Service.

In particular, we support SA Power Networks' submission that including a margin in the price cap formula for quoted services ensures that the price is consistent with the principle of competitive neutrality, and the revenue and pricing principles in the NEL, meaning that customers pay a price similar to that in a competitive market.[24] The same principle applies in relation to the tax issue raised in section 21.7.

In light of these changed circumstances, which were not evident when the F&A was published (January 2019), we propose the following formula applies to connection services and network ancillary services that are quoted services:[25]

Price = Labour + Contractor Services + Materials + Margin + Tax

Where:

Labour consists of all labour costs directly incurred in the provision of the service which may include labour on-costs, fleet on-costs and overheads. Labour is escalated annually by:

$(1+\Delta CPI_t)(1-X_t^i)$

Where:

---

24 AER draft decision, SA Power Networks Distribution Determination 2020 to 2025, Attachment 13 Control Mechanisms, p. 13-16.

25 AER, *Final Framework and approach | Victorian Electricity Distributors Regulatory control period commencing 1 January 2021*, 31 January 2019, p. 71.

ΔCPI_t is the annual percentage change in the ABS consumer price index (CPI) All Groups, Weighted Average of Eight Capital Cities from the December quarter in year *t*–2 to the June quarter in year *t*–1.

X_t^i is the X factor for service *i* in year *t*, incorporating annual adjustments to the PTRM for the trailing cost of debt where necessary.

Contractor Services reflect all costs associated with the use of external labour including overheads and any direct costs incurred. The contracted services charge applies the rates under existing contractual arrangements. Direct costs incurred are passed on to the customer.

Materials reflect the cost of materials directly incurred in the provision of the service, material storage and logistics on-costs and overheads.

Margin is an amount equal to AusNet Services' nominal vanilla WACC applied to the total cost of Labour, Contractor Services and Materials.

Tax is an amount, if any, equal to the tax costs in present value terms arising from the provision of the service to a customer, net of the value attributed to imputation credits in the AER's Rate of Return Guideline.

21.8.3 New services offered during the regulatory period

Where a new service is identified that falls within an existing ACS service group classification, we propose to be able to commence offering that service during the regulatory period. This will provide us with the flexibility to provide new services to our customers without having to wait until the subsequent regulatory period. New quoted services will be provided to the AER for approval as part of our annual pricing proposal.

21.9 Supporting documentation

In addition to relevant parts of the RIN templates the following document is provided in support of this chapter:

- AusNet Services connection and network ancillary services charge model.