

ATTACHMENT 17.1 TYPE 5 AND 6 METERING SERVICES PROPOSAL 2019-24

April 2018



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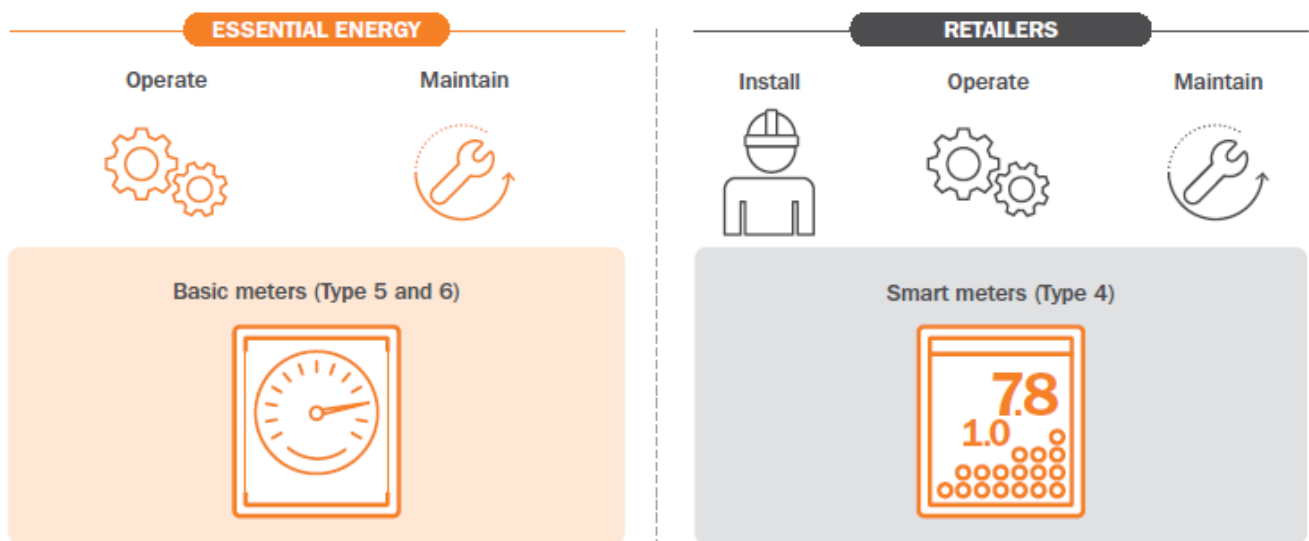
1. BACKGROUND

This attachment explains:

- > The metering services Essential Energy provides, the different types of metering installations and the drivers for providing metering services.
- > What we have done to provide customers with metering services, and their associated costs.
- > Our approach to determining revenue requirements so we can recover the efficient costs of providing metering services.
- > Our methodology for setting charges.

From 1 December 2017, the provision of new and replacement metering became fully contestable under the Power of Choice framework and Essential Energy no longer installs meters.

However, we continue to be responsible for Type 5 and 6 (basic) meter reading and maintenance. We have reflected the intent of the Power of Choice framework by developing cost-reflective charges for these services.



1.1 About metering services

On 26 November 2015, the Australian Energy Market Commission (AEMC) made its final determination in relation to the *National Energy Retail Amendment (Expanding competition in metering and related services) Rule 2015*.

This rule change was designed to make metering services more competitive and formed part of the Power of Choice reform package. From 1 December 2017, primary responsibility for providing new meters transferred from Local Network Service Providers (LNSPs) to a new class of industry participant – Metering Coordinators (MCs). New and replacement meters are provided by competitive MCs and chosen by customers in conjunction with their electricity retailer. All the new meters being installed are smart meters (Type 4).

DNSPs, including Essential Energy, have retained a role as the Initial MC for existing Type 5 and 6 meters. Should these meters require replacement for any reason, such as functional failure or loss of statistical accuracy, we will no longer replace them. Instead, we will issue a meter fault notification to the retailer for the meter to be replaced within the competitive environment.

We will continue to be responsible for reading Type 5 and 6 meters, and for completing accuracy testing in accordance with the National Electricity Rules (NER).

The Australian Energy Regulator (AER) proposes to continue regulating metering services associated with Type 5 and 6 metering installations that are provided by NSW DNSPs from 1 July 2019 as Alternative Control Services.

In Essential Energy's distribution area, we only installed Type 5 meters where annual consumption was between 100MWh and 160MWh. Type 6 meters were installed where annual consumption was less than 100MWh. Type 6 meters are generally older electromechanical meters that only provide aggregated energy consumption between meter readings and are read manually.

Type 5 meters provide interval metering but do not meet the full requirements of a smart (Type 4) meter. Despite their limited functionality, Type 6 meters make up most of the meters on Essential Energy's network and have demonstrated their ability to operate reliably and accurately for many decades. Many of these meters now exceed their notional economic lives but are still recording within acceptable accuracy bands.

Installations with consumption above 160MWh per annum are required to have Types 1, 2, 3, or 4 meters installed. As they continue to be provided in a competitive market, they are not being regulated by the AER.

Metering Services associated with Type 7 metering installations (unmetered supplies) will continue to be regulated by the AER as part of Network Services under the Standard Control Services regime.

2. OBLIGATIONS AND DRIVERS FOR PROVIDING METERING SERVICES

Under the NER, the MC is responsible for providing, installing and maintaining a metering installation and for collecting, processing and delivering metering data. The LNSP must perform the role of Initial MC for metering installations at premises with Type 5 and 6 meters¹.

As the designated Initial MC for Type 5 and 6 metering installations located in our network area, Essential Energy must:

- > Ensure all relevant connection points are metered to the defined standard.
- > Develop a Meter Asset Management Plan (MAMP) for maintaining metering installations that is approved by the Australian Energy Market Operator (AEMO).
- > Comply with the NER and the associated Procedures (Metrology and Meter Provider/Metering Data Provider Service Level Procedures) in relation to our method of providing, installing and maintaining metering installations and metering data services.

We are also obligated to comply with the requirements of relevant Australian Standards, particularly those relating to meter testing.

Our objectives for providing metering services are:

- > Ensuring the integrity of the metering system.
- > Supporting efficient metering data collection and provision.
- > Detecting meters that no longer meet their functional or accuracy requirements.
- > Facilitating a smooth transition to the Power of Choice framework.

¹ For Metering Installation Types 1, 2, 3 and 4, the customer's retailer contracts with a Metering Coordinator other than Essential Energy

3. HOW WE DELIVER METERING SERVICES

The AER's final framework and approach for Ausgrid, Endeavour Energy and Essential Energy (July 2017) re-states the Power of Choice framework. In relation to Type 5 and 6 metering services, it says that:

- > From 1 December 2017, households and other small customers that traditionally use these meter types may wish to change their metering provider and the type of meter they have. NSW distributors will no longer be permitted to install or replace existing meters with Type 5 or 6 meters.
- > While NSW distributors cannot install new Type 5 and 6 meters from 1 December 2017, they will continue to operate and maintain existing Type 5 and 6 meters until these are replaced.
- > NSW distributors will still recover the capital cost of Type 5 and 6 metering equipment installed before 1 July 2015 as an Alternative Control Service.

Under the new framework and approach, Essential Energy's metering services activities around Type 5 and 6 meters are now restricted to:

- > *Meter maintenance* - inspecting and testing.
- > *Meter reading* - quarterly or other regular reading.
- > *Meter data services* –collecting, processing, storing and delivering metering data and managing relevant NMI Standing Data in accordance with the NER.

3.1 Meter maintenance

Essential Energy's Metering Asset Management Plan² outlines our strategy for maintaining metering and associated equipment, which includes:

- > Notifying retailers of the need to replace meters that have failed functionally or are part of a population of meters that no longer meet their accuracy requirements.
- > In-service sample meter testing to verify installed Type 5 and 6 meter populations remain accurate.
- > In-service sample Current Transformer (CT) testing and inspection to verify CT populations remain accurate.
- > Inspecting metering installations as required under the NER.

3.2 Meter reading and meter data services

As Initial MC, we continue to be responsible for obtaining routine meter readings from all Type 5 and 6 metering installations connected to our network. This includes physical on-site meter reading, meter reading route scheduling and maintenance. Readings are validated before they are distributed to industry market participants. This can lead to some reactive (off-cycle) meter reading when a routine read fails verification criteria.

As an accredited Meter Data Provider, Essential Energy's metering data services include:

- > Forward estimation for Type 5 metering data so National Electricity Market (NEM) settlements can occur weekly.
- > Validating Type 5 and 6 metering data after collection.
- > Substituting Type 5 and 6 metering data where required.
- > Storing Type 5 and 6 metering data in accordance with the NER.
- > Forwarding metering data to eligible market participants for billing purposes.
- > Forwarding metering data to AEMO to allow for market settlement.

² Refer to Attachment 17.3.1 Meter Asset Management Plan

4. SERVICE COSTS FOR TYPE 5 AND 6 METERS

Essential Energy requires operating expenditure, a return on, and return of, the meter asset base that existed prior to 1 July 2015 when delivering Type 5 and 6 metering services under the Power of Choice framework.

With just under 1.4 million Type 5 and 6 meters installed, a critical determinant for metering services delivery costs over the coming regulatory period will be the rate at which the population of meters declines.

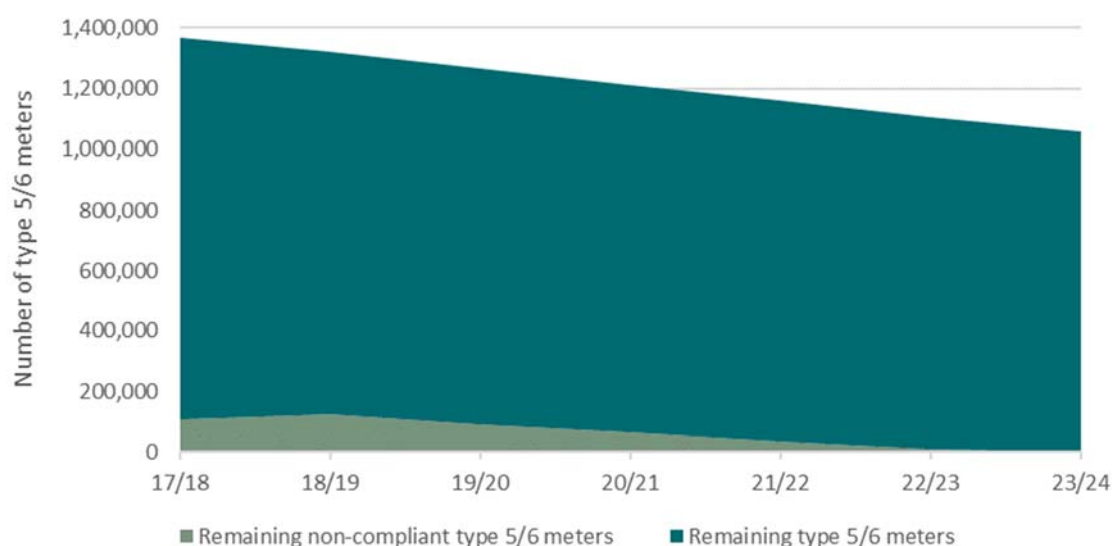
Type 5 and 6 meters are being replaced for the following reasons:

- > The meter is no longer functioning correctly (functional failure).
- > The meter is part of a population of meters that no longer meet their statistical accuracy requirements.
- > Metering changes are required due to the installation of photovoltaic systems or other switchboard alterations.
- > A meter change is requested by a retailer (in conjunction with their customer) to take advantage of the advanced functionality of smart meters.

To help with establishing the likely level of meter roll-off, Essential Energy engaged specialists NIEIR to assist in forecasting the likely smart meter roll-out rate for both new installations (which are 100 per cent smart meters) and existing installations across our network.

We combined this forecast with the expected number of functional failures and non-compliant meters to predict the roll-off for Type 5 and 6 meters and the reduction in statistically non-compliant meters.

Expected Change in Population of Type 5 and 6 and Non-Compliant Meters



Based on these forecasts, we estimate that the Type 5 and 6 metering population will decline by approximately 20 per cent between 2017/18 and 2023/24. About half of this decline will be driven by the need to replace non-compliant and functionally-defective meters, while the other half relates to Retailer and customer requested upgrades.

While we expect ongoing management costs for Type 5 and 6 metering services will go down as the volume of these meters reduces, some variable costs, such as meter reading, will increase on a unit basis. This is because the time to read individual installations will go up over time as Type 5 and 6 meter density reduces, mainly because the travel time between individual meter readings will increase. Other costs will remain relatively fixed in real terms, (e.g. compliance testing costs) as the required sample sizes only vary slightly with a decline in meter population.

4.1 Operating costs

We forecast the total operating costs for Type 5 and 6 metering services (maintenance, reading and data services) at \$90.65 million for the five years 2019/20 to 2023/24. We have forecast these costs using historical information, updating them to align with our projected meter churn figures since Power of Choice commenced.

Annual Operating Expenditure for Type 5 and 6 Metering Services (\$M, 2018/19)

Operating expenditure	2019/20	2020/21	2021/22	2022/23	2023/24
Meter compliance and testing	\$1.97	\$1.18	\$0.68	\$0.84	\$0.93
Meter reading	\$14.77	\$14.72	\$14.64	\$14.52	\$14.45
Meter data services	\$1.89	\$1.89	\$1.89	\$1.89	\$1.89
Tax and debt	\$0.39	\$0.45	\$0.50	\$0.55	\$0.61
Total	\$19.02	\$18.24	\$17.70	\$17.80	\$17.89

Further detail is provided within Attachment 17.2 Metering Model and 17.3 Metering PTRM.

4.1.1 Operating costs drivers

To provide cost-reflective metering charges, we must identify appropriate cost drivers so we can send charging signals to customers. We consider that allocating operational costs based on meter type and the number of registers to be read provides the most appropriate cost-reflectivity. Although Essential Energy has some Type 5 capable meters installed, they are read as Type 6 meters, so there is no material difference in the costs to maintain and read them.

We consider that each category of operating expenditure (maintenance, reading and data services) has a different cost driver, so we have allocated costs differently between Type 5 and 6 installations.

- > **Meter maintenance** — costs depend on the type and quantity of meters installed on-site. On average, an accumulation meter costs less to maintain than an electronic Time of Use (TOU) or interval meter.
- > **Meter reading** — given the size of our network area, we estimate that 75 per cent of the time required to read our meters is driven by the large distances to be covered. The remaining 25 per cent depends on the number of registers to be read. We assign meter reading costs on this basis, with single-read accumulation meters attracting the lowest cost.
- > **Meter data processing** — the base cost driver is the volume of data being processed. Meter data services are higher for processing and managing multiple register readings per meter, such as TOU.

4.2 Capital costs

As outlined above, Essential Energy no longer invests in new meters and does not have any related direct capital costs for the 2019-24 regulatory period. However, capital costs associated with meters installed prior to 1 July 2015 will continue to be recovered until the meters are fully depreciated. Capital costs represent the cost of financing the capital value of the meters installed at customer premises (the return on capital) as well as the return of this capital (regulatory depreciation). These costs are weighted on the historical purchase price of the various meter types.

While there is no forecast capital expenditure relating specifically to meters, there will be some indirect capital related to non-system assets associated with continuing to perform the MC role in relation to these meters.

Indicative Forecast Capital Expenditure for Transitional Year and Subsequent Four Years (\$M, 2018/19)

Metering Services Capex	2019/20	2020/21	2021/22	2022/23	2023/24
Information & communication technology	\$1.55	\$0.77	\$0.87	\$0.58	\$0.59
Furniture, fittings, plant and equipment	\$0.06	\$0.06	\$0.06	\$0.06	\$0.07
Motor vehicles	\$0.81	\$0.79	\$0.88	\$1.07	\$0.95
Buildings	\$0.38	\$0.23	\$0.34	\$0.35	\$0.36
Land (non-system)	\$0.69	\$0.05	\$0.01	\$0.09	\$0.00
Other non-system assets					
Total metering services CAPEX	\$3.49	\$1.90	\$2.16	\$2.15	\$1.97

The value of the metering services regulated Metering Asset Base (MAB) is made up of several asset classes that are used, either wholly or shared, when providing Type 5 and 6 metering services.

Indicative Closing Value of Metering Services MAB at 30 June Each Period (\$M, 2018/19)

	2019/20	2020/21	2021/22	2022/23	2023/24
Total metering services MAB value	\$87.50	\$82.11	\$76.85	\$71.44	\$65.69

Further detail is provided within Attachment 17.2 Metering Model and 17.3 Metering PTRM.

5. METERING SERVICES CHARGES

When developing our metering services charges, we have sought to meet the following principles:

- > **Cost-reflective charging** — by developing a cost-reflective charge between the various Type 5 and 6 meters and their functionality, we are ensuring charges reference our historical expenditure.
- > **Equitable treatment** — by progressively eliminating the existing asset base without penalising customers who have paid for their own meter and providing information for customer decision-making from now on.
- > **Administrative simplicity** — by developing our approach within the constraints of existing IT and billing capabilities so we can provide customers with simple, transparent information. We have avoided approaches where the implementation costs or ongoing reporting and reconciliation requirements would be significant.

We have calculated a metering service charge that reflects the costs of providing a metering service over the life of the asset, including recovering the pre-1 July 2015 asset base. This recovery cost does not apply to installations connected after 1 July 2015.

5.1 Annual meter charges

Essential Energy's annual metering service charges recover our ongoing operating expenditure and, where applicable, the value of the metering asset base (as at 1 July 2015).

The charges have been developed on a 'per service' basis. This means that each unique data stream will attract a charge. For example, a basic and an off-peak (controlled load) data stream is two services.

We have used this approach to develop charges that reflect the service and benefit customers receive from their respective metering service. We have sought to develop an approach that balances the need for cost-reflectivity with a fair and appropriate service-based charging signal.

These charges will be provided on a fixed cents-per-day basis, similar to the service availability charge component of network charges for Standard Control Services.

This approach aligns with Essential Energy's existing network charging structure, as customers are grouped according to the service we provide. In effect, the metering charges are mapped to the network charges list. This approach has worked satisfactorily for many years.

Our proposed metering service charges have been developed in accordance with the AER's price cap formula and are provided as Attachment 4 – Indicative Metering Services Pricing Schedule in our Tariff Structure Statement.

5.1.1 Capital recovery charge

A capital recovery charge will apply to all sites where Essential Energy funded metering equipment to recover the costs of the regulated MAB i.e. the capital costs of the meter/s installed at the connection point.

This charge is based on the network charge structure that applied on 30 June 2015. It will remain fixed and will not change, even if our network charges change. Where a customer funded a regulated metering upgrade or switched to a competitive metering arrangement after 1 July 2015, the capital recovery charge continues to be applied to recover our costs for previously-installed regulated metering equipment.

Capital Recovery Charges Applying to Installations Established Before 1 July 2015 (Real \$, 2018-19)

Price by tariff class	Charge per year				
	2019/20	2020/21	2021/22	2022/23	2023/24
Residential Anytime	\$10.04	\$10.17	\$10.13	\$10.11	\$10.08
Residential TOU	\$14.61	\$14.80	\$14.74	\$14.71	\$14.67
Small Business Anytime	\$10.04	\$10.17	\$10.13	\$10.11	\$10.08
Small Business TOU	\$14.61	\$14.80	\$14.74	\$14.71	\$14.67
Controlled Load	\$4.57	\$4.63	\$4.61	\$4.60	\$4.59

5.1.2 Operating and maintenance charges

The operating and maintenance charge covers the ongoing operating expenditure for providing Type 5 and 6 metering services, including meter reading, testing and inspections.

A maintenance metering service charge will apply for all NMIs where we provide Type 5 and 6 metering services i.e. where Essential Energy is nominated as MC, Meter Provider and Meter Data Provider for the NMI in the NEM.

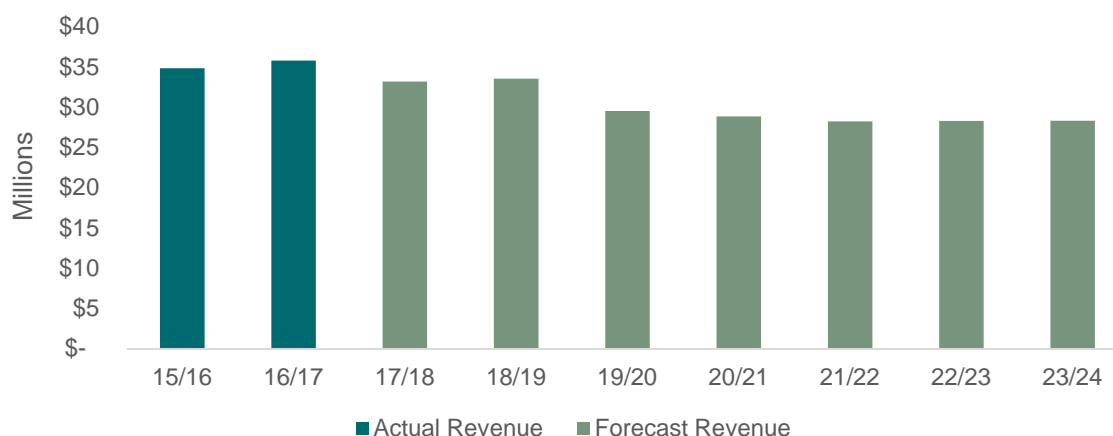
Operation and Maintenance Charges Applying to Type 5 and 6 Metering Installations (Real \$, 2018/19)

Price by tariff class	Charge per year				
	2019/20	2020/21	2021/22	2022/23	2023/24
Residential Anytime	\$22.90	\$23.77	\$25.14	\$27.76	\$30.57
Residential TOU	\$34.34	\$35.65	\$37.71	\$41.64	\$45.85
Small Business Anytime	\$22.90	\$23.77	\$25.14	\$27.76	\$30.57
Small Business TOU	\$34.34	\$35.65	\$37.71	\$41.64	\$45.85
Controlled Load	\$5.72	\$5.94	\$6.28	\$6.94	\$7.64

6. METERING SERVICES REVENUE

In accordance with the AER's framework and approach, price caps will continue to be applied to metering service charges during the 2019-24 regulatory period. Actual and forecast revenue for the current regulatory period (2014-19) and forecast revenue for the future regulatory period (2019-2024) is provided below for comparative purposes, demonstrating a progressive reduction in revenue expected over the period as Type 5 and 6 meters are replaced with smart meters.

Forecast Metering Services Revenue (Real \$, 2018/19)



Metering Services Revenue (Real \$M, 2018/19)									
14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24
\$34.83	\$35.79	\$33.18	\$33.18	\$33.54	\$29.52	\$28.85	\$28.24	\$28.29	\$28.32

7. COMPLIANCE WITH THE CONTROL MECHANISM

The AER has decided to apply price caps to individual service charges for all Alternative Control Services during the 2019-24 regulatory period.

The AER has also set out its proposed Alternative Control Services formulas. We have adopted the AER's approach to the proposed formulas and will demonstrate our compliance with this control mechanism through the published lists of charges we produce as part of the annual pricing proposal process.

When developing charges for our Type 5 and 6 metering services, we adopted a cost build-up approach to setting them so that we could demonstrate compliance. This approach is comparable to the building block approach prescribed for Standard Control Services.