

Energex Alternative Control Services 2020-25

January 2019



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1. Introduction

Alternative control services (ACS) are customer specific or customer requested services. In its Final Framework and Approach (F&A) paper issued for Energex and Ergon Energy in July 2018, the AER classified the following customer specific services / services group as ACS:

- Public lighting
- Type 6 Metering services
- Auxiliary metering services
- Connection management services
- Enhanced connection services, and
- Network ancillary services.

This document sets out Energex's proposal for its ACS as follows:

- Building block public lighting services
- Building block Type 6 metering services, and
- Fee-based and quoted services for the remaining ACS.

Part 1 ACS - Type 6 metering services

1. Type 6 Metering Services Overview

Under the Australian Energy Market Commission's Power of Choice (POC) reform package, metering contestability came into full effect on 1 December 2017. This reform transferred the responsibility for the provision of meters to a Metering Coordinator (MC). New and replacement meters are now provided by competitive MCs and chosen by customers in conjunction with their electricity retailer. Distribution network service providers (DNSP), including Energex and Ergon Energy, have retained the role as the initial MC for existing Type 5¹ and 6 meters and will continue to provide metering services for these legacy meters.

2. Customer and stakeholder views

We prepared and published a fact sheet on our proposed approach on Type 6 metering services. We received one submission from the National Seniors Australia. In summary, National Seniors Australia do not agree with accelerated regulatory depreciation and agree with the proposition that charging cancellation (or exit) fees would be an impediment to competition. Further, they expressed their concerns on the issue of potential cross subsidisation from those who remain with the old meters (likely to be those who can least afford to make a change) to those who move to digital meters. Our proposed approach to continue to apply the capital charge to customers who churned will ensure that cross subsidisation will be minimised.

3. Scope of metering services

Under POC the 'Responsible Person' as at 1 December 2017 was appointed as the MC. Energex was the Responsible Person² for all Type 6 meters and hence inherited the role of metering coordinator for customers with Type 6 meters.

The F&A paper specifies that the following Type 6 metering services be classified as ACS:

- Recovery of capital costs of Type 6 meters installed by Energex prior to 1 December 2017
- meter maintenance - works to inspect, test, maintain, and repair meters
- meter reading - quarterly or other regular reading of the meter, and
- meter data services - collection, processing, storage, delivery and management of metering data, remote or self-reading at difficult to access sites, provision of metering data from previous two years and ongoing provision of metering data.

Energex's Meter Asset Management Plan (MAMP) prepared in accordance with the Australian Energy Market Operator's requirements sets out our plan for the installation, replacement, testing

¹ There are no Type 5 meters in Energex. All meters in Energex's MAB are Type 6 meters.

² Clause 11.86.7 - *On and from the effective date, a Local Network Service Provider that was the responsible person for a type 5 or 6 metering installation connected to, or proposed to be connected to, the Local Network Service Provider's network under clause 7.2.3(a)(2) of old Chapter 7 or clause 9.9C.3 immediately before the effective date must be appointed as the Metering Coordinator by the financially responsible Market Participant.*

and inspection for the metering installations for which it is responsible. A copy of the MAMP is provided in Attachment 15.001.

4. Proposed classification and control mechanism

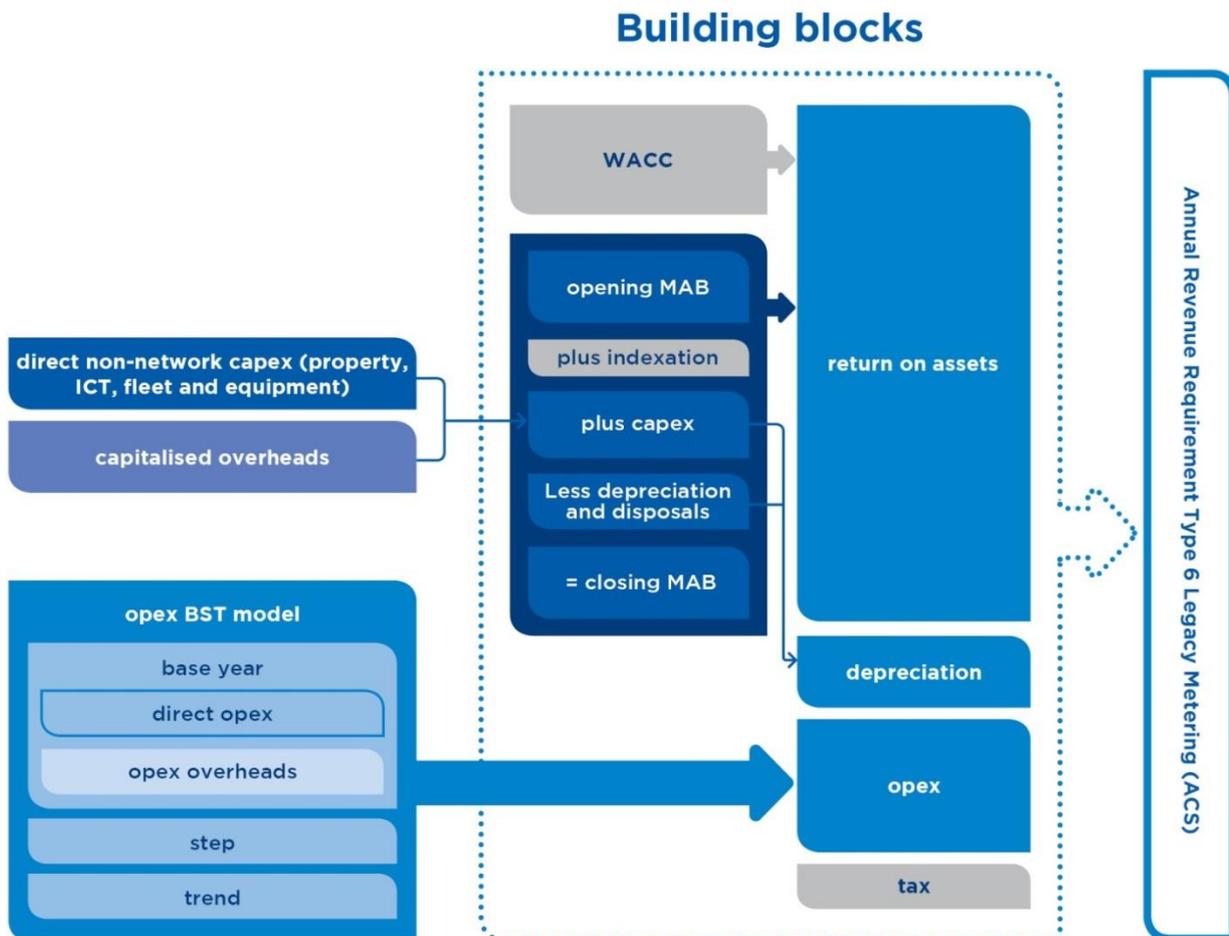
We accept the AER’s classification of Type 6 metering services as ACS and will apply a limited building block approach as the basis of control. This approach is consistent with the current approach and provides for the development of a price cap based on efficient metering costs. Further the price cap for Type 6 metering will be established as a daily metering service charge per tariff to recover the costs of the following service components:

- capital costs of meter provision
- ongoing Energex initiated meter maintenance
- cyclic meter reading, and
- provision and maintenance of meter data.

5. Type 6 metering services - limited building block

This section sets out the limited building block components for Type 6 metering, consistent with the approach used for standard control services (SCS). Figure 1 depicts the building block for Type 6 metering services.

Figure 1: Metering Services – Limited building block



5.1 Metering asset base

We are proposing an opening metering asset base (MAB) value of \$338.99 million as at 1 July 2020. We calculated the opening value in accordance with clause 6.5.1 of the National Electricity Rules (NER) and using the AER's roll forward model (RFM).

In summary, we will use the AER's approved opening asset valuation at 1 July 2015, rolled forward for actual capital expenditure (capex) and forecast regulatory depreciation incurred in the current regulatory control period to determine the opening MAB value as at 1 July 2020. An adjustment for the estimated capex used to determine the starting MAB value at 1 July 2015 is also included.

The completed metering RFM is provided as Attachment 15.022. Table 1 summarises the calculations.

Table 1: Opening MAB as at 1 July 2020

| \$M, Nominal | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 |
|--|---------|---------|---------|---------|---------------|
| Opening MAB | 416.04 | 400.07 | 385.70 | 370.95 | 349.54 |
| Actual Capex | 7.46 | 6.47 | 6.99 | 1.96 | 1.64 |
| Forecast Regulatory Depreciation | -23.44 | -20.84 | -21.74 | -23.37 | -24.10 |
| Interim Closing MAB | 400.07 | 385.70 | 370.95 | 349.54 | 327.08 |
| Difference between Actual and Forecast Capex | | | | | 9.18 |
| Return on Difference – Net Capex | | | | | 2.73 |
| Closing MAB | | | | | 338.99 |

5.2 Forecast capex

There will not be any direct metering capex for the 2020-25 regulatory control period as provision of metering services are now fully contestable. However, there are:

- indirect capex relating to non-network assets associated with delivering legacy metering services and performing the metering coordinator role for the market, and
- corporate overheads which cover the provision of corporate support and management services by the corporate office that cannot be directly attributed to specific services.

Table 2 sets out our capex requirement for Type 6 metering services for the 2020-25 regulatory control period.

Table 2: Metering capital expenditure forecast, 2020-21 to 2024-25

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Capex -Non-network allocation | 1.33 | 1.47 | 1.79 | 1.83 | 1.64 | 8.06 |
| Total | 1.33 | 1.47 | 1.79 | 1.83 | 1.64 | 8.06 |

Numbers may not add due to rounding

5.3 Meter roll-off

Our opex forecast has been based on our predicted "churn" or roll-off of our meter population as shown in Table 3. The reduction in the meter population is driven by the replacement of existing

meters as a result of meter asset failures and customer and retailer driven churns as a result of the POC reforms.

Our forecast of meter replacements has been developed base on the analysis of historical meter replacements, taking into account trends identified since the implementation of POC. It includes consideration of forecast meter asset replacements due to known failed meter families.

The combination of meter asset failure and customer/retailer driven meter churn is used to derive the percentage forecast reduction in the meter population during the next regulatory control period.

Table 3: Forecast meter population

| Volume of Forecast | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---------------------------|------------------|------------------|------------------|------------------|------------------|
| Opening meter population | 1,969,294 | 1,910,215 | 1,852,909 | 1,797,322 | 1,743,402 |
| Replacement of old meters | -4,491 | -4,356 | -4,225 | -4,099 | -3,976 |
| Retailer driven churn | -54,588 | -52,950 | -51,362 | -49,821 | -48,326 |
| Total | 1,910,215 | 1,852,909 | 1,797,322 | 1,743,402 | 1,691,100 |

Numbers may not add due to rounding

5.4 Forecast opex

Table 4 provides the forecast opex for the 2020-25 regulatory control period. Consistent with our approach to SCS, it was prepared using a base step trend methodology with 2018-19 as the base year.

Our 2018-19 base year opex was adjusted for changes in Cost Allocation Method (CAM) and service classification. As per the approach for SCS, additional adjustments were made to remove other non-recurrent costs.

Table 4: 2018-19 Base year Opex

| \$M, Real \$2020 | 2018-19 |
|---------------------------------|--------------|
| Base Opex | 21.89 |
| Non-recurrent costs | -0.42 |
| Operational improvements | -0.30 |
| Forecast 2019-20 merger savings | -0.22 |
| Cost Allocation Adjustments | -1.36 |
| Adjusted Base Year Opex | 19.59 |

Our metering opex forecast does not include any step changes. In relation to rate of change (or trend adjustments), we have adopted the SCS average annual rate of change to costs of 0.16 per cent and an annual productivity improvement factor of 1.72 per cent. Our output growth factor for metering services of -3.05 per cent is based on meter population over the 2020-25 regulatory control period, factoring in a three per cent per annum meter roll-off.

Our proposed metering opex for the 2020-25 regulatory control period is set out below.

Table 5 – Forecast opex – BST 2020-21 to 2024-25

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-------------------------|---------|---------|---------|---------|---------|-------|
| Adjusted Base Year Opex | 19.59 | 19.59 | 19.59 | 19.59 | 19.59 | 97.97 |

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Step Changes | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rate of change ³ | -0.55 | -1.04 | -1.49 | -1.91 | -2.32 | -7.31 |
| Debt raising costs | 0.16 | 0.15 | 0.13 | 0.12 | 0.10 | 0.67 |
| Totals | 19.21 | 18.70 | 18.24 | 17.80 | 17.38 | 91.33 |

5.5 Regulatory Depreciation

For the forthcoming regulatory control period, we propose the use of forecast regulatory depreciation to calculate the regulatory depreciation allowance, consistent with the approach for SCS. The existing electronic and electro-mechanical meter assets are assumed to have a combined average remaining life of 10.64 years.

We have forecast the regulatory depreciation schedules for the 2020-25 regulatory control period based on the roll forward of the opening MAB as set out in section 5.1 and the forecast capex discussed in section 5.2. The post-tax revenue model (PTRM) has been used to calculate the forecast straight line depreciation for the 2020-25 regulatory control period.

Our proposed regulatory depreciation allowance is summarised in Table 6.

Table 6: Regulatory Depreciation for Type 6 metering for the 2020-25 regulatory control period

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-------------------------|---------|---------|---------|---------|---------|--------|
| Regulatory Depreciation | 24.61 | 26.16 | 27.79 | 29.52 | 30.62 | 138.70 |

5.6 Return on capital and taxation

We have applied the same rate of return of 5.46 per cent for ACS, as for SCS. The rate of return is set out in Chapter 9 of our Regulatory Proposal. We have calculated our tax allowance building block component consistently with the estimated corporate income tax methodology as discussed in Chapter 10 of the Regulatory Proposal.

5.7 Revenue requirements

Our forecast revenue requirements for Type 6 metering services over the 2020-25 regulatory control period is shown in Table 7, as calculated by the PTRM at Attachment 15.016.

Table 7: Forecast metering services revenue 2020-21 to 2024-25

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Return on Capital | 18.50 | 17.14 | 15.71 | 14.23 | 12.68 | 78.26 |
| Regulatory Depreciation | 24.61 | 26.16 | 27.79 | 29.52 | 30.62 | 138.70 |
| Opex | 19.68 | 19.62 | 19.60 | 19.58 | 19.58 | 98.06 |
| Tax Allowance | 1.94 | 2.04 | 2.15 | 2.35 | 2.40 | 10.89 |
| Unsmoothed revenue requirement | 64.73 | 64.96 | 65.25 | 65.69 | 65.28 | 325.91 |

³ Rate of change factors of output growth, price change and productivity growth

6. Smoothed revenue and X factors

Consistent with the AER's final decision for the current regulatory period, switching customers will continue to pay the capital cost component of the regulated annual metering service charge. This approach is taken in preference to an upfront exit fee which would create a regulatory barrier to competitive entry.

The revenue requirements for metering services are recovered via two separate components - the capital and non-capital components. The capital component is comprised of the return on capital, regulatory depreciation (or return of capital) and tax allowance. The non-capital consists of the opex element.

We have adopted the same methodology used in the current regulatory control period to calculate the smoothed revenue for capital and non-capital revenue of metering services. This is discussed further in section 8 below. The resulting unsmoothed and smoothed revenue and x factors are presented in Table 8 below.

Table 8: Smoothed Capital and Non-capital revenue components

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|--|--------------|--------------|--------------|--------------|--------------|
| Capital | | | | | |
| Annual revenue requirement (unsmoothed) | 45.05 | 45.34 | 45.65 | 46.11 | 45.70 |
| X factors | 7.46% | 0.00% | 0.00% | 0.00% | 0.00% |
| Annual revenue requirement (smoothed) | 43.51 | 44.56 | 45.64 | 46.74 | 47.87 |
| Non-Capital | | | | | |
| Annual revenue requirement (unsmoothed) | 19.68 | 19.62 | 19.60 | 19.58 | 19.58 |
| X factors | -8.01% | 0.00% | 0.00% | 0.00% | 0.00% |
| Annual revenue requirement (smoothed) | 19.86 | 19.73 | 19.60 | 19.47 | 19.34 |
| Total Annual revenue requirement (smoothed) | 63.37 | 64.29 | 65.24 | 66.21 | 67.21 |

7. Apportioning revenue requirements

As for the current regulatory control period, metering services revenue will be recovered as a daily metering services charge per tariff. For the current regulatory control period, we developed a methodology to apportion the revenue requirements across applicable tariffs for Type 6 metering customers which was accepted by the AER. We propose to adopt the 2015 AER approved revenue proportions as set out in Table 9.

Table 9: Revenue proportion for Type 6 metering services

| Tariff Groups | Description | Proportion of revenue assigned to tariff category (%) |
|-------------------------|--|---|
| Primary tariffs | Any standard asset customer tariff on Type 6 metering, excluding controlled load and solar PV. | 76% |
| Controlled load tariffs | Controlled load tariffs (super economy and economy). | 12% |
| Solar PV tariffs | Solar PV Tariffs | 12% |
| Total | | 100% |

8. Indicative prices

The indicative prices per tariff are based on the revenue proportion assigned to the forecast volume of Type 6 meters for each tariff group.

Separate prices for capital and non-capital components of the metering services costs provide flexibility for separate service components to be removed if required should an alternative provider deliver part or all of the Type 6 metering services.

Prices for the 2020-25 regulatory control period are calculated on the same basis as that used in the current regulatory control period. That is, annual prices will change by CPI-X from years 2 to 5 of the 2020-25 regulatory control period, and the 2020-21 prices are set such that the net present value of the revenue stream resulting from this price path over the 2020-25 regulatory control period equals the net present value of the building block revenue requirement for the 2020-25 regulatory control period. For 2020-21, the Po⁴ has been determined to be 7.46 percent for capital charge and -8.01 percent for non-capital charge. For 2021-22 through to 2024-25 inclusive, the X Factor has been set to zero consistent with our approach for SCS.

Table 10 displays the indicative daily metering services charge by tariff group for the forthcoming regulatory control period.

Table 10: Indicative prices

| Indicative Prices (cents per day) | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|-----------------------------------|---------|---------|---------|---------|---------|
| Primary Tariff | | | | | |
| Non- Capital Charge | 3.358 | 3.439 | 3.522 | 3.607 | 3.695 |
| Capital Charge | 6.587 | 6.746 | 6.909 | 7.077 | 7.248 |
| Controlled Load | | | | | |
| Non- Capital Charge | 1.007 | 1.032 | 1.057 | 1.082 | 1.108 |
| Capital Charge | 1.976 | 2.024 | 2.073 | 2.123 | 2.174 |
| Solar PV | | | | | |
| Non- Capital Charge | 2.350 | 2.407 | 2.466 | 2.525 | 2.586 |
| Capital Charge | 4.611 | 4.722 | 4.837 | 4.954 | 5.074 |

Further details of the prices are provided in our 2020-25 Tariff Structure Statement (TSS) (Attachment 14.001) and the accompanying TSS Explanatory Notes (Attachment 14.003).

⁴ Po as defined in the AER's PTRM handbook is the X-factor in year 1 where a positive number denotes a price decrease and vice-versa.

9. Public Lighting Overview

We have approximately 360,000 public lights connected to our distribution network in South East Queensland. We own and operate more than 325,000 public lights, with the remaining public lights being owned by local government authorities and other government entities. The main types of public light luminaires in our inventory are fluorescent, mercury vapour (MV) and high pressure sodium. Together, these types account for 98% of all public lighting. The remaining public lights are either incandescent, metal halide, or low-pressure sodium lamps.

Our major customers for public lighting include the 12 local government authorities (LGAs) in our distribution area, the Department of Transport and Main Roads (DTMR) and other Government entities such as Queensland Rail.

In recent years public lighting technology has experienced substantial advances, in particular the emergence of light-emitting diode (LED) technology. Combined with communication capabilities and smart city applications, public lights have the potential to be smarter, more environmentally friendly and can provide opportunities for customers to make savings in energy and network costs.

We propose to apply a limited building block approach to determine the efficient costs of providing both non-contributed and contributed public lighting services under the price cap control mechanism.

10. Customer and stakeholder views

We issued a Discussion Paper and conducted workshops with key public lighting stakeholders to identify opportunities to improve Energex's offerings of public lighting tariff options that promote sustainable, fair and affordable solutions.

The key issue for the upcoming regulatory control period relates to the rate of roll out of LEDs in South East Queensland. While more expensive than conventional lights, LEDs consume less energy and when implemented at a large scale have the potential to reduce operating and maintenance costs. Consequentially, it is our position that all new public lighting installed in South East Queensland should be LEDs.

It is our plans to prudently convert conventional lights to LEDs where this can be implemented at low cost or offers greater savings. Under our existing replacement program, LEDs are installed where the existing pole and bracket can accommodate it, or where the replacement of the pole or bracket is justified by its location. In particular, the focus is to increase the rate of replacement of MV lamps as a result of their impending obsolescence and concerns associated with the future supply of MV lamps globally.

Based on feedback from customers, we are adopting a moderate acceleration of LED replacement program to achieve a target of 47% LED penetration by 2020.

11. Scope and obligations of public lighting services

We have a legislative obligation to connect public lighting to the network. The services we provide include the provision, installation, operation and maintenance of public lights for customers. Provision of public lighting services in Queensland is currently characterised by:

- no legislated service standards in relation to the connection and ongoing maintenance

- no legislative instrument setting out the roles and responsibilities of public lighting service providers and the relationship between DNSPs and customers
- a lack of a legislated contestability framework that authorises third party providers, and
- a mix of non-binding operating codes and policies.

The principal source of service standard obligations for public lighting in Queensland is the *Australian Standard AS/NZS 1158 - Lighting for Roads and Public Spaces* and the *Australian Standard AS/NZS 3000 - Wiring Rules*. Neither of these Australian Standards are mandatory, but may be called upon by authorities as best practice guidelines. In addition, we provide public lighting services in accordance with the *Electrical Safety Act's Code of Practice - Working Near Overhead and Underground Electric Lines*.

The management of Energex's public lighting assets is guided by the Energy Queensland Group Asset Management Plan – Public Lighting as provided in Attachment 15.003. Energy Queensland Public Lighting Strategy document as provided in Attachment 15.004 sets out a united and streamlined approach for public lighting in Queensland.

12. Proposed classification and control mechanism of Public lighting services

We accept the AER's classification of public lighting services as ACS and will apply a limited building block approach as the basis of control. This approach is consistent with the current methodology and provides for the development of a price cap based on efficient public lighting costs.

We will continue to apply a price cap for public lighting services which will be established as a fixed charge based on contributed or non-contributed assets on major or minor roads. Further, based on customer feedback, we will introduce LED specific tariffs to encourage the conversion to this new energy efficient technology.

13. Public lighting – limited building block

The limited building block approach is used to determine allowable revenues, which is then converted into public lighting service charges that are each subject to a price cap for the regulatory control period. Consistent with our proposal to introduce separate tariffs for LEDs, we have prepared two separate PTRMs:

- a conventional public lighting PTRM covering the conventional public lighting asset base (PLAB), and used to create the conventional public lighting tariffs, and
- a LED public lighting PTRM, covering the LED PLAB and used to create the LED public lighting tariffs.

Figure 2 and Figure 3 below depict the building blocks for LED and conventional lights respectively.

Figure 2: Building Block - LED

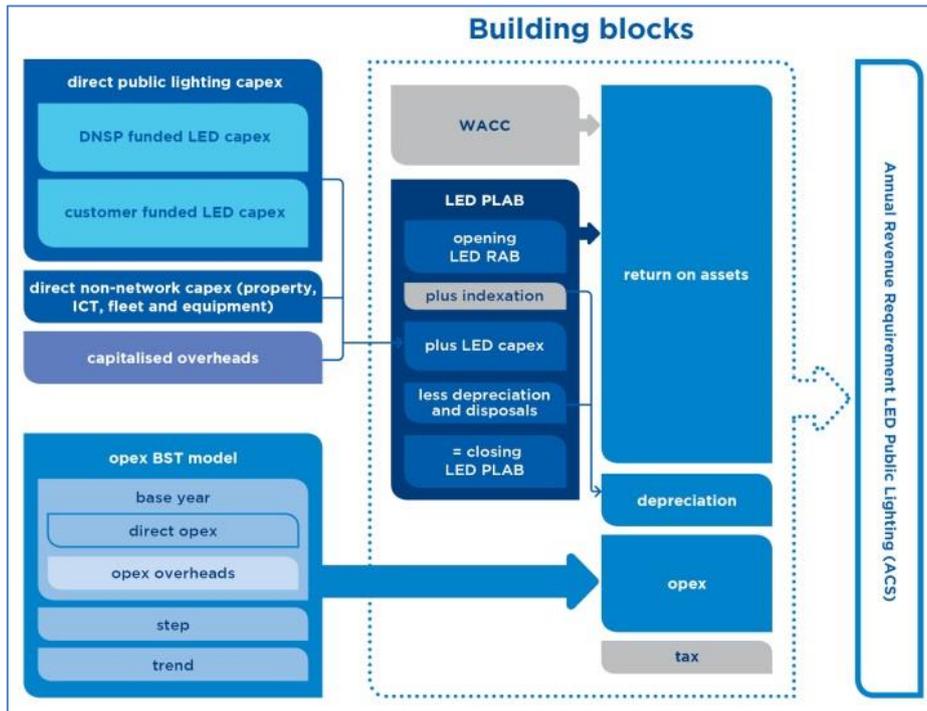
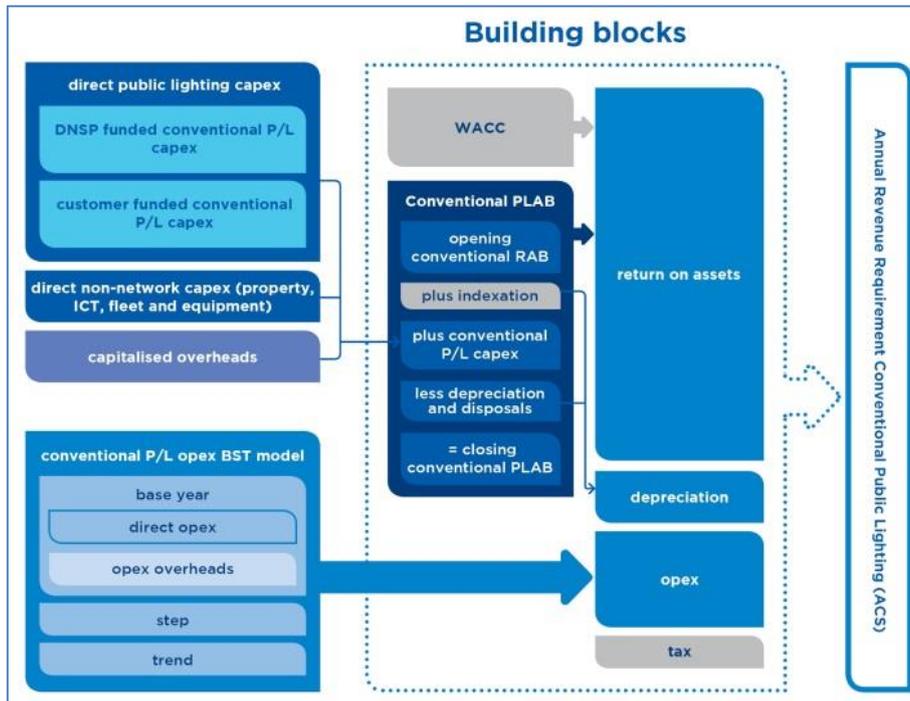


Figure 3: Building Block - Conventional



This section sets out the limited building block components of public lighting.

13.1 Public lighting regulatory asset base

We are proposing an opening PLAB value of \$155.60 million as at 1 July 2020. We calculated the opening value in accordance with clause 6.5.1 of the NER and using the AER's RFM.

In summary, we will use the AER's approved opening asset valuation at 1 July 2015, rolled forward for actual capex and forecast regulatory depreciation incurred in the current regulatory control period to determine the opening PLAB value as at 1 July 2020. An adjustment for the estimated capex used to determine the starting PLAB value at 1 July 2015 is also included.

The completed public lighting RFMs are provided as Attachments 15.024 and 15.026⁵. Table 11 summarises the calculations.

Table 11: Roll forward public light asset base for 2020-25 regulatory control period

| \$M, Nominal | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 |
|--|---------|---------|---------|---------|---------------|
| Opening PLAB | 124.72 | 126.34 | 126.48 | 125.86 | 132.07 |
| Actual Capex | 10.98 | 8.99 | 8.86 | 16.62 | 21.43 |
| Forecast Regulatory Depreciation | -9.36 | -8.85 | -9.48 | -10.41 | -10.84 |
| Interim Closing PLAB | 126.34 | 126.48 | 125.86 | 132.07 | 142.66 |
| Difference between Actual and Forecast Capex | | | | | 9.97 |
| Return on Difference – Net Capex | | | | | 2.97 |
| Closing PLAB | | | | | 155.60 |

The closing PLAB on 30 June 2020 is separated into LED PLAB and Conventional PLAB as at 1 July 2020 based on the number of lights in each category. The opening asset base as at 1 July 2020 for LEDs and conventional lights are set out in Table 12.

Table 12: Opening PLAB as at 1 July 2020 (\$m, nominal)

| Description (\$M, Nominal) | 2020-21 |
|----------------------------|---------------|
| LED | 2.91 |
| Conventional | 152.69 |
| Total | 155.60 |

13.2 Forecast capex

Our public lighting capex focus for the 2020-25 regulatory control period is to prudently invest in LEDs to deliver efficient and sustainable outcomes for our public lighting customers. Investment in non-LEDs will still occur, where this is the most cost effective solution and meets customer requirements. Non-LED investment will be kept to a reasonable level to facilitate an orderly transition to LEDs for all public lighting customers in future regulatory control periods.

The public lighting capex in the 2020-25 regulatory control period is expected to be driven by customer funded LED program. We understand that there is an increasing appetite to deploy more LEDs. This trend is reflected in the growing capex in LEDs, by us and our customers.

⁵ There are two RFMs for public lighting – LED and Conventional. The values are identical for the 2015-20 regulatory control period in both models and split up on 1 July 2020 to roll forward independently for the purposes of determining public lighting prices for the 2020-25 regulatory control period.

Non-network assets such as vehicles, ICT, tools and equipment are required support the provision of public lighting services. Based on our CAM, a proportion of these costs are added to the forecast capex for public lighting. Further a proportion of capitalised overhead costs which cover the provision of corporate support and management services and non-specific network activities are also included in the capex for public lighting.

Table 13 summarises our forecast public lighting capex.

Table 13: Public Lighting capital expenditure forecast, 2020-21 to 2024-25

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Energex Funded LED | 9.02 | 7.59 | 8.41 | 9.19 | 10.21 | 44.41 |
| Customer Funded LED | 16.63 | 17.81 | 19.19 | 20.49 | 22.05 | 96.18 |
| Total LED capex | 25.65 | 25.40 | 27.61 | 29.68 | 32.25 | 140.59 |
| Energex Funded Conventional | 8.15 | 8.10 | 7.88 | 7.54 | 6.42 | 38.08 |
| Customer Funded Conventional | 1.50 | 1.54 | 1.48 | 1.52 | 1.39 | 7.43 |
| Total Conventional capex | 9.65 | 9.64 | 9.36 | 9.06 | 7.81 | 45.52 |
| Total Public Lighting Capex | 35.30 | 35.04 | 36.97 | 38.74 | 40.06 | 186.11 |

13.3 Demand

As at 1 July 2020 Energex expects to operate and maintain approximately 335,000 public lights comprising of 98 per cent conventional type and two percent of LEDs. It is expected that by the end of the 2020-25 regulatory control period, LED will form around 40 per cent of the public lighting in Southeast Queensland.

Table 14 below shows the forecast of public lighting for the 2020-25 regulatory control period.

Table 14: Public lighting forecast volumes for 2020-25 regulatory control period

| Description | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|--------------------|----------------|----------------|----------------|----------------|----------------|
| Major LED | 5,884 | 11,021 | 19,785 | 29,818 | 41,165 |
| Minor LED | 13,889 | 26,111 | 47,098 | 71,286 | 98,962 |
| Major Conventional | 88,706 | 85,084 | 77,895 | 69,502 | 59,860 |
| Minor Conventional | 227,988 | 219,681 | 202,683 | 182,561 | 159,025 |
| Total | 336,467 | 341,897 | 347,462 | 353,167 | 359,012 |

13.4 Forecast opex

Table 15 provides the forecast opex for the 2020-25 regulatory control period. Consistent with our approach to SCS, it was prepared using a base step trend methodology with 2018-19 as the base year.

Our 2018-19 base year opex was adjusted for changes in CAM and service classification. As per the approach for SCS, additional adjustments were conducted to remove other non-recurrent costs.

Table 15: 2018-19 Base year Opex – LED and Conventional

| \$M, Real \$2020 | LED | Conventional |
|---------------------------------|-------------|---------------------|
| Base Opex | 0.58 | 30.40 |
| Non-recurrent costs | -0.01 | -0.72 |
| Operational improvements | 0.00 | 0.00 |
| Forecast 2019-20 merger savings | 0.00 | 0.00 |
| Cost Allocation Adjustments | -0.24 | -12.75 |
| Adjusted Base Year Opex | 0.32 | 16.92 |

Our public lighting operating expenditure (opex) forecast does not include any step changes. In relation to rate of change (or trend adjustments), we have adopted the SCS average annual rate of change of cost of 0.16 per cent. We have included an average annual productivity improvement factor of 4.8 per cent over the regulatory control period for LED. Our output growth factors for LED and conventional public lighting are of 80.57 percent and -7.95 per cent respectively. These forecasts are based on public lighting population over 2020-25 regulatory control.

Our proposed opex for LEDs and conventional lights for the 2020-25 regulatory control period is set out in tables below.

Table 16: Forecast LED opex – BST 2020-21 to 2024-25

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-------------------------|----------------|----------------|----------------|----------------|----------------|--------------|
| Base | 0.32 | 0.32 | 0.32 | 0.32 | 0.32 | 1.61 |
| Step Changes | - | - | - | - | - | - |
| Rate of change | 0.40 | 0.93 | 1.76 | 2.84 | 4.07 | 10.00 |
| Debt raising costs | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.05 |
| Total | 0.73 | 1.26 | 2.09 | 3.17 | 4.41 | 11.65 |

Table 17: Forecast Conventional lights opex – BST 2020-21 to 2024-25

| \$M, Real \$2020 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|-------------------------|----------------|----------------|----------------|----------------|----------------|--------------|
| Base | 16.92 | 16.92 | 16.92 | 16.92 | 16.92 | 84.62 |
| Step Changes | - | - | - | - | - | - |
| Rate of change | - 0.51 | - 1.13 | - 2.39 | - 3.91 | - 5.71 | -13.65 |
| Debt raising costs | 0.07 | 0.07 | 0.07 | 0.07 | 0.06 | 0.34 |
| Total | 16.49 | 15.87 | 14.60 | 13.08 | 11.27 | 71.31 |

13.5 Regulatory Depreciation

For the forthcoming regulatory control period, we propose the use of forecast regulatory depreciation to calculate the regulatory depreciation allowance, consistent with the approach for SCS. A remaining life of 11.89 years has been used based on the public lighting asset register.

The forecast of regulatory depreciation schedules for the 2020-25 regulatory control period are based on the roll forward of the opening PLAB and the forecast capex for LEDs and conventional lights. The PTRMs have been used to calculate the forecast straight line depreciation for the 2020-25 regulatory control period and the depreciation allowances for LED and conventional lights are summarised in Table 18

Table 18: Depreciation for conventional and LEDs for the 2020-25 regulatory control period

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---|---------|---------|---------|---------|---------|-------|
| Regulatory Depreciation – LEDs | 0.52 | 1.18 | 2.07 | 3.20 | 4.44 | 11.42 |
| Regulatory Depreciation - Conventional Lights | 9.76 | 10.26 | 10.66 | 10.92 | 10.44 | 52.03 |

13.6 Return on capital and taxation

Energex has applied the same rate of return of 5.46 per cent for ACS, as for SCS. The rate of return is set out in Chapter 9 of the Regulatory Proposal. Energex has calculated its tax allowance building block component consistently with the estimated corporate income tax methodology as discussed in Chapter 10 of the Regulatory Proposal.

13.7 Revenue requirements

Our forecast revenue requirements for public lighting LEDs and conventional lights over the 2020-25 regulatory control period are calculated using the AER's PTRM (Attachment 15.020 and 15.018) and are summarised in Table 19 and Table 20 below.

Table 19: Building block revenue requirements for LED public lighting

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---------------------------------------|-------------|-------------|-------------|--------------|--------------|--------------|
| Return on capital | 0.43 | 1.24 | 2.02 | 2.86 | 3.76 | 10.30 |
| Regulatory Depreciation | 0.52 | 1.18 | 2.07 | 3.20 | 4.44 | 11.42 |
| Opex | 0.74 | 1.32 | 2.25 | 3.49 | 4.97 | 12.77 |
| Tax allowance | 0.14 | 0.26 | 0.48 | 0.74 | 1.04 | 2.67 |
| Unsmoothed revenue requirement | 1.83 | 4.01 | 6.82 | 10.28 | 14.21 | 37.15 |

Table 20: Building block revenue requirements for Conventional public lighting

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Return on capital | 8.07 | 7.62 | 7.08 | 6.46 | 5.75 | 34.96 |
| Regulatory Depreciation | 9.76 | 10.26 | 10.66 | 10.92 | 10.44 | 52.03 |
| Opex | 16.89 | 16.64 | 15.68 | 14.39 | 12.71 | 76.31 |
| Tax allowance | 2.27 | 2.15 | 2.02 | 1.84 | 1.63 | 9.92 |
| Unsmoothed revenue requirement | 36.98 | 36.68 | 35.44 | 33.61 | 30.52 | 173.22 |

14. Smoothed revenue and X factors

The revenue for LEDs and conventional lights are set out in the Table 21 below. This revenue is then smoothed as part of the process to establish prices for the 2020-2025 regulatory control period. We have adopted the same methodology used in the current regulatory control period to calculate the smoothed revenue for LED and conventional public lighting. The resulting unsmoothed and smoothed revenue and x factors are presented in Table 21 below.

Table 21: Energex Public Lighting smoothed revenue and X factors

| \$M, Nominal | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|---|---------|---------|---------|---------|---------|
| LED | | | | | |
| Annual Revenue Requirement (unsmoothed) | 1.83 | 4.01 | 6.82 | 10.28 | 14.21 |
| X Factors | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Annual Revenue Requirement (smoothed) | 1.87 | 3.61 | 6.68 | 10.35 | 14.71 |
| CONVENTIONAL | | | | | |
| Annual Revenue Requirement (unsmoothed) | 36.98 | 36.68 | 35.44 | 33.61 | 30.52 |
| X Factors | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Annual Revenue Requirement (smoothed) | 38.02 | 37.47 | 35.42 | 32.71 | 29.28 |

15. Apportioning the revenue requirements

As for the current regulatory control period, public lighting revenue will be recovered on a per light, daily public lighting tariff. For the 2020-25 regulatory control period, we continue to apportion the revenue requirements across applicable tariffs for the four public lighting categories being NPL1 (Major), NPL1 (Minor), NPL2 (Major) and NPL2 (Minor).

This categorisation is basically unchanged from the current regulatory control period, albeit the naming has changed and streamlined across both Energex and Ergon Energy⁶. The key difference

⁶ The current naming refers to Non-Contributed and Contributed for Energex public lighting, and Ergon Energy owned and operated, and Gifted & Ergon Energy operated public lighting

for the 2020-25 regulatory control period is that the four separate categories will be separately applied to conventional and LED lights.

Table 22 explains the revenue apportioning for public lighting⁷.

Table 22: Revenue apportioning for public lighting services

| Revenue Component | Conventional | LED | Comment |
|-------------------------|---|---|---|
| O&M | Conventional O&M apportioned to conventional tariffs (NPL1C – Major, NPL1C – Minor, NPL2C – Major, NPL2C – Minor) | LED O&M apportioned to LED tariffs (NPL1L – Major, NPL1L – Minor, NPL2L – Major, NPL2L – Minor) | 1.5 relativity of Major to Minor used to align with the Ergon's approach. |
| Tax liability | Net tax liability associated with gifting and contributed assets apportioned to all lights | | 1.5 relativity of Major to Minor used to align with the Ergon's approach. |
| Return on capital | Conventional return on capital apportioned to conventional tariffs (NPL1C – Major, NPL1C – Minor) | LED return on capital apportioned to LED tariffs (NPL1L – Major, NPL1L – Minor) | 1.8 relativity of Major to Minor used to align with the Ergon's approach. |
| Regulatory Depreciation | Conventional regulatory depreciation apportioned to conventional tariffs (NPL1C – Major, NPL1C – Minor) | LED regulatory depreciation apportioned to LED tariffs (NPL1L – Major, NPL1L – Minor) | 1.8 relativity of Major to Minor used to align with the Ergon's approach. |

The resultant revenue outcomes, for the first year and the last year of the 2020-25 regulatory period is shown in Table 23 below.

Table 23: Revenue proportions for public lighting services, year 1 and year 5

| Public lighting service | Revenue Proportion (Year 1, Year 5) | Type | Revenue Proportion (Year 1, Year 5) |
|-------------------------|-------------------------------------|--------------|-------------------------------------|
| Major | 37%, 37% | Conventional | 95%, 66% |
| | | LED | 5%, 34% |
| Minor | 63%, 63% | Conventional | 96%, 68% |
| | | LED | 4%, 32% |

In addition to the introduction LED specific tariffs, two other changes are proposed for the 2020-25 regulatory control period:

- Allocation of 10% of PLAB to NPL2 category to allow for a public light to remain on the NPL 2 tariff when Energex replaces the asset. This is a change the previously adopted approach where such action will trigger a re-assignment from NPL1 to NPL2 tariff. Our TSS Explanatory Notes details this change in approach, and
- Introduction of NPL4 tariff to be applied when customers fund the replacement of the luminaire and lamp (and bracket if required) to LED of existing conventional NPL1 lights. NPL4 tariff is discussed further in our TSS Explanatory Notes.

⁷ Note – this revenue apportion methodology has changed for Energex – adopting the Ergon methodology

16. Indicative prices

The formula to calculate each of the public lighting tariffs is outlined below:

$$\left(\frac{\text{Annual target for public lighting tariff}}{\text{Number of luminaires for public lighting tariff}} \right) / \text{Days in the year}$$

Prices for the 2020-25 regulatory control period are calculated on the same basis as that used in the current regulatory control period. That is, annual prices will change by CPI-X from years 2 to 5 of the 2020-25 regulatory control period, and the 2020-21 prices are set such that the net present value of the revenue stream resulting from this price path over the 2020-25 regulatory control period equals the net present value of the building block revenue requirement for the 2020-25 regulatory control period.

Table 24 and Table 25 display the indicative prices for our public lighting services charge for the forthcoming regulatory control period.

Table 24- Prices for LED public lighting services for 2020-25 regulatory control period

| Type | Category | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|------|----------|---------|---------|---------|---------|---------|
| NPL1 | Major | 0.545 | 0.558 | 0.572 | 0.586 | 0.601 |
| | Minor | 0.328 | 0.336 | 0.344 | 0.353 | 0.362 |
| NPL2 | Major | 0.257 | 0.264 | 0.270 | 0.277 | 0.284 |
| | Minor | 0.168 | 0.172 | 0.176 | 0.181 | 0.185 |
| NPL4 | Major | 0.540 | 0.554 | 0.567 | 0.582 | 0.596 |
| | Minor | 0.330 | 0.338 | 0.347 | 0.355 | 0.364 |

Table 25: - Prices for conventional public lighting services for 2020-25 regulatory control period

| Type | Category | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
|------|----------|---------|---------|---------|---------|---------|
| NPL1 | Major | 0.618 | 0.634 | 0.650 | 0.666 | 0.683 |
| | Minor | 0.375 | 0.384 | 0.394 | 0.404 | 0.414 |
| NPL2 | Major | 0.317 | 0.325 | 0.333 | 0.342 | 0.350 |
| | Minor | 0.208 | 0.213 | 0.218 | 0.224 | 0.229 |

Further details of the prices are provided in our 2020-25 TSS and the accompanying TSS Explanatory Notes.

Part 3 Other ACS

17. Other ACS Overview

In addition to the Type 6 metering services and public lighting services, there are other services that have been classified as ACS by the AER. These services include:

- Connection management services
- Enhanced connection services
- Network ancillary services
- Auxiliary metering services, and
- Auxiliary public lighting services.

These services share the common characteristic of being non-routine services provided to an individual customer on an 'as needs' basis. Unlike Type 6 metering services and public lighting services which adopted the limited building block as the control mechanism, these other ACS will be based on a cost build up approach. This section sets out our proposed approach for these other ACS.

18. Customer and stakeholder views

We have not specifically consulted on the provision of the ACS given the ad hoc and customer requested nature of these services. In preparation for this regulatory proposal, we published a fact sheet on our proposed approach on these services.

19. Scope of Other ACS

The AER has broadly defined "Connection services" as services relating to the electrical or physical connection of a customer to the network. While the majority of connection services (in particular connection in relation to small customers) are classified as SCS, some specific connection services are classified as ACS. These services are broadly grouped into to either connection management services or enhanced connection services and typically cover a range of services and activities provided at the request of customers under our Distribution Authority.

Auxiliary metering services classified as ACS cover services required to support metering contestability framework and for us to fulfil our obligations under our Distribution Authority. Similarly there are services ancillary to public lighting services where we are required to attend to at the request of the public lighting services.

Network ancillary services involve work on, or in relation to, parts of our distribution network. Generally, these services can only be provided by Energex as the DNSP.

The other ACS described here have diverse and varied scope. A fee-based approach can be adopted for services where the scope of work is predefined, while services that involve work where the scope of work varies will be provided on a quoted basis.

20. Proposed classification of Other ACS

It is noted that the AER has reclassified a number of specific network ancillary services from unregulated to ACS including:

- network related property services
- the provision of training to third party for network related access, and
- the provision of security lights.

We accept the AER proposed classification of the group of services listed in Section 16 as ACS. This acceptance includes the specific network ancillary services reclassified from unregulated listed above.

21. Control Mechanism and Pricing arrangements

Energex will adopt the cost build up approach to determine the prices for services classified as ACS. The cost build up approach is specified by the formula below:

$$\text{Price} = \text{Labour} + \text{Contractor Services} + \text{Materials} + \text{Capital Allowance}$$

Pricing arrangements will be either fee-based or quoted dependent on the type of service.

22. Fee-based services

All fee-based services will use the cost build up approach in 2020-21 (the first year of the regulatory control period). The fee or price will be based on a cost build-up formula as follows:

$$\text{Price} = \text{Labour} + \text{Contractor Services} + \text{Materials} + \text{Capital Allowance}$$

Prices in subsequent years will be based on AER's prescribed price cap formula to be determined as follows:

$$p_i^t = p_i^{t-1}(1 + \Delta CPI_t)(1 - X_i^t) + A_i^t$$

Where:

p_i^{t-1} is the cap on the price of service i in year t-1

p_i^t is the cap on the price of service i in year t.

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities from December in year t-2 to December in year t-1.

X_i^t is the X-factor for service i in year t and will be determined as part of the determination for SCS.

Appendix A sets out the list of proposed fee-based services for the 2020-25 regulatory control period. Details of the fee-based prices are provided in our 2020-25 TSS and the accompanying TSS Explanatory Notes.

23. Quoted Services

The price for quoted services will reflect the approved labour and material cost escalators and the approved rate of return at the time the work is requested. The fee or price will be based on a cost build-up formula as follows:

$$\text{Price} = \text{Labour} + \text{Contractor Services} + \text{Materials} + \text{Capital Allowance}$$

Appendix B sets out the list of proposed quoted services for the 2020-25 regulatory control period. It is noted that this is a non-exhaustive list and there may be other quoted services currently not envisaged. Any such services will also adopt the cost build-up formula as set out above and explained in our 2020-25 TSS and the accompanying TSS Explanatory Notes.

Appendix A.

PROPOSED FEE-BASED FOR 2020-25⁸

| Service Groups | Description |
|--|---|
| Connection services – Services relating to the electrical or physical connection of a customer to the network | |
| Connection application and management services | <p>The F&A defines this service grouping as a range of services and activities provided by distributors, and sought by customers, which are specific to a connection point, and encompasses:</p> <ul style="list-style-type: none">• Connection application related services• De-energisations and re-energisations• Temporary connections• Overhead service line replacements (e.g. as a result of a point of attachment relocation)• Upgrade from overhead to underground service |
| Network ancillary services – Customer and third party initiated services related to the common distribution service | |
| Attendance at customers' premises to perform a statutory right where access is prevented. | <p>A follow up attendance at a customer's premises to perform a statutory right where access was prevented or declined by the customer on the initial visit. This includes the costs of arranging, and the provision of, a security escort or police escort (where the cost is passed through to the distributor).</p> |
| Metering services (Type 5 and 6) | |
| Auxiliary metering services | <p>Examples of auxiliary metering services include:</p> <ul style="list-style-type: none">• Off cycle meter reads for Type 5 and 6 meters• Change distributor's load control relay channel• Works to reseal a Type 5 and 6 meter due to customer or third party action. |

⁸ The full list of services and prices are provided in the Energex's 2020-25 TSS

Appendix B.

PROPOSED QUOTED SERVICES FOR 2020-25⁹

| Service Groups | Description |
|--|---|
| Connection services – Services relating to the electrical or physical connection of a customer to the network | |
| Connection application and management services | <p>The F&A defines this service grouping as a range of services and activities provided by distributors, and sought by customers, which are specific to a connection point,</p> <ul style="list-style-type: none">• Remove or reposition connections• Protection and power quality assessment• Customer requested change requiring secondary and primary plant studies for safe operation of the network (e.g change protection settings)• Rectification of illegal connections or damage to overhead or underground service cables, and• Power factor correction. |
| Enhanced connection | <p>The F&A defines this service grouping as activities to provide customers with a higher standard of services that exceeds the minimum technically feasible standard. These include services at the request of customer or third party that are:</p> <ul style="list-style-type: none">• 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, and• In excess of levels of service or plant ratings required by the distributor• For embedded generators, including the removal of network constraints |
| Network ancillary services – Customer and third party initiated services related to the common distribution service | |
| Network safety services | <p>Examples include:</p> <ul style="list-style-type: none">• Installation of aerial markers (or Powerlink Hazard Identifiers) on overhead lines, and• Customer requested disconnection and reconnection of supply, coverage of LV mains and/or switching to allow customer/contractor to work close, e.g. Tiger Tails. |
| Customer, retailer or third party | <p>Works initiated by a customer, retailer or third party which are not covered</p> |

⁹ This is a non-exhaustive list and there may be other services that will be provided on a quoted basis using a cost build-up formula based approach

| Service Groups | Description |
|---|---|
| requested appointments | <p>by another service and are not required for the efficient management of the network, or to satisfy distributor purposes or obligations. Includes, but is not limited to:</p> <ul style="list-style-type: none"> • Restoration of supply due to customer action • Re-test at customer's installation (i.e. customer has submitted Form A and the Retailer has issued a Service Order Request, but installation fails test and cannot be connected, requiring a re-test of the installation) • Safety observer • Tree trimming • Switching • Cable bundling, and • Checking pump size for tariff eligibility. |
| Removal/rearrangement of network assets | Removal, relocation or rearrangement of network assets (other than connection assets) at customer request that would not otherwise have been required for the efficient management of the network. |
| Sale of approved materials or equipment | Includes the sale of approved materials/equipment to third parties for connection assets that are gifted back to become part of the shared distribution network. |
| Network related property services | <ul style="list-style-type: none"> • 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, and • Conveyancing inquiry services relating to the provision of property conveyancing information at the request of a customer. |
| Security lights | <p>Provision, installation, operation and maintenance of equipment mounted on a distribution equipment used for security services, e.g. night watchman lights.</p> <p>Note: excludes connection services.</p> |
| Non-standard network data requests | Customer requests provision of electricity network data requiring customised investigation, analysis or technical input (e.g. requests for pole assess information and zone substation data). |
| Auxiliary metering services | Testing and maintenance of instrument transformers for Type 5 and 6 metering purposes. |
| Provision of services for approved unmetered supplies | Provision of services to extend / augment the network, to make supply available for the connection of approved unmetered equipment, e.g. public telephones, streetlights, extension to the network to provide a point of supply for a billboard & city cycle, eg Installation of a pillar to supply connection for R3 public lighting. |

| Service Groups | Description |
|----------------|-------------|
|----------------|-------------|

Auxiliary public lighting services

Ad hoc, customer requested public lighting services:

- Removal /rearrangement of public lights
- Provision of unique luminaire glare screening or customer requests
- Review, inspection and auditing of design or construction works carried out by an accredited service provider
- Exit fees for the residual asset value of non-contributed public lights when the entire assets (pole, cabling, bracket, luminaire and lamp) are replaced before the end of their expected life¹, and
- Public lighting technologies.

Note 1: Excludes the replacement of conventional lights with LED technology