OVERVIEW
Ex post Review of Ergon Energy 2018-2023 Capital Expenditure

Justification Paper

January 2024

Note

This document provides an overview and key elements of Ergon Energy's justification of the ex post review of its 2018-2023 capital expenditure. It forms part of the 2025-30 Regulatory Proposal submission to the AER.

It should be read in conjunction the following attachments:

Attachment A	Pole Replacements
Attachment B	Overhead Conductor Replacements
Attachment C	Pole Top Structure Replacements
Attachment D	Switchgear Replacements
Attachment E	Transformer Replacements
Attachment F	Underground Cable Replacements
Attachment G	Service Replacements
Attachment H	SCADA Replacements
Attachment I	Other Replacements
Attachment J	ICT Capex

EXECUTIVE SUMMARY

Introduction

Towards the end of the 2015-20 regulatory control period, and across the current 2020-25 regulatory control period, Ergon Energy has incurred capital expenditure substantially above the AER's regulatory determination forecasts. As a result, we anticipate the AER will undertake an ex post review of capital expenditure in accordance with its Capital Expenditure Incentive Guideline (CEIG). The purpose of this paper is to outline the circumstances in which this overspend occurred and to explain how we consider this overspend should be treated as part of the forthcoming Determination for the 2025-30 regulatory control period.

While we have underspent capex in the 2015-20 regulatory control period, we have overspent the total capex as forecasted by the AER over the relevant ex post review period[1] from 2018-19 to 2022-23. This is the period specified in the CEIG and aligns with the most recent 5-year period of actual data enabling an ex post review to be undertaken by the AER. The ex post review will assess whether the overspend is justified and should be rolled into the regulatory asset base (RAB). If the AER finds some or all the overspend is not justified, the unjustified portion would not be rolled into the RAB. Consequently, Ergon Energy would be unable to recover these costs. In our view, this would not be in the long-term interests of consumers, as outlined later in this submission.

This paper and supporting attachments set out the information to assist the AER in understanding the circumstances of our overspend and in making its decision on the ex post assessment for the 2025-30 distribution determination. The ex post review of capital expenditure will consider the total expenditure not just individual components of the overspend. However, to understand the reasons why the overspend occurred, we have prepared a detailed commentary and explanation of the main causes of our actual expenditure being higher than the AER's forecast expenditure.

The key contributor to the overspend is replacement capex due to a significant increase in the replacement of defective pole replacements. Replacement capex accounts for over 90 percent of the overspend, with poles representing almost one third of all replacement capex. Prior to the 2020-25 regulatory proposal, we noted a trend of increasing unassisted pole failures; with failure rates eventually exceeding the limit as set by our jurisdictional safety regulator in 2019-2020. In 2019 a review of our poles serviceability calculation (also known as pole assessment algorithm) indicated that we needed to strengthen our serviceability assessment of poles to reduce the increasing failure rates back to the levels set by our safety regulator. This new serviceability calculation has been independently assessed and reviewed by EA Technology as consistent with world best practice.

The second key contributor to the overspend has been in our non-network ICT capex. In the 2015-20 regulatory control period, we had a significant interdependent legacy application portfolio that was overdue for replacement. What became known as the DEBBs[2] portfolio was a multi-year complex major business transformation required to address these legacy application issues. This portfolio of activities was the key driver in our high ICT capital expenditure. The second driver was our unplanned investment in our cyber security stemming from new compliance obligations, and a heightened risk of cyber-attacks across Australia and targeting of critical infrastructure providers. We do not intend to seek to recover the expenditure on ICT capex above the amount that was included in the forecasts that were approved by the AER for the ex post review period. That is, we will self-fund the \$113.5 million (real \$2024-25) difference between AER's forecast and our actual ICT capex.

[1] The review period as defined in NER S6.2.2A(a1) is 2018-2023
2 Digital Enterprise Building Blocks

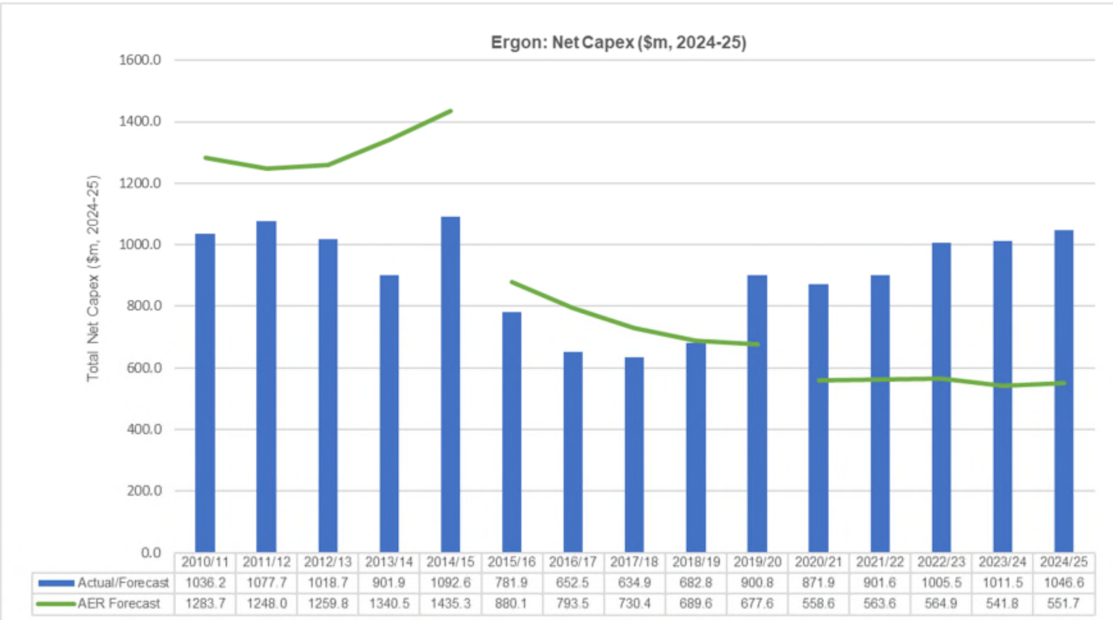
In recognition of our need to increase spending on our replacement programs, we did a top-down challenge to reduce expenditure elsewhere such as in our network augmentation. Where feasible and within our risk appetite, we have deferred large substation augmentation and replacement projects as well as our distribution feeder works. We have also deferred some clearance works where the breaches are of a less critical nature. Due to the need to significantly increase our pole and other consequential replacements, we were unable to fully offset the large overspend in our replacement capex.

Excluding the ICT capex overspend, we propose to roll forward all capital expenditure incurred over the review period. As a responsible distribution entity, we had an obligation to increase our investment in asset replacement to maintain a safe and reliable network. We consider that this expenditure was prudent, efficient and necessary for us to meet our obligation to operate a safe and reliable network. These investments will benefit customers in the long term by improving reliability and safety outcomes through reducing unassisted failures and providing environmental benefits through the avoidance of possible bushfires caused by asset failures.

Historical Capex Trends

Figure 1 shows our annual capex compared to the AER's forecasts. Up until 2018-19, our annual capex was below the AER's forecast with actual expenditure ranging from $600 million to $1,200 million. The historical pattern of expenditure shows the overspend started in 2019-20.

Figure 1: Annual Capex 2010-2025



	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Actual/Forecast	1036.2	1077.7	1018.7	901.9	1092.6	781.9	652.5	634.9	682.8	900.8	871.9	901.6	1005.5	1011.5	1046.6
AER Forecast	1283.7	1248.0	1259.8	1340.5	1435.3	880.1	793.5	730.4	689.6	677.6	558.6	563.6	564.9	541.8	551.7

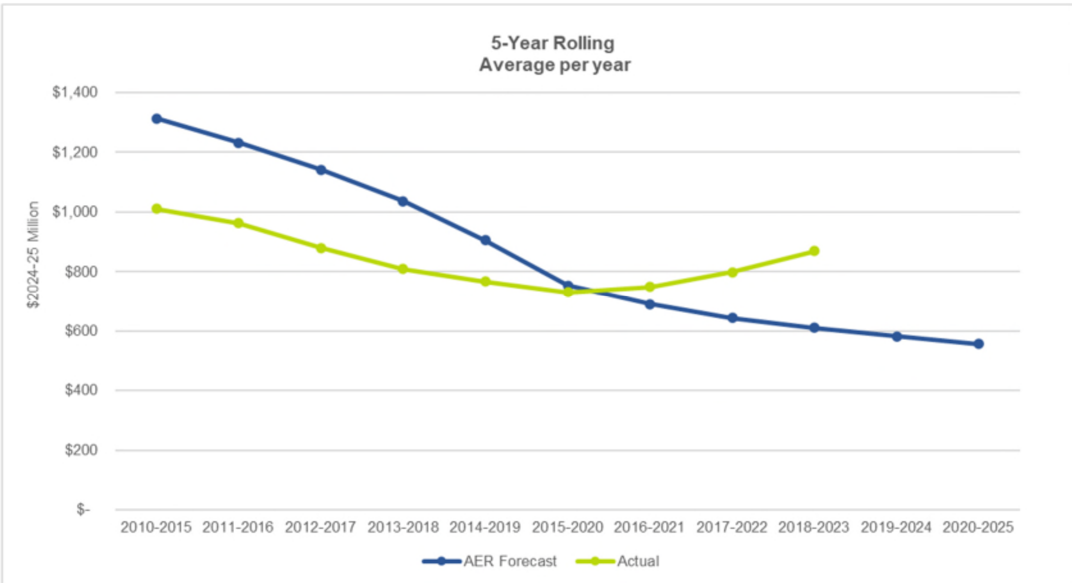
In the 2010-15 regulatory control period, we significantly underspent to the AER's forecast, in part due to a relaxation of jurisdictional security by the Queensland government in 2011-12. To recognise the savings from the reduced capex, we reduced the network charges for 2012-13 and 2013-14 by $99.8 million[3]. As Capital Expenditure Sharing Scheme (CESS) was not applicable during this period, there were no other price impacts from the reduced spending.

In 2015-20 regulatory control period, despite a step-down in AER capex forecast, we were still spending below the AER's forecast. AER's forecast continued on a downward trend in the 2020-25 regulatory control period. It is noted that the AER's annual capex forecast over the 2020-25 regulatory control period is below the lowest historical annual capex of $635 million in 2017-18

As network businesses are infrastructure-based businesses with investments in long life assets, capex spend tends to be "lumpy" and will have peaks and troughs driven by asset age profile, customers growth and demand. As shown in the Figure 1, our capex spend was at its lowest in 2017-18 and we are now on an upward trajectory which is required to maintain legal, safety and jurisdictional standards in accordance with our licence obligations. Figure 1 also shows that over the period from 2010 to 2023 our expenditure is below the AER's forecast, with our actual expenditure $11,559 million compared with the AER's forecast of $12,025 million.

Figure 2 outlines our actual five-year rolling average expenditure across this period compared to the AER's five-year rolling average expenditure forecast. It demonstrates that we have historically been below the AER forecast, only beginning to spend more than the forecast in the 2016-21 period, with our highest expenditure above forecast occurring in the 2018-23 period, coinciding with the ex post period.

Figure 2: 5-year rolling average



Actual Versus Forecast

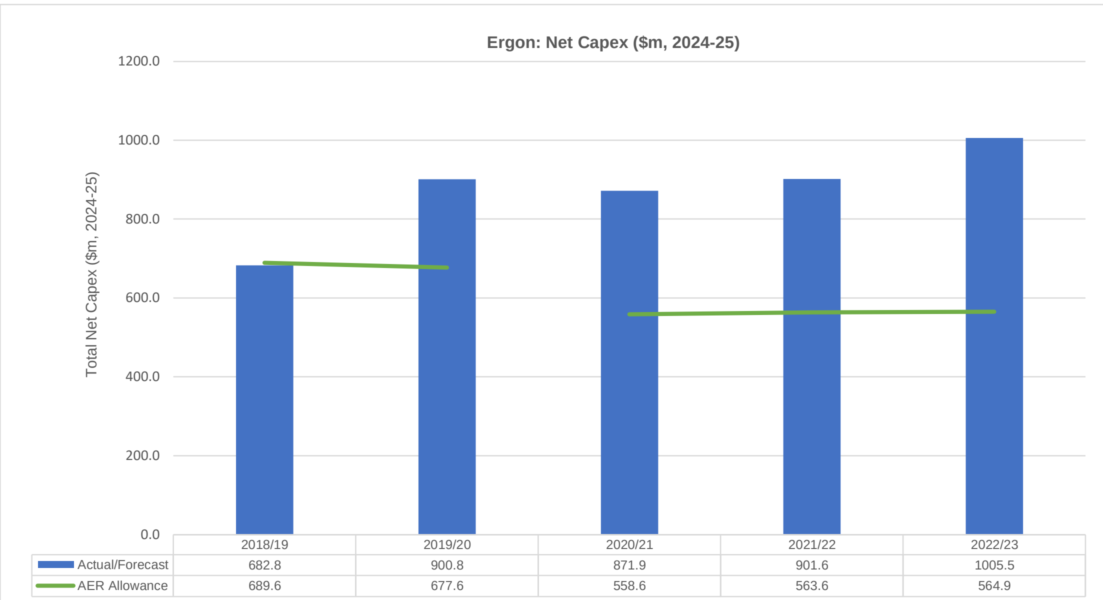
Table 1 is a summary of the actual expenditure over the review period compared to the AER's forecast. Excluding disposals; we have exceeded the AER's forecast by $1,308.4 million (real $2024-25) or 43% above the AER's forecast.

Table 1 and Figure 3 shows our annual expenditure compared to the AER's forecast over the 5-year review period.

Table 1: Review Period (2018-19 to 2022-23) - Actual Versus Forecast

Ex post Review Period Total $M 2024-2025	AER Forecast	Actual (as per RIN)	Variation $million	Variation per cent
Augmentation capex	$ 400.2	$ 269.2	-$ 130.9	-33%
Customer connections capex (gross)	$ 485.7	$ 642.9	$ 157.2	32%
Asset replacement capex	$ 989.6	$ 2,180.6	$ 1,191.1	120%
Non-network capex	$ 451.7	$ 561.5	$ 109.7	24%
Capitalised overheads	$ 942.1	$ 1,036.5	$ 94.4	10%
Total Gross Capex	$ 3,269.3	$ 4,690.8	$ 1,421.5	43%
Capital Contributions included	$ 215.0	$ 328.2	$ 113.1	53%
Total Net Capex (excl disposals)	$ 3,054.2	$ 4,362.6	$ 1,308.4	43%

Figure 3: Annual capex- Actual Versus AER's forecast



Key Drivers of Increased Expenditure

We have significantly increased our investment in pole replacements. In 2018, we noted an increasing trend in our unassisted pole failures. Since 2019-20, our three-year moving average of unassisted pole failures exceeded the ESCOP[4] limit of 1 per 10,000 poles (or 99.99%). A review of our pole inspections and assessments was conducted to ensure that we could meet our obligations as a distribution entity in Queensland. This review was independently assessed by an industry expert and has resulted in an increase and timely number of pole replacements required to address the high unassisted failures of our poles.

We had obligations under our licence requirements to improve our pole serviceability calculation to maintain a safe and reliable network and align with good industry practice. This change in pole serviceability has driven an increase in the number of pole replacements, resulting in increased expenditure. Given our jurisdictional and legal obligations as a prudent distribution network service provider, a timely implementation of this change was required.

The increase in pole replacements has also driven an increase in replacements of equipment such as crossarms, transformers, service lines and switches that are attached to the pole. Where feasible and cost effective, these assets were also replaced at the same time. The “bundling” of works is commonly accepted as good industry practice and is prudent as demonstrated by the post implementation review (PIR) of our pole replacement program and efficient as demonstrated by our Cost Comparison paper comparing our costs with other DNSPs in the NEM.

We have also increased our expenditure in relation to our overhead lines’ clearance to ground and clearance to structure programs to comply with our legislated obligations. Prior to 2015, clearance defects were identified manually by asset inspectors through visual estimation. In 2014-15, Ergon employed ROAMES aerial LiDAR technology to identify clearance defects. This improved methodology was further enhanced in late 2021 when a temperature correction algorithm was applied to ground clearances. This algorithm calculates additional sag based on a standard temperature of 35°C to identify conductors that will breach legislative clearances and included these in our clearance program.

This resulted in a significant increase in the identification of breaches of our legislative clearance obligations, which has resulted in increased expenditure on our clearance program. In consultation with the Electrical Safety Office (ESO), we risk-prioritised the breaches to ensure that we rectified the most critical ones in the 2018-23 period and have spread the less critical rectifications across the 2023-30 period. We also report quarterly to the ESO on this program.

In the interest of transparency, we have provided expenditure of the clearance program in isolation from repex or augex to assist the AER in their ex post review.

Next Steps

We have reviewed the relevant AER’s decisions in developing and setting their forecast expenditure for Ergon over the review period. We accept that these forecasts are reasonable based on the information available and provided by Ergon at that time.

Due to the timing of the decisions and vagaries of forecasting, the AER’s forecasts are below what was required for us to operate and maintain the network safely and in compliance with our licence and regulatory obligations. Spending to these forecast levels was not an option and would not have been consistent with the National Electricity Objectives (NEO) of investing in the long-term interest of customers.

[4] ESCOP - Electrical Safety Code of Practice

We also note the AER's concern on the lack of cost benefit analysis to support our capex forecast in their previous decisions. In support of our expenditure in this ex post review, we have conducted post implementation reviews on the relevant asset classes that demonstrates the prudency of our investments.

In our engagement with our customers, we have set out safety and reliability of our ageing network as our investment priority 1. In response to our Draft Plans, the Reset Reference Group (RRG) noted that *"Safety is a 'given'. Customers expect safety of the public, employees and the network to be the top priority for Ergon."*

Proposed Roll Forward

As discussed above, in recognition of the cost-of-living pressures experienced by our customers, we will self-fund the $113.5 million difference between the AER forecast and our actual non-network ICT capital expenditure for the review period to minimise bill impacts for customers.

Excluding the overspend in ICT, capex over the review period is $1,195 million or 39% over the AER forecast. We propose that this capex amount be included in the RAB.

We are providing this document and associated attachments in support of our assessment that the expenditure is prudent and efficient and should be rolled into the RAB.

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1 INTRODUCTION

In making a distribution determination, the Australian Energy Regulator (AER) is required to make a number of constituent decisions including a decision on the regulatory asset base as at the commencement of the regulatory control period[5]. The AER will be guided by S6.2.2A on the amount of capital expenditure that should be include in the roll forward of the regulatory asset base.

Clause S6.2.2A(k) requires that the AER determination must be consistent with the *capital expenditure incentive objective*[6] and, in making such a determination, the AER must take into account the Capital Expenditure Incentive Guidelines (CEIG)[7].

Section 4.3 of the CEIG sets out the ex post review process that the AER will take for the purpose of making the ex post statement. The 2-stage ex post review process is depicted in Appendix 1.

We have significantly overspent the AER's forecast capex over the relevant ex post review period[8] from 2018-19 to 2022-23.

This paper and the associated attachments set out the rationale and justification for our capex over the review period. We submit that all our capex is prudent and efficient and except for the overspend in ICT capex, should be rolled into that starting RAB at as 1 July 2025.

2 BACKGROUND

The review period is defined in Clause S6.2.2A(a1) as follows:

> for the purposes of this clause S6.2.2A, "review period" means:
>
> (1) the previous control period (excluding the last two regulatory years of that previous control period); and
>
> (2) the last two regulatory years of the regulatory control period preceding the previous control period.

The *review period* applicable for the 2025-30 Distribution Determination is from 2018-19 to 2022-23 which spans across two regulatory control periods of 2015-20 and 2020-2025.and are based on two separate AER Distribution Determinations.

Forecasts for the 2015-20 and 2020-25 regulatory determinations were in set in $2014-15 $2019-20 respectively. The forecast capex in Table 2 below has been converted to $2024-25 for comparison purposes and to align with the basis of capex forecast for the 2025-30 regulatory period.

The AER's capital expenditure forecasts for Ergon Energy over the 2015-20 and 2020-25 regulatory control periods are summarised below.

5 NER 6.12.1(6)
6 NER 6.5.7(a)
7 AER's Better Regulation Capital Expenditure Incentive Guideline for Electricity Network Service Providers November 2013
8 The review period as defined in NER S6.2.2A(a1)

Table 2: AER's capital expenditure forecasts ($2024-25)

	AER Forecast									
M 2024-2025	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Augmentation capex	$ 169.3	$ 157.0	$ 146.1	$ 110.3	$ 110.3	$ 60.8	$ 58.4	$ 60.3	$ 42.5	$ 33.6
Customer connections capex (gross)	$ 104.2	$ 103.7	$ 103.9	$ 104.2	$ 104.5	$ 95.8	$ 92.9	$ 88.2	$ 88.5	$ 89.9
Asset replacement capex	$ 227.2	$ 205.8	$ 173.9	$ 187.0	$ 182.6	$ 198.6	$ 206.4	$ 215.0	$ 224.1	$ 234.1
Non-network capex	$ 145.9	$ 106.0	$ 98.2	$ 81.4	$ 74.4	$ 103.1	$ 101.2	$ 91.7	$ 77.5	$ 84.1
Capitalised overheads	$ 272.6	$ 261.5	$ 250.6	$ 249.9	$ 249.9	$ 146.5	$ 147.5	$ 148.3	$ 147.9	$ 148.7
Total Gross Capex	$ 919.2	$ 834.2	$ 772.7	$ 732.9	$ 721.8	$ 604.7	$ 606.4	$ 603.5	$ 580.5	$ 590.3
Capital Contributions included	$ 39.1	$ 40.7	$ 42.3	$ 43.3	$ 44.2	$ 46.1	$ 42.8	$ 38.6	$ 38.6	$ 38.7
Total Net Capex (excl disposals)	$ 880.1	$ 793.5	$ 730.4	$ 689.6	$ 677.6	$ 558.6	$ 563.6	$ 564.9	$ 541.8	$ 551.7

3 2015-20 REGULATORY DETERMINATION

Unless otherwise stated, all values in this section are in are $2014-15 as per the 2015-20 final decision[9].

In addition to its internal engineering and technical expertise, the AER engaged Energy Market Consulting associates (EMCa)[10] to provide advice on some elements of Ergon Energy's proposed system capex and assess if the proposed capex is reasonable, or to otherwise quantify an alternative. This involved reviewing Ergon Energy's processes, and specific projects and programs of work.

In its 2015-20 Revised Regulatory Proposal (RRP), Ergon Energy forecasted a total capex of $3,282.4 million[11] over the 2015-20 regulatory control period. This is 39 per cent lower than the AER's forecast for the 2010–15 regulatory control period of $5,399.3 million and 13 per cent lower than actual capex for the 2010–15 regulatory control period of $3,762.7 million[12].

In its final decision, the AER provided a capex forecast of $2,858.1 million[13] over the 2015-20 regulatory control period to Ergon Energy; 13 percent lower that the Ergon Energy's RRP forecast.

The AER's final decision on Ergon Energy's total capex forecasts for the 2015-20 regulatory control period in Table 3[14] below.

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[9] AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[10] EMCa - *Review of Ergon Energy revised proposed capex - September 2015*

[11] Page 6-8 AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[12] Page 6-8 of the *AER - Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[13] Page 6-8 of the *AER - Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[14] Table 6.1 of the *AER - Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

Table 3: Ergon Energy's total forecast capex ($2014-15, Million)

	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Ergon Energy's initial proposal	739.8	723.2	659.4	644.5	630	3,397.0
AER preliminary decision	540.1	495.3	428.1	381.0	337.5	2,182.0
Ergon Energy's revised proposal	749.4	685.6	634.3	610.6	602.6	3,282.4
AER final decision	667.0	601.4	553.6	522.6	513.5	2,858.1
Difference (final decision and revised proposal)	–82.4	–84.2	–80.7	–88.0	–89.1	–424.3
Percentage difference (%) (final decision and revised proposal)	–11.0	–12.3	–12.7	–14.4	–14.8	–12.9

Key findings and decisions include:

- Augmentation capex[15] (Augex)

  The AER's accepted the majority of Ergon's proposed augex in the RRP with some adjustments to distribution augex and other system enabling capex resulting in an augex forecast of $543.7 million.

- Connection capex (Connex)[16]

  The AER accepted Ergon Energy's revised proposal for net connections capex of $279.5 million and forecast for customer contributions of $158.3 million.

- Replacement capex (Repex)[17]

  The AER did not accept Ergon Energy's revised proposed repex of $941 million ($2014-15). A forecast of $786 million ($2014–15) was provided for repex over the regulatory control period.

  - Modelled repex.

    The AER has six asset categories[18] in its repex model used as a predictive modelling to estimate the forecast repex requirement. In its final decision, the AER adopted this approach for four of the asset categories but used Ergon Energy's proposed expenditure on pole and overhead conductor replacement ($84 million and $253 million [19], respectively, which were lower than the estimates from the predictive modelling.

[15] Pages 6-37 to 6-78 AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015. Table 6.7 showed augex of $550.2 million which included augex for metering*

[16] Pages 6-78 to 6-79 AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[17] Pages 6-79 to 6-103 AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[18]Asset categories - poles, overhead conductors, service lines, switchgear, transformers and underground cables.

[19] Sum of $216 million in reset RIN for overhead conductor and $37 million for clearance to ground defect remediation program which was included in unmodelled but assessed as modelled in AER final decision

The outcome of the calibrated repex model for the remaining four categories was $242 million resulting in a final estimate for the six modelled asset categories of $542.2 million. If the repex model was adopted in its entirety, repex for the regulatory control period would have been $911 million [20].

- Unmodelled repex
  - SCADA – The AER accepted Ergon Energy's proposed repex of $109 million for SCADA, network control and protection.
  - Pole top structures - Ergon Energy's forecasted $103 million for pole top structure replacement. The AER's final decision of $61 million was based on Ergon Energy's pole top replacement from the previous regulatory control period.
  - Other repex – includes replacement of capacitor banks, current transformers, static var compensators and voltage transformers. The AER accepted Ergon Energy's forecast repex of $42 million in its final decision.

- Non network capex[21]

  The AER's forecast for non-network capex of $406.6 million comprised of the following:

  - ICT - $25.62 million for ICT capex in relation to end user devices which forms part of Ergon Energy's non system capex. The SPARQ ICT expenditure forecast is included in the capitalised overheads category.
  - Property - $206.1 million[22] for expenditure in relation to building, plant and equipment, and office equipment & furniture part of Ergon Energy's non network capex
  - Fleet - fleet capex forecast of $174.9 million.

- Capitalised Overheads

  In the 2015-20 regulatory control period, Ergon Energy included SPARQ ICT capex of $226.1 million ($2021-13). This expenditure forecast was converted and included as capitalised overhead component of capex.

  Ergon Energy proposed capitalised overheads of $1051.4 million for the 2015-20 regulatory control period. The AER reduced the capitalised overheads to $1035.3 million to reflect the reductions in its total substituted capex forecast.

Table 4 below sets out the details of the capex forecast by capex driver categories[23].

[20] *AER repex model - calibrated replacement lives and forecast unit costs October 2015*

[21] Pages 6-106 to 6-122 AER - *Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

[22] Non-Network Capex Tab - AER - *Final decision Ergon Energy distribution determination - Capex model - October 2015*

[23] Table 6.3 of the *AER - Final decision Ergon Energy distribution determination - Attachment 6 - Capital expenditure - October 2015*

Table 4: AER's capex forecast by capex driver 2015–20 ($2014–15 million)

Category	2015–16	2016–17	2017–18	2018–19	2019–20	Total
Augmentation	130.8	122.4	115.0	87.4	88.1	543.7
Connections	82.2	83.0	84.0	85.0	85.7	419.8
Replacement	179.3	164.6	140.6	152.4	149.7	786.6
Metering	2.7	3.2	3.1	2.5	2.4	13.8
Non-Network	115.1	84.8	79.3	66.3	61.0	406.6
Capitalised overheads	215.1	209.2	202.5	203.6	204.9	1,035.3
Labour and materials escalation adjustment	-28.6	-35.0	-38.8	-41.7	-44.9	-188.9
Gross Capex (includes capital contributions)	**696.6**	**632.2**	**585.6**	**555.4**	**547.1**	**3,016.9**
Capital Contributions	29.6	30.8	32.0	32.8	33.5	158.8
Net Capex (excluding capital contributions)	**667.0**	**601.4**	**553.6**	**522.6**	**513.5**	**2,858.1**

It should be noted that all assessments and capex forecasts at category level are set at pre labour and materials escalation adjustments of $188.9 million. To ensure alignment of total by asset categories with the overall net capex, the forecasts for each capex category are adjusted on a prorated basis. Hence some numbers may not add up due to the pro-rated adjustments and rounding effect.

4 2020-25 REGULATORY DETERMINATION

Unless otherwise stated, all values in this section are in $2019-20 as per the 2020-25 final decision[24].

In its RRP, Ergon proposed a total net capex forecast of $2804.3 million. In its final decision, the AER substituted an estimate of $2276.2 million as the net capex forecast for the 2020-25 regulatory control period. This amount is 19 per cent below Ergon Energy's revised forecast.

The AER final decision on total capex and by capex driver are set out in Table 5[25] below. Unless otherwise stated, all values are $2019-20 in this section.

Table 5: Final decision on Ergon Energy's total net capex forecast ($ million, 2019–20)

	2020–21	2021–22	2022–23	2023–24	2024–25	Total
Ergon Energy's revised proposal	551.6	568.8	580.7	549.5	553.7	2804.3
AER final decision	457.5	461.6	462.7	442.7	451.8	2276.2
Difference ($)	-94.1	-107.2	-118.0	-106.8	-101.9	-528.1
Percentage difference (%)	-17%	-19%	-20%	-19%	-18%	-19%

[24] Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020.
[25] Table 5.1 Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020.

Key findings and decisions include:

- Augmentation capex[26]

  The AER included $211.7 million of Ergon's proposed Augex of $239.5 million in its final decision for augex for intelligent grid enablement, back-up protection, telecommunication network capacity and coverage, protection upgrades and four sub-transmission augmentation projects[27].

- Connection capex[28]

  The AER accepted Ergon Energy's revised proposal for net connections capex of $207.8 million and forecast customer contributions of $169.0million.

- Replacement capex[29]

  The AER did not accept Ergon Energy's revised proposed repex of $1289.6 million. A substituted forecast of $891.8 million was provided for repex over the regulatory control period.

- Key findings and decisions in repex include:
  - The AER noted the significant increase in repex and replacement volumes for most asset categories; in particular poles, overhead conductors, service lines and Other.
  - Modelled repex.

    The AER has six asset categories[30] in its repex model used as a predictive modelling to estimate the forecast repex requirement. Ergon Energy's proposed modelled repex in the RRP of $924.6 million is higher than the AER's repex model (lives scenario) of $653 million. The key differences are in the asset categories of poles ($137 million), transformers ($77.4 million), switchgear ($41.4 million) and service line[31] ($19.7 million)

    In its final decision, the AER adopted the outcomes of the 'lives' scenario for five asset categories in the repex model – see Table A.2 of final decision. For service lines replacement the AER provided additional allowance to undertake increased number of service lines in lieu of the LV safety program.
  - In addition to its predictive modelling via its repex model, the AER undertook a bottom - up analysis on repex for poles, transformers, and switchgear.
  - Bottom-up and Unmodelled repex assessment
    - Based on their bottom-up analysis, the AER had concerns on Ergon's options analysis, forecast asset failures, risks assessments and counter factual arguments. On that basis, the AER decision was to adopt the outcomes from its repex model as discussed above.

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[26] Pages 5-5 to 5-12 Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020
[27] Cloncurry, Blackwater, Yarranlea, East Bundaberge to Burnett Heads
[28] Pages 5-15 AER Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020
[29] Pages 5-16 to 5-30 AER Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020
[30] The six modelled asset categories are poles, overhead conductors, service lines, switchgears, transformers and underground cables.
[31] This amount excludes allowances for the low-voltage safety program.

- Clearance to ground and structure breach remediation program

  Ergon Energy's forecast for this program of $133 million was included in unmodelled category of 'other' repex asset group. However, the AER asserted that this program has historically been reported against modelled asset groups and provided $69.2 million based on the estimated amount spent in 2015-20. 84 percent of the $69.2 million was then allocated across the six modelled repex categories and 16 percent to pole top structures and other asset groups [32] .

- Low-voltage safety program

  Ergon Energy's proposal includes $44.0 million for a low-voltage (LV) safety program to install network monitoring devices (NMDs). The AER asserted that this program is linked with service line replacement program and should be assessed within the repex model. The final decision did not provide any allowance for low-voltage safety program but provide additional allowance in service line replacements as the alternative option to the safety program by increasing the service line replacements from $32 million (output from the Repex model) to $52 million.

- Pole top structures, SCADA and Other - Ergon Energy's forecasted $144.0 million, $69.8 million, and $148.1 million for pole top structure replacement, SCADA, and Other asset groups respectively. The AER's final decision was to adopt the spend over 2015-20 regulatory control period resulting in $122.6 million, $52.6 million, and $43.8 million in the three unmodelled categories.

- Non network capex[33]
  - Non-network ICT
    - The AER accepted Ergon Energy's revised ICT capex forecast of $164.4 million, which included a minor modelling adjustment to the AER's substitute estimate for recurrent ICT capex.
  - Property
    - The AER included $65.8 million for property capex in their substitute estimate, which was $38 million lower than Ergon Energy's revised proposal of $103.8 million. The AER considered that the base cases for the Maryborough depot, Townsville training facility and property security projects were the most prudent and efficient options ($5.9 million) rather than the proposed total of $43.3 million for these projects.
  - Fleet and other non-network
    - The AER accepted Ergon Energy's revised other non-network capex forecast of $150.5 million based on the additional information provided in Ergon Energy's new fleet model.

[32] Page 5-24 Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020

[33] Pages 5-30 to 5-38 AER Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020

- Capitalised Overheads
    - The AER did not accept Ergon Energy's capitalised overheads forecast of $682.2 million.
    - The AER included a capitalised overheads forecast of $609.9 million as the substitute estimate.

The AER final decision by capex driver is set out in Table 6[34] below.

Table 6: AER's capex forecast by capex driver 2020-25 ($2019-20 millions)

Driver	Ergon Energy's revised proposal	AER final decision	Difference ($)	Difference (%)
Augex	239.5	211.7	-27.8	-12%
Gross connections	376.7	376.7	0.0	-0%
Repex	1289.6	891.8	-397.8	-31%
ICT capex	164.4	164.4	0.0	-0%
Property capex	103.8	65.8	-38.0	-37%
Other non-network capex	150.5	150.5	0.0	-0%
Capitalised overheads	682.2	609.5	-72.6	-11%
Gross capex	**3006.6**	**2470.4**	**-536.2**	**-18%**
less capital contributions	169.0	169.0	0.0	-0%
less asset disposals	20.9	20.9	0.0	-0%
less Ergon Energy's modelling adjustments	12.5	12.5	0.0	-0%
less AER modelling adjustments	-	8.1	-	-
Net capex	**2804.3**	**2276.2**	**-528.1**	**-19%**

It is noted that the figures for each asset categories in Table 6 above are pre modelling adjustments of $12.5 million. In this ex post review, the numbers are extracted from the capex model which accounted for the modelling error and may differ marginally from the numbers in Table 6.

[34] Table 5.2 Final decision - Ergon Energy distribution determination 2020-25 - Attachment 5 - Capital expenditure - June 2020.

5 CLEARANCE TO GROUND AND CLEARANCE TO STRUCTURE PROGRAM

A discussion on Clearance to Ground and Clearance to Structure program is included here to provide context of the background, how the program was assessed and classified and changes to the approach of the program.

The Electrical Safety Act (Qld) s29 imposes an obligation that Ergon Energy (as a prescribed Electrical Entity) has a duty of care to ensure that works are electrically safe and operated in a way that is electrically safe. The duty of care includes the requirement to inspect, test and maintain the works.

Further, Clauses 207 and 208 of the Electrical Safety Regulations 2013 sets out Ergon's obligations in relation to clearance from ground and clearance from structure respectively. Schedules 4 sets out the clearance of overhead electric lines (other than low voltage service lines) from ground and structures while Schedule 5 sets out the clearance requirements of low voltage service lines. These clearances are designed to minimise the risk that people or their property/equipment will come into contact with electrical lines.

Relevant clauses from the Electrical Safety Regulation 2013 are set out in Appendix 2.

Prior to 2015, clearance to ground defects were identified manually by asset inspectors through visual estimation. In 2014-15, Ergon employed ROAMES aerial LiDAR technology to identify clearance defects.

The timing of the new approach was identified after the submission of the RP for the 2015-20 Distribution Determination. In the RP, the forecast volume of clearance defects was 6,746 over the regulatory control period or 1,350 per annum. ROAMES LiDAR identified an additional 15,000 defects that require remediation. The RRP for 2015-20 RCP included the additional defects resulting in an increase of the program cost of $37 million ($2014-15). Ergon energy included the forecast expenditure in the "Other" category of the repex model.

On page 6-104 of its Final Decision, the AER state that:

> *We note the concerns expressed by EMCa in its report. However, we also note that this program relates to the replacement of overhead line assets on Ergon Energy's network, such that it would fall under the "modelled" asset category of overhead conductor. If the $37 million proposed by Ergon Energy was included in this category, Ergon Energy's proposal would total $253 million ($37 million + $216 million). This amount would be lower than the business as usual expenditure estimated by the repex model for this category of $413 million. Given that, if the expenditure had been proposed as "overhead conductor", we would have accepted the forecast as being lower than the business as usual amount, we consider that the expenditure is likely to reflect the capex criteria, and have included it in our alternative estimate.*

The following summarises the chronology of events in the 2020-25 Determination (all numbers in this section are in real $2019-20).

Ergon Energy Regulatory Proposal, January 2019

- Details of CTG/CTS are set out in Supporting document 7.155 - Justification Statement - CTG CTS - January 2019.pdf
- $14 million of CTG/CTS related costs were spread across poles, transformers, overhead conductors, switchgear and service lines.
- This amount is included in the modelled repex of $765.0 million for the 2020–25 regulatory control period.
- In its draft decision, the AER's forecast was $637.1 million for modelled repex
- There was no specific mention of expenditure for CTG/CTS within the total repex.

Ergon Energy Revised Regulatory Proposal - December 2019

- Forecast for the CTG/CTS program was revised up from $14 million to $133 million.
- Unlike the RP where the costs are spread across the relevant asset categories of the repex model, Ergon had the CTG/CTS expenditure included in "Other" category of the unmodelled repex
- The AER assessment re-allocated the expenditure back in the proportion of 84% to modelled repex category – split across poles, transformers, overhead conductors, switchgear and service lines plus 16% to pole top structures and Other.

The AER final decision was a forecast of $69.2 million[35] for CTG/CTG program spread across the modelled repex categories[36] as set out on Page 5-28.

> *Therefore, our substitute estimate outlined in table 3, which is derived using the repex model and trend analysis, includes the historical repex of $69.2 million that Ergon Energy has spent remediating clearance breaches during the current period (2015–20).70 As noted above, this amount was spent to rectify 21601 defects during this period.*

In the final decision, the AER conducted a project and program level analysis on clearance program to ground and structure breach remediation program and low-voltage safety program[37]. Following the analysis, the AER final decision stated provision of additional allowance for clearance program ($14 million to $69.2million) and low voltage safety program (additional $20 million).

The additional capex forecast for low voltage safety was clearly evident as an additional amount to the output from repex model. However, Ergon Energy is unable to reconcile how, where and if additional allowance for clearance program has been provided for.

[35] Page 5-28 Attachment 5: Capital expenditure | Final decision – Ergon Energy 2020–25

[36] 49% to poles, 14% to pole top structures, 12% to OH, 4 % to services, 15% to transformers, 2% to others

[37] Page 5-24 to 5-27 Attachment 5: Capital expenditure | Final decision – Ergon Energy 2020–25

5.1 Changes in CTG/CTS reporting

Clearance program is a discrete / distinct program to address a regulatory compliance matter does not fit wholly into a repex or augex program in the AER category. Energex has always treated clearance program as augex program while Ergon has historically considered clearance programs as repex category. In 2021-22, Ergon Energy reclassified the clearance program as an augex program.

Due to the misalignment of the clearance program in the RRP and the AER's final decision, reconciliation of actual to the AER is problematic.

For the purpose of this ex post review, adjustments to the relevant asset categories to reflect the change in clearance programs to augex are conducted.

As the AER's final decisions are discussed generally, assumptions are made as to how the allowances are spread across the years and across asset categories. For simplicity, allowances are spread evenly across each year within the regulatory control period. For the 2015-20 regulatory control period, 100% of the program was allocated to the overhead categories [38]. For the 2020-25 regulatory control period, the program was allocated as follows: 49% to poles, 14% to pole top structures, 12% to overhead conductors, 4 % to services, 15% to transformers, 5% to switchgear and 2% to street lighting others[39]

A comparison of the proposed expenditure in Revised Regulatory Proposals, AER's forecast and actual expenditure in $2024-25 incurred on our clearance programs are summarised in the Table 7 below.

Table 7: 2018-23 Clearance program Forecast to Actuals

$ 2024-2025 ($,000)	CTG/CTS					
	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
RRP	$ 9,606	$ 9,606	$ 32,198	$ 32,198	$ 32,198	$ 115,807
AER Final Decision Forecast	$ 9,606	$ 9,606	$ 16,753	$ 16,753	$ 16,753	$ 69,470
Actual in Repex (as reported in RIN)	$ 37,948	$ 67,862	$ 77,241	$ -	$ -	$ 183,050
Actual in Augex (as reported in RIN)	$ -	$ -	$ -	$ 22,033	$ 18,849	$ 40,882

Over the review period, $223.9 million ($2024-25) was spent on clearance program to comply with our legislative obligation.

For simplicity and clarity, it is proposed that in this ex post review, expenditure on clearance program be assessed in isolation from the repex and augex.

[38] Page 6-104 AER Final Decision Attachment 6 – Capital expenditure | Ergon Energy determination 2015–20
39 Ergon Energy AER IR017–3-Distribution Reset RIN apportionment

6 MAJOR PROJECTS

Ergon has reviewed the expenditure of major augex and repex sub-transmission projects undertaken over the review period.

Appendix 3 is the list of augex and repex projects and the expenditure incurred in each year of the review period. It is noted that some projects are still in progress and the expenditure are in $nominal.

For the purpose of this ex post review, projects with a threshold of $3 million over the 5-year review period are listed.

7 CAPEX TRENDS AND ANALYSIS

The purpose of this section is to review and provide a top-down analysis of the overall capex spend since 2010.

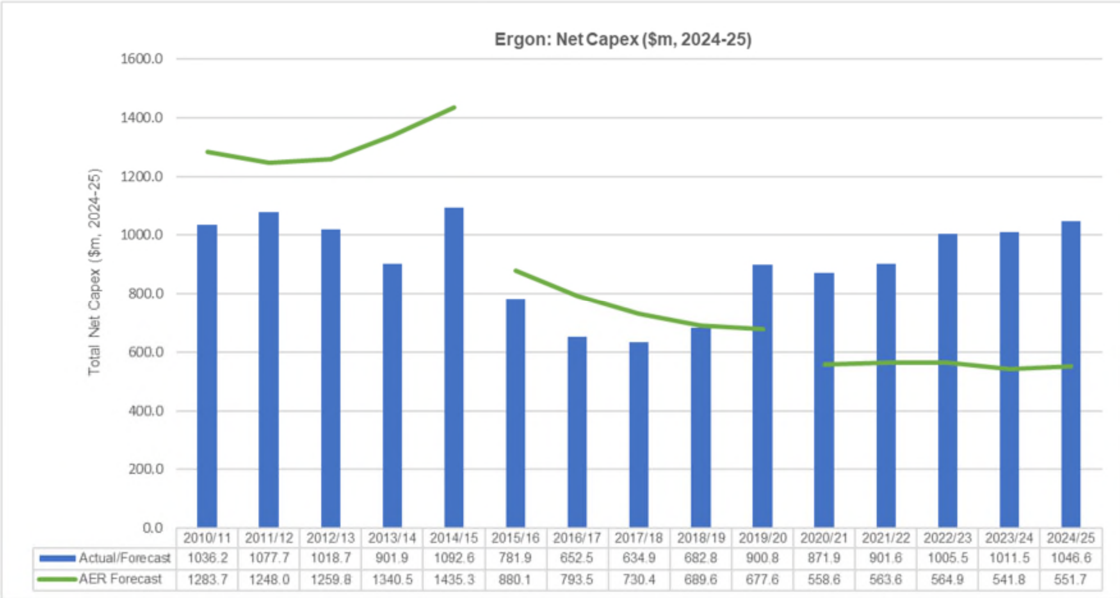
Unless otherwise stated, all the values in this section are converted to $ 2024-25 to allow for meaningful discussions and analysis.

AER total capex forecast and Ergon Energy's total actual and estimated (for 2023-24 and 2024-25) expenditure since 2010-11 is shown is Figure 4 below. Key observations:

- AER's forecast capex for the 2010-15 regulatory control period was $6567 million. We significantly underspent the capex forecast estimated by the AER. The primary driver for the underspend was the change in the jurisdictional security standard following the Electricity Network Capital Program (ENCAP) review undertaken by the Queensland government. To recognise the savings from the reduced capex, we reduced the network charges for 2012-13 and 2013-14 by $99.8 million[40].
- Capital Expenditure Sharing Scheme (CESS) was not applicable during the 2010-15 regulatory control period; hence there were no price impacts from the reduced spending as no CESS reward was claimed for underspending over this regulatory control period.
- For 2015-20 regulatory control period, the AER total net capex forecast was significantly reduced to $3,771 million. Ergon Energy's actual spend of $3653 million is $118 million below the AER's forecast.
- The capex forecast was further reduced to $2781 million for the 2020-25 regulatory control period. It is noted that this is forecast almost 24% below the actual spend incurred over the then 2015-20 regulatory control period.
- Ergon Energy has significantly overspent the AER's annual capex forecasts in the first three years of 2020-25 regulatory control period and is expected to spend above the AER's forecast in the remaining two years.
- The overspend is predominantly in replacement capex, driven primarily by the increase in pole replacements due safety risks from increasing pole failure rates among its ageing assets.

[40] Pages 96-97 Ergon Energy Regulatory Proposal 2015 to 2020 31 October 2014

Figure 4: Ergon Energy's annual capex 2010-2025



	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Actual/Forecast	1036.2	1077.7	1018.7	901.9	1092.6	781.9	652.5	634.9	682.8	900.8	871.9	901.6	1005.5	1011.5	1046.6
AER Forecast	1283.7	1248.0	1259.8	1340.5	1435.3	880.1	793.5	730.4	689.6	677.6	558.6	563.6	564.9	541.8	551.7

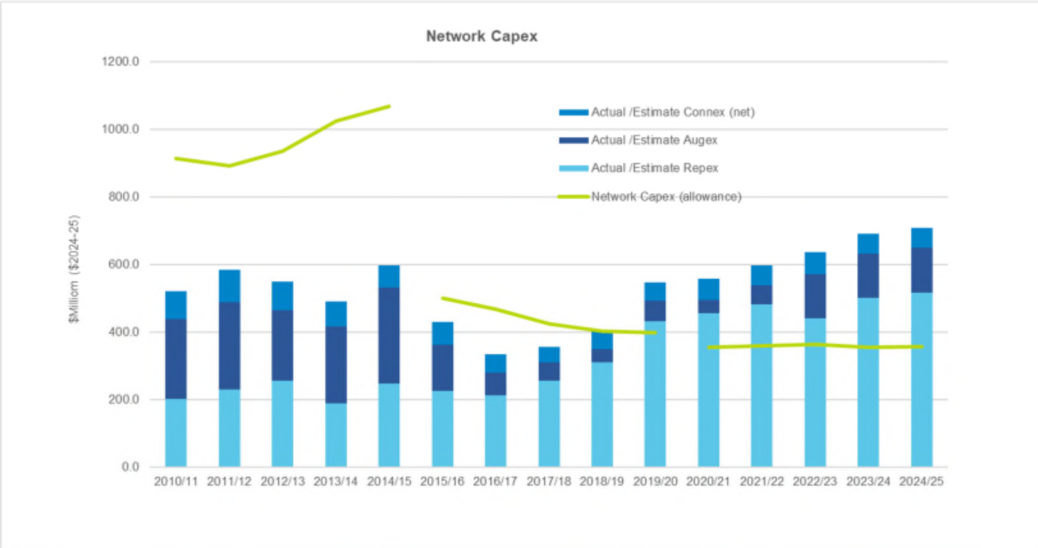
7.1 Network Capex

An analysis of Ergon Energy's historical network capex of augmentation capex (Augex), replacement capex (Repex) and connection capex (Connex) spend is presented in Figure 5 below.

Key observations are:

- Ergon Energy's annual network capex spend over the last 15 years fluctuates between $350million to $630 million.
- The average network capex over the last 15 years is $510 million per year.
- In early years of the 2010-15 regulatory control period, network capex is predominantly focussed on augmentation program to meet the jurisdictional security standards.
- A relaxation of the strict N-1 security standards following the ENCAP review saw an easing of augmentation programs.
- This has seen the augmentation capex reduced from 45% of network capex in 2010-11 to approximately 10% of network capex in recently.
- On the other hand, replacement capex from has significantly increased from 39% of network capex in 2010-11 to over 80% of network capex.

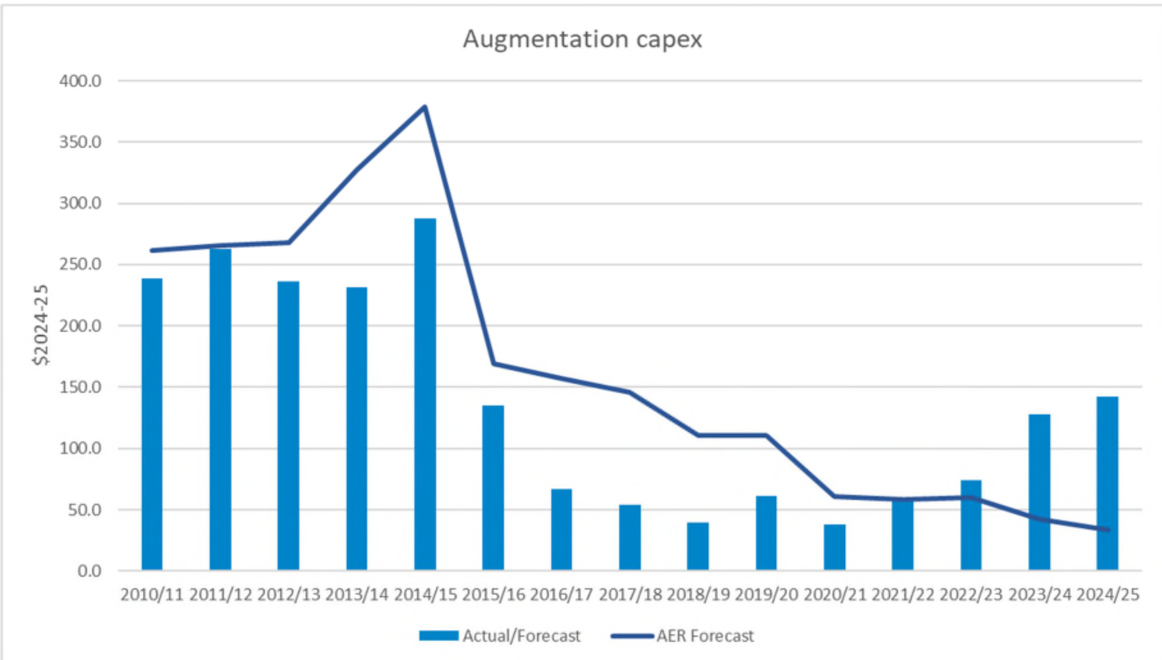
Figure 5: Ergon Energy's annual network capex 2010-2025



7.1.1 Augmentation Capex

Figure 6 below is a chart which shows Ergon Energy's expenditure on augmentation capex since 2010-11.

Figure 6: Historical Augmentation Capex



Key observations of our historical spend on augmentation capex are:

- 2010-15 regulatory control period,
  - Actual augex averaged $251 million per year predominantly focussed on projects and programs to meet the jurisdictional security standards.

- In the first 2 years of the regulatory control period, the actual spend closely aligned with the AER 's.
  - A relaxation of the strict N-1 security standards following the ENCAP review saw an easing of augmentation programs.
  - To recognise the savings from the reduced capex, Ergon Energy reduced the network charges for 2012-13 and 2013-14 by $99.8 million.
  - Overall, the total augex over the regulatory control period is below the AER's forecast by $243 million.
  - It is also noted that CESS was not applicable during the 2010-15 regulatory control period.
- 2015-20 regulatory control period,
  - Following the adoption of a modified N-1 security standards, reduced augmentation works were required.
  - This is shown by the step down in the actual augex which averaged $71 million per year.
- 2020-25 regulatory control period,
  - From 2021-22 onwards, our clearance program was included as augex instead of repex.
  - Clearance program totalled $22.0million and $18.8 million in 2021-22 and 2022-23 respectively.
  - Excluding the clearance program, the actual augex for the first three years of this regulatory control period was $20 million below the AER's forecast.

7.1.2 Replacement Capex

In assessing the repex forecast, the AER has a repex model to forecast replacement volumes and expenditure for the poles, overhead conductors, service lines, switchgear, transformers and underground cables asset groups. The repex model is a statistical model that forecasts repex for the asset categories based on historical trends, their condition (using age as a proxy) and unit costs.

In addition, the AER also has other assessment tools to determine repex which cannot be modelled using the standard repex model because the assets are more heterogeneous, do not have relevant age profile data, cannot be compared with other businesses, or expenditure tends to be more volatile in nature. Generally, for unmodelled assets, the AER provided three broad categories of SCADA, pole top structures plus a category of "Other" to accommodate special or non "business as usual" expenditure.

7.1.2.1 Repex Modelling

Repex model was first applied to Ergon Energy in the 2015-20 regulatory control period.

The asset categories modelled are poles, overhead conductors, services, switchgears, transformers and underground cables.

Table 8 is a summary of the expenditure outputs (converted into real $2024-25) from the repex models for the 2015-20[41] and 2020-25 final decisions.

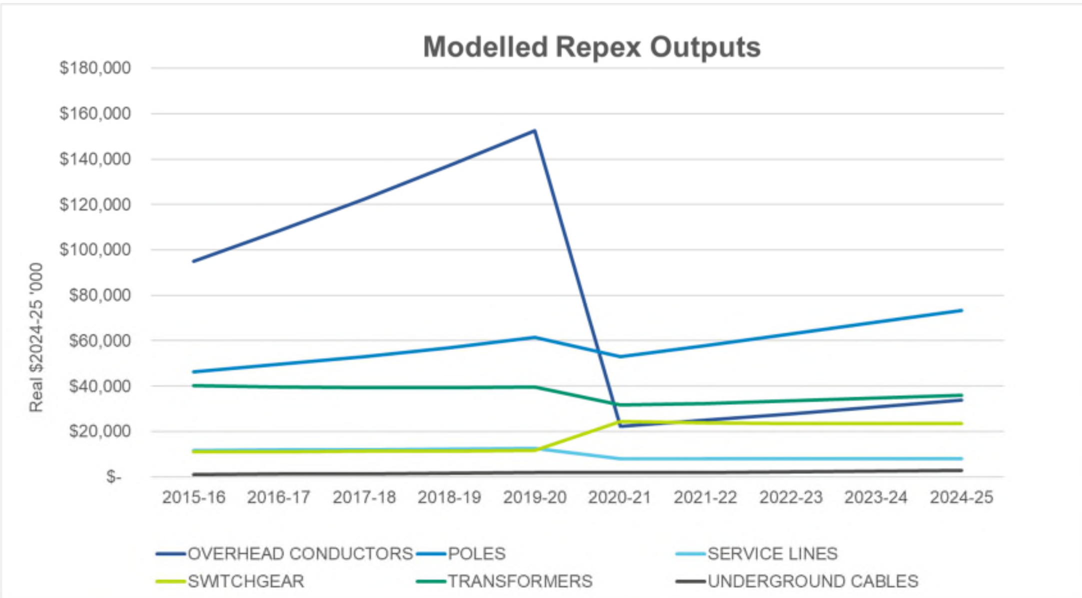
[41] AER – Final decision Ergon Energy - Repex model (Lives Scenario Output) - April 2015

Table 8: Repex Model Outputs

Repex - Asset Group	Replacement expenditure forecast ($,000) Real $ 2024-25					Replacement expenditure forecast ($,000) Real $ 2024-25				
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
OVERHEAD CONDUCTORS	$ 95,057	$ 108,313	$ 122,383	$ 137,164	$ 152,541	$ 22,286	$ 24,981	$ 27,811	$ 30,766	$ 33,834
POLES	$ 46,378	$ 49,591	$ 53,115	$ 57,025	$ 61,378	$ 52,905	$ 57,855	$ 62,921	$ 68,103	$ 73,412
SERVICE LINES	$ 11,607	$ 11,800	$ 11,986	$ 12,178	$ 12,385	$ 7,846	$ 7,833	$ 7,838	$ 7,864	$ 7,914
SWITCHGEAR	$ 10,867	$ 10,991	$ 11,175	$ 11,406	$ 11,676	$ 24,349	$ 23,831	$ 23,524	$ 23,392	$ 23,406
TRANSFORMERS	$ 40,075	$ 39,581	$ 39,392	$ 39,452	$ 39,728	$ 31,791	$ 32,421	$ 33,392	$ 34,614	$ 36,036
UNDERGROUND CABLES	$ 1,095	$ 1,195	$ 1,331	$ 1,510	$ 1,741	$ 1,742	$ 1,938	$ 2,155	$ 2,396	$ 2,667
Total Modelled Repex	**$ 205,078**	**$ 221,471**	**$ 239,382**	**$ 258,734**	**$ 279,449**	**$ 140,918**	**$ 148,859**	**$ 157,640**	**$ 167,136**	**$ 177,269**

Figure 7 shows the trends of outputs from AER's repex model for the six modelled asset categories.

Figure 7: Modelled Repex Outputs

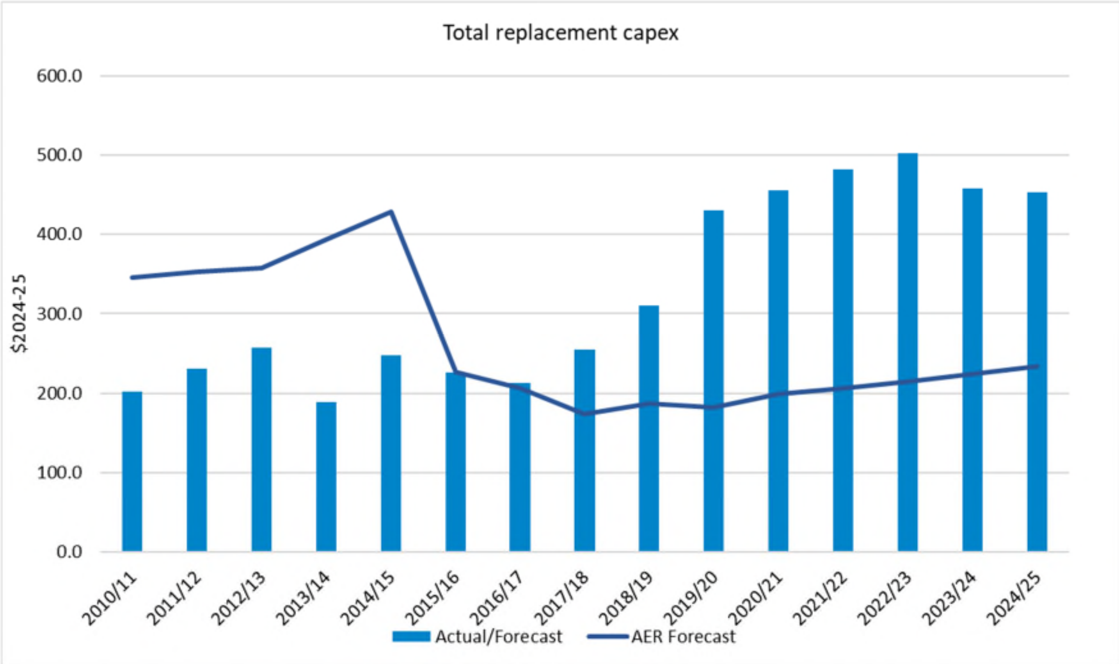


As discussed in Section 3, the AER did not adopt the 2015-20 repex model in its entirety; resulting in a total modelled repex forecast of $542.2 million ($2014-15) instead of the total of $911 million ($2014-15) as calculated in the repex model.

7.1.2.2 Historical Replacement Capex

Figure 8 below is a chart which shows Ergon Energy's expenditure on replacement capex since 2010.

Figure 8: Historical replacement capex



Key observations of Ergon Energy's historical spend on replacement capex are:

- 2010-15 regulatory control period,
  - AER repex forecast for the regulatory control period was $1,877 million compared to actual repex of $1128 million.
  - Actual repex averaged $226 million per year; well below the AER's repex forecast of $375 million per year.
  - In 2013-14, the actual repex was $189 million; less than 50% of AER's repex forecast of $394 million.
- 2015-20 regulatory control period,
  - AER's repex forecast for the regulatory control period was $977 million; a reduction of 48% compared to the 2010-15 regulatory period.
  - 2015-16 and 2016-17 saw the continuation of low expenditure in replacements of network assets.
  - From 2017-18 onwards, concerted efforts were made to undertake replacement of ageing assets on a sustainable basis to ensure a safe and reliable network.
  - Replacement capex at the end of the period (2019-20) of $430 million is 90% higher than that at start of the regulatory control period (2015-16) of $226 million.
  - The actual repex for the regulatory control period was $1,435 million; exceeding the repex forecast by $458 million.
- 2020-2025 regulatory control period,
  - AER's repex forecast for this regulatory control period was $1,078 million.
  - This is $357 million below the actual spend over the 2015-20 regulatory control period.

- The actual spend in the first three years of the regulatory control period of $1,439 million is already above the AER's forecast for the regulatory control period.
- The key drivers are increased pole replacements and the clearance program to address the safety compliance concerns.
- Increase pole replacements resulted in increase in replacements of assets attached to the pole such as crossarms, switches and transformers.

7.1.3 Connection Capex

Connections capex relates to capex incurred in connecting new customers to the network. New connection works can be undertaken by Ergon Energy or a third party. The new customer may be required to make a contribution towards the cost of the new connection assets. This contribution can be in cash (Type 1) or in the form of contributed or gifted assets (Type 2).

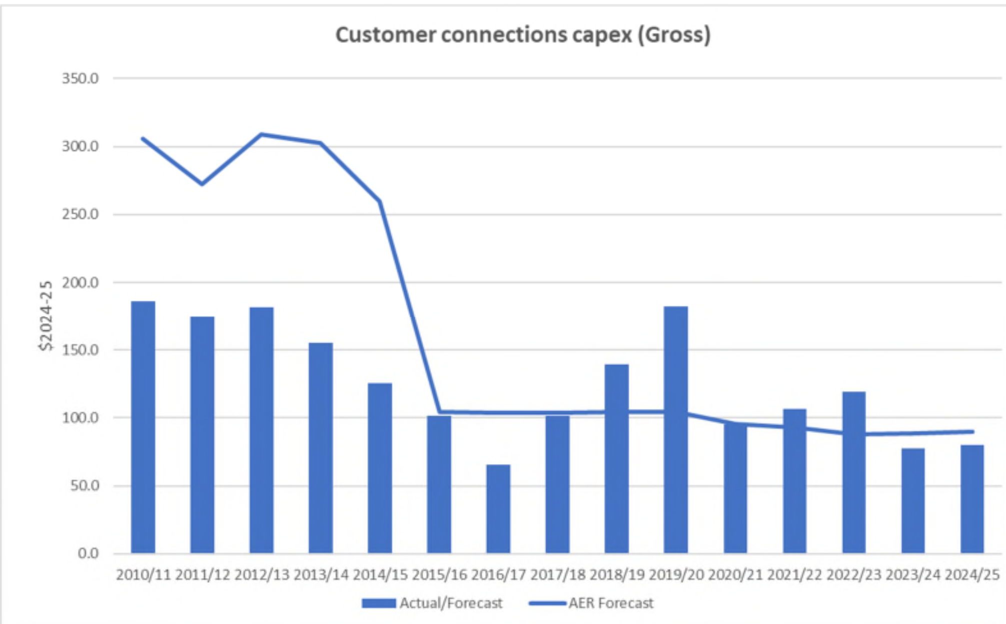
Where assets are gifted, the construction is typically undertaken as alternative control services. Historically, any gifted asset from a tax perspective is regarded as revenue and tax is payable. To recover the tax, a derived value of these assets is included with other cash contributions as part of standard control building block revenue calculation.

Tax treatment on gifted assets changed in October 2020 whereby gifted assets do not constitute tax revenue. As such, the value of these assets no longer needs to be included with as capital contributions. Ergon Energy subsequent incorporated this into the RIN reporting from 2020-21 onwards. However, recent discussions with the AER suggest that as the determination was done under the old tax rules in relation to gifted assets, the gross capex reported as well as capital contributions need to include gifted connection assets for this control period. As such RIN reporting should continue to be on the same basis. An amended RIN will be submitted to the AER to comply with the requirement.

The analysis in this ex post is based on the AER requirement and will not align with the numbers in current 2020-21, 2021-21 and to 2022-23 RIN.

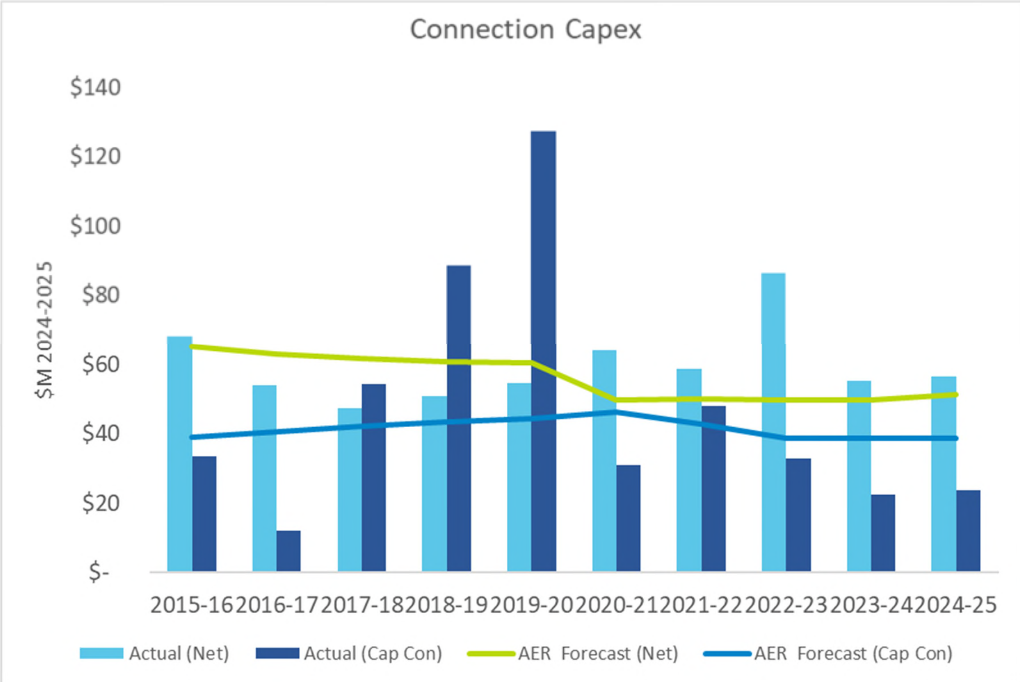
Figure 9 below is a chart which shows Ergon Energy's connection capex since 2010.

Figure 9: Historical Connection Capex



An analysis of the connex by category is shown in Figure 10 below.

Figure 10: Connection Capex by Category



The connection expenditure estimated for 2022-23 to 2024-25 is higher than the AER's connex forecast due to the unanticipated impact of Covid-19 on migration in regional Queensland and the associated increase in new connections.

Furthermore, our 2020-25 investment proposals were completed on the back of a construction boom (prior to the Covid-19 pandemic) when a slowdown in construction was anticipated for the 2020-25 period.

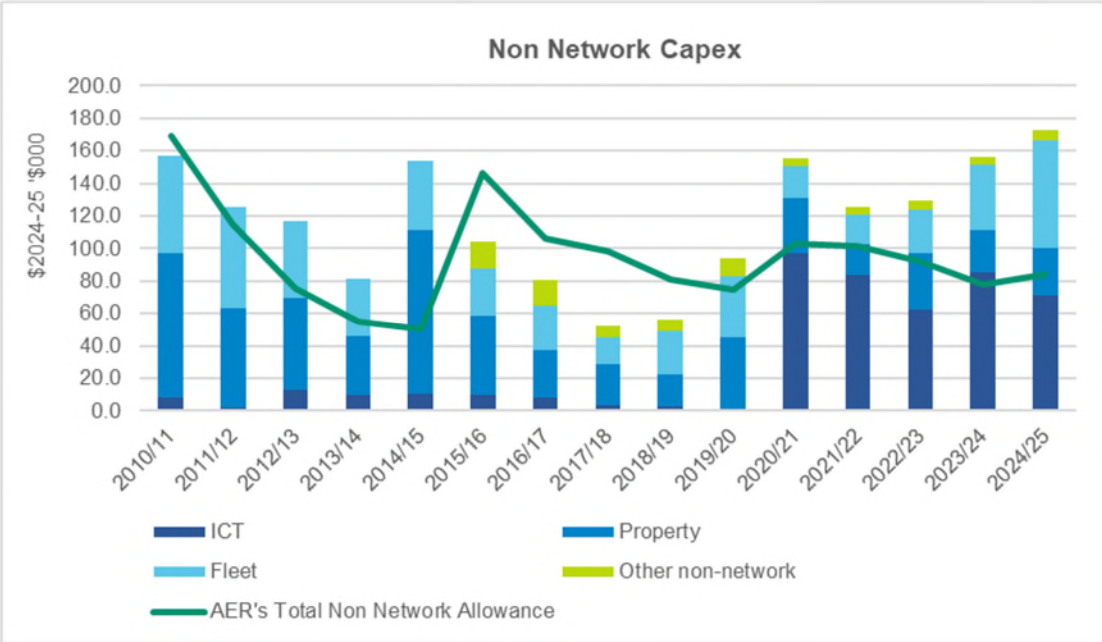
7.2 Non Network Capex

An analysis of Ergon Energy's historical network non capex of ICT, property, fleet and other non-network capex expenditure is presented in Figure 11 below.

Key observations are:

- In the 2010-15 and 2015-20 regulatory control periods, non network capex is dominated by expenditure in property and fleet.
- At that time, ICT service were provided on the basis of a service level agreement with SPARQ Solutions; an in-house provider of ICT services.
- ICT expenditure incurred by SPARQ was classified as a capitalised overhead rather than non-network capex.
- For the 2020–25 regulatory control period, ICT capex was classified as a capex category within the non network capex.
- ICT capex is now the dominant capex contributing over 50% of the annual non- network capex.

Figure 11: Historical Non network capex



7.3 Capitalised Overheads

Figure 12 below is a chart which shows Ergon Energy's capitalised overheads expenditure since 2010.

Key observations of the trends in capitalised overheads are:

- Capitalised overheads expenditure closely follows the total capex;
- In the 2010-15 and 2015-20 regulatory control periods, capitalised overheads constituted approximately 33 percent of the total capex.
- Since 2020-21, the proportion of capitalised overheads has reduced to approximately 20 percent of capex.

Figure 12: Historical Capitalised Overheads

8 REVIEW PERIOD PERFORMANCE (2018-19 TO 2022-23)

The *review period*[42] for ex post review spans across two regulatory control period and two separate Distribution Determinations.

Unless otherwise stated, all values have been converted to $2024-25 for comparison purposes.

8.1 Augmentation Capex

For the purpose of this document, the categories as assessed and determined in the AER's final decisions are adopted to enable a comparison of actual spend to the AER's forecast. It should be noted that while annual expenditure of augex is reported in RIN 2.3.4, the reports are based on a different matrix focussing on the nature or characteristic of infrastructure investments. While corporate data do capture the information, they are generally reported in a fairly generic basis.

To enable a comparison of actual expenditure to the AER forecast, the AER groups have been amalgamated into larger categories, keeping to the nature of the drivers.

As the expenditure for the total augex over the review period is below the AER forecast, this approach simplifies the comparison while still providing expenditure trends to be analysed.

The three groups are:

- demand-related capex (for its distribution and sub-transmission networks),
- reliability and quality of supply capex,
- other system-enabling capex.

[42] NER S6.2.2A (a1)

Table 9: Review Period Performance by Augex Category

Augex Group	$ 2024-2025 ($million)	2018-19	2019-20	2020-21	2021-22	2022-23	5 year Total
Growth / Demand Driven	AER Forecast	$ 88.7	$ 91.1	$ 45.2	$ 44.2	$ 45.6	$ 314.8
Growth / Demand Driven	Actual	$ 29.6	$ 18.9	$ 23.3	$ 44.5	$ 61.9	$ 178.1
PQ/QoS/WPF/Reliability	AER Forecast	$ 5.7	$ 5.4	$ 5.0	$ 4.5	$ 3.6	$ 24.3
PQ/QoS/WPF/Reliability	Actual	$ 4.9	$ 3.8	$ 2.7	$ 1.6	$ 1.3	$ 14.2
Other system enabling capex	AER Forecast	$ 15.8	$ 13.8	$ 10.6	$ 9.7	$ 11.1	$ 61.1
Other system enabling capex	Actual	$ 5.1	$ 38.4	$ 12.1	$ 10.8	$ 10.5	$ 76.9
TOTAL AUGEX	AER Forecast	$ 110.3	$ 110.3	$ 60.8	$ 58.4	$ 60.3	$ 400.2
TOTAL AUGEX	Actual	$ 39.5	$ 61.1	$ 38.1	$ 56.9	$ 73.7	$ 269.3
CTG/CTS	AER Forecast	$ -	$ -	$ -	$ -	$ -	$ -
CTG/CTS	Actual	$ -	$ -	$ -	$ 22.0	$ 18.8	$ 40.9
TOTAL AUGEX(excl CTG/CTS)	AER Forecast	$ 110.3	$ 110.3	$ 60.8	$ 58.4	$ 60.3	$ 400.2
TOTAL AUGEX(excl CTG/CTS)	Actual	$ 39.5	$ 61.1	$ 38.1	$ 34.9	$ 54.8	$ 228.4

Overall, the actual performance of augex against the forecasts set by the AER over the *review period* is provided in Table 10 below.

Table 10: Augex - Review Period Performance

	Review Period					5 year
$ 2024-2025 ($million)	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
Revised RP	134.4546	$ 133.0	$ 60.9	$ 79.2	$ 59.9	$ 467.6
AER Allowance	110.4829	$ 110.5	$ 60.8	$ 58.4	$ 60.3	$ 400.5
Actual (incl CTG/CTS)	39.51873	$ 61.1	$ 38.1	$ 56.9	$ 73.7	$ 269.3
Actual (excl CTG/CTS)	39.51873	$ 61.1	$ 38.1	$ 34.9	$ 54.8	$ 228.4

Over the review period, Ergon Energy has underspent the AER augex forecast by $131 million. On a like for like basis (i.e. excluding the clearance program), the actual augex is $172 million below the AER forecast.

8.2 Replacement Capex

Overall, Ergon Energy replacement capex over the review period was significantly above the AER repex forecast. Detailed analysis of modelled and unmodelled repex by asset category is provided in accompanying Attachments.

The actual performance of total repex against the repex forecasts set by the AER over the review period is provided in Table 11 below.

Table 11: Repex - Review Period Performance

$ 2024-2025 ($,000)	Total Repex					
	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
RRP	$ 240,536	$ 236,367	$ 284,209	$ 290,471	$ 320,042	$ 1,371,624
AER Final Decision Forecast	$ 187,035	$ 182,603	$ 198,488	$ 206,430	$ 215,194	$ 989,750
Actual (as reported in RIN)	$ 310,467	$ 430,594	$ 455,865	$ 481,890	$ 501,823	$ 2,180,640
RRP	$ 230,930	$ 226,761	$ 274,603	$ 258,273	$ 287,843	$ 1,278,410
Adjusted AER Forecast (without CTG/CTS)	$ 177,429	$ 172,997	$ 181,736	$ 189,677	$ 198,441	$ 920,280
Adjusted Actual (CTG/CTS removed in 18-19,19-20 and 20-21)	$ 272,519	$ 362,732	$ 378,625	$ 481,890	$ 501,823	$ 1,997,590

It is noted that in its 2015-20 final decision, the AER adopted their predictive modelling output for service lines, switchgear, transformers and underground cables but used Ergon Energy's proposed expenditure on pole and overhead conductor replacement. Ergon's forecast in poles and overhead conductors of $84 million and $253 million[43], respectively were lower than the estimates from the predictive modelling of $202 million and $466 million respectively (all in in real $2014-15).

The outcome of the 2015 calibrated AER repex model[44] was $911 million ($2014-15) compared to the final decision of $580 million ($2014-15) for the six modelled asset categories. This is 40% lower than if the repex model was adopted in its entirety.

Table 12 summarised the comparison of repex forecasts had the repex model been adopted in its entirety in the 2015-20 decision.

Table 12: Repex Model based Forecast

$ 2024-2025 ($,000)	Total Repex					
	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
AER Final Decision Forecast	$187,035	$182,603	$198,488	$206,430	$215,194	$ 989,750
Forecast if Repex Model was adopted in its Entirety	$303,232	$313,566	$198,488	$206,430	$215,194	$1,236,911
Actual (as reported in RIN)	$305,061	$422,414	$455,865	$481,890	$501,823	$2,167,054

[43] Ergon's forecast was $216 million for conductor and $37 million for clearance, AER allowance included in clearance program into overhead category (see page 6-104)

[44] AER – Final decision Ergon Energy - Repex model (Lives Scenario Output) - April 2015

8.3 Connection Capex

Overall, Ergon Energy connection capex over the review period is above the AER's forecast. The actual performance of connex against the forecasts set by the AER over the review period is provided in Table 13 below.

Table 13: Connex – Review Period Performance

$ 2024-2025 ($,000)	Gross Connection Capex					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 104,208	$ 104,534	$ 95,847	$ 92,927	$ 88,182	$ 485,698
Actual	$ 139,516	$ 182,191	$ 95,097	$ 106,761	$ 119,372	$ 642,938

8.4 Non Network Capex

Overall, Ergon Energy aggregated non-network capex over the review period was above the AER's forecast; driven by the overspend in ICT and property capex.

The actual performance of the aggregated non-network against the forecasts set by the AER over the review period is provided in Table 14 below.

Table 14: Non-Network Capex – Review Period Performance

$ 2024-2025 ($,000)	Non Network Capex					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 81,373	$ 74,438	$ 103,057	$ 101,184	$ 91,671	$ 451,723
Actual	$ 56,471	$ 94,291	$ 155,413	$ 125,817	$ 129,515	$ 561,507

Details of the components of non-network capex are provided in the following sub-sections.

8.4.1 ICT Capex

Details of ICT expenditure is provided in Attachment J. The actual performance of the ICT expenditure against the forecasts set by the AER over the review period is provided in Table 15 below.

Table 15: ICT Capex – Review Period Performance

$ 2024-2025 ($,000)	Non Network ICT expenditure					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 3,068	$ 7,719	$ 41,293	$ 40,802	$ 39,854	$ 132,737
Actual	$ 2,804	$ 152	$ 96,911	$ 83,604	$ 62,783	$ 246,255

8.4.2 Property Capex

Overall, Ergon Energy property capex over the review period is above the AER forecast. The actual performance of property capex against the forecasts set by the AER over the review period is provided in Table 16 below.

Table 16: Property Capex – Review Period Performance

$ 2024-2025 ($,000)	Non Network Property expenditure					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 27,725	$ 17,647	$ 27,309	$ 16,874	$ 10,286	$ 99,841
Actual	$ 19,318	$ 45,148	$ 33,925	$ 19,097	$ 34,027	$ 151,515

The primary drivers for the overspend over the ex post period relate to:

- the timing of investment in projects due to project phasing and contractor availability, and
- increased costs due to general industry and market conditions

The non-network property forecast can vary significantly year-to-year, as it is often dependent on a small number of major projects. This means that any delay (or early start) to a proposed major project can impact the performance against the AER forecast each year. The AER forecast for the 2015-20 period was heavily weighted towards the start of the period. Of the $214 million ($2024-25) AER estimate for 2015-20, 65 per cent was included in the first two years (2015-16 and 2016-17).

Due to a delay in spend at the start of the 2015-20 regulatory control period, actual expenditure was shifted into the ex post period. There was a corresponding underspend in 2015-16 and 2016-17. Considering property capex spend across both the 2015-20 and 2020-25 periods, this indicates only a minor overspend of $16m, or 5%.

8.4.3 Fleet Capex

Overall, Ergon Energy fleet capex over the review period is below the AER forecast. The actual performance of fleet capex against the forecasts set by the AER over the review period is provided in Table 17 below.

Table 17: Fleet Capex – Review Period Performance

$ 2024-2025 ($,000)	Non Network Fleet expenditure					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 42,283	$ 39,841	$ 29,145	$ 38,160	$ 36,139	$ 185,568
Actual	$ 27,257	$ 37,389	$ 19,415	$ 18,241	$ 26,774	$ 129,076

8.4.4 Other Non Network Capex

Overall, Ergon Energy other non network capex over the review period is below the AER forecast. The actual performance of other non network capex against the forecasts set by the AER over the review period is provided in Table 18 below.

Table 18: Other Non network Capex – Review Period Performance

$ 2024-2025 ($,000)	Non Network Other Non Network expenditure					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 8,297	$ 9,232	$ 5,309	$ 5,348	$ 5,393	$ 33,578
Actual	$ 7,091	$ 11,602	$ 5,161	$ 4,875	$ 5,930	$ 34,660

8.5 Capitalised Overheads

Overall, Ergon Energy capitalised overheads over the review period is above the AER forecast. The actual performance of the capitalised overheads against the forecasts set by the AER over the review period is provided in Table 19 below.

Table 19: Capitalised Overheads – Review Period Performance

$ 2024-2025 ($,000)	Capitalised Overheads					
	2018-19	2019-20	2020-21	2021-22	2022-23	Total
AER Forecast	$ 249,934	$ 249,930	$ 146,451	$ 147,526	$ 148,268	$ 942,110
Actual	$ 225,558	$ 260,124	$ 158,452	$ 178,292	$ 214,107	$ 1,036,534

9 BENCHMARKING

The information contained in this section is based on the AER 2023 Annual Benchmarking Report – Distribution Network Service Providers based on performance up to 2023.

Measured multilateral total factor productivity (MTFP), in 2022 Ergon Energy is ranked seventh among the thirteen distributors in the National Electricity Markey (NEM). Table 20 is an extract from the report which presents the MTFP rankings for individual DNSPs in 2022 and 2021, the annual growth in productivity in 2022 (column four) and the average annual growth in the 2006–2022 and 2012–2022 periods (columns five and six).

Table 20: Individual DNSP MTFP rankings and growth rates[45]

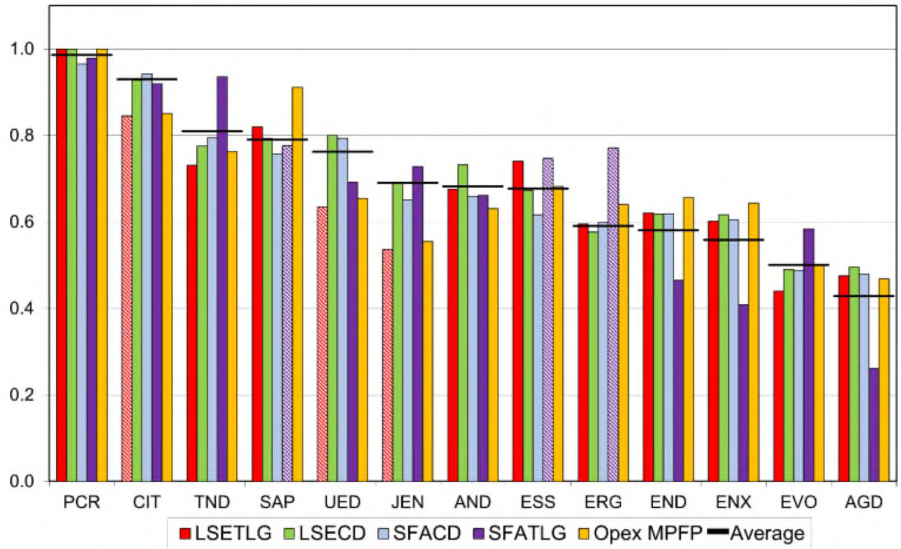
DNSP	2022 Rank	2021 Rank	Change (2022)	Change (2006–2022)	Change (2012–2022)
SAP	1	1	-3.0%	-1.2%	-0.7%
CIT	2↑	3	0.2%	-0.1%	1.0%
ESS	3↑	7	7.0%	0.4%	2.6%
PCR	4↓	2	-5.9%	-0.5%	-0.3%
UED	5↓	4	-3.6%	0.1%	1.5%
END	6	6	-2.3%	-0.5%	0.7%
ERG	7↓	5	-3.3%	0.7%	0.7%
ENX	8	8	-0.2%	-0.2%	0.2%
JEN	9	9	2.0%	0.2%	1.3%
AGD	10↑	13	9.8%	0.9%	2.7%
AND	11↓	10	-1.1%	-1.0%	-0.7%
TND	12↓	11	1.7%	-1.3%	0.0%
EVO	13↓	12	-2.5%	0.0%	1.4%

In summary the AER report states that Ergon Energy

- Reduced our position in the MTFP ranking for DNSPs from 4th in 2021 to 7th in 2022.
- Annual Decrease in MTFP by 3.3% compared to the distribution industry average of 0%.
- Over the period 2006–2021 and 2012-21, MTFP increased by 0.7%
- Ergon sits in the middle of the pack in relation to Opex efficiency scores and opex MPFP, (2012–2021) – see Figure 13.
- On Partial Performance Indicators, comparison with Essential Energy (refer to Figures 15-17 of 2022 Benchmarking report):
    - Total cost per customer - $1,350 per customer compared to $1,100 per customer for Essential.
    - Total cost per kilometre of circuit line - ~ comparable cost of $5,000 per km for both DNSPs.
    - Total cost per MW of maximum demand ~$335,000 for both DNSPs.

[45] Table 1 AER 2022 Annual Benchmarking Report – Distribution Network Service Providers -November 2023

Figure 13:Opex efficiency scores and opex MPFP (2006-2022)[46]

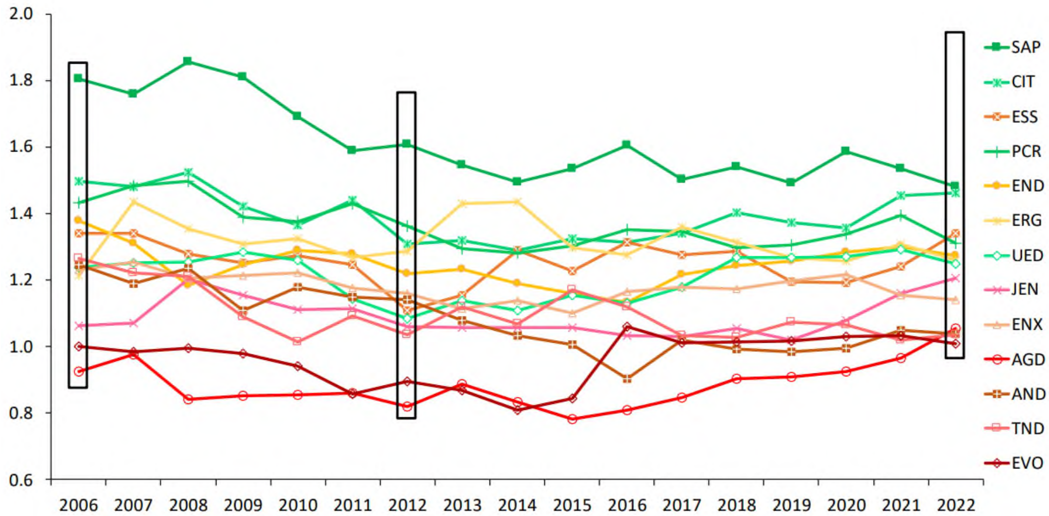


9.1 Capital expenditure benchmarking and commentary

In the context of the ex post review, our performance in capital productivity is an important measure.

Figure 14 is an extract from the report which presents the capital benchmarking rankings for individual DNSPs from 2006-2022.

Figure 14: DNSP capital multilateral partial factor productivity indexes, 2006-2022[47]



[46] Figure 18 AER 2023 Annual Benchmarking Report – Distribution Network Service Providers -November 2023

[47] Figure 13 AER 2023 Annual Benchmarking Report – Distribution Network Service Providers -November

On page 66 of the report, the AER stated that "*our benchmarking models do not directly account for differences in legislative or regulatory obligations, climate and geography*". While this would primarily have an impact on opex, the vast geographical spread of our network and the challenges we have with weather and access to the network to undertake capital expenditure, this is likely to have an impact on our performance in this type of benchmarking activity.

As Figure 14 shows, despite these geographical challenges we rank third in the productivity index, only slightly below Citipower. While we have increased our capital expenditure over the last 5 years, we have only seen a slight downward trend. This result reflects our efficient level of capital expenditure over the last 15 years, and the expenditure in the last five years should be seen in this context.

As we have outlined in our regulatory proposal, we invested prudently and efficiently over previous regulatory periods. However, in the last five years, our expenditure has increased as our network condition has required us to replace more assets than historically was the case. Taken in totality, we believe that our asset management strategy and plans, and capital investment processes have resulted in an efficient expenditure, maximising the value to our customers over the long term.

10 COST COMPARISON REVIEW

Our expenditure in both the ex-post review period and the forward 2025-2030 regulatory control period has a significant portion of expenditure relating to the replacement of defective poles, and the replacement of deteriorating overhead conductors. Typically, when we replace a defective pole, we would also replace assets that are attached to the pole when it is prudent and efficient to do so. Similarly, replacement of overhead conductors can involve replacement of poles (and attached assets) as the "bundling" of works is commonly accepted as good industry practice and is prudent.

As such, we developed a "basket of goods" approach to compare our costs to other Distribution Network Service Providers (DNSPs) in the National Electricity Market (NEM). We have used the historic unit rate performance, as revealed in Regulatory Information Notices (RIN) submitted to the AER.

Supporting document *Cost Comparison of Ergon RIN Unit Costs to the NEM* sets out the approach and compares our "basket of goods" cost to other DNSPs in the NEM.

The "basket of goods" covers the following bundled works:

- Pole Replacement – comprised of costs associated with pole replacements, pole-top structure (predominantly cross-arms), switches, services, transformers and overhead conductors.
- LV Conductor Replacement – comprised of costs associated with replacement of the conductor, pole, switches, pole-top structures, services and transformers.
- HV Conductor Replacement - comprised of costs associated with replacement of the conductor, pole, switches, pole-top structures, services and transformers.
- Transformer Replacement - comprised of costs associated with replacement of transformers and fuses.

This analysis shows that we compare favourably with DNSPs across the NEM, demonstrating our efficiency in delivery of our program of work.

11 INTERACTION WITH CAPITAL EXPENDITURE SHARING SCHEME

The Capital Expenditure Sharing Scheme (CESS) provides ex ante incentives for network businesses to undertake efficient capex during a regulatory control period. Network businesses that underspend their capex forecast are rewarded, and a penalty imposed for businesses that overspend their capex forecast.

CESS will be applicable to Ergon Energy over the review period. With this ex post review, any inclusion or exclusion of these costs above the AER's forecast to or from the RAB will have an impact on the CESS calculation.

12 KEY OBSERVATIONS AND FINDINGS

Ergon Energy submits that the capex expenditure over the review period is prudent and efficient to enable it to maintain and operate its extensive and ageing network in compliance with its regulatory obligations as a distribution network service provider.

Ergon Energy accepts that the AER forecasts for the 2015-20 and 2025-25 Regulatory Determinations based on the information in Ergon Energy's regulatory proposals were reasonable.

However as shown in the detailed analysis in attachments provided, the forecasts are below what is required for Ergon Energy as a prudent operator to meet its regulatory obligations associated with the provision of standard control services. In particular, the forecasts pole replacements is below a reasonable amount required for Ergon Energy to operate and maintain the network safely and in compliance with its regulatory obligation.

The key factors for the overspending above the AER forecasts are:

- Ergon made some errors its forecast – in particular, pole replacement volumes and its forecast unit costs.
- Ergon did not provide sufficient information in its regulatory proposals and revised regulatory proposals to the AER /consultant to make a reasonable decision.
- Ergon's business cases lacked robust risk assessments to justify its forecast expenditure
- Change in serviceability calculator (also known as pole strength algorithm) resulted in increased volume of pole replacements.
- Higher spend of consequential replacements of other assets (pole top structures, transformers, switches, etc) due to increase pole replacements.
- On page 8 of its paper *Better regulation: Expenditure forecast assessment guideline for electricity distribution, August 2022*, the AER stated.

> *Past actual expenditure may not be an appropriate starting point for capex given it is largely non-recurrent or 'lumpy', and so past expenditures or work volumes may not be indicative of future volumes. For non-recurrent expenditure, we will attempt to normalise for work volumes and examine per unit costs (including through benchmarking across DNSPs) when forming a view on forecast unit costs.*

- However, we note that the AER decisions are typically biased towards past expenditure. Due to Ergon's historically low repex spend, the forecasted amounts set by the AER are below what is required for Ergon to maintain its network to meet its legislative and regulatory obligations.

To facilitate the ex post review of the overspend over the review period, Ergon Energy will submit supporting documents including:

- Justification papers of replacement capex by asset category to align and compare with the AER's final decisions.
- While we will self fund the overspend in ICT, Appendix J sets out details of ICT capex over the review period for the purpose of AER analysis.
- Post implementation reviews of relevant repex asset categories which detail cost benefit analysis to justify the prudency of expenditure incurred.
- Independent assessment by EA Technology on pole replacements.

13 SUMMARY OF REVIEW PERIOD

Summary of AER forecast and actual spend by category over the review period is provided in Table 21. Unless otherwise stated, all values have been converted to $2024-25. It is noted that the analysis in this ex post submission excludes adjustments of actual disposal to forecast disposal which will have an impact on the quantum of overspend.

Table 21: Review Period: Actual Capex against AER Forecast

Ex post Review Period Total $M 2024-2025	AER Forecast	Actual (as per RIN)	Variation $million	Variation per cent
Augmentation capex	$ 400.2	$ 269.2	-$ 130.9	-33%
Customer connections capex (gross)	$ 485.7	$ 642.9	$ 157.2	32%
Asset replacement capex	$ 989.6	$ 2,180.6	$ 1,191.1	120%
Non-network capex	$ 451.7	$ 561.5	$ 109.7	24%
Capitalised overheads	$ 942.1	$ 1,036.5	$ 94.4	10%
Total Gross Capex	$ 3,269.3	$ 4,690.8	$ 1,421.5	43%
Capital Contributions included	$ 215.0	$ 328.2	$ 113.1	53%
Total Net Capex (excl disposals)	$ 3,054.2	$ 4,362.6	$ 1,308.4	43%

As can be seen from Table 21, the overspend over the review period is predominantly in replacement capex. Overall, the overspend amounts to $1,308 million or 43% over the AER forecast as determined for the 2015-20 and 2020-25 regulatory control periods.

As discussed in Section 8.4.1, Ergon Energy will self-fund the overspend in ICT capex. Table 22 sets out the comparison of actual (with ICT capex to align with AER's forecast) to AER's forecast.

Table 22: Review Period: Adjusted Capex against AER Forecast

Ex post Review Period Total $M 2024-2025	Notes	AER Forecast	Actual / Adjusted actual (Note 1)	Variation $million	Variation per cent
Augmentation capex		$ 400.2	$ 269.2	-$ 130.9	-33%
Customer connections capex (gross)		$ 485.7	$ 642.9	$ 157.2	32%
Asset replacement capex		$ 989.6	$ 2,180.6	$ 1,191.1	120%
Non-network capex	Note 1	$ 451.7	$ 447.9	-$ 3.8	-1%
Capitalised overheads		$ 942.1	$ 1,036.5	$ 94.4	10%
Total Gross Capex		$ 3,269.3	$ 4,577.3	$ 1,308.0	40%
Capital Contributions included		$ 215.0	$ 328.2	$ 113.1	53%
Total Net Capex (excl disposals)		$ 3,054.2	$ 4,249.1	$ 1,194.9	39%

Excluding the overspend in ICT, capex over the review period is $1,195 million or 39% over the AER forecast.

14 EX POST REVIEW ASSESSMENT

As set out in the AER's CEIG, the ex post review process comprises of a 2-stage process. Due to the significant amount of overspend, the stage 2 process will be triggered, and a detailed assessment by the AER will be required.

As discussed in Section 3 and Section 4, two AER decisions on the repex forecasts in the 2015-20 and 2020-25 determinations have resulted in the lower than otherwise repex that falls within the review period.

- In the 2015-20 determination, the AER adopted Ergon's lower erroneous forecast in repex for poles and conductors but substituted the higher forecast with outputs from the repex model for the four remaining asset categories. Ergon believes that the AER should have been adopted the repex model in its entirety.
- In 2020-25, the AER conducted a project and program level analysis assessment on clearance program and low voltage safety. A specific allowance for the safety program was added to the replacement of services but not for the clearance program. This is also contrary to the 2015-20 decision where a specific allowance was added to the overhead conductor category.

On that basis, and for the purpose of this ex post review, Ergon Energy submits that assessment for the stage 2 to determine the quantum of overspend should be adjusted to account for the issues above.

A summary of Ergon Energy analysis is provided in Table 23 below.

Table 23: Stage 2 Ex post Expenditure

Ex post Review Period Total $M 2024-2025	Notes	AER Forecast - Adjusted	Actual - Adjusted	Variation $million	Variation per cent
Augmentation capex	Note 1	$ 400.2	$ 228.4	-$ 171.7	-43%
Customer connections capex (gross)		$ 485.7	$ 642.9	$ 157.2	32%
Asset replacement capex	Notes 2, 3	$ 1,237.0	$ 1,997.6	$ 760.6	61%
Clearance Program	Notes 4, 5	$ 69.4	$ 223.8	$ 154.4	222%
Non-network capex	Note 6	$ 451.7	$ 447.9	-$ 3.8	-1%
Capitalised overheads		$ 942.1	$ 1,036.5	$ 94.4	10%
Total Gross Capex		$ 3,586.1	$ 4,577.3	$ 991.2	28%
Capital Contributions included		$ 215.0	$ 328.2	$ 113.1	53%
Total Net Capex (excl disposals)		$ 3,371.1	$ 4,249.1	$ 878.0	26%

Note 1: Actual has been adjusted down to exclude augex for clearance that was included in RIN

Note 2: AER forecast adjusted up based on repex model being adopted in its entirety in 2015-20 RCP

Note 3: Actual has been adjusted down to exclude repex for clearance that was included in RIN

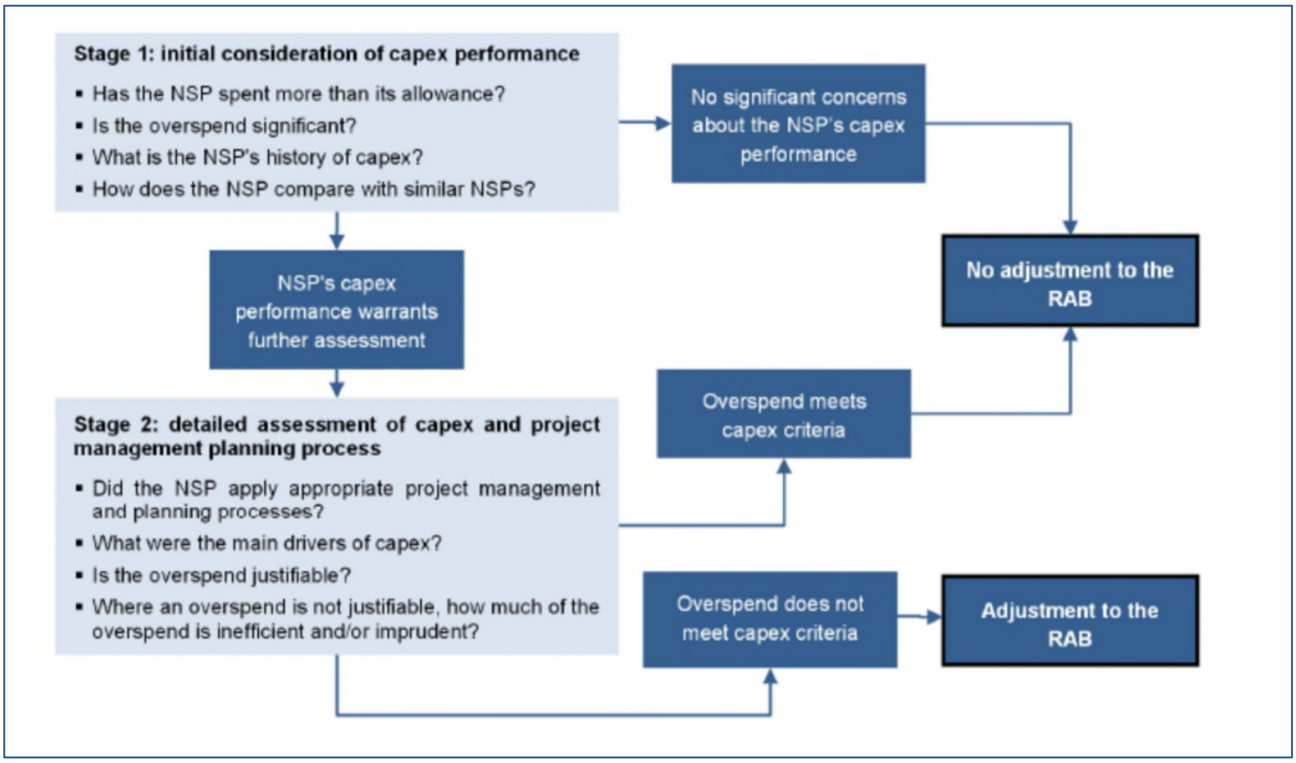
Note 4: Assuming a specific allowance provided for Clearance program by the AER in the 2020-25 RCP

Note 5: Clearance program removed from augex and repex to be assessed in isolation

Note 6: Actual has been adjusted down to exclude expenditure above AER's forecast for ICT

Appendix 1: Ex post Review Process

Staged process for ex post review



Appendix 2: Queensland Electrical Safety Regulation 2013

207 Clearance of overhead electric lines from ground

(1) An electricity entity must ensure the distance from the conductors of its overhead electric lines to the ground is as required under—

(a) for an overhead electric line, including a high voltage overhead service line—schedule 4, parts 1 and 3; and

(b) for a low voltage overhead service line—schedule 5, part 1.

(2) Subsection (1) does not apply to electric cables known as aerial bundled cables installed with a clearance from the

208 Clearance of overhead electric lines from structures

(1) An electricity entity must ensure the distance from the conductors of its overhead electric lines to a structure is as required under—

(a) for an overhead electric line, including a high voltage overhead service line—schedule 4, parts 2 and 4; and

(b) for a low voltage overhead service line—schedule 5, part 2.

(2) Subsection (1) does not apply to electric cables known as aerial bundled cables installed with a clearance from a structure decided by the electricity entity to be a safe clearance considering the nature of the cables and their location.

Appendix 3: Major Project list

Top Project ID	2018-19	2019-20	2020-21	2021-22	2022-23	Grand Total	Description	Category
00281906	$ 63,537	$ 153,392	$ 915,995	$ 14,466,443	$ 23,908,695	$ 39,508,062	WBN MO28 CHILDERS-GAYNDAH REBUILD	Repex
00278928	$ 79,294	$ 201,182	$ 1,164,613	$ 4,349,550	$ 12,325,842	$ 18,120,481	NQ Garbutt 132/66/11kV substation (T046)	Repex
00253021	$ 3,751,377	$ 3,773,348	$ 2,411,063	$ 2,260,287	$ 1,350,215	$ 13,546,289	MK MACTSS refurbishment/rebuild	Repex
00264109	$ 54,326	$ 165,479	$ 1,538,320	$ 3,023,881	$ 7,470,365	$ 12,252,372	WBS ARPCBRM KILK RPLC 3CB's,6CT's&3VTs	Repex
00240584	$ 2,026,545	$ 5,713,292	$ 1,179,035	$ 1,902,274	$ 174,526	$ 10,995,672	CA DYSART 66/22kV TFs	Repex
00265602	$ 1,008,765	$ 3,225,007	$ 1,070,547	$ 1,653,251	$ 1,134,971	$ 8,092,542	WBS HOWARD SUBSTATION REFURB WORK	Repex
00254267	$ 675,766	$ 3,745,317	$ 2,108,018	$ 559,572	$ 18,422	$ 7,107,095	SW BS RPL YARA RPLC TX1 & TX2 BAYS	Repex
LVSAFS23					$ 6,784,087	$ 6,784,087	CA57LV Saftey Device Redback - STH 22/23	Repex
00257797	$ 115,729	$ 1,513,312	$ 1,678,930	$ 1,572,234	$ 1,497,677	$ 6,377,884	WB ARP CBRM BUND ASSET REPLACEMENT	Repex
00328360		$ 37,064	$ 1,693,075	$ 2,911,552	$ 1,404,731	$ 6,046,422	TELCO ETHERNET AGED REPLACEMENT 2019-21	Repex
00309653		$ 3,141,527	$ 2,838,061	$ 876		$ 5,980,464	SO LV NETWORK MONITORING PILOT	Repex
00296503	$ 84,867	$ 463,649	$ 219,276	$ 1,069,594	$ 3,570,697	$ 5,408,083	NQ NI K N Douglas Shire Reinforceme	Repex
00265897	$ 167,225	$ 153,493	$ 360,241	$ 2,880,305	$ 1,244,154	$ 4,805,418	CA BLACKWATER SUB REFURB	Repex
00292648	$ 1,160	$ 23,108	$ 87,235	$ 342,892	$ 4,347,540	$ 4,801,935	SOCW CBRM BARC REPLACE 1 TR	Repex
00278968	$ 73,714	$ 93,555	$ 953,794	$ 1,215,506	$ 1,977,696	$ 4,314,265	SW WETOSS REPLACE 3 CBs	Repex
328172		$ 21,755	$ 64,931	$ 1,552,841	$ 1,915,517	$ 3,555,044	FD RPL BUND-FARN 66KV CU REPLACE	Repex
00254126	$ 959,971	$ 312,510	$ 1,092,635	$ 673,105	$ 128,240	$ 3,166,462	CA LAKES CREEK SUB REFURB REPLACE	Repex
00299547	$ 10,923	$ 9,078	$ 144,589	$ 1,221,069	$ 12,589,225	$ 13,974,884	NQ CANN & JUPO 66kV Reinforcement	Augex
00251190	$ 45,404	$ 721,853	$ 2,720,808	$ 1,680,531	$ 753,226	$ 5,921,822	CE Gracemere 66/11kV Zone Sub	Augex
00251220	$ 7,006	$ 205,076	$ 1,413,372	$ 894,069	$ 3,114,842	$ 5,634,366	CA Egans Hill-Gracemere 66kV Line Constr	Augex
00325188			$ 5,223,089			$ 5,223,089	TSV - Garbutt OCCN - Operational Telco	Augex
00279034	$ 8,900	$ 84,100	$ 302,597	$ 1,325,496	$ 1,928,161	$ 3,649,254	SW SUBSTN SECURITY FENCING SOUTHRN STG1	Augex