Attachment E Transformers Ex post Review of Ergon Energy 2018-2023 Capital Expenditure

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ERGON ENERGY NETWORK
Part of Energy Queensland

Note

This attachment forms part of Ergon Energy's justification of the ex post review of its 2018-2023 capital expenditure for submission to the AER as part of its 2025-30 Regulatory Proposal. It should be read in conjunction the main document.

The ex post review submission includes the following documents.

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

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	Non Network Capex

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1 BACKGROUND

Transformers are a broad asset category and are generally grouped into substation transformers and distribution transformers. Substation transformers are located within a zone substation and generally are at sub-transmission voltages (>22kV) and are ground mounted outdoor transformers. Distribution transformers are transformers which reduce high voltage distribution voltages (22kV and under) to household voltages (typically 240V or 415V) and include pole mounted and kiosk mounted transformers.

Our expenditure on transformer replacements over the review period[1] was above the AER's forecast by $201.7 million ($2024-25). We have conducted a Post Implementation Review (PIR) on our distribution transformer replacements to evaluate outcomes and benefits of the expenditure, which is the highest contributor to the expenditure in this period. The PIR on distribution transformer replacements is set out in supporting document 5.3.16. Our substation transformers are typically replaced, and cost justified in individually approved projects through a Project Approval Report.

This paper provides the background and analysis of Ergon Energy's expenditure on transformer replacements to identify the causes and drivers behind the expenditure.

2 ASSET MANAGEMENT PRACTICE

The asset management practice of distribution transformers is set out in our Asset Management Plan for Transformers. In addition, a concise overview of these practices can be found in Section 8.3.6 of the Ergon Energy Distribution Annual Planning Report (DAPR) for 2022.

Ergon's strategy for the replacement of distribution transformers is reactive replacement, due to either electrical failure or identified poor condition as assessed by an asset inspection. Ergon also considers the replacement of distribution transformers when undertaking pole replacements, reconductoring and other distribution lines projects to gain works efficiencies across multiple asset classes.

Ergon's substation transformer replacement strategy involves a combination of proactive replacement based on condition, typically identified utilising Condition Based Risk Management (CBRM), with a small portion of expenditure involved in replacing transformers upon failure or defect, which is classed as reactive. Because of the nature of replacement being an individual site assessment and the level of expenditure heavily weighted to our distribution transformer population, we have largely focused on distribution transformers rather than substation transformers.

[1]The review period as defined in NER S6.2.2A(a1) is 2018-19 to 2022-23

3 DISTRIBUTION TRANSFORMERS PERFORMANCE

As per 2021-22 RIN data, Ergon Energy have a total of 102,742 distribution transformers. Figure 1, Figure 2 and

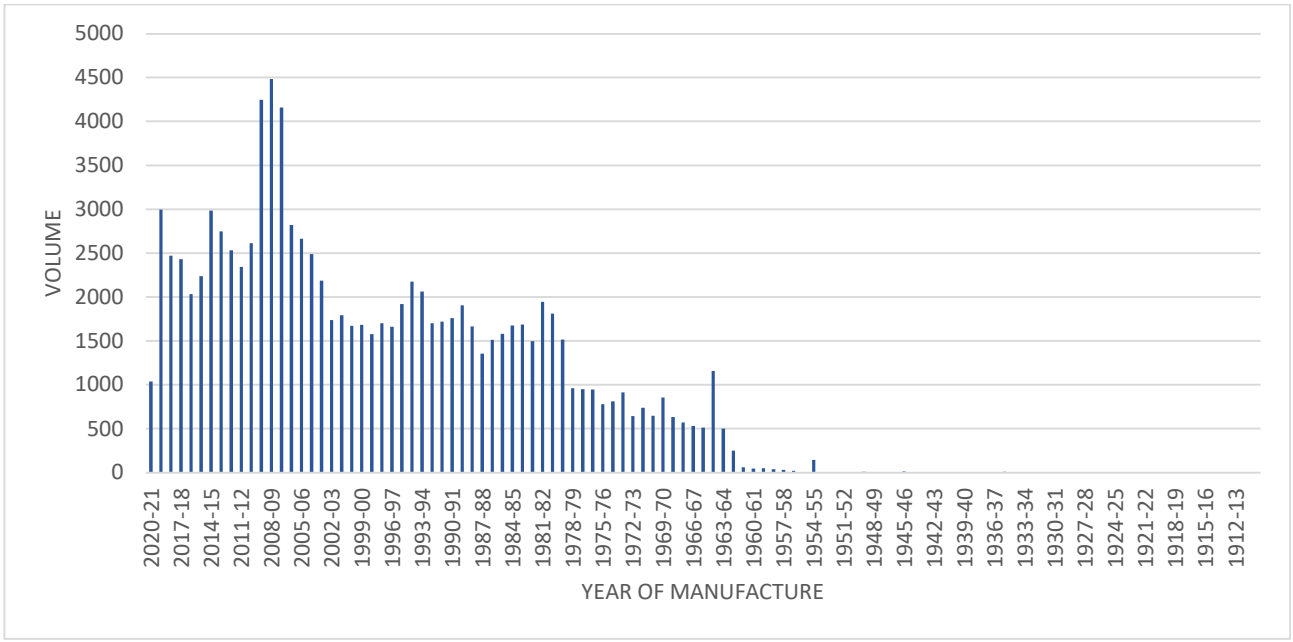


Table 1 below present the age distribution of the transformers. The majority of our transformer population is relatively young, with over 90% of our transformers being under 45 years.

Figure 1: Sub-transmission transformer asset age profile

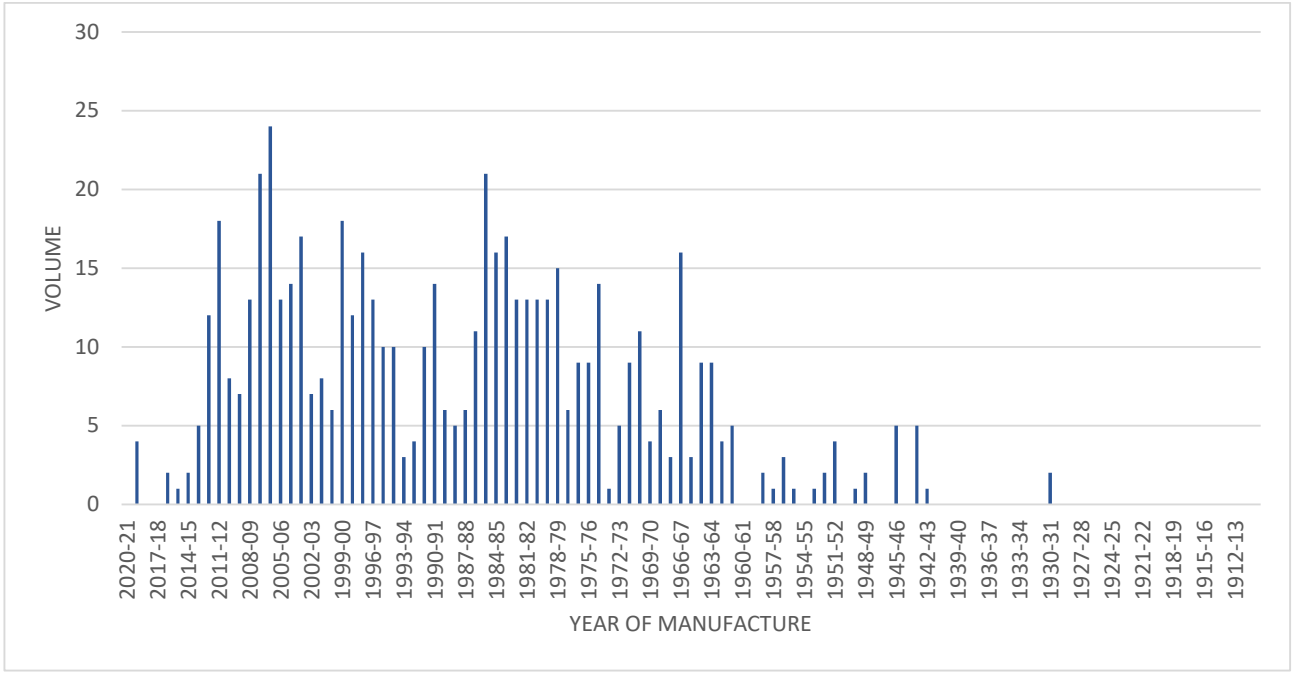


Figure 2: Distribution transformer asset age profile

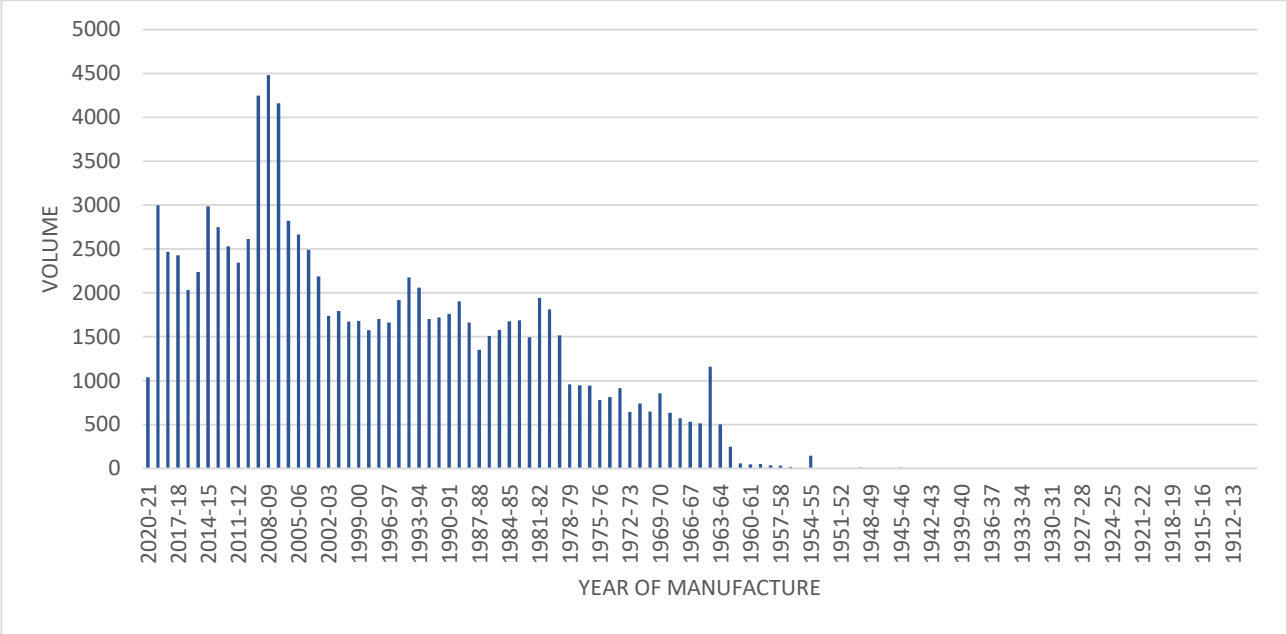


Table 1 : Percentage of transformers in different age categories

Age	Transformers	Proporton
Under 45 Years	94,208	90%
45 Years and over	10,633	10%

4 2015-20 DISTRIBUTION DETERMINATION

Transformers are a pre-defined asset group in the AER repex model, a predictive modelling tool used to estimate forecast replacement volumes and expenditure. A high-level review of the 2015-20 Regulatory Determination process was undertaken to determine the basis and reasons of the AER decision on the allowances provided for pole replacements.

Unless otherwise stated, all values in this section are in are $2014-15.

Table 2 is a summary of information on transformer replacements from the 2015-20 Regulatory Determination.

Table 2: 2015-20 Transformer Replacements

TRANSFORMERS 2015-2020 Determination						
$ 2014-2015 ($,000)	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total
Revised Regulatory Proposal	$ 37,481	$ 39,835	$ 34,988	$ 42,706	$ 44,647	$ 199,656
Repex Model Final Decision	$ 30,328	$ 29,955	$ 29,811	$ 29,857	$ 30,066	$ 150,016
AER Final Decision Forecast	$ 30,328	$ 29,955	$ 29,811	$ 29,857	$ 30,066	$ 150,016
Volume (units)	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**Total**
Revised Regulatory Proposal	1,172	1,196	1,284	1,176	1,195	6,023
Repex Model Final Decision	1,362	1,374	1,387	1,401	1,418	6,941
AER Final Decision Forecast	1,362	1,374	1,387	1,401	1,418	6,941
Unit Cost ($)	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**Average**
Revised Regulatory Proposal	$ 31,980	$ 33,307	$ 27,249	$ 36,314	$ 37,361	$ 33,242
Repex Model Final Decision	$ 22,261	$ 21,806	$ 21,501	$ 21,310	$ 21,210	$ 21,618
AER Final Decision Forecast	$ 22,261	$ 21,806	$ 21,501	$ 21,310	$ 21,210	$ 21,618

Key points in relation to transformer replacements are:

- In our RP we forecast transformer repex of $177 million over the regulatory control period.
- Following some adjustments, the repex amount was corrected to $197 million.
- In its assessment, EMCa found evidence of the application of CBRM to transformers but did not find sufficient analysis to support the proposed forecast[2].
- In our RRP we proposed a transformer repex of $200 million.
- Based on information provided by Ergon Energy, EMCa maintained its position that there was insufficient analysis to justify the level of expenditure proposed in the RRP[3].
- The AER adopted the outcome from its final repex model output and provided a forecast of $150 million for the 2015-20 regulatory control period.

5 2020-25 DISTRIBUTION DETERMINATION

A comparison of the expenditure, volume and unit cost from the 2020-25 regulatory determination process is provided in Table 3 below.

Unless otherwise stated, all values in this section are in are $2019-20.

Table 3: Summary of 2020-25 Proposals and Decisions

TRANSFORMERS 2020-2025 Determination						
$ 2019-2020 ($,000)	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	Total
Revised Regulatory Proposal	$ 37,037	$ 37,851	$ 43,097	$ 48,476	$ 52,935	$ 219,396
Repex Model Final Decision	$ 26,226	$ 26,745	$ 27,546	$ 28,554	$ 29,728	$ 138,799
AER Final Decision Forecast	$ 26,226	$ 26,745	$ 27,546	$ 28,554	$ 29,728	$ 138,799
Volume (units)	**2020-2021**	**2021-2022**	**2022-2023**	**2023-2024**	**2024-2025**	**Total**
Revised Regulatory Proposal	1,499	1,490	1,473	1,460	1,451	7,373
Repex Model Final Decision	848	884	923	962	1,002	4,618
AER Final Decision Forecast	848	884	923	962	1,002	4,618
Unit Cost ($)	**2020-2021**	**2021-2022**	**2022-2023**	**2023-2024**	**2024-2025**	**Average**
Revised Regulatory Proposal	$ 24,702	$ 25,405	$ 29,251	$ 33,196	$ 36,494	$ 29,810
Repex Model Final Decision	$ 30,941	$ 30,240	$ 29,852	$ 29,686	$ 29,683	$ 30,080
AER Final Decision Forecast	$ 30,941	$ 30,240	$ 29,852	$ 29,686	$ 29,683	$ 30,080

Key points to note are:

- In our RRP, we forecast transformer repex for 2020-25 of $219 million.
- In its Final Decision, the AER did not refer to transformers specifically, rather their focus was on our approach to cost benefit analysis generally.
- Using trend analysis, the repex model and bottom-up assessment techniques, the AER assessed our forecast and highlighted that they were not satisfied that it reasonably reflected the capex criteria.
- In its final decision, the AER adopted the repex model output and provided a forecast of $138.8 million for the 2020-25 regulatory control period.

[2] Page 6-88, FINAL DECISION -Ergon Energy determination 2015−16 to 2019−20 Attachment 6 − Capital

[3] Page 35, Para 168 EMCa Review of Proposed Capex in Ergon's Revised Regulatory Proposal- September - 2015

6 HISTORICAL EXPENDITURE AND VOLUMES

This section presents data sourced from our proposals for 2015-20 and 2020-15 Determinations and CA RIN 2.2 Repex as submitted to the AER.

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

6.1 Actual 2015-20 Performance

A summary of the actual expenditure of transformer replacements over the 2015-20 regulatory control period is provided in Table 4 below.

Table 4: Transformer Repex 2015-20

	TRANSFORMERS					
$ 2024-2025 ($,000)	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total
Revised Regulatory Proposal	$ 49,455	$ 52,562	$ 46,166	$ 56,349	$ 58,910	$ 263,442
Repex Model Final Decision	$ 40,017	$ 39,524	$ 39,336	$ 39,395	$ 39,671	$ 197,943
AER Final Decision Forecast	$ 40,017	$ 39,524	$ 39,336	$ 39,395	$ 39,671	$ 197,943
Actual	$ 43,937	$ 44,720	$ 55,140	$ 68,766	$ 86,481	$ 299,045
Volume (units)	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**Total**
Revised Regulatory Proposal	1,172	1,196	1,284	1,176	1,195	6,023
Repex Model Final Decision	1,362	1,374	1,387	1,401	1,418	6,941
AER Final Decision Forecast	1,362	1,374	1,387	1,401	1,418	6,941
Actual	1,571	1,239	1,511	1,802	2,153	8,276
Unit Cost ($)	**2015-2016**	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**Average**
Revised Regulatory Proposal	$ 42,197	$ 43,948	$ 35,955	$ 47,916	$ 49,297	$ 43,863
Repex Model Final Decision	$ 29,373	$ 28,773	$ 28,369	$ 28,118	$ 27,986	$ 28,524
AER Final Decision Forecast	$ 29,373	$ 28,773	$ 28,369	$ 28,118	$ 27,986	$ 28,524
Actual	$ 27,968	$ 36,094	$ 36,493	$ 38,161	$ 40,168	$ 35,777

Key Observations

- Over the 2015-2020 regulatory control period, our expenditure on transformer replacements exceeded the AER forecast by 52%.
- Ergon Energy replacement volumes are marginally higher than the repex model forecast level of replacements.
- We have exceeded AER's forecast repex in all years of the 2015-20 regulatory control period.

6.2 2020-25 Actual and Estimated Performance

A summary of the actual expenditure of transformer replacements over the 2015-20 regulatory control period is provided in Table 5 below.

Table 5: Transformer Repex 2020-2025

	TRANSFORMERS					
$ 2024-2025 ($,000)	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	Total
Revised Regulatory Proposal	$ 44,832	$ 45,817	$ 52,168	$ 58,679	$ 64,076	$ 265,572
Repex Model Final Decision	$ 31,745	$ 32,374	$ 33,344	$ 34,564	$ 35,984	$ 168,011
AER Final Decision Forecast	$ 31,745	$ 32,374	$ 33,344	$ 34,564	$ 35,984	$ 168,011
Actual	$ 69,691	$ 75,870	$ 77,494	$ 68,009	$ 50,370	$ 341,434
Volume (units)	**2020-2021**	**2021-2022**	**2022-2023**	**2023-2024**	**2024-2025**	**Total**
Revised Regulatory Proposal	1,499	1,490	1,473	1,460	1,451	7,373
Repex Model Final Decision	848	884	923	962	1,002	4,618
AER Final Decision Forecast	848	884	923	962	1,002	4,618
Actual	2,148	2,023	1,469	1,712	1,200	8,552
Unit Cost ($)	**2020-2021**	**2021-2022**	**2022-2023**	**2023-2024**	**2024-2025**	**Average**
Revised Regulatory Proposal	$ 29,901	$ 30,752	$ 35,407	$ 40,183	$ 44,175	$ 36,084
Repex Model Final Decision	$ 37,453	$ 36,604	$ 36,134	$ 35,934	$ 35,930	$ 36,411
AER Final Decision Forecast	$ 37,453	$ 36,604	$ 36,134	$ 35,934	$ 35,930	$ 36,411
Actual	$ 32,444	$ 37,503	$ 52,753	$ 39,725	$ 41,975	$ 40,880

Key observations:

- The actual expenditure in the first three years of this regulatory control period exceeded the AER's forecast by 100%
- This trend is expected to continue in the remaining two years of the regulatory control period.
- The average unit cost is comparable to the AER's forecast unit cost.

6.3 Historical Trends and Performance

Error! Reference source not found. and Figure 4 provide comparisons of the expenditure and volume of Transformer replacements from the actual to the applicable RRPs, repex model and AER final decisions.

Figure 3: Transformer Replacement – Expenditure

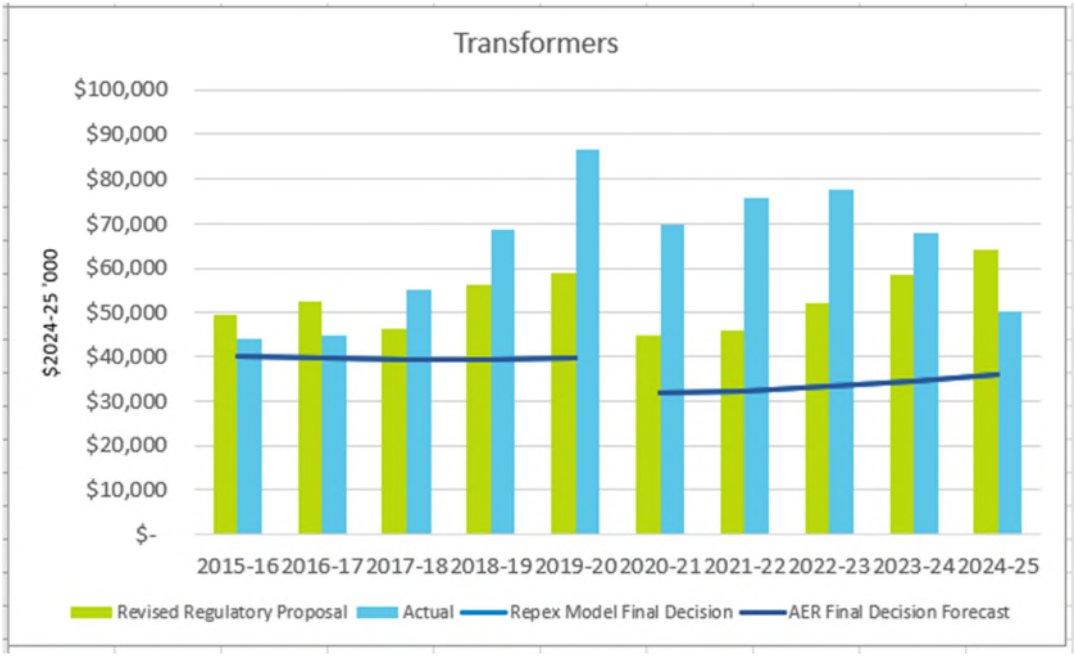
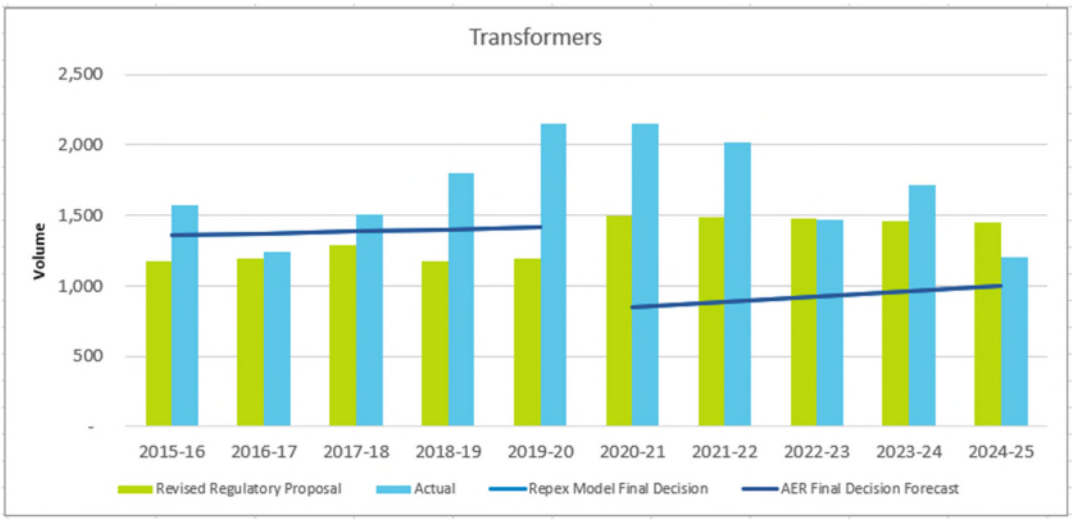


Figure 4: Transformer Replacement – Volume



Key observations:

- There was an increase in expenditure from 2020, with this reducing to a more consistent level across the final four years of the current regulatory proposal.
- Our replacement volumes have an upward trend from 2018 to 2020 and after that a consistent volume of replacements has been undertaken.

7 ANALYSIS OF TRANSFORMER REPLACEMENTS

In order to analyse the data, transformers can be split into two distinct types of assets – substation transformers and distribution transformers. These transformers have quite different unit rates for replacement, as well as differing asset management strategies.

7.1 Distribution transformers

Around 95% of Ergon Energy's transformer replacement expenditure is associated with distribution transformers. There are typically two ways our distribution transformer replacements have occurred:

- **Consequential Replacements**: around a third of the expenditure on distribution transformer replacements is associated with line consequential replacement. Within this category, defects of other assets CTS/CTG adjustments, and the service replacement program associated solely with line projects. These are consequential replacements undertaken to achieve efficiency in delivery of services; bringing forward their replacement by a short period to avoid future, more expensive replacements.

- **Failed and defective transformers replacement**: around two-thirds of the expenditure on distribution transformer replacements is attributed to in-service failures or defects of transformers themselves.

Table 6 and Table 7 show the level of expenditure for the replacement of our distribution transformer over the last two regulatory control period.

Table 6 : Distribution transformers expenditure – 2015-2020

Line	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total/Average
2024-25 ($,000)	$ 41,730	$ 40,569	$ 55,593	$ 68,261	$ 75,051	$ 281,203
Volume	1,569	1,236	1,511	1,801	2,153	8,270
Unit Rate	$ 26,596	$ 32,822	$ 36,792	$ 37,902	$ 34,859	$ 33,794

Table 7 : Distribution transformers expenditure – 2020-2025

Line	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	Total/Average
2024-25 ($,000)	$ 67,698	$ 70,917	$ 61,999	$ 61,999	$ 61,999	$ 324,612
Volume	2,141	2,016	1,465	1,465	1,465	8,552
Unit Rate	$ 31,620	$ 35,177	$ 42,320	$ 42,320	$ 42,320	$ 38,751

Key Observations

- Since 2018, the change in our serviceability calculation for poles applied during their routine inspections, has resulted in a higher rate of poles failing inspections. This, in turn, has led to an elevated rate for replacements of poles and associated equipment.
- Our unit rate for replacement has remained relatively stable across this period.

7.2 Substation transformers

Around 5% of Ergon Energy transformer replacement expenditure was associated with sub-transmission transformers. Ergons sub-transmission transformer replacement strategy involves a combination of:

- Proactive Replacements: the majority of substation transformer replacements were conducted following CBRM assessments.
- Failure-Related Replacements: a small portion of the substation transformer total expenditure are as the result of an asset failure.

Table 8 and Table 9 show the level of expenditure for the replacement of our distribution transformer over the last two regulatory control period.

Table 8 : Substation transformers expenditure – 2015-2020

Substation	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	Total/Average
2024-25 ($,000)	$ 2,658	$ 3,489		$ 1,077		$ 7,224
Volume	2	2		1		5
Unit Rate	$ 1,329,105	$ 1,744,528		$ 1,077,152		$ 1,383,595

Table 9 : Substation transformers expenditure – 2020-2025

Substation	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	Total/Average
2024-25 ($,000)	$ 3,143	$ 4,134	$ 8,673	$ 8,673	$ 8,673	$ 33,296
Volume	7	7	4	4	4	26
Unit Rate	$ 449,062	$ 590,575	$ 2,168,209	$ 92,339	$ 186,898	$ 697,417

Key observations:

- During 2017-2018 and 2019-2020 there were no sub-transmission transformer replacements.
- The volume of sub-transmission transformer replacements has increased in the current regulatory period, however, is still a low volume in comparison to our overall sub-transmission transformer population.
- The volume of expenditure on sub-transmission transformer replacements is substantially less than that for distribution transformers.

8 POST IMPLEMENTATION REVIEW

We have undertaken a post implementation review (PIR) of our distribution transformer expenditure over the review period and compare with alternative options. Pease note that RIN reports are on total number of transformers including substation transformers. The PIR on distribution line replacement is set out in supporting document 5.3.16.

The basis and assumptions used in the PIR are:

- A cost benefit analysis over a twenty-year time horizon as a period
- The options analysis is based on the different volume of replacements.
- The actual delivery or selected option expenditure and unit cost over the 5-year review period is used as the starting point.
- The base case or counterfactual is based on the implied volume using the AER forecast and the actual delivery unit cost.
- The actual unit cost is applied across all other options.
- Only cost associated with distribution transformer defects are included in the cost benefit analysis.
- Costs associated with replacements because of other projects or programs (e.g pole replacements, reconductoring, CTG/CTS) are excluded from this cost benefit analysis. They are included in the PIR of the respective asset classes.

Table 10 sets out the basis of the PIR for switches and reconciliation to the annual CA RIN 2.2

Table 10 : PIR / RIN Reconciliation

Transformers ($ millions nominal)	2018-19	2019-20	2020-21	2021-22	2022-23	Total
RIN total ($million)	$ 55.3	$ 70.8	$ 57.8	$ 64.3	$ 69.4	$ 317.6
Dist Transformers only	$ 50.4	$ 61.7	$ 51.6	$ 60.0	$ 60.9	$ 284.6
Dist Transformers Defects	**$ 37.9**	**$ 35.1**	**$ 29.5**	**$ 39.8**	**$ 41.8**	**$ 184.1**
Added to PIR for Transformers						
Fuse	**$ 10.6**	**$ 12.3**	**$ 14.2**	**$ 13.9**	**$ 13.9**	**$ 64.9**
Non Defects / Added to other PIRs						
Poles	$ 7.8	$ 17.5	$ 10.4	$ 14.1	$ 11.0	$ 60.8
Conductors	$ 1.1	$ 3.4	$ 5.3	$ 6.0	$ 8.1	$ 23.9
Clearance	$ 3.6	$ 5.7	$ 6.4	$ 0.1	$ -	$ 15.8
Total PIR for Transformers	**$ 48.5**	**$ 47.4**	**$ 43.7**	**$ 53.7**	**$ 55.7**	**$ 249.0**

The cost benefits analysis from the post implementation review confirms that our defect driven distribution transformer replacements undertaken over the review period delivered a net benefit of $80 million compared to the AER forecast option.

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

The *review period* 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.

Table 11 : Review Period Performance- Transformer Replacements

	TRANSFORMERS					
$ 2024-2025 ($,000)	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
Revised Regulatory Proposal	$ 56,349	$ 58,910	$ 44,832	$ 45,817	$ 52,168	$ 258,076
Repex Model Final Decision	$ 39,395	$ 39,671	$ 31,745	$ 32,374	$ 33,344	$ 176,529
AER Final Decision Forecast	$ 39,395	$ 39,671	$ 31,745	$ 32,374	$ 33,344	$ 176,529
Actual	$ 68,766	$ 86,481	$ 69,691	$ 75,870	$ 77,494	$ 378,302
Volume (units)	**2018-2019**	**2019-2020**	**2020-2021**	**2021-2022**	**2022-2023**	**Total**
Revised Regulatory Proposal	1,176	1,195	1,499	1,490	1,473	6,834
Repex Model Final Decision	1,401	1,418	848	884	923	5,473
AER Final Decision Forecast	1,401	1,418	848	884	923	5,473
Actual	1,802	2,153	2,148	2,023	1,469	9,595
Unit Cost ($)	**2018-2019**	**2019-2020**	**2020-2021**	**2021-2022**	**2022-2023**	**Average**
Revised Regulatory Proposal	$ 47,916	$ 49,297	$ 29,901	$ 30,752	$ 35,407	$ 38,655
Repex Model Final Decision	$ 28,118	$ 27,986	$ 37,453	$ 36,604	$ 36,134	$ 33,259
AER Final Decision Forecast	$ 28,118	$ 27,986	$ 37,453	$ 36,604	$ 36,134	$ 33,259
Actual	$ 38,161	$ 40,168	$ 32,444	$ 37,503	$ 52,753	$ 40,206

Key observations:

- Our transformer repex over the review period was above the AER's forecast by 107%.
- Ergon Energy has overspent the AERs forecast in every year of the review period.
- The actual volume replaced exceeded our RRP and the AER forecasts by 41% and 74% respectively.

Figure 5 and Figure 6 compare the actual expenditure and volume of transformer replacements to Ergon Energy's forecast in RRP, AER's repex model forecast provided in AER's final decision.

Figure 5: Transformers Repex – Review Period

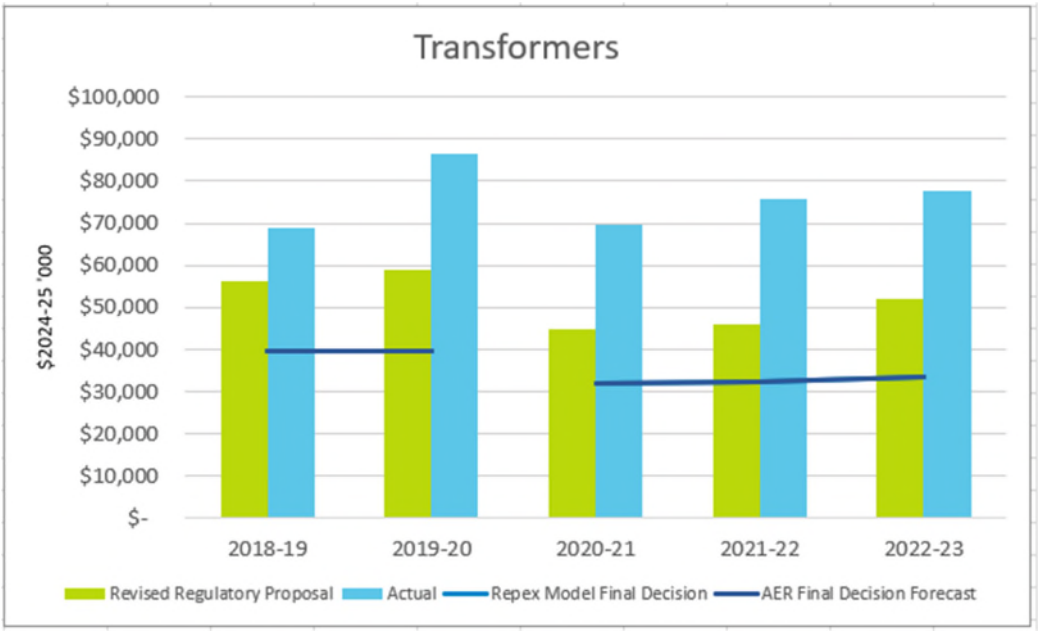
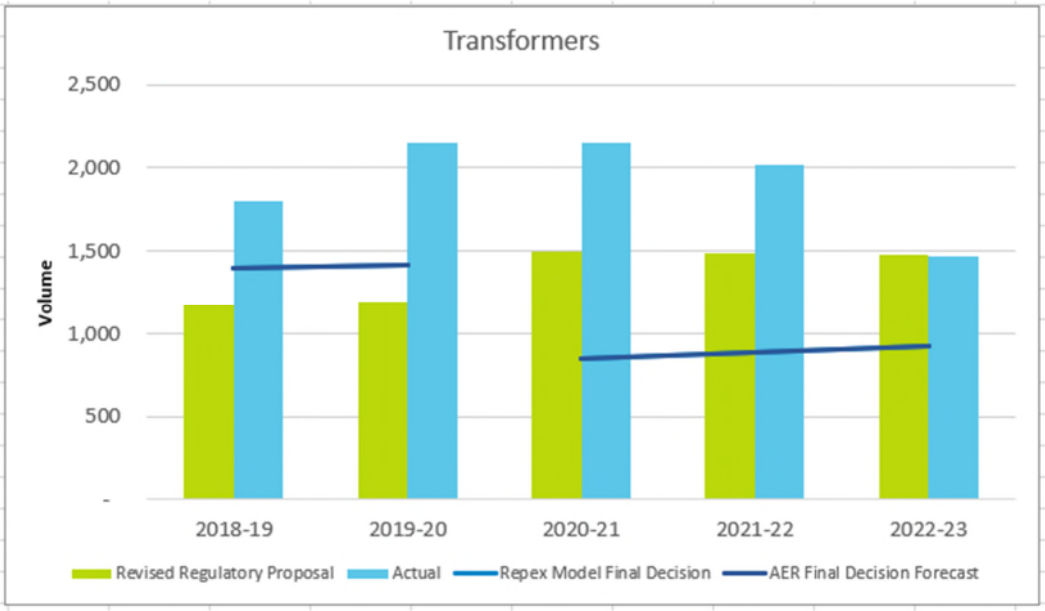


Figure 6: Transformers Replacement Volume – Review Period



9.1 Adjustments for CTG/CTS

As discussed in our overview paper, CTG/CTS programs are better reflected as an augex program. Hence, from 2021-22 onwards all clearance programs are categorised as augex. Going forward, Ergon Energy will be reporting costs associated with the clearance programs as augex instead of repex.

Table 12 present a summary of the AER forecast with and without the CTG/CTS where:

- The AER Final Decision Forecast is the forecast with a notional amount of CTG/CTS included.
- Actual as reported in RIN with CTG/CTS in repex from 2018-19, 2019-20 and 2020-21)
- Adjusted AER forecast is the forecast without the notional amount of CTG/CTS
- Adjusted actual shows repex with expenditure for CTG/CTS in 2018-19, 2019-20 and 2020-21 removed from the transformer asset category.

Table 12 : Review Period Performance – excluding CTG/CTS

$ 2024-2025 ($,000)	TRANSFORMERS					
CTG/CTS Included	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
AER Final Decision Forecast	$ 39,395	$ 39,671	$ 31,745	$ 32,374	$ 33,344	$ 176,529
Actual	$ 68,766	$ 86,481	$ 69,691	$ 75,870	$ 77,494	$ 378,302
CTG/CTS Excluded	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Total
AER Final Decision Forecast	$ 39,395	$ 39,671	$ 29,253	$ 32,374	$ 33,344	$ 174,037
Actual	$ 62,689	$ 75,488	$ 61,968	$ 75,870	$ 77,494	$ 353,508

10 JUSTIFICATION STATEMENTS AND CONCLUSION

We submit that the expenditure for replacement of our distribution transformers over the *review period* is prudent and efficient as demonstrated by

- The PIR which shows that the replacement of defective distribution transformers is prudent and delivered a net benefit of $80 million compared to the AER's forecast option.
- The remaining of distribution transformers were replaced as part of other works such as pole replacement, conductor replacement, etc and they have been separately cost justified.
- The 5.2.10 Cost Comparison of Ergon RIN Unit Costs to the NEM report which shows that our unit costs compare favourably to other DNSPs in the NEM.

We therefore submit that all the repex on transformers incurred over the review period are required and should be rolled into our RAB.