FINAL DECISION

Jemena
Distribution Determination
2021 to 2026

Attachment 6
Operating expenditure

April 2021

AUSTRALIAN ENERGY REGULATOR

Inquiries about this publication should be addressed to:

Australian Energy Regulator
GPO Box 520
Melbourne Vic 3001

Tel: 1300 585 165
Email: VIC2021-26@aer.gov.au

AER reference: 63601

Note

This attachment forms part of the AER's final decision on the distribution determination that will apply to Jemena for the 2021–26 regulatory control period. It should be read with all other parts of the final decision.

The final decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 12 – Not applicable to this distributor

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

Attachment 15 – Pass through events

Attachment 16 – Alternative control services

Attachment 18 – Connection policy

Attachment 19 – Tariff structure statement

Attachment A – Negotiating framework

Contents

6 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other non-capital expenses incurred in the provision of network and related services. Forecast opex for standard control services is one of the building blocks we use to determine a service provider's annual total revenue requirement.

This attachment outlines our assessment of Jemena's proposed opex forecast for the 2021–26 regulatory control period.

6.1 Final decision

Our final decision is to accept Jemena's updated revised opex proposal of $516.6 million ($2020–21), including debt raising costs, for the 2021–26 regulatory control period. This is because our alternative estimate of $509.2 million ($2020–21) is not materially different ($7.4 million ($2020–21), or 1.4 per cent, lower) than Jemena's updated revised total opex forecast. Therefore we consider that Jemena's total opex forecast reasonably reflects the opex criteria.[1]

Jemena's revised proposal included a total opex forecast of $532.3 million ($2020–21) for the 2021–26 period and $20.0 million ($2020–21) of opex savings, realised from its 2019 transformation program. It subsequently updated its forecast to $516.6 million ($2020–21), recognising further opex savings of $10.1 million ($2020–21) that it considered could be passed back to customers in the next regulatory control period.[2] This reflected lower-than-expected actual opex in 2020 of $2.0 million ($2020–21) driven largely by Jemena's 2019 transformation program. Jemena proposed significant improvements as a part of the process, with opex savings of $30.2 million ($2020–21) in total being proposed.[3] As set out below, these improvements are not materially different to those we have determined via our alternative estimate as being required for Jemena's base opex to be relatively efficient.

Jemena's updated revised proposal also reflected the removal of the Energy Safe Victoria (ESV) levy from opex ($5.7 million ($2020–21) over the next regulatory control period)[4] as we recently determined this is a jurisdictional scheme and the costs will be recovered through the annual pricing review.[5]

---

1 NER, cl.6.5.6(c).

2 Jemena, *2021–26 EDPR - Update to operating expenditure proposal*, 01 March 2021, p. 1.

3 Numbers may not add up to totals due to rounding.

4 Jemena, *EDPR 2021–26– Update for changes in the treatment of Energy Safe Victoria levies*, 19 March 2021.

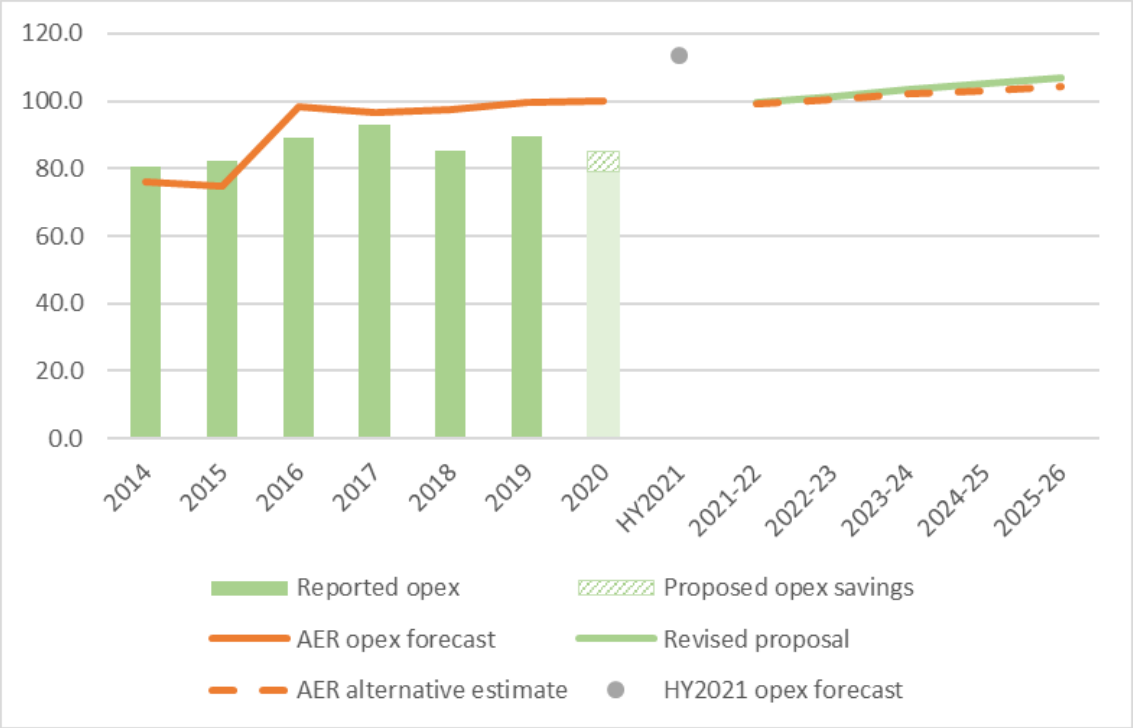
5 AER, *Determination on CPU jurisdictional scheme request*, March 2021.

Our final decision opex forecast (Jemena's updated revised proposal) is:

- $24.9 million ($2020–21), or 5.1 per cent higher than the opex forecast we approved in our final decision for the 2016–20 regulatory control period[6]
- $80.7 million ($2020–21), or 18.5 per cent higher than Jemena's actual (and estimated) opex in the 2016–20 regulatory control period
- $60.0 million ($2020–21), or 10.4 per cent lower than Jemena's initial proposal.

Figure 6.1 shows Jemena's actual opex, our previous approved forecast, proposed opex for the next five years and our alternative estimate.

Figure 6.1 Jemena's opex over time ($ million, 2020–21)



Source: Jemena, *Regulatory proposal 2021–26 – Supporting document RIN 5 – Workbook 1 – Regulatory determination*, March 2020, Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26,* 19 March 2021; AER, *Draft Decision, Jemena distribution determination 2021–26, Opex model*, September 2020, AER Draft Decision, *Jemena distribution determination 2021–26, EBSS model*, September 2020.

Note: Opex for 2020 is an estimate based on Jemena's forecast, with the $6.0 million ($2020–21) opex savings from its updated revised proposal shown with the hatching.

Table 6.1 sets out Jemena's revised proposal, its updated revised proposal (which we accept), and our alternative estimate for the final decision.

[6] This difference is calculated based on the five year 2016–20 period (not including the half year 2021 extension) using unlagged inflation.

Table 6.1 Comparison of Jemena's revised opex proposal and our alternative estimate ($ million, 2020–21)

	Jemena's revised proposal	Updated revised proposal	AER alternative estimate	Difference (per cent)
Base (reported opex in 2018)	422.5	422.5	422.5	–
Efficiency adjustment	–	–	–36.9	–36.9
Expected opex reductions	–20.0	–30.2	–	30.2
Base year adjustments	–	–5.7	–5.7	–
Final year increment	79.2	81.4	81.4	–
Trend: Output growth	13.8	13.0	11.9	–1.1
Trend: Real price growth	6.0	6.0	5.9	–0.1
Trend: Productivity growth	–6.8	–6.8	–6.2	0.6
Step changes	32.4	32.1	32.1	–0.0
Net category specific forecasts	1.2	0.3	0.3	–
Debt raising costs	4.0	4.0	4.1	0.1
Total opex	532.3	516.6	509.2	–7.4
Percentage difference to updated revised proposal				–1.4%

Source: Jemena, *Revised Regulatory proposal 2021–26 – Opex model*, December 2020; Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

Note: Numbers may not add up to totals due to rounding. Differences are between the AER's alternative estimate and Jemena's updated revised proposal. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance. Jemena's updated revised proposal removed the ESV levy in the category specific forecast section of its opex model. In Table 6.1 we have represented this as a base adjustment. Net category specific forecasts captures the net impact of removing these costs from the base year and re-forecasting as a category specific forecast for the 2021–26 regulatory control period. The final year increment incorporates the adjustment for newly expensed corporate overheads (discussed in section 6.4.1.3).

There is only one main driver of our lower alternative estimate of total opex compared to Jemena's updated revised total opex forecast. The difference relates to the efficiency of Jemena's base opex. Our final decision continues to find that Jemena's opex historically and in the base year is outside the efficient band and therefore, similar to our draft decision, our alternative opex forecast applies an efficiency adjustment of $36.9 million ($2020–21). As outlined above, in submitting its updated revised proposal Jemena included $30.2 million ($2020–21) of opex savings over the next regulatory control period, recognising the scope for significant efficiency gains in light of the 2019 transformation program. As a result, the difference between the efficiency adjustment we have made in our alternative estimate and Jemena's opex savings that it proposed to pass on to customers is relatively small ($6.8 million, $2020–21 over five years).

The efficiency adjustment we have made in our alternative estimate reflects the findings from our benchmarking and other analysis. We have calculated this efficiency adjustment:

- By applying an adjustment to recognise differences in Jemena's capitalisation practices (the reporting and/or use of opex relative to capital inputs) compared to the comparator businesses. For the purposes of this final decision we used two ratios (opex/totex and opex/total cost) to inform this adjustment but note that the magnitude of our alternative estimate, and final decision, does not change using an alternative method incorporating a third ratio (opex/total inputs).
- By applying a glide path to transition in future efficiencies above the $30.2 million ($2020–21) cost savings already achieved by Jemena.[7]

6.2 Jemena's revised proposal

Jemena used a 'base–step–trend' approach to forecast opex for the 2021–26 regulatory control period in its revised and updated revised proposals, consistent with our standard approach.

Jemena's revised proposal included a total opex forecast of $532.3 million ($2020–21) for the 2021–26 period.[8] This incorporated $20.0 million ($2020–21) of opex savings from its 2019 transformation program.[9] Jemena subsequently submitted an updated revised total opex proposal of $516.6 million ($2020–21).[10] Most significantly this reflected:

- Indications of approximately $2.0 million ($2020–21) lower opex in 2020 than initially expected, driven by Jemena's 2019 transformation program. This resulted in additional opex savings over the next regulatory control period of $10.1 million ($2020–21) that Jemena considered could be passed back to customers.[11] Together with the $20.0 million ($2020–21) from its revised proposal, its total opex forecast therefore includes $30.2 million ($2020–21) of opex savings.
- The removal of the ESV levy from its base year opex ($1.1 million ($2020–21) per year or $5.7 million ($2020–21) over the next regulatory control period).[12] This is because we recently determined that the annual payments made by the Victorian distributors to ESV are a jurisdictional scheme. As a result these costs will be recovered through annual prices rather than opex.

Jemena also proposed several other smaller updates to its revised proposal. It:[13]

---

7 This reflects the $20 million ($2020–21) of opex savings Jemena included in its revised proposal and the additional $10.1 million ($2020–21) of opex savings it added to these in the update to its revised proposal.

8 Jemena, *Revised regulatory proposal 2021–26, Att 05–01 Operating expenditure,* December 2020, p. 1.

9 Jemena, *Revised regulatory proposal 2021–26, Att 05–01 Operating expenditure*, December 2020, p. 5.

10 Jemena, *Revised regulatory proposal 2021–26, 05–01M SCS Opex Model FY22–26,* 19 March 2021.

11 Jemena, *EDPR 2021–26– Update to operating expenditure proposal*, 01 March 2021, p. 1.

12 Jemena, *EDPR 2021–26 – Update for changes in the treatment of Energy Safe Victoria levies,* 19 March 2021.

13 Jemena, *Revised regulatory proposal 2021–26, 05–01M SCS Opex Model FY22–26*, 19 March 2021.

- updated its Rapid Earth Fault Current Limiters (REFCL) maintenance and testing step change and guaranteed service level (GSL) category specific forecasts
- updated output weights as per the AER's *2020 Annual Benchmarking Report*[14]
- used the latest inflation forecasts published by the RBA.

In applying our base–step–trend approach to forecast opex for the 2021–26 regulatory control period, Jemena:[15]

- used opex in 2018 as the base to forecast ($422.5 million ($2020–21))
- adjusted opex in the base year to reflect opex savings from its 2019 transformation program that could be passed back to customers (–$30.2 million ($2020–21))
- adjusted opex in the base year to exclude the ESV levies that will be recovered through annual prices (–$5.7 million ($2020–21))
- added the final year increment from the base year of 2018 ($81.4 million ($2020–21), of which $59.2m ($2020–21) relates to the adjustment for newly expensed corporate overheads)
- applied a rate of change comprising of:
    - real price escalation ($6.0 million ($2020–21))
    - output growth ($13.0 million ($2020–21))
    - and productivity (–$6.8 million ($2020–21))
- added forecast step changes for the 2021–26 regulatory control period ($32.1 million ($2020–21))
- included a net category specific GSL forecast for the 2021–26 regulatory control period of $0.3 million ($2020–21)
- added forecast debt raising costs ($4.0 million ($2020–21)).

Jemena's updated revised total opex proposal is set out in Table 6.2, noting opex represents 43.1 per cent of Jemena's total revenue proposal.[16]

---

14 AER, *Annual Benchmarking Report electricity distribution network service providers*, November 2020

15 Jemena, *Revised regulatory proposal 2021–26, 05–01M SCS Opex Model FY22–26,* 19 March 2021.

16 Jemena, *Revised regulatory proposal 2021–26, 09–01M SCS PTRM FY22–26*, 19 March 2021

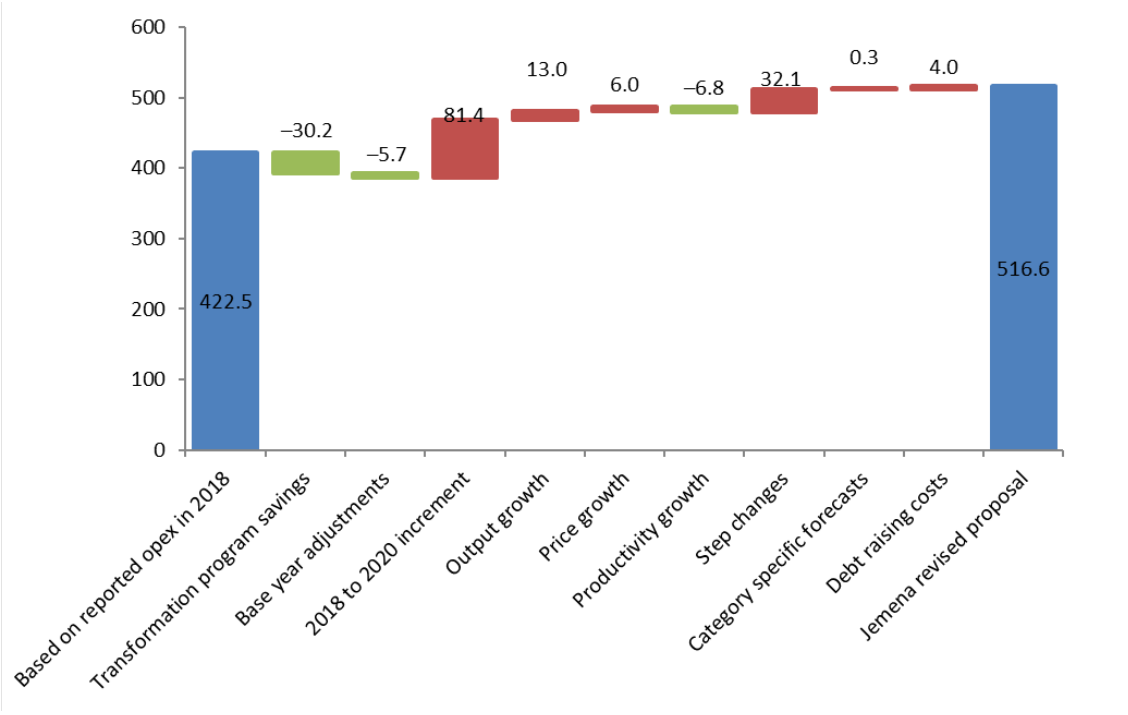
Table 6.2 Jemena's revised opex forecast ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Total opex including category specific forecasts	98.6	100.5	102.8	104.4	106.2	512.6
Debt raising costs	0.8	0.8	0.8	0.8	0.8	4.0
Total opex	99.4	101.3	103.6	105.2	107.1	516.6

Source: Jemena, *Revised regulatory proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021.
Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

Figure 6.2 shows the different components in Jemena's opex proposal as described above.

Figure 6.2 Jemena's revised opex forecast ($ million, 2020–21)



Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

6.2.1 Stakeholder views

We received five submissions on Jemena's 2021–26 revised regulatory proposal that raised issues about opex. At a high level, submissions were generally supportive of our draft decision noting concerns of productivity declines over time. Submissions provided commentary on various components of the revised proposals. We have taken these submissions, and any other concerns consumers identified, into account in developing

the positions set out in this final decision. A summary of the opex issues raised in submissions is provided in Table 6.3.

Table 6.3 Submissions on Jemena's revised opex proposal

Stakeholder	Issue	Summary
The AER's Consumer Challenge Panel, sub-panel 17 (CCP17), Ausgrid, Victorian Community Organisation (VCO), Energy Consumers Australia (ECA)	Base opex	The VCO suggested that a bottom-up sanity check may be useful in evaluating efficiency as all distributors except United Energy have experienced a decline in productivity over time. Further, distribution businesses have consistently incurred lower opex costs than their allowance, suggesting base opex is not efficient. An efficiency adjustment is considered appropriate for both Jemena and AusNet Services.[17] The CCP17 noted that based on the benchmarking results CitiPower, Powercor and United Energy are the more efficient distribution businesses in Australia for all measures, whereas AusNet Services and Jemena have performed poorly. It considered that although Jemena has improved in some productivity measures, it is still difficult to consider it efficient.[18] Ausgrid expressed concerns about the AER's benchmarking[19] and suggested an independent review is required. It highlighted inconsistencies and discrepancies between the index models and the econometric models and that the 15 per cent efficiency adjustment in Jemena's draft decision should be reconsidered. Further, it considered that, if the AER is unable to undertake an independent review in time for the final decision, significant weight should be given to the CEPA report Jemena provided with its revised proposal. In relation to addressing the impact of capitalisation on the benchmarking results it proposed using the opex / totex ratio of the frontier business (Powercor).[20] Consultant for ECA, Spencer&Co expressed similar concerns about the benchmarking results. It considered the benchmarking results to be highly sensitive to inputs and that this presents risks when setting opex using these results. It called for a review of the impact of capitalisation policies on benchmarking and suggested Jemena's base opex is similar to the efficient allowance set in the prior period if the expensing of corporate overheads was removed. It also questioned how the AER's use of a glide-path compares to Jemena's proposal to bring forward the benefits of its transformation program.[21]
VCO	Trend	The VCO considered that to determine price growth the most recent data sources should be used (including the Victorian government's December 2020 estimates) and that the labour / materials weights should be the same across all businesses.[22] The VCO supported the AER's approach for developing output growth forecasts using updated information for the final decisions and to address the issues raised in the NERA and Frontier Economics reports. It considered a detailed review of the forecast growth in outputs is required, including for customer

17 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, pp. 15–18, 18–21 & 49–51 (Headberry Partners P/L).

18 CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 56–57, 97–104.

19 AER, Annual Benchmarking Report electricity distribution network service providers, November 2020

20 Ausgrid, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 3–6.

21 Energy Consumers Australia*, Submission and attachment on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 9 (Spencer&Co).

22 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 22, 52 (Headberry Partners P/L).

Stakeholder	Issue	Summary
		numbers (connections), peak demand and energy throughput. It also sought consistency in approach across all businesses.[23] The VCO considered the 0.5 per cent per annum productivity growth forecast is too low.[24]
CCP17, VCO	Step Changes	The VCO supported the application of materiality as grounds for examining step changes, in particular the proposed Australian Energy Market Operator (AEMO) fees and ESV levy. It was generally supportive of the AER's decisions on the step changes in the draft decision.[25] The CCP17 also supported the application of materiality as a guide for determining if proposed step changes are prudent and efficient and discussed the issues raised by CitiPower, Powercor and United Energy in its revised proposal.[26]
VCO, ECA	ESV Levy	The VCO supported the AER draft decision that the ESV levy cost should be absorbed by the distribution businesses.[27] ECA generally supported the distribution businesses position to include fees and charges levied by regulators in the price control mechanism. It considered these costs cannot controlled and that it is appropriate to pass the costs on to customers via price controls.[28]
CCP17, VCO, Energy Users Association of Australia (EUAA), ECA	Insurance Premiums	The VCO supported analysis of the insurance step change and cost pass through proposals to ensure these costs are not double counted. It noted there is support for developing the most efficient bushfire insurance program, with consumers sharing in the increased costs and risks, including general insurance which has not been impacted by the increased bushfire risk.[29] The CCP17 acknowledged that insurance coverage is decreasing while insurance costs are rising rapidly. It viewed the insurance market changes as material and beyond reasonable budget projections (with these changes likely to be sustained over a long period due to climate change). As such, it considered the insurance step changes to be reasonable.[30] The EUAA encouraged discussions around the risk sharing of these events between networks, customers, and potentially the wider community.[31] Consultant for ECA, Spencer&Co supported the steps taken by businesses to mitigate the cost impacts of rising insurance premiums on customers. They also

23 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 22–23, 52 (Headberry Partners P/L).

24 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 52 (Headberry Partners P/L).

25 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 17–18 & 54 (Headberry Partners P/L).

26 CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 57–59.

27 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 55 (Headberry Partners P/L).

28 Energy Consumers Australia, *Submission and attachment on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 18 (Spencer&Co).

29 Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 17–18 & 56 (Headberry Partners P/L).

30 CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 61–64.

31 EUAA, S*ubmission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p, 10.

Stakeholder	Issue	Summary
		considered that the businesses response to insurance premium increases was reasonable in the circumstances.[32]
CCP17	GSL	The CCP17 contended allowing businesses to recover GSL costs does not incentivise improved services. It believed businesses should bear the costs for GSL payment categories they have control over (e.g. for late or missed appointments or delays to connections) and 30 per cent of the other payment categories. The CCP17 proposed that the AER actively review the extent to which GSL payments should be met by the business rather than passed to customers.[33]

6.3 Assessment approach

Our role is to form a view about whether to accept a business' forecast of total opex. Specifically, we must form a view about whether a business' forecast of total opex 'reasonably reflects the opex criteria'.[34] In doing so, we must have regard to each of the opex factors specified in the National Electricity Rules (NER).[35]

If we are satisfied the business's forecast reasonably reflects the opex criteria, we must accept the proposed forecast.[36] If we are not satisfied, we must not accept the proposed forecast and must substitute an alternative estimate that we are satisfied reasonably reflects the opex criteria.[37] In making this decision, we take into account the reasons for the difference between our alternative estimate and the business's proposal, and the materiality of the difference. Further, we are required to consider interrelationships with the other building block components of our decision.[38]

As set out in our draft decision in detail, we generally assess a business's forecast total opex using a 'base-step-trend' approach, as summarised in Figure 6.3.[39]

---

32 Energy Consumers Australia, *Submission and attachment on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 15 (Spencer&Co).

33 CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 64–67.

34 NER, cl. 6.5.6(c).

35 NER, cl. 6.5.6(e)

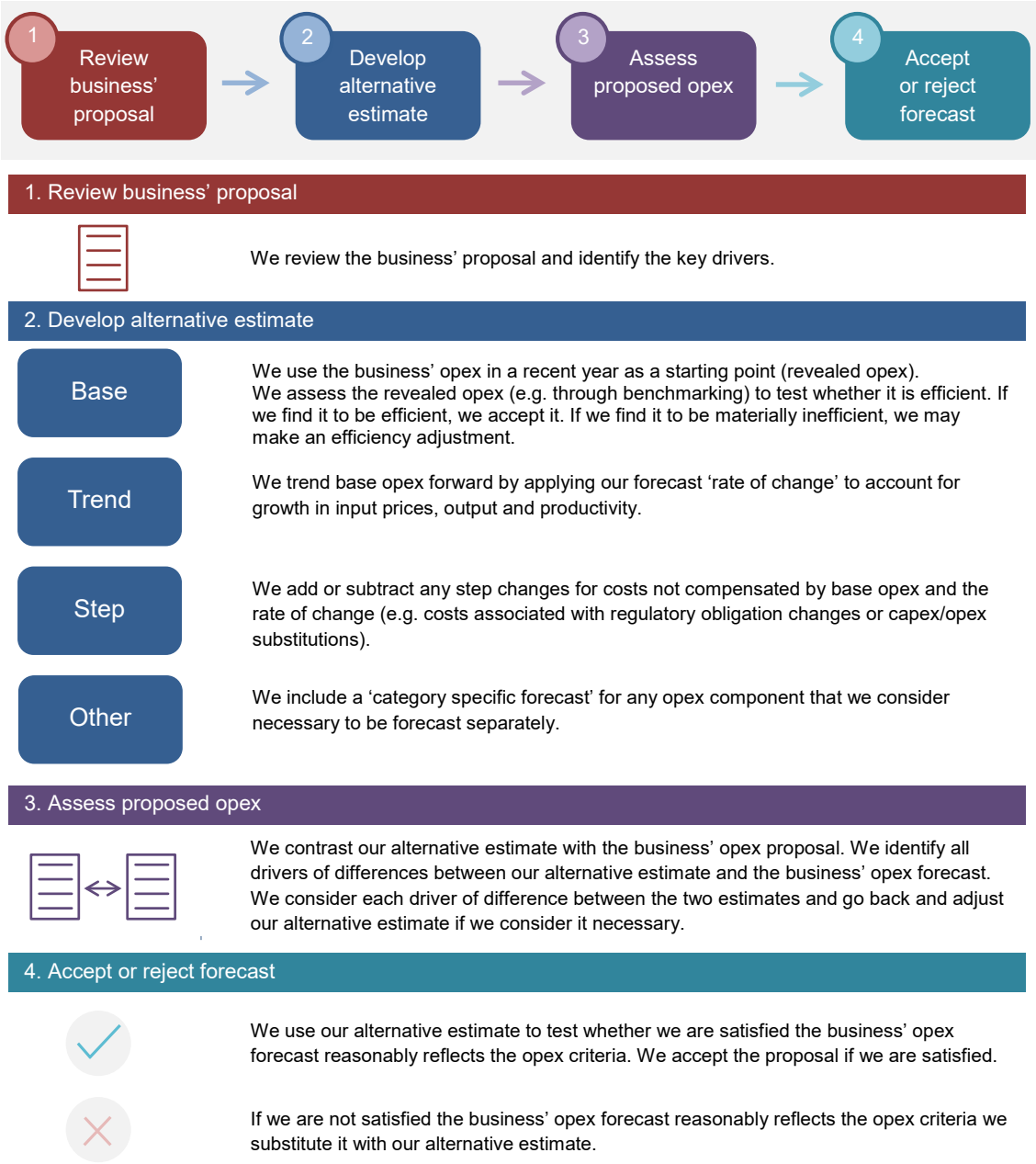
36 NER, cl. 6.5.6(c).

37 NER, cll. 6.5.6(d) and 6.12.1(4)(ii).

38 NEL, s. 16(1)(c).

39 Our base–step–trend approach is also set out in our expenditure guideline. See AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution,* November 2013, pp. 22–24.

Figure 6.3 Our opex assessment approach



6.3.1 Interrelationships

In assessing Jemena's total forecast opex we took into account other components of its proposal and our determination, including:

- the efficiency benefit sharing scheme (EBSS) carryover—the level of opex used as the starting point to forecast opex (the final year of the current regulatory control period (2016–20)) should be the same as the level of opex used to forecast the EBSS carryover. This consistency ensures that the business is rewarded (or penalised) for any efficiency gains (or losses) it makes in the final year the same as it would for gains or losses made in other years

- the operation of the EBSS in the 2016–20 regulatory control period, which provided Jemena an incentive to reduce opex in the base year
- the impact of cost drivers that affect both forecast opex and forecast capital expenditure (capex). For instance, forecast labour price growth affects forecast capex and our forecast price growth used to estimate the rate of change in opex
- the approach to assessing the rate of return, to ensure there is consistency between our determination of debt raising costs and the rate of return building block
- concerns of electricity consumers identified in the course of Jemena's engagement with consumers.

6.4 Reasons for final decision

Our final decision is to accept Jemena's total forecast opex of $516.6 million ($2020–21), including debt raising costs, in Jemena's revenue for the 2021–26 regulatory control period. We have tested Jemena's updated revised proposal by comparing it to our alternative estimate of the total opex forecast of $509.2 million ($2020–21),[40] which is not materially different from (1.4 per cent lower than) Jemena's revised proposal. Therefore, we are satisfied that Jemena's proposed forecast reasonably reflects the opex criteria. On this basis we accept Jemena's updated revised total opex proposal.

We discuss the components of our alternative estimate below. Full details of our alternative estimate are set out in our opex model, which is available on our website.

6.4.1 Base opex

This section provides our view on the prudent and efficient level of base opex that Jemena would need for the safe and reliable provision of electricity services over the 2021–26 regulatory control period.

Jemena proposed base opex to reflect its actual opex in 2018 of $84.5 million ($2020–21).[41] As noted above in Section 6.1 and 6.2, Jemena's updated revised proposal incorporated significant ($30.2 million ($2020–21)) opex savings over the next regulatory control period. Consistent with our draft decision, we consider Jemena's actual base year opex is a relatively inefficient level, as indicated by our benchmarking results and other analysis, and as a result our alternative estimate does not rely on actual or 'revealed' opex in the 2018 base year. Instead, we have made an efficiency adjustment to actual base year opex to reflect our view of an efficient level of recurrent opex. However, the difference between the efficiency adjustment we have made for the purposes of our alternative estimate and Jemena's expected opex reductions is relatively small ($6.8 million, $2020–21 over five years).

---

40 Including debt raising costs.

41 This excludes movements in provisions and DMIA payments. Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

We discuss the choice of base year in section 6.4.1.1 and set out our analysis of the efficiency of base year opex in in section 6.4.1.2. We discuss the final year increment to base year opex in section 6.4.1.3 and adjustments to base opex in section 6.4.1.4.

6.4.1.1 Proposed base year

In its revised proposal Jemena noted our draft decision considered 2018 is an appropriate base year.[42] Jemena did not propose a different base year in its revised proposal.

Our position has not changed since the draft decision in accepting 2018 as the base year for Jemena.[43] In terms of other possible base years, we do not consider 2019 an appropriate base year for Jemena as it incurred costs for its transformation programs which are not recurrent. While Jemena has proposed estimated opex savings realised in final year 2020, we do not consider this would be an appropriate base year as final-year opex, as is normally the case, has not been audited in time for the final decision.

6.4.1.2 Efficiency of base year opex

Jemena proposed base opex to reflect its actual or 'revealed' opex in the base year 2018 of $84.5 million ($2020–21).[44] As outlined in section 6.3, and in our *Expenditure Forecast Assessment Guideline*[45], our standard approach for forecasting opex is to use a revealed cost approach. This is because opex is largely recurrent and stable at a total level. Where a distribution business is responsive to the financial incentives under the regulatory framework, the actual level of opex it incurs should provide a good estimate of the efficient costs required for it to operate a safe and reliable network and meet its relevant regulatory obligations. However, we do not rely on the a priori assumption that the business's revealed opex is efficient. We use our top-down benchmarking tools, and other assessment techniques, to test whether the business is operating efficiently historically and particularly in the base year.

In this section, we first outline Jemena's revealed cost performance, before presenting our benchmarking and cost category analysis.

Analysis of Jemena's revealed costs

Figure 6.4 shows Jemena’s opex forecast for the next regulatory control period, its actual opex in previous regulatory control periods, our previous regulatory decisions and our alternative estimate that has informed our final decision.

---

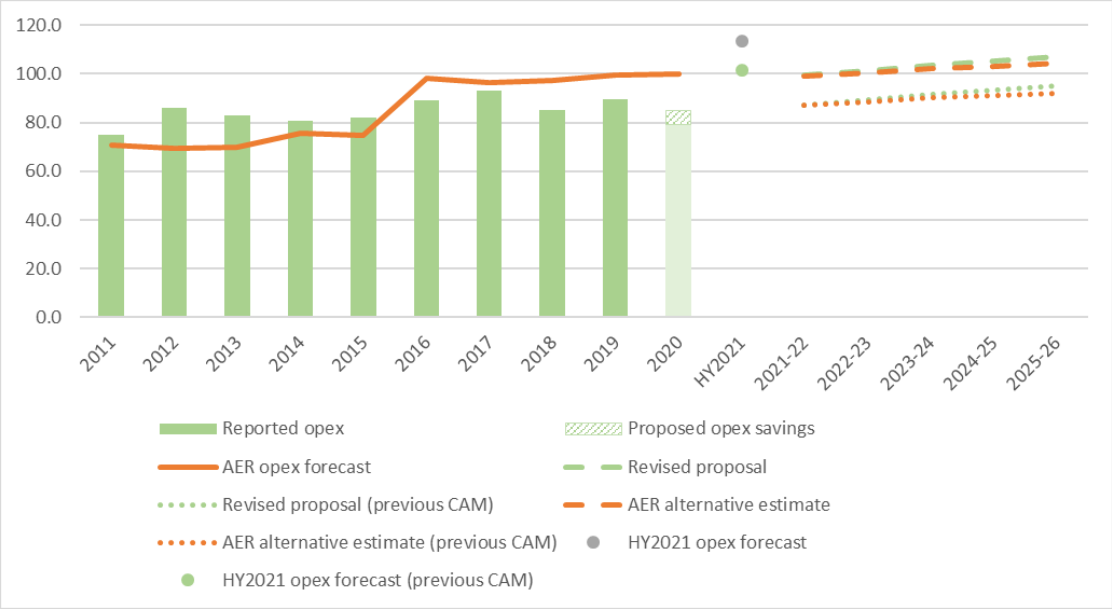
42 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure*, December 2020, p. vi.

43 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 25–26.

44 This excludes movements in provisions and DMIA payments, and reflects an updated inflation forecast published by the Reserve Bank of Australia. Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26,* 19 March 2021; Reserve Bank of Australia*, Statement on Monetary Policy—Appendix: Forecast,* February 2020; AER analysis.

45 AER, *Expenditure forecast assessment guidelines for electricity distribution*, November 2013.

Figure 6.4 Jemena's opex over time ($ million, 2020–21)



Source: Jemena, *Regulatory proposal 2021–26 – Supporting document RIN 5 – Workbook 1 – Regulatory determination*, March 2020; *Jemena, Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26, 19 March 2021*; AER, *Final Decision, Jemena distribution determination 2021–26*, Opex model, April 2021; AER, Final Decision, Jemena, *Distribution determination 2021–26 – EBSS model*, April 2021; AER analysis.

Note: Opex for 2020 is an estimate based on Jemena's forecast, with the $6.0 million ($2020–21) efficiency savings from its updated revised proposal shown with the hatching.

To allow a like-for-like comparison across regulatory control periods, we have presented Jemena's historical and proposed opex as well as an alternative estimate that reflects Jemena's Cost Allocation Methodology (CAM) that applied until 1 January 2021 (previous CAM).[46] This is in addition to the alternative estimate for the final decision that reflects the CAM that will apply from 1 January 2021.

Jemena provided an updated estimate for 2020 opex. In its revised proposal, Jemena estimated that its 2020 opex would be around $4 million ($2020–21) lower than it forecast in its initial proposal.[47] Subsequent to this and reflecting the latest information available about its actual opex, Jemena updated this estimate to around $6 million ($2020–21) lower.[48] Taking these updates into account, we estimate 2020 opex of around $79 million ($2020–21). This is the only change in our revealed cost analysis from our draft decision.[49]

[46] As discussed further in section 6.4.1.3, Jemena's new CAM treats all corporate overheads as opex (i.e. fully expensing corporate overheads).

[47] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure*, December 2020, p. 5.

[48] Jemena, *EDPR 2021–26 – Update to operating expenditure proposal*, 01 March 2021. p. 1.

[49] AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 26–28.

Overall we have seen a slight increasing trend in Jemena's opex over time. Over the current regulatory control period Jemena's expected average annual opex of $87.2 million ($2020–21) is $5.8 million ($2020–21) higher than over the 2011–15 regulatory control period.[50] There was a step up in Jemena's opex in the first two years of the current regulatory control period. In 2017, Jemena's opex was at its highest at $93.0 million ($2020–21) after averaging $82 million ($2020–21) per year in the final three years of the previous regulatory control period. Opex decreased significantly in 2018 to $85.2 million ($2020–21) before increasing again in 2019 to $89.6 million ($2020–21) in part as a result of the costs incurred from its transformation program (see below). The benefits of its transformation program appear to have begun to be realised with the estimated lower opex of around $79 million ($2020–21) in 2020.

While increasing over time, Jemena's opex has been below our forecast for the current regulatory control period. Its actual and estimated opex in the current regulatory control period is 11.3 per cent below our opex forecast and its actual opex in the base year of 2018 is 12.6 per cent below our forecast.[51] This is in contrast to Jemena's actual opex in the previous regulatory control period, which was on average 12.8 per cent higher per annum than our opex forecast. The recent underspend performance is reflected in Jemena's positive EBSS carryovers, as discussed in Attachment 8 of this final decision. However, as indicated by its benchmarking performance, Jemena has not been able to achieve the same degree of cost reductions as the more efficient distribution businesses.

In this regard we note that Jemena's increasing opex trend is in contrast to many other distribution businesses, who have achieved cost reductions over time. This comparative performance is reflected in various benchmarking measures, as discussed further below. One possible source of Jemena's increasing opex is in the overheads category, as discussed further below and in Appendix B.

As noted above, in 2019 Jemena implemented a business-wide transformation program to reduce its opex so it could achieve sustained opex reductions over the next regulatory control period and the longer term. Jemena incurred $10.0 million ($2020–21) in costs for the transformation program in 2019.[52] In an update to its revised proposal, Jemena stated that it has assessed the effectiveness of its 2019 transformation program and that the latest information available about its opex in 2020 indicated that it will be around $2.0 million ($2020–21) lower than included in its revised proposal.[53] Together with the $4 million ($2020–21) 2020 opex savings already included in its revised proposal, this would mean that Jemena expects the transformation program to deliver annual savings of around $6.0 million ($2020–21) compared to its base year. It proposed to pass these savings on to customers.[54]

---

50 This comparison includes the estimated opex of $79 million ($2020–21) in 2020.

51 As above, this comparison includes the estimated opex of $79 million ($2020–21) in 2020.

52 Jemena, *Regulatory proposal 2021–26 – Attachment 06–01 Standard Control Services – Operating Expenditure,* February 2020, p. 7.

53 Jemena, *EDPR 2021–26 – Update to operating expenditure proposal*, 01 March 2021, p. 1.

54 Jemena, *EDPR 2021–26 – Update to operating expenditure proposal*, 01 March 2021, pp 1–2.

We consider this transformation program and the associated annual savings and benefits indicate Jemena's internal view that there is scope for 'catch-up' to the more efficient businesses.

In line with our approach, we have used our benchmarking tools and other cost analysis to assess and establish whether Jemena has been operating relatively efficiently, both over time and in the base year. We conclude that historically Jemena has still under-performed compared to other networks, as noted in this attachment. However, since the base year (2018), the significant opex savings from its transformation program largely close the gap to our alternative estimate of opex.

Benchmarking the efficiency of Jemena's opex over time

Benchmarking broadly refers to the practice of comparing the economic performance of a group of service providers that provide the same service as a means of assessing their relative performance. Our *2020 Annual Benchmarking Report* includes information about the use and purpose of economic benchmarking, and details about the techniques we use to benchmark the efficiency of distribution businesses in the National Electricity Market (NEM).[55]

While opex at the total level is generally recurrent, year-to-year fluctuations can be expected. To shed light on Jemena's general level of operating efficiency, we first look at the efficiency of Jemena's opex over a period of time, using our top-down benchmarking tools, as well as other supporting techniques. This is followed by looking at the efficiency of base year (2018) opex in particular, and deriving an alternative estimate of efficient opex in the base year.

Since our draft decision we have published the *2020 Annual Benchmarking Report* which incorporates the 2019 data for distribution businesses.[56] Jemena's results are slightly worse in the *2020 Annual Benchmarking Report* compared to the 2019 report. This is partly due to Jemena incurring transformation costs, which increased its 2019 opex. It also reflects that for Jemena there are two fewer econometric opex cost function models in the *2020 Annual Benchmarking Report* that we can use and the average of these results is lower compared to the results in the *2019 Annual Benchmarking Report*.

Top-down benchmarking

Period-average efficiency scores

In terms of historical performance, our benchmarking results from the *2020 Annual Benchmarking Report* indicate that Jemena's opex has been relatively inefficient over the 2006–19 period when compared to other distribution businesses in the NEM.[57]

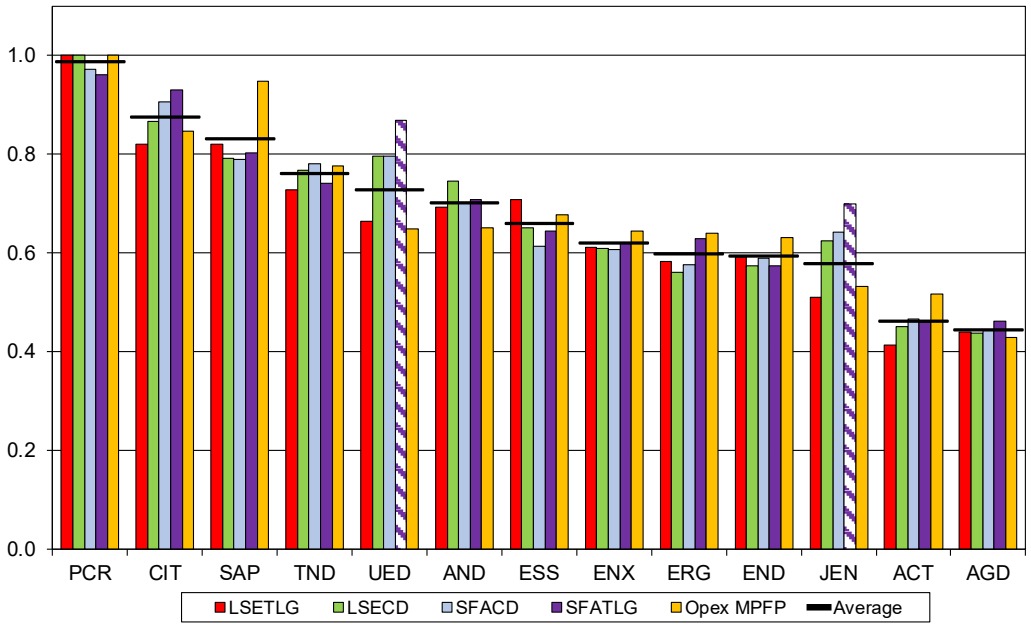
---

55 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020.
56 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020.
57 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020.

Figure 6.5 shows that over this period Jemena ranks 11th out of 13 distribution businesses based on the average efficiency scores from five economic benchmarking models.[58] In the draft decision (using results from the *2019 Annual Benchmarking Report*) Jemena ranked ninth.[59] In the *2020 Annual Benchmarking Report* Jemena's average efficiency score across the available models is 0.58, with scores ranging from 0.51 (LSE TLG model) to 0.64 (SFA CD model).[60] For reasons explained below, Jemena's average efficiency score does not include its SFA TLG score which is represented by the hatched purple column in Figure 6.5. In the draft decision Jemena's average efficiency score was 0.61, which included its SFA TLG score.[61]

The best possible efficiency score is 1.0. We use a 0.75 comparator point to assess the relative efficiency of distribution businesses,[62] noting that we adjust this for operating environment factors (OEFs) not already captured in the modelling below (which we apply to Jemena in the next section). Allowing for OEFs enables us to account for some factors beyond a distribution business' control that can affect its benchmarking performance.

Figure 6.5 Average opex efficiency scores of distribution businesses, 2006–19



58 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020, p. 32; AER analysis. The five models are the four econometric models – Cobb–Douglas stochastic frontier analysis (SFA CD), Cobb–Douglas least squares econometrics (LSE CD), Translog stochastic frontier analysis (SFA TLG) and Translog least squares econometrics (LSE TLG) and the opex multilateral partial factor productivity (MPFP) model.

59 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 29–30.

60 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020; Economic Insights, *Benchmarking results for the AER – Distribution,* October 2020; AER analysis.

61 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 29.

62 As set out further below, we use the efficiency scores from the valid econometric models to derive our estimate of efficient base opex and not the opex MPFP efficiency score. See Box 1 below for further details.

Source: Economic Insights, *Benchmarking results for the AER - Distribution*, October 2020; AER analysis.

Note: Columns with a hatched pattern represent results that do not satisfy the key property (monotonicity - that an increase in output is achieved with an increase in opex) and are not included in the average efficiency score for each business (which is represented by the black horizontal line). JEN in the figure represents Jemena. Other acronyms are: PCR = Powercor, CIT = CitiPower, SAP = SA Power Networks, TND = TasNetworks, UED = United Energy, AND = AusNet Services, ESS = Essential Energy, ENX = Energex, ERG = Ergon Energy, END = Endeavour Energy, ACT = Evoenergy, AGD = Ausgrid.

It can take some time for more recent improvements in efficiency by previously poorer performing distribution businesses to be reflected in period-average efficiency scores. Considering this, we also examined Jemena's average performance over the shorter and more recent 2012–19 time period. Jemena's average score over the 2012–19 period is also 0.58, and it is ranked 11th of the 13 distributors (this was also the case in the *2019 Annual Benchmarking Report* used for the draft decision).[63] This indicates that Jemena has not improved its efficiency relative to its peers over the 2012–19 period. In part, this is explained by other distributors improving their performance since 2012.

A key property required of the econometric opex models is that an increase in output can only be achieved with an increase in inputs (e.g. opex). This is the monotonicity requirement. Cobb-Douglas models automatically impose monotonicity, but the more flexible Translog models (that allow for output elasticities i.e. the responsiveness of opex to an increase in a particular output, to vary for each data point) do not, and so this property may not always hold. Therefore, when estimating the Translog models, satisfaction of the requirement has to be checked for each observation. On the advice of our consultant Economic Insights, we require this property (an increase in outputs requires an increase in inputs) to hold for at least half the data points of a business in order to include the efficiency score from that model in our efficiency assessment.

In Jemena's draft decision, we excluded its LSE TLG model results for the 2012–18 period, as this requirement was not met.[64] As highlighted in the *2020 Annual Benchmarking Report* the number of instances where this requirement is not met has become more prevalent, particularly for Jemena.[65] In addition to its LSE TLG results for the 2012–19 period, its results from the SFA TLG model over both the 2006–19 and 2012–19 periods do not satisfy the key property under our test. This is a change from the *2019 Annual Benchmarking Report* and Jemena's draft decision.

As a result, of the four Translog models (LSE TLG and SFA TLG, over both the 2006–19 and 2012–19 periods) only one (LSE TLG over the 2006–19 period) satisfies the key property and can be used to assess Jemena's base opex efficiency. As mentioned above, Jemena's lowest efficiency score is from the LSE TLG model. In its revised proposal Jemena noted this model has significantly lower results than other models,

---

63 Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020; AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 30.

64 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 39.

65 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020, p. 31.

and carries more weight on the calculated efficiency adjustment as there are only five available models compared to a total of eight econometric models that are generally used to estimating efficient base year opex.[66]

In its revised proposal Jemena also expressed concerns with the significant differences in elasticities between the LSE TLG and SFA TLG models for the 2006–19 period (discussed further below).

Because of these concerns Jemena submitted its 2006–19 LSE TLG results should not be used to assess its base opex efficiency.[67]

We set out in Appendix D a detailed response to Jemena's Translog model concerns. In summary, we have included the 2006–19 LSE TLG results in our assessment of Jemena's base opex efficiency as the *2020 Annual Benchmarking Report* results for this model raise no concerns in relation to the monotonicity requirement. The Translog model results provide useful information on Jemena's efficiency. If the results were excluded then Jemena's efficiency would only be assessed using one functional form (Cobb-Douglas). Excluding the valid Translog results would mean not using all useful information available to inform our position. When assessing our NSW 2014–19 opex efficiency assessments, the Australian Competition Tribunal were critical of relying on just one piece of information (the SFA CD model) and recommended that the AER draw on a wider range of models in future assessments.[68]

Opex multilateral partial factor productivity (MPFP) over time

We use the productivity index number techniques to enable comparisons of productivity levels over time and between businesses. The multilateral total factor productivity (MTFP) index measures the productivity over all inputs of each business, whereas the opex and capital MPFP indexes measure the productivity of opex or capital inputs respectively.

We use the MTFP / MPFP results as a part of our top down analysis of revealed opex to test whether a distribution business is operating efficiently historically and in the base year. It is one of several tools we use, along with econometric benchmarking, partial performance indicators and trend analysis. These tools, including MTFP / MPFP results discussed below, mostly point to there being concerns with Jemena's efficiency.

In its revised proposal, Jemena raised technical concerns over the MTFP / MPFP results and stated they should not be relied upon to assess base opex efficiency.[69] These concerns and our response to them are discussed in Appendix D. In summary we do not consider the technical concerns raised invalidate the use of the MTFP / MPFP models, particularly as in this decision they are used qualitatively to assess

---

66 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 15.

67 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 17.

68 Australian Competition Tribunal, *Applications by Public Interest Advocacy Centre Ltd and Ausgrid,* 2016, paragraph 461, 471, 1227.

69 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 19–21.

Jemena's historical and base year opex efficiency, including as a cross check for the results from the opex econometric cost function models.

In this regard, we believe the MTFP / MPFP results play an important supplementary role in base opex efficiency assessments. Our expenditure guidelines recommend the use of a combination of techniques to assess opex efficiency, which includes various benchmarking techniques.[70] The MTFP / MPFP results provide useful information as they allow for comparisons between businesses and across time, providing an indication of a business's efficiency both historically and in the base year, whereas the econometric models only examine period-average efficiency. The MTFP / MPFP results also represent a total cost function which incorporates both opex and capital costs. This is a key distinguishing factor from the econometric models which use an opex cost function. As such, although the MTFP / MPFP models have a broader inclusion of outputs and different output weights reflecting a total cost function, the annual movements in opex MPFP provide a good guide to interpreting the opex cost function efficiency score movements over time.

We do not, and have not, used the MTFP / MPFP results to derive the value of the opex efficiency adjustment in our alternative estimate as set out below.

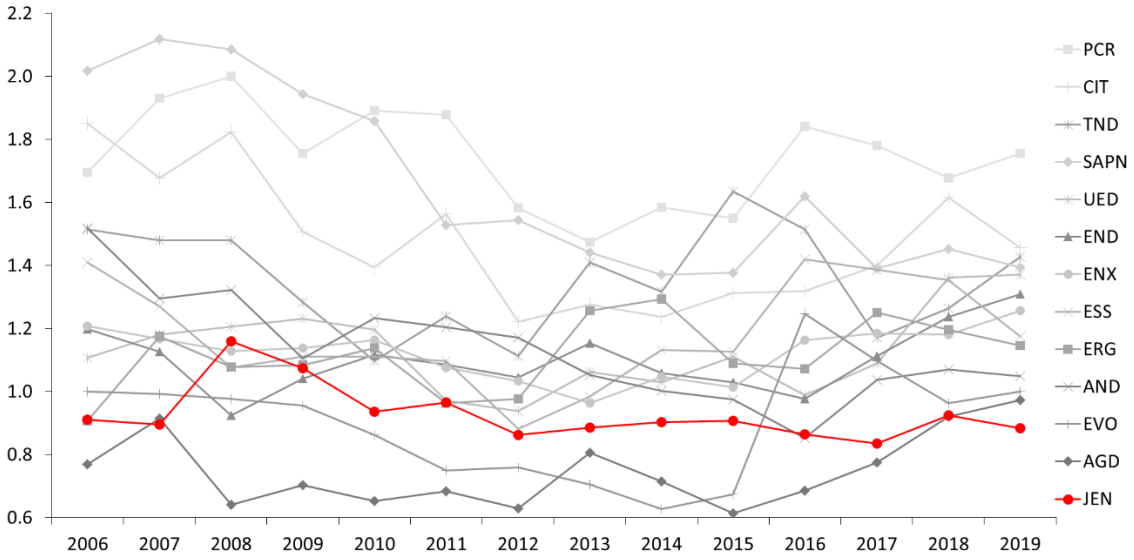
The results from our opex MPFP analysis can be seen in Figure 6.6 (where a higher index score means more efficient). Jemena has typically ranked among the lowest performing distribution businesses in terms of opex MPFP. Jemena's performance has remained fairly constant since 2012. However, as some other distribution businesses have improved their performance since 2012, Jemena's ranking has fallen slightly relative to its peers. For Jemena its average ranking over both the 2006–19 and 2012–19 periods is 11th (consistent with the *2019 Annual Benchmarking Report* results used in the draft decision[71]). In 2019 (the most recent year) Jemena became the lowest performing distribution business as measured by opex MPFP. This result would be partly driven by Jemena incurring transformation costs in 2019 as noted above.

---

70 AER, *Expenditure forecast assessment guideline for electricity distribution,* November 2013, p. 22.

71 Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020. AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 31.

Figure 6.6 Opex MPFP by individual distribution businesses, 2006–19



Source: Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020; AER analysis.

Note: JEN in the figure represents Jemena.

Partial Performance Indicators and cost category analysis

We have also examined the relative opex performance of Jemena using partial performance indicators (PPIs) and examining key cost categories. The detail of this analysis is contained in Appendices A and B.

The PPIs support other benchmarking techniques, because they provide a general indication of comparative performance of distribution businesses in delivering a specific output. However, they are more simplistic measures, and rankings for PPIs may be affected by factors outside the control of the distribution businesses and must be analysed with caution, with comparisons generally limited to businesses with similar characteristics, e.g. customer density.

Consistent with the draft decision, the evidence on Jemena's performance on the range of PPIs is not consistent and depends on the output considered.[72] Across the different PPI cost categories, Jemena tends to perform well on per customer metrics but relatively less well on per circuit length metrics. Largely urban businesses such as Jemena have denser distribution networks and tend to perform better on per customer metrics than their more rural counterparts. In addition, care must be taken drawing conclusions from PPI analysis. For Jemena this is particularly the case given its situation is relatively unique in terms of its customer density.[73]

---

[72] AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 32.

[73] Jemena's customer density (72 customers per km of route length) is different to its closest peers in terms of customer density, who are United Energy (98 customers per km of route length) and Evoenergy (46 customers per km of route length). AER analysis.

This pattern of Jemena's better performance on per customer than on per circuit km is repeated for the main opex cost categories, with the analysis indicating that Jemena has relatively low maintenance, vegetation management and emergency response opex per customer, but that these cost categories are relatively higher on a per circuit length basis. The exception to this is total overhead costs (opex and capitalised corporate and network overhead costs) where Jemena does not perform particularly well on either customer or circuit length measures. See Appendix B for further analysis.

In terms of the category level costs underpinning the PPIs, as per the draft decision, opex overheads and non-network costs have been the largest components of Jemena's total opex for each year in the 2014 to 2019 period.[74] These costs have also remained relatively constant over time. In comparison, Evoenergy and Ausgrid (who have similar top down benchmarking results) have achieved reductions in total opex by reducing costs for most categories, and particularly opex overheads which is their largest cost category. See Appendix B for further analysis.

Benchmarking the efficiency of Jemena's base year opex

Given the evidence outlined above about the relative inefficiency of Jemena's opex over the 2006–19 period, and the more recent 2012–19 period, as well as supporting PPI analysis for the 2015–19 time period, we have undertaken additional analysis. This includes application of our economic benchmarking roll-forward-model, which includes adjusting for OEFs, to more directly test the efficiency of Jemena's actual opex in the base year.

The results from our productivity index techniques and econometric opex cost function modelling continue to indicate the presence of material inefficiency in Jemena's 2018 base year opex.

In base year 2018, Jemena is placed second-last (12th) on opex MPFP as shown in Figure 6.6. This is an indicator that Jemena's base year opex likely contains a material degree of inefficiency, noting that this is below its 2006-19 opex MPFP period-average ranking (eleventh) and 2012-19 opex MPFP period-average ranking (eighth).

Consistent with our standard approach we have tested this further using the econometric benchmarking incorporating OEF analysis to establish Jemena's efficient opex in the base year and the efficiency adjustment. MTFP / MPFP benchmarking is not used as a part of this further testing. We used the same approach in the draft decision.

Econometric benchmarking roll forward modelling

Our econometric models produce average opex efficiency scores for distribution businesses across the 2006–19 and 2012–19 periods respectively. Using our roll-forward-model, we convert these period-average results to estimate the level of

[74] See Figure B.1 in Appendix B.

network services opex[75] required by a service provider operating in Jemena's circumstances in 2018, and compare this to the Jemena's actual base year network services opex.

This uses a benchmark comparison point of 0.75. This also adjusts for differences in OEFs between Jemena and the benchmark comparators that are not already captured in the modelling (discussed further below). We outline our approach in Box 1.

Box 1: Our approach to estimating efficient base year opex

To derive our efficient estimate of base year opex for businesses, we find the average of the estimated efficient rolled-forward levels of network services opex as determined by each of our applicable econometric models (LSE CD, SFA CD, LSE TLG, SFA TLG). This is done using data over the 2006–19 and 2012–19 periods separately, which means two averages are produced. We then compare this to actual network services opex in the base year.

The first step is to average a business' actual network services opex over the relevant benchmarking period to find the business's period-average network services opex (and where relevant, we use the same backcast opex series under the CAM applying in 2013–14, as those used for our economic benchmarking).

We then separately compare the business's efficiency scores of each econometric model over that period, against a benchmark comparison point of 0.75. This reflects that we consider the upper quartile of possible efficiency scores are efficient, and reflects our conservative approach to setting a benchmark comparison point.

We adjust the benchmark comparison point for material differences in OEFs between the business and the benchmark comparators that are not already captured in the modelling (discussed further below). The benchmark comparators are those businesses that have average efficiency score above the 0.75 benchmark comparison score. (For both the 2006–19 and 2012–19 benchmarking periods, there are five businesses with average efficiency score at or above 0.75, namely Powercor, CitiPower, United Energy, SA Power Networks and TasNetworks).

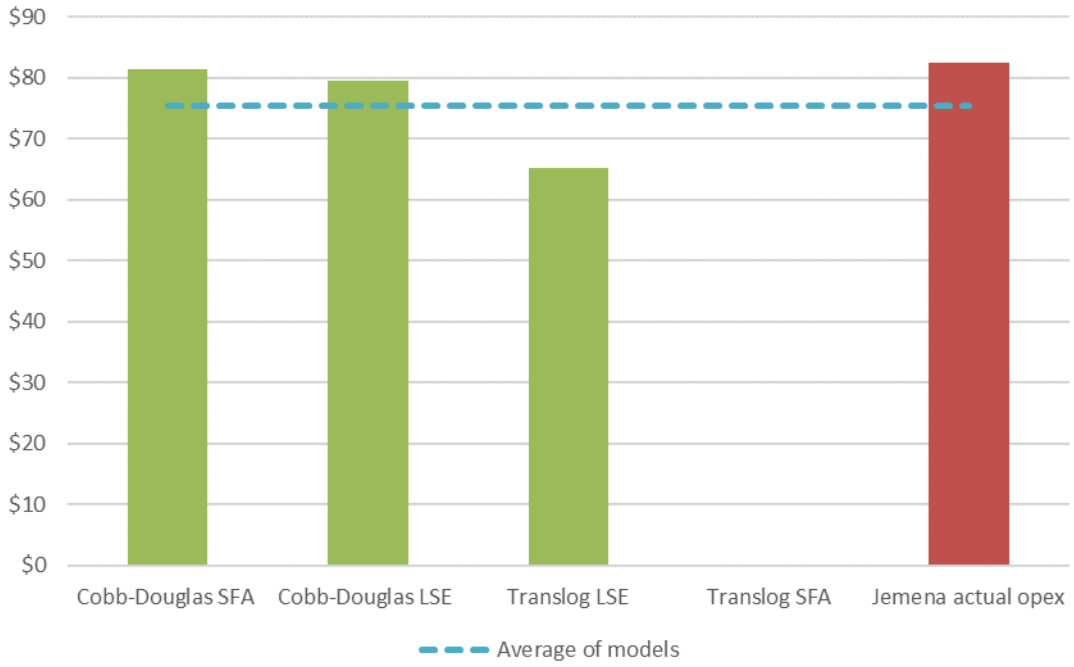
Where the business' efficiency score derived from an applicable model is below the adjusted benchmark comparison point, we adjust its period-average network services opex (established in the first step) down by the difference between the adjusted comparison point and the efficiency score. This results in an estimate of period-average network services opex that we consider is not materially inefficient.

This period-average network services opex estimate is then trended forward from the midpoint of the period to the base year to account for the rate of change. This results in a conservative estimate of efficient network services opex in the base year, which is compared against actual base year network services opex. This process is repeated for each econometric model, resulting in a different estimate for each.

[75] We benchmark distribution businesses on the basis of the network services component of standard control services opex, which comprises the majority of standard control services opex. Network services opex excludes opex categories that are part of standard control services opex, such as opex for metering, customer connections, street lighting, ancillary services and solar feed-in tariff payments.

The results of this analysis for Jemena are set out in Figure 6.7 for the 2006–19 period and in Figure 6.8 for the 2012–19 period using results from the *2020 Annual Benchmarking Report.* In Figure 6.7, our estimates of efficient network services opex (which includes adjustment for OEFs) in the base year are shown in green (with an average of $75.4 million ($2020–21)), while Jemena's actual network services opex in the base year of 2018 is shown in red ($82.5 million ($2020–21)). Our average estimate (the blue dashed line) is $7.1 million ($2020–21), or 8.7 per cent below Jemena's actual network services opex.

Figure 6.7 Estimates of efficient network services opex using data over the 2006–19 period ($ million, 2020–21)



Source: Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020; AER analysis.

Note: We excluded the efficiency score for the SFA TLG model for Jemena as it does not satisfy the monotonicity requirement (as discussed above). See Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020, p. 13.

Similarly, in Figure 6.8, our estimates of efficient network services opex (which includes adjustment for OEFs) in the base year over the period 2012–19 are shown in green (with an average of $74.0 million ($2020–21)), while Jemena's actual network services opex in the base year of 2018 is again shown in red ($82.5 million ($2020–21)). Our average estimate (the blue dashed line) is $8.5 million ($2020–21), or 10.3 per cent below Jemena's actual opex.

Figure 6.8 Estimates of efficient network services opex using data over the 2012–19 period ($ million, 2020–21)

Source: Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020; AER analysis.

Note: We exclude the efficiency score for the LSE TLG and SFA TLG models for Jemena as they do not satisfy the monotonicity requirement (as discussed above). See Economic Insights, *Benchmarking results for the AER – Distribution*, October 2020, p. 13.

Across the two periods, the average difference between our estimates of efficient network services opex in the base year and Jemena's actual network services opex in the base year (i.e. prior to incorporating Jemena's proposed opex reductions) is $7.8 million ($2020–21), which is 9.5 per cent of Jemena's actual base year network services opex. This is an update from the draft decision, where the difference was $12.2 million ($2020–21) and 15.0 per cent.[76] The change from the draft decision is due to a number of factors as mentioned throughout this section (e.g. updating to use results from the *2020 Annual Benchmarking Report*, the inclusion of an OEF adjustment for capitalisation).

Given the conservatism built in to our benchmarking, particularly the use of a 0.75 benchmark comparison point, and accounting for OEFs not already captured in the econometric modelling, we consider this supports a finding that Jemena's base year network services opex is materially inefficient.

[76] AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 39.

Operating Environment Factors

Distribution businesses do not all operate under exactly the same operating environments. Our economic benchmarking techniques account for differences in operating environments to a significant degree, including the scope of services provided, the share of undergrounding and network densities. However, our benchmarking models do not directly account for all factors, such as differences in legislative or regulatory obligations, climate and geography.

Given this, we also consider OEFs as a part of our benchmarking analysis. This enables us to assess the efficiency of a distribution business's operations on a like-for-like basis to inform our assessment of whether its base year opex is efficient or materially inefficient. We do this by quantifying the material OEFs to adjust the benchmark comparison point (upwards for negative OEFs, downwards for positive OEFs) to account for the operating environment of the distribution business we are assessing (see Box 1). This adjusted comparison point is then compared to the business's efficiency score (from the benchmarking models), allowing us to account for potential cost differences due to material OEFs between the business and the benchmark comparison businesses. More detail on the mechanics of our approach is contained in past decisions.[77]

Based on a 2018 review carried out by our consultant Sapere-Merz, we have identified a limited number of OEFs that materially affect the relative opex of each business in the NEM. Sapere-Merz consulted with stakeholders, including the electricity network businesses in undertaking this review.[78]

The material OEFs Sapere-Merz identified are:

1. The higher operating costs of maintaining sub-transmission assets.
2. Differences in vegetation management requirements.
3. Jurisdictional taxes and levies.
4. The costs of planning for, and responding to, cyclones.
5. Backyard reticulation (in the ACT only).
6. Termite exposure.

Consistent with the draft decision, we have calculated the adjustments for each of these OEFs for Jemena. Since the draft decision, these adjustments have been updated for an additional year of data and the results of the *2020 Annual Benchmarking Report.* The results from the 2020 report impact the composition of the

---

[77] AER, *Preliminary Decision, Ergon Energy determination 2015–20, Attachment 7 – Operating Expenditure*, April 2015, pp. 93–138; AER, *Draft Decision, Ausgrid Distribution determination 2019–24, Attachment 6 – Operating Expenditure*, November 2018, pp. 31–33; AER, *Draft Decision, Endeavour Energy Distribution determination 2019–24, Attachment 6 – Operating Expenditure*, November 2018, pp. 27–29.

[78] Sapere Research Group and Merz Consulting, *Independent review of Operating Environment Factors used to adjust efficient operating expenditure for economic benchmarking*, August 2018.

comparator businesses[79] (with the addition of TasNetworks) and the efficient base opex for each business against which the cost of the OEF is compared to derive a percentage impact.[80] As discussed further below, we have also now included an OEF adjustment for capitalisation practices.

Table 6.4 shows our calculated OEFs for Jemena for the two benchmarking periods that are incorporated into the analysis shown in Figure 6.7 and Figure 6.8.[81]

Table 6.4 OEF adjustments for Jemena, per cent

	2006–19 period	2012–19 period
Sub-transmission (Licence conditions)	0.4	0.4
Vegetation management (bushfire)	–1.2	–1.9
Taxes and levies	–0.2	–0.2
Termite exposure	–0.1	–0.1
Capitalisation	9.9	7.5
Total	8.9	5.7

Source: AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020; Sapere Research Group and Merz Consulting, *Independent review of Operating Environment Factors used to adjust efficient operating expenditure for economic benchmarking*, August 2018; AER analysis.

These results indicate that Jemena incurs net cost disadvantages (8.9 per cent and 5.7 per cent over the two benchmarking periods, respectively) relative to the benchmark comparator businesses. That is, relative to the benchmark comparator businesses Jemena incurs relatively more costs given its operating environment. As per our standard approach, we reduce our benchmark comparator point of 0.75 to account for these cost disadvantages. The most material of these adjustments are discussed below.

OEF adjustment for vegetation management

The OEF for vegetation management (bushfire) exists to account for the differences in opex between distribution businesses due to differences in bushfire risk for clearing vegetation, in this case between Jemena and the comparator networks.[82] Consistent

---

79 The OEF adjustments are calculated using the customer–number weighted average of the comparator businesses as the reference point.

80 The OEF estimates in percentage terms are calculated by dividing the cost of the OEF by historical opex that is efficiency–adjusted using the opex efficiency scores.

81 The spreadsheets used to calculate these adjustments are published along with this decision.

82 In past decisions, we have also calculated a second vegetation management OEF, termed division of responsibility, in relation to the cost disadvantage in the scale of vegetation management responsibility compared to the benchmark comparator businesses in Victoria and South Australia. This was because in Queensland distribution businesses are responsible for vegetation clearance from all network assets, whereas in Victoria and South Australia, other parties such as councils, landowners and roads authorities are responsible for some

with the draft decision, we have applied the approach that we recently applied in our Ergon Energy determination, which was a re-application of the approach used in our Queensland 2015 decisions.[83] This approach calculates the vegetation management OEF for the relevant business by quantifying the cost impact of vegetation management regulations introduced in Victoria after the 2009 Black Saturday bushfires. The increased opex expected to be incurred as a result of the new regulations is used as a proxy for the differences in costs of managing bushfire risks in Victoria compared to other states. While as a Victorian business Jemena also faced these additional vegetation management obligations and costs, it is predominantly an urban business so is relatively less affected by bushfire risk obligations.[84]

As discussed further in Appendix D (setting out our response to issues raised in Jemena's revised proposal), to estimate Victorian vegetation management costs we have continued to use historical forecast costs associated with new bushfire regulations rather than actual vegetation management costs as proposed by Jemena.[85] This is because we consider it unlikely that actual costs will reflect only changes as a result of the new obligations faced given these costs can fluctuate due to other reasons such as weather conditions and vegetation management cycles.

OEF adjustment for capitalisation

For the final decision we have now included an OEF adjustment to account for Jemena's capitalisation practices being materially different to the comparator businesses. Consistent with past decisions,[86] we have characterised capitalisation as an OEF in that while it is somewhat under managerial discretion, this factor is unrelated to efficiency. In addition, we do not consider that capitalisation practices are sufficiently accounted for elsewhere (i.e. directly in the data adjustments, modelling or other OEF adjustments). For the purposes of our alternative estimate in this final decision, we have applied an adjustment to recognise differences in Jemena's capitalisation practices compared to the comparator businesses. We used two ratios (opex/totex and opex/total cost) to inform this adjustment but note that the magnitude of our alternative estimate, and our final decision, does not change using an alternative method incorporating a third ratio (opex/total inputs).

We consider this approach fit for purpose in the context of Jemena's circumstances and for this final decision. However, we consider that the optimal method of identifying

---

vegetation clearance. See AER, *Draft decision, Ergon Energy distribution determination 2020–25 Attachment 6,* October 2019, pp. 83–85. Given Jemena is a Victorian network, its cost advantage/disadvantage for this OEF under our calculation method is zero.

83 AER, *Preliminary Decision*, *Ergon Energy determination 2015−16 to 2019−20, Attachment 7 − Operating Expenditure,* April 2015, p. 200; AER, *Final decision, Ergon Energy distribution determination 2020 to 25 Attachment 6, Operating expenditure,* June 2020, pp. 41–44.

84 More details of how this OEF adjustment is calculated are shown in the calculation spreadsheet which we have published along with this decision.

85 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 17.

86 AER, *Final Decision Ausgrid distribution determination 2015–16 to 2018–19,* Attachment 7 – Operating expenditure, April 2015, pp. 180–182.

and adjusting for material difference in capitalisation between distribution businesses is an area of ongoing work and is an issue that we intend to explore further in the context of the *2021 Annual Benchmarking Report*.

Following past decisions, we have used the term capitalisation practices to encompass two broad types of capitalisation undertaken by distribution businesses:

- capitalisation policy, i.e. a business's reporting/classification of expenditure as opex or capex, (e.g. expensing/capitalising overheads) including under a CAM[87]
- opex/ capital trade-offs, i.e. a business's utilisation of opex versus capital inputs.

We observe some degree of variation among distribution businesses in their capitalisation practices. The mix of opex and capital to produce outputs will be particular to each business, and there is some flexibility in capitalisation policy.[88] As noted above, benchmarking relies on like-with-like comparability. We recognised at the start of our economic benchmarking programme in 2014 that differences between businesses in terms of capitalisation potentially reduces comparability. For example, without broadly consistent capitalisation practices, a low opex efficiency score could penalise a business with a policy to expense all corporate overheads. We considered that the businesses' CAMs/capitalisation policies applying in 2014 (including Evoenergy's revised CAM) were broadly consistent.[89] We then 'froze' the CAMs as at 2014 for benchmarking purposes to minimise the scope for businesses to game the benchmarking by reallocating costs between opex and capex.[90]

The issue of differing capitalisation practices was put forward by Jemena as a key explanation for its opex efficiency score performance.[91] In the draft decision, we noted Jemena was close to (slightly below) the comparator average for the opex/totex ratio but relatively high on the opex/total cost and opex/total inputs ratios. However, we considered there was not clear evidence that Jemena's relative mix of opex and capital is materially different to the comparators. We stated that we would further review this issue.[92]

---

87 Businesses do not need to specify their capitalisation policies as a part of the CAMs submitted to the AER, although some businesses have included these in their CAMs.

88 For example, we know that under their revised CAMs, CitiPower, Powercor and United Energy fully expense their corporate overheads, while other businesses do not. The extent of these differences is limited by some statutory reporting requirements e.g.in relation to expensing or capitalising certain costs.

89 Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2019 DNSP Annual Benchmarking Report,* 16 October 2019, pp. 3–4

90 Where a business has subsequently changed its CAM, we ask that it continue to provide network services opex annually as if the 2014 CAM still applied.

91 Jemena, *Electricity Distribution Price Review Regulatory Proposal 2021–26 I – Attachment 06–01 Standard Control Services – Operating Expenditure – Public,* 24 February 2020, p. 11; Jemena, *Information request 043*, 15 July 2020, p. 2; Jemena*, Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 6–15.

92 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 45–46.

Based on our further review of a range of qualitative and quantitative evidence, we now consider that there is sufficient evidence of capitalisation practices being materially different between Jemena and the comparator businesses.

Qualitatively, we have observed in the context of the AER's role in approving businesses' CAMs that there is variation in the manner in which businesses allocate and capitalise shared costs. For example, some distribution businesses (e.g. CitiPower, Powercor, Ergon Energy, and Jemena from 1 January 2021) have changed their capitalisation policy to expense more (or all) corporate overheads through a change in their CAM.

Quantitatively, for the purpose of this final decision we now consider that there is a material difference between Jemena's and the comparator businesses' capitalisation practices, and that that these differences have a material impact on its opex benchmarking scores. We have formed this view with particular regard to:

- The sensitivity of reported opex and associated opex benchmarking scores under alternative capitalisation policies.
- Jemena's opex/capital ratios relative to the comparators, and a further assessment of the advantages and disadvantages of the three types of ratio we have identified.

In relation to the first factor, results of our modelling indicate that reported opex and the opex benchmarking scores are sensitive to the capitalisation policy in place. To explore this question, we recast the historical opex series on the basis of the current CAMs that businesses have in place (backcast to 2006) and ran our econometric cost models using this series (instead of the frozen 2014 CAM opex series). Given the current CAMs incorporate a change in capitalisation policy for three businesses (Powercor, CitiPower, and Ergon Energy), this analysis provides an insight into the impact of varying capitalisation practices on opex and opex benchmarking scores. While we do not consider we can rely on the current CAM efficiency scores to replace the 2014-CAM scores, or for deriving an OEF adjustment as proposed by Jemena (as explained below and in Appendix D), the change in the benchmarking efficiency scores indicates their sensitivity to capitalisation change and/or differences.

As an example to indicate this sensitivity, while Jemena's opex is the same under the 2014 and current CAMs (as it has not yet changed its CAM), Jemena's efficiency scores under the current CAMs are 15–20 per cent higher than under the 2014 CAMs.[93] This change in Jemena's score reflects the increase in the opex of the benchmark comparators (CitiPower and Powercor) under their revised CAMs. In the case of CitiPower, for example, its average opex over the 2006–19 period is 33 per cent higher under its revised capitalisation policy (to expense of all its corporate overheads) compared to the 2014 CAM opex used for the benchmarking. This results in a significant reduction in its average opex efficiency score from 0.88 (2006–19

[93] This is consistent with the modelling put forward by Jemena in its revised proposal, noting that we have excluded from our calculation the models that did not satisfy the monotonicity requirement. Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 13.

period) and 0.83 (2012–19 period) under the 2014 CAM benchmarking to 0.77 and 0.71 under the current CAM benchmarking.

In relation to the second factor, we continue to consider that opex/capital ratios are able to capture net capitalisation practices, irrespective of specific sources e.g. capitalisation/expensing of overheads, preferences for opex over capex. All else equal, a higher (lower) opex/capital ratio indicates a relatively greater (lesser) use of opex relative to capital inputs. As set out in the draft decision, we consider there are three types of opex/capital ratios that are informative indicators of businesses' capitalisation practices, with all measured as average ratios over the full (2006–19) and short (2012–19) benchmarking periods:[94]

- opex/totex
- opex/total cost where total costs is opex + capital costs (the latter measured by the annual user cost of capital (AUC))
- opex/total inputs.

Since the draft decision we have further examined the merits of the three ratios, and consider that they provide evidence that Jemena's capitalisation practices are materially different to the comparator businesses. In particular, we consider that, on balance, Jemena reports/utilises relatively more opex, than capital in delivering outputs compared to the comparator businesses. In support of this conclusion, we note:

- At the time of the draft decision, Jemena's average opex/totex ratio over both benchmarking periods (2006–18 and 2012–18) was marginally lower than the comparator-average ratios. Following updates since the draft decision we observe that Jemena's average opex/totex ratio over both periods is now 2 per cent higher than the comparator-average.
- Jemena's opex/total cost and opex/total inputs ratios over these two periods remains significantly (17.8 and 13.0 per cent for opex/total cost, and 24.2 and 23.8 per cent for opex/total inputs) higher than the comparator-average. For the reasons explained below, we are satisfied that more weight can be placed on both of these ratios as indicators of capitalisation practices relative to the draft decision.[95]

We continue to consider that each ratio has strengths and limitations, and so we have had regard to all three ratios as indicators of variations in capitalisation practices. Our views around each of these ratios, and their strengths and weaknesses, is set out in Appendix C.

In terms of calculating this OEF adjustment, for the purposes of this final decision we have derived this based on the percentage divergence of Jemena's opex/totex and

---

94 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 90–93.

95 We have updated these ratios for an additional year of data (2019) and the addition of TasNetworks as a comparator business. This update is presented in Appendix C.

opex/total cost ratios relative to the respective comparator-average ratios. Specifically, we have calculated the OEF adjustment for the two benchmarking periods (2006–19 and 2012–19) by taking the midpoint of the percentage differences between Jemena's opex/totex and opex/total cost ratios and the respective customer-weighted comparator-average ratios (all measured as average ratios over the two benchmarking periods). This calculation method is consistent with our standard OEF adjustment calculation method of calculating the percentage impact of the OEF on a business's opex relative to the comparator-average impact. This approach incorporates two different measures of opex/capital mix, recognising that each has advantages and disadvantages, as discussed in Appendix C.

For this final decision, we also examined a range of alternative methods of calculating the OEF adjustment for capitalisation, including Jemena's proposed methods, discussed below and in Appendix D. We consider that a feasible alternative method could incorporate the opex/total inputs ratio, which was the third ratio that we put forward in the draft decision.[96] Specifically, we considered an OEF adjustment method based on the weighted average of the opex/totex (0.5 weight), opex/total cost (0.25) and opex/total inputs (0.25) ratios. We adopted this particular weighting to reflect that the opex/total cost and opex/total inputs ratios both incorporate a measure of the capital stock, set against the opex/totex ratio which is expenditure-based. We note that we have some concerns with using an index-based ratio in this manner, for technical reasons explained in Appendix C. We will further review the use of the opex/total input ratio within our broader review of capitalisation in the *2021 Annual Benchmarking Report*. We note that the broad magnitude of our alternative estimate, and our final overall decision to accept Jemena's opex proposal, does not change under this alternative method.

We also considered two of Jemena's proposed methods of addressing capitalisation:

- An OEF adjustment based on comparison of the current CAM efficiency scores to the 2014-CAM scores (Jemena's preferred option).
- Adopting scores from benchmarking using a common capitalisation ratio for all businesses.[97]

We did not adopt these proposed methods in our alternative estimate. We discuss Jemena's views and proposed approaches to addressing capitalisation practice differences further in Appendix D. In summary, we consider Jemena's first method does not take into account the extent to which Jemena's capitalisation practices differ from the comparator businesses under the current CAM benchmarking. We see Jemena's second method as a useful cross-check, not as a substitute for the 2014-CAM benchmarking. This is because we consider an adjustment made prior to the benchmarking being undertaken would result in opex for each Australian distributor that would excessively diverge from their actual opex. For the purposes of this

---

96 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 93.

97 *Jemena, Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 6–15.

decision, we consider that an OEF adjustment applied to the efficiency scores after the benchmarking is undertaken is consistent with our standard approach to other OEFs.

Jemena's and other stakeholders' submissions on base opex efficiency, and our response

Jemena raised several concerns about our benchmarking and the use of it to assess the efficiency of opex in the base year in the context of its reset determination.[98] These were:

- that our approach relies on Translog models that are prone to statistical issues
- the MTFP benchmarking results should not be relied on and the recent errors raise broader concerns
- it includes a vegetation management OEF based on regulatory allowances rather than revealed actual cost
- it does not account for differences in capitalisation
- an overall 'health check' is required on the AER's benchmarking tools and practice by experts other than Economic Insights.

We have outlined our response to many of these arguments in the sections above. Our more detailed responses to these and issues raised by other stakeholders in relation to our approach to assessing the efficiency of opex in the base year are set out in Appendix D.

Efficiency adjustment to Jemena's final year opex

Taking the above analysis into account, consistent with our draft decision, we have concluded on balance that Jemena's actual base year opex (before adjusting for its proposed opex reductions) is not at a level that is consistent with what an efficient service provider operating in Jemena's circumstances would require to deliver its network services. Given the conservatism built into our benchmarking approach, including the use of 0.75 as the efficiency benchmark and accounting for OEFs, we consider that Jemena's base year opex is materially inefficient. Consequently, to determine our alternative estimate of base opex we have made an efficiency adjustment to Jemena's estimated final year opex to establish a level of opex that we consider reflects an efficient distributor's opex.

The size of the efficiency adjustment for Jemena suggested by the benchmarking results and adjusted to take account of the relevant OEFs is 9.5 per cent, as indicated in the analysis above.

---

98 *Jemena, Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020.

Transition to lower cost base via a glide path

Consistent with our draft decision, for our alternative estimate we have incorporated a glide path to transition Jemena from its current opex levels to the more efficient opex level adopted in this decision.

For this final decision we have applied the glide path only for efficiencies above those we understand Jemena has already achieved, as included in its updated revised proposal. In the draft decision we applied a glide path to the total efficiency adjustment as recognition it would likely take Jemena time to achieve them.[99] As discussed above, Jemena's updated revised proposal of $516.6 million ($2020–21) incorporates efficiencies of $6.0 million per year ($2020–21) or $30.2 million ($2020–21) over the next regulatory control period that we understand have already been achieved (i.e. the $20 million included in the revised proposal and an additional $10.2 million ($2020–21) as a result of further information on estimated opex in 2020). We have therefore applied a glide path to the efficiencies beyond $30.2 million ($2020–21).

The glide path involves linear reductions over the next regulatory control period, so that the 9.5 per cent reduction is fully realised by the last year of the period. In practice, and in combination with the annual efficiency gain of $6.0 million already achieved ($2020–21), this results in a net efficiency adjustment of 7.3 per cent in the first year of the next regulatory control period, 7.8 per cent in the second year, 8.4 per cent in the third, 8.9 per cent in the fourth, with the full 9.5 per cent applied in the final year of the period. (This is equivalent to a flat 8.4 per cent if applied without a glide path.)

Application of the glide path beyond those efficiencies we understand Jemena has already achieved, recognises it will take time and involve costs for management to implement the required programs over the next regulatory control period to realise those further reductions. Based on the initiatives Jemena undertook in its 2019 transformation program, this may involve incurring costs in relation to redundancies (the major proportion of the costs), transformation program management, and systems and processes implementation costs.[100] We consider that a glide path provides for the prudent, practicably achievable targets that will allow Jemena to achieve cost efficiency while at the same time maintaining the quality, reliability, security and safety of services over the period.

The 9.5 per cent adjustment, when combined with the glide path lowers our alternative estimate of opex by $36.9 million ($2020–21) over the next regulatory control. However, the significant improvements made by Jemena to its proposal throughout the process largely closed the gap to our alternative estimate. Jemena's updated revised proposal, which included opex savings of $6.0 million per year ($2020–21) ($30.2 million ($2020–21) over the next regulatory control period) is equivalent to a 6.0 per cent efficiency adjustment applied to its base year opex. This means our net efficiency adjustment ($36.9 million ($2020–21)) is only $6.8 million ($2020–21)

---

99 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 47–48.

100 Jemena, *Information request 052*, 27 July 2020, pp. 8–9.

more than the expected opex reductions Jemena included in its updated revised proposal.

As noted above in our discussion of capitalisation, our overall decision to accept Jemena's opex proposal would not change under an alternative method of calculating the OEF adjustment for capitalisation that incorporates an additional opex/capital ratio. Under this method, our efficiency adjustment (after applying the glide path) in our alternative estimate would be $32.2 million ($2020–21) over the next regulatory control period, which is $2.1 million ($2020–21) more than Jemena's updated revised proposal.

6.4.1.3 Final year increment

Our standard practice to calculate final year opex is to add the difference between the opex allowance for the final year of the preceding regulatory control period and the opex allowance for the base year to the amount of actual opex in the base year.[101] As a result of the six month extension to the current regulatory control period, we have updated our final year increment calculation by replacing the opex allowance for the final year of the preceding regulatory control period with the annualised half year 2021 forecast. As explained further below, the calculated final year increment includes the change in Jemena's CAM between base year 2018 and half-year 2021.

By forecasting opex in this way, the opex forecast assumes the business makes no efficiency gains between the base year and the final year. This allows the business to retain the efficiency gains it makes in the final year through the opex forecast.[102] This is consistent with the decision to apply the EBSS to Jemena during the 2016–20 regulatory control period.[103]

Expensing of corporate overheads

A business' CAM typically sets out, among other things, the basis on which it treats expenditures as either opex or capex. In 2019, the AER approved a new CAM for Jemena to apply from 1 January 2021.[104] Under this, Jemena moved from treating approximately 30 per cent of its corporate overheads as capex, to treating all corporate overheads as opex (i.e. fully expensing corporate overheads). In the draft decision we included this change in our alternative estimate as a part of the calculation of Jemena's final year increment.[105] This reflected that its new CAM will come into effect on 1 January 2021, which falls within the time period covered by the final year increment

---

101 AER, *Expenditure forecast assessment guidelines for electricity distribution*, November 2013, p. 64–65.

102 AER, *Expenditure forecast assessment guidelines for electricity distribution*, November 2013, pp. 22–23.

103 AER, *Jemena distribution determination 2016 to 2020, Final decision, Attachment 9, Efficiency Benefit Sharing Scheme*, May 2016, pp. 6–7.

104 AER, Jemena Electricity Networks (Vic) Ltd, *Revised Cost Allocation Method*, Final Decision, May 2019.

105 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 48–50.

and that we were satisfied that the proposed adjustment for additional expensing of corporate overheads was consistent with the new CAM.[106]

In its revised proposal Jemena adopted our position in the draft decision to adjust the final year increment by $11.8 million ($2020–21) per year ($59.2 million ($2020–21) over the next regulatory control period) to account for Jemena's new CAM and the change in the treatment of corporate overheads.[107] The inclusion of Jemena's newly expensed corporate overheads in the final year increment in our alternative estimate for this final decision is consistent with our position in the draft decision

In the draft decision after allowing for the increase in opex as a result of Jemena's new CAM we applied the efficiency adjustment to opex, including the newly expensed corporate overheads (under the new CAM). We did not separately assess the efficiency of the newly expensed corporate overheads and the existing base opex in making our draft decision. The application of the base efficiency adjustment occurred more because of the way we applied the adjustment in our modelling.

In its revised proposal Jemena argued any efficiency adjustment should not be applied to the newly expensed corporate overheads as they were not subject to economic benchmarking.[108] Jemena also believed the corporate overheads would not have been reduced if they were capitalised (i.e. if its CAM did not change). This is because the AER's capex and Capital Efficiency Sharing Scheme (CESS) draft decisions did not observe any inefficiency in Jemena's capex program.[109]

We consider the efficiency adjustment applied to Jemena's base opex should not be applied to its newly expensed corporate overheads, and we have not done so in our alternative estimate of forecast opex for this final decision. This is a change from our draft decision.

We recognise that Jemena's newly expensed corporate overheads are not assessed by the opex economic benchmarking as they do not form a part of historical opex (given they were previously treated as capex). Further assessment of the efficiency of newly expensed corporate overheads would be required before concluding they are inefficient.

As stated above, in our draft decision, we were satisfied Jemena's newly expensed corporate overheads could be included as a part of the calculation of Jemena's final year increment as they reflected historical values of capitalised corporate overheads and the changes were consistent with the new CAM. These costs were incurred as capex while Jemena was operating under the CESS, and the evidence does not

---

106 AER, *Jemena Six–month extension – variation decision*, October 2020, p. 17.

107 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. vii.

108 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 21–22.

109 AER, *Draft Decision, Jemena 2021–26, Attachment 5 Capital expenditure*, September 2020, pp. 38–39; AER, *Draft Decision, Jemena 2021–26, Attachment 9 Capital expenditure sharing scheme*, September 2020, p. 5.

indicate that Jemena's previously capitalised corporate overheads were inefficient, including from its capital MPFP benchmarking results.[110]

6.4.1.4 Base adjustment

ESV levy

Our final decision is to remove ESV levies from base opex in our alternative estimate. This is because they will be recovered via the price control mechanism over the 2021–26 regulatory control period following our decision on 19 March 2021 to approve the ESV levy as a jurisdictional scheme.[111] This is consistent with Jemena's updated revised proposal, which removed ESV levy costs from base opex.[112]

Table 6.5 ESV levy ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Jemena's revised proposal	–1.1	–1.1	–1.1	–1.1	–1.1	–5.7
AER final decision	–1.1	–1.1	–1.1	–1.1	–1.1	–5.7
Difference	–	–	–	–	–	–

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

Note: Numbers may not add due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

Jemena's initial proposal sought to treat ESV levies as a category specific forecast over the 2021–26 regulatory control period.[113] To do this, it made an adjustment to remove the existing ESV levies from base opex and then added a category specific forecast to recognise the ongoing higher forecasts it expected to incur over the next regulatory control period. Our draft decision did not accept this proposed treatment in our alternative estimate for the following reasons:[114]

- base opex reflects the cost of meeting existing regulatory obligations, including the obligation to pay the ESV levy
- changes in specific costs should be managed within:
    - the existing base opex as the cost of other projects or programs decline. A rise in a single cost category is not sufficient to justify a step change, and/or
    - the rate of change forecast which escalates base opex to capture real increases in input prices and output growth (net of productivity growth).

---

110 AER, *Draft Decision, Jemena 2021–26, Attachment 5 Capital expenditure*, September 2020, pp. 38–39.
111 AER, *Determination on CPU jurisdictional scheme request*, March 2021.
112 Jemena, *EDPR 2021–26 – update opex for change in treatment of ESV levies,* 19 March 2021.
113 Jemena, *Regulatory Proposal 2021–26 – Attachment 06–01 – Operating Expenditure,* January 2020, p. 26.
114 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 74–75.

In its revised proposal, Jemena maintained the position that ESV levies should be recovered by a category specific forecast (or via the price control) as they are unavoidable and efficiently incurred in line with Jemena's licence obligations.[115]

The VCO's submission was supportive of our draft decision and considered the ESV levy increases should be absorbed by the distribution businesses.[116] However, ECA's consultant Spencer&Co supported moving the ESV levy into the price control mechanism, on the basis that these fees are outside the control of the business.[117]

On 25 February 2021, CitiPower, Powercor and United Energy submitted an application to request that the AER determine the ESV levy is a jurisdictional scheme.[118] We considered that the ESV levy meets the jurisdictional scheme criteria, and we determined that ESV levy is a jurisdictional scheme.[119] Further details are in our decision.[120] In this distribution determination, we have also made a decision on how Jemena and the other Victorian businesses are to report to the AER on its recovery of the jurisdictional scheme amounts for the scheme and on the adjustments to be made to pricing proposals to account for over and under recovery.[121] As a result, the ESV levy becomes an approved jurisdictional scheme for Jemena. The scheme amounts are recovered via the price control mechanism and therefore we have removed such costs from total opex in our alternative estimate.

We note that while the ESV levy meets the jurisdictional scheme criteria, and have not included these costs in our alternative estimate, we consider from a policy perspective there is a strong case for such costs to remain in base opex. The reasons for this are:

- While they are costs which may be outside the control of the distribution businesses, neither opex nor the EBSS within our framework distinguishes between controllable and uncontrollable costs. As stated in our explanatory statement for the EBSS[122] to do so would weaken the incentive framework and there is no compelling reason to share the cost of uncontrollable events between consumers and businesses differently to all other costs they face. Uncontrollable costs present both upside and downside risks for businesses, with any material risks able to be managed via pass-through events and contingent projects. So while levies and licence fee costs may be largely out of the control of businesses,

---

115 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p viii.

116 Headberry Partners report to VCO, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26 Submission to Initial Proposals,* January 2021, p. 55.

117 Spencer&Co, report to ECA, *Submission and attachment on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 18 ().

118 CitiPower. Powercor and United Energy, *Jurisdictional scheme determination request,* February 2021.

119 NER, cll. 6.18.7A(n) and 6.18.7A(x).

120 AER*, Determination on CPU jurisdictional scheme request*, March 2021.

121 NER, cl, 6.12.1(20) and AER, *Final decision, Jemena distribution determination 2021–26 – Overview*, April 2021, Appendix A; AER, *Final decision, Jemena distribution determination 2021–26, Attachment 14 Control mechanisms,* April 2021, Appendix D.

122 AER, *Explanatory statement – efficiency benefit sharing scheme*, November 2013, pp. 19–21.

we consider this should not preclude them from being included in our total opex forecast and subject to the EBSS.

- While we recognise that licence fee and levy costs may experience changes, our top down approach seeks to set a total opex forecast. As explained in our assessment approach in the draft decision[123] 'even if disaggregated opex categories have high volatility, the total opex varies to a lesser extent because new or increasing components of opex are generally offset by decreasing costs or discontinued opex projects. Further, we expect the regulated business to manage the inevitable 'ups and downs' in the components of opex from year to year—to the extent they do not offset each other—by continually re-prioritising its work program, as would be expected in a workably competitive market. Our incentive-based, revealed cost, framework incentivises them to do so.'
- Increasing the number of items included in the price control mechanism makes it difficult for consumers to know how much tariffs will change year to year if they are subject to numerous adjustments.

6.4.2 Rate of change

Having determined an efficient starting point, or base opex, we trend it forward to account for the forecast growth in prices, output and productivity. We refer to this as the rate of change.[124]

In its updated revised proposal Jemena applied our standard approach to forecasting the rate of change. Specifically it:[125]

- **Output growth:** adopted the output weights, measures and values we used in our final decision.
- **Price growth:** adopted our input price weightings of 59.2 per cent labour and 40.8 per cent non-labour and an average of Wage Price Index (WPI) price growth forecasts from Deloitte and BIS Oxford Economics for labour price growth.
- **Productivity growth:** adopted our productivity growth forecast of 0.5 per cent per year.

The rate of change proposed by Jemena contributes $12.1 million ($2020–21), or 2.4 per cent, to Jemena's updated revised proposal total opex forecast of $516.6 million ($2020–21). This equates to opex increasing on average by around 0.9 per cent each year.[126]

---

123 AER, *Draft Decision, AusNet Services 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 16.

124 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, pp. 23–24.

125 AusNet Services, *Revised Regulatory Proposal 2021–26,* December 2020, p. 81; Jemena, *Revised Regulatory Proposal – 2021–26 – opex model*, March 2021.

126 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.

We have also included a rate of change that on average is around 0.9 per cent each year in the next regulatory control period in our alternative estimate. We have set out in Table 6.6 Jemena's updated revised proposal and our alternative estimate for each component of the rate of change. We set out the reasons for our forecast below.

We received one submission, from the VCO, relating to the rate of change. It generally supported our approach to forecast the rate of change in our draft decision, specifically how we accounted for the impact of COVID–19. The VCO stated that we should apply the same approach across all the Victorian businesses.[127] We have considered this submission in making our final decision.

Table 6.6 Forecast rate of change (per cent)

	2021–22*	2022–23	2023–24	2024–25	2025–26
Jemena's updated revised proposal					
Price growth	0.4	0.3	0.4	0.6	0.8
Output growth	0.6	0.9	1.1	1.1	1.0
Productivity growth	0.4	0.5	0.5	0.5	0.5
Overall rate of change	**0.6**	**0.7**	**1.0**	**1.1**	**1.3**
AER final decision					
Price growth	0.5	0.4	0.4	0.4	0.6
Output growth	0.6	0.9	1.1	1.1	1.0
Productivity growth	0.4	0.5	0.5	0.5	0.5
Overall rate of change	**0.7**	**0.8**	**0.9**	**1.0**	**1.1**
Overall difference	**0.1**	**0.1**	**0.0**	**-0.2**	**-0.2**

* The rate of change for 2021–22 reflects nine months' worth of growth in price, output and productivity to account for the extension of the current regulatory control period by six months to transition the timing of the regulatory control period for Victorian electricity distribution networks from a calendar year basis to a financial year basis. We discussed the reasons for this in our draft decision which are summarised below.

Note: Numbers may not add up to totals due to rounding.

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

6.4.2.1 Forecast price growth

We have included forecast average annual real price growth of 0.4 per cent in our alternative opex estimate. This compares to Jemena's proposed average annual price

[127] Victorian Community Organisations, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26 Submission to Initial Proposals*, January 2021, pp. 18, 52 (Headberry Partners P/L).

growth of 0.5 per cent.[128] This increases our alternative estimate of total opex by $5.9 million ($2020–21), instead of $6.0 million ($2020–21) as proposed by Jemena.[129]

Our real price growth forecast is a weighted average of forecast labour price growth and non-labour price growth:

- To forecast labour price growth both we and Jemena have used the forecast of growth in the WPI for the Victorian electricity, gas, water and waste services (utilities) industry. Specifically, we have used an average of forecasts from Deloitte and the BIS Oxford forecasts submitted by Jemena.[130] In our draft decision, we did not use the BIS Oxford forecasts submitted by Jemena with its regulatory proposal because we considered they did not account for the COVID–19 pandemic impact or the legislated changes to the superannuation guarantee.[131] The revised BIS Oxford forecasts submitted by Jemena now account for both of these issues.[132]
- Both we and Jemena applied a forecast non-labour real price growth rate of zero.[133] This is consistent with our draft decision.
- Both we and Jemena applied benchmark input price weights of 59.2 per cent and 40.8 per cent for labour and non-labour, respectively.[134] These are the weights we use for our econometric modelling in our annual benchmarking report.[135] This is also consistent with our draft decision.[136]
- Both we and Jemena adjusted BIS Oxford Economics' WPI growth forecast for 2021–22 to reflect the growth between the average WPI value for the first six months of calendar year 2021 and the average value for the 2021–22 financial year.[137] This is to account for the shift from calendar years to financial years and is the same approach we adopted for the draft decision.[138]

The only differences between our real price growth forecasts and Jemena is that we have used more recent forecasts of WPI growth from Deloitte.[139]

---

128 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
129 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
130 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
131 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 53.
132 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure*, December 2020, pp. 24–26.
133 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
134 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
135 Economic Insights, *Memorandum prepared for the AER on review of reports submitted by CitiPower, Powercor and United Energy on opex input price and output weights*, 18 May 2020, p. 8.
136 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 54–55.
137 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.
138 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 59.
139 Deloitte Access Economics, *Wage Price Index forecasts – Prepared for the Australian Energy Regulator*, Table vii, p. xiii, 1 April 2021. We have added increases to the superannuation guarantee of 0.5 per cent to Deloitte forecast.

6.4.2.2 Forecast output growth

We have included forecast average annual output growth of 0.9 per cent in our alternative opex forecast. This increases our alternative estimate of total opex by $11.9 million ($2020–21), instead of $13.0 million ($2020–21) as proposed by Jemena.[140]

In our draft decision we stated that we would update the output weights to reflect the results from all five of our economic benchmarking models in the *2020 Annual Benchmarking Report*, which we published in November 2020.[141]

For this final decision, we have used the updated weights derived from the *2020 Annual Benchmarking Report* to forecast our alternative estimate of forecast opex for this final decision. As set out below, in addition to updating these weights to reflect the results in the most recent benchmarking report, we have also considered the appropriate weights to use in response to feedback received as a part of the Victorian resets. In summary, we have forecast output growth by:

- Calculating the growth rates for three outputs (customer numbers, circuit line length and ratcheted maximum demand). This is a change from our draft decision where we also used energy throughput.
- Calculating four weighted average overall output growth rates for these three outputs using the output weights from four of the five models presented in our *2020 Annual Benchmarking Report* (see Table 6.7). For the reasons set out below, we did not use the opex MPFP model for this final decision.
- For our Translog models, calculating the elasticities at the full sample mean. For our draft decisions we calculated the elasticities at the Australian sample mean. We discuss the reasons for this change in approach below.
- Averaging the four model specific weighted overall output growth rates.

The output weights that we have used in our alternative estimate for the final decision are set out in Table 6.7.

Table 6.7 AER output weights, per cent

	Cobb-Douglas SFA	Cobb-Douglas LSE	Translog LSE	Translog SFA	Average	Draft decision average
Customer numbers	50.9	63.3	49.5	59.3	55.7	52.5
Circuit length	14.9	16.4	16.6	14.2	15.5	20.7
Ratcheted maximum demand	34.2	20.3	33.9	26.5	28.7	25.1

[140] Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.

[141] AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 56.

	Cobb-Douglas SFA	Cobb-Douglas LSE	Translog LSE	Translog SFA	Average	Draft decision average
Energy throughput	–	–	–	–	–	1.7

Source: Economic Insights, *Memorandum prepared for the AER on review of reports submitted by CitiPower, Powercor and United Energy on opex input price and output weights*, 18 May 2020, p. 21; AER, *Draft decision AusNet Services distribution determination 2021–26, Attachment 6, Operating expenditure,* September 2020, pp. 49–50.

Note Numbers may not add up to 100 per cent due to rounding. Energy throughput is only used in the opex MPFP model.

While Jemena adopted our new approach to forecast output growth in its updated revised proposal,[142] it provided feedback relating to elements of our previous approach in its revised proposal. This included the appropriateness of the opex MPFP weights and Translog cost function weights, which we discuss below.[143]

Jemena accepted our draft decision on the forecast growth of circuit length and ratcheted maximum demand.[144] We have maintained these in developing our alternative estimate for the final decision. Jemena also accepted our draft decision on the forecast annual growth rate of customer numbers, though it updated the level of this output. We have accepted Jemena's changes for customer numbers as it maintained our draft decision year-on-year rate of change.[145]

Exclusion of opex MPFP weights from our alternative output growth forecast

Our standard approach to forecast output growth has been to calculate the average output growth across all of the benchmarking models we have published in our most recent annual benchmarking report for the full benchmarking period.[146] For our draft decision this was four econometric methods (two Cobb-Douglas (CD SFA and CD LSE) and two Translog (TLG SFA and TLG LSE)) and one using the opex partial productivity index number method (opex MPFP).[147] In its revised proposal Jemena and its consultant, CEPA, submitted that it was inappropriate to use the opex MPFP output weights for the purpose of trending opex forward because they reflect drivers of total

142 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.

143 CEPA, *AERs opex benchmarking a review of the impact of capitalisation and model reliability – 20201203*, December 2020, p. 27; Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating Expenditure,* December 2020, p. 26.

144 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating Expenditure*, December 2020, p. 28.

145 Jemena did not accept our draft decision on forecast throughput and raised concerns about our approach to forecast this output. Given that our new approach to forecast output growth does not include this output, we have not addressed Jemena's concerns in this final decision. For more details, see: Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating Expenditure*, December 2020, p. 28.

146 AER, *2020 Annual Economic Benchmarking Report, – Electricity distribution network service providers*, November 2020, pp. 64–65. We have used the output weights from the benchmarking models for the full period.

147 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 55–56.

cost, not the relationship between output and opex.[148] CitiPower, Powercor and United Energy also raised concerns with using the opex MPFP weights, although they did use them in their revised proposals.[149]

We agree that we should not include the opex MPFP weights in determining our forecast of output growth because they reflect drivers of, and relationship with total cost, not necessarily opex. This is consistent with Economic Insights' view.[150] Consequently, we have not used the output weights from this model or energy throughput as an output measure in this final decision (as the opex MPFP benchmarking is the only model that includes this output).

Translog cost function weights

For this final decision, we have calculated the Translog elasticities at the full sample mean. In our draft decision, we used the output weights from the Translog opex cost function models with data normalised by the Australian sample mean. We adopted this approach in response to concerns raised by Frontier Economics in a report submitted with CitiPower's, Powercor's and United Energy's initial regulatory proposals. [151] This considered the elasticities should be evaluated at output levels that reflect the operating characteristics of Australian distributors.

Our consultant, Economic Insights agreed there was some merit in normalising output variables in the opex cost function database by the respective means of the Australian sample rather than the means of the full sample as suggested by Frontier Economics.[152] However, in its 2020 Benchmarking Report, Economic Insights advised against making this change until there has been sufficient opportunity to review the performance of the Translog models. The inclusion of additional data from 2019 raised a number of monotonicity violation concerns with the Australian distributors.[153] We agree with this advice and we will continue to monitor the performance of our Translog cost function as part our ongoing benchmarking development.[154]

---

148 CEPA, *AERs opex benchmarking a review of the impact of capitalisation and model reliability – 20201203 – Public*, December 2020, p. 27; Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating Expenditure*, December 2020, p. 26.

149 CitiPower, *Revised regulatory proposal – 2021–26*, December 2020, p. 122.

150 Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2020 DNSP Annual Benchmarking Report,* October 2020, pp. 5, 8, 10.

151 Frontier Economics, *Review of econometric models used by the AER to estimate output growth - a report prepared for CitiPower, Powercor and United Energy*, 5 December 2019, pp. 7–15.

152 Economic Insights, *Memorandum prepared for the AER on review of reports submitted by CitiPower, Powercor and United Energy on opex input price and output weights*, 18 May 2020, p. 20.

153 Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2020 DNSP Annual Benchmarking Report*, October 2020, p. 13.

154 For more detail about issues on the performance of the Translog cost function of our benchmarking analysis, see: Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2020 DNSP Annual Benchmarking Report,* October 2020, p. 34.

Jemena submitted in its revised proposal that the output weights should be based on the full sample mean if we were to continue relying on the Tanslog models.[155] This is what we have done for this final decision.

6.4.2.3 Productivity growth

Consistent with our draft decision, we have forecast annual productivity growth of 0.5 per cent.[156] This reduces our alternative estimate of total opex by $6.2 million ($2020–21). Jemena also adopted a productivity growth forecast of 0.5 per cent per year in its revised proposal, consistent with our draft decision, which reduced its total opex forecast by $6.8 million ($2019–20).[157]

6.4.3 Step changes

In its revised proposal, Jemena re-proposed three of the seven step changes it included in its initial proposal. These were for bushfire insurance premium increases, REFCL testing and maintenance and cyber security, which are discussed further below. It did not re-propose the opex step changes for the future grid program (with some of this expenditure capitalised in the revised proposal), changed EPA regulations (a nominated cost pass through was included in the revised proposal) or the transitional return on debt and additional regulatory information notice (RIN) reporting requirements (the AER's materiality concerns about these step changes in the draft decision were noted).[158]

Table 6.8 summarises the step changes Jemena included in its initial and revised proposals, our draft decision and our alternative estimate for the purpose of the final decision. In its revised proposal, Jemena's step changes total $32.1 million ($2020–21),[159] which is 23.6 per cent lower than its initial proposal.

We have included $32.1 million ($2020–21) for the three step changes re-proposed by Jemena in our alternative estimate for the final decision. We have examined each step change on its own merit and whether the proposal meets the intent of what step changes should reflect as set out in the *Expenditure Forecast Assessment Guideline*.[160] Noting that step changes should not double count cost increases compensated through the rate of change, we have included step changes in our alternative estimate for:

- insurance premiums - $28.2 million ($2020–21)

---

155 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating Expenditure*, December 2020, p. 27.

156 AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, p. 59.

157 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26*, 19 March 2021.

158 Jemena, *Revised Regulatory Proposal 2021–26 – Att 05–01 Operating expenditure*, December 2020, pp. 32, 35, 36; AER, *Draft Decision, Jemena 2021–26, Attachment 6 Operating expenditure*, September 2020, pp. 64–67, 67–70.

159 Not including its proposed opex savings from its transformation program, which is considered in section 6.4.1.

160 AER, *Expenditure forecast assessment guideline for electricity distribution - explanatory statement*, November 2013, pp. 51–54.

- cyber security - $2.9 million ($2020–21)
- REFCL testing and maintenance - $1.0 million ($2020–21).

Table 6.8 Jemena's step change proposals and our alternative estimates ($ million, 2020–21)

Step change	Jemena initial proposal	AER draft decision	Jemena revised proposal	AER alternative estimate for Final Decision	Difference
Insurance premiums	28.8	28.2	28.2	28.2	–
REFCL testing and maintenance	1.3	1.3	1.0	1.0	–0.0
Future grid program	3.8	–	–	–	–
Transitional return on debt alignment	0.9	–	–	–	–
EPA regulations	4.2	–	–	–	–
Cyber security	2.9	2.9	2.9	2.9	–
Additional RIN reporting	0.5	–	–	–	–
Total	42.4	32.4	32.1	32.1	–0.0

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

The following sections sets out the reasons for our alternative estimate of each step change.

6.4.3.1 Insurance premiums

Consistent with our draft decision,[161] our final decision is to include a step change of $28.2 million ($2020-21) for the future increases in insurance premiums over the next regulatory control period in our alternative estimate.

[161] AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure, September 2020,* pp. 61–62.

Table 6.9 Insurance premiums ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Jemena's revised proposal	3.9	5.0	6.0	6.4	6.9	28.2
AER final decision	3.9	5.0	6.0	6.4	6.9	28.2
Difference	–	–	–	–	–	–

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22-26*, December 2020; AER analysis.

Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

In our draft decision, we were satisfied that the proposed step change was prudent, the estimates reasonable and the increasing insurance premium costs were not captured through the non-labour price growth forecast, or would reasonably be offset by decreases in other cost categories over the 2021–26 regulatory control period.[162]

Jemena's revised proposal accepted our draft decision and noted actual premiums incurred in September 2020 are closely aligned with the forecasts in its initial proposal.[163]

In forming our final decision, we took into account stakeholder submissions to our draft decision and businesses' revised regulatory proposals on this issue summarised below.

The VCO supported analysis of the insurance premium proposals to ensure that the step change and cost pass through events are not double counted. It noted there is support for developing the most efficient bushfire insurance program for each business with consumers sharing in the increased costs and risks, including general insurance which it considered had not been impacted by the increased bushfire risk.[164]

The CCP17 submitted it is aware that insurance coverage is decreasing, while insurance costs are rising rapidly for all Australian electricity network businesses. The CCP17 viewed the changes to insurance markets to be material and beyond reasonable budget projections, with these changes likely to be sustained over a long period due to climate change. Consequently, the CCP17 accepted that the higher insurance prices are likely to remain over the coming regulatory control period.[165]

---

[162] AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure*, *September 2020,* p. 61.

[163] Jemena*, Revised Regulatory Proposal 2021–26 – Attachment 05–01 Response to the AER's draft decision – Operating expenditure*, December 2020, pp. 32–33.

[164] Victorian Community Organisations, *Submission to Draft Determination and Revised Proposals 2.0,* January 2021, p. 56 (Headberry Partners P/L).

[165] CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, pp. 61–63.

Consultant for ECA, Spencer&Co supported the steps taken by businesses to mitigate the costs impacts of rising insurance premiums on customers. They also considered that the businesses response to insurance premium increases is reasonable in the circumstances.[166]

We acknowledge the benefits of using a cost pass through for businesses to recover insurance premium costs over the next regulatory control period, but maintain our draft decision position that the long term interests of consumers is better served if the appropriate incentives remain with the businesses to actively work to moderate expected increases in insurance premiums over the next regulatory control period.

For our final decision we have included a step change of $28.2 million ($2020-21) in our alternative estimate.

6.4.3.2 Cyber Security

Consistent with our draft decision,[167] our final decision is to include a step change of $2.9 million ($2020-21) in our alternative estimate for Jemena to uplift its cyber security capabilities.

Table 6.10 Cyber security ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Jemena's revised proposal	0.6	0.6	0.6	0.6	0.6	2.9
AER final decision	0.6	0.6	0.6	0.6	0.6	2.9
Difference	–	–	–	–	–	–

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22-26,* December 2020; AER analysis.

Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

In our draft decision, we accepted that while the Australian Energy Market Operator (AEMO) Australian Energy Sector Cyber Security Framework is not currently a legislated regulatory obligation, this was likely to occur shortly, and also considered Jemena's response was likely to represent the actions of a prudent operator in the current context of escalating cyber security.[168] We also considered that the proposed costs were efficient.

---

166 Spencer&Co report to ECA, *Submission and attachment on the Victorian EDPR Revised Proposal and Draft Decision*, January 2021, p. 15.

167 AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure, September 2020,* p. 70.

168 AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 70–71.

Jemena's revised proposal accepted our draft decision and provided further observations around cyber-security obligations and actual cyber-crime activity.[169] We have included this step change in our alternative estimate.

6.4.3.3 Rapid Earth Current Fault Limiters (REFCL)

Our final decision is to include a step change of $1.0 million ($2020–21) for annual REFCL testing and maintenance in our alternative estimate. This is slightly lower than our draft decision which is consistent with Jemena's updated revised proposal.

Table 6.11 REFCL testing and maintenance ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Jemena revised proposal	–	0.0	0.3	0.3	0.3	1.0
AER final decision	–	0.0	0.3	0.3	0.3	1.0
Difference	–	–0.0	–0.0	–0.0	–0.0	–0.0

Source: Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021; AER analysis.

Note: Numbers may not add up to total due to rounding. Differences of '0.0' and '–0.0' represent small variances and '–' represents no variance.

In our draft decision we included $1.3 million ($2020–21) for REFCL annual testing and maintenance at the Coolaroo zone substation in our alternative estimate.[170] This was subject to Jemena updating the forecast in its revised proposal to reflect the outcome of the exemption it was pursuing with ESV. At the time, Jemena was seeking an exemption to develop an alternative technical solution, involving installation of REFCLs at a new zone substation (Greenvale), instead of at the Coolaroo zone substation.[171] Jemena stated that the outcome of this exemption process would determine matters such as the number of REFCL-protected feeders which would be required.[172]

It its revised proposal, Jemena included a slightly higher step change ($1.33 million ($2020–21))[173] for REFCL annual testing and maintenance at the Coolaroo and Kalkallo zone substations.[174] Jemena stated that:[175]

- It had made substantial changes to its approach to complying with the obligations for the Coolaroo zone substation, following an exemption being granted, as foreshadowed in its initial proposal. However, after submitting its revised proposal

169 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 34.
170 AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 62–64.
171 Jemena, *Information request IR30,* Question 4, 6 June 2020, p. 5.
172 Jemena, *Information request IR30,* Question 4, 6 June 2020, p. 5.
173 Jemena, *Revised Regulatory Proposal 2021–26 – 05–01M SCS Opex Model FY22–26,* December 2020
174 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 33.
175 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 33.

Jemena subsequently informed us that its implementation design for the REFCL installation program at Greenvale (as per the exemption) will change and the installation and testing will now occur at Coolaroo.

- It must now undertake additional works to install a 'remote REFCL' at its Kalkallo zone substation overhead feeder to comply with its regulatory obligations. This is because AusNet Services changed its compliance approach for its Kalkallo zone substation, which supplies three of Jemena's feeders, one of which must be REFCL-protected. [176]

Jemena did not seek amendments to its annual capacity testing policy from ESV, to reduce its annual testing obligations (e.g. testing only one feeder per REFCL zone substation similar to Powercor and AusNet Services).[177] This was due to the expectation of significant growth in the Coolaroo supply area resulting in at least minor feeder reconfiguration or modification works each year.[178]

We have not received any stakeholder submission on Jemena's revised REFCL step change.

In our review, we questioned a number of individual cost items in Jemena's revised proposal cost build-up that had changed relative to the initial proposal. In response to these queries, Jemena provided an updated REFCL step change of $1.0 million ($2020–21) after correcting a calculation error.[179] We have reviewed Jemena's updated calculations and are satisfied they are reasonable. We have only adjusted Jemena's updated proposal to reflect the latest inflation forecast. This adjustment resulted in a very small difference relative to Jemena's updated revised proposal.

Consequently, our final decision is to include a step change of $1.0 million ($2020–21) for REFCL annual testing and maintenance in our alternative estimate.

6.4.4 Category specific forecasts

We have included two expenditure items, debt raising costs and GSL payments, in our alternative estimate of total opex as category specific forecasts, which we do not forecast using the base-step-trend approach.

---

176 AusNet Services determined that the construction of a new REFCL–protected Kalkallo North zone substation is not possible due to technical limitations of the existing REFCL technology. For more detail, see: Jemena, *Revised Regulatory Proposal 2021–26 – Attachment 04–01 capital expenditure*, December 2020, p. 23.

177 Powercor, CitiPower, Powercor and United Energy, *Amendments to operating expenditure step changes and capital programs*, May 2020, p.3.

178 Jemena, *Revised Regulatory Proposal 2021–26 – Attachment 05–01 Response to the AER's draft decision – Operating expenditure,* December 2020, p. 34.

179 Jemena, *Information request IR62*, Question 6, 8 January 2021, p. 7.

6.4.4.1 ESV levy

As discussed in section 6.4.1.4, following our decision to approve the ESV levy as a jurisdictional scheme,[180] meaning these costs will be recovered by the price control mechanism over the next regulatory control period, Jemena updated its revised proposal to remove these costs from opex.[181] In its revised proposal it had proposed an adjustment to remove the existing ESV levies from base opex and added a category specific forecast to recognise the ongoing higher forecasts it expected to incur over the next regulatory control period. Reflecting our decision to treat these costs as a jurisdictional scheme, and Jemena's updated revised proposal, we have not included the ESV levies in our alternative estimate of opex (in either base opex or as a category specific forecast).

6.4.4.2 GSL payments

We have included GSL payments of $1.1 million ($2020–21) as a category specific forecast in our alternative estimate. This is consistent with Jemena's updated revised proposal and is $0.2 million ($2020–21) higher than our draft decision.

The Essential Services Commission (Victoria) concluded its review of the consumer protection framework in the Electricity Distribution Code on 16 November 2020. The final decision included updates to the GSL scheme.[182] Notably, there have been changes to the value of payments, payment thresholds and the introduction of exclusions for major event days. We stated in our draft decision that we would update our forecast of GSL payments in this final decision to reflect the revisions made to the GSL scheme by the Essential Services Commission.[183]

In its revised proposal, Jemena accepted our draft decision as it considered the overall increase in costs from the Essential Services Commission's final decision was likely to be immaterial and could be managed within the allowance approved in the draft decision.[184]

Jemena subsequently amended its GSL forecast. It adopted the GSL payments forecast we used in our draft decision and added an additional amount to account for the changes to the GSL scheme. It calculated this amount as the difference between the average of the GSL reliability payments it would have paid under the new scheme over the period 2015 to 2019 and the average of the GSL reliability payments it actually paid.[185] We are satisfied that this is a reasonable approach to account for the

---

180 AER, *Determination on CPU jurisdictional scheme request*, March 2021.

181 Jemena, *Revised Regulatory Proposal 2021–26 – 05-01M SCS Opex Model FY22–26*, 19 March 2021.

182 See https://www.esc.vic.gov.au/electricity–and–gas/codes–guidelines–and–policies/electricity–distribution–code/electricity–distribution–code–review–2019.

183 AER, *Draft decision, Jemena determination 2021–26, Attachment 6 Operating expenditure,* September 2020, pp. 73–74.

184 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 29–30.

185 Jemena, *Information request 063*, January 2021, p. 3.

impact of all changes in the GSL scheme in its forecast of GSL payments for the next regulatory control period.

We note that AusNet Services proposed a transition amount in addition to its forecast of GSL payments for the next regulatory control period.[186] AusNet Services stated that from 2015 to 2019, it made significant GSL payments for events that were outside of its control. Due to the changes to the GSL scheme, many of these payments were excluded from its backcast payments and thus not included in AusNet Services' forecast GSL payments for the 2021–26 regulatory control period.

We consider a 'transitional amount' is only required when there is a change in the scheme and there are abnormal events in the averaging period used to forecast GSL payments.[187]

We asked Jemena if it considered a 'transitional amount' was required. It stated that, while a 'transitional amount' may be necessary in some circumstances, it did not think one was required in its case.[188] We have reviewed Jemena's outages both at the customer level, and at the feeder level, and are satisfied that the outages on Jemena's network over the period 2015 to 2019 do not reflect abnormal conditions. Consequently, we agree that a 'transitional amount' is not necessary in Jemena's circumstances.

6.4.4.3 Debt raising costs

We have included debt raising costs of $4.1 million ($2020–21) in our alternative estimate for the final decision. This is $0.1 million ($2020–21) higher than the forecast proposed by Jemena.[189]

Debt raising costs are transaction costs incurred each time a business raises or refinances debt. The appropriate approach is to forecast debt raising costs using a benchmarking approach rather than a service provider's actual costs in a single year. This provides for consistency with the forecast of the cost of debt in the rate of return building block.

We used our standard approach to forecast debt raising costs which is discussed further in Attachment 3 – Rate of Return to the draft decision.[190]

6.4.5 Assessment of opex factors

In deciding whether or not we are satisfied the service provider's forecast reasonably reflects the 'opex criteria' under the NER, we have regard to the 'opex factors'.[191]

---

186 AusNet Services, *Revised Regulatory Proposal 2021–26*, December 2020, pp. 91–94.

187 This is discussed further in Attachment 6 for AusNet Services

188 Jemena, *Information request 063*, January 2021, p. 2.

189 Jemena, *Revised Regulatory Proposal 2021–26 – Att 05–01 Operating expenditure*, December 2020, p. 1.

190 AER, *Draft decision, Jemena distribution determination 2021–26 – Attachment 3 – Rate of return*, September 2020, pp. 10–13

We attach different weight to different factors when making our decision to best achieve the National Electricity Objective. This approach has been summarised by the Australian Energy Market Commission (AEMC) as follows:[192]

> As mandatory considerations, the AER has an obligation to take the capex and opex factors into account, but this does not mean that every factor will be relevant to every aspect of every regulatory determination the AER makes. The AER may decide that certain factors are not relevant in certain cases once it has considered them.

Table 6.12 summarises how we have taken the opex factors into account in making our final decision.

Table 6.12 Our consideration of the opex factors

Opex factor	Consideration
The most recent annual benchmarking report that has been published under rule 6.27 and the benchmark opex that would be incurred by an efficient distribution network service provider over the relevant regulatory control period.	There are two elements to this factor. First, we must have regard to the most recent annual benchmarking report. Second, we must have regard to the benchmark operating expenditure that would be incurred by an efficient distribution network service provider over the next regulatory control period. The annual benchmarking report is intended to provide an annual snapshot of the relative efficiency of each service provider. The second element, that is, the benchmark operating expenditure that would be incurred by an efficient provider during the forecast period, necessarily provides a different focus. This is it requires us to construct the benchmark opex that would be incurred by an efficient provider for that particular network over the relevant period. We have used several assessment techniques that enable us to estimate the benchmark opex that an efficient service provider would require over the forecast period. These techniques include productivity index number and opex cost function modelling. We have used our judgment based on the results from all of these techniques to holistically form a view on the efficiency of Jemena's proposed total forecast opex compared to the benchmark efficient opex that would be incurred over the relevant regulatory control period.
The actual and expected opex of the Distribution Network Service Provider during any proceeding regulatory control periods.	Our forecasting approach uses the service provider's actual opex as the starting point. We have compared several years of Jemena's actual past opex with that of other service providers to form a view about whether or not its revealed opex is efficient such that it can be relied on as the basis for forecasting required opex in the forthcoming period.
The extent to which the opex forecast includes expenditure to address the concerns of electricity consumers as identified by the Distribution Network Service Provider in the course of its engagement with electricity consumers.	This particular factor requires us to have regard to the extent to which service providers have engaged with consumers in preparing their proposals, such that they factor in the needs of consumers.[193] Based on the information provided by Jemena in its proposal and CCP17's advice, we consider Jemena consulted with consumers in developing its proposal. For the purpose of the revised proposal,

191 NER, cl. 6.5.6(e).

192 AEMC, *National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, Final Rule Determination,* 29 November 2012, p. 115.

193 AEMC, *National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012, Final Rule Determination*, 29 November 2012, pp. 101, 115.

Opex factor	Consideration
	Jemena engaged its People's Panel in a series of 'deep dive' workshops about the efficiency of its opex and the AER's benchmarking results. Following these workshops, the People's Panel supported Jemena's revised opex proposal that included opex efficiency savings of $20 million ($2020–21). We have examined this engagement and the People's Panel's view as well as the issues raised by other consumers in developing our alternative estimate of opex.
The relative prices of capital and operating inputs.	We have considered capex/opex trade-offs in considering Jemena's proposed step changes. For instance we considered whether the proposed step changes represent an efficient capex/opex trade-off. We have had regard to multilateral total factor productivity analysis when deciding whether or not forecast opex reflects the opex criteria. Our multilateral total factor productivity analysis considers the overall efficiency of networks in the use of both capital and operating inputs with respect to the relative prices of capital and operating inputs.
The substitution possibilities between operating and capital expenditure.	As noted above, we considered whether Jemena's proposed step changes represent efficient capex/opex trade-offs. Some of our assessment techniques examine opex in isolation – either at the total level or by category. Other techniques consider service providers' overall efficiency, including their capital efficiency. We have relied on several metrics when assessing efficiency to ensure we appropriately capture capex and opex substitutability. In developing our benchmarking models we have had regard to the relationship between capital, opex and outputs. We also had regard to multilateral total factor productivity benchmarking when deciding whether or not forecast opex reflects the opex criteria. Our multilateral total factor productivity analysis considers the overall efficiency of networks in the use of both capital and operating inputs. Further, we considered the different capitalisation practices of the service providers' and how this may affect opex performance under benchmarking.
Whether the opex forecast is consistent with any incentive scheme or schemes that apply to the Distribution Network Service Provider under clauses 6.5.8 or 6.6.2 to 6.6.4.	The incentive scheme that applied to Jemena's opex in the 2016–20 regulatory control period, the EBSS, was intended to work in conjunction with a revealed cost forecasting approach. We have applied our estimate of base opex consistently in applying the EBSS and forecasting Jemena's opex for the 2021–26 regulatory control period.
The extent the opex forecast is referable to arrangements with a person other than the Distribution Network Service Provider that, in the opinion of the AER, do not reflect arm's length terms.	Our primary tools assess total opex efficiency, with supporting tools examining the efficiency of both opex and capital inputs as well as at the category level. Given this, we are not necessarily concerned whether arrangements do or do not reflect arm's length terms. A service provider which uses related party providers could be efficient or it could be inefficient. Likewise, for a service provider who does not use related party providers. If a service provider is inefficient, we adjust their total forecast opex proposal, regardless of its arrangements with related providers.
Whether the opex forecast includes an amount relating to a project that should more appropriately be included as a contingent project under clause 6.6A.1(b).	This factor is only relevant in the context of assessing proposed step changes (which may be explicit projects or programs). We have not identified any opex project in the forecast period that should more appropriately be included as a contingent project.
The extent the Distribution Network Service Provider has considered, and made provision for, efficient and prudent non-network alternatives.	We have not found this factor to be significant in reaching our final decision.

Opex factor	Consideration
Any relevant final project assessment report (as defined in clause 5.10.2) published under clause 5.17.4(o), (p) or (s).	In having regard to this factor, we must identify any regulatory investment test (RIT-D) submitted by the business and ensure the conclusions of the relevant RIT-D are appropriately addressed in the total forecast opex. Jemena did not submit any RIT-D project for its distribution network.
Any other factor the AER considers relevant and which the AER has notified the Distribution Network Service Provider in writing, prior to the submission of its revised proposal under clause 6.10.3, is an operating expenditure factor.	We did not identify and notify Jemena of any other opex factor.

Source: AER analysis.

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CAM	cost allocation method
capex	capital expenditure
CCP17	Consumer Challenge Panel, sub-panel 17
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIAM	demand management innovation allowance mechanism
distributor	distribution network service provider
DNSP	distribution network service provider
EBSS	efficiency benefit sharing scheme
ECA	Energy Consumers Australia
MPFP	multilateral partial factor productivity
MTFP	multilateral total factor productivity
NEL	National Electricity Law
NEM	National Electricity Market
NER	National Electricity Rules
OEF	operating environment factors
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RBA	Reserve Bank of Australia
RFM	roll forward model
RIN	regulatory information notice
VCO	Victorian Community Organisations

A Partial Performance Indicators

The various partial performance indicators (PPIs) we have examined relating to total cost, total opex and the opex cost categories of total overheads and maintenance (which comprise the bulk of Jemena's opex), as well as vegetation management and emergency response, are summarised in Table A. 1. The results for total opex, total costs, total overheads and maintenance are also illustrated in Figure A.1 to A.9.

These PPI results are taken from the *2020 Annual Benchmarking Report* and are broadly consistent with the results from the *2019 Annual Benchmarking Report* that we examined in our draft decision.[194] The *2020 Annual Benchmarking Report* results use data over the 2015–19 period and reflect a slight update to the 2014–18 data used in the *2019 Annual Benchmarking Report*. Our analysis and conclusions regarding the PPIs in the draft decision is largely unchanged in the final decision.

We note that PPIs provide some information about the total and category specific opex performance of a business in delivering a given type of output and may help in understanding potential drivers of relative efficiency or inefficiency. Although they are more simplistic measures, the PPI results can provide further insights and evidence to cross-check our top-down economic benchmarking. It is important to note that rankings for PPIs may be affected by factors outside the control of the distribution businesses and must be analysed with caution, with comparisons generally limited to businesses with similar characteristics, e.g. customer density.

Table A. 1 PPIs of Jemena's historical performance (2015–19 average)

PPI	2015–19 ranking out of 13 distribution businesses	Comments
Total cost per customer[195]	2	Across the different PPI categories, Jemena tends to perform better on the per customer metrics but less well on the per circuit length metrics. This reflects that on a per customer basis an urban business will tend to perform better relative to others in rural areas as it has a denser distribution of its network. As
Total cost per circuit km	11	
Total cost per MW of maximum demand	5	
Total opex per customer	4	
Total opex per circuit km	12	
Total opex per MW of maximum demand	8	

194 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020.

195 Total cost include opex and asset costs where the asset costs are annual user cost as the sum of regulatory depreciation and return on investment.

PPI	2015–19 ranking out of 13 distribution businesses	Comments
Maintenance opex per customer	1	a result rankings for each of these PPIs present a partial picture of the business performance and must be analysed with caution. Comparisons are generally limited to businesses of a similar customer density or type, unless some relationship between the PPI measure and customer density is known or can be gauged. Where possible, we have plotted PPIs against customer density, to visualise and account for these customer density effects when interpreting the results. See the graphs in figures A.1–A.9.
Maintenance opex per circuit km	7	
Vegetation management opex per customer	2	
Vegetation management opex per circuit km	7	
Emergency response opex per customer	2	
Emergency response per circuit km	9	
Total overheads per customer196	8	
Total overheads per circuit km	12	

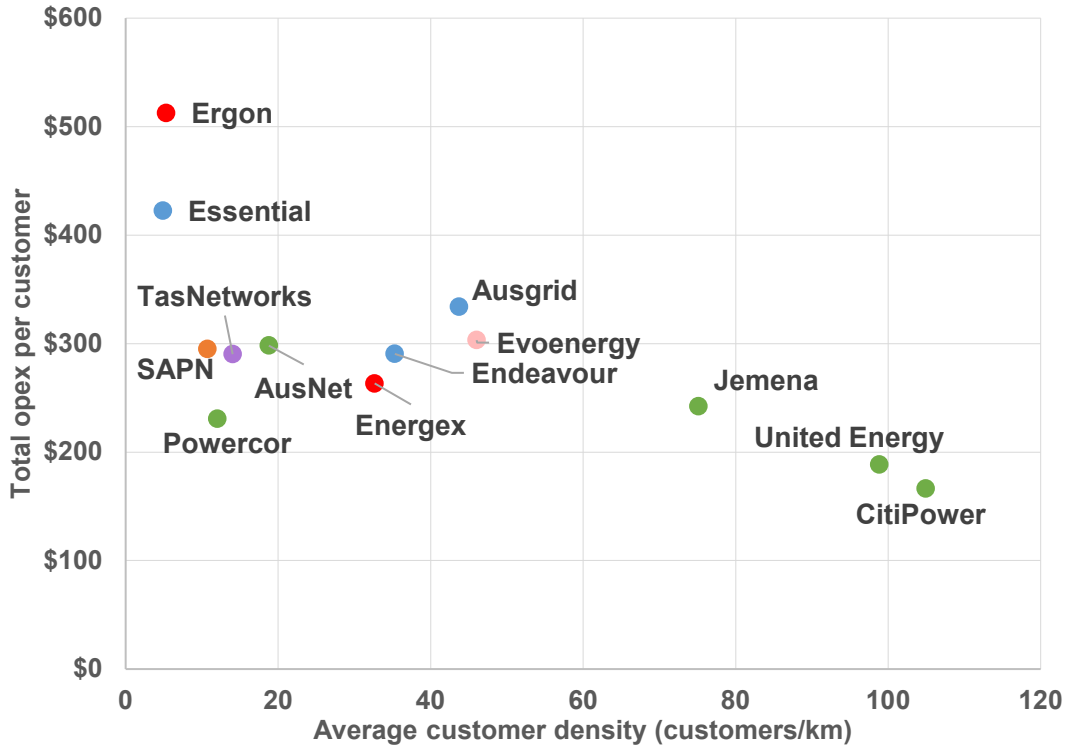
These results can be seen in Figure A. 1 where Jemena has relatively low average opex per customer, as compared to in Figure A. 2 where it has relatively high average opex per circuit length among the distributors in the NEM (over the 2015–19 time period). However, as noted above, care must be taken drawing conclusions from PPI analysis. For Jemena this is particularly the case given its situation is relatively unique in terms of its customer density.[197] That said, we observe in Figure A. 1 that Jemena's opex per customer is not particularly low when considering it has similar or only marginally lower opex per customer as distribution businesses of less than half its customer density (e.g. Energex, Powercor). We can expect a negative relationship between opex per customer and customer density. This is because, all else equal, the cost of managing the same number of customers connected to a shorter network will tend to be lower. This generally negative relationship is borne out in the figure.

Similarly, we observe that Jemena's opex per circuit km is higher than CitiPower and United Energy, which have higher customer density. We would generally expect that opex per circuit length would have a positive relationship with customer density, as the cost of managing more customers connected to the same network would tend to be higher, all else equal.

196 Total overheads includes opex and capitalised overheads.

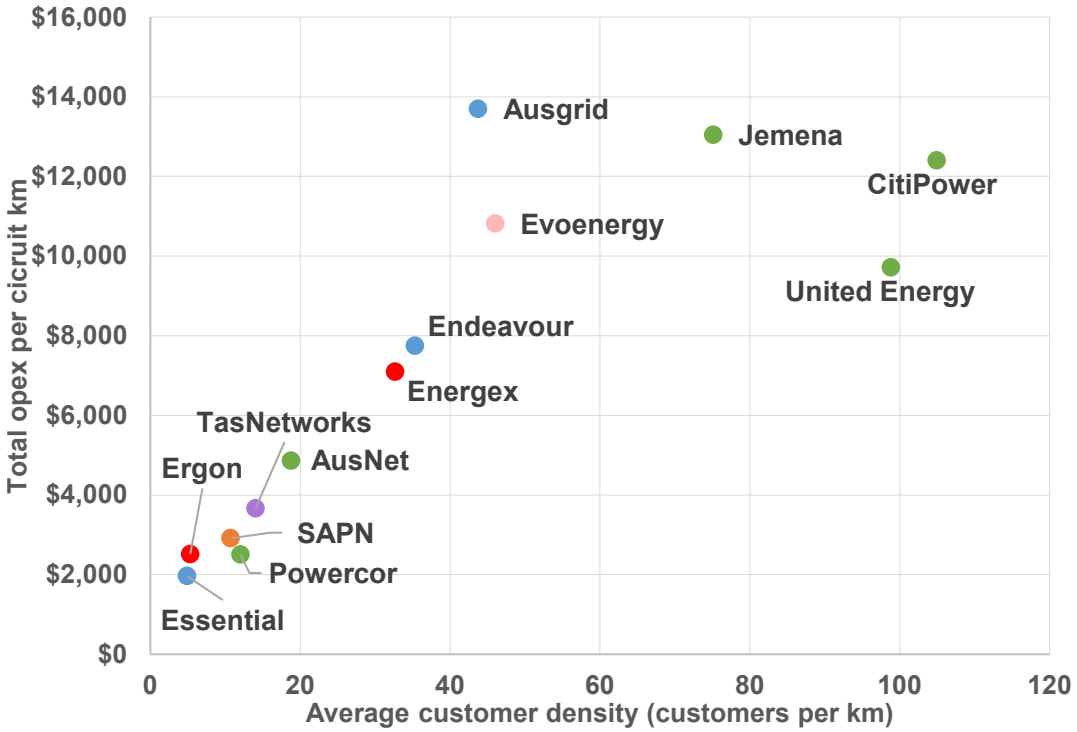
197 Jemena's customer density (75 customers per km of route length) is different to its closest peers in terms of customer density, who are United Energy (99 customers per km of route length) and Evoenergy (46 customers per km of route length). AER analysis.

Figure A. 1 Total opex per customer, 2015–19, ($2020–21)



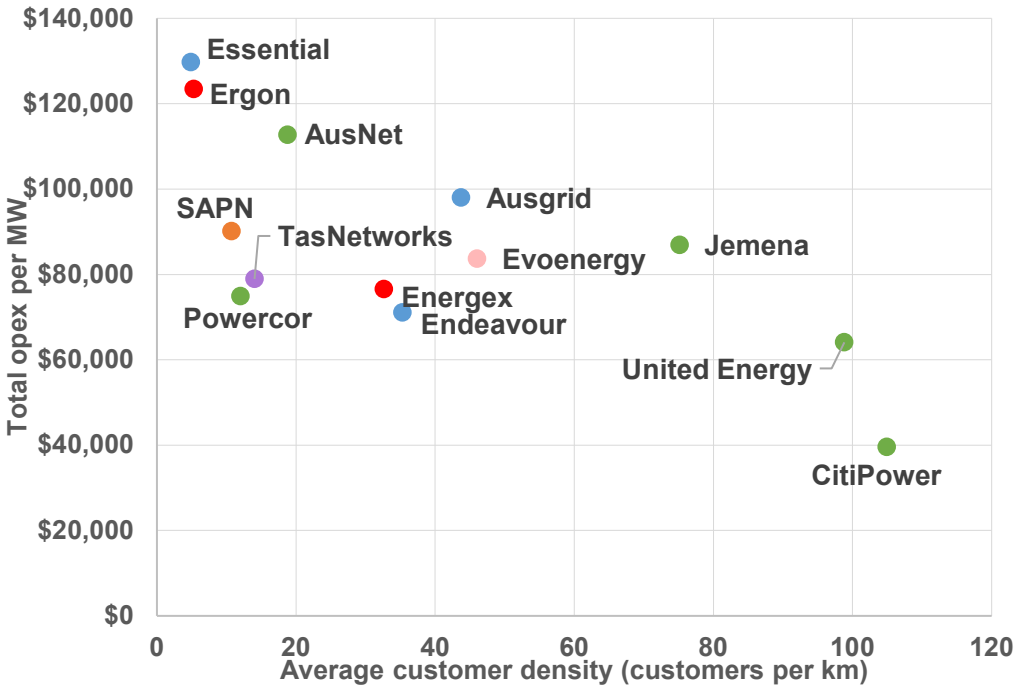
Source: AER analysis.

Figure A. 2 Total opex per circuit line length, 2015–19, ($2020–21)



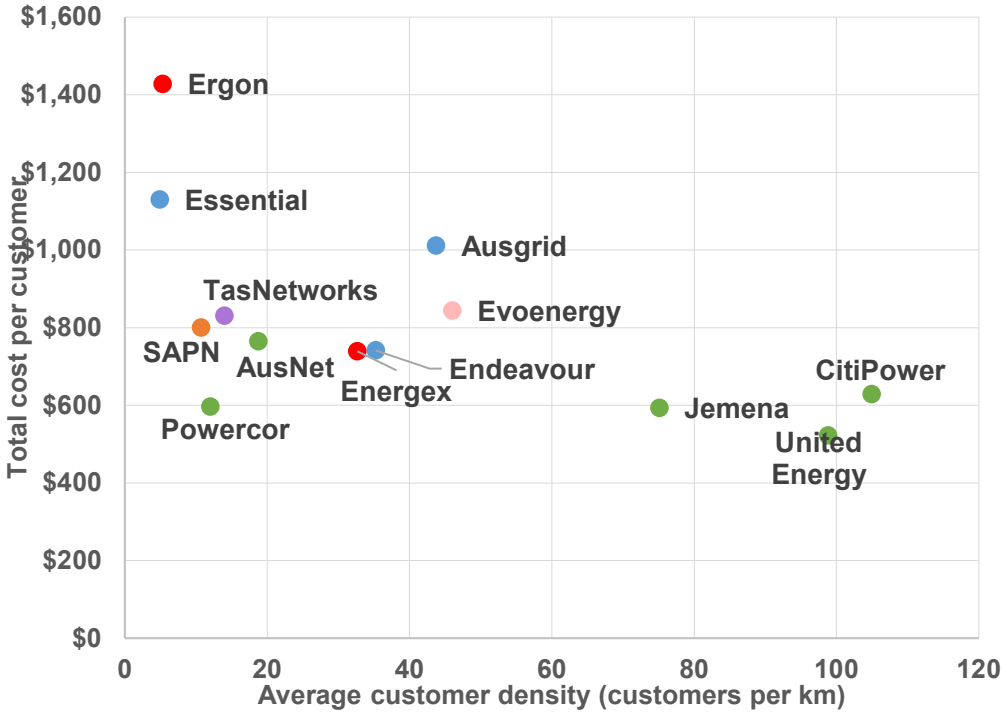
Source: AER analysis.

Figure A. 3 Total opex per MW of maximum demand, 2015–19 average ($2020–21)



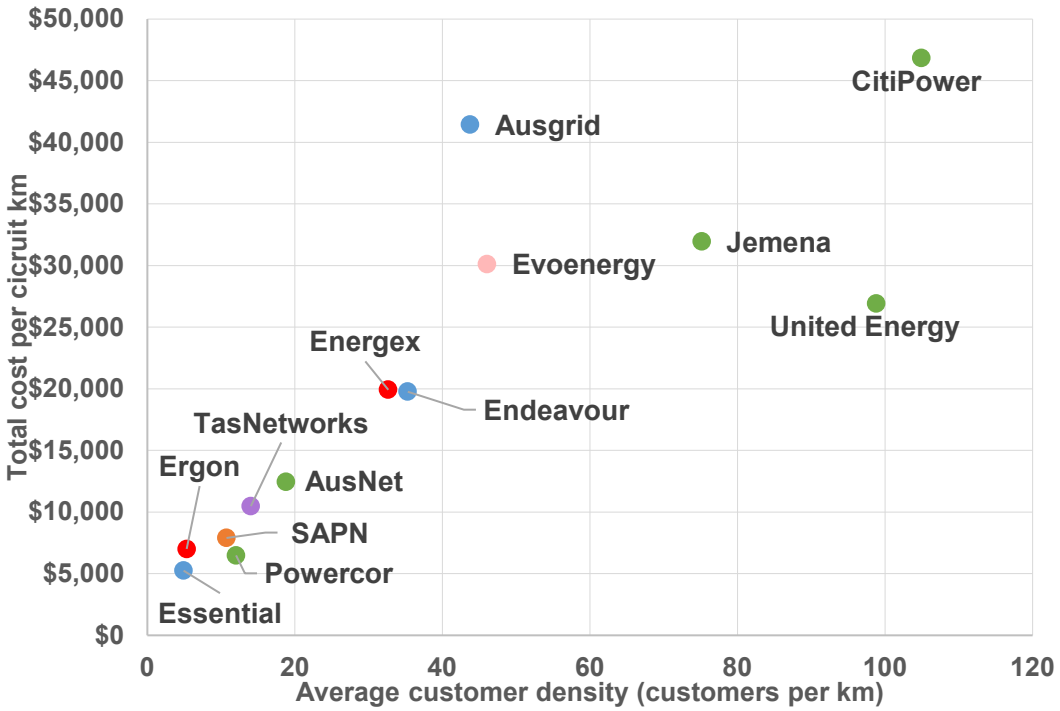
Source: AER analysis.

Figure A. 4 Total cost (capex and opex) per customer, 2015–19 average ($2020–21)



Source: AER analysis.

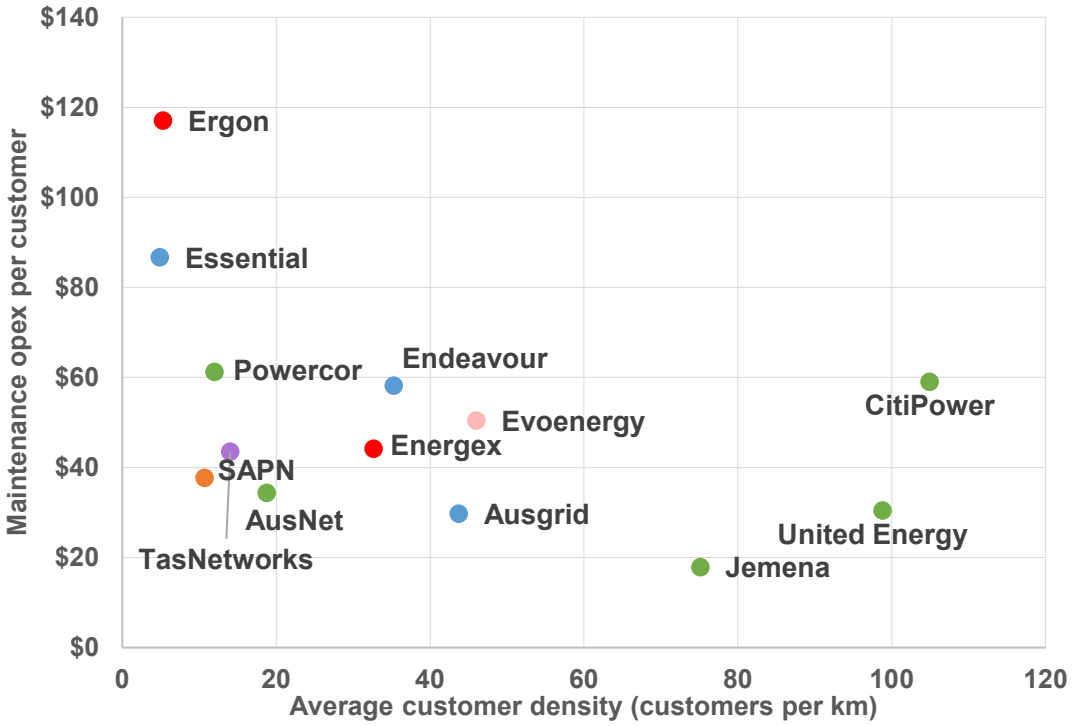
Figure A. 5 Total cost (opex and capex) per circuit km, 2015–19 average ($2020–21)



Source: AER analysis.

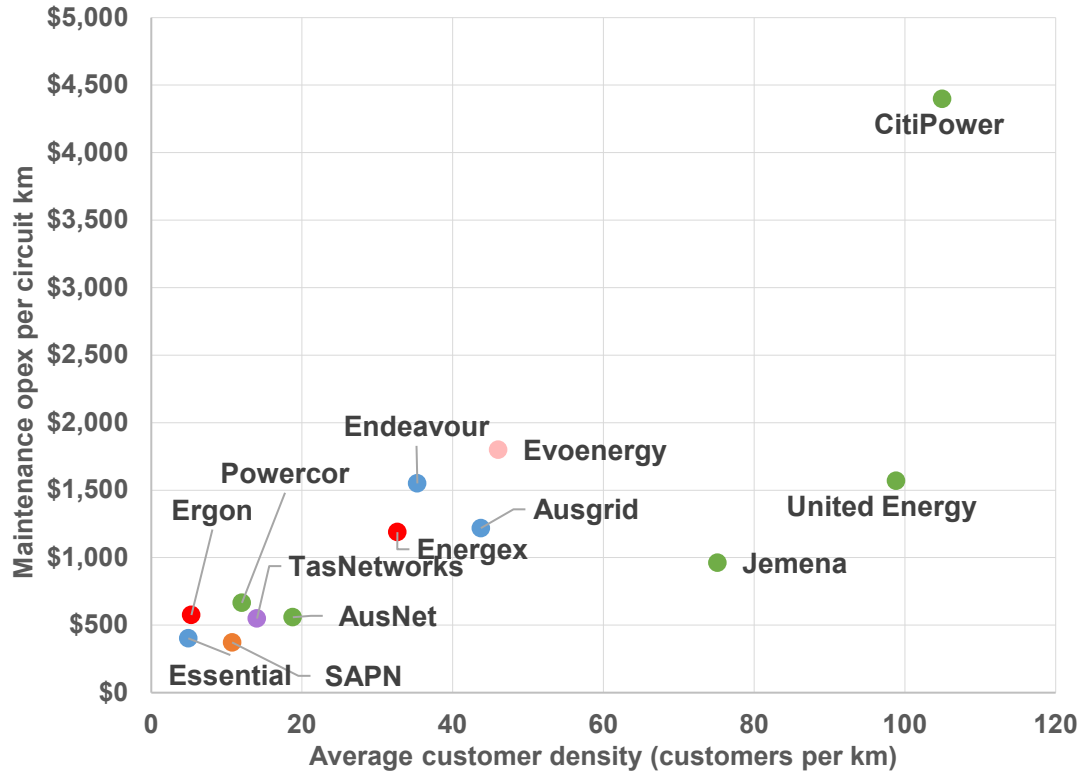
The pattern of Jemena's better performance on per customer than on per circuit km is repeated for the main opex cost categories, with the PPI analysis indicating that Jemena has relatively low maintenance, vegetation management and emergency response opex per customer, but that these cost categories are relatively higher on a per circuit length basis. The exception to this is total totex overheads (corporate and network, opex and capitalised) where Jemena does not perform particularly well on either customer number or circuit length measures. This analysis suggests that Jemena's overheads may be one area of inefficiency. As noted above these results need to be treated with caution.

Figure A. 6 Maintenance opex per customer, 2015–19 average ($2020–21)



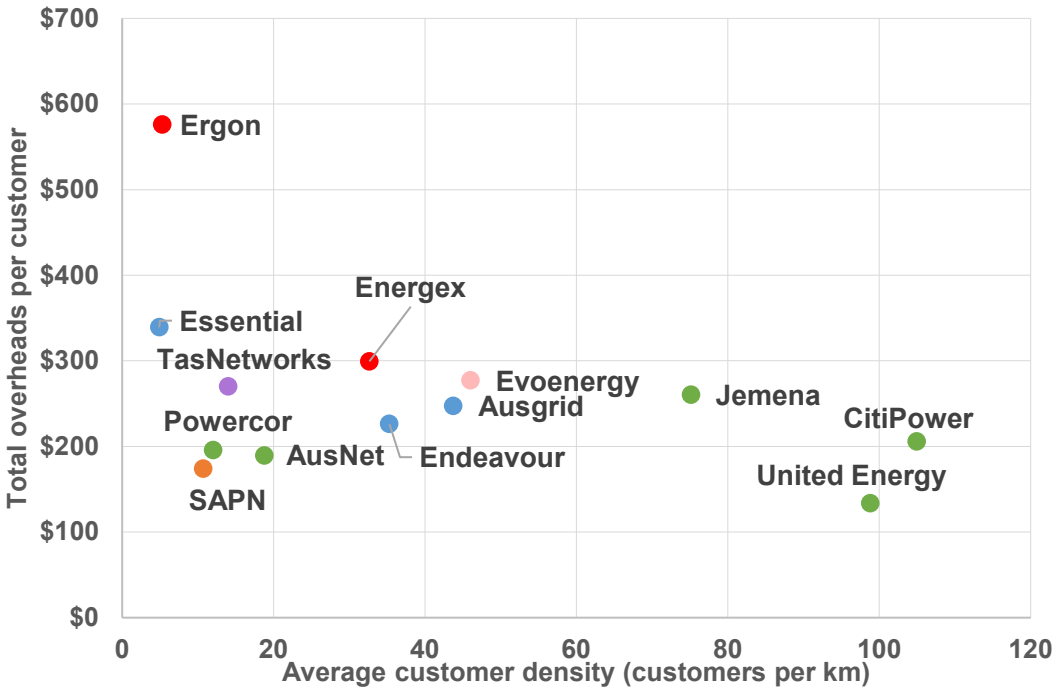
Source: AER analysis.

Figure A. 7 Maintenance opex per circuit km, 2015–19 average ($2020–21)



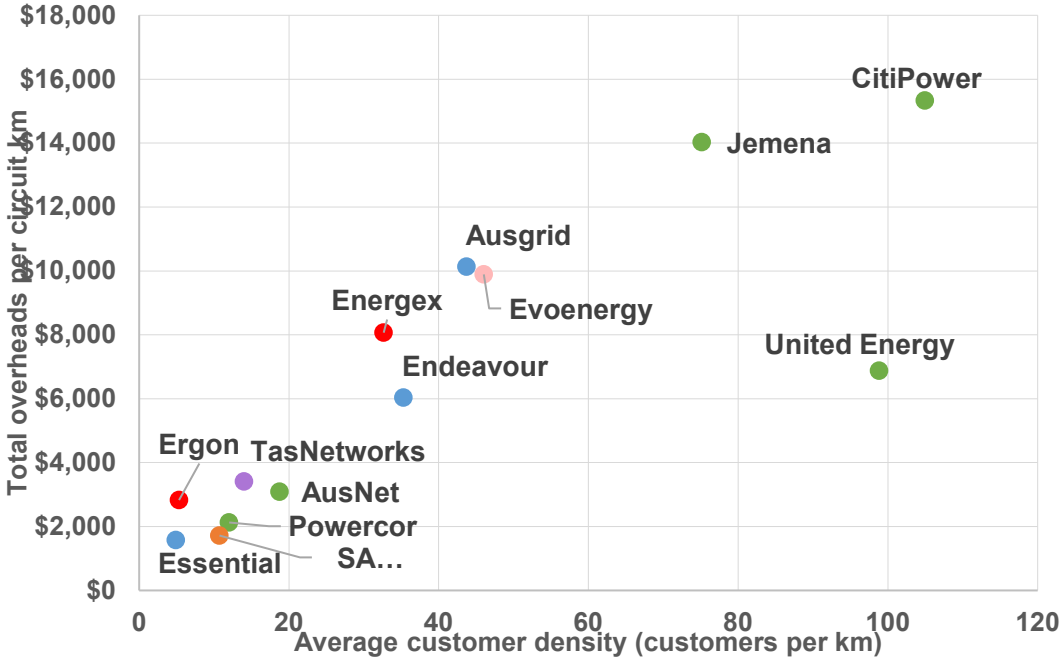
Source: AER analysis.

Figure A. 8 Total totex overheads per customer, 2015–19 average ($2020–21)



Source: AER analysis.

Figure A. 9 Total totex overheads per circuit length, 2015–19 average ($2020–21)



Source: AER analysis.

We also note that in terms of the cost category data underpinning the PPIs, the ratio of individual cost categories to total opex vary between businesses. For example, over the 2014–19 period Jemena's maintenance, vegetation management and emergency response opex are among the lowest proportions of total opex out of all businesses, whereas it has the highest proportion of opex overheads in the industry. This can be seen in Table A. 2. While this may provide further evidence that a source of inefficient costs is its overheads, there is also the possibility that Jemena allocates costs differently to other businesses. The variability in proportions across businesses, that could be attributable to their cost allocation differences, is a further issue that makes it difficult to compare specific cost categories (rather than total opex) across businesses.

Table A. 2 Proportion of cost categories to total opex, 2014–19

Distributor	Maintenance	Vegetation management	Emergency response	Opex overheads	Non-network costs	Balancing item
Evoenergy	19%	5%	4%	66%	12%	-3%
Ausgrid	10%	8%	6%	51%	22%	2%
AusNet Services	12%	17%	8%	44%	17%	0%
CitiPower	27%	3%	7%	63%	0%	0%
Endeavour Energy	19%	14%	8%	55%	24%	-21%
Energex	15%	11%	11%	57%	34%	-31%
Ergon Energy	19%	10%	11%	57%	24%	-24%
Essential Energy	20%	25%	10%	43%	31%	-30%
Jemena	**7%**	**5%**	**4%**	**71%**	**20%**	**-5%**
Powercor	23%	17%	12%	48%	0%	0%
SA Power Networks	16%	14%	15%	60%	15%	-16%
TasNetworks	15%	19%	15%	60%	21%	-30%
United Energy	16%	11%	10%	54%	5%	4%

Source: Category Analysis RIN responses 2013–14 to 2018–19.

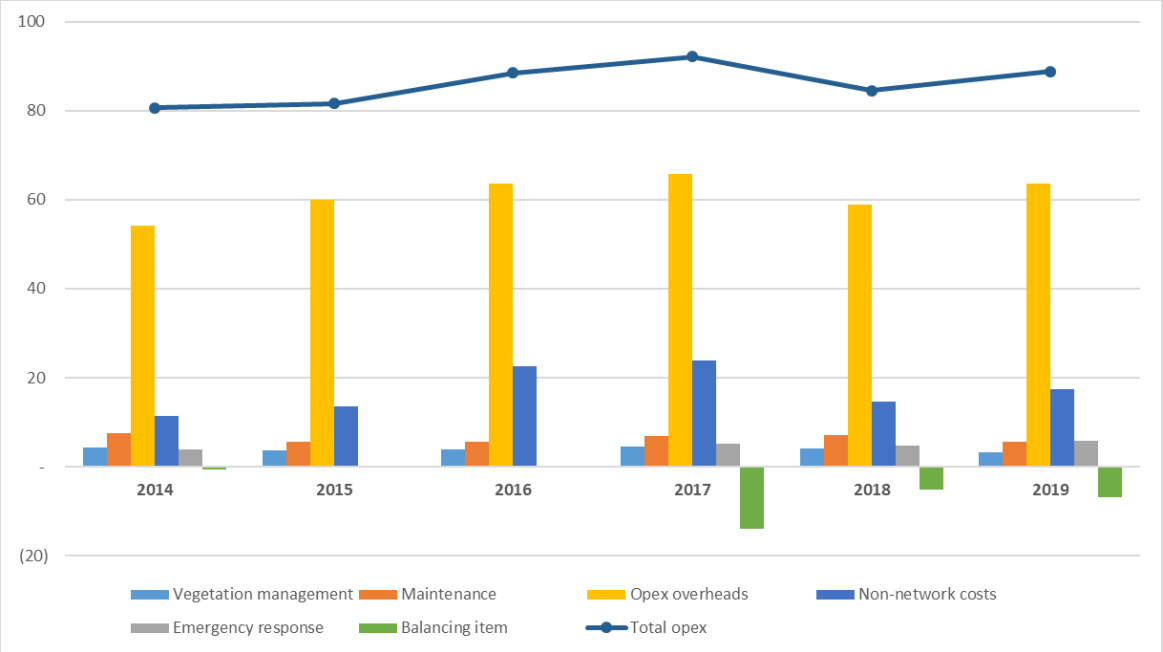
Note: A balancing item is included as a negative, but sometimes positive, item to offset the difference when the cost categories do not sum to total opex. See Appendix B for further discussion. This analysis excludes confidential information. Not all values add up to 100 per cent. Analysis is unchanged from the draft decision as we will not receive Jemena's cost category data for 2020 prior to the final decision.

B Cost category analysis

In addition to examining PPIs, we have examined category level costs underpinning them to further understand any changes in Jemena's opex over time and potential sources of inefficiencies compared to other distribution businesses. We have analysed the following opex cost categories over the period 2014–19: maintenance, vegetation management, emergency response, overheads and non-network costs. We will not receive Jemena's cost category data for 2020 prior to the final decision, and as a result this analysis is unchanged from the draft decision.

Figure B. 1 shows how Jemena's opex cost categories have changed over time. In 2019 Jemena's total opex (the blue line) was over $8.0 million ($2020–21) higher than its opex in 2014, which was predominantly driven by increases in opex overheads and non-network costs. Opex overheads and non-network costs (the yellow and dark blue bars) have been the largest components of Jemena's total opex for each year within the 2014 to 2019 period. All other cost categories account for low proportions of Jemena's total opex, and are unlikely to be material sources of relative inefficiency. For these other cost categories, vegetation management and maintenance costs (the light blue and orange bars) had minor decreases (in terms of their proportions of total opex) in 2019 compared to 2014, whereas annual emergency response costs (the grey bar) were slightly higher in 2019 than in 2014.

Figure B. 1 Jemena's opex cost categories over time ($ million, 2020–21)



Source: Jemena Category Analysis RIN responses 2014 to 2019; AER analysis.

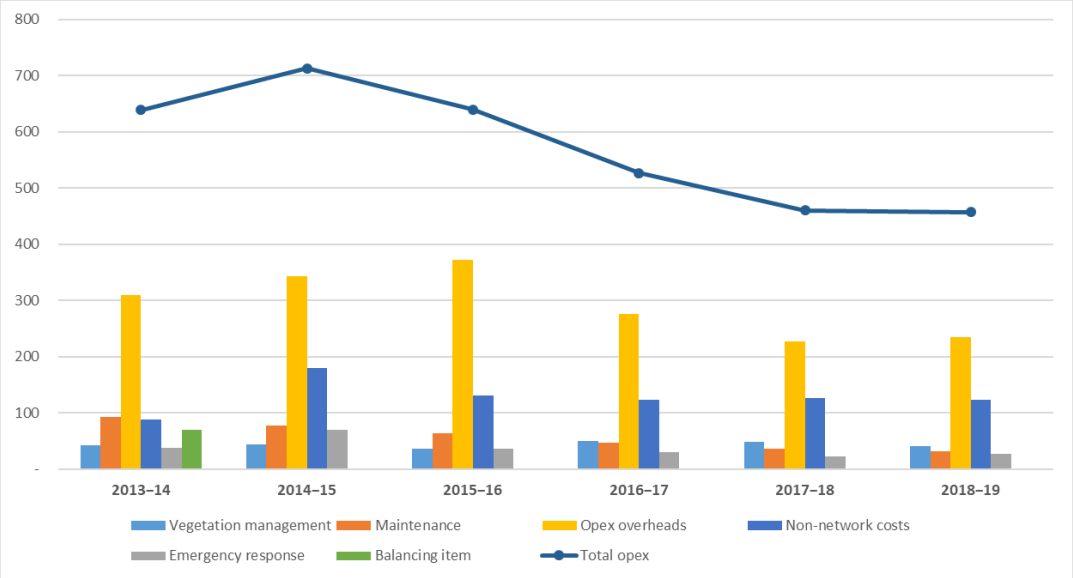
Note: Jemena's emergency response and balancing item values for 2015 and 2016 are confidential and are not included in Figure B.1 or our analysis.

We have also compared how Jemena's cost categories have changed over time relative to Ausgrid and Evoenergy. These two distribution businesses have historically

performed similarly to Jemena under our top-down opex benchmarking and have customer densities lower than, but close to, Jemena. Ausgrid and Evoenergy have achieved reductions in total opex over the period by reducing costs for most categories, particularly opex overheads which is the largest cost category for both businesses. In contrast Jemena's opex overheads have generally increased over the period, although Jemena has achieved some reductions in its opex overheads in recent years.

Figure B. 2 displays Ausgrid's cost categories over the period 2013–14 to 2018–19. Ausgrid's total opex was 28 per cent lower in 2018–19 compared to 2013–14, which was mainly driven by reductions in opex overheads and maintenance. All cost categories decreased over this period, apart from non-network costs which were higher in 2018–19 than 2013–14. In contrast Jemena's opex overheads generally increased over this period, noting the small reduction in 2018, and it has only reduced costs in categories that account for lower proportions of total opex.

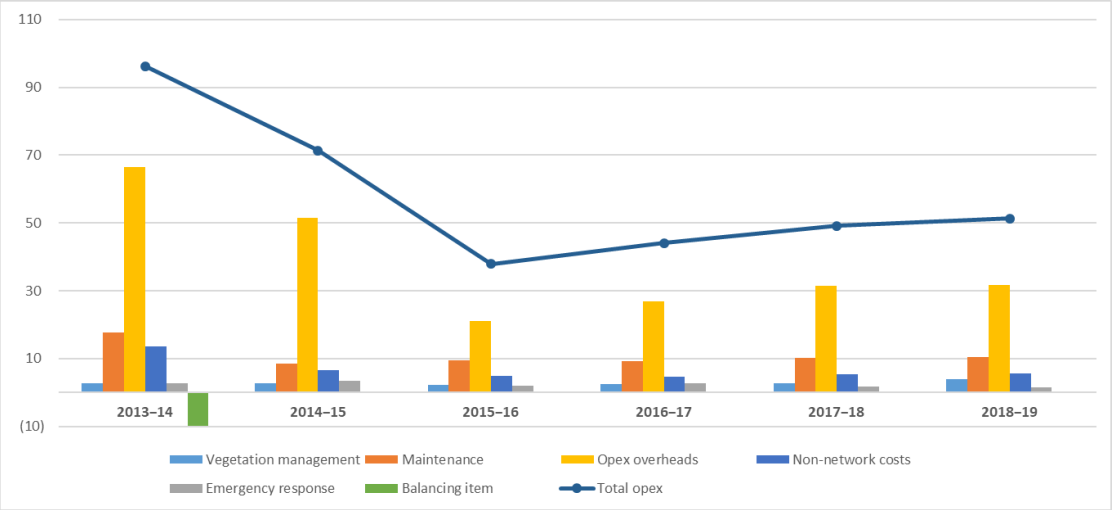
Figure B. 2 Ausgrid's opex cost categories over time ($ million, 2020–21)



Source: Ausgrid *Category Analysis RIN responses 2013–14 to 2018–19*; AER analysis.

Figure B. 3 shows Evoenergy's cost categories over the same period. From 2013–14 to 2018–19, Evoenergy achieved reductions in all cost categories other than vegetation management, which is a small component of its total opex. We understand its additional vegetation management costs from July 2018 relate to new obligations. The reduction in total opex was largely driven by a reduction in opex overheads, its largest cost category, and to a lesser extent maintenance and non-network costs. As above, this is in contrast to Jemena's opex overheads which have generally increased over the period, noting the small reduction in 2018. Further, Jemena has only reduced costs in categories that account for lower proportions of total opex.

Figure B. 3 Evoenergy's opex cost categories over time ($ million, 2020–21)



Source: *Evoenergy* Category Analysis RIN responses 2013–14 to 2018–19; AER analysis.

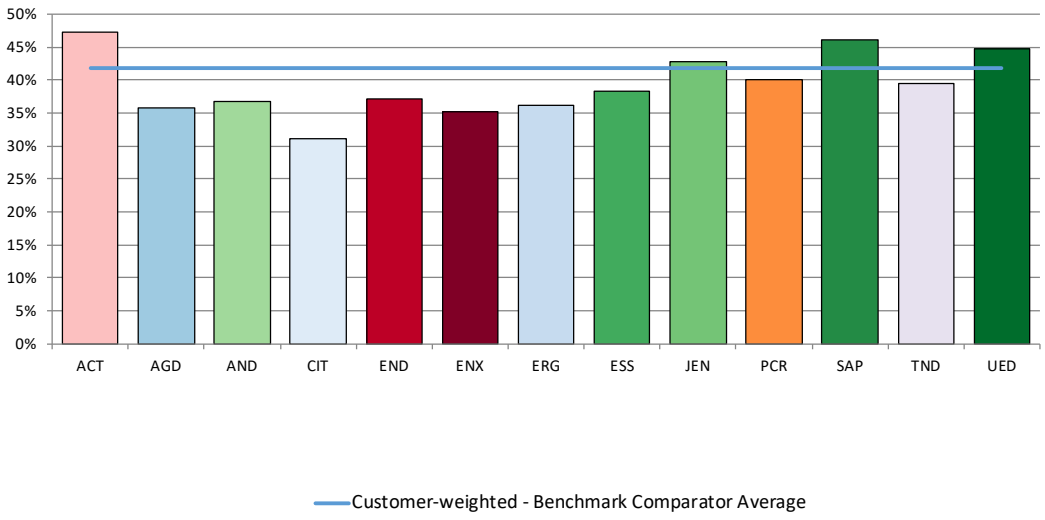
We note there are limitations with analysing opex category costs sourced from the category analysis RIN. This includes the potential for different cost allocation or accounting approaches. Further, this data set includes a balancing item (usually negative but sometimes positive to offset the difference when the sum of other cost categories does not equal total opex). Businesses with a high, negative balancing item are likely to have inflated proportions of total opex for some cost categories. The balancing item varies between businesses and can vary across time which complicates comparisons. In the above analysis for Jemena, Ausgrid and Evoenergy, the balancing items are not significant in most years. Opex-related data items in this dataset is also not scrutinised at the same level as the total opex data supporting our top down benchmarking. Given this, our cost category analysis is used to support top-down benchmarking analysis rather than being relied on to assess base opex on its own.

C Our analysis of the opex/capital ratios that inform the extent of capitalisation practice differences

As discussed in section 6.4.1.2, we have now included an OEF adjustment to account for Jemena's capitalisation practices being materially different to the comparator businesses. In making this assessment we have been informed by the extent to which Jemena's opex/totex, opex/total cost, and opex/total inputs ratios differ to the comparator businesses'. In this appendix, we present updated ratios from the draft decision for both benchmarking periods and discuss their advantages and disadvantages.

The average opex/totex ratio for all the distribution businesses is shown in Figure C. 1 and Figure C. 2 for the 2006–19 period and 2012–19 periods.

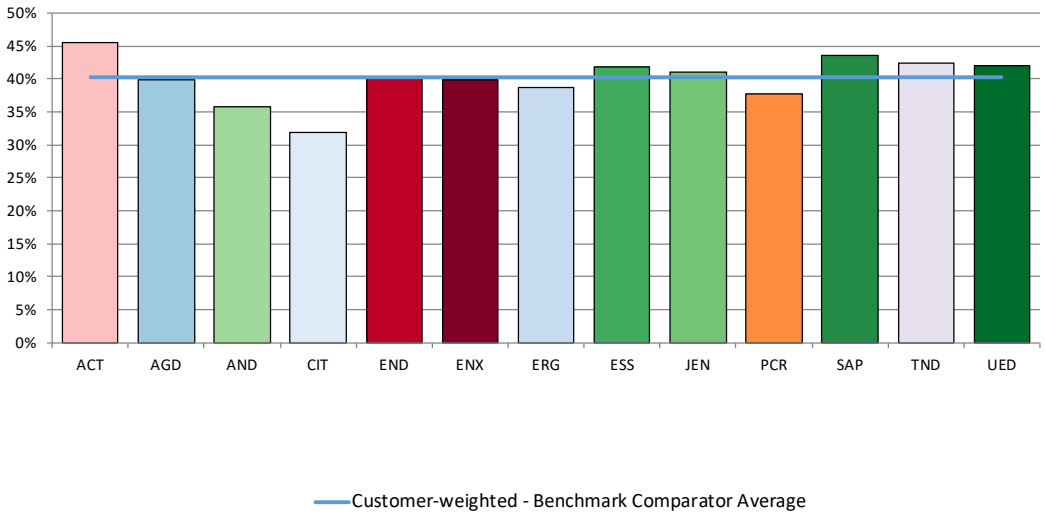
Figure C. 1 Opex to totex ratios for distribution businesses, 2006–19[198]



Source: Economic Benchmarking RINs, all distribution businesses; AER analysis.

[198] Consistent with the opex series used for economic benchmarking, these charts use 2014–CAM backcast opex for those distribution businesses which have changed their CAM.

Figure C. 2 Opex to totex ratios for distribution businesses, 2012–19



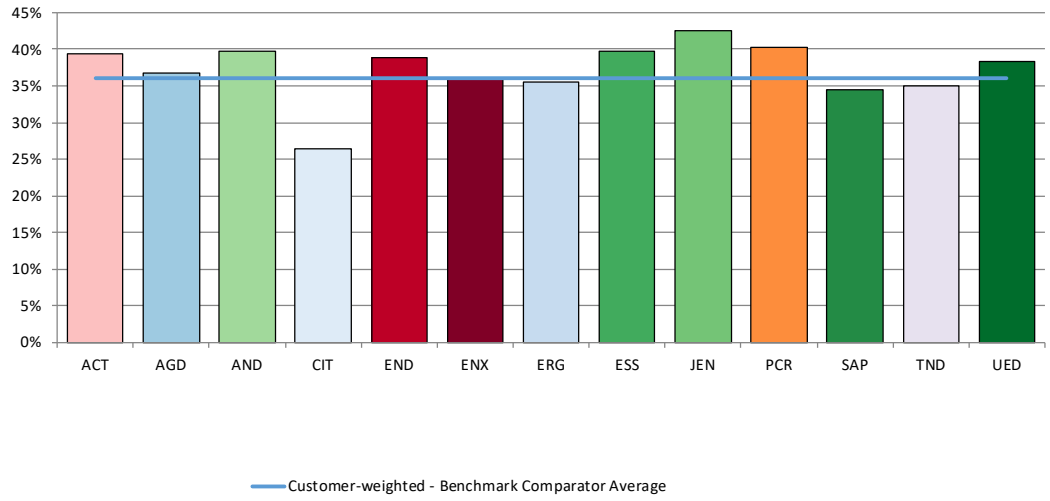
Source: Economic Benchmarking RINs, all distribution businesses; AER analysis.

We find that Jemena's opex/totex ratio is marginally (2 per cent) above the benchmark comparator-average ratio as shown by the blue lines in Figure C. 1 and Figure C. 2.

The key advantage of the opex/totex ratio is that it captures important dollar-for-dollar swings between opex and capex over the benchmarking periods, such as capitalisation/expensing decisions on overheads. However, as an expenditure and flow-based measure, despite calculating it over a relatively long period, it is also likely subject to volatility. Jemena raised several concerns with the opex/totex ratio, which are discussed further in Appendix D. We have considered these concerns, (e.g. that other factors may be influencing the opex/totex ratio but are not related to the opex/capex mix, such as capital contributions). While the ratio will pick up some 'noise', we consider that these concerns do not invalidate the use of this ratio as a high level gauge of capitalisation practices, particularly when used in combination with other ratios.

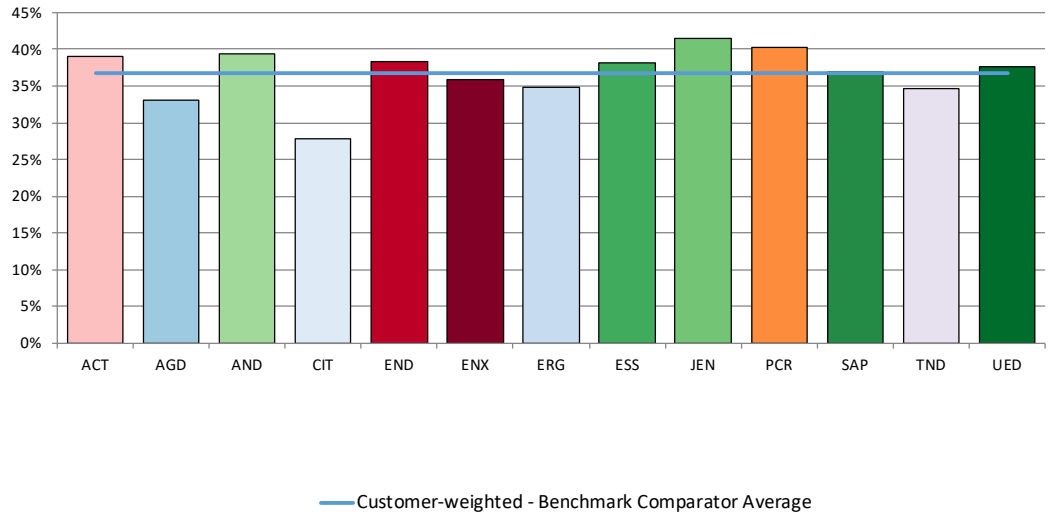
The average opex/total cost ratio for all the distribution businesses is shown in Figure C. 3 and Figure C. 4 for the 2006–19 period and 2012–19 periods.

Figure C. 3 Opex to total cost ratios for distribution businesses, 2006–19[199]



Source: Economic Benchmarking RINs, all distribution businesses; AER analysis.

Figure C. 4 Opex to total cost ratios for distribution businesses, 2012–19



Source: Economic Benchmarking RINs, all distribution businesses; AER analysis.

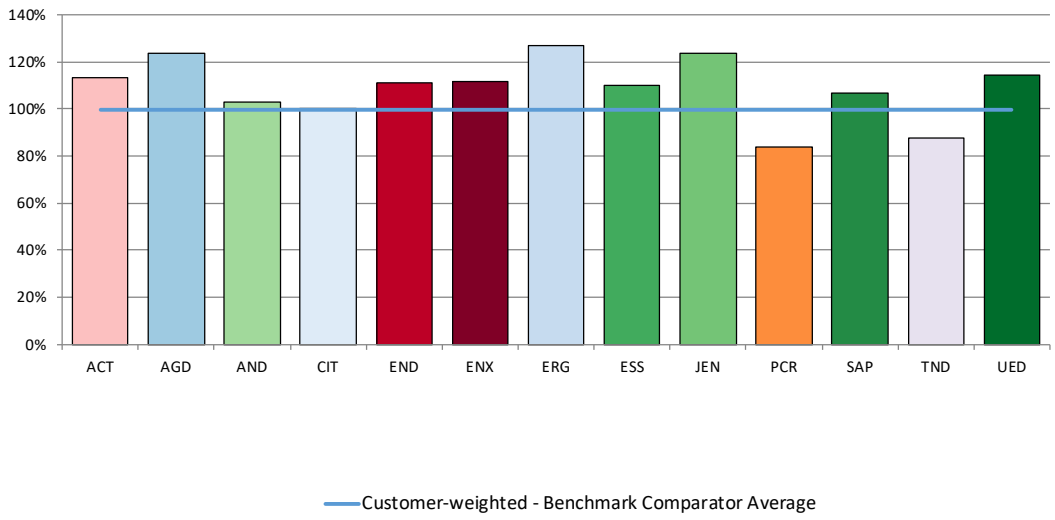
[199] Consistent with the opex series used for economic benchmarking, these charts use 2014–CAM backcast opex for those distribution businesses which have changed their CAM.

We find that Jemena's opex/total cost ratio is 17.8 and 13.0 per cent above the benchmark comparator-average ratio as shown by the blue lines in Figure C. 3 and Figure C. 4.

Compared to the opex/totex ratio, the opex/total cost ratio is more theoretically consistent with the cost- rather than expenditure-based approach used in benchmarking. The annual user cost of capital is based on a stock measure for the durable capital input,[200] and thus supplements the above flow-based measure (i.e. opex/totex). While capital inputs are largely captured de facto in the benchmark modelling (due to its collinearity with the output variables), this is for the average business in the data that holds a particular degree of capital intensity (capital inputs relative to opex). We consider that businesses such as Jemena, with materially different capitalisation practices, as indicated by its opex/total cost ratio, may not be sufficiently captured. Against these advantages, the average user cost of capital is an imperfect measure of capital inputs, due to potential inconsistencies among the distribution businesses in approaches to (initial) regulatory asset base valuation.

The average opex/total inputs ratio for all the distribution businesses is shown in Figure C. 5 and Figure C. 6 for the 2006–19 period and 2012–19 periods.

Figure C. 5 Opex to total inputs ratios for distribution businesses, 2006–19[201]

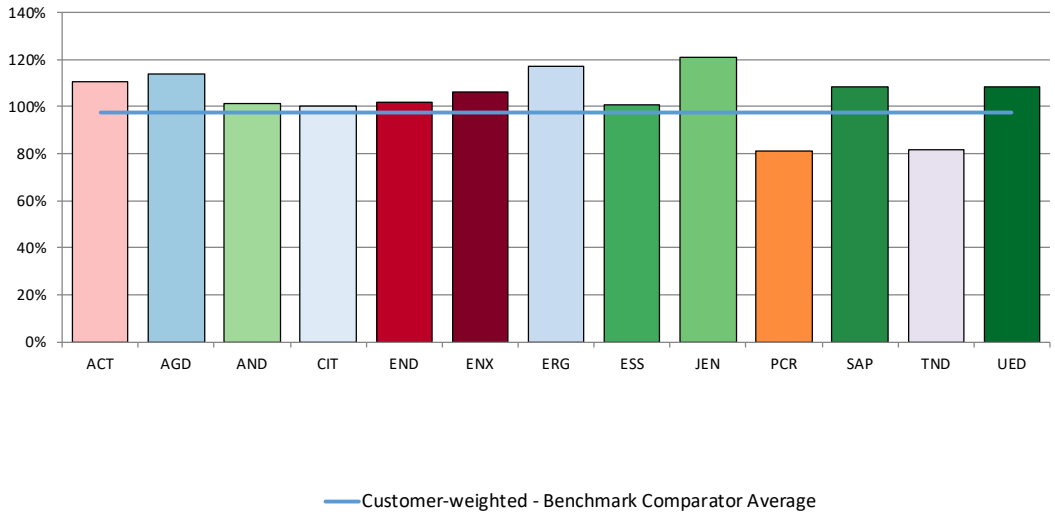


Source: Economic Benchmarking RINs, all distribution businesses; Economic Insights, Files for 2020 DNSP Economic Benchmarking Report, 8 October 2020; AER analysis.

[200] This assumes that the periodic flow of capital services is in proportion to the capital stock in place.

[201] Consistent with the opex series used for economic benchmarking, these charts use 2013–CAM backcast opex for those distribution businesses which have changed their CAM.

Figure C. 6 Opex to total inputs ratios for distribution businesses, 2012–19



Source: Economic Benchmarking RINs, all distribution businesses; Economic Insights, Files for 2020 DNSP Economic Benchmarking Report, 8 October 2020; AER analysis.

We find that Jemena's opex/total inputs ratio is 24.2 and 23.8 per cent above the benchmark comparator-average ratio as shown by the blue lines in Figure C. 5 and Figure C. 6.

The opex/total inputs ratio uses the opex and capital input quantity indexes from the index number-based MTFP analysis to construct an index that reflects the ratio of opex to total inputs.[202] As a quantity based measure, we consider it reduces some of the issues set out above in relation to the value-based measures. However, the capital input quantity constructed may be relatively insensitive to changes in capitalisation policy with respect to overheads. In addition, we consider that, as an index-based measure, the opex/total inputs ratio may be problematic if used in quantification of the OEF adjustment. This is because the ratio is an index, comprised of two indexes (opex inputs and total inputs) rather than direct observations, as is the case for the first two ratios. Multi-lateral indexes of this type are designed with a focus on preserving comparability of productivity levels across all businesses and over time. This is enabled by doing all comparisons through the sample average (e.g. average opex across all businesses and years), rather than directly between pairs of observations. This may limit its usefulness in deriving an OEF adjustment for capitalisation under which direct comparison between pairs of observations using observation-specific

[202] For each business, MTFP for each year over the 2006–2019 period is divided by opex MPFP for each year over that period. This gives the ratio of Opex/total inputs, since MTFP = Outputs/Total inputs, and Opex MPFP = Outputs/Opex.

information is preferred. Such an application in the case of the opex/total inputs ratio may not be in conformance with the multi-lateral nature of the index. We will investigate this issue further as part of our further review of capitalisation.

D Responses to issues raised by Jemena and other stakeholders in relation to the assessment of the efficiency of opex in the base year

This appendix discusses the issues raised by Jemena and other stakeholders in relation to the assessment of the efficiency of opex in the base year and our detailed responses. We outlined our positions in relation to many of these issues as they affect our final decision in section 6.4.1.2.

D.1 Use of Translog models

In its revised proposal Jemena argued its benchmarking results are significantly impacted as the Translog models are prone to monotonicity violations.[203] This means that a key property required of the econometric opex models, that an increase in output can only be achieved with an increase in inputs (e.g. opex), is not satisfied. It also stated the LSE TLG model, which is the model that produces Jemena's lowest efficiency score, has a larger than normal influence on the calculated efficiency adjustment as there are only five available models rather than the usual eight. It also considered the LSE TLG results are an outlier as the model produces unjustifiable output weights and gives significantly lower results compared to other econometric models.

In relation to this last issue, Jemena's consultant, CEPA, expressed concerns that there were significant differences in output elasticities between the SFA TLG and LSE TLG models for the 2006–19 period.[204] Jemena highlighted the differences in the customer number elasticities from the two Translog models that are specific to each distribution business. In particular, the customer numbers elasticities for CitiPower, Jemena and United Energy.[205] Jemena considered this raises concerns about the reasonableness of applying Translog model results to assess its base opex efficiency.

For these reasons Jemena proposed we should not use the LSE TLG model from the 2006–19 period to assess its base opex efficiency.

As noted in section 6.4.1.2, when estimating the relatively flexible Translog models (that allow for output elasticities to vary for each data point) an increase in output may not always be related to an increase in inputs. On the advice of our consultant Economic Insights, we require this property of an increase in outputs to be related to

---

[203] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 15–17.

[204] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 15, Jemena*, Revised Regulatory Proposal – 2021–26 – CEPA Att 05–05 AER's opex benchmarking – a review of the impact of capitalisation and model reliability,* December 2020, pp. 20–21.

[205] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 16.

an increase in inputs, to hold for at least half the data points of a business in order to include the efficiency score from that model in our efficiency assessment.

We agree that as a result of not meeting this requirement under the above test, there are only five econometric opex models available to assess Jemena's opex efficiency. Further, that as a result, the LSE TLG efficiency score for the 2006–19 period (which satisfies this key property for all data points, but produces the lowest efficiency score) has a larger effect than if all eight models were available. However, we consider the LSE TLG model results provide useful information on Jemena's relative efficiency. If this result was excluded, then Jemena's efficiency would only be assessed using one functional form (Cobb-Douglas). We support the use of a wider range of assessment methods to inform our efficiency considerations. Excluding the LSE TLG model results would mean we would not use all useful information available to inform our position. When assessing our NSW 2015 resets the Australian Competition Tribunal were critical of relying on just one piece of information (the SFA CD model) and recommended that the AER draw on a wider range of models in the future.[206]

Regarding the material difference in elasticities between the two Translog models for the period 2006–19, we consider this difference does not suggest that we cannot use these Translog models as a part of our considerations of the efficiency of Jemena's opex. When the joint effect of all outputs as a whole are considered, the impact of differences in customer numbers elasticities on efficiency scores can be more limited as a result of high correlation between customer numbers and ratcheted maximum demand outputs. It is the prevalence of multi-collinearity that leads to imprecise estimates of the correlated output variables in the TLG model. We note that in this instance, the LSE TLG model produces noticeably lower efficiency scores for Jemena compared to the other models. As an intensive 'producer' of customer numbers compared to ratcheted maximum demand, Jemena likely received a lower efficiency score from the LSE TLG model due to the model's relatively low customer numbers elasticity for Jemena. However, the results satisfy our key economic property (increase in output being achieved with an increase in inputs) and we have used them as a part of our analysis.

Further, we note that Jemena's SFA TLG results for the 2006–19 period do not meet this key property, and as such they are not used to assess Jemena's base opex efficiency. Given this, the model's elasticities are not likely to be appropriate and should not be compared with the LSE TLG elasticities.

We consider our current approach represents the best trade-off between using as much information as possible and a range of appropriate models, while excluding those which fail to satisfy necessary economic properties. Translog models are more flexible than Cobb-Douglas models, and this flexibility comes at the cost of higher data requirements. We also note that in the *2020 Annual Benchmarking Report*, we stated

---

[206] Australian Competition Tribunal, *Applications by Public Interest Advocacy Centre Ltd and Ausgrid,* 2016, paragraph 461, 471, 1227.

that we would examine the ongoing performance of the Translog models.[207] Other model specifications have been explored (e.g. a two-output specification); however, these are preliminary and further investigation is required (including consulting with industry) to understand whether a change in the model specification is appropriate.[208]

D.2 Use of multilateral total/partial factor productivity (MTFP/MPFP) benchmarking results

In its revised proposal Jemena argued it is inappropriate to use the MTFP / MPFP benchmarking results to assess opex efficiency and it did not use them in its analysis. Jemena considered these results have reliability concerns as a result of two statistical issues.[209] Firstly, that most coefficients in the Leontief cost function regressions that are used to determine the MTFP / MPFP output weights are not statistically significant and therefore are not robust. Secondly, that the Leontief cost function models explain less than half of the variation in opex (the R^2 value of the models is less than 50 per cent).

Economic Insights has provided advice that the Leontief cost function regressions will never produce impressive-looking statistical results, and cannot be judged by the same standards as more complex models, such as the Cobb-Douglas and Translog models.[210] This reflects that only Australian data can be used for the total cost function (comprised of opex and capital stock) as international data does not have comparable capital stock data. As a result, there are fewer data points available (and less variation between these data points) using Australian data only. As noted by Economic Insights, the Australian data available is not appropriate for modelling complex functional forms and the much simpler Leontief cost function is considered to be the most appropriate model given the data available. As this model assumes fixed input proportions in each output, it fits a right angle rather than a smooth curve to the data. Therefore, its statistical performance cannot be that impressive, in comparison to the smooth functions such as Cobb-Douglas or Translog used in the opex econometric cost function models.

We believe these statistical concerns do not invalidate the use of the MTFP / MPFP models, particularly as in this decision the results from these models are used to assess Jemena's base opex efficiency in a qualitative sense, including as a cross check for the results from the opex econometric cost function models. Further, we note that they do not affect the calculation of the opex efficiency adjustment for Jemena, which as set out in section 6.4.1.2, reflects the results of the opex econometric cost function models and relevant OEF adjustments.

---

[207] AER, Annual Benchmarking Report, *Electricity distribution network service providers,* November 2020, p. 52.

[208] Economic Insights, *Benchmarking results for the AER – Distribution,* October 2020, p. 155.

[209] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 19–21.

[210] Economic Insights, *Memo on DNSP ABR submissions – Distribution,* 21 November 2020, pp.1–2.

D.3 Vegetation management OEF

In its revised proposal, Jemena submitted that the negative OEF adjustments we applied for vegetation management were overstated.[211] Jemena argued this was because they relied on the AER's historical forecast of Victorian vegetation management costs to meet the then-new obligations (2011–2015) rather than more up-to-date actual vegetation management costs. It noted that actual vegetation management costs reported in the Category Analysis Regulatory Information Notices for the period 2011–19 are slightly lower than the AER's forecast, particularly for CitiPower.

Jemena submitted that although a useful starting point, relying on forecast data from ten years ago to estimate the OEF is unlikely to reflect the actual cost disadvantages faced by Victorian distribution businesses, particularly in the light of actual vegetation management cost data availability.[212] Jemena's concern with relying on vegetation management allowances or forecast costs, rather than actual costs, is that this could overstate the estimated OEF because actual vegetation management costs appear lower than those allowed by the AER for the relevant Victorian distribution businesses.

Jemena's proposed approach specifically involved comparing:

- Average annual actual vegetation management opex for Victorian distribution businesses in 2009 and 2010 (i.e. prior to the introduction of the new obligations) as a proportion of average annual actual network services opex in 2009 and 2010, to
- Average annual actual vegetation management costs over 2011–19 from the Category Analysis Regulatory Information Notice responses for each of the benchmark comparator businesses, as a proportion of average annual actual network services opex over 2011-19.

Jemena argued this was justified on the basis that the vegetation management OEF should reflect the impact on actual costs of changes in vegetation management obligations, given that the OEF is used to adjust benchmarking results that are based on actual opex. Jemena argued that actual vegetation management costs, which are available in the Regulatory Information Notices responses, provide a more accurate indication of the impact of the new obligations than forecast costs. In addition, it noted that these increased vegetation management costs were close to or lower than the allowances.[213]

As noted section 6.4.1.2, we are concerned that actual costs do not provide consistent data on the actual incremental costs associated with bushfire regulation. This is because we consider it unlikely these costs will only reflect changes as a result of the new obligations faced. This is particularly given these costs can fluctuate due to other

---

211 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 17.
212 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 17.
213 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 17.

reasons. We acknowledged in the draft decision that our approach is designed to be a pragmatic one in the absence of better and more consistent data. As noted in the *2020 Annual Benchmarking Report*, refining our approach to calculating a vegetation management OEF is an area we have identified for further development.[214]

To estimate the OEF for these costs in the draft decision, we used allowances for the costs of new vegetation management obligations over 2011–15 for Victorian distribution businesses that were estimated in 2010. We understand the rationale behind Jemena's proposed approach to be that incremental costs of identified OEFs are, ideally, set on the basis of actual costs (as a percentage of network services opex). However, we have relied on forecast costs as we do not have consistent data on the actual cost of incremental bushfire regulations. We also do not consider that these can be inferred by comparing actual vegetation management opex (in proportion) two years before and nine years after the introduction of new bushfire obligations. We consider that actual vegetation management costs can fluctuate for several reasons, notably weather conditions and vegetation management cycles, particularly in the context of drawing on only two years (2009 and 2010) of actual costs pre-obligations. We therefore continue to see merit in relying on the expected increased opex incurred as a result of these new regulations as a proxy for the actual but unknown differences in costs of managing higher bushfire risks in Victoria compared to other states.

With revisions since the draft decision to take into account updated comparator businesses, the vegetation management OEF adjustment for Jemena has (coincidentally) reduced (in absolute value) to the amounts proposed by Jemena in its revised proposal (i.e. –1.2% for the 2006–19 period and –1.9% for the 2012–19 period).

D.4 Accounting for differences in capitalisation

As outlined in section 6.4.1.2, the issue of the impact of differing capitalisation practices on the benchmarking results was put forward by Jemena in its initial and revised proposals as a key explanation for its opex efficiency score performance.[215] Jemena made the following key points in its revised proposal:

- That the AER should draw on the efficiency scores generated on the basis of the current CAMs instead of the 'frozen' 2014 CAMs.
- As an alternative, the AER should consider the efficiency scores generated on the basis of a common opex/totex ratio applied to all businesses.
- The opex/totex ratio should not be solely relied upon to inform an OEF adjustment.

---

[214] AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2020, p. 52.

[215] Jemena*, 2021–26 Electricity Distribution Price Review Regulatory Proposal – Attachment 06–01 Standard Control Services – Operating Expenditure – Public*, 24 February 2020, p. 11; Jemena, *Information request 043*, 15 July 2020, p. 2; Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, pp. 6–15.

Each of these issues is examined in more detail below.

D.4.1 Efficiency scores under the current CAMs

Jemena submitted that its opex econometric cost function efficiency scores when benchmarking on the basis of businesses' current CAMs are significantly different to, and considerably higher (around 15-17 per cent) than, the *2020 Annual Benchmarking Report* scores (based on the 'frozen' 2014 CAMs).[216] Jemena argued that this difference represents the impact of capitalisation on benchmarking. It considered using the current CAMs for benchmarking better reflects the cost structure of businesses over the next regulatory control period. Further, that given the AER's credible commitment to continually undertake benchmarking based on the 2014 CAMs, the businesses' current CAMs can be used for benchmarking without concern of bias or gaming.[217] Where the AER continues to rely on the 2014-CAM results, Jemena proposed to use the difference in its efficiency scores under the current CAM benchmarking (15-17 per cent) as an OEF adjustment for capitalisation.[218]

Ausgrid also submitted that the AER's current benchmarking approach does not do enough to adjust for differences in capitalisation policies.[219] It argued that using the 2014 CAMs for benchmarking opex artificially lifts Powercor and CitiPower's efficiency scores, and presented analysis which showed that these businesses' opex MPFP efficiency scores are significantly higher under their 2014 frozen CAMs used for benchmarking purposes compared to if the current CAMs were used. Ausgrid submitted that the continued use of the frozen 2014 CAMs could be considered misleading, given that the actual level of opex these businesses spend under their current approved CAMs is much higher i.e. less efficient. Ausgrid submitted that this skews the benchmarking results for all other businesses.

AusNet Services' regulatory proposals have put forward similar analysis and conclusions.[220] AusNet Services maintained that benchmarking results change significantly depending on which capitalisation approach is used for benchmarking purposes (2014 CAMs or current CAMs). It presented analysis in its revised proposal which showed that the benchmarking results change significantly depending on which capitalisation approach is used. In particular, when Powercor and CitiPower's opex under its current CAMs is used Powercor's performance decreased, CitiPower's ranking dropped from second to ninth position, and the overall industry productivity converged.[221]

---

216 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 7.
217 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 13.
218 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 14.
219 Ausgrid, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 4.
220 AusNet Services, *Revised Regulatory Proposal 2021–26,* December 2020, p. 96.
221 AusNet Services, *Revised Regulatory Proposal 2021–26,* December 2020, pp. 96–97

Consultants for ECA, Spencer&Co, expressed similar concerns about the impact of capitalisation policy on the benchmarking results, citing Jemena consultant CEPA's analysis of this issue.[222]

We share Jemena and other stakeholders' views that the sensitivity of the benchmarking efficiency scores to the adopted CAM and associated capitalisation policy suggests a degree of materiality in the impact of CAM/capitalisation changes on the benchmarking scores. We consider this is to be expected, given the large impact of CitiPower and Power's capitalisation policy change on their level of opex and in turn the 'weight' of opex in economic benchmarking of opex.

However, we do not consider Jemena's proposed approach is appropriate as a method to quantify the impact of Jemena's capitalisation differences from the benchmark comparator businesses. This is because it does not take into account whether, and to what extent, Jemena's capitalisation practices differ from the comparator businesses under the current CAM benchmarking. We consider this means a fresh analysis of the difference between the comparator businesses and Jemena under the current (or any alternative set of) CAMs is still required.

A further concern we have with relying on the current CAMs for deriving an OEF adjustment that is applied to the benchmarking results using opex under the 2014 CAMs, is that the current CAMs may reflect some degree of endogenous response to our benchmarking approach. That is, the current CAMs may reflect a response to our benchmarking approach rather than only updates to cost allocation and categorisation or corporate structures.

D.4.2 Efficiency scores under a common opex/totex ratio

As a further alternative, Jemena proposed to use opex econometric cost function benchmarking results using opex obtained by applying a common opex/totex ratio, specifically the benchmark comparator-average ratio, to all businesses' totex prior to modelling. Jemena argued that the material improvement in its efficiency score (6-7 per cent) under this approach is further evidence that its efficiency score is adversely impacted by capitalisation differences. Jemena submitted that the advantage of this approach is it removes the need for a capitalisation OEF adjustment as the capitalisation for all businesses is on a comparable basis.[223]

We consider benchmarking on the basis of a common opex/totex ratio a useful cross-check on the OEF-adjusted 2014-CAM benchmarking scores (as set out in section6.4.1.2). The increase in Jemena's opex efficiency score under this approach, replicated in our modelling, is consistent with the positive OEF we have applied to its 2014-CAM efficiency scores in this decision. In this regard, our modelling results show that the efficiency scores under this approach somewhat converge (relative to the 'raw'

---

[222] Spencer&Co report to ECA, *Submission and attachment on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 9.

[223] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure*, December 2020, p. 11–12.

2014-CAM scores) to the capitalisation-OEF-adjusted 2014-CAM scores. These results provides some support to the approach we have adopted in this decision of using opex/capital ratios to inform an OEF adjustment for capitalisation. While complementary, we do not see this analysis as a substitute for the 2014-CAM benchmarking. This is because we consider an adjustment made prior to the benchmarking being undertaken would result in opex for each Australian business that would excessively diverge from their actual opex. For the purposes of this decision, we consider that an OEF adjustment applied to the efficiency scores after the benchmarking is undertaken is consistent with our standard approach to other OEFs. We also note that the common ratio has only been used to adjust the Australian distributors, rather than the full dataset including overseas distributors, which may cause issues in the interpretation of results.

D.4.3 Jemena and others' concerns with the opex/totex and other opex/capital ratios

Jemena raised a number of concerns with the opex/totex ratio which centre on the influences of the level of capex beyond capitalisation practices. This was in a context where the AER would solely rely on this ratio as a means to derive an OEF adjustment for capitalisation. Jemena argued that the opex/totex ratio provides little insight into differences in capitalisation practices across distribution businesses.[224] Jemena argued that, while the opex/totex captures capitalisation practices, it also captures differences between businesses unrelated to the opex efficiency assessment, which makes it unsuitable for assessing opex efficiency.[225] These include different asset replacement cycles, asset age profiles, capital contribution levels, levels of efficiency between opex and capex and augmentation and safety requirements. Jemena argued that without adjustment for these factors, the ratio cannot provide meaningful insight into the specific question of whether the businesses capitalisation practices impact opex benchmarking results. Jemena noted that for this reason, its consultant CEPA recommended that the AER separately analyse capitalisation policy and opex/capex trade-off differences, noting that accounting treatment is largely independent of opex/capex trade-offs and other differences in capex drivers that require a separate assessment of capex.

Jemena also argued that as there are limitations to all three ratios the AER noted in the draft decision, it is more appropriate to at least take the average of all three ratios in determining a capitalisation OEF for Jemena.[226]

Jemena's People's Panel was generally supportive of its revised proposal. In particular, it suggested that in using the opex/totex ratio the AER exclude capex

---

[224] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 8.
[225] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 8.
[226] Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 11.

differences that are irrelevant in the assessment of opex benchmarking,[227] and consider benchmarking based on a normalised constant opex/totex ratio or on the basis of the current CAMs.[228]

Ausgrid submitted that the comparison point for Jemena's opex/totex ratio should be the frontier business's (Powercor's) opex/totex ratio.[229] Ausgrid argued that the AER's use of the customer weighted comparator average opex/totex ratio as the comparison point for Jemena's ratio is not a valid comparison point since a weighted average of multiple firms does not reflect how efficiency scores are calculated in the AER's benchmarking models.

As discussed in section 6.4.1.2, Appendix C and in the draft decision, we consider each of the identified opex/capital ratios has advantages and limitations, and this is why we have been informed by each of these in assessing the impact of capitalisation on our benchmarking. In this context, we generally agree with Jemena that the opex/totex ratio is an imperfect measure of capitalisation practices (as are all of the ratios) but note that it does provide some information that needs to be taken into account.

In terms of Jemena's specific concerns:

- In relation to replacement cycles and asset age, consistent with past decisions, we consider that this factor can potentially be an additional OEF.[230] However, consistent with our finding in 2015,[231] reviewing current asset age profiles across the distribution businesses indicates that asset age is not likely to be a source of material differences in opex. Our specific finding on Jemena is that its assets have among the longest weighted average remaining life among the distribution businesses. While the exact factors driving this are unclear, the evidence does not appear to indicate that asset age explains Jemena's level of opex and hence its relatively low opex benchmarking scores.
- In relation to capital contributions, the opex/totex ratio that we have calculated incorporates net capex rather than gross capex, i.e. it is capex net of capital contributions. We intend to explore this issue further in our upcoming review. However, we note that Jemena may be favoured by this approach (i.e. receive a higher OEF adjustment than otherwise), as it appears to incur a relatively large amount of capital contributions, particularly in recent years. The inclusion of capital

---

227 Jemena's People's Panel, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 71

228 Jemena's People's Panel, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 5.

229 Ausgrid, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 4, 7.

230 AER, *Final Decision, Ausgrid distribution determination 2015–16 to 2018–19, Attachment 7 – Operating expenditure*, April 2015, pp. 251–255.

231 AER, *Final Decision, Ausgrid distribution determination 2015–16 to 2018–19, Attachment 7 – Operating expenditure*, April 2015, pp. 251–255.

contributions would therefore reduce Jemena's opex/totex ratio relative to the impact for other distribution businesses.

- We agree that the efficiency or inefficiency of past capex could also potentially influence the opex/totex ratio. To the extent that actual capex is inefficient and that this inefficiency is greater (lesser) than opex inefficiency, this will overstate (understate) efficient capex, and thus understate (overstate) the opex/totex ratio. (Where the opex/totex ratio is then incorporated in an OEF adjustment, this will tend to overstate (understate) the required opex efficiency adjustment.) In the present context, our finding is that Jemena has been generally more efficient in capex than opex. This will tend to overstate the opex/totex ratio. However, in the context of our conservative approach, we have not made further adjustments to the opex/totex ratio to account for this. We will consider how this issue can be addressed in our further review of capitalisation.
- In relation to augmentation and safety requirements, Jemena did not provide any evidence to support this general claim. However, we note that as the comparator businesses are mostly Victorian, and hence with similar augmentation and safety requirements, we do not expect this to be a material source of difference between Jemena and the comparators.

We do not agree with Ausgrid's submission on the comparator point. We use 0.75 rather than 1.0 (or the frontier business) as the comparison point, which provides the cut-off point for distributors to be compared to on capitalisation practices. This is to be consistent with our standard approach to OEF adjustment calculation.

D.5 Overall health check is required on the AER's benchmarking

In its revised proposal Jemena proposed an independent overall health check of benchmarking as it has been some time since we started using economic benchmarking in our regulatory decisions.[232] It also proposed an independent review in the context of the MTFP / MPFP benchmarking results presented in the *2020 Annual Benchmarking Report* due to the reasons specified above.[233]

We also received a submission from Ausgrid that proposed a review of the MTFP benchmarking results (reflecting the coding error and changes in the *2020 Annual Benchmarking Report*).[234] The CCP17 agreed that there should be a review of some of the technical aspects of the benchmarking methodology.[235] The ECA, via its consultant Spencer&Co, also expressed concerns with the sensitivity of the benchmarking

---

232 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 5.
233 Jemena, *Revised Regulatory Proposal – 2021–26 – Att 05–01 Operating expenditure,* December 2020, p. 21.
234 Ausgrid, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 4.
235 CCP17, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, p. 104.

results.[236] Separately, the VCO, via its consultant Headberry Partners P/L, considered that as all distributors except United Energy have experienced productivity declines over time, a bottom-up sanity check may be useful in evaluating efficiency.[237] We are considering a review of the MTFP / MPFP benchmarking including the appropriate scope. This could not be progressed in time for the final decision. As mentioned above, a review of the MTFP / MPFP benchmarking would not affect Jemena's base opex efficiency adjustment as we use the results from this benchmarking in a qualitative manner and as a cross check for the opex econometric cost function benchmarking.

[236] Spencer&Co report to ECA, *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26*, January 2021, p. 9.

[237] VCO *Submission on the Victorian EDPR Revised Proposal and draft decision 2021–26,* January 2021, pp. 15–16.