DRAFT DECISION

AusNet Services Distribution Determination 2021 to 2026

Attachment 6 Operating expenditure

September 2020

AUSTRALIAN ENERGY REGULATOR

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Note

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

The draft 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 11 – Demand management incentive scheme and demand management innovation allowance mechanism

Attachment 12 – Customer service incentive scheme

Attachment 13 – Classification of services

Attachment 14 – Control mechanisms

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Attachment 19 – Tariff structure statement

Attachment A – Victorian f-factor incentive scheme

Contents

6 Operating expenditure

Operating expenditure (opex) refers to the operating, maintenance and other noncapital expenses incurred in the provision of network 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 AusNet Services' proposed opex forecast for the 2021–26 regulatory control period.

6.1 Draft decision

We have reviewed AusNet Services' total opex proposal and find it is largely reasonable, with the main difference to our alternative estimate being the impact of unforeseen changes in economic conditions on the rate of change as a result of COVID–19. Without these changes in economic conditions impacting the rate of change we would have been likely to accept AusNet Services' proposal.

Our alternative estimate of total opex is $1187.4 million ($2020–21) which is $46.1 million ($2020–21), or 3.7 per cent, lower than AusNet Services' forecast.[1] Of this, $37.9 million ($2020–21) is driven by the impact of the lower output and real price growth. As a result, we do not accept AusNet Services' opex forecast of $1233.4 million ($2020–21)[2] for the 2021–26 regulatory control period because we are not satisfied that it reflects the opex criteria.[3] For the draft decision we have substituted AusNet Services' opex proposal with our alternative estimate. Table 6.1 sets out AusNet Services' proposal and our alternative estimate for the draft decision.

Table 6.1 Comparison of AusNet Services' proposal and our draft decision on opex ($ million, 2020–21)

	AusNet Services Proposal	AER draft decision	Difference
Base (reported opex in 2018)	1080.1	1080.1	0.0
Efficiency adjustment	0	0	0
Base year adjustments	-5.0	-14.0	-9.0
Final year increment	65.9	75.1	9.2
Trend: Output growth	47.6	26.5	-21.2
Trend: Real price growth	18.9	2.2	-16.8

1 Including debt raising costs.

2 Including debt raising costs; AusNet Services, *Electricity Distribution Price Review (EDPR) 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 124.

3 NER, cl. 6.5.6(d).

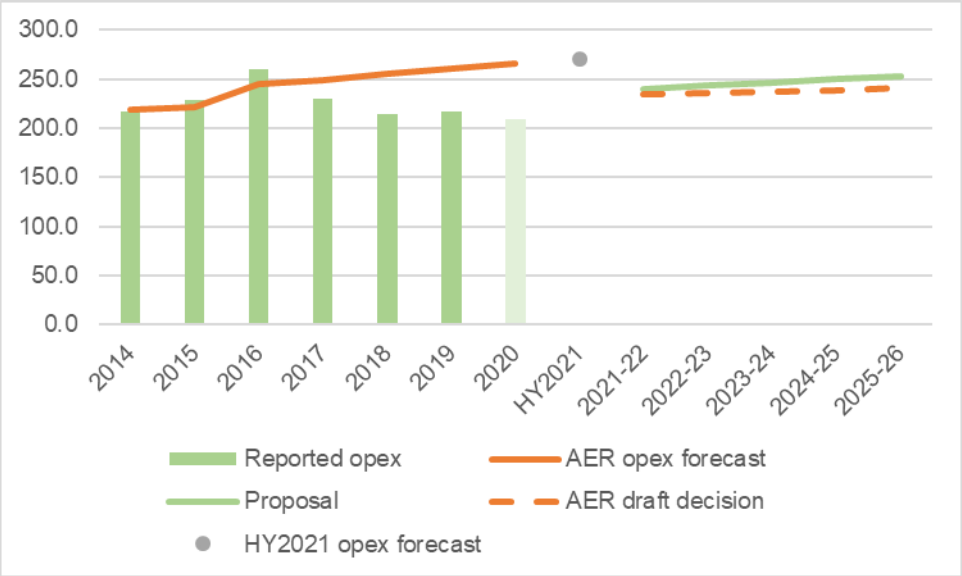
	AusNet Services Proposal	AER draft decision	Difference
Trend: Productivity growth	-16.0	-15.1	0.9
Step changes	16.9	9.3	-7.6
Category specific forecasts	13.2	11.9	-1.3
Total opex (excluding debt raising costs)	1221.6	1176.0	-45.6
Debt raising costs	11.8	11.3	-0.5
Total opex (including debt raising costs)	1233.4	1187.4	-46.1
Percentage difference to proposal			-3.7%

Source: AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

Note: Numbers may not add up to totals due to rounding. The difference is between AusNet Services' proposal and our draft decision. Category specific forecasts for Guaranteed Service Level (GSL) payments reflect the net change.

Figure 6.1 shows AusNet Services' opex forecast, its actual opex, our previous regulatory decisions and our alternative estimate that is the basis for our draft decision. AusNet Services' opex forecast was 9.2 per cent higher than its actual and estimated opex in the 2016–20 regulatory control period. Our alternative total opex forecast is 5.1 per cent higher than AusNet Services' actual and estimated opex in the current regulatory control period.

Figure 6.1 AusNet Services' opex over time ($ million, 2020–21)



Source: AusNet Services, *2021–26 Regulatory proposal –Supporting document –Workbook 1 –Regulatory determination,* January 2020; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Opex model,* January 2020; AER, *Draft Decision –AusNet Services distribution determination 2021–26 –Opex model,* September 2020; AER, *Draft Decision, AusNet Services distribution determination 2021–26 –Efficiency Benefit Sharing Scheme model, ,* September 2020; AER analysis.

We have found AusNet Services' base year opex to be not materially inefficient and have not included an efficiency adjustment in our alternative estimate, consistent with AusNet Services' proposal. However, the following factors have contributed to our lower alternative total opex forecast:

- Our forecast rate of change by which we trend opex forward over the next five years is on average 0.6 per cent each year, which is lower than AusNet Services' proposed 1.5 per cent per year. This is primarily driven by our lower price and output growth forecasts, reflecting the impact of COVID–19 and our lower forecasts of wage price growth and updating maximum demand to reflect Australian Energy Market Operator's (AEMO's) most recent forecasts. This lowers our alterative estimate compared to AusNet Services' proposal by $37.9 million ($2020–21).
- With the exception of forecasting labour price growth, we have used our standard approach to trend opex forward over the next five years. For labour price growth, we have used a forecast prepared by Deloitte Access Economics (Deloitte) rather than our standard approach of averaging two forecasts as this is the only forecast available which factors in the impacts of COVID–19. For the final decision we will reconsider updating the rate of change forecast using our standard approach provided the necessary forecasts are available.
- We generally only include step changes where we are satisfied there are efficient costs associated with new regulatory obligations or capital expenditure (capex)/opex trade-offs and these costs are not already captured in base opex or through our trend forecast. We have not included the step changes proposed by AusNet Services related to transitioning to the IT cloud and anticipated cyber security obligations. We do not consider sufficient evidence has been provided to justify the capex/opex substitution for the IT cloud costs. Further, while we consider it is prudent for businesses to meet anticipated cyber security obligations, we do not consider that AusNet Services' proposed approach and cost to meet these obligations is efficient. For the step changes we included in our alternative estimate, the amount included is slightly lower than AusNet Services' proposal (this is detailed in section 6.4.5). This lowers our alternative estimate compared to AusNet Services' proposal by $7.6 million ($2020–21).
- We have reallocated a lower amount to standard control services (SCS) metering than AusNet Services' proposed, which is partly offset by our decision to not accept AusNet Services' proposal to remove the Energy Safe Victoria (ESV) levy from base opex (for recovery through the annual L factor). The net impact is that our alternative estimate is $9.0 million ($2020–21) lower than what AusNet Services proposed.[4]
- Our final year increment is $9.2 million ($2020–21) higher than AusNet Services' proposal.

[4] The net impact also takes into account AusNet Services' revised amount for capitalisation of leases, which we have included in our alternative estimate. This is detailed in section 6.4.3.1.

Under the New Reg trial, opex was an in-scope item for negotiation with the Customer Forum, and AusNet Services negotiated each element of the opex forecast with the Customer Forum. The final positions for each element were detailed in AusNet Services opex proposal (e.g. where an element was agreed to or considered appropriate for further investigation by us). AusNet Services' proposal also documented the input from the Energy Users Association of Australia (EUAA) and the AER's Consumer Challenge Panel, sub-panel 17 (CCP17) to the opex proposal. This allowed us to clearly see how AusNet Services had engaged with its customers on each element of the opex forecast and how that engagement had impacted its proposal. Further, we could see those areas where a more detailed review by the AER was appropriate. We have also received feedback from a number of stakeholders in relation to AusNet Services' proposal. This expressed a number of concerns, including the efficiency of AusNet Services' base year opex, the trend forecasts in light of COVID–19 impacts and the quantum of proposed step changes. We have used these views to inform our assessment.

6.2 AusNet Services' proposal

AusNet Services used a 'base–step–trend' approach to forecast opex for the 2021–26 regulatory control period, consistent with our preferred approach.

In applying our base–step–trend approach to forecast opex for the 2021–26 regulatory control period, AusNet Services:

- Used actual opex in 2018 of $216.0 million ($2020–21) as the base to forecast its costs for the next regulatory control period.[5]
- Adjusted its base year opex to reflect its planned capitalisation of lease costs of $4.5 million ($2020–21) per annum (under Australian Accounting standard AASB 16) and the removal of the ESV levy of $2.4 million ($2020–21) per annum (with the costs of the levy proposed to be met through the L-factor in the price control).[6] These adjustments removed $6.9 million ($2020–21) per annum from base year opex. In our analysis, we categorised AusNet Services' proposed category specific forecast of $5.9 million ($2020–21) per annum for metering reallocation as a base adjustment (this is detailed in section 6.4.3.3 of this attachment). As a result of our reclassification, the net impact of these three adjustments is a reduction in base opex of $1.0 million per year and $5.0 million ($2020–21) over the next regulatory control period.
- Applied the approach in the Expenditure forecast assessment guideline for electricity distribution (the Expenditure Assessment Guideline) to calculate the final year increment to derive the starting point for its opex forecast. This increased its

[5] AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

[6] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 135-36; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

base opex forecast by $13.2 million per annum ($2020–21) or $65.9 million ($2020–21) over the next regulatory control period.[7]

- Applied its forecast rate of change to its opex forecast, consistent with the Expenditure Assessment Guideline.[8] This increased its opex forecast by $50.5 million ($2020–21), including real price growth of $18.9 million ($2020–21), output growth of $47.6 million ($2020–21) and productivity growth of $16.0 million ($2020–21.[9]
- Proposed four step changes related to new Rapid Earth Fault Current Limiter (REFCL) obligations, new five minute and global settlement obligations, new cyber security and IT cloud obligations and an IT cloud step change. This increased its opex forecast by $16.9 million ($2020–21).[10]
- Proposed opex category specific forecast of $1.2 million ($2020–21) for innovation expenditure[11] and a net forecast of $12.0 million ($2020–21) for Guaranteed Service Level (GSL) payments.[12] This increased its opex forecast by $13.2 million ($2020–21).

AusNet Services' total opex forecast is $1233.4 million ($2020–21) for the 2021–26 regulatory control period (see Table 6.2). AusNet Services is forecasting opex will be 9.2 per cent higher opex in the 2021–26 regulatory control period compared to its actual and estimated opex in the 2015–20 regulatory control period. Opex represents 38.8 per cent of AusNet Services' total revenue in its proposal.[13]

Table 6.2 AusNet Services' proposed opex ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
Total opex including category specific forecasts	237.4	241.0	244.5	248.0	250.7	1221.6
Debt raising costs	2.3	2.3	2.4	2.4	2.4	11.8
Total opex[14]	239.8	243.3	246.9	250.4	253.0	1233.4

7 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020, AER analysis.

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

9 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

10 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, pp. 143-147.

11 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p.149.

12 The net GSL forecast accounts for a proposed opex category specific forecast of $46.7 million ($2020–21) and removal of $34.7 million ($2020–21) from base opex. AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 148; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

13 AusNet Services, 2021–26 Regulatory proposal –Supporting document – Distribution Proposal PTRM model (2022–26), January 2020; AER analysis.

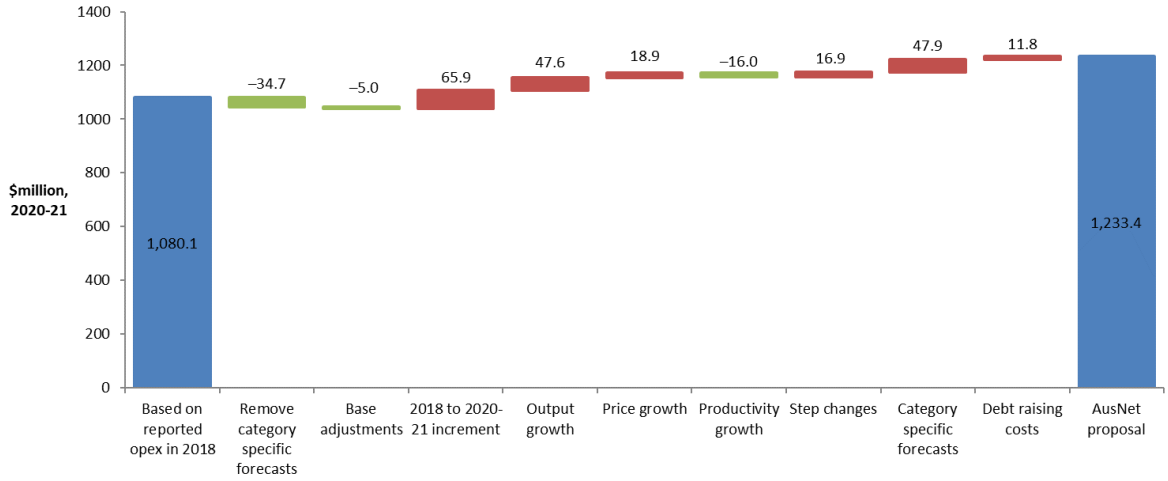
14 Total opex including debt raising costs.

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 127, 148; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020, AER analysis.

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

Figure 6.2 shows the different components in AusNet Services' opex proposal.

Figure 6.2 AusNet Services' opex forecast ($ million, 2020–21)



Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 127, 148; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020, AER analysis.

6.2.1 Stakeholder views

We received six submissions on AusNet Services' 2021–26 proposal that raised opex issues. At a high level, submissions raised questions around base opex, the need to account for the impacts of COVID–19 on economic conditions and trend forecasts. They also raised various points about the quantum and drivers of step changes proposed. We have taken these submissions, and any other concerns consumers identified during our engagement into account in developing the positions set out in this draft decision. A summary of the opex issues raised in submissions is provided in Table 6.3.

Table 6.3 Submissions on AusNet Services' opex proposal

Stakeholder	Issue	Description
CCP17, Origin Energy, Energy Users Association of Australia (EUAA), Victorian Community Organisations (VCO)	Base opex	CCP17 noted that AusNet Services' base opex is in the low range of opex efficiency but has been improving in recent years and questioned whether AusNet Services' base year is efficient.[15] VCO considered that the base year for AusNet Services needs to be adjusted downwards to reflect their observed poor productivity.[16] Multiple submissions questioned the choice of 2018 as the base year given it does not represent the most recently audited data, and the significant amount of time between 2018 and the start of the next regulatory control period.[17]
CCP17	ESV Levy	CCP17 noted that some businesses have proposed this as a step change whereas AusNet Services proposed to remove it from their base and recover it annually via tariffs. It considered the levy as exogenous and an ongoing operating cost, and sees merit in uniformity of approach in dealing with it across the five businesses.[18]
CCP17, Energy Consumers Australia (ECA), Energy Australia (EA), Origin Energy, EUAA	Trend	Origin Energy noted AusNet Services forecast both price and output growth using the AER's standard approaches.[19] EA submitted that further trend analysis should be undertaken to reveal persistent over-estimation or under-estimation and to ensure credibility of forecasting methods.[20] CCP17 and Origin Energy considered that growth forecasts may need to be substantially revised in light of the impacts of COVID-19 on the economy.[21] EUAA welcomed AusNet Services' 1 per cent annual productivity improvement compared to the 0.5 per cent AER requirement.[22]
CCP17, ECA, Origin Energy,	Step changes	Multiple submissions expressed concerns with the quantum of step changes and considered the AER needs to test these proposals

15 CCP17, *Advice to the AER on the Victorian EDPR for the Regulatory Determination 2021–26*, 10 June 2020, pp. 43–44.

16 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p. 56.

17 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p. 43; Origin Energy, *Submission to Victorian electricity distributors regulatory proposals,* 3 June 2020, p. 4; Energy Users Association of Australia, *Submission AusNet Services EDPR 2021–26*, 10 June 2020, p. 9.

18 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26*, 10 June 2020, p. 54.

19 Origin Energy, *Submission to Victorian electricity distributors regulatory proposals*, 3 June 2020, p. 4.

20 Energy Australia, *Victorian Electricity Distribution Determinations 2021–26 – regulatory proposals – 31 January 2020,* 3 June 2020, pp. 7–8.

21 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p 3; Origin Energy, *Submission to Victorian electricity distributors regulatory proposals*, 3 June 2020, p. 3.

22 Energy Users Association of Australia, *Submission AusNet Services EDPR 2021–26*, 10 June 2020, p. 5.

Stakeholder	Issue	Description
EA, VCO		carefully against the step change criteria with concerns that not all of the proposed step changes meet the step change criteria.[23] ECA noted the step change mechanism does not operate symmetrically and it is rare for a business to put forward negative step changes. It considered this is a further reason why the AER should carefully assess the veracity of each step change.[24] EA questioned whether allowing numerous opex step changes reflects poorly on the integrity of the AER's revealed cost framework and whether it should take a harder line to preserve this.[25]
CCP17, Origin Energy, VCO, ECA	5 minute Settlement	CCP17 and ECA considered this qualifies as an acceptable step change but questioned the initial costs proposed due to the delay in implementation.[26] VCO was concerned with the difference in proposed costs of the five Victorian businesses.[27]
CCP17, Origin Energy, VCO, ECA	Cyber Security	CCP17 considered the cyber security step change appears to be a legitimate new and exogenous obligation that is imposed by the Commonwealth Government.[28] VCO noted AusNet Services costs to comply with the requirement as quite modest.[29] Origin Energy raised concerns at the persistent high levels of expenditure relative to the expenditure over the current period, this includes in the area of cyber security. Origin Energy encouraged the AER to closely scrutinise the businesses' forecast ICT expenditure.[30] ECA noted that all 5 Victorian businesses are subject to compliance with new Federal Government cyber security standards for energy utilities.[31]
CCP17, VCO	REFCL	CCP17 noted some aspects of it has already been approved as contingent projects and it is a legislated requirement. Given this it

23 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p. 12; Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 9.

24 Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 28.

25 Energy Australia, *Victorian Electricity Distribution Determinations 2021–26 – regulatory proposals – 31 January 2020,* 3 June 2020, p. 8.

26 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26*, 10 June 2020, pp. 52–53; Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, June 2020*, Attachment 1, p. 28.

27 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p. 66.

28 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p. 53.

29 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p. 66.

30 Origin Energy, *Submission to Victorian electricity distributors regulatory proposals*, 3 June 2020, p. 3.

31 Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026*, Attachment 1: A review of Victorian Distribution Networks, May 2020, p. 29.

Stakeholder	Issue	Description
		considered the AER's role is to check the efficiency of implementation.[32] VCO noted that Powercor is seeking more than twice the amount than AusNet Services. It considered this difference needs to be investigated in more depth as well as the base costs provided by both.[33]
CCP17, ECA	IT Cloud	CCP17 considered this is part of a capex/opex trade-off and is acceptable as a step change where there is net benefit to customers.[34] ECA stated that businesses should only make a decision to move IT systems to the cloud where the benefits of doing so are outweighed by the costs. ECA seeks evidence that all businesses have explicitly considered how cloud migration costs can be offset.[35]
CCP17	GSL	CCP17 was not convinced that the increase to the base year to adjust for some GSL self-funding correlates with the GSL category specific adjustment that AusNet Services has proposed.[36]
CCP17	Innovation Fund	CCP17 stated that the concept is really important and has their and the Customer Forum's support. The AER needs to consider how we can ensure that customers get the best outcome.[37]
CCP17, ECA	Metering Reallocation	ECA argued it is important that all networks attribute metering costs in a manner that is consistent with their cost allocation methodologies as this will ensure greater comparability of costs between networks.[38]
Origin Energy, Energy Australia, CCP17	COVID-19	Origin Energy considered COVID–19 is expected to have an unknown, but significant impact on electricity demand and expenditure within the current and potentially the next regulatory control period. To the extent that these impacts extend into the next regulatory control period, Origin Energy anticipates the businesses' demand and expenditure forecasts will need to be substantially revised.[39]

32 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p. 55.

33 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, pp. 65–66.

34 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p. 55.

35 Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 29.

36 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26*, 10 June 2020, p. 48.

37 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26*, 10 June 2020, p. 49.

38 Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 37.

39 Origin Energy, *Submission to Victorian electricity distributors regulatory proposals,* 3 June 2020, p. 1.

Stakeholder	Issue	Description
		EA considered the downturn associated with COVID–19 should provide new pressures to achieve cost reductions, as they are being felt in competitive sectors of the economy.[40]

6.3 Assessment approach

6.3.1 Incentive regulation and the 'top-down' approach

Incentive regulation is designed to prevent network businesses from exploiting their natural monopoly position by setting prices in excess of efficient costs.[41] A key feature of the regulatory framework is that it is based on incentivising networks to be as efficient as possible. We apply incentive-based regulation across the energy networks we regulate, including electricity distribution networks. More specifically for opex, we rely on the efficiency incentives created by both ex ante revenue regulation (where an opex forecast is granted over a multi-year regulatory control period) and the efficiency benefit sharing scheme (EBSS).

The approach we apply to assessing a business's opex (and which we have applied in this draft decision) is more fully described in the Expenditure Assessment Guideline,[42] and its accompanying explanatory materials.

The incentive-based regulatory framework partially overcomes the information asymmetries between the regulated businesses and us, the regulator.[43]

Incentive regulation encourages regulated businesses to reduce costs below the opex forecast set by the regulator, in order to make higher profits, and ‘reveal’ their costs in doing so. The information revealed by the businesses allows us to develop better expenditure forecasts over time. Revealed opex reflects the efficiency gains made by a business over time. As a network business becomes more efficient, this translates to lower forecasts of opex in future regulatory control periods, which means consumers also receive the benefits of the efficiency gains made by the business. Incentive regulation therefore aligns the business’s commercial interests with consumer interests.

Our general approach is to assess the efficiency of the business’s forecast opex over the regulatory control period at a total level, rather than to assess individual opex projects or programs. To do so, we develop an alternative estimate of total opex using forecasting method as set out in the Expenditure Assessment Guideline, known as the ‘base–step–trend’ approach (section 6.3.2). This is generally a 'top-down' approach,

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40 Energy Australia, *Victorian Electricity Distribution Determinations 2021–26 – regulatory proposals – 31 January 2020,* 3 June 2020, p. 6.

41 Productivity Commission, *Electricity Network Regulatory Frameworks, volume 1, No. 62*, 9 April 2013, p. 188.

42 AER, *Explanatory Statement*, *Expenditure Forecast Assessment Guideline,* November 2013.

43 Productivity Commission, *Electricity Network Regulatory Frameworks, volume 1, No. 62*, 9 April 2013, p. 189.

but there may be circumstances where we need to use bottom-up analysis, particularly in relation to our base opex assessment and for step changes.[44]

Benchmarking a network business against others in the National Electricity Market (NEM) provides an indication of whether revealed opex can be adopted as 'base opex' and, if not, what our alternative estimate of base opex should be. While benchmarking is a key tool, we use a combination of techniques to assess whether base opex reasonably reflects the opex criteria.[45] We may make a downward adjustment to the business's revealed opex if we consider it is operating in a materially inefficient manner. Material inefficiency is a concept we introduced in our Expenditure Assessment Guideline.[46] We consider a service provider is materially inefficient when it is not at, or close to, its peers on the efficiency frontier. We define this more precisely in the context of economic benchmarking below.

Incentive regulation is designed to leave the day-to-day decisions to the network businesses.[47] It allows the network businesses the flexibility to manage their assets and labour as they see fit to achieve the opex objectives in the National Electricity Rules (NER),[48] and more broadly, the National Electricity Objective (NEO).[49] This is consistent with the requirement that we consider whether the total opex forecast, and not the individual forecast opex components, reasonably reflects the opex criteria.[50]

The Australian Energy Market Commission (AEMC) supports this view of our role as the economic regulator. It stated:[51]

> The key feature of economic regulation of [distribution network service providers] in the NEM is that it is based on incentives rather than prescription…
>
> Importantly, under [incentive-based regulation], funding is not approved for [distribution network service providers'] specific projects or programs. Rather, a total revenue requirement is set, which is based on forecasts of total efficient expenditure. Once a total revenue is set, it is for the [business] to decide which suite of projects and programs are required to deliver services to consumers while meeting its regulatory obligations…

6.3.2 Base–step–trend forecasting approach

As a tool to assess a business's opex forecast, we develop an alternative estimate of the business's total opex requirements in the forecast regulatory control period, using

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44 A 'top-down' approach forecasts total opex at an aggregate level, rather than forecasting individual projects or categories to build a total opex forecast from the 'bottom up'.

45 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, pp. 12–14.

46 AER, *Expenditure forecast assessment guideline*, November 2013, p. 22.

47 Productivity Commission, *Electricity Network Regulatory Frameworks, volume 1, No. 62*, 9 April 2013, pp. 27–28.

48 NER, cl. 6.5.6(a).

49 NEL, s. 7.

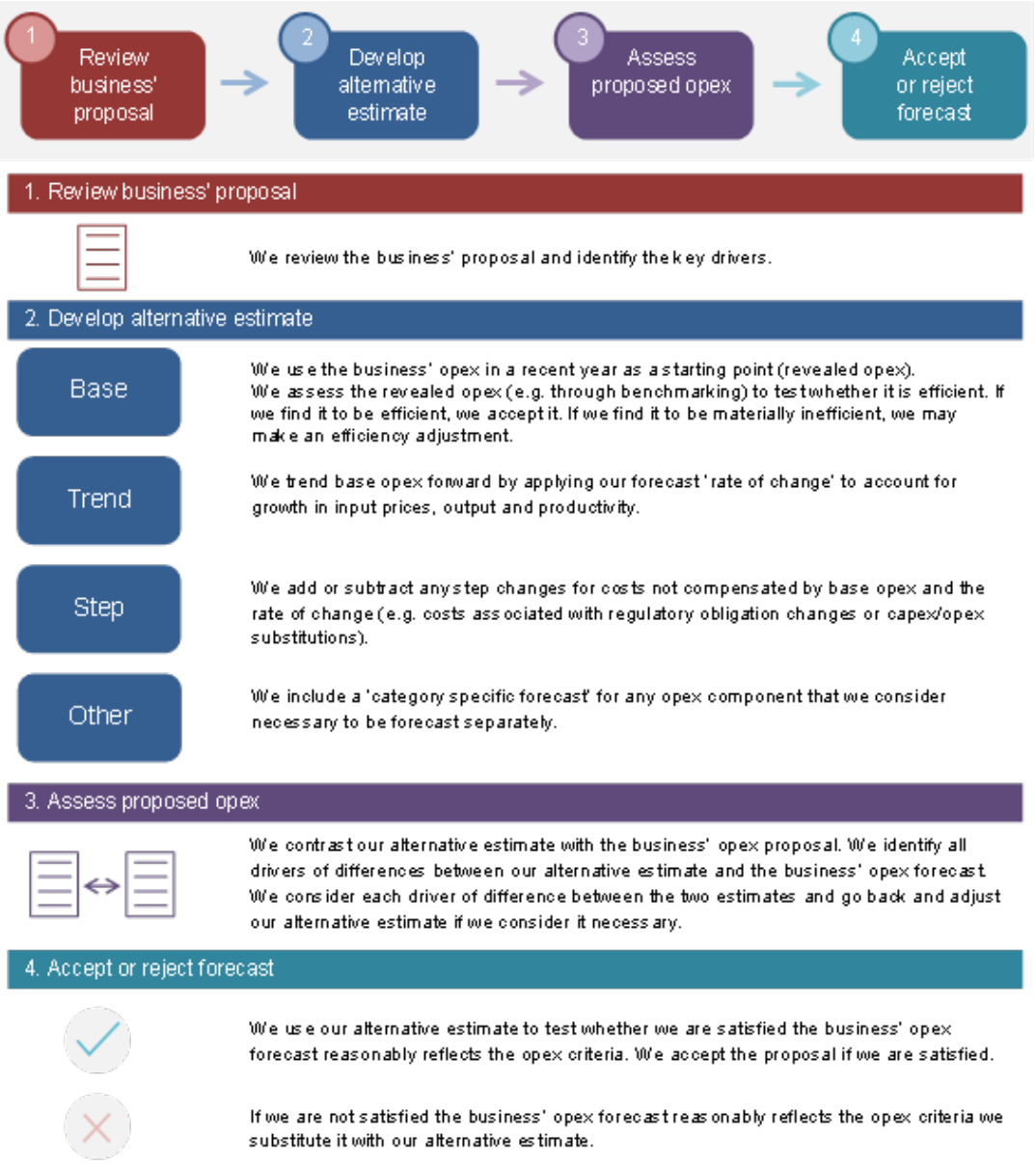
50 NER, cl. 6.5.6(c).

51 AEMC, *Contestability of energy services, Consultation paper*, 15 December 2016, p. 32.

the base–step–trend forecasting approach. We have regard to the opex factors set out in the NER in making this assessment.[52]

If the business adopts a different forecasting approach to derive its opex forecast, we develop an alternative estimate and assess any differences with the business's forecast opex. Figure 6.3 summarises the base–step–trend forecasting approach.

Figure 6.3 Our opex assessment approach



[52] NER, cl. 6.5.6(e).

Base opex

If we find the business is operating efficiently, our preferred methodology is to use the business's historical or 'revealed' costs in a recent year as a starting point for our opex forecast.[53] We must have regard to the opex factors in deciding whether we are satisfied that the business's proposed opex forecast reasonably reflects the opex criteria.[54]

We do not simply assume the business's revealed opex is efficient. It may include an ongoing level of inefficient expenditure. We use our benchmarking results[55] and other assessment techniques to test whether the business is operating efficiently. Where we find a business to be materially inefficient in its base year opex, we will generally apply an efficiency adjustment.

We consider revealed opex in the base year is generally a good indicator of annual opex requirements over the next regulatory control period because the level of total opex is relatively stable from year to year. This reflects the broadly predictable and recurrent nature of opex.

A business may experience fluctuations in particular categories of opex, and the composition of total opex can change, from year to year. While many operation and maintenance activities are recurrent and non-volatile, some opex projects follow periodic cycles that may or may not occur in any given year, and some opex projects are non-recurrent.

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.

Rate of change

We trend base opex forward by applying our forecast 'rate of change'. We estimate the rate of change by forecasting the expected growth in input prices, outputs and productivity. We consider that the rate of change takes into account almost all relevant sources of opex growth.

We forecast input price growth using a combination of labour and non-labour price change forecasts. Labour costs represent a significant proportion of a distribution

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53 NER, cl. 6.5.6(e)(5).

54 NER, cl. 6.5.6(e)(5).

55 NER, cl. 6.5.6(e)(4); AER, *Annual benchmarking report—Electricity distribution network service providers*, November 2018.

business's costs.[56] To determine the input price weights for labour and non-labour prices, we have regard to the input price weights of a prudent and efficient benchmark business. Consistent with incentive regulation, this provides the business an incentive to adopt the most efficient mix of inputs throughout the regulatory control period.

We forecast output growth to account for the annual increase in output of services provided. The output measures used should, ideally, be the same measures used to forecast productivity growth.[57] Productivity measures the change in output for a given amount of input.

The output measures we typically use for distribution businesses are energy delivered, ratcheted maximum demand, customer numbers and circuit length.[58] We do not typically adjust forecast output growth for economies of scale because we account for these in our forecast of productivity growth.

Our forecast of opex productivity growth captures the sector-wide, forward looking, improvements in good industry practice that should be implemented by efficient distributors as part of business-as-usual operations. We generally base our estimate of productivity growth on recent productivity trends across the electricity industry. However, if we consider historic productivity growth does not represent 'business-as-usual' conditions we do not use it to forecast future productivity growth and may rely on other industry or economy wide indicators.

We recently reviewed our approach to forecasting opex productivity growth and determined that a forecast of 0.5 per cent per year reflects a reasonable forecast of the productivity growth a prudent and efficient electricity distributor can make.[59] We stated that we intended to adopt this opex productivity growth forecast when we review the opex forecasts proposed by electricity distributors going forward.[60]

Step changes and category-specific forecasts

Lastly, we add or subtract any components of opex that are not appropriately compensated for in base opex or the rate of change, but which should be included in the forecast total opex to meet the opex criteria.[61] These adjustments are in the form of 'step changes' or 'category-specific forecasts'.

Step changes

Step changes should not double count costs included in other elements of the total opex forecast. As explained in the Expenditure Forecast Assessment Guideline, the

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56 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, p. 49.

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

58 These measures are discussed more fully in our benchmarking reports, see AER, *Annual Benchmarking Report – Electricity distribution network service providers*, November 2018, pp. 46–52.

59 AER, *Final decision paper – Forecasting productivity growth for electricity distributors*, March 2019, pp. 8–11.

60 AER, *Final decision paper – Forecasting productivity growth for electricity distributors*, March 2019, p. 11.

61 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.

costs of increased volume or scale should be compensated for through the output growth component of the rate of change and it should not become a step change.[62] In addition, forecast productivity growth may account for the cost of increased regulatory obligations over time—that is, 'incremental changes in obligations are likely to be compensated through a lower productivity estimate that accounts for higher costs resulting from changed obligations.[63] Therefore, we consider only new costs that do not reflect the historic 'average' change as accounted for in the productivity growth forecast require step changes.[64]

To increase its maximum allowable revenue, a regulated business has an incentive to identify new costs not reflected in base opex or costs increasing at a greater rate than the rate of change. It has no corresponding incentive to identify those costs that are decreasing or will not continue. Information asymmetries make it difficult for us to identify those future diminishing costs. Therefore, simply demonstrating that a new cost will be incurred—that is, a cost that was not incurred in the base year—is not a sufficient justification for introducing a step change. There is a risk that including such costs would upwardly bias the total opex forecast.

The test we apply is whether the step change is needed for the opex forecast to achieve the opex objectives in the NER.[65] Our starting position is that only circumstances that would change a business's fundamental opex requirements warrant the inclusion of a step change in the opex forecast.[66] Two typical examples are:

- a material change in the business's regulatory obligations
- a prudent and efficient capex/opex substitution opportunity.[67]

We may accept a step change if a material 'step up' or 'step down' in expenditure is required by a network business to comply prudently and efficiently with a new, binding regulatory obligation that is not reflected in the productivity growth forecast.[68] This does not include instances where a business has identified a different approach to comply with its existing regulatory obligations that may be more onerous, or where there is increasing compliance risks or costs the business must incur to comply with its regulatory obligations. Usually when a new regulatory obligation is imposed on a business, it will incur additional expenditure to comply. The business may be expected to continue incurring such costs associated with the new regulatory obligation into future regulatory control periods; hence, an increase in its opex forecast may be warranted.

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62 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.
63 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, p. 52.
64 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.
65 NER, cl. 6.5.6(a).
66 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.
67 NER, cl. 6.5.6(e)(7).
68 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 11.

We expect the business to provide evidence demonstrating the material impact the change of regulatory obligation has on its opex requirements, and robust cost–benefit analysis to demonstrate the proposed step change expenditure is prudent and efficient to meet the change in regulatory obligations.[69] We stated in the explanatory statement accompanying the Expenditure Forecast Assessment Guideline:[70]

> [Network services providers] will be expected to justify the cost of all step changes with clear economic analysis, including quantitative estimates of expected expenditure associated with viable options. We will also look for the [Network services providers] to justify the step change by reference to known cost drivers (for example, volumes of different types of works) if cost drivers are identifiable. If the obligation is not new, we would expect the costs of meeting that obligation to be included in revealed costs. We also consider it is efficient for [Network services providers] to take a prudent approach to managing risk against their level of compliance when they consider it appropriate (noting we will consider expected levels of compliance in determining efficient and prudent forecast expenditure).

By contrast, proposed opex projects designed to improve the operation of the business, which we consider as discretionary in the absence of any legal requirement, should be funded by base opex and trend components, together with any savings or increased revenue that they generate—rather than through a step change. Otherwise, the business would improperly benefit from a higher opex forecast and the efficiency gains.[71]

We may also accept a step change in circumstances where it is prudent and efficient for a network business to increase opex in order to reduce capital costs. An example of a capex/opex trade-off step changes involves replacement expenditure (or "repex").[72] The business should provide robust cost–benefit analysis to demonstrate clearly how increased opex would be more than offset by capex savings.[73]

In the absence of a change to regulatory obligations or a legitimate capex/opex trade-off opportunity, we would accept a step change under limited circumstances. We would consider whether the costs associated with the step change are unavoidable and material—such that base opex, trended forward by the forecast rate of change, would be insufficient for the business to recover its efficient and prudent costs. We would also consider whether the business would continue to incur the costs of a proposed step change in future regulatory control periods.

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69 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, pp. 51–52; AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 11.

70 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, p. 52.

71 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 11.

72 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, p. 74.

73 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, p. 52.

Category specific forecasts

A category specific forecast may be justified if, as a result of including a specific opex category in the base opex, total opex becomes so volatile that it undermines our assumption that total opex is relatively stable and follows a predictable path over time.

A category specific forecast is an amount we may allow to be included in the opex forecast for a particular year, which is not appropriate as a step change, nor for inclusion in base opex, but which we nevertheless consider meets the legal criteria for efficient expenditure in that year.

We may also use category specific forecasts to avoid inconsistency or double counting within our determination. We have typically included category specific forecasts for debt raising costs and the demand management incentive allowance mechanism (DMIAM). In jurisdictions where GSL payments were historically included under category specific forecasts, we continue to do so. There are specific reasons for forecasting these categories separately from base opex. For example, we forecast debt raising costs separately to provide consistency with the forecast of the cost of debt in the rate of return building block of allowable revenue. For DMIAM, we forecast these costs separately because we fund them through a separate building block (and so these costs are excluded from the base opex to avoid double counting)..

Absent such exceptions, we expect that base opex, trended forward by the rate of change, will allow the business to recover its prudent and efficient costs. This is a reasonable assumption given that the business has operated in the past with that level of opex, demonstrating that it is able to operate prudently and efficiently in meeting all its existing regulatory obligations, including its safety and reliability standards. We consider it is also reasonable to expect the same outcome looking forward with the increase provided through the trend growth in the base opex. Some costs may go up, and some costs may go down—despite potential volatility in the cost of certain individual opex activities, total opex is generally relatively stable over time. As we stated above in relation to step changes, a business has an incentive to inflate its total opex forecast by identifying new and increasing costs, but it does not have the same incentive to identify declining costs in its forecasts. Consequently, there is a risk that providing a category specific forecast for opex items identified by the business may upwardly bias the total opex forecast. By applying our revealed cost approach consistently and carefully scrutinising any further adjustments, we avoid this potential bias.

6.3.3 Interrelationships

In assessing AusNet Services' total forecast opex we also took into account other components of its proposal that could inter-relate with our opex decision.[74] The matters we considered in this regard included:

- the impact of cost drivers that affect both forecast opex and forecast capex. For instance, forecast labour price growth affects forecast capex and the opex rate of change
- AusNet Services' proposed step changes which have an upfront opex and capex investment, and subsequent efficiencies in opex and capex
- 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.

6.4 Reasons for draft decision

Our draft decision is to include total forecast opex of $1187.4 million[75] ($2020–21) in AusNet Services' revenue for the 2020–25 regulatory control period. Our alternative estimate is $46.1 million ($2020–21) or 3.7 per cent less than AusNet Services' proposal of $1233.4 million[76] ($2020–21). We are satisfied our alternative estimate of total forecast opex for AusNet Services reasonably reflects the opex criteria.[77]

Table 6.4 presents the components of our alternative estimate compared to AusNet Services' proposal. The key differences between our alternative estimate of total forecast opex and AusNet Services' proposal are summarised in section 6.1 and set out in detail below in sections 6.4.1 to 6.4.7.

Table 6.4 Comparison of AusNet Services' proposal and our draft decision on opex ($ million, 2020–21)

	AusNet Services Proposal	AER draft decision	Difference
Base (reported opex in 2018)	1080.1	1080.1	0.0
Efficiency adjustment	0	0	0
Base year adjustments	-5.0	-14.0	-9.0
Final year increment	65.9	75.1	9.2

74 When making revenue decisions under the NEL, we must specify the manner in which the constituent components of our decision relate to each other, and the manner in which we take account of these interrelationships: NEL, s. 16(1)(c).

75 Including debt raising costs.

76 Including debt raising costs.

77 NER, cl. 6.5.6(c) and cl. 6.5.6(d).

	AusNet Services Proposal	AER draft decision	Difference
Trend: Output growth	47.6	26.5	-21.2
Trend: Real price growth	18.9	2.2	-16.8
Trend: Productivity growth	-16.0	-15.1	0.9
Step changes	16.9	9.3	-7.6
Category specific forecasts	13.2	11.9	-1.3
Total opex (excluding debt raising costs)	1221.6	1176.0	-45.6
Debt raising costs	11.8	11.3	-0.5
Total opex (including debt raising costs)	1233.4	1187.4	-46.1
Percentage difference to proposal			-3.7%

Source: AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

Note: Numbers may not add up to totals due to rounding. The difference is between AusNet Services' proposal and our draft decision.

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 AusNet Services would need for the safe and reliable provision of electricity services over the 2021–26 regulatory control period.

AusNet Services proposed base opex of $216.0 million ($2020–21) reflecting its actual opex in 2018.[78] We have concluded AusNet Services is a relatively efficient business, and have relied on AusNet Services' revealed costs in the base year in developing our alternative estimate. 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.

6.4.1.1 Proposed base year

AusNet Services proposed 2018 as its base year. It noted that this was the most recent regulatory year with audited regulatory accounts and other financial information available.[79] Further, that it achieved savings from its efficiency program in both 2017

[78] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 135; AER analysis. This value is different from the estimated base year opex in AusNet Services' proposal, as it does not exclude category specific forecasts or include trend to estimate base year opex (consistent with our standard approach).

[79] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 134.

and 2018, which is captured in base year expenditure and that economic benchmarking has demonstrated AusNet Services is efficient relative to its peers.

AusNet Services also noted that while it anticipates reductions in opex in 2019, with the operation of the EBSS its revenue is unaffected by the choice of base year.[80] We note AusNet Services opex in 2019 was slightly higher than in 2018.

AusNet Services also considered there were no unusual events or factors in 2018 that indicate it is not reflective of AusNet Services' normal operating environment.[81]

As a part of its considerations, the Customer Forum accepted 2018 as AusNet Services' base year, subject to our base efficiency assessment.[82]

Consistent with our preferred approach, we consider 2018 is an appropriate base year. This is because it is representative of the base opex required for the next regulatory control period. While there is a more recent year of actual opex available, 2019, due to the interaction with the EBSS we are indifferent to the choice of base year of a distributor, provided we find AusNet Services efficient.

We have updated AusNet Services' base opex in 2018 as follows:

- We have used the latest inflation forecasts published by the Reserve Bank of Australia.[83] We consider these inflation forecasts are the best forecasts possible in the circumstances because they are the most up-to-date information available at the time.
- We have updated the value of movements in provisions.[84]

These two updates largely offset each other, and our base opex amount for 2018 is $216.0 million ($2020–21).

6.4.1.2 Efficiency of AusNet Services' opex

As outlined in section 6.3, and in our Expenditure Forecast Assessment Guideline, our preferred 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

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80 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 134.
81 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 135.
82 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 132.
83 Reserve Bank of Australia, *Statement on Monetary Policy — Appendix: Forecast*, August 2020.
84 Refer to AER, *Draft decision, 2021–26 determination for AusNet Service - Attachment 8 - Efficiency Benefit Sharing Scheme*, September 2020 for further information.

assessment techniques, to test whether the business is operating efficiently historically and particularly in the base year.

In this section, we first outline AusNet Services' revealed cost performance, before presenting our benchmarking analysis.

Analysis of AusNet Services' revealed costs

Figure 6.1 shows AusNet Services' opex forecast for the next regulatory control period, its actual opex in the current and previous regulatory control periods, our previous regulatory decisions and our alternative estimate that is the basis for our draft decision.

We have seen a slightly decreasing trend in AusNet Services' opex since 2016. AusNet Services' actual and estimated opex in the current regulatory control period is 11.5 per cent below our opex forecast and its actual opex in the base year of 2018 is 16.1 per cent below our opex forecast. AusNet Services' actual opex in the previous regulatory control period was on average 1.6 per cent lower per annum than our opex forecast. Since 2011 in aggregate, AusNet Services has spent 5.0 per cent below our opex forecast. Over the current regulatory control period AusNet Services' expected average annual expenditure is $225.9 million ($2020–21), which is $19.9 million higher than over the 2011–15 regulatory control period.

In the current regulatory control period AusNet Services refreshed its corporate strategy, with one key objective being to operate all three of its networks in the top quartile of efficiency benchmarks.[85] In its proposal AusNet Services outlined key aspects of its transformation journey to deliver the cost reductions that are in its base year opex. These include being able to better access organisational data and improve asset management, works planning and scheduling. Further, undertaking a variety of outsourcing initiatives, enabling headcount reductions and improving procurement systems and approaches to deliver further savings.[86]

These initiatives and the revealed costs data suggest that AusNet Services has responded to the incentives included in our regulatory regime. It has been able to achieve opex efficiency improvements in several years of the current regulatory control period, and is forecasting to maintain this in the last year of the current period. In line with our approach, we have used our benchmarking tools and other cost analysis to assess whether AusNet Services is operating efficiently, both over time and in base year. We conclude that AusNet Services performs relatively well compared to other networks.

Benchmarking the efficiency of AusNet Services' opex over time

Benchmarking broadly refers to the practice of comparing the economic performance of a group of service providers that all provide the same service as a means of

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[85] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

[86] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 137.

assessing their relative performance. Our *2019 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 NEM.[87]

While opex at the total level is generally recurrent, year-to-year fluctuations can be expected. To shed light on AusNet Services' general level of operating efficiency, we first look at the efficiency of AusNet Services' 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 the base year (2018) in particular.

Top-down benchmarking

In terms of historical performance, our benchmarking results from the *2019 Annual Benchmarking Report* indicate that AusNet Services has been fairly efficient over the 2006–18 period when compared to other distribution businesses in the NEM.[88] As a result of some recent updates to the economic benchmarking data, and the correction of a coding error in the estimation of the output weights used in the productivity index measure, we have examined the impact of these changes on our benchmarking. We asked Economic Insights to examine the impact of these changes on the 2019 Annual Benchmarking report.[89] These results are reported below along with the results from *2019 Annual Benchmarking Report*.

Figure 6.4 shows that over this period AusNet Services ranks sixth out of 13 distribution businesses based on the average efficiency scores from five economic benchmarking models.[90] With the updates noted above, the scores range from 0.65 (opex multilateral partial factor productivity (MPFP)) to 0.76 (Cobb-Douglas least squares econometrics (LSE CD) model). AusNet Services' average efficiency score across the five models is 0.71.[91] We use a 0.75 comparator point to assess the relative

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87 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2019.

88 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2019; AER analysis.

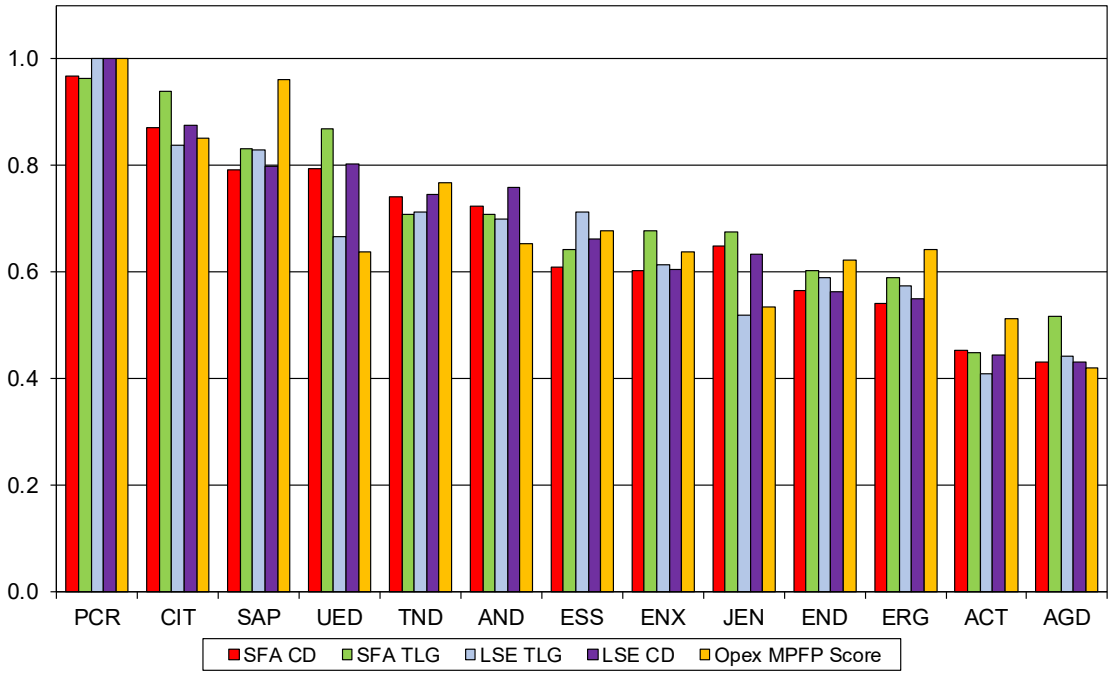
89 Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020. The data updates include revised opex data for Jemena, CitiPower, Powercor and AusNet Services in some recent years. The updated weights for non-reliability outputs reflect Economic Insights' review of a report submitted by CitiPower, Powercor and United Energy on opex input price and output weights and the identification of a coding error. See Economic Insights, *Memorandum prepared for the AER review of reports submitted by CitiPower, Powercor and United Energy on opex input price and output weights*, 18 May 2020. We are currently consulting with businesses in relation to the corrected output weights as a part of our annual benchmarking update to prepare the *2020 Annual Benchmarking Report*.

90 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2019, p. 29; Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; 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.

91 Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

efficiency of distribution businesses[92], noting that we adjust this for operating environment factors (OEFs) not already captured in the modelling (which we apply to AusNet Services in the next section). Allowing for OEFs enables us to account for some factors beyond a distributor's control that can affect its benchmarking performance.

Figure 6.4 Distribution businesses' average opex efficiency scores, 2006–18



Source: Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

Note: AND in the figure represents AusNet Services.

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 have also examined AusNet Services' average performance over the shorter and more recent 2012–18 time period. AusNet Services' average score over the 2012–18 period is 0.65[93], and its ranking is seventh of the 13 distributors.[94] Again, these results have not been further adjusted for OEFs. This indicates that AusNet Services' relative efficiency has declined in recent years, compared with its efficiency over the 2006–18 period. In part this is explained by other distribution

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92 As set out further below, we use the efficiency scores from the four econometric models to derive our estimate of efficient base opex and not the opex MPFP efficiency score.

93 This is with the updates noted above, its average score over the 2012–18 period was 0.66 in the *2019 Annual Benchmarking Report*.

94 AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2019, p. 30; Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

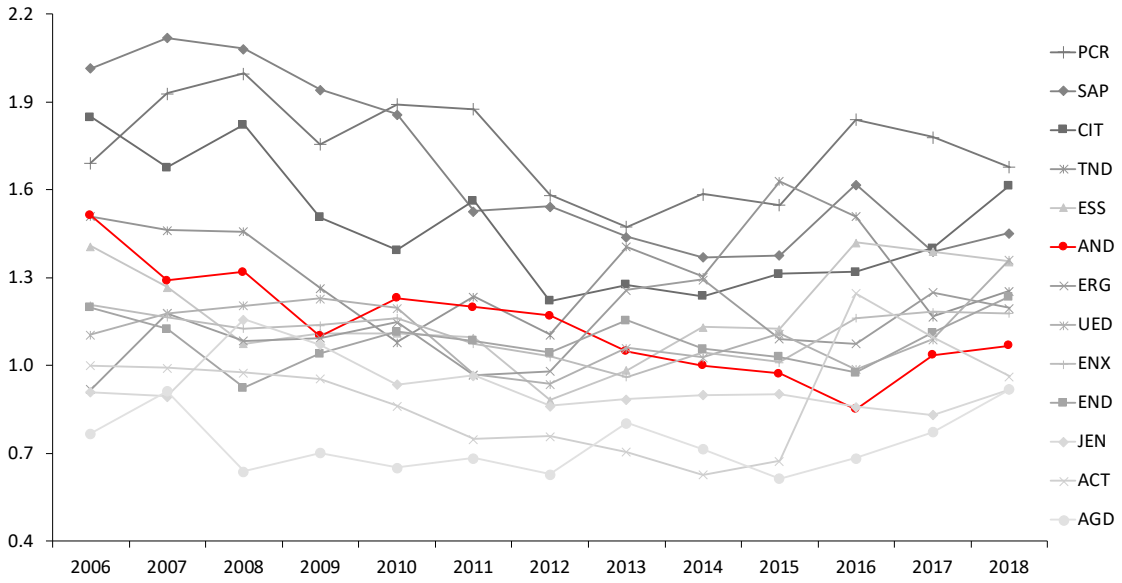
businesses improving their performance since 2012, meaning AusNet Services' ranking has fallen slightly relative to its peers.

We also use the productivity index techniques to enable comparisons of productivity levels over time and between businesses. The multilateral total factor productivity (MTFP) index measures the total productivity of each business, whereas the opex and capital multilateral partial factor productivity (MPFP) indexes measure the productivity of opex or capital input respectively. As noted above, these results have recently been updated to reflect corrected weights that are used to calculate the output indexes. With the corrected output weights the rankings of the distribution businesses have changed. AusNet Services' rankings in the productivity index techniques tended to drop slightly due to the correction.

The results from our opex MPFP analysis with these updates can be seen in Figure 6.5 (where a higher index score means more efficient). These show AusNet Services' relative efficiency has slowly trended down from 2006 to 2016 after which it improved to achieve small level of catch-up to the average performing distribution businesses. While its relative performance trended down from 2006 to 2012, AusNet Services typically ranked in the top half of distribution businesses. From 2012 to 2016 AusNet Services' relative performance slipped to the middle to lower range of businesses. Since 2016 AusNet Services' opex productivity has improved substantially, and in recent years AusNet Services has managed to operate at a level close to the middle group of distribution businesses. This is reflected in its sixth ranking over the 2006–18 period but its tenth ranking over the 2012–18 period.[95] Its slight worsening in performance over the 2012–18 period occurred at the same time as many other distribution businesses improved their performance, meaning its ranking fell relative to its peers. These results have not been adjusted to account for OEFs.

[95] Under the uncorrected results (*in the 2019 Annual Benchmarking Report*) AusNet ranked seventh and eighth in opex MPFP over the 2006–18 and 2012–18 periods respectively.

Figure 6.5 Opex MPFP (corrected results) by individual businesses, 2006–18



Source: Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

Note: AND in the figure represents AusNet Services

Partial Performance Indicators

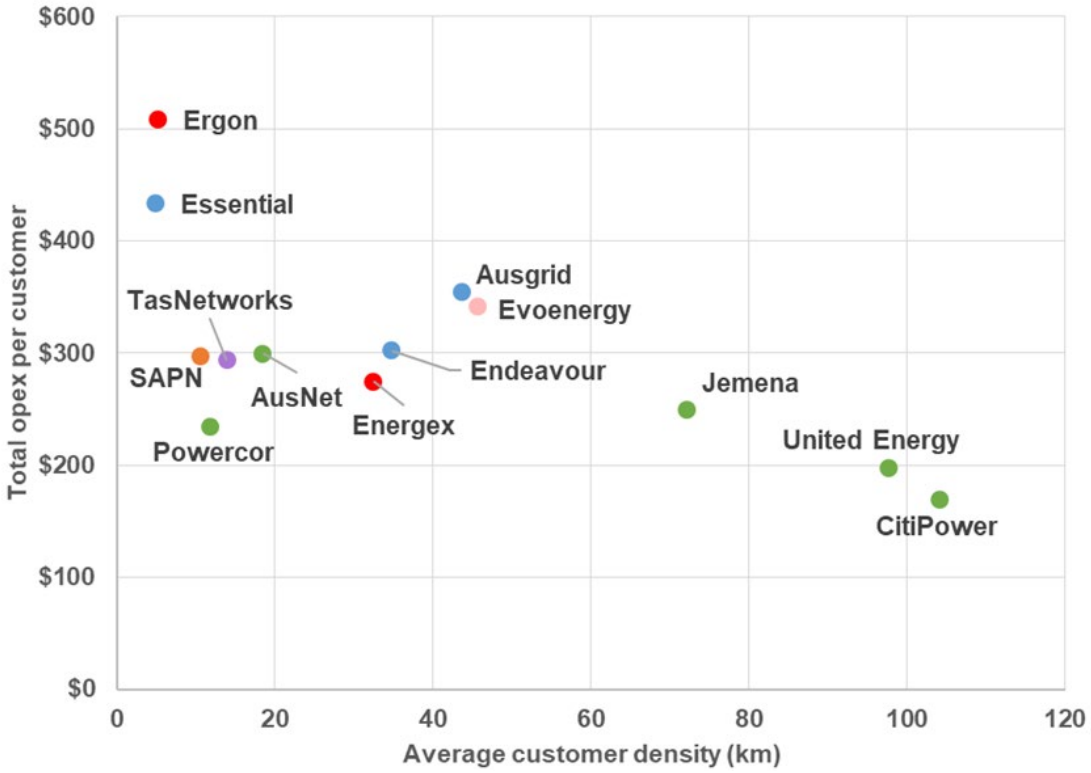
We have also examined the relative opex performance of AusNet Services using partial performance indicators (PPIs).[96] These provide some information about the total and category specific opex performance of a business in delivering a given type of output and may help in understanding potential drivers 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. Where possible, analysis of PPIs includes controlling for customer density, to account for these customer density effects when interpreting the results.

AusNet Services tends to perform relatively well in per customer PPIs, compared with peers that have a similar customer density and performs similar or slightly worse compared to its peers for per circuit PPIs. These observations are generally consistent on a total cost and total opex basis (see Figure 6.6 and Figure 6.7) and for the main

[96] The PPIs support other benchmarking techniques because they provide a general indication of comparative performance of distribution businesses in delivering a specific output. While PPIs do not take into account the interrelationships between outputs (or the interrelationship between inputs), they are informative when used in conjunction with other benchmarking techniques.

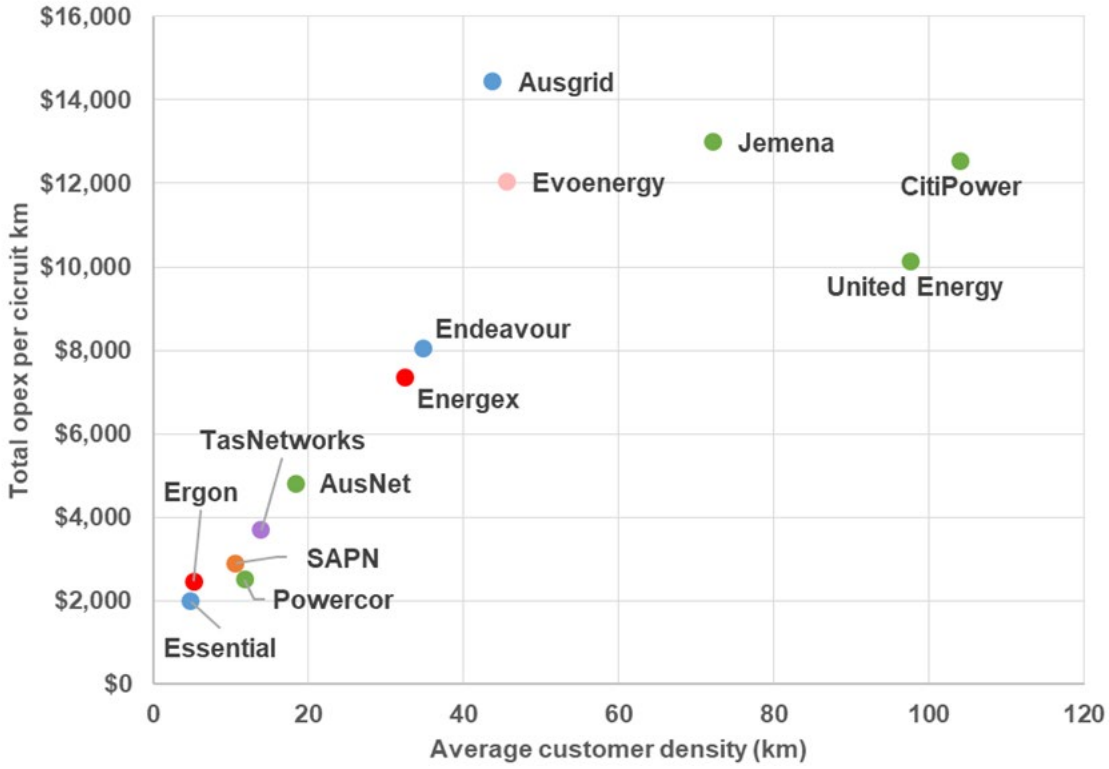
opex cost categories (maintenance, vegetation management, emergency response and total overheads). These results suggest AusNet Services is generally similar in its efficiency compared to its peers. As noted above however, these results need to be treated with caution.

Figure 6.6 Total opex per customer, 2014–18, ($2020–21)



Source: AER analysis.

Figure 6.7 Total opex per circuit line length, 2014–18, ($2020–21)



Source: AER analysis.

Benchmarking the efficiency of AusNet Services' base year opex

Given AusNet Services' worse top-down efficiency performance over the more recent period 2012–18, we have undertaken additional analysis. This includes application of our economic benchmarking roll-forward-model to more directly test the efficiency of AusNet Services' actual opex in the base year.

The results from our productivity index techniques and econometric opex cost function modelling indicate that when adjusting for OEFs (see below), AusNet Services' 2018 base year opex is not materially inefficient.

Our productivity index techniques allow us to look at the productivity of each business's total outputs in any particular year. In the base year 2018, AusNet Services is placed tenth on opex MPFP. While its productivity improved in 2018, so did the performance of its peers. This is an indicator that AusNet Services' base year opex may contain some relative inefficiency; however, these results have not been adjusted to account for OEFs and further analysis is required.

Our econometric models produce average opex efficiency scores for distribution businesses across the 2006–18 and 2012–18 periods respectively. Using our roll-forward-model, we convert these period-average results to estimate the level of opex required by a benchmark service provider operating in AusNet Services' circumstances in 2018, and compare this to the AusNet Services' actual base year opex. This uses a benchmark comparison point of 0.75. This also adjusts for

differences in OEFs between AusNet Services and the benchmark comparators that are not already captured in the modelling (discussed further below). We outline our approach in Box 6.1.

Box 6.1 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 opex as determined by each of our econometric models (LSE CD, SFA CD, LSE TLG, SFA TLG). This is done using data over the 2006–18 and 2012–18 periods separately, which means two averages are produced. We then compare this to actual opex in the base year.

The first step is to average a business's actual opex over the relevant benchmarking period to find the business's period-average opex (where relevant, backcast for the Cost Allocation Method (CAM) applying in 2013–14, given that our economic benchmarking approach uses opex obtained under this CAM for all the distribution businesses.)

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 potential differences in OEFs between the business and the benchmark comparators that are not already captured in the modelling (discussed further below). The benchmark comparator businesses are those that have any efficiency score above the 0.75 benchmark comparison score. (For both the 2006–18 and 2012–18 benchmarking periods, there are four businesses with average efficiency scores at or above 0.75, namely Powercor, CitiPower, United Energy and SA Power Networks.)

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

This period-average 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 opex in the base year, which is compared against actual base year opex. This process is repeated for each econometric model, resulting in a different estimate for each.

The results of this analysis for AusNet Services are set out in Figure 6.8 for the 2006–18 period and in Figure 6.9 for the 2012–18 period and reflect the updates to the *2019 Annual Benchmarking Report* noted above. In Figure 6.8, our estimates of efficient network services opex in the base year using our econometric models over the

2006–18 period (as described above) are shown in green (with an average of $209.6 million ($2020–21)), while AusNet Services' actual network services opex in the base year of 2018 is shown in red ($199.9 million, ($2020–21))[97]. The average of our efficient estimates (the blue dashed line) is materially ($9.7 million ($2020–21)) above AusNet Services' actual opex.

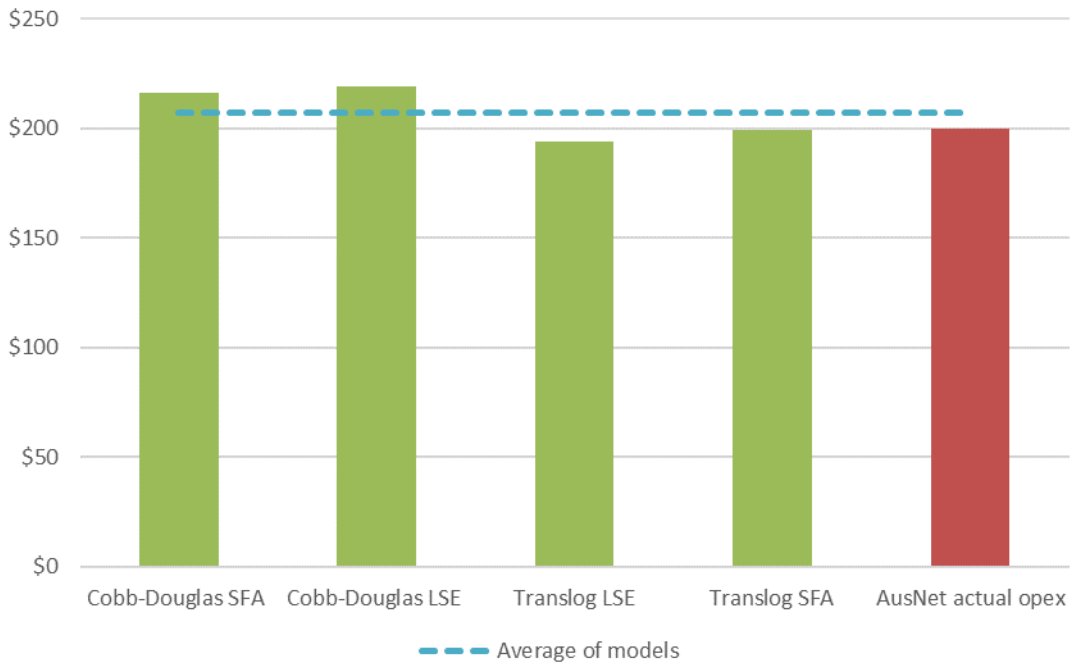
Figure 6.8 Estimates of efficient opex using data over the 2006–18 period ($ million, 2020–21)

Source: Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

Similarly, in Figure 6.9 our estimates of efficient opex in the base year using our econometric models over the 2012–18 period are shown in green (with an average of $207.1 million ($2020–21)), while AusNet Services' actual opex in the base year of 2018 is again shown in red ($199.9 million ($2020–21)). The difference between our average estimate and AusNet Services' actual opex is $7.2 million ($2020–21).

[97] 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.

Figure 6.9 Estimates of efficient opex using data over the 2012–18 period ($ million, 2020–21)



Source: Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report*, 24 August 2020; AER analysis.

AusNet Services' actual opex in the base year is less than our estimates of efficient opex in both the 2006–18 and 2012–18 periods. We consider this supports a finding that AusNet Services' base year network services opex (and hence its standard control services opex) is not materially inefficient.

Operating Environment Factors

Service providers 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 using the OEFs to adjust the benchmark comparison point to account for the operating environment of the distribution business we are assessing (see Box 6.1). This adjusted comparison point is then compared to the business's benchmark efficiency score (from the benchmarking models) allowing us to account for potential cost differences due to OEFs between the business and the

benchmark comparison firms. More detail on the mechanics of our approach is contained in past decisions.[98]

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 operating expenditure of each business in the NEM. Sapere-Merz consulted with stakeholders, including the electricity network businesses in undertaking this review.[99]

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.

In its proposal, AusNet Services noted that the econometric models do not take into account OEFs.[100] It highlighted bushfire mitigation as an important OEF and raised that its OEF relating to tax and levies needs to be re-estimated, as there has been a recent change to the classification of AusNet Services' opex to include tax and levies. Further, it stated businesses have different capitalisation approaches to corporate overheads which can materially impact benchmarked performances. These issues are examined below.

Table 6.5 shows our calculated OEFs for AusNet Services for the two benchmarking periods.[101]

Table 6.5 OEF adjustments for AusNet Services

	2006–18 period	2012–18 period
Sub-transmission (Licence conditions)	-0.7%	-0.4%
Vegetation management (bushfire)	3.5%	5.7%
Taxes and levies	-1.2%	-1.0%
Termite exposure	0.0%	-0.0%

98 See 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.

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

100 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, pp. 138-40.

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

	2006–18 period	2012–18 period
Total	1.7%	4.3%

Source: AER, *Annual Benchmarking Report, Electricity distribution network service providers*, November 2019; 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 AusNet Services has net cost disadvantages (1.7 per cent and 4.3 per cent over the two benchmarking periods, respectively) relative to the benchmark businesses. We adjust our benchmark comparator point of 0.75 downwards to account for these cost disadvantages.

The OEF for vegetation management (bushfire) is the only OEF adjustment of material size that we are applying to AusNet Services in this draft decision. This OEF exists to account for the differences in opex between distributors due to differences in bushfire risk for clearing vegetation, in this case between AusNet Services and the comparator networks.[102] 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.[103] 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 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 AusNet Services also faced these additional vegetation management obligations and costs, as a more rural business it is relatively more affected by bushfire risk obligations, reflected in the positive OEF adjustments shown in Table 6.5.[104]

AusNet Services did not provide data to enable re-calculation of the OEF for tax and levies. We would welcome the required data from AusNet Services. However, our finding is that AusNet Services' base year opex is relatively efficient based on the OEF adjustments in Table 6.5.

[102] 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 vegetation clearance. See AER, *Draft decision Ergon Energy distribution determination 2020–21 to 2024–25 Attachment 6*, May 2020, pp. 83–85. Given AusNet Services is a Victorian network, its cost advantage for this OEF under our calculation method is zero.

[103] 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 2020–21 to 2024–25 Attachment 6*, May 2020, pp. 41–44.

[104] More details of how this OEF adjustment is calculated is shown in the calculation spreadsheet, which we have published along with this decision.

Capitalisation practices

We have considered whether capitalisation practices (the use and/or reporting of opex and capex by businesses, which covers both opex/capex trade-offs and capitalisation policy) could be unduly influencing the benchmarking scores and potentially constitute a material OEF for AusNet Services.

AusNet Services raised this issue specifically in relation to corporate overheads. It submitted that the distribution businesses adopt different capitalisation approaches to corporate overheads, and that this can materially impact the benchmarking results, particularly where a business has changed its capitalisation policy from the one reflected in the opex series used for benchmarking.[105]

We have considered the impact of capitalisation practices on our opex benchmarking in response to the issues AusNet Services (and the other Victorian businesses) raised and as part of the continuous improvement of our benchmarking.[106] We have not included an OEF for AusNet Services for capitalisation practices in our current assessment. While capitalisation practices could potentially be impacting on our opex benchmarking scores, we do not consider this factor likely to be having a material impact, either positive or negative, on AusNet Services' benchmarking scores. The issue of capitalisation is, however, an area of ongoing work, and we welcome AusNet Services' and other stakeholders' feedback on the analysis and draft position outlined here.

We consider there should be a wider focus on capitalisation than just corporate overheads as raised by AusNet Services. Differences in a range of capitalisation practices beyond capitalisation of corporate overheads exist among the distribution businesses. These can arise through differing capitalisation policies and/or different opex/capital mixes adopted by businesses in delivering required outputs and outcomes. These include differences in:

- capitalisation of network overheads
- opex/capex trade-offs (e.g. maintenance versus replacement, cloud-based vs capex solutions for ICT).

We have examined opex/capex ratios over the two benchmarking periods as a high level measure of the extent to which distribution businesses report/use opex relative to capex. Rather than focusing on one cost category (e.g. overheads), we consider the opex/totex ratio a high level gauge that captures the net effect of all types of capitalisation practices – encompassing accounting/reporting (capitalisation policies) and opex/capex trade-offs.

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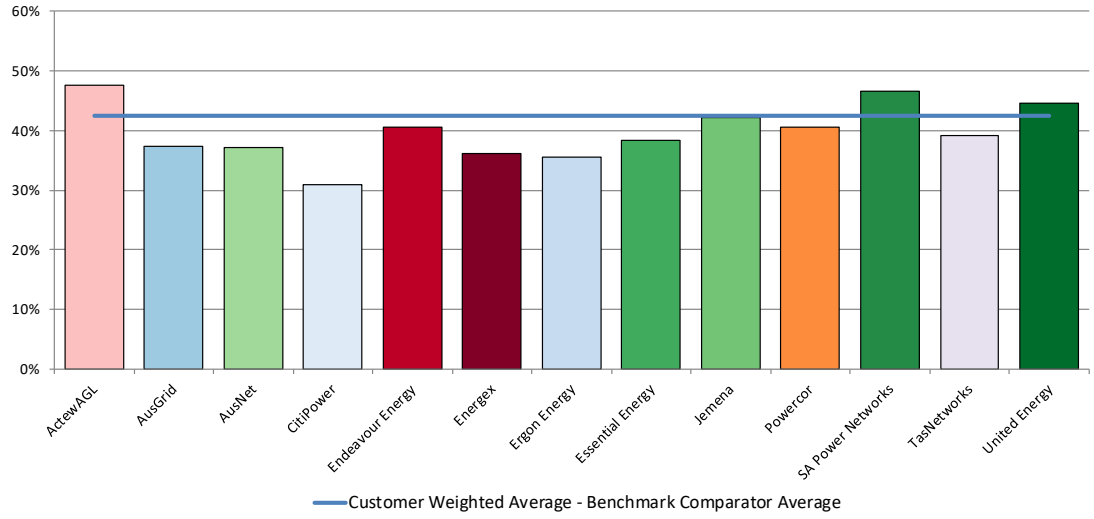
[105] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 140.

[106] We highlighted this issue in our *2019 Annual Benchmarking Report* as one of our focus areas of continuous improvement of our benchmarking toolkit.

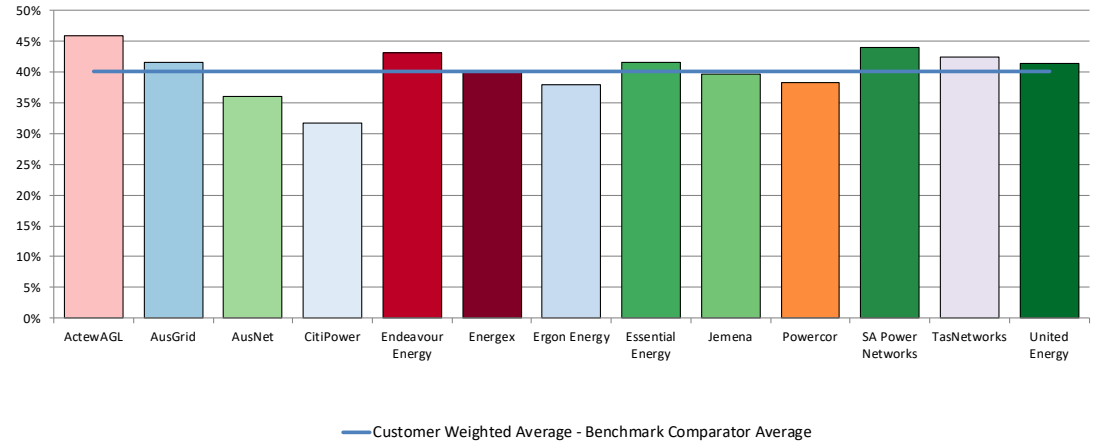
The average opex/totex ratio for all the distribution businesses is shown in Figure 6.10 and Figure 6.11 for the 2006–18 and 2012–18 periods.

Figure 6.10 Opex to totex ratios for distribution businesses, 2006–18[107]



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

Figure 6.11 Opex to totex ratios for distribution businesses, 2012–18



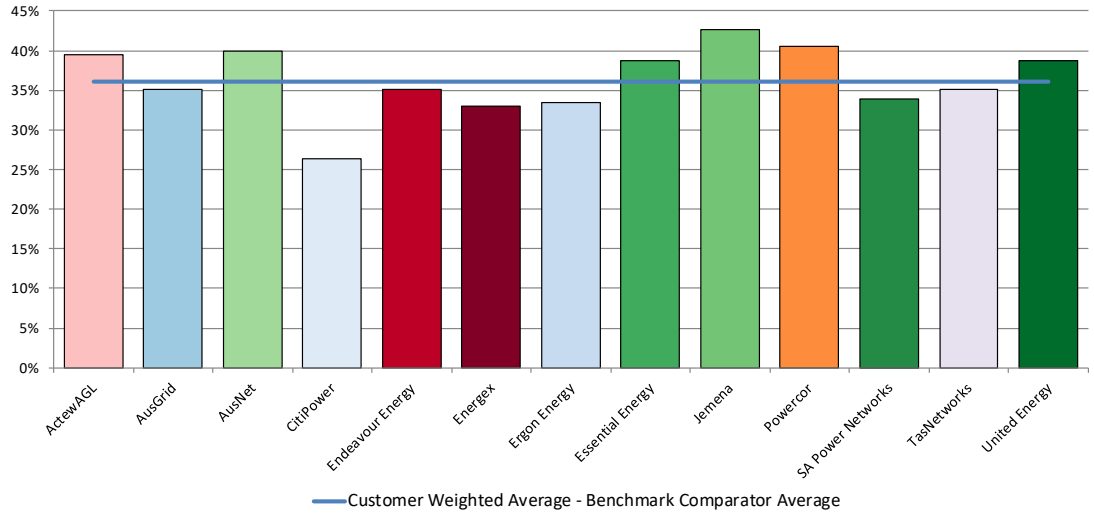
Source: Economic Benchmarking RINs, all distribution businesses; AER analysis.

As an alternative measure of opex/capital trade-offs that businesses are making, we have also examined the average opex/total cost (opex plus capital annual user cost

[107] 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.

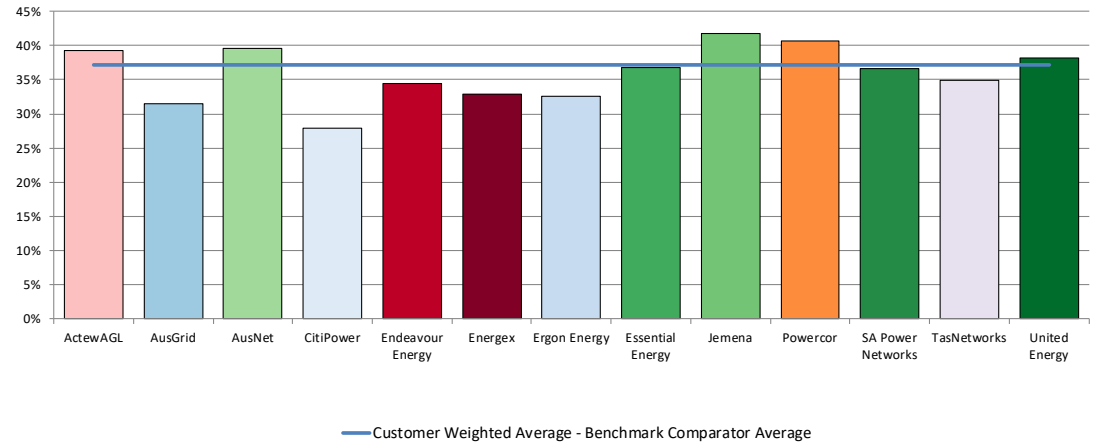
(AUC)) ratio for all the distribution businesses. This is shown in Figure 6.12 and Figure 6.13 for the 2006–18 and 2012–18 periods.

Figure 6.12 Opex to total cost ratios for distribution businesses, 2006–18[108]



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

Figure 6.13 Opex to total cost ratio for distribution businesses, 2012–18



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

A third possible measure of opex/capital trade-offs is to use the opex and capital input quantity indexes from the MTFP models to construct an index that reflects the ratio of opex to total inputs. This is shown in Figure 6.14 for the 2006–18 period.

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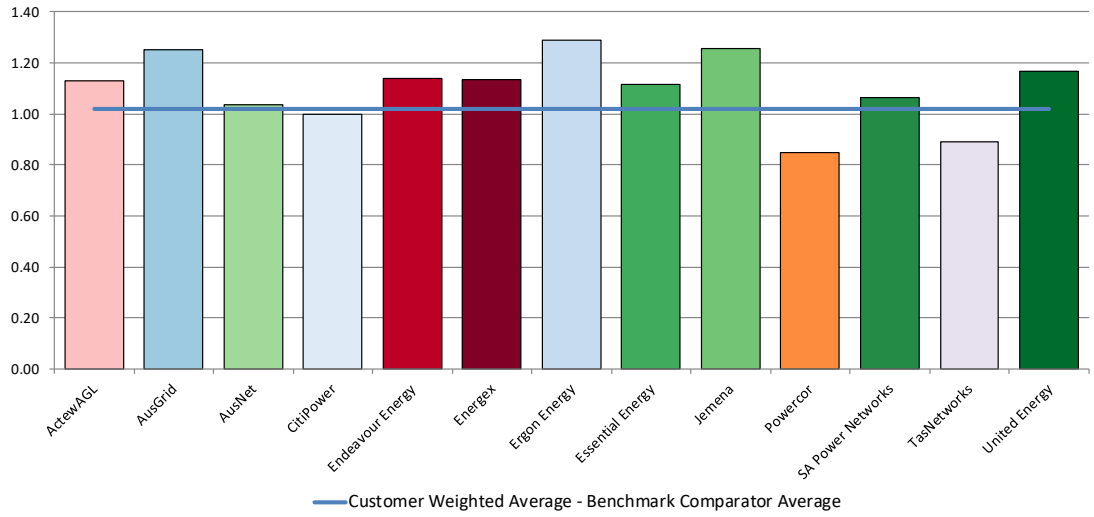
[108] Consistent with the opex series used for economic benchmarking, these charts use 2013-CAM backcast opex for those distribution businesses which have changed their CAM.

Figure 6.14 Opex to total inputs ratios for distribution businesses, 2006–18[109]



Source: Economic Benchmarking RINs, all distribution businesses; Economic Insights, *Revised files for 2019 DNSP Economic Benchmarking Report,* 24 August 2020; AER analysis.

We find that AusNet Services' opex/totex ratio is somewhat below the benchmark comparator-average ratio. Using the second measure of opex/total cost, we find that AusNet Services' ratio over both benchmarking periods is higher than the benchmark comparator-average ratio. AusNet Services' ratio is not materially different to the benchmark comparator average on the third measure.

While useful as a high level gauge of capitalisation practices, we recognise that each of these measures has limitations. As capital assets are long-lived, the use of capex in the opex/totex ratio, even over a long period, may not fully take account for different age asset age profiles and investment cycles among the businesses. In relation to the opex to total cost ratio (the second measure), due to high correlation with the output variables in the opex models, it is likely that the relationship between capital inputs and opex is captured de facto in the opex models. In addition, we consider that AUC is an imperfect measure of capital inputs, notably due to inconsistencies among the distribution businesses in approaches to asset valuation, asset age and depreciation profile. In relation to the opex to total inputs ratio (the third measure), the capital input quantity may not adequately take into account important sources of capex as noted by AusNet Services, such as capitalisation of corporate overheads.

Notwithstanding these limitations, we consider these results do not offer strong evidence that AusNet Services' benchmarking score is being unduly impacted one way

[109] 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.

or the other by capitalisation practices. This suggests that an OEF adjustment for AusNet Services' use of opex compared to capex is not warranted.

Efficiency of AusNet Services' base year opex

Taking the above analysis into account, we have concluded that on balance AusNet Services' actual base year opex is at a level that we consider to be not materially inefficient. Consequently, in determining our alternative estimate of base opex we have not made an efficiency adjustment to AusNet Services' estimated final year opex.

While we consider that AusNet Services remains relatively efficient (or within the bounds of not materially inefficient), a continuation of a declining trend in relation to AusNet Services' efficiency scores over the 2021–26 regulatory control period would be of concern when assessing its efficiency in setting base opex for the following regulatory control period.

6.4.2 Final year increment

Our standard practice to calculate final year opex is to add the difference between the opex forecast for the final year of the preceding regulatory control period and the opex forecast for the base year to the amount of actual opex in the base year.[110] 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 forecast for the final year of the preceding regulatory control period to the annualised half year 2021 forecast.

6.4.3 Base adjustments

6.4.3.1 Lease capitalisation

AusNet Services proposed to remove $4.5 million ($2020–21) per annum of costs associated with leases from base year opex under revised Australian Accounting standard AASB 16.[111] We have included this adjustment in our alternative estimate. For the purposes of the EBSS we have treated this as a non-recurrent efficiency adjustment. This is discussed in more detail in the EBSS attachment.

AusNet Services submitted that from the start of its financial reporting year (2019), the full amount of a lease, where AusNet Services is the lessee, must be capitalised up-front when it is first entered into, or renewed, and amortised over its lease term.[112]

Consistent with this, AusNet Services proposed to treat all existing property leasing arrangements as capex from 1 April 2019. Correspondingly, that there would be an increase in capex and the Regulatory Asset Base to match the offsetting reduction in

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110 AER, *Explanatory Statement*, *Expenditure Forecast Assessment Guideline,* November 2013. p. 64.

111 AusNet Services*, EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

112 AusNet Services, *Appendix 9E Lease Accounting Treatment*, 31 January 2020, p. 2.

opex.[113] After submitting its proposal, AusNet Services revised its adjustment down slightly to $4.4m ($2020–21).[114]

We have included this downward base adjustment as we consider it is prudent that regulatory accounts are prepared in accordance with the applicable accounting standards. Further, the adjustment is consistent with AusNet Services' Cost Allocation Method (CAM) and has a neutral impact on consumers as AusNet Services will only be recovering the net present value of the opex lease payments via our capex forecast.

6.4.3.2 Energy Safe Victoria levy

AusNet Services proposed to remove $2.4 million ($2020–21) in relation to the ESV levy from base year opex and proposed it be recovered through an annual L factor adjustment in the price control formula.[115] This is equivalent to an $11.8 million reduction in opex over the next regulatory control period.

AusNet Services submitted it has no control over the ESV levy and notes significant increases to it have recently been announced, from $2.3 million in 2018 to $3.5 million in 2024.[116] AusNet Services proposed to recover the ESV levy through an annual adjustment of the price control formula on the basis that it ensures that the business can recover the actual amount incurred regardless of any revisions of these levies.[117] AusNet Services noted its proposed approach is consistent with the previous approach for recovery of the Essential Services Commission (ESC) annual distributor licence fee through the B term.[118] AusNet Services stated that if we do not accept this approach, the levy should be added back into the base year and an additional step change will be required.[119]

The ESV levy is used to fund the ESV activities related to regulating the Victorian distribution businesses and is spread across the network operators based on the proportion of customers on each distribution businesses' network.

We are satisfied that there will be an expected increase in the ESV levy from 2018–19 to 2023–24 based on documentation provided by AusNet Services.[120] However, we have not removed the ESV levy from base year opex in our alternative estimate of total opex as we consider this cost should remain a part of base opex and that increases in the levy can be managed within existing base opex and the forecast rate of change. Base opex already reflects the cost of meeting existing regulatory obligations and

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113 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

114 AusNet Services, *Information request 015 - Q3,* 20 May 2020, p. 3.

115 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136; AusNet Services, *2021–26 Regulatory proposal –Supporting document – Opex– Material assumptions,* January 2020; AER analysis.

116 These figures are in $2018. AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

117 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

118 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 271.

119 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 136.

120 AusNet Services, *Information request 009 - Q1*, 24 April 2020.

maintaining the reliability, safety and quality of supply of standard control services. This includes ESV levy costs, which reflects existing regulatory obligations. In the absence of exceptional circumstances, fluctuations in the ESV levy should be managed within base opex and the forecast rate of change. We acknowledge that some costs may increase by more than the forecast rate of change; however, this is likely offset by other costs that increase by less than the forecast rate of change or by decreases in other cost categories over the 2021–26 regulatory control period.

We have not removed the ESV levy from base year opex in our alternative estimate of total opex, and we do not propose to include an annual adjustment of the price control formula for the ESV levy. We consider increases in the ESV levy can be managed within the existing base opex and the forecast rate of change.

This approach is consistent with what we are proposing for CitiPower, Powercor and United Energy which have proposed a step change and Jemena who has proposed recovery of the ESV levy through a category specific forecast.

In our assessment, we considered the use of annual adjustments through the price control formula to recover licence fees. While annual adjustments of the price control formula are currently used to recover AusNet Services' ESC annual licence fees, this reflects historical treatment. Our preference going forward is to avoid the use of the annual adjustments in the price control formula to recover annual licence fees.

6.4.3.3 Metering systems reallocation

AusNet Services proposed a $29.4 million ($2020–21) category specific forecast to reallocate a higher proportion of forecast metering system IT opex to SCS. This is offset by an equivalent reduction in the proportion of metering system IT costs allocated to Alternative Control Services (ACS).[121] We are satisfied that it is appropriate to reallocate a portion of metering costs as SCS; however, we have included a reallocation of $7.8 million ($2020–21) in our alternative estimate. This is $21.6 million ($2020–21) less than the $29.4 million ($2020–21) proposed by AusNet Services for the reasons set out below and detailed under section 16.3 in Attachment 16.

Table 6.6 AusNet Services proposed metering reallocation and our alternative estimate ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal	5.7	5.7	5.9	6.0	6.1	29.4
AER Draft Decision	1.6	1.6	1.6	1.6	1.6	7.8
Difference	-4.1	-4.1	-4.3	-4.4	-4.5	-21.6

[121] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, pp. 148–149.

Source: AusNet Services, *Electricity Distribution Price Review 2022–26 Regulatory Proposal Part III,* 31 January 2020, p. 149; AER analysis.

Note: Numbers may not add up to total due to rounding. These figures are prior to the rate of change being added.

AusNet Services proposed reallocating a portion of metering system IT costs to SCS to reflect the trend of increasingly relying on advanced metering infrastructure (AMI) data to run its network.[122] AusNet Services proposed a causal allocation of shared metering IT systems costs[123] based on the total amount of data (volume) collected from meters. AusNet Services provided information which indicated that 85 per cent of data volumes from meters is used to provide SCS services and applied qualitative reasoning to conclude that a 50/50 allocation was appropriate for costs between ACS and SCS.[124] AusNet Services' forecast costs are based on the 2018 base year costs for ACS and SCS metering IT systems and include escalation.[125]

The Customer Forum agreed that metering systems are increasingly being used to provide SCS and that allocating a greater proposition of costs to SCS is consistent with the use of these systems.[126]

In our assessment, we considered the appropriateness of the efficiency of the forecast metering system IT costs and the reallocation of these costs from ACS to SCS.

We are satisfied that the metering system IT costs in the 2018 opex are efficient and that the application of causal allocation is consistent with AusNet Services' CAM. However, we are not satisfied with:

- Applying escalation to the metering system IT costs. As we are treating this as a base adjustment, trend will be applied over the next regulatory control period and we do not consider further escalation is required.
- The proposed reallocation of costs between ACS and SCS for shared metering IT system costs. We do not consider the assumptions driving the percentage of data volumes used by SCS and ACS are reasonable. In particular, the assumption that AusNet Services is obtaining power quality data from 85 per cent of meters and sending every meter 30 alarms per day.[127] Based on a review by our technical experts and revised assumptions we consider are more reasonable, we consider the information suggests that 6 per cent of data volumes from meters is used to provide SCS services. For shared metering IT systems this would result in an allocation of 6 per cent to SCS and 94 per cent to ACS.

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122 AusNet Services, *Information request 018 - Q1,* 18 June 2020, p. 3.

123 AusNet Services, *2021–26 Regulatory proposal –Supporting document*– Appendix 9D Allocation of AMI ICT to SCS and ACS Metering, 31 January 2020, pp. 6-7.

124 AusNet Services, *Information request 052 - Q6,* 24 July 2020, pp. 6–7.

125 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Metering Opex model*, January 2020.

126 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 133.

127 AusNet Services, *Information request 052 - Q6,* 24 July 2020, pp. 6–7.

We have revised AusNet Services' forecast costs to remove escalation. Where we consider that power quality data can be used as a reasonable cost allocator, we have substituted our 6 per cent SCS / 94 per cent ACS cost allocation. For two cost items, we consider there is insufficient information to establish a causal method of allocation using the power quality data provided, and we have applied an equal cost allocation split across SCS and ACS. For the remaining cost items, we have maintained the allocations from the current decision, which is consistent with AusNet Services' proposal. This is discussed in more detail in Attachment 16 on ACS.

Finally, we have treated this as a base adjustment as we do not consider that metering system costs need to be forecast separately. We prefer to use a base-step-trend approach to assessing most opex categories,[128] and in this case the use of a category specific forecast for metering reallocation has not been justified.

6.4.4 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.[129]

AusNet Services broadly applied our standard approach to forecasting the rate of change.[130] It proposed:[131]

- Price growth: to adopt input price weights of 59.7 per cent for labour and 40.3 per cent for non-labour. AusNet Services applied an average of Deloitte's wage price index (WPI) forecasts for South Australia utilities sector prepared in June 2019 and BIS Oxford Economics' forecast for Victoria utilities sector prepared in April 2019.[132]
- Output growth: to use output weights from four benchmarking models[133] (based on its forecasts of growth in customer numbers, circuit line length, ratcheted maximum demand and energy throughput). It adopted the output weights set out in our *2019 Annual Benchmarking Report*.
- Productivity growth: to use our 0.5 per cent per year productivity growth forecast.[134]

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128 AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution,* November 2013, p. 22.

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

130 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

131 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

132 At the time of its proposal there were no Victorian utilities WPI forecasts available for AusNet Services and it used the South Australian forecasts instead. AusNet Services, *2021–26 Regulatory proposal –Supporting document – BIS Oxford - Appendix 10A Labour Cost Escalation Forecasts,* April 2019; AusNet Services, *2021–26 Regulatory proposal –Supporting document – Labour Price Escalation calculation*, 31 January 2020.

133 AusNet Services*, EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 149-153; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020..

134 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III,* January 2020, pp. 149-153; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

AusNet Services' rate of change contributes $50.5 million ($2020–21), or 4.1 per cent of its proposed total opex forecast of $1233.4 million ($2020–21). This equates to opex increasing by around 1.5 per cent each year over the 2021–26 regulatory control period.[135]

We include a rate of change that increases opex by 0.6 per cent each year in our alternative estimate. Table 6.7 sets out our alternative estimates of each component of the rate of change, and AusNet Services' proposal. We have set out the reasons for our forecast, and the difference compared to AusNet Services' forecast, below.

We received five submissions relating to AusNet Services' proposed rate of change.[136] The key concern raised by stakeholders was the impact of the COVID–19 on the accuracy of the forecasts. We have taken these concerns into account when assessing price growth by relying on Deloitte's utilities WPI growth forecasts for Victoria only (for the draft decision) and when assessing output growth by updating the forecasts for two of the individual output measures. Some submissions also encouraged us to examine the impact of the increase in the super guarantee on labour price growth, which we have done.[137]

Table 6.7 Forecast rate of change, per cent

	2021–22	2022–23	2023–24	2024–25	2025–26
AusNet Services proposal					
Price growth	0.6	0.6	0.6	0.6	0.5
Output growth	1.5	1.4	1.5	1.4	1.1
Productivity growth	0.5	0.5	0.5	0.5	0.5
Overall rate of change	**1.6**	**1.5**	**1.7**	**1.4**	**1.1**
AER draft decision					
Price growth	0.1	–0.1	0.0	0.2	0.6
Output growth	0.5	0.8	1.0	1.0	1.0
Productivity growth	0.4	0.5	0.5	0.5	0.5
Overall rate of change	**0.3**	**0.2**	**0.5**	**0.7**	**1.1**

[135] AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

[136] CCP17, *Submission on the Victorian Electricity Distribution Regulatory Proposal 2021–26, June 2020*, pp. 56–58; Origin Energy, *Submission on the Victorian Electricity Distribution Regulatory Proposal 2021–26*, June 2020, pp. 4–5; Energy Australia, *Submission on the Victorian Electricity Distribution Regulatory Proposal 2021–26,* June 2020, p. 7; Energy Consumers Australia, *Victorian Electricity Distribution Regulatory Proposal 2021–26, Attachment 1: A review of Victorian distribution networks*, May 2020, p. 30; Victorian Community Organisations, *Submission on the Victorian Electricity Distribution Regulatory Proposal 2021–26*; pp. 62–64.

[137] Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 30.

	2021–22	2022–23	2023–24	2024–25	2025–26
Overall difference	**–1.3**	**–1.3**	**–1.2**	**–0.7**	**–**

Source: AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020; AER analysis.

6.4.4.1 Forecast price growth

We have included forecast average annual real price growth of 0.2 per cent in our alternative opex estimate. This compares to AusNet Services' proposed average annual price growth of 0.6 per cent.[138] This increases our alternative estimate of total opex by $2.2 million ($2020–21), instead of $18.9 million ($2020–21) as proposed by AusNet Services. The magnitude of the difference in dollar terms is due to two key elements:

- Our forecast average annual real price growth is lower than AusNet Services'.
- Our forecast growth path in the first three years is close to zero, then it increases to 0.6 per cent in the final year whereas AusNet Services' proposed growth path is relatively constant around 0.6 per cent.

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

- To forecast labour price growth we have used the most up-to-date forecast of growth in the utilities WPI for Victoria as forecast by Deloitte.[139] AusNet Services used our standard approach of averaging WPI growth forecasts from Deloitte and BIS Oxford Economics.[140] We discuss below our reasons for not averaging the Deloitte and BIS Oxford Economics forecasts. Unlike AusNet Services, we have accounted for the legislated superannuation guarantee increases in our labour price growth forecasts.
- Both we and AusNet Services applied a forecast non-labour real price growth rate of zero.[141]
- We applied benchmark input price weights of 59.2 per cent and 40.8 per cent for labour and non-labour, respectively. These weights correct for a small error in the calculation used to determine the weights we have previously used.[142] In contrast,

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138 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

139 Deloitte Access Economics, *Wage Price Index forecasts – Report prepared for the Australian Energy Regulator*, 11 August 2020.

140 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp 150–151; AusNet Services, *2021–26 Regulatory proposal –Supporting document – BIS Oxford - Appendix 10A Labour Cost Escalation Forecasts*, April 2019.

141 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 151; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

142 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.

AusNet Services proposed 59.7 per cent for labour and 40.3 per cent for non-labour inputs.[143]

Consequently, the key differences between our real price growth forecasts and AusNet Services' are that:

- we used labour price growth WPI forecasts from only Deloitte, rather than the average of forecasts from Deloitte and BIS Oxford Economics.
- we used updated input price weights.

Deloitte's forecasts of utilities real WPI growth for Victoria reflect the best estimate of labour real price growth at this time

There is a significant difference between the WPI growth forecasts provided by Deloitte, who we engaged, and those provided by BIS Oxford Economics, who was engaged by AusNet Services. This is set out in Table 6.8.

Table 6.8 Forecast utilities WPI growth for Victoria, per cent

	2021–22	2022–23	2023–24	2024–25	2025–26
Deloitte	–0.3	–0.7	–0.6	–0.1	0.5
BIS Oxford Economics	1.5	1.6	1.7	1.6	1.4

Source: Deloitte Access Economics, *Wage Price Index forecasts – Report prepared for the Australian Energy Regulator*, 11 August 2020, p. xv; AusNet Services, *2021–26 Regulatory proposal –Supporting document – BIS Oxford - Appendix 10A Labour Cost Escalation Forecasts,* April 2019, p. 4.

The BIS Oxford Economics forecasts were prepared prior to COVID–19, which has materially changed the economic outlook. In contrast, Deloitte's forecasts were prepared in late July 2020 and they take into account the effects of COVID–19.

The difference in the economic outlook underlying the two sets of forecasts is stark. Therefore, we consider that the BIS Oxford forecasts do not reflect a realistic expectation of labour prices. Nor would including them in an average produce a realistic expectation of labour prices. Consequently, we have used only the Deloitte's labour price growth forecasts for this draft decision. If we receive updated BIS Oxford Economics' forecasts that account for the significant shift in the economic outlook for our final decision, we will reconsider averaging them with updated Deloitte forecasts, having regard to the reasons described above.

[143] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 150; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

We have accounted for the legislated increases in the superannuation guarantee in our labour price growth forecasts

AusNet Services did not include an additional forecast for the legislated superannuation guarantee increases to its labour price growth forecasts.[144] However, we note that the reset proposals from some other Victorian distribution businesses (CitiPower, Powercor and United Energy) did.[145]

We sought advice from Deloitte on how to best account for the superannuation guarantee increases. It noted that there is extensive research suggesting that increases in payroll taxes or compulsory contributions levied on employers are passed onto employees. This research suggests that the increases to the superannuation guarantee will likely result in slower WPI growth than would otherwise have been the case. Deloitte advised that the superannuation guarantee increases should be added to the forecast WPI growth rates, but only if those WPI growth rates take into account the superannuation guarantee changes.[146] Consequently, we have added the legislated superannuation guarantee increases to Deloitte's WPI growth forecasts to forecast labour price growth.[147]

We have applied Deloitte's advice consistently to the five Victorian distributors. Should AusNet Services provide revised BIS Oxford forecasts with its revised proposal, we would only add the legislated superannuation guarantee increases to them if it is clear that they have been reduced to account for the superannuation guarantee increases.

We also note that the significant economic downturn resulting from COVID–19 has raised the question of whether the superannuation guarantee increases should proceed. We will continue to monitor this situation. If there are any changes to the legislated superannuation guarantee increases we will take that into account in our final decision.

Input price weights

We have used the weights of 59.2 per cent for labour inputs and 40.8 per cent for non-labour inputs. Our input price weights reflect the weights we used in our *2019 Annual benchmarking report*, corrected for an error identified by Frontier Economics.

CitiPower, Powercor and United Energy submitted a report from Frontier Economics, which advocated for the use of firm specific 'actual' input weights, rather than the

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144 AusNet Services, *2021–26 Regulatory proposal –Supporting document – BIS Oxford - Appendix 10A Labour Cost Escalation Forecasts,* April 2019*,* pp. 37–38*.*

145 For example, Powercor, *Regulatory proposal*, 31 January 2020, pp. 126–127.

146 Deloitte Access Economics, *Impact of changes to the superannuation guarantee on forecast labour price growth*, 24 July 2020, p. 4.

147 Deloitte Access Economics, *Impact of changes to the superannuation guarantee on forecast labour price growth*, 24 July 2020, p. 5.

industry–wide weights we use.[148] We engaged Economic Insights to consider the issues raised by Frontier Economics. Economic Insights recommended that we maintain our existing approach of using an industry average.[149] However, Economic Insights agreed that one of the calculation errors identified by Frontier Economics was an error. Correcting this error reduces the industry average labour weight from 59.7 per cent to 59.2 per cent.[150] Our response to Frontier Economics is discussed in more detail in our draft determination for CitiPower, Powercor and United Energy (Attachment 6).

In contrast, AusNet Services proposed input price weights of 59.7 per cent for labour and 40.3 per cent for non-labour.[151]

6.4.4.2 Forecast output growth

We have included forecast average annual output growth of 0.9 per cent in our alternative opex estimate. This compares to AusNet Services' proposed average annual output growth of 1.4 per cent.[152] This increases our alternative estimate of total opex by $26.5 million ($2020–21), instead of $47.6 million ($2020–21) as proposed by AusNet Services.

We and AusNet Services have forecast output growth by:

- forecasting the growth rates for four outputs (customer numbers, circuit line length, energy throughput, and maximum demand).
- calculating five weighted average overall output growth rates using the output weights from our the five benchmarking models presented (see Table 6.9)
- averaging the five benchmarking model specific weighted overall output growth rates.

Table 6.9 Output weights, per cent

	Cobb-Douglas SFA	Cobb Douglas LSE	Translog LSE	Translog SFA	MPFP	Average	AusNet Services proposed
Customer numbers	67.4	69.0	38.0	69.7	18.5	52.5	57.3
Circuit length	15.1	15.6	21.2	12.4	39.1	20.7	15.9

148 Frontier Economics (2019a*), Estimation of opex input weights, Report prepared for CitiPower, Powercor and United Energy*, 15 March 2019, pp. 4–18.

149 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. 5-8.

150 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, 11.

151 AusNet Services*, EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 150; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

152 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

	Cobb-Douglas SFA	Cobb Douglas LSE	Translog LSE	Translog SFA	MPFP	Average	AusNet Services proposed
Ratcheted maximum demand	17.5	15.5	40.9	17.9	33.8	25.1	23.8
Energy throughput	–	–	–	–	8.6	1.7	2.4

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; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

Note: Numbers may not add up to 100 per cent due to rounding.

We will publish our *2020 Annual benchmarking report* in late November 2020. In our final decision, we will update our output growth rate forecasts to reflect the results in the *2020 Annual benchmarking report*. Full details of our approach to forecasting output growth are set out in our opex model, which is available on our website.

Our output weights are different from those proposed by AusNet Services. This is because, consistent with the other Victorian resets, in response to issues raised by CitiPower, Powercor and United Energy we have updated the output weights in the opex MPFP model to correct for a coding error identified and changed our approach for the translog models. These issues are discussed below.

The opex MPFP output weight

As part of their initial proposals, CitiPower, Powercor and United Energy submitted a Frontier Economics report that raised concerns about statistical problems with the opex MPFP model and identified a coding error in the calculations.[153]

Our consultant, Economic Insights has reviewed Frontier Economics' report and agreed there was a coding error in the calculations. Economic Insights found correcting this error significantly improves the performance of the opex MPFP model and consequently mitigates the other concerns raised by Frontier Economics about the opex MPFP model.[154] Consequently, Economic Insights considered we should include the MPFP weights when we forecast output growth.[155] We agree with Economic Insights that correcting the coding error addresses the concerns raised by Frontier Economics and, consequently, the MPFP model should be included in our forecast of output growth. Our response to Frontier Economics is discussed in more detail in our draft determination for CitiPower, Powercor and United Energy (Attachment 6).

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[153] Frontier Economics, *Memorandum prepared for the AER on review of econometric models used by the AER to estimate output growth*, 5 December 2019, pp. 7–15.

[154] 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.

[155] 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, pp. 16-17.

The effect of correcting the error on the output cost weights is shown in Table 6.10. The effect is to transfer weight from customer numbers to circuit length, and to a lesser extent from energy throughput to ratcheted maximum demand.

Table 6.10 Corrected opex MPFP output weights, per cent

	Uncorrected, 2006–2017	Corrected, 2006–2018
Energy throughput	12.46	8.58
Ratcheted maximum demand	28.26	33.76
Customer numbers	30.29	18.52
Circuit length	28.99	39.14

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. 16.

Translog models are appropriate for forecasting output growth

Our past practice has been to evaluate the elasticities from our translog models at the average output levels of all distribution businesses in the international sample. However, CitiPower, Powercor and United Energy stated that, instead, the elasticities should be evaluated at output levels that reflect the operating characteristics of the Australian distributors.[156] Frontier Economics in its report for CitiPower, Powercor and United Energy considered the elasticities should be evaluated at output levels that reflect the operating characteristics of Australian distributors and this could be done better using the Cobb-Douglas function. On this basis, CitiPower, Powercor and United Energy did not use the translog models to derive their proposed output weights.

Our consultant Economic Insights reviewed the issues raised by Frontier Economics. It advised the translog models should be retained in the calculation of output weights because the translog function is more flexible than the Cobb Douglas function and so produces additional useful information that should be included.[157]

Economic Insights stated that it has no underlying objection to calculating the output weights at the Australian average level rather than at the average output levels of all distributors in the international sample.[158] It demonstrated that there is economic justification for using both bases and the statistical performance of the models using either basis is similar.[159]

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156 Powercor, *Regulatory proposal*, 31 January 2020, p. 130.

157 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.

158 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. 19.

159 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.

Calculating the translog opex cost function output weights at Australian average output levels addresses the concerns raised by Frontier Economics.[160] Accordingly, we consider those weights should be included in our calculation of forecast output growth.

Table 6.11 below presents the output weights derived from the translog opex cost functions with data normalised by the full sample means and by the Australian sample means, as calculated by Economic Insights. As noted by Economic Insights, the basis of normalisation does not make a material difference to the output weights derived from the stochastic frontier analysis (SFA) estimation method. However, for the least squares econometrics (LSE) method the effect of normalising by the Australian sample is to transfer weight from customer numbers to line length and ratcheted maximum demand.[161]

Table 6.11 Translog opex cost function output weights 2006 to 2018, per cent

Output	LSE All DNSPs	LSE Australian DNSPs	SFA All DNSPs	SFA Australian DNSPs
Customer numbers	52.95	37.95	69.45	69.73
Circuit length	15.72	21.16	14.86	12.37
Ratcheted maximum demand	31.33	40.89	15.69	17.90

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. 19.

Forecast growth of the individual output measures

In developing our alternative estimate, we have used AusNet Services' circuit length and energy throughput forecasts for the next regulatory control period. However, we are not satisfied that its forecast of the growth in customer numbers and ratcheted maximum demand reasonably reflect a realistic expectation. Specifically, for:

- customer numbers: we have adjusted AusNet Services' pre-COVID–19 forecasts in line with the reduction we applied to customer connections, using the Housing Industry Association's April 2020 dwelling starts forecasts.[162]
- ratcheted maximum demand: we have forecast ratcheted maximum demand based on AEMO's 2019 maximum demand forecasts at the transmission connection point to forecast maximum demand. AEMO is not forecasting demand to surpass 2019,

[160] For our discussion on the concerns raised by Frontier Economics, see AER, *Draft decision - Powercor distribution determination 2021–26 - Attachment 6*, September 2020.

[161] 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, pp. 19–20.

[162] AER, Draft decision, *2021–26 determination for AusNet Service - Attachment 5 - Capital expenditure*, September 2020.

suggesting no growth in ratcheted maximum demand. We discuss this further in attachment 5. In contrast, AusNet Services used AEMO's 2018 forecasts.[163]

Our output growth forecasts are set out our opex model for this draft decision.

6.4.4.3 Forecast productivity growth

We have forecast productivity growth of 0.5 per cent per year in developing our alternative opex forecast. AusNet Services also included forecast productivity growth of 0.5 per cent per year in its opex forecast.[164] This reduces our alternative estimate of opex over the 2021–26 regulatory control period by $15.1 million ($2020–21), instead of $16.0 million ($2020–21) as proposed by AusNet Services.

6.4.4.4 Forecasting the rate of change for 2021–22

We have amended how we forecast the rate of change for 2021–22 to account for the shift from calendar years to financial years. To forecast our alternative estimate of opex we apply the rate of change to our annualised estimate of opex for the first six months of calendar year 2021 (which is outside the 2021–26 regulatory control period).

The rate of change for 2021–22 should represent the change in the average level of output, prices and productivity in that year compared to the first six months of calendar year 2021 (the six month extension period). This can be thought of as the difference between the levels at the end of December 2021 (the middle of 2021–22) and the end of March 2021 (the middle of the 2021 half year). This is nine months. This is consistent with the approach we have used to set forecast opex for the six-month extension period.

AusNet Services agreed to this amendment.[165]

6.4.5 Step changes

In developing our alternative estimate, we typically include step changes for cost drivers such as new regulatory obligations or efficient capex/opex trade-offs. As we explain in the Expenditure Assessment Guideline, we will include a step change if the efficient base opex and the rate of change in opex of an efficient service provider do not already include the proposed cost.[166]

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163 AusNet Services, *2021–26 Regulatory proposal –Supporting document – Proposal Opex model*, January 2020; AusNet Services, *2021–26 Regulatory proposal –Supporting document – AEMO - Demand Forecasts 2018 TCPR - 310120 - PUBLIC,* January 2020.

164 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 131; AusNet Services, *2021–26 Regulatory proposal –Supporting document –Proposal Opex model*, January 2020.

165 AusNet Services, *Information Request 043*, 18 June 2020.

166 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.

AusNet Services proposed four step changes totalling $16.9 million ($2020–21) or 1.4 per cent[167] of its proposed total opex forecast. These are shown in Table 6.12 along with our draft decision, which is to include step changes totalling $9.3 million ($2020–21) in our alternative estimate for the draft decision.

Table 6.12 AusNet Services proposed step changes and our draft decision ($ million, 2020–21)

Step change	AusNet Services proposed step changes	AER draft decision	Difference
REFCLs	5.9	5.8	-0.1
5 minute settlement	3.6	3.5	-0.1
Cyber security	4.7	0	-4.7
Cloud IT	2.6	0	-2.6
Total	16.9	9.3	-7.6

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III,* 31 January 2020, p. 127; AER analysis.
Note: Numbers may not add up to total due to rounding.

The following sets out the reasons for our draft decision.

6.4.5.1 Five minute settlement

AusNet Services proposed a step change of $3.6 million ($2020–21)[168] in response to the five minute settlement rule by the AEMC published on 28 November 2017. This changes the settlement period for the electricity wholesale market from 30 minutes to five minutes to align with the operational dispatch of electricity.[169] Our draft decision is to include this step change in our alternative estimate but with a slightly lower cost of $3.5 million ($2020–21) for the reasons outlined below.

Table 6.13 Five minute settlement step change ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal	0.5	1.4	0.4	0.6	0.7	3.6
AER draft decision	0.5	1.4	0.4	0.6	0.7	3.5
Difference	0.0	0.0	0.0	0.0	0.0	-0.1

Source: AusNet Services, *Information request 007- follow-up question*, 4 August 2020; AER analysis.

[167] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 127.
[168] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 144–145; AusNet Services, *Information request 007 - follow up question*, 4 August 2020.
[169] AEMC, *Five Minute Settlement, final determination*, 28 November 2017.

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

On 9 July 2020, the AEMC made a ruling to delay the commencement of the five minute settlement rule by three months. It now commences on 1 October 2021. A three month delay balances the capacity constraints placed on the industry by COVID–19 against the additional costs and deferred benefits that are caused by a delay to the commencement of the respective rules.[170] This was a concern raised by the ECA who questioned the initial costs proposed due to the delay.[171] The VCO also noted the difference in proposed costs amongst the Victorian distributors, and we have taken this into account in our assessment.[172]

We have reviewed the AEMC ruling on the delay to the commencement of five minute settlement and consider it should not have a material impact on AusNet Services' step change as the delay only relates to meter types 1–3.[173] AusNet Services' proposal primarily relates to Victorian type 5 AMI meters, which still must be configured to record five minute data from 1 December 2020 as set out in the AEMC five minute settlement rule made on 28 November 2017.[174] We are satisfied that the AEMC ruling should be considered a new regulatory obligation and the efficient costs to meet these obligations included as a step change.

AusNet Services' opex step change proposal is comprised of two key categories:

- Increasing carrier costs due to greater volume of data and increased requirements to supply information in five minute intervals rather than 30 minute intervals – $1.9 million ($2020–21)
- Logical conversion and data cleansing which involves updating data stream level changes, reprogramming meters and monitoring of performance of the metering network to ensure optimal operations – $1.7 million ($2020–21).

We view these proposed costs as reasonable but have adopted the latest inflation forecasts[175] that results in an alternative estimate of $3.5 million ($2020–21).

6.4.5.2 Cyber security

AusNet Services proposed a $4.7 million ($2020–21) step change to undertake a program of work that will enable it to proactively comply with and maintain the anticipated cyber security obligations to meet Maturity Indicator Level (MIL) 3 standards set by AEMO's Australian Energy Sector Cyber Security Framework

170 AEMC, *Delayed Implementation of five minute and Global settlement, Rule determination,* 9 July 2020.

171 Energy Consumers Australia, *Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks*, May 2020, p. 28.

172 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p. 66.

173 AEMC, *Five Minute Settlement, final determination*, 28 November 2017, p. v; NER, cl. 11.103.1.

174 AEMC, *Five Minute Settlement, final determination*, 28 November 2017, p. 121.

175 Reserve Bank of Australia, *Statement of Monetary Policy*, August 2020.

(AESCSF).[176] We have not included this step change in our alternative estimate for the reasons outlined below.

Table 6.14 Cyber security step change ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal	1.1	1.1	0.9	0.8	0.8	4.7
AER draft decision	0	0	0	0	0	0
Difference	-1.1	-1.1	-0.9	-0.8	-0.8	-4.7

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 146; AER analysis.
Note: Numbers may not add up to total due to rounding.

AusNet Services submitted that it anticipates that AEMO will impose a regulatory obligation on it to uplift its cyber security capability to MIL 3 in the next regulatory control period.[177] It also submitted that it has benchmarked its security maturity level of capability against the Cybersecurity Capability Maturity Model and reaching and maintaining this level of maturity will require a step increase in resourcing.[178]

The AESCSF is a framework developed by AEMO in conjunction with industry and government stakeholders which provides a self-assessment framework for measuring cyber security maturity levels.[179]

The Customer Forum deferred consideration of the cyber security step change to the AER, given the highly technical and sensitive nature of the issues and the uncertainty of the emerging regulatory requirements.[180] ECA noted that all five Victorian distributors are subject to compliance with new Federal Government cyber security standards for energy utilities,[181] and the CCP17 considered the cyber security step change appears to be a legitimate new and exogenous obligation that is imposed by the Commonwealth Government.[182] The VCO raised concerns regarding the large difference in cost proposed by the Victorian businesses, it noted AusNet Services proposed costs to comply with the requirement as quite modest.[183]

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176 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 145–146; AEMO, *AESCSF framework and resources*, 2019. Available at https://www.aemo.com.au/initiatives/major-programs/cyber-security/aescsf-framework-and-resources.

177 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 145.

178 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 145.

179 AEMO, 2019 AESCSF Criticality Assessment Tool. Available at https://www.aemo.com.au/-/media/files/cyber-security/2019/aescsf-cat-overview-2019-v1.pdf?la=en&hash=5EFB6855F99AE6ADF5CBA2C12A3EF0DB.

180 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p .132.

181 Energy Consumers Australia, Victorian Electricity Distributors Regulatory Proposals 2021–2026, Attachment 1: A review of Victorian Distribution Networks, May 2020, p. 29.

182 CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26,* 10 June 2020, p. 53.

183 Victorian Community Organisations, *EDPR 2021–26 Submission to Initial Proposals*, May 2020, p.66.

In our assessment we took into account confidential information provided by AusNet Services related to its self-assessment against the AESCSF's Critical Assessment Tool. Confidential Appendix A sets out AusNet Services self-assessment and cyber security capability gap against the standards set by the AESCSF, the supporting confidential information we have relied on and our assessment.

We consulted with AEMO's Chief Security Officer and we understand the exact implementation timing of this legislation remains uncertain particularly in the current context of COVID–19. In the absence of certainty about the implementation of this legislation and the specific requirements, we note this is not yet a proven regulatory obligation and is therefore not a compliance obligation. However, we note the current context of evolving threat of cyber security risk, and the Australian Government's recent warning to organisations to take action to mitigate these risks of increased frequency and sophistication of cyber-attacks.[184]

We engaged expert consultants, EMCa, to assist us with this assessment. In its assessment EMCa did not consider that the proposed cyber security step change was warranted, although it noted that with escalating threats from cyber-attacks it is prudent for AusNet Services to improve its cyber security posture.[185]

We have not included this step change in our alternative estimate as while we consider it prudent for businesses to meet the standards set by the AESCSF, we do not consider AusNet Services' proposed approach and cost to achieve and maintain this standard is efficient.

6.4.5.3 IT Cloud

AusNet Services proposed a step change of $2.6 million ($2020–21) to recover cloud transition costs related to the roll out a Customer Relationship Management (CRM) IT system and Outage Management system.[186] We have not included this step change in our alternative estimate as we consider insufficient evidence has been provided to show the required capex/opex substitution.

Table 6.15 IT Cloud step change ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal	0.5	0.5	0.5	0.5	0.5	2.6
AER draft decision	0	0	0	0	0	0
Difference	-0.5	-0.5	-0.5	-0.5	-0.5	-2.6

[184] Prime Minister of Australia, Statement on malicious cyber activity against Australian networks, June 2020. Available at https://www.pm.gov.au/media/statement-malicious-cyber-activity-against-australian-networks.

[185] EMCa, *AusNet Services regulatory proposal 2021–26: Review of proposed opex ICT related step changes,* August 2020, pp. 2-8.

[186] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 147.

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 147; AER analysis.

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

The proposed step change costs reflect negotiations with the Customer Forum, who only agreed to $0.5 million ($2020–21) per annum out of the $4.4 million ($2020–21) per annum of opex initially proposed.[187] AusNet Services submitted the step change is a capex/opex trade off and results in lower capex in the next regulatory control period, relative to the alternative capex solution.[188]

AusNet Services submitted the CRM IT system allows it to better understand its customers through customer data management and improve customer outcomes.[189] The proposed Outage Management system will provide more timely and accurate information to customers in relation to outages to address their expectations.[190]

We engaged expert consultants, EMCa, to assist us with this assessment.

EMCa considered AusNet Services' proposed CRM IT system and Outage Management system are likely to be the best approaches to achieve the required functionality. EMCa examined the cost benefit analysis for these systems and noted the proposed CRM IT system is likely to be prudent as it results in positive net present value, while the proposed Outage Management system is only marginally positive in net present value.[191] EMCa considers the lack of an avoided capital cost in the cost benefit analysis implies that the proposed expenditure does not satisfy the capex-opex trade-off criterion for an opex step-change in accordance with our Expenditure Forecast Assessment Guideline.[192]

We consider AusNet Services has not demonstrated there is a capex/opex trade-off for its cloud transition costs to justify a step change. For us to accept a step change on the basis of capex/ opex trade-off criteria, we would need to be satisfied the proposed expenditure is material, prudent and efficient through robust cost–benefit analysis to demonstrate clearly how increased opex would be more than offset by capex savings.[193]

While AusNet Services proposed the step change as a capex/ opex trade-off, it acknowledged the '[abilities] to realise capex savings in the short-term [is reduced]' as there is shared hardware required to run other applications, and cannot be transitioned

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187 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, pp. 118, 146.

188 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 147.

189 AusNet Services, *2021–26 Regulatory proposal –Supporting document –Program Brief Customer Information Services,* January 2020, p. 6.

190 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 48.

191 EMCa, *AusNet Services regulatory proposal 2021–26: Review of proposed opex ICT related step changes,* August 2020, pp. 10–12.

192 EMCa, *AusNet Services regulatory proposal 2021–26: Review of proposed opex ICT related step changes,* August 2020, pp. 12–13.

193 AER, *Expenditure forecast assessment guideline, Explanatory statement*, November 2013, pp. 51–52.

to cloud during the 2021–26 regulatory control period.[194] AusNet Services confirmed that it has not proposed capex alternatives to the proposed CRM IT and Outage Management system, nor presented capex forecast costs as there are no credible on-premises solutions.[195]

We have not included this step change in our alternative estimate as we consider insufficient evidence has been provided to justify the capex/opex substitution for the IT cloud cost.

6.4.5.4 Rapid Earth Current Fault Limiters

AusNet Services proposed a $5.9 million ($2020–21) step change for its REFCL annual testing and maintenance.[196]

The *Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016* require Victorian distributors (AusNet Services, Powercor and Jemena) to:

- install REFCL at 45 designated zone substations, following a prescribed and tiered process (Tranche 1 by 1 May 2019, Tranche 2 by 1 May 2021 and Tranche 3 by 1 May 2023), and
- undertake REFCL testing before the commencement of each specified bushfire risk period to ensure that lines originating from each prescribed zone substation continue to meet the Required Capacity.

We are satisfied that this step change reflects new obligations to annually test REFCL devices once they are installed as required by the *Electricity Safety (Bushfire Mitigation) Regulations 2016*. We have already approved three tranches of contingent projects for AusNet Services and Powercor relating to their REFCL installation programs.[197]

In reviewing the efficiency of the proposed step change amount, we sought clarification as to whether AusNet Services intended to seek a similar amendment to that obtained by one of the Victorian distribution businesses. ESV approved an amendment to Powercor's REFCL annual testing policy reducing the frequency of its annual testing requirements.[198] AusNet Services responded that it has started an application process.[199] However, the approximate timeframe provided by AusNet Services indicated that an outcome would not be achieved in time to be reflected in our draft determination.

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194 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p.118.

195 AusNet Services, *Information request 037- Q2,* 19 June 2020, p. 1.

196 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 143–144.

197 AER, *Final Decision: AusNet Services Contingent Project Installation of REFCLs – tranche three*, October 2019; AER, *Final Decision Powercor Contingent Project Installation of REFCLs – tranche three*, January 2020.

198 The ESV approved Powercor's proposal to amend its REFCL annual capacity testing policy, to reduce its annual testing obligations. Please see: *CitiPower, Powercor and United Energy - Amendments to operating expenditure step changes and capital programs*, 15 May 2020, p. 3.

199 AusNet Services, *Information request 032,* 16 June 2020, pp. 1–2.

Consequently, we have included the proposed amount of $5.8 million ($2020–21) in our alternative of total opex, which is slightly lower than AusNet Services proposal because we have applied the most up-to-date forecast inflation.[200] We expect AusNet Services to update this step change in its revised proposal to reflect the impact of any ESV amendment to its annual testing obligations and forecast inflation.

Table 6.16 sets out our draft decision for the 2021–26 regulatory control period.

Table 6.16 REFCL step change ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal	0.9	1.1	1.3	1.3	1.3	**5.9**
AER draft decision	0.8	1.1	1.3	1.3	1.3	**5.8**
Difference	0.0	0.0	0.0	0.0	0.0	**–0.1**

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, Public, 31 January 2020, p. 144; AER analysis.

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

6.4.6 Category specific forecast

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

6.4.6.1 GSL payments

We have included GSL payments of $46.0 million ($2020–21) in our alternative estimate. This is $0.7 million ($2020–21) less than the $46.7 million forecast ($2020–21) proposed by AusNet Services.[201]

We have forecast GSL payments as the average of GSL payments made by AusNet Services between 2015 and 2019. AusNet Services used the average of the period from 2014 to 2018.

The incentives provided by our forecasting approach are consistent with generally adopting a single year revealed cost approach and applying the EBSS. We have adopted the historical averaging approach to maintain consistency with how GSL payments have been forecast for previous regulatory control periods.

We note the ESC is currently undertaking a review of the consumer protection framework in the Electricity Distribution Code, including the GSL scheme.[202] A draft

[200] Reserve Bank of Australia, *Statements on Monetary Policy*, August 2020.

[201] AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 148.

decision was published on 7 May 2020[203] which sets out proposed changes to the GSL scheme. Consultation on the draft decision closed on 2 July 2020. As the review has not been completed we have calculated GSL payments based on the current GSL scheme and have not taken into account the proposed changes. Provided the ESC's review is completed by early next year, we will update the GSL payment forecasts in our final decision to take into account the impact of the GSL scheme changes.

6.4.6.2 Innovation

AusNet Services proposed a $1.2 million ($2020–21) category specific forecast to conduct trials for accommodating distributed energy resources (DER) as part of its $7.5 million ($2020–21) innovation expenditure proposal over the 2021–25 regulatory control period.[204] There is also proposed capex of $6.3 million ($2020–21) associated with the innovation expenditure proposal. [205] We have included the proposed innovation step change in our alternative estimate as a category specific forecast for the reasons discussed below. Table 6.17 sets out AusNet Services' proposal and our draft decision for the 2021–26 regulatory control period.

Table 6.17 AusNet Services' proposed innovation expenditure ($ million, 2020–21)

	2021–22	2022–23	2023–24	2024–25	2025–26	Total
AusNet Services' proposal and AER draft decision	0.2	0.2	0.2	0.2	0.2	1.2

Source: AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 37, 149. AER analysis.

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

AusNet Services' innovation expenditure proposal funds nine innovation projects across four key project groups: low voltage, high voltage, distributed energy resources (DER) market place projects and data availability. AusNet Services proposed innovation expenditure to cover three projects to test ways of managing low voltage networks and improving network management. It includes:[206]

- The use of an energy management system to maximise benefits of solar for commercial users.
- A dispatch system to enable customers to actively manage their DER.
- Testing decentralised power systems to design the systems, interfaces and working arrangements that will be needed.

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202 https://www.esc.vic.gov.au/electricity-and-gas/codes-guidelines-and-policies/electricity-distribution-code/electricity-distribution-code-review-2019.

203 Essential Services Commission, *Electricity Distribution Code review - customer service standards draft decision,* 7 May 2020.

204 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp.157–158.

205 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp.157–158.

206 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 161–162.

The Customer Forum was supportive of these projects. It believed that the high level of customer interest in solar installation, and the demand this places on the network, requires active investigation (beyond the current DER expenditure) about how to address future constraints that impacts customers.[207] Through negotiation with the Customer Forum, AusNet Services agreed to apply the following financial arrangements on the proposed expenditure:[208]

- the innovation expenditure will only be available for the 2021–26 regulatory control period.
- a 'use it or lose it' arrangement will apply, which means that AusNet Services will return any unspent funds from the 2021–26 regulatory control period to customers.[209]
- the Capital Expenditure Sharing Scheme (CESS) and the EBSS will not apply to the innovation expenditure.

At the time of AusNet Services' engagement with the Customer Forum on the proposed innovation expenditure, AER staff noted that we considered it prudent to consider evidence that customers value— and are willing to pay for— the proposed innovations, to inform negotiations.[210] AusNet Services' qualitative customer research tested customers' willingness to pay for an increase in expenditure capped at $7.5 million ($2020–21) for projects broadly related to innovation. However, it did not test customers' willingness to pay for the specific projects contained in the proposal[211] and was limited in number of customers surveyed.[212] While AusNet Services' testing did not look for a firm willingness to pay outcome for each project[213] we note the results were supportive of the proposed innovation expenditure.

We have included the proposed innovation expenditure in our alternative estimate of total opex on the basis that:

- it is supported by the Customer Forum[214] and is consistent with the conditions negotiated with the Customer Forum regarding financial arrangements, number of

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207 AusNet Services, *Customer Forum Final Engagement Report,* January 2020, p. 35.

208 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 159.

209 The 'use it or lose it' provision would apply to the total innovation forecast over the 5-year period, rather than operating on an annual basis, to allow smoothing of expenditure from year to year.

210 AER staff*, New Reg: Towards Consumer Centric Energy Network Regulation, AusNet Trial - AER Staff Guidance Note 9,* March 2019, p. 20.

211 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp.169–170; AusNet Services, *2021–26 Regulatory Proposal –Supporting document – Appendix 3E - JWS Research - Community Perception Towards Solar and Innovation Propositions*, September 2019, p.12

212 AusNet Services' qualitative research surveyed a total of 42 to 50 customers in the form of either face to face focus groups or online group discussions. AusNet Services, *2021–26 Regulatory Proposal –Supporting document – Appendix 3E - JWS Research - Community Perception Towards Solar and Innovation Propositions*, September 2019, p. 6.

213 AusNet Services, *Information request 015,* 12 May 2020, question 1(iii), p. 6

214 AusNet Services, *Customer Forum Final Engagement Report,* January 2020, p. 35.

projects and total expenditure sought to undertake these projects.[215] There was also support through AusNet Services' qualitative customer research and from the CCP17 in response to AusNet Services initial proposal.[216]

- AusNet Services classified this proposal as a category specific forecast,[217] which ensures the proposed step change does not become recurrent expenditure.

6.4.6.3 Debt raising costs

We have included debt raising cost of $11.3 million ($2020–21) in our alternative estimate. This is $0.5 million ($2020–21) less than the $11.8 million forecast ($2020–21) proposed by AusNet Services.[218]

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 to the draft decision.

6.4.7 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'.[219]

We attach different weight to different factors when making our decision to best achieve the NEO. This approach has been summarised by the AEMC as follows:[220]

> 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 6.18 summarises how we have taken the opex factors into account in making our draft decision.

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215 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, pp. 158–159.

216 AusNet Services, *2021–26 Regulatory Proposal –Supporting document – Appendix 3E - JWS Research - Community Perception Towards Solar and Innovation Propositions*, September 2019; CCP17, *Advice to the AER on the Victorian Electricity Distributors' Regulatory Proposals for the Regulatory Determination 2021–26*, 10 June 2020, p. 49.

217 AusNet Services, *Information response 018* – Q8a, 18 June 2020, p. 7.

218 AusNet Services, *EDPR 2022–26 Regulatory Proposal Part III*, 31 January 2020, p. 148.

219 NER, cl. 6.5.6(e).

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

Table 6.18 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 opex 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 opex that would be incurred by an efficient provider during the forecast period, necessarily provides a different focus. This is because this second element requires us to construct the benchmark opex that would be incurred by a hypothetically 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 AusNet Services' 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 AusNet Services' 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.[221] Based on the information provided by AusNet Services in its proposal and the CCP17's advice, we consider AusNet Services consulted with consumers in developing its proposal. We have examined the issues raised by consumers in developing our alternative estimate of opex. Section 1.4 of the Overview attachment details how we have taken into account customer engagement outcomes in our consideration of the proposal.
The relative prices of capital and operating inputs	We have considered capex/opex trade-offs in considering AusNet Services' proposed step changes. For instance we considered whether a step change for IT cloud is an efficient capex/opex trade-off. We considered whether there are capex and opex solutions in considering this step change. 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 capex/opex trade-offs in considering AusNet Services' proposed step changes. Some of our assessment techniques examine opex in isolation – either at the total level or by category. Other techniques consider service

[221] AEMC, *Rule Determination*, 29 November 2012, pp. 101, 115.

Opex factor	Consideration
	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 policies 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 AusNet Services' opex in the 2015–20 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 AusNet Services' 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 draft decision.
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. AusNet Services 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 AusNet Services of any other opex factor.

Source: AER analysis.

A Confidential Appendix - Cyber security step change

Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
capex	capital expenditure
CCP17	Consumer Challenge Panel, sub-panel 17
DMIAM	demand management innovation allowance mechanism
Distributor/DNSP	distribution network service provider
EBSS	efficiency benefit sharing scheme
ECA	Energy Consumers Australia
ESC	Essential Services Commission
ESV	Energy Safe Victoria
GSL	Guaranteed Service Level
MPFP	multilateral total factor productivity
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
OEF	operating environment factors
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
REFCL	Rapid Earth Fault Current Limiter
repex	replacement expenditure
RIN	regulatory information notice