FINAL DECISION

TasNetworks
Distribution Determination
2019 to 2024

Attachment 6
Operating expenditure

April 2019

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's final decision on TasNetworks' 2019–24 distribution determination. It should be read with all other parts of the final decision.

The final decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

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Attachment 13 – Control mechanisms

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Attachment 19 – Tariff structure statement

Attachment B – Negotiating framework

Contents

Shortened forms

Shortened form	Extended form
ACS	alternative control services
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CCP 13	Consumer Challenge Panel, sub-panel 13
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
DMIAM	demand management innovation allowance (mechanism)
DMIS	demand management incentive scheme
distributor	distribution network service provider
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider

Shortened form	Extended form
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SCS	standard control services
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

6 Operating expenditure

Operating expenditure (opex) refers to operating, maintenance and other non-capital expenses. Forecast opex for standard control services is one of the building blocks that make up a service provider's total revenue requirement.

This attachment outlines how we assessed TasNetworks' proposed total opex forecast.

6.1 Final decision

We accept TasNetworks' distribution total opex forecast of $446.8 million ($2018–19) for the 2019–24 regulatory control period.[1] We have tested TasNetworks' revised proposal by comparing it to our alternative estimate of total opex forecast of $448.4 million ($2018–19), which is not materially different from TasNetworks' proposal. We are therefore satisfied that TasNetworks' revised proposal for the total opex forecast reasonably reflects the opex criteria.[2] On this basis we accept TasNetworks' distribution total opex forecast.

Table 6-1 shows our alternative estimate compared to TasNetworks' revised proposal. This is also reflected in Figure 6-1 which shows TasNetworks' opex forecast (both initial and revised proposals), its historical reported opex, our previous regulatory decisions and our draft and final decision forecasts.

Table 6-1 Our alternative estimate of distribution forecast opex compared to TasNetworks' proposal ($million, 2018–19)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
TasNetworks' revised proposal for opex	90.7	90.3	89.5	88.6	87.7	446.8
AER alternative estimate	89.6	89.6	89.7	89.7	89.8	448.4
Difference	-1.2	-0.7	0.2	1.1	2.1	1.5

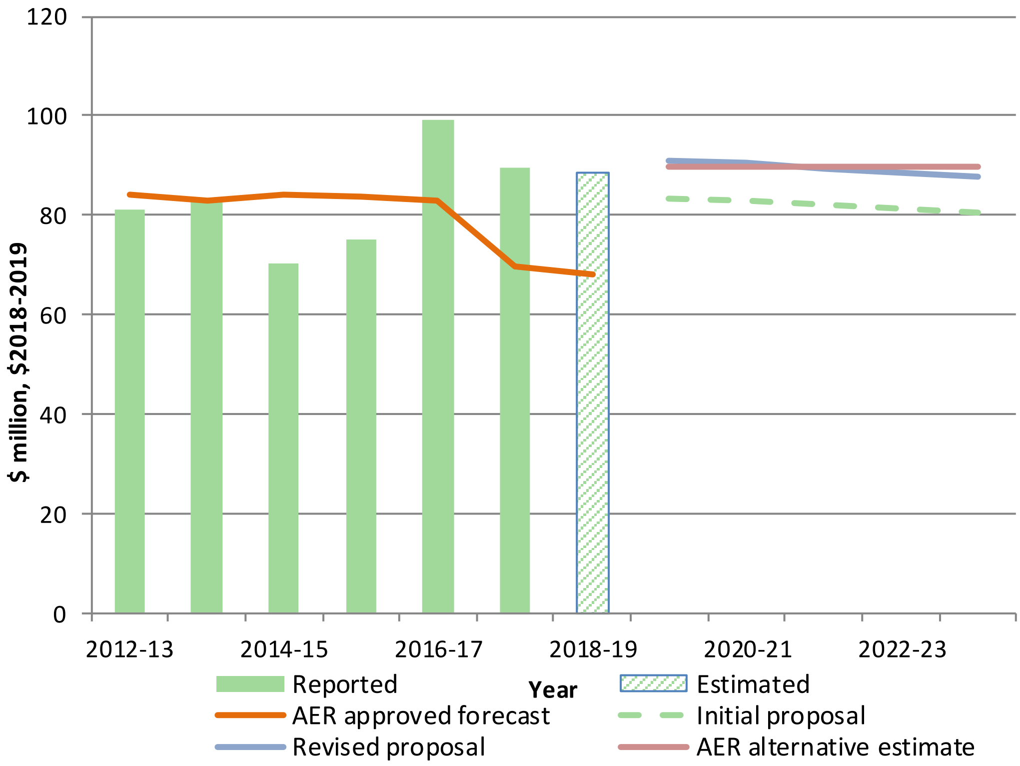
Source: TasNetworks, *Revenue proposal, PTRM*, 29 November 2018; AER analysis.

Note: Includes debt raising costs. Numbers may not add up to total due to rounding.

1 Including debt raising costs; TasNetworks, *Regulatory proposal, PTRM*, 29 November 2018·.

2 NER, cl. 6.5.6(c).

Figure 6-1 Our final decision - forecast distribution opex ($million, 2018–19)



Source: TasNetworks*, Regulatory accounts 2009–10 to 2017–18*; TasNetworks, *Economic benchmarking RIN response 2012-13 to 2017-18,* TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; TasNetworks, *Post Tax Revenue Model (PTRM) PTRM Distribution*, 29 November 2018; AER analysis.

Note: Includes debt raising costs.

Our decision to accept TasNetworks' revised total opex proposal of $446.8 million ($2018–19) reflects there is no material difference between the revised proposal and our alternative estimate of $448.4 million ($2018–19). We developed our alternative estimate using the same approach as in the draft decision, updated with the latest information. Our alternative estimate:

- uses the higher base year opex proposed by TasNetworks, reflecting actual costs in 2017-18, updated to take into account the RBA's lower CPI forecast from February 2019. We have relied on the revealed opex because our most recent benchmarking results indicate that TasNetworks is operating relatively efficiently. We note that TasNetworks will be penalised under the Efficiency Benefit Sharing Scheme for its higher-than-allowed opex in 2017–18.
- updates price growth to reflect Deloitte Access Economics' wage price index forecasts from February 2019, averaged with the forecasts proposed by TasNetworks in its initial proposal from Jacobs, to forecast labour price growth

- updates output growth to reflect the average output weights from the four benchmarking models included in our 2017 Annual Benchmarking Report (consistent with the draft decision) for the period 2006–17
- incorporates the 0.5 per cent per year opex productivity growth forecast established in our recent review, as compared to the $19.5 million ($2018–19) TasNetworks included in its revised proposal.[3] We consider this reflects the opex productivity that can be achieved by a prudent electricity distributor acting efficiently under business-as-usual conditions
- includes $6.2 million ($2018–19) for step changes reflecting our view of the prudent and efficient costs required to meet new obligations and for the proposed demand management project. In particular:
    - an amount of $4.5 million ($2018–19) for damage to assets (emergency recoverable works) over the next regulatory control period reflecting the average annual net costs TasNetworks has incurred over the period 2015-16 to 2017-18
    - an amount of $0.8 million ($2018–19) to meet the new ring-fencing requirements, reflecting our view of efficient annual costs of $0.2 million ($2018–19)
    - an amount of $0.9 million ($2018–19) reflecting the efficient costs for a demand management project that will enable TasNetworks to defer the augmentation of an aging transformer.

We have considered the issues raised in submissions in establishing our alternative opex estimate. Both CCP13 and the Tasmanian Small Business Council encouraged us to undertake a thorough examination of the revised opex forecasts for the final decision given the changes and rebalancing between transmission and distribution opex.[4] They also supported the application of an opex productivity growth forecast.

6.2 TasNetworks' revised proposal

In its revised proposal, TasNetworks forecasts opex of $446.8 million ($2018–19)[5], which is 0.9 per cent higher than TasNetworks' actual and estimated opex for the 2017–19 regulatory control period calculated on an annual average basis. TasNetworks' revised opex forecast is 8.9 per cent higher than its initial regulatory proposal and 7.9 per cent higher than our alternative estimate in the draft decision.

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3 We estimate the $19.5 million is equivalent to annual productivity growth of 1.6 per cent. TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019 - 2024, Regulatory Control Period 1 July 2019 to 30 June 2024*, 29 November 2018, p. 77.

4 CCP, *Advice to the Australian Energy Regulator (AER), Consumer Challenge Panel Sub-Panel 13, Response to TasNetworks revised proposal for a revenue reset for the 2019-24 regulatory period, Sub-Panel* 13, 11 January 2019, p.5; Tasmanian Small Business Council, *TasNetworks Transmission and Distribution Determination 2019-20 to 2023-24, Response to the AER's Draft Decision and TasNetworks' Revised Proposals*, 14 January 2019, pp.11–12.

5 Including debt raising costs; TasNetworks, *Regulatory proposal, PTRM*, 29 November 2018.

Table 6-2 sets out TasNetworks forecast opex for the 2019-24 regulatory control period.

Table 6-2 TasNetworks' proposed opex ($million, 2018–19)

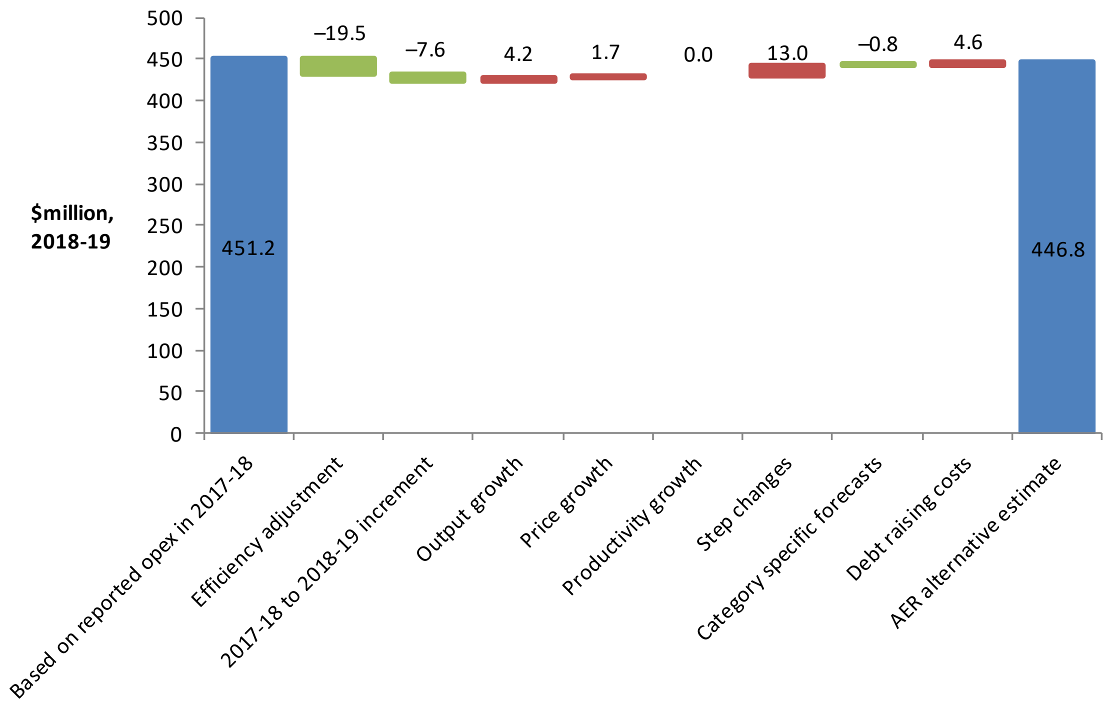
	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Opex excluding category specific forecasts	82.1	81.6	80.7	79.9	79.0	403.3
Debt raising costs	0.9	0.9	0.9	0.9	1.0	4.6
Guaranteed Service Level payments	3.1	3.1	3.1	3.1	3.1	15.7
Electrical safety inspection payments	4.0	4.0	4.0	4.0	4.0	19.9
National Energy Market levy payments	0.7	0.7	0.7	0.7	0.7	3.3
Total opex	90.7	90.3	89.5	88.6	87.7	446.8

Source: TasNetworks, *Post Tax Revenue Model (PTRM) PTRM Distribution*, 29 November 2018; TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018.

Note: Includes debt raising costs. Numbers may not add up to total due to rounding.

Figure 6-2 provides a breakdown of TasNetworks revised opex forecast into key components.

Figure 6-2 TasNetworks' opex forecast ($million, 2018–19)



Source: TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

TasNetworks stated that it adopted our base–step–trend approach to forecast opex for the 2019–24 regulatory control period and that its revised proposal includes base year opex reflecting actuals rather than estimates.[6] The key elements of TasNetworks' proposal resulting in forecast total opex of $446.8 ($2018–19) million are:

- TasNetworks used its reported opex in 2017–18 to derive a base opex of $451.2 million ($2018–19).[7] This is 9.9 per cent higher than base opex in the initial regulatory proposal
- TasNetworks applied the final year formula in our expenditure forecast assessment guideline to derive a final year increment of $7.6 million ($2018– 19)[8]
- TasNetworks then trended forward its base opex to account for:
    - forecast output growth, driven primarily by increased customer numbers, circuit line length and maximum demand, all of which can increase the cost to TasNetworks of operating its network ($4.2 million, $2018–19)[9]
    - expected increases in real input prices, including forecast increases in labour costs and an increase in line with CPI for non-labour costs ($1.7 million, $2018–19)[10]
    - included an efficiency adjustment of $19.5 million ($2018–19), which we calculate is equivalent to annual opex productivity growth of 1.6 per cent.[11]
- TasNetworks included four step changes in its opex forecast, consistent with its initial proposal totalling $13.0 million[12] ($2018–19):
    - $0.9 million ($2018–19, $0.2 million per annum) for damage to assets, also known as emergency recoverable works
    - $6.1 million ($2018–19, $1.2 million per annum) to meet new ring-fencing requirements
    - $5.0 million (($2018–19, $1.0 million per annum) to address compliance voltage issues arising from new obligations
    - $1.0 million ($2018–19, $0.2 million per year) in demand management costs to allow it to defer the augmentation of an aging transformer.

[6] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24*, 29 November 2018, pp. 62, 72.

[7] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, pp. 73, 79; TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

[8] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, pp. 73, 79; TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

[9] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24*, 29 November 2018, pp. 75, 79; TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis. We note that in its revised proposal TasNetworks appears to have incorrectly noted the amount for output growth ($1.7 million) which is price growth and vice versa.

[10] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, pp. 76, 79; TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

[11] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, pp. 76–79; AER analysis.

[12] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, pp. 73–74; AER analysis.

- TasNetworks included a net reduction of its category specific forecasts of $0.8 million ($2018–19) related to its guaranteed service level (GSL) payments, electrical safety levy, national energy market (NEM) levy[13]
- TasNetworks forecasted $4.6 million ($2018–19) of debt raising costs.[14] Debt raising costs are transaction costs incurred each time debt is raised or refinanced.

6.2.1 Stakeholder views

We received two submissions on TasNetworks' revised opex proposal from the AER's Consumer Challenge Panel (CCP 13) and the Tasmanian Small Business Council (TSBC). A summary of these submissions is provided in Table 6-3.

Table 6-3 Submissions on TasNetworks' revised opex proposal

Stakeholder	Issues	Description
CCP 13	Base opex efficiency and productivity	CCP 13 observed that there are material differences in TasNetworks revised proposal that appear to be driven by updating 2017–18 estimates to actuals.[15] It was of the view that the changes and rebalancing between transmission and distribution should trigger a revisit of the opex forecast for the final determination. CCP 13 also noted the AER's review in relation to the approach to forecasting opex productivity growth for electricity distributors and considered this would be relevant to TasNetworks ongoing efficiencies.
TSBC	Base opex efficiency, benchmarking and productivity	TSBC was concerned about the increase in TasNetworks' revised proposal for distribution opex, and considered TasNetworks should provide clear reasons for the increases that the AER should assess.[16] It noted that emergency field operations had increased by 116 per cent, with other increases justified as relating to higher bushfire risks. TSBC was also of the view that 2014–15 is more reflective of TasNetworks' underlying efficient distribution opex and should be used as the base year (as opposed to 2017–18 proposed by TasNetworks). TSBC considered benchmarking an important tool to help assess opex forecasts. It expressed disappointment with TasNetworks' distribution business benchmarking results, considering TasNetworks are lagging most other NEM distribution businesses and that opex is a major contributor, giving further cause for concern about its opex forecasts. TSBC supported the inclusion of an opex productivity growth forecast, but was of the view that the one per cent included in the AER's draft decision for the review of opex productivity growth was too low. TSBC noted the AER has consistently produced higher forecasts for

13 TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

14 TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019-24,* 29 November 2018, p. 78; AER analysis.

15 CCP, *Advice to the Australian Energy Regulator (AER), Consumer Challenge Panel Sub-Panel 13, Response to TasNetworks revised proposal for a revenue reset for the 2019-24 regulatory period*, Sub-Panel 13, 11 January 2019, pp. 6, 18.

16 Tasmanian Small Business Council, *TasNetworks Transmission and Distribution Determination 2019-20 to 2023-24, Response to the AER's Draft Decision and TasNetworks' Revised Proposals*, 14 January 2019, pp. 3, 11–12, 55–60.

Stakeholder	Issues	Description
		TasNetworks' opex using its opex forecasting model and stated that this is a surprising outcome and may be indicative of model shortcomings.

6.3 AER's assessment approach

Our role is to form a view about whether a business's forecast of total opex is reasonable. Specifically, we must form a view about whether a business's forecast of total opex 'reasonably reflects the opex criteria'. In doing so, we must have regard to each of the opex factors specified in the NER.

If we are satisfied the business's forecast reasonably reflects the opex criteria, we accept the forecast.[17] If we are not satisfied, we substitute an alternative estimate that we are satisfied reasonably reflects the opex criteria for the business's forecast.[18] In making this decision, we take into account the reasons for the difference between our alternative estimate and the business's proposal, and the materiality of the difference. Further, we consider interrelationships with the other building block components of our decision.[19]

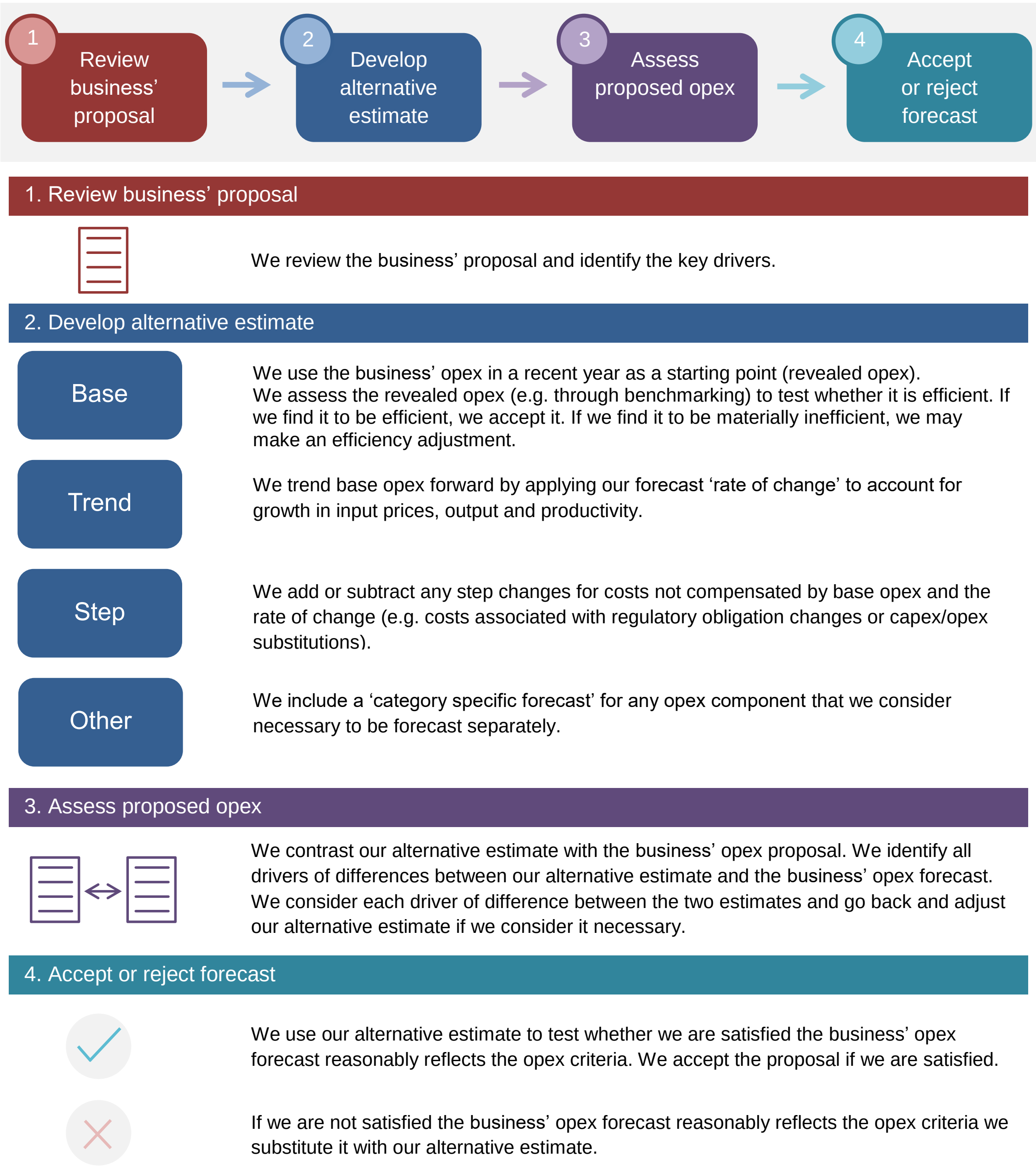
As set out in our draft decision in detail, we generally assess a business's forecast total opex using a 'base-step-trend' approach, as summarised in Figure 6-3.

[17] NER, cl. 6.5.6(c).

[18] NER, cll. 6.5.6(d) and 6.12.1(4)(ii).

[19] NEL, s. 16(1)(c).

Figure 6-3 Our opex assessment approach



6.3.1 Interrelationships

In assessing TasNetworks' total forecast opex we took into account other components of its proposal, including:

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

- the operation of the EBSS in the 2017–19 regulatory control period, which provided TasNetworks an incentive to reduce opex in the base year
- the impact of cost drivers that affect both forecast opex and forecast capex. For instance, forecast labour price growth affects forecast capex and our forecast price growth used to estimate the rate of change in opex
- the approach to assessing the rate of return, to ensure there is consistency between our determination of debt raising costs and the rate of return building block
- concerns of electricity consumers identified in the course of TasNetworks' engagement with consumers.

6.4 Reasons for final decision

Our final decision is to include TasNetworks total forecast opex of $446.8 million ($2018–19) in TasNetworks' revenue for the 2019–24 regulatory control period. We have tested TasNetworks' revised proposal by comparing it to our alternative estimate of the total opex forecast of $448.4 million ($2018–19), which is not materially different from (0.3 per cent higher than) TasNetworks' proposal. Therefore, we are satisfied that TasNetworks' proposed forecast reasonably reflects the opex criteria. On this basis we accept TasNetworks' distribution total opex forecast.

Table 6-4 presents the components of our alternative estimate compared to TasNetworks' revised proposal. While the components of our alternative estimate are different from TasNetworks', the differences largely offset each other. The key differences between our alternative estimate of total forecast opex and TasNetworks' revised proposal are:

- we have forecast opex productivity growth of 0.5 per cent per annum reflecting the outcome of our recent opex productivity growth forecast review.[20] In comparison, we estimate TasNetworks has incorporated, via its efficiency saving adjustment (see the second row in Table 6-4), an annual opex productivity growth forecast equivalent to 1.6 per cent. This means our alternative estimate for opex productivity growth is $13.5 million ($2018–19) higher than the revised proposal over the next regulatory control period
- we have included $6.2 million ($2018–19) for prudent and efficient step changes over the next regulatory control period. In comparison to TasNetworks' forecast of $13.0 million ($2018–19). This means our alternative estimate for step changes is $6.8 million ($2018–19) lower than TasNetworks' revised proposal over the next regulatory period.

[20] AER, *Final decision - Forecasting productivity growth for electricity distributors*, March 2019.

Table 6-4 Our alternative estimate of forecast opex compared to TasNetworks' revised proposal ($million, 2018–19)

	TasNetworks	Our alternative estimate	Difference
Base opex	451.2	445.9	-5.3
Efficiency savings	-19.5	0.0	19.5
Opex change 2017–18 to 2018–19	-7.6	-7.5	0.1
Output growth	4.2	3.9	-0.4
Price growth	1.7	2.1	0.4
Productivity growth	0.0	-6.0	-6.0
Step changes	13.0	6.2	-6.8
Category specific forecasts	-0.8	-0.8	0.0
Debt raising costs	4.6	4.5	-0.1
Total opex	**446.8**	**448.4**	**1.5**

Source: TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.

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

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

Consistent with our draft decision, we have relied on TasNetworks' reported opex in 2017–18 to forecast its opex over the 2019–24 regulatory control period, as proposed by TasNetworks.[21] As set out in more detail in our draft decision, this is because we consider that our preferred revealed cost approach is appropriate, given that with an ex ante revenue allowance and the EBSS, TasNetworks had the incentive to reduce costs, and our benchmarking results indicate that TasNetworks is operating relatively efficiently.[22]

Since the draft decision, our 2018 Annual Benchmarking Report has been released, which updates our benchmarking with an additional year (2016–17) of data. We note the slight decline in TasNetworks' opex efficiency scores since our draft decision where we examined its relative efficiency over the period 2006–17.[23] In the draft decision, we

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21 Our estimate of base opex in the first row of Table 6.4 differs to TasNetworks' proposed $451.2 million ($2018–19) because we have used updated CPI figures.

22 AER, *Draft Decision, TasNetworks Distribution Determination 2019 to 2024, Attachment 6 Operating Expenditure*, September 2018, p. 14.

23 This is likely to reflect the impact of the relatively high expenditure in 2016–17. In the 2018 Annual Benchmarking Report, we noted TasNetworks' comments that the increased opex had been necessary to address emerging risks

highlighted that under the Cobb-Douglas Stochastic Frontier Analysis (SFACD) econometric model, TasNetworks ranked fifth with an efficiency score of 0.75. While TasNetworks still ranks relatively highly (fifth of 13 distributors in the NEM) using either the SFACD econometric model or an average of our four econometric benchmarking models over the 2006–17 period,[24] its average efficiency score has reduced from 0.73 to 0.70. This compares to a benchmark comparison score of 0.75 which reflects the upper quartile of possible efficiency scores and is consistent with the comparison point we adopted in our November 2018 and April 2015 for the NSW distribution business decisions.[25]

In our 2018 Annual Benchmarking Report, we also examined efficiency scores over the 2012–17 period to enable us to understand the impact of the efficiency reforms and other changes in opex put in place by distribution businesses over the past six years. Using a shorter period gives greater weight to more recent changes. TasNetworks' average efficiency score across the five economic benchmarking models available over the 2012–17 period is 0.74, which is 4th highest of 13 distribution businesses.[26]

These efficiency scores exclude consideration of the operating environment factors (OEFs) relevant to TasNetworks' particular circumstances. In October 2018, we published a report from our consultants Sapere Research Group and Merz Consulting that reviewed material differences in operating environments among the distributors in the NEM. The report identified a limited number of OEFs that materially affect the costs of each distribution business in the NEM. The OEFs identified for TasNetworks were the extent of sub-transmission in its network (favourable), and taxes and levies (unfavourable). Our consultant calculated that TasNetworks requires 1.2 per cent more opex to run its network efficiently compared to the most efficient distributors in the NEM. [27] This is primarily due to the high taxes and levies it faces in Tasmania. This means that its efficiency score would be improved by 1.2 per cent if we were to account for the impact of these OEFs. That said, Sapere-Merz acknowledged that its analysis was preliminary and could be improved through better data. We intend to

on its distribution network, such as the bushfire risks posed by vegetation, especially in light of experiences interstate. It stated that as better information became available, it concluded that bushfire and asset related risks were higher than previously understood. TasNetworks also pointed to increases in uncontrollable expenditure, such as GSL payments and the associated costs towards emergency response resulting from major weather events. See AER, *2018 Annual Benchmarking Report*, November 2018, p. 22.

24 AER, *Annual benchmarking report, Electricity distribution network service providers*, November 2018, p. 32.

25 AER, *Draft Decision, Ausgrid Distribution determination 2014-19, Attachment 7 - Operating Expenditure*, November 2014, p. 18-20 and AER, *Draft Decision, Ausgrid Distribution determination 2019-24, Attachment 6 - Operating Expenditure*, November 2018, pp. 21–33.

26 In the 2018 Annual Benchmarking Report we included the results of an additional econometric model — the Translog SFA model. Economic Insights originally considered this model in our initial benchmarking development program in 2013–14, but we did not implement it at the time. Economic Insights has recommended that this model is now suitable and is statistically robust over the 2012–17 dataset. AER, *2017 Annual benchmarking report, Electricity distribution network service providers*, November 2017, pp. 31–32.

27 Sapere-Merz, *Australian Energy Regulator, Independent review of Operating Environment Factors used to adjust efficient operating expenditure for economic benchmarking*, August 2018, p. 89.

consult further with the distribution industry to further refine the assessment and quantification of OEFs.

In light of this evidence, on balance we consider that TasNetworks remains relatively efficient (or within the bounds of not materially inefficient). However, a continuation of a declining trend in relation to TasNetworks' efficiency score over the 2019–24 regulatory control period would be of concern when assessing TasNetworks' efficiency in setting base opex for the following regulatory control period.

We note that TasNetworks' actual audited opex in base year 2017–18 is $8.1 million[28] ($2018–19) or 9.9 per cent higher than was estimated in TasNetworks' initial regulatory proposal and adopted in the draft decision. This is a significant increase. However, as a result TasNetworks will incur a larger negative EBSS carryover than estimated (on the basis of estimated 2017–18 opex) in the draft decision. In addition, we note the wider context that this increase in distribution base year opex is offset by a similar decrease in transmission base year ($8.9 million ($2018–19) relative to that estimated for the initial proposal).[29] In any event, if sustained, this increase in base year opex will potentially be relevant for our efficiency assessment for the following regulatory control period.

As outlined in section 6.2.1, stakeholders encouraged us to examine base opex as a result of the increase in actual opex in 2017–18, noting in particular the increase in the emergency field operation and maintenance and vegetation management cost categories. They suggested we undertake a thorough assessment of these changes.

In relation to emergency field operation costs, actual opex in 2017–18 increased significantly to $19.5 million ($2018–19) compared to TasNetworks' initial proposal of $9.5 million ($2018–19). However, this cost is broadly consistent with average costs over the previous five years of $19.4 million ($2018–19) and in our view likely to reflect recurrent costs.

Actual maintenance and vegetation management opex in 2017–18 of $40.4 million ($2018–19) is slightly higher than forecast in TasNetworks' initial proposal ($38.2 million ($2018–19)). Actual costs in 2016–17 were $45.6 million ($2018–19), but even taking this into account, actual maintenance and vegetation management costs in 2017–18 are significantly higher than average costs over the five years from 2012–13 to 2016–17 of $30.9 million ($2018–19).

TasNetworks has previously explained that this increase was necessary to address emerging bushfire risks posed by vegetation, particularly in light of interstate experiences.[30] TasNetworks' Bushfire Risk Mitigation Plan also shows that over the five years from 2012–13 to 2016–17, vegetation inside and outside clearance spaces

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28 Removing the change in provisions.

29 See AER*, Final Decision, TasNetworks Transmission and Distribution Determination 2019-24 Overview*, April 2019, section 2.5 for more details in relation to transmission.

30 TasNetworks, *Tasmanian Transmission and Distribution Regulatory Revenue Proposals 2019-24*, 31 January 2018, p. 149.

made up, on average, 34.8 per cent of the cause of fires initiated by distribution assets.[31]

We acknowledge that addressing a level of bushfire risk is an important consideration in establishing a prudent and efficient level of capex and opex for the next regulatory control period. Given the critical nature of vegetation management opex in managing bushfire risk, combined with our view of the relative efficiency of TasNetworks' total opex, and the continuous incentives provided by the EBSS to incur efficient opex, we have not undertaken a detailed review of vegetation management opex in forming our alternative estimate.

The TSBC also raised the appropriateness of 2017–18 as a base year, maintaining its view in relation to the initial proposal that 2014–15 is more reflective of TasNetworks' underlying efficient distribution opex and should be used as the base year for forecasts.[32] TasNetworks' total opex has been relatively volatile over the last five years, and was at its lowest in 2014–15 and its highest in 2016–17. As set out above, we have used 2017–18 as the base year. We consider that while it is higher than the average over the previous five years, it is reasonably reflective of recurrent costs noting our views above in relation to the relative efficiency of base opex and our assessment of the changes in costs categories in 2017–18 between the initial and revised proposals.

6.4.2 Rate of change

Having determined an efficient starting point, or base opex, we trend it forward to account for the forecast growth in prices, output and productivity. We refer to this as the rate of change.[33]

TasNetworks has largely adopted our approach in the draft decision to forecasting the rate of change, particularly for price and output growth. We have forecast an average annual rate of change of 0.03 per cent, taking into account annual opex productivity growth of 0.5 per cent. We estimate that TasNetworks forecast an average annual rate of change of -1.1 per cent over the next regulatory control period.[34]

The reasons for our forecast, and the difference compared to TasNetworks' forecast, are set out below.

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31 TasNetworks, *Bushfire Risk Mitigation Plan, R303735, Version 7.0*, November 2018, pp. 27–28.

32 Tasmanian Small Business Council, *TasNetworks Transmission and Distribution Determination 2019–20 to 2023-24, Response to the AER's Draft Decision and TasNetworks' Revised Proposals,* January 2019, pp. 12, 57.

33 AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, pp. 22–24.

34 We have estimated this because in its opex model TasNetworks does not include a forecast productivity change, but rather includes targeted efficiency savings of $19.5 million, which in its revised proposal it states are productivity savings. See TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019-24,* 29 November 2018, p. 76.

6.4.2.1 Forecast price growth

We have forecast real average annual price growth of 0.21 per cent in developing our alternative opex forecast. This increased our estimate of total opex by $0.4 million ($2018–19). It compares to TasNetworks' proposed average annual price growth of 0.18 per cent.[35]

Our 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 average growth in the wage price index (WPI) for the Tasmanian utilities industry forecast by Deloitte Access Economics (DAE) and TasNetworks' consultant, Jacobs[36]
- to forecast non-labour price growth applied the forecast growth in CPI.

We have applied the updated weights consistent with our 2017 Annual Benchmarking Report to account for the proportion of opex that is labour and the proportion that is non-labour (59.7:40.3).[37]

TasNetworks also used the above approach[38] with the only difference being that we have used updated WPI forecasts from Deloitte Access Economics, along with updated CPI forecasts, compared to the draft decision.

6.4.2.2 Forecast output growth

We have included forecast average annual output growth of 0.32 per cent in our alternative opex estimate. This reduced our alternative estimate of total opex by $0.4 million ($2018–19). It compares to TasNetworks' proposed average annual output growth of 0.34 per cent.[39]

For the purpose of our final decision, we have updated the weights we use in forecasting output growth, derived from the same benchmarking models presented in our 2017 Annual Benchmarking Report but updated with 2016–17 data.[40]

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35 TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018.

36 Deloitte Access Economics, *Labour Price Growth Forecasts*, *Prepared for the Australian Energy Regulator*, 27 March 2019, p. 46; Jacobs, *Labour Costs Escalation Report, Tasmanian Networks Pty Ltd, Final Report*, 25 October 2017, p. 13.

37 We applied Economic Insights' benchmark opex price weightings for labour and non-labour as reflected in our 2017 *Annual benchmarking report*. For more detail, see: Economic Insights, *Economic benchmarking results for the Australian Energy Regulator's 2017 DNSP benchmarking report*, 31 October 2017, p. 2.

38 TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, p. 76 and TasNetworks, *Distribution Operating Expenditure Model*, 31 January 2018.

39 TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, p. 75 and TasNetworks, TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018.

40 AER, *2017 Annual benchmarking report - Electricity distribution network service providers*, November 2017.

In our draft decision, we changed our approach in estimating output growth weights by using four benchmarking models, rather than simply the SFACD model we used in our previous decisions.[41]

Since our draft decision, we have published our 2018 Annual Benchmarking Report, presenting the four benchmarking models we used in our draft decision for the 2012–17 period.[42] We have also presented the results of an additional benchmarking model for the first time, the Translog Stochastic Frontier Analysis for the 2012–17 period.[43] This represents an alternative approach to forecasting average output growth weights by using all five benchmarking models for the 2012–17 period.

In its revised proposal, TasNetworks adopted our draft decision approach of using the four benchmarking models to estimate output growth weights and used the weights derived from the 2017 Annual Benchmarking Report.[44] It noted that our new approach has merit and that we intended to update the weights in the final decision.

For consistency, we have relied on the same benchmarking models as in our draft decision, but updated with 2016–17 data. While we have had regard to the results of the most recent annual benchmarking report, we have not relied on the additional Translog Stochastic Frontier Analysis model or the 2012–17 data set to estimate output growth weights.[45]

Table 6-5 shows the output specification and weights from each model as reflected in the 2017 Annual Benchmarking Report.

Table 6-5 Outputs specification and weights derived from economic benchmarking models for 2006–17 (per cent)

Output	MPFP	SFA CD	LSE CD	LSE TLG
Customer numbers	31.00	70.94	68.53	57.32
Circuit length	29.00	12.62	10.74	11.33
Ratcheted maximum demand	28.00	16.43	20.72	31.36
Energy throughput	12.00			

41 The four benchmarking models are the SFACD, the Cobb Douglas Least Squares Econometrics, the Translog Least Squares Econometrics and the Opex Multilateral Partial Factor Productivity analysis.

42 Whilst not explicitly presented in the 2018 Annual Benchmarking Report, the benchmarking results of the four models we used in our draft decision for the 2006–17 period were contained in the supporting data files of the benchmarking report.

43 AER, *2018 Annual benchmarking report - Electricity distribution network service providers*, November 2018.

44 TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019-24,* 29 November 2018, p. 75 and TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018.

45 We must have regard to the most recent annual benchmarking report that has been published under the NER. It is an opex factor.

Source: Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2018 DNSP Benchmarking Report,* November 2018; AER analysis

The differences in the output growth weights adopted in TasNetworks revised opex proposal and our alternative estimate are negligible and do not contribute to a material difference in our opex forecasts.

6.4.2.3 Forecast productivity growth

We have included a productivity growth forecast of 0.5 per cent in our alternative estimate. As foreshadowed in our draft decision, we have undertaken an industry wide consultation on our opex productivity growth forecast review.[46] We have taken the outcome of this review into consideration when deriving our alternative estimate. The 0.5 per cent per year opex productivity forecast 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. It is not intended to capture the inefficiencies in the costs of an individual distributor (these are a part of our base year assessment outlined above).

In our final decision of the opex productivity growth forecast review, we set out the analysis and evidence we have relied on to forecasting productivity growth.[47] We considered a productivity growth forecast of 0.5 per cent per year was a reasonable forecast of the productivity growth that could be achieved by a prudent electricity distributor acting efficiently under business-as-usual conditions and should be adopted in our electricity distribution determinations going forward.

In its revised proposal TasNetworks noted the inclusion of productivity savings of $19.5 million ($2018–19) over the 2019–24 regulatory control period (a slight increase from the $19.2 million ($2018–19) savings included in the initial regulatory proposal).[48] It stated that this results in savings exceeding the 1 per cent per annum the AER proposed in the draft decision for the opex productivity growth review.

We have included the opex productivity growth forecast of 0.5 per cent per year in our alternative estimate. Taking into account the $19.5 million ($2018–19) efficiency savings TasNetworks included in its revised proposal as productivity savings, which we estimate is equivalent to annual opex productivity growth of 1.6 per cent, our alternative estimate is $13.5 million ($2018–19) higher than the revised proposal.

46 AER, *Draft Decision, TasNetworks Distribution Determination 2019 to 2024 Attachment 6 Operating Expenditure,* September 2018, p. 17.

47 AER, *Final decision - Forecasting productivity growth for electricity distributors*, March 2019.

48 TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019-24,* 29 November 2018, pp. 76–77.

CCP13 and TSBC supported the application of an opex productivity growth forecast.[49] TSBC considered that the one per cent per year included in the AER's draft decision for the review of opex productivity growth was too low. Our final decision for the opex productivity growth review sets out the evidence and basis for our 0.5 per cent forecast, including why we considered this represents a reasonable forecast of the opex productivity growth that could be achieved by a prudent electricity distributor.

6.4.3 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 Guideline, we will include a step change if efficient base opex and the rate of change in opex of an efficient service provider do not already include the proposed cost.[50]

In its revised proposal, TasNetworks proposed the same four step changes with the same amounts as in its initial proposal. As shown in Table 6-6, these total $13.0 million ($2018–19), or 2.9 per cent of its proposed total opex forecast.[51] We have included $6.2 million ($2018–19) for step changes in our alternative estimate as also shown in Table 6-6. The following sections set out the reasons for our alternative estimates.

Table 6-6 Step changes - proposed and alternative estimate over the 2019-24 regulatory control period ($million, 2018–19)

Step change	TasNetworks proposed	AER alternative estimate	Difference
Damage to assets	0.9	4.5	3.5
Ring-fencing costs	6.1	0.8	-5.2
Compliance voltage issues	5.0	0.0	-5.0
Capex/opex trade-off (DMIS)	1.0	0.9	-0.1
Total	13.0	6.2	-6.8

Source: TasNetworks, *Distribution Operating Expenditure Model*, 29 November 2018; AER analysis.
Note: Numbers may not add up to total due to rounding.

We did not include an allowance for the proposed step changes in our draft decision as TasNetworks' proposed total opex was lower than our alternative estimate, even when the proposed step changes were not included. Consequently we did not form, and did

[49] CCP, *Advice to the Australian Energy Regulator (AER), Consumer Challenge Panel Sub-Panel 13, Response to TasNetworks revised proposal for a revenue reset for the 2019-24 regulatory period, Sub-Panel 13*, 11 January 2019, pp. 6, 18 and Tasmanian Small Business Council, *TasNetworks Transmission and Distribution Determination 2019–20 to 2023-24, Response to the AER's Draft Decision and TasNetworks' Revised Proposals,* January 2019, pp. 3, 11-12, 55-60.

[50] AER, *Expenditure forecast assessment guideline for electricity distribution*, November 2013, p. 24.

[51] TasNetworks, *Tasmanian Transmission and Distribution Revised Proposals 2019 - 2024*, *Regulatory Control Period 1 July 2019 to 30 June 2024,* 29 November 2018, pp. 73-74.

not need to form, a view on whether these step changes were required since it did not affect our decision to accept TasNetworks' total opex forecast.[52] However, with the higher actual base year opex in the revised proposal, and application of our industry-wide opex productivity growth forecast as discussed above, it became evident that our alternative estimate of total opex without an amount for step changes would potentially be below proposed total opex. This meant we needed to undertake an assessment of the proposed step changes for the final decision.

6.4.3.1 Damage to assets

As in its initial proposal, TasNetworks proposed an amount of $0.9 million ($2018–19) over the next regulatory control period for forecast costs for a change in service classification in relation to third party damage to assets, also known as emergency recoverable works (ERW).[53] ERW are a distributor's emergency work to repair damage following a person's act or omission, for which that person is liable (for example, repairs to a power pole following a motor vehicle accident).

Given that these services are provided in connection with a distribution system, we consider they are a part of distribution services. However, until recently, we did not “classify” this service in the Framework and Approach (F&A), treating it as an unregulated distribution service. [54] This is because the cost of these works may be recovered through other avenues (e.g. under common law). That is, the distributor can seek payment of their costs to fix the network from the parties responsible for causing the damage, through the courts if necessary. However, following the introduction of our ring-fencing guideline, we had cause to consider the classification of this service. As an unregulated distribution service, it would be subject to ring-fencing which could increase the cost of these activities. We are of the view that these services should be classified as direct control.

Our intention in making the classification change to ERW costs, as outlined in the TasNetworks F&A, was that the reclassification would apply only to recovered ERW costs and so have zero net impact on network revenues and costs to consumers.

For this decision only, where TasNetworks has adopted a different interpretation of the F&A to that intended, and we believe this was not an unreasonable misinterpretation, and given that TasNetworks has verified that unrecovered ERW costs are not included in its historical opex, we have accepted the case for this step change. The F&A wording on the ERW reclassification has been updated in subsequent F&As to make clear that the change applies to recovered ERW costs.[55]

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[52] AER, *Draft Decision, TasNetworks Distribution Determination 2019 to 2024, Attachment 6 Operating Expenditure*, September 2018, pp. 22.

[53] TasNetworks, *Tasmanian Transmission and Distribution Revenue Proposals, 2019-24*, 31 January 2018, p. 153.

[54] AER, *Preliminary framework and approach, TasNetworks electricity transmission and distribution, Regulatory control period commencing 1 July 2019*, March 2017, p. 22.

[55] AER, *Final framework and approach, SA Power Networks, Regulatory control period commencing 1 July 2020*, July 2018, pp. 23–24.

As noted above, in response to an information request, TasNetworks clarified that the proposed amount in its step change of $0.9 million ($2018–19) relates to *net* ERW, i.e. the forecast unrecovered component of its ERW costs.[56] TasNetworks also confirmed that these costs were removed from the base year that was used to forecast opex for the current regulatory control period.[57]

TasNetworks also provided further information on historical ERW costs and revenues over the period 2015–16 to 2017–18. We have used a period-average of unrecovered ERW costs (revenues minus costs) to develop our alternative estimate of the efficient costs for this step change. We consider this represents an efficient and recurrent amount for forecasting purposes as TasNetworks faced the incentive during the current regulatory control period to recover ERW costs from third parties, and the use of averaging smooths out year-to-year fluctuations (particularly as this cost was not subject to an EBSS).

On this basis the average annual net (unrecovered) ERW costs over the three years of available data (2015–16 to 2017–18) is $0.9 million ($2018–19). We have included this amount annually, or $4.5 million ($2018–19) over the next regulatory control period, in our alternative estimate of the costs of this step change.

6.4.3.2 Ring-fencing costs

In line with its initial proposal, TasNetworks submitted that the implementation of the AER's ring-fencing guideline will impose additional opex on its distribution business, and that these costs are an unavoidable consequence of a regulatory change. It stated that only costs incremental to ring-fencing costs incurred in the 2017–18 base year are included in the proposed amount for this step change.[58]

In response to our information request, TasNetworks further specified that it forecasts additional recurrent costs in relation to:

- Compliance auditing
- Ongoing training of staff and contractors
- Ongoing compliance monitoring and reporting
- Separate accounting obligations and controls.[59]

TasNetworks did not provide a significant amount of detail on the nature of these activities, including evidence to support them being incremental costs relative to business-as-usual. However, we accept that ongoing costs additional to those in the base year will need to be incurred as a result of a regulatory change, namely the

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56 TasNetworks, *Response to Q3 of IR39*, 4 January, 2019, p. 13.

57 TasNetworks, *Response to Q3 of IR39*, 4 January, 2019, p. 13.

58 TasNetworks, *Tasmanian Transmission Revenue and Distribution Revenue Proposal*, 31 January 2018, p. 153.

59 TasNetworks, *Response to Q1 of IR39*, 4 January 2019, p. 4 and TasNetworks, *Response to Q1 of IR39 supplementary response*, 21 January, 2019, p. 2.

introduction of our ring-fencing guideline on 1 January 2018.[60] Of the activities proposed by TasNetworks, we accept that compliance with our ring-fencing guideline will give rise to ongoing additional compliance auditing, staff and contractor training, and compliance monitoring and reporting. We have therefore incorporated the costs of these activities in our alternative estimate.

However, we have not incorporated the costs of separate accounting obligations and controls into our alternative estimate. TasNetworks submitted that these costs relate to:

- Separate company structure
- Reporting and analysis
- CAM implementation and Performance reporting requirements.
- Administration of services agreement.
- Other legal costs (as the current waivers expire).[61]

We do not consider sufficient justification was provided for their inclusion. This is due to the speculative nature of the requirements in relation to separate company structure, the lack of relevance to ring-fencing of the administration of services agreement, and the lack of evidence that reporting and analysis and CAM implementation costs are incremental to business-as-usual.

TasNetworks also provided a revised estimate of the costs of each of these activities.[62] On the basis of this information, and the exclusion of the costs in relation to separate accounting obligations, we have included an amount of $0.2 million ($2018–19) per annum, or $0.80 million ($2018–19) in total, in our alternative estimate of the costs of this step change.

6.4.3.3 Voltage management

TasNetworks submitted in its revised proposal that it requires a step change to meet compliance obligations relating to voltage on the network, largely resulting from increased uptake of distributed generation (solar PV).[63] The step change is for increased opex of $1 million ($2018–19) per annum, or $5 million ($2018–19) over the next regulatory control period.

In response to an information request, TasNetworks stated that this step change will be used to resolve the compliance issues expected to be found as advanced meter data is interrogated for the first time.[64] We do not accept that this step change is required and have not included it in our alternative estimate. We consider that the proposed program

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60 AER, *Ring-fencing Guideline Electricity Distribution Version 2, Explanatory Statement*, October 2017, p. 8.

61 TasNetworks, *Response to Q1 of IR39 supplementary response*, 21 January, 2019, p. 2.

62 TasNetworks, *Response to Q1 of IR39 supplementary response*, 21 January, 2019, p. 2.

63 TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019-24,* 29 November 2018, p. 73.

64 TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, p. 5.

of expenditure does not principally arise from new regulatory obligations, and consider that TasNetworks should be able to manage the cost of voltage issues within its existing, business-as-usual, opex allowance.

TasNetworks initially explained in response to an information request that "this unprecedented level of access to customer voltage data is the main driver behind the forecast step-change in [its] voltage compliance opex cost."[65] It subsequently noted that the trigger for the step change is a change in regulatory obligations.[66] Specifically, it stated that the Power of Choice metering competition rule change, brought into effect on 1 December 2017, required that all new revenue meters be smart meters, which have the capability to remotely monitor a customer's connection point voltage.[67] It submitted that the data from the new revenue meters will provide TasNetworks with evidence of any legacy problems with its distribution network[68], which would not be available in the opex base year (2017–18). TasNetworks explained that as more advanced revenue meter data becomes available with increased meter rollout, the location of voltage compliance issues will be confirmed and site-specific works will be required substantially above the level undertaken in the base year. TasNetworks would need to purchase advanced meter voltage data from the relevant Metering Coordinator, analyse the data, and undertake works to change identified transformer taps to optimal settings.

TasNetworks submitted that its recent experience with advanced meter technology has shown that the state regulator OTER has a high expectation that voltage compliance is to be achieved once issues have been identified.[69]

In relation to the materiality of costs, TasNetworks submitted that recent experience (in the form of trialling and sampling) with advanced meter data has demonstrated the level of opex that will be required to manage the voltage compliance of its network in an age of continuous monitoring.[70] It provided revised cost estimates ranging from $348 000 in 2019-20 to $511 000 in 2024-25, for a total of $2.1 million ($2018–19) over the next regulatory control period. The estimated cost of $2.1 million ($2018–19) is comprised of two components: data purchase costs ($0.6 million ($2018–19)) and tap-change costs ($1.5 million ($2018–19)).[71] This compares to the $1 million ($2018–19) per year, or $5 million ($2018–19) over the next regulatory control period, included in TasNetworks revised proposal.

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65 TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, p. 5.

66 TasNetworks, *Response to Q2 of IR39 supplementary response*, 21 January, 2019, p. 1.

67 TasNetworks cited Table S7.5.1.1 of the NER titled 'Minimum Services Specification – services and access parties' row (e) contains the specific clause requiring voltage monitoring to be made available.

68 TasNetworks stated that the data is expected to reveal that a significant proportion of the distribution transformers in its network have been set to a sub-optimal tap selection. The incorrect tap settings have occurred over time in the absence of continuous monitoring of the low voltage network.

69 TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, p. 6.

70 TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, pp. 5–7.

71 TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, p. 7.

On the basis of the information supplied by TasNetworks, we do not consider that the test for a step change has been met in this case. This is primarily because we do not consider that the proposed program of expenditure meets the principal hurdle for the acceptance of a step change, which is that a material increase in expenditure (above base year expenditure) has arisen from a new or changed regulatory obligation. We consider that the link between the new regulatory obligation and proposed expenditure is overly tenuous and not sufficiently established. We consider that voltage management is a business-as-usual activity for distribution networks. In support of this view, we make the following observations.

The regulatory obligation cited by TasNetworks as being one of the drivers is not new. The Power of Choice rule change has been in operation since December 2017, after a long period of consultation. The timing of a new regulatory obligation is a key element in our assessment of step changes.[72]

In any event, we do not consider that TasNetworks has established the link between the Power of Choice rule change and the need to address voltage management issues. Rather, we consider that the driver for the increase in costs is a potentially increased awareness of voltage compliance issues on its network. The step change component of our opex forecasting approach is not designed to capture costs of this nature.

We may accept a step change if a material 'step up' (or 'step down') in expenditure is required by a network business to prudently and efficiently comply with a new, binding regulatory obligation that is not reflected in the productivity growth forecast.[73] 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.

We consider that any cost impacts of voltage non-compliance are better characterised as business-as-usual along a continuum for TasNetworks, and other distributors, for which no dedicated extra allowance is required. In this light, we note that to increase its revenue requirement, 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.

In this context, TasNetworks is already funded for carrying out transformer tap change works and other activities that address network voltage. Addressing voltage non-

72 AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013, p. 11.

73 AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013, pp. 11, 24.

compliance is an ongoing activity for TasNetworks and all distributors. As with all network activities, there is the opportunity to bundle works and to also gain associated benefits from new activities. In the case of TasNetworks, voltage rectification works can also be bundled with other line activities to reduce costs. Voltage rectification works may also have other benefits such as improved network mapping, improved load management and a reduction in emergency management costs.

TasNetworks has also not demonstrated a clear declining trend in the quality of the service delivered to consumers. TasNetworks provided information that shows that complaints about under and over voltage have not materially changed in recent years.[74]

To the extent that voltage non-compliance instances increase, we consider that TasNetworks, as with any distribution business, is able to re-prioritise expenditure accordingly. In this light we note that all other distribution businesses in the NEM have been able to manage voltage issues without a dedicated increase in their opex allowances. For example, the smart meter roll-out in Victoria did not identify a major backlog of voltage non-compliance (at least not reported to the AER or proposed as a step change). This is particularly relevant to the TasNetworks step change request as the Victorian AMI program resulted in 100 per cent penetration of smart meters. Whereas the roll out of advanced metering in Tasmania is expected to occur a lot more gradually and should therefore have a lesser impact.

Illustrating the points above, we did not accept Energex's capex proposal in its 2015–20 reset to install transformer monitoring to identify the extent of voltage fluctuations across its network.[75] This was in the context of current and forecast solar PV penetration being among the highest in the NEM. Tasmania, by contrast, has the lowest current and forecast solar PV penetration in the NEM. This underlines our view that TasNetworks' voltage issues can be addressed within its existing opex allowance as a part of business-as-usual and are likely to be less material than other network businesses.

6.4.3.4 Capex/Opex trade-off (DMIS)

TasNetworks' revised proposal stated that it has identified a demand management project that will enable it to defer the augmentation of an aging transformer (approximately $6.0 million ($2018-19) in capex). As in its initial proposal, it proposed to recover the $1.0 million ($2018–19) of opex costs as a step change.[76]

We consider that TasNetworks has demonstrated both the existence of the need for this capex (augex), and that the proposed opex will enable a deferral of this capex that results in a lower overall cost to consumers. As discussed in our capex attachment

[74] TasNetworks, *Response to Q2 of IR39*, 4 January, 2019, p. 8.

[75] AER, *Final decision, Energex determination 2015-16 to 2019-20, Attachment 6 - Capital Expenditure*, October 2015, pp. 59–64.

[76] TasNetworks, *Tasmanian Transmission Revenue and Distribution Revenue Proposal*, 31 January 2018, p. 153.

(Attachment 5), we have assessed TasNetworks' overall forecasting approach for its augex projects, and found it to be reasonable. In this context, we can therefore be satisfied of the augmentation need in question.

We also consider that TasNetworks has demonstrated that the proposed opex option is the most efficient option to address the project's aims. In response to our information request, TasNetworks provided information which showed that the chosen opex option is the lowest cost out of the options it considered.[77] This cost of $0.9 million ($2018–19) over the next regulatory control period was slightly lower than TasNetworks included in its revised proposal.

We consider that TasNetworks has adequately demonstrated the augex need that will be deferred as a result of the proposed opex, and shown that the level of proposed demand management opex is efficient. We accept this step change and include the revised forecast cost of $0.9 million in our alternative estimate.

6.4.4 Category specific forecasts

We have included four expenditure items in developing our alternative estimate of forecast total opex which are not forecast using the base-step-trend approach. These are debt raising costs, GSL payments, an electrical safety inspection (ESI) levy and a NEM levy.

6.4.4.1 Debt raising costs

We have included debt raising cost of $4.5 million ($2018–19) in our alternative opex forecast.

Debt raising costs are transaction costs incurred each time a business raises or refinances debt. Our preferred 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 discuss this in Attachment 3 to the draft decision.

6.4.4.2 GSL payments

Following past practice, for our alternative estimate we have forecast GSL payments as the average of GSL payments made by TasNetworks over the most recent five years for which we have data.[78] This is consistent with the approach adopted by TasNetworks in its proposal. We note the GSL revenue and incentives provided under this approach is almost identical to 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.

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77 TasNetworks, *Response to Q4 of IR39*, 4 January 2019, pp. 14–15.

78 The five years are 2013–14 to 2017–18.

6.4.4.3 ESI and NEM levy

TasNetworks pays an ESI levy and a NEM levy to the Tasmanian government. Following past practice, for our alternative estimate we have estimated these based on actual payments of these levies in the base year. This is consistent with the approach adopted by TasNetworks in its revised proposal.

During the regulatory control period, both payments are subject to an annual true up as part of our revenue control mechanism.[79] We calculate the true up as the difference between the forecast allowance and the actual costs TasNetworks incurs. Where the amount TasNetworks incurs is lower than the allowance, we make a negative revenue adjustment.

Table 6-7 sets out our alternative estimate of the amounts for these levies. We note these are not materially different to TasNetworks' proposal, as shown in Table 6-2.

Table 6-7 Electrical safety levy and NEM levy ($million, 2018–19)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Electrical safety levy	3.9	3.9	3.9	3.9	3.9	19.7
NEM levy	0.7	0.7	0.7	0.7	0.7	3.3

Source: AER analysis

6.4.5 Assessment of opex factors under NER

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'.[80]

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:[81]

> 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.

79 This is described further in Attachment 13 of this determination.

80 NER, cl. 6.5.6(e).

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

Table 6-8 summarises how we have taken the opex factors into account in making our draft decision.

Table 6-8 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 our most recent annual benchmarking report. Second, we must have regard to the benchmark opex that would be incurred by an efficient service provider over the 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 estimated an alternative opex estimate and have compared it with TasNetworks' proposal over the relevant regulatory control period. In doing this we relied on the information set out in our most recent benchmarking report.
The actual and expected opex of the Distribution Network Service Provider during any proceeding regulatory control periods.	To assess TasNetworks' opex forecast and develop our alternative estimate, we have used TasNetworks' estimated actual opex in 2017–18 as the starting point. We have examined TasNetworks' historical actual opex and compared it with that of other distribution network services providers.
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.	We understand the intention of this particular factor is to require 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. CCP 13 noted that in general TasNetworks is to be commended for a committed, well planned and executed consumer engagement process to support its revised proposal.[82] TasNetworks' revised proposal sets out how it had taken into account customer feedback in relation the use of 2017–18 as its base year, including the removal of non-recurrent costs and the use of challenging targets to set the opex forecast in the next regulatory control period. [83]
The relative prices of capital and operating inputs	We adopted price growth forecasts that account for the relative prices of opex and capex inputs. We generally consider capex/opex trade-offs in considering proposed step changes. One reason we will include a step change in our alternative opex forecast is if the service provider proposes a capex/opex trade-off. We consider the relative expense of capex and opex solutions in considering such a trade-off. TasNetworks proposed one step change that involves a capex/opex trade-off.[84] We have assessed this as being an efficient capex/opex trade-off and

[82] CCP, *Advice to the Australian Energy Regulator (AER), Consumer Challenge Panel Sub-Panel 13, Response to TasNetworks revised proposal for a revenue reset for the 2019-24 regulatory period, Sub-Panel 13*, 11 January 2019, p. 11.

[83] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019 - 2024,* 29 November 2018, p. 11.

[84] TasNetworks, *Tasmanian Transmission and Distribution Revised Revenue Proposals 2019 - 2024,* 29 November 2018, p. 73–74.

Opex factor	Consideration
	included it as a part of our alternative estimate.
The substitution possibilities between operating and capital expenditure.	Some of our assessment techniques examine opex in isolation—either at the total level or by category. Other techniques consider service providers' overall efficiency, including their capital efficiency. We have relied on several metrics when assessing efficiency to ensure we appropriately capture capex and opex substitutability. In developing our benchmarking models we have had regard to the relationship between capital, opex and outputs. TasNetworks proposed a step change that included a capex/opex trade off. We have assessed this capex/opex trade-off as being efficient.
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 TasNetworks' opex in the 2017–19 regulatory control period, the EBSS, was intended to work in conjunction with a revealed cost forecasting approach. We have applied our approved base opex consistently in implementing the EBSS and forecasting TasNetworks' opex for the 2019–24 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.	Some of our techniques assess the total expenditure efficiency of service providers and some assess the total opex efficiency. 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 that does not use related party providers. If a service provider is inefficient, we adjust its 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 generally only relevant in the context of assessing proposed step changes (which may be explicit projects or programs). TasNetworks did not propose any opex step changes that would be more appropriately included as a contingent project.
The extent the Distribution Network Service Provider has considered, and made provision for, efficient and prudent non-network alternatives.	TasNetworks stated it accepts the AER's framework and approach position to the demand management incentive scheme and demand management innovation allowance.[85] It also proposed a step change that included a capex/opex trade off that involves a non-network (demand management) alternative. We have assessed this capex/opex trade-off as being efficient.
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 identify any RIT-D project submitted by the business and ensure the conclusions are appropriately addressed in the total forecast opex. TasNetworks 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 regulatory proposal under clause 6.10.3, is an operating expenditure factor.	We did not identify and notify TasNetworks of any other opex factor.

Source: AER analysis.

85 TasNetworks, *Tasmanian Transmission and Distribution Revenue Proposals,* 31 January 2018, p. 176.