



DRAFT DECISION

TasNetworks
Transmission Determination
2019 to 2024

Attachment 6
Operating expenditure

September 2018

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AER reference 60153

Note

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

The draft decision includes the following attachments:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure a

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 – Pricing methodology

Attachment 12 – Pass through events

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Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	annual service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CCP13	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
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
F&A	framework and approach
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
opex	operating expenditure

Shortened form	Extended form
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
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

6 Operating expenditure

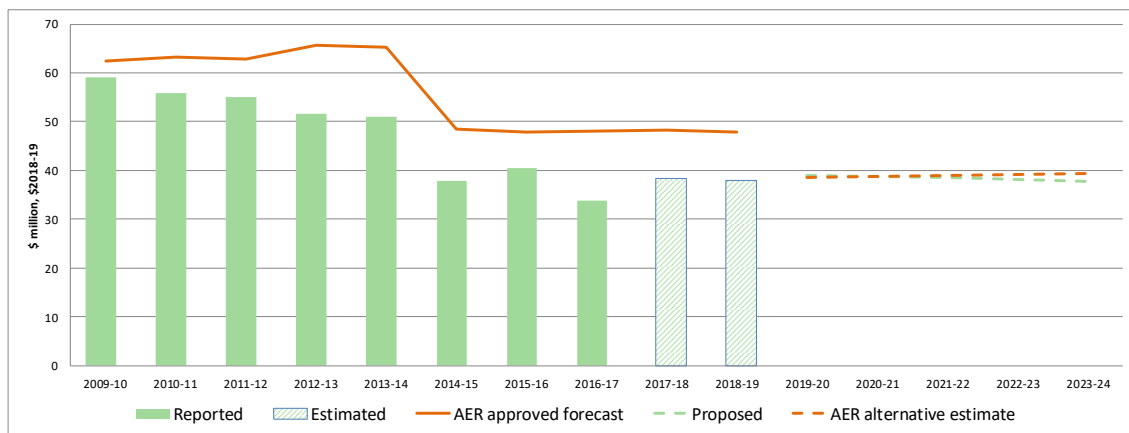
Operating expenditure (opex) refers to operating, maintenance and other non-capital expenses. Forecast opex for prescribed transmission services is one of the building blocks that make up a service provider's total revenue requirement. This attachment outlines how we assessed TasNetworks' proposed total opex forecast.

6.1 Draft decision

We accept TasNetworks' opex forecast of \$192.1 million (\$2018–19).¹ We are satisfied that it reasonably reflects the opex criteria.² We have tested TasNetworks' proposal by comparing it to our alternative estimate of total opex forecast (\$194.7 million, \$2018–19). Our alternative estimate is not materially different from TasNetworks' opex forecast.

Figure 6.1 shows TasNetworks' opex forecast, its actual opex, our previous regulatory decisions and our alternative estimate.

Figure 6.1 Historical and forecast opex (\$million, 2018–19)



Source: TasNetworks, *Regulatory accounts 2009–10 to 2016–17*; TasNetworks, *Economic benchmarking RIN response 2006 to 2017*, TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018; TasNetworks, *Post Tax Revenue Model (PTRM) Transmission*, 31 January 2018; AER analysis.

Note: Includes debt raising costs.

6.2 TasNetworks' proposal

TasNetworks proposed total forecast opex of \$192.1 million (\$2018–19) for the 2019–24 regulatory control period (see Table 6.1).³ This represents a 2.2 per cent

¹ Including debt raising costs; TasNetworks, *Post Tax Revenue Model (PTRM) Transmission*, 31 January 2018.

² NER, cl. 6A.6.6(c).

³ Including debt raising costs. TasNetworks, *Post Tax Revenue Model (PTRM) Transmission*, 31 January 2018.

increase compared to its reported and estimated opex in the 2014–19 regulatory control period.⁴

Table 6.1: TasNetworks’ proposed opex (\$million, 2018–19)

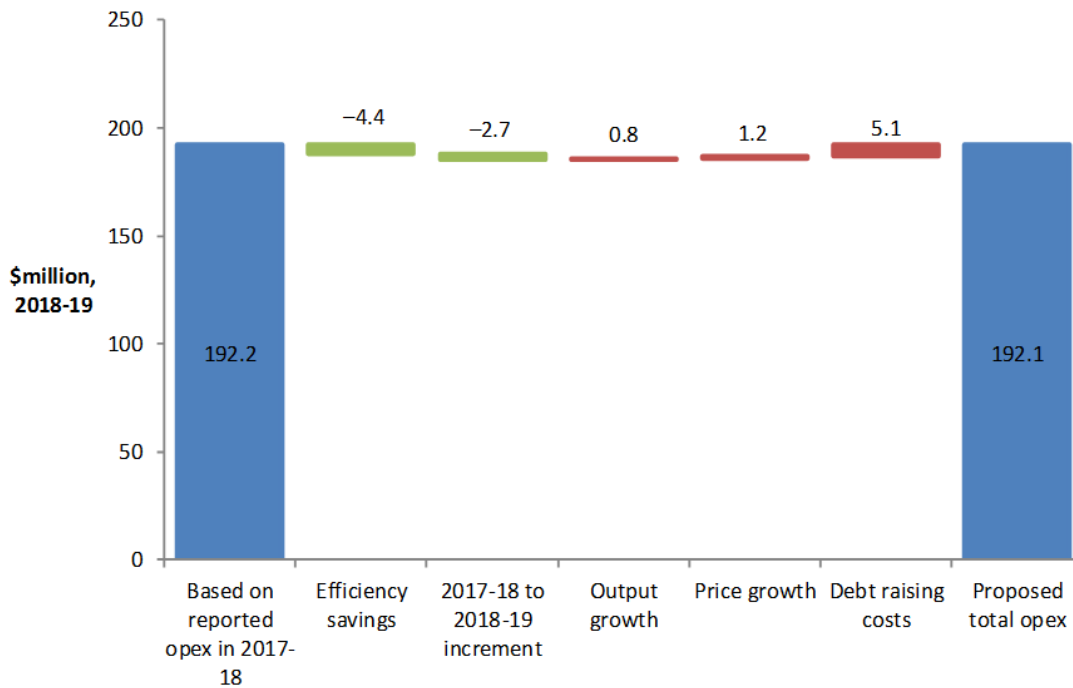
	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Opex excluding debt raising costs	37.9	37.7	37.5	37.1	36.8	187.1
Debt raising costs	1.0	1.0	1.0	1.0	1.0	5.0
Total opex	38.9	38.7	38.5	38.2	37.8	192.1

Source: TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018; TasNetworks, *Post Tax Revenue Model (PTRM) Transmission*, 31 January 2018.

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

In Figure 6.2 we separate TasNetworks’ opex proposal into the different elements that make up its forecast.

Figure 6.2 TasNetworks’ opex forecast (\$million, 2018–19)



Source: TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018; AER analysis.

⁴ TasNetworks' economic benchmarking RIN; AER analysis.

TasNetworks stated that it adopted our base–step–trend approach to forecast opex for the 2019–24 regulatory control period.⁵ We have set out the key elements of TasNetworks’ proposal below:

- TasNetworks used estimated opex in 2017–18 as the base year for its forecast.⁶ If no other adjustments were made for non-recurrent opex or provisions, this would lead to base opex of \$192.2 million (\$2018–19) over the 2019–24 regulatory control period. TasNetworks proposed no adjustment.⁷
- TasNetworks applied the approach in the *Expenditure forecast assessment guideline* (the Guideline) to calculate the 2017–18 to 2018–19 increment (the starting point for its forecast).⁸ This reduced its opex forecast by \$2.7 million (\$2018–19).
- TasNetworks applied its forecast of the overall rate of change to its estimate of opex for 2018–19, consistent with the Guideline.⁹ This increased its opex forecast by \$2.0 million (\$2018–19). This includes real price growth of \$0.8 million, output growth of \$1.2 million and zero productivity growth.
- TasNetworks proposed no step changes.¹⁰
- TasNetworks proposed category specific forecasts for debt raising costs, this increased its opex forecast by \$5.1 million (\$2018–19).¹¹
- TasNetworks proposed efficiency savings, which reduced its opex forecast by \$4.4 million (\$2018–19).

This resulted in total opex forecast of \$192.1 million (\$2018–19).¹²

6.2.1 Stakeholders’ views

We have received three submissions on TasNetworks’ opex proposal from the Consumer Challenge Panel subpanel 13 (CCP 13), the Tasmanian Small Business Council (TSBC) and an anonymous party. A summary of these submissions is provided in Table 6.2 below.

Table 6.2: Submissions on TasNetworks’ opex proposal

Stakeholder	Issue	Description
CCP 13,	Choice of base year and	Stakeholders had mixed views on which year should be considered as

⁵ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 136.

⁶ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 141.

⁷ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 142.

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

⁹ TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018.

¹⁰ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 142.

¹¹ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 145; TasNetworks, *Post Tax Revenue Model (PTRM) Transmission*, 31 January 2018.

¹² TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 144.

Stakeholder	Issue	Description
TSBC	assessment of efficient base opex	<p>the base year. CCP 13 supported 2017–18 while TSBC proposed 2016–17.¹³</p> <p>CCP 13 raised concerns about how we assess opex, stating that it is unclear what we mean by 'not materially inefficient' when relying on economic benchmarking to assess opex. It proposed we should benchmark distributors against the frontier firm, rather than the low benchmark comparison point as we did in previous determinations. CCP 13 encouraged us to review how we exercise our discretion in this respect.¹⁴</p>
CCP 13, TSBC	Efficiency and productivity	<p>CCP 13 supported TasNetworks' proposed efficiency adjustment while TSBC submitted we should test it.¹⁵</p> <p>CCP 13 questioned our zero productivity growth forecast, which we applied in previous determinations. It recommended we review it, pointing to productivity improvement in the sector in recent years.¹⁶</p>
CCP 13, TSBC	Labour price growth	<p>CCP 13 raised concerns about the approach TasNetworks' consultant (Jacobs) used to forecast internal and external labour price growth:¹⁷</p> <ul style="list-style-type: none"> For external labour, it noted that Jacobs focused on average weekly ordinary time earnings (AWOTE) data for workers in the utilities sector and did not provide a breakdown of utilities AWOTE for Tasmania For internal labour, it submitted that Jacobs appeared to have misunderstood us by suggesting that we have relied on enterprise agreements (EA) to forecast labour price growth. CCP 13 noted that we use forecasts of labour price growth from independent consultants to assist our understanding of the (opex) trend.

6.3 Assessment approach

Our role is to decide whether to accept a business's total opex forecast. We are to decide whether a business's forecast of total opex 'reasonably reflects the opex criteria'.¹⁸ In doing so, we must have regard to the opex factors specified in the NER.¹⁹

¹³ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, pp. 48–49; Tasmanian Small Business Council, *TasNetworks electricity network revenue proposal 2019–24*, 16 May 2018, pp. 54–55.

¹⁴ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, pp. 56–60.

¹⁵ Tasmanian Small Business Council, *TasNetworks electricity network revenue proposal 2019–24*, 16 May 2018, p. 54; Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, pp. 60–61.

¹⁶ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, pp. 60–61.

¹⁷ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, pp. 62–63.

¹⁸ NER, cl. 6A.6.6(c).

¹⁹ NER, cl. 6A.6.6(e).

The Guideline, together with an explanatory statement, sets out our assessment approach in detail.²⁰ While the Guideline provides for greater regulatory predictability, transparency and consistency, it is not mandatory. However, if we make a decision that is not in accordance with the Guideline, we must state the reasons for departing from the Guideline.²¹

Our approach is to assess the business's forecast opex over the regulatory control period at a total level, rather than to assess individual opex projects. To do so, we develop an alternative estimate of total opex using a 'top-down' forecasting method, known as the 'base-step-trend' approach (see

Table 6.3).²² We compare our alternative estimate with the business' total opex forecast to form a view on the reasonableness of the business' proposal. If we are satisfied the business' forecast reasonably reflects the criteria, we accept the forecast.²³ If we are not satisfied, we substitute the business' forecast with our alternative estimate that we are satisfied reasonably reflects the opex criteria.²⁴

In making this decision, we take into account the reasons for any difference between our alternative estimate and the business' proposal, and examine each driver of the differences and adjust our alternative estimate if we consider it necessary. Further, we take into consideration interrelationships between opex and the other building block components of our decision.²⁵

Figure 6.3 summarises our assessment approach.

²⁰ AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013; AER, *Expenditure forecast assessment guideline*, Explanatory statement, November 2013.

²¹ NER, cl. 6A.2.3(c).

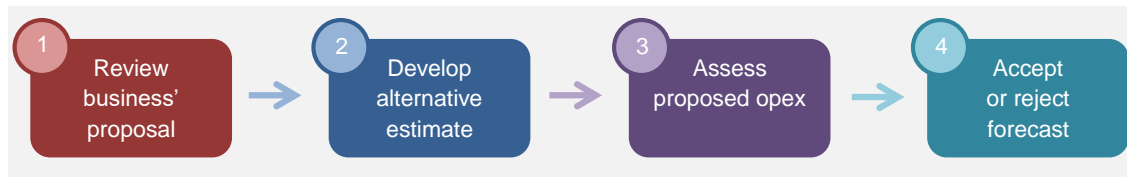
²² A 'top-down' approach forecasts total opex at an aggregate level, rather than forecasting individual projects or categories to build a total opex forecast from the 'bottom up'.

²³ NER, cl. 6A.6.6(c).

²⁴ NER, cll. 6A.6.6(d) and 6A.14.1(3)(ii).

²⁵ NEL, s.16(1)(c).

Figure 6.3 Our opex assessment approach



1. Review business' proposal



We review the business' proposal and identify the key drivers.

2. Develop alternative estimate

Base

We use the business' opex in a recent year as a starting point (revealed opex). We assess the revealed opex (e.g. through benchmarking) to test whether it is efficient. If we find it to be efficient, we accept it. If we find it to be materially inefficient, we may make an efficiency adjustment.

Trend

We trend base opex forward by applying our forecast 'rate of change' to account for growth in input prices, output and productivity.

Step

We add or subtract any step changes for costs not compensated by base opex and the rate of change (e.g. costs associated with regulatory obligation changes or capex/opex substitutions).

Other

We include a 'category specific forecast' for any opex component that we consider necessary to be forecast separately.

3. Assess proposed opex



We contrast our alternative estimate with the business' opex proposal. We identify all drivers of differences between our alternative estimate and the business' opex forecast. We consider each driver of difference between the two estimates and go back and adjust our alternative estimate if we consider it necessary.

4. Accept or reject forecast



We use our alternative estimate to test whether we are satisfied the business' opex forecast reasonably reflects the opex criteria. We accept the proposal if we are satisfied.



If we are not satisfied the business' opex forecast reasonably reflects the opex criteria we substitute it with our alternative estimate.

6.3.1 Interrelationships

In assessing TasNetworks' total forecast opex we took into account its relationship with 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 regulatory control period) should be the same as the level of opex used to calculate EBSS rewards and penalties. 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 does for gains or losses made in other years

- the operation of the EBSS in the 2014–19 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 of 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 its engagement with consumers.

6.4 Reasons for draft decision

Our draft decision is to accept TasNetworks' total opex forecast of \$192.1 million (\$2018–19).²⁶ We are satisfied this forecast reasonably reflects the opex criteria.²⁷

We have developed an alternative estimate of total opex, as set out in section 6.3, to compare TasNetworks' proposal. Our estimate of \$194.7 million (\$2018–19) is not materially different from TasNetworks' opex forecast.

This section outlines the key inputs and assumptions we made in developing our alternative estimate of efficient costs over the 2019–24 regulatory control period.

Table 6.3 illustrates the differences between our alternative opex estimate and TasNetworks' proposal. While the components of our alternative estimate are different to TasNetworks', the differences largely offset each other. The key difference is that we have not included an efficiency adjustment.

Table 6.3: Our alternative estimate compared to TasNetworks' proposal (\$million, 2018–19)

	TasNetworks' proposal	Our alternative estimate	Difference
Base opex	192.2	191.5	-0.7
Efficiency savings	-4.4	-	4.4
Opex change 2017–18 to 2018–19	-2.7	-2.6	0.0
Output growth	0.8	1.3	0.5
Price growth	1.2	0.9	-0.2

²⁶ Including debt raising costs.

²⁷ NER, cl. 6A.6.6(c).

	TasNetworks' proposal	Our alternative estimate	Difference
Productivity growth	–	–	–
Debt raising costs	5.1	3.6	-1.4
Total opex	192.1	194.7	2.6

Source: TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018; AER analysis.

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

Full details of our alternative estimate are set out in our opex model, which is available on our website.²⁸

6.4.1 Base opex

We have relied on TasNetworks' estimated opex in 2017–18 to forecast its opex over the 2019–24 regulatory control period, as proposed by TasNetworks.

TasNetworks considered 2017–18 to be the most relevant year for forecasting purposes because it is representative of its underlying operating conditions for the current and forthcoming regulatory control periods.²⁹

Use of 2017–18 as a base year for opex was a focus of TSBC's submissions.³⁰

While we recognise that base year opex is (13.8 per cent) higher than in 2016–17, it is similar to the previous two years' opex (being 4.4 per cent lower than 2015–16 and 2.3 per cent higher than 2014–15).

Further, given we consider revealed expenditure to be not materially inefficient (see below), and we are not making an efficiency adjustment, the choice of base year has little impact on the net revenue allowance. This is because any increase in opex is counteracted by a decrease in the EBSS carryover. These two effects cancel each other out from a net revenue allowance perspective.

In this regard, TasNetworks is subject to the incentives of an ex ante regulatory framework, including the application of the EBSS. Typically, where a service provider is subject to these incentives, we are satisfied there is a continuous incentive for a service provider to make efficiency gains and it does not have an incentive to increase its opex in the proposed base year. As shown in Figure 6.1, TasNetworks has underspent against its opex allowance for the last several years (for which it will be rewarded under the EBSS), suggesting it is responding to the incentives of the framework. We therefore consider that our stated preference for deriving base opex for

²⁸ AER, *TasNetworks transmission determination 2019–20 to 2023–24*, Draft decision, Opex model, September 2018.

²⁹ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 141.

³⁰ Tasmanian Small Business Council, *TasNetworks electricity network revenue proposal 2019–24*, 16 May 2018, pp. 54–55.

our alternative estimate on the basis of revealed cost is appropriate in the present case.³¹

We have had regard to our transmission benchmarking in deciding to use TasNetworks' estimate of opex in 2017–18 as a starting point for our alternative opex estimate. In our 2017 annual benchmarking report, the opex multilateral partial factor productivity (MPFP) index analysis for transmission indicates that TasNetworks is operating relatively efficiently compared to others in the NEM.³² It has significantly improved its opex efficiency, being ranked third out of five in 2014–15 and 2015–2016.³³ These results were obtained under the new output specification.³⁴ Under the original output specification, TasNetworks ranked first in both of these years.³⁵

In its submission, TasNetworks points to it being disadvantaged under the new output specification for opex MPFP and considers the change in results indicates that caution should be applied in interpreting results. TasNetworks submitted that greater weight should therefore be placed on improvements made by it (and other transmission businesses) over time, rather than comparing transmission business productivity scores.³⁶

Our benchmarking of transmission networks is relatively new. It is limited by the small sample size of transmission businesses in the NEM and limited international data available, among other things. Reflecting this, we have taken the transmission benchmarking into account but not solely relied on it in forming a view on the efficiency of TasNetworks' 2017–18 estimated opex.

The transmission benchmarking also does not take into account the different operating environment factors (OEFs) of transmission businesses. TasNetworks identified a range of material OEFs applicable to its transmission network in its submission and accompanying annexed report.³⁷ It submitted that our considerations on OEFs to date

³¹ AER, *Expenditure forecast assessment guideline*, November 2013, p. 22.

³² The opex multilateral partial factor productivity (MPFP) technique examines the contribution of opex to overall productivity. This 'partial' approach uses the same output specification as multilateral total factor productivity (MTFP) but provides more detail on the contribution of the individual components of capital and opex to changes in productivity.

³³ AER, *Annual benchmarking report, Electricity transmission network service providers*, November 2017, pp.48–49.

³⁴ We reviewed outputs specification for electricity transmission businesses in 2017 following industry consultation. This is set out in: Economic Insights, *Review of economic benchmarking of transmission network service providers – Position Paper*, 9 October 2017.

³⁵ The original model includes voltage-weighted connections as an output, whilst the new model uses customer connections. TasNetworks submitted that its significant number of transmission connections (due to the large number of generation sources in Tasmania) means that its transmission network benchmarks much more favourably using the original model specification. It submits that the exclusion of generation connections in the output specification of the revised model means that direct comparisons between transmission networks are unlikely to provide useful indicators of relative productivity until post model adjustments are made.

³⁶ TasNetworks, *TasNetworks benchmarking report*, December 2017, pp. 39–42

³⁷ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 141; and TasNetworks, *TasNetworks benchmarking report*, December 2017, pp. 18–24.

has not adequately accounted for them, including the disadvantages that TasNetworks faces under the new output specification as this can be addressed under the OEFs. However, because we are not using benchmarking to determine an alternative opex estimate, we do not need to consider OEFs further in this decision.

Taking into account the above, we are satisfied that TasNetworks' estimate of its opex in 2017–18 is not materially inefficient, and represents an appropriate starting point for forecasting opex for the 2019–24 regulatory control period. We will update TasNetworks' base year expenditure with actual information in our forecast when it becomes available.

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.³⁸

We have forecast an average annual rate of change of 0.44 per cent, reflecting forecast price and output growth. We have forecast zero productivity growth. Our overall rate of change is higher than TasNetworks' proposal of 0.38 per cent because we have applied different price and output growth rates, which we discuss below.

Forecast price growth

We have forecast real average annual price growth of 0.22 per cent in our alternative opex forecast. This increased our alternative estimate of total opex by \$0.9 million (\$2018–19). This is slightly lower than TasNetworks' proposed average annual price growth of 0.24 per cent.

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 and TasNetworks' consultant, Jacobs. In contrast, TasNetworks only applied WPI forecast by Jacobs.³⁹
- to forecast non-labour price growth, both we and TasNetworks have applied the forecast growth in CPI.⁴⁰
- we have applied updated weights consistent with the 2017 annual benchmarking report to account for the proportion of opex that is labour and the proportion that is

³⁸ AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, pp. 23–24.

³⁹ TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018.

⁴⁰ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 143.

non-labour (70.4:29.6).⁴¹ In contrast, TasNetworks applied the benchmark mix of labour and non-labour inputs reflected in our 2016 *Annual Benchmarking Report* (62:38).⁴²

CCP 13 submitted that Jacobs' analysis for external labour trends focused on average weekly ordinary time earnings (AWOTE) data for workers in the utilities sector and did not provide a breakdown of Utilities AWOTE for Tasmania.⁴³ We do not directly use AWOTE as a measure of labour price growth. However, we are aware that independent consultants may rely on a combination of wage growth factors, including AWOTE to impute estimated values for utilities WPI in some jurisdictions. This is particularly the case for Tasmania as the Australian Bureau of Statistics (ABS) does not publish utilities WPI for this state.⁴⁴ Further, we understand that to forecast WPI growth for TasNetworks Jacobs identified a number of factors, including AWOTE, which it considers drive changes in labour costs, and it sought to assign a weight to each driver through regression analysis.⁴⁵

CCP 13 also submitted that Jacobs misunderstood our approach to estimating efficient opex by stating we accepted the annual wage increase in an enterprise agreement (EA) in our determination for Powerlink.⁴⁶ CCP 13 encouraged us to review the past performance of Jacobs when determining the appropriateness of TasNetworks' labour price forecasts.⁴⁷

We agree with CPP 13 that Jacobs misunderstood our position on EAs. We accepted Powerlink's total forecast opex because it was not significantly different from our alternative estimate. This should not be interpreted as an endorsement of the approach used to derive individual aspects of Powerlink's total opex forecast. In developing our alternative estimate we used the average of WPI forecast from two independent consultants to forecast labour price growth.⁴⁸ We did not use the wage increases in Powerlink's EA. Our most recent decision for CitiPower outlines why we do not use the wage increases in a distributor's EA to forecast labour price growth.⁴⁹

⁴¹ We applied Economic Insights' benchmark opex price weightings for labour and non-labour as reflected in our 2017 Economic Benchmarking Report. For more detail, see: Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2017 TNSP Benchmarking Report*, 6 November 2017, pp. 6–7.

⁴² TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018.

⁴³ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, p. 62.

⁴⁴ Deloitte Access Economics, *Labour Price Growth Forecasts*, 19 July 2018, p. 72.

⁴⁵ These drivers include CPI, WPI, AWOTE, Labour Productivity Index (LPI) and Producer Price Index (PPI). For more details, see: *Jacobs, Labour costs escalation report*, 25 October 2017, p. 6.

⁴⁶ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, p. 63; *Jacobs, Labour Cost Escalation Report 2019-2024*, 25 October 2017, pp. 4, 12.

⁴⁷ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, p. 63.

⁴⁸ AER, *Powerlink transmission determination 2017–18 to 2021–22*, Draft decision, Attachment 7, September 2016, p. 17.

⁴⁹ AER, *CitiPower distribution determination 2016 to 2020*, Final decision, Attachment 7, May 2016, pp. 54–80.

In respect of CCP 13's suggestion that we review the past performance of Jacobs' labour price forecasts, it is also unclear whether Jacobs continues to use the approach previously adopted by Sinclair Knight Mertz (SKM), which merged with Jacobs in 2013, and thus whether that forecasting performance remains relevant. Regardless, we are satisfied that it is reasonable to incorporate Jacobs' labour price growth forecasts in our own forecast since they are not materially different from DAE's forecasts.

Forecast output growth

We have included forecast average annual output growth of 0.23 per cent in our alternative opex estimate. This increased our alternative estimate by \$1.3 million (\$2018–19).

We have calculated output growth as the weighted average growth in the following output measures:

- circuit line length, 37.6 per cent
- ratcheted maximum demand, 19.4 per cent
- energy throughput, 23.1 per cent
- customer numbers, 19.9 per cent.

This reflects the updated specification of electricity transmission outputs used in our 2017 *Annual benchmarking report* following a consultation process with the industry and key stakeholders.⁵⁰ TasNetworks' views were taken into account in that process.

We have used the forecasts of circuit line length, ratcheted maximum demand and energy throughput in TasNetworks' reset RIN.⁵¹ However, for customer connection points, we have used TasNetworks' distribution business forecasts of customer numbers as a proxy.⁵² This is consistent with our 2017 *Annual benchmarking report* and the associated Economic Insights report, which also sets out the reasons for updating our approach.⁵³

In contrast, TasNetworks adopted the outputs specification and weights that we applied in our 2016 *Annual benchmarking report*.⁵⁴ TasNetworks included the following outputs:

- circuit line length, 28.7 per cent

⁵⁰ Economic Insights, *Review of Economic Benchmarking of Transmission Network Service Providers*, Position paper, 9 August 2017; and Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2017 TNSP Benchmarking Report*, 6 November 2017, p. 6.

⁵¹ TasNetworks, *Reset RIN FINAL Template 1 - Revenue Determination Transmission*, January 2018.

⁵² TasNetworks updated this information in its response to our information request: TasNetworks, *Response to AER information request IR#20*, 5 June 2018.

⁵³ Economic Insights, *Economic Benchmarking Results for the Australian Energy Regulator's 2017 TNSP Benchmarking Report*, 6 November 2017, pp. 1–6.

⁵⁴ TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018.

- ratcheted maximum demand, 22.1 per cent
- energy throughput, 21.4 per cent
- weighted entry and exit connections, 27.8 per cent.

We have applied our approach as it reflects the outcome of our recent review of economic benchmarking of electricity transmission network service providers.

Forecast productivity growth

We have not included any forecast productivity growth. This is consistent with TasNetworks' proposal.⁵⁵ Our opex productivity growth forecast reflects our best estimate of the shift in the productivity frontier.⁵⁶

Our productivity growth forecast reflects our expectation of the opex productivity growth an efficient service provider in the transmission industry can achieve. It reflects historic industry opex productivity growth to the extent we consider past performance to be a good indicator of future performance under a business-as-usual situation. This assumes there will be no significant structural change in the electricity transmission industry over the 2019–24 period relative to the 2006–16 period, which we used to measure historic productivity growth.

We have forecast zero productivity growth based on analysis provided previously by our expert consultant, Economic Insights. We consider this reflects a reasonable expectation of the benchmark productivity that an efficient and prudent transmission network can achieve for the forecast period because:

- Economic Insights has previously recommended we forecast productivity growth based on trend growth in opex MPFP performance measured in electricity transmission⁵⁷
- opex MPFP growth, over the period from 2006 to 2016 is negative, but very close to zero, at the industry level.⁵⁸ We do not consider this is representative of long term trends and our expectations of forecast productivity in the medium term. The increase in the service provider's inputs, which is a significant factor contributing to negative productivity, is unlikely to continue for the forecast period.⁵⁹

⁵⁵ TasNetworks, *Transmission Operating Expenditure Model*, 31 January 2018.

⁵⁶ AER, *Expenditure forecast assessment guideline*, Explanatory statement, November 2013, p. 65.

⁵⁷ Economic Insights, *Memorandum: TNSP MTFP Results*, 29 April 2016, p. 5.

⁵⁸ Economic Insights, *Economic benchmarking results for the Australian Energy Regulator's 2017 TNSP benchmarking report*, 6 November 2017, p. 8.

⁵⁹ For more details about the impact of inputs increase on opex MPFP, see: Economic Insights, *Economic benchmarking results for the Australian Energy Regulator's 2017 TNSP benchmarking report*, 6 November 2017, pp. 8–13.

- Economic Insights has previously recommended that a forecast opex productivity growth rate of zero should be used in the when measured productivity growth is negative.⁶⁰
- as noted by Economic Insights, opex partial productivity trended up from 2006 to 2013 before falling in 2014 and 2015. There is some evidence that at least part of these recent falls reflect one-off events.⁶¹ Consistent with this, we note that our preliminary analysis for our 2018 *Annual benchmarking report* shows opex MPFP improving in 2017.

CCP 13, however, recommended that we reconsider our zero productivity growth forecast.⁶² In commenting on productivity growth, however, CCP 13 did not distinguish between distribution and transmission. For example, it stated that the trend in productivity growth may have reversed so that a positive productivity growth forecast may be sustainable.⁶³ This appears to be referring to growth in opex MPFP in distribution which, at the industry level, has averaged 2.97 per cent per year from 2012 to 2016.⁶⁴ By comparison, opex MPFP growth for electricity transmission has been almost the reverse of what we have seen for distribution. Over the period from 2006 to 2012 opex MPFP growth was positive. But from 2012 to 2016 it has been negative.⁶⁵

Our standard approach to forecasting opex productivity growth for electricity transmission has been to use the measured industry average opex MPFP trend growth rate over the full period from 2006. This has been positive until recently and thus we have applied positive productivity growth in most of our transmission determinations since we published the Guideline. We will continue to monitor opex MPFP performance, which we measure for our annual transmission benchmarking report. At this point in time we remain satisfied that measured industry average opex MPFP trend growth remains an appropriate basis for forecasting opex productivity growth for electricity transmission.

6.4.3 Step changes

We have not included any step changes in our alternative total opex forecast. This is consistent with TasNetworks' proposal.⁶⁶

⁶⁰ Economic Insights, *Economic Benchmarking Assessment of Operating Expenditure for NSW and ACT Electricity DNSPs*, 8 September 2014, pp. 55–57.

⁶¹ Economic Insights, *Memorandum: TNSP MTFP Results*, 29 April 2016, p. 5.

⁶² Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, p. 7.

⁶³ Consumer Challenge Panel, CCP Sub-Panel No. 13, *Advice to the AER, Response to proposals from TasNetworks for a revenue reset for the 2019–24 regulatory period*, 16 May 2018, p. 61.

⁶⁴ Economic Insights, *Economic benchmarking results for the Australian Energy Regulator's 2017 DNSP benchmarking report*, 31 October 2017, p. 3.

⁶⁵ Economic Insights, *Economic benchmarking results for the Australian Energy Regulator's 2017 TNSP benchmarking report*, 6 November 2017, p. 8.

⁶⁶ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 142.

6.4.4 Category specific forecasts

We have included category specific forecasts for debt raising costs of \$3.63 million (\$2018–19) in our alternative total opex forecast. This is lower than TasNetworks' proposal of \$5.05 million (\$2018–19) due to us not accepting other revenue building blocks in this determination, and the impact this has on forecast debt raising costs.⁶⁷ TasNetworks adopted our benchmark approach to forecast debt raising costs.⁶⁸

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 of this determination.

6.4.5 Assessment of opex factors under NER

In deciding whether or not we are satisfied a service provider's forecast reasonably reflects the 'opex criteria' under the NER, we have regard to the 'opex factors'. Table 6.4 summarises how we have taken the opex factors into account in making our draft decision.

Table 6.4: Our consideration of the opex factors

Opex factor	Consideration
The most recent annual benchmarking report that has been published under clause 6A.31 and the benchmark opex that would be incurred by an efficient Transmission Network Service Provider over the relevant regulatory control period.	<p>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.</p> <p>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.</p> <p>We have estimated an alternative opex forecast and compared it with TasNetworks' proposal over the relevant regulatory control period. In doing this we have taken into account the information set out in our most recent benchmarking report.</p>
The actual and expected opex of the Transmission Network Service Provider during any preceding 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 transmission businesses.
The extent to which the opex forecast includes expenditure to address the concerns of electricity consumers as	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

⁶⁷ For example, we have not accepted TasNetworks' capex proposal.

⁶⁸ TasNetworks, *Transmission and distribution regulatory proposal*, 31 January 2018, p. 145.

Opex factor	Consideration
identified by the Transmission Network Service Provider in the course of its engagement with electricity consumers.	of consumers. Based on the information provided by TasNetworks in its proposal and CCP 13's advice, we consider TasNetworks consulted extensively in developing its proposal, commencing in May 2016. This consultation included the publication of a <i>Directions and priorities paper</i> which set out its preliminary proposal. ⁶⁹
The relative prices of capital and operating inputs.	We adopted price growth forecasts that account for the relative prices of opex and capex inputs.
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.
Whether the opex forecast is consistent with any incentive scheme or schemes that apply to the Transmission Network Service Provider under clauses 6A.6.5, 6A.7.4 or 6A.7.5.	The incentive scheme that applied to TasNetworks' opex in the 2014–19 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 Transmission 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 their total forecast opex proposal, regardless of their 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 6A.8.1(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, including those that would be more appropriately included as a contingent project.
The most recent NTNDP and any submissions made by AEMO, in accordance with the Rules, on the forecast of the Transmission Network Service Provider's required opex.	We have had regard to AEMO's most recent NTNDP and consider this to be consistent with TasNetworks forecast opex. ⁷⁰
The extent to which the Transmission Network Service Provider has considered and made provision for efficient and prudent non-network alternatives.	TasNetworks has proposed no expenditure for non-network alternatives for the 2019–24 regulatory control period.
Any relevant project assessment conclusions report required under 5.16.4.	In having regard to this factor, we identify any RIT-T project submitted by the business and ensure the conclusions are appropriately addressed in the total forecast opex. TasNetworks did not submit any RIT-T project for

⁶⁹ TasNetworks, *Direction and Priorities Consultation Paper Transmission and Distribution Determination 2019–24*, August 2017.

⁷⁰ TasNetworks, *Transmission and distribution regulatory proposal*, January 2018, p. 24.

Opex factor	Consideration
	its transmission network.
Any other factor the AER considers relevant and which the AER has notified the Transmission Network Service Provider in writing, prior to the submission of its revised proposal under clause 6A.12.3, is an operating expenditure factor.	We did not identify and notify TasNetworks of any other opex factor.

Source: AER analysis.