DRAFT DECISION
ElectraNet transmission determination
2018 to 2023

Attachment 7 – Operating expenditure

October 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on ElectraNet's transmission determination for 2018–23. It should be read with all other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – Maximum allowed revenue

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Value of imputation credits

Attachment 5 – Regulatory depreciation

Attachment 6 – Capital expenditure

Attachment 7 – Operating expenditure

Attachment 8 – Corporate income tax

Attachment 9 – Efficiency benefit sharing scheme

Attachment 10 – Capital expenditure sharing scheme

Attachment 11 – Service target performance incentive scheme

Attachment 12 – Pricing methodology

Attachment 13 – Pass through events

Attachment 14 – Negotiated services

Contents

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
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIA	demand management innovation allowance
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
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
NTSC	negotiated transmission service criteria
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

Shortened form	Extended form
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

7 Operating expenditure

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

This attachment outlines our assessment of ElectraNet's proposed total opex forecast for the 2018–23 regulatory control period.

7.1 Draft decision

We accept ElectraNet's total opex forecast of $440.1 million ($2017–18) over the 2018–23 regulatory control period.[1] We are satisfied this forecast reasonably reflects the opex criteria.[2] ElectraNet adopted a base–step–trend forecasting approach similar to the approach we set out in the *Expenditure forecast assessment guideline* (the Guideline).[3]

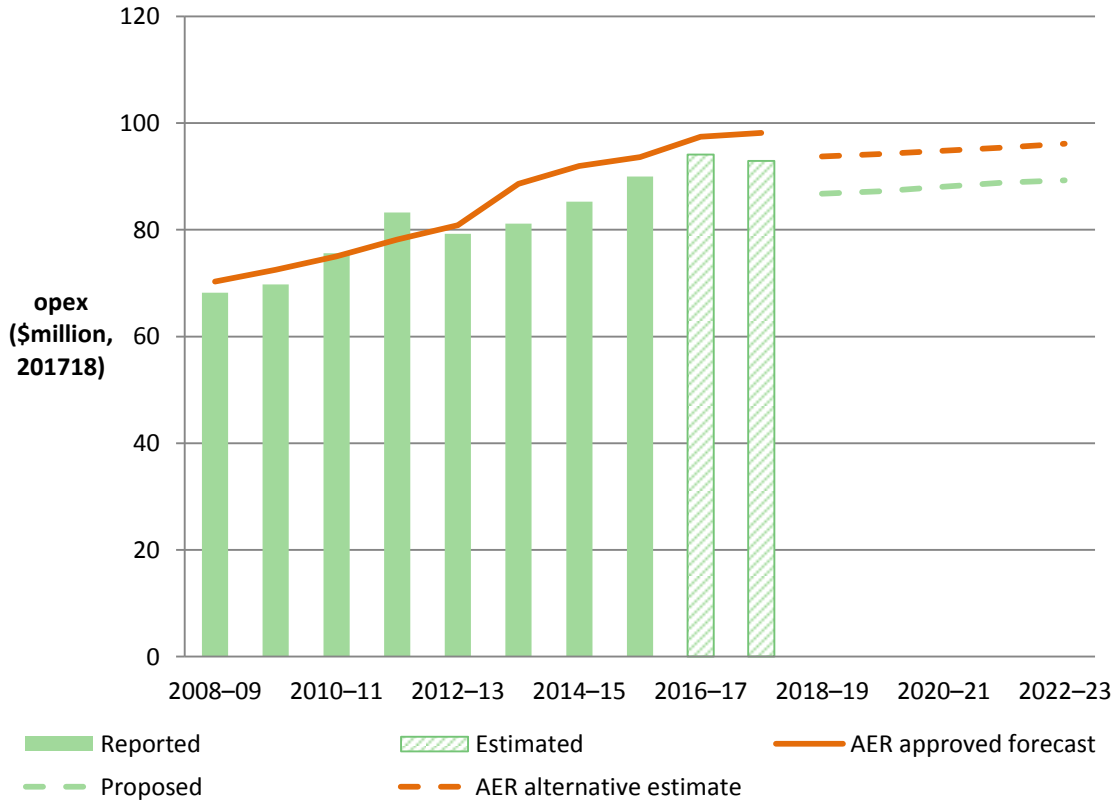
Figure 7.1 compares ElectraNet's total opex forecast to its past actual opex, our previous regulatory decisions and our alternative estimate.

1 Including debt raising costs.

2 NER, cl. 6A.6.6(c).

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

Figure 7.1 Historical and forecast opex ($million, 2017–18)



Source: ElectraNet, *Regulatory accounts 2008–09 to 2015–16*; ElectraNet, *Revenue proposal*, *Opex model*, March 2017; *Revenue proposal*, *PTRM*, March 2017; AER analysis.

Note: Includes debt raising costs and movements in provisions.

7.2 ElectraNet's proposal

ElectraNet proposed total forecast opex of $440.1 million ($2017–18, see table 7.1).[4] This is 0.7 per cent less than ElectraNet's estimated actual opex for the 2013–18 regulatory control period.[5]

Table 7.1 Proposed total opex ($million, 2017–18)

	2018–19	2019–20	2020–21	2021–22	2022–23	Total
Total opex excluding debt raising costs	86.6	87.1	87.9	88.7	89.1	**439.4**
Debt raising costs	0.2	0.2	0.2	0.2	0.1	**0.8**
Total opex	**86.8**	**87.2**	**88.1**	**88.8**	**89.1**	**440.1**

[4] ElectraNet, *Revenue proposal*, *Opex model*, March 2017.

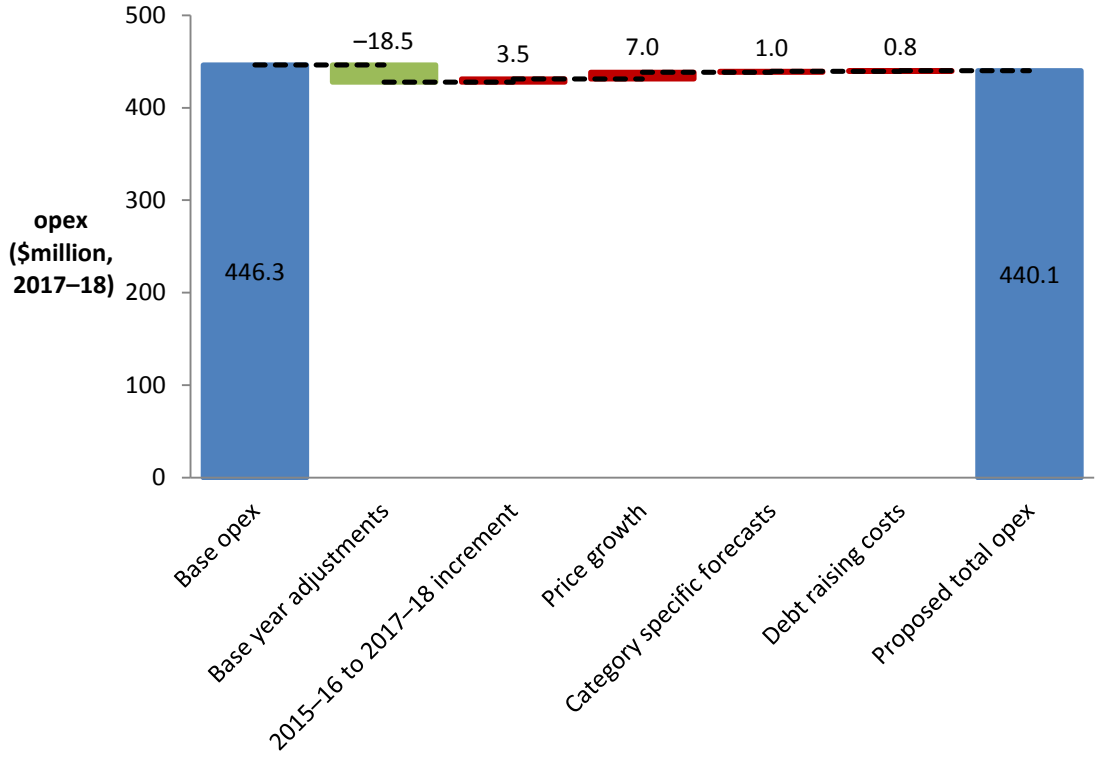
[5] Opex for 2013–14 to 2015–16 is actual. Opex for 2016–17 and 2017–18 is estimated because actual data is not available yet.

Source: ElectraNet, *Revenue proposal*, *Opex model*, March 2017; ElectraNet, *Revenue proposal*, *PTRM,* March 2017

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

In figure 7.2 we separate ElectraNet's opex proposal into the different elements that make up its forecast.

Figure 7.2 ElectraNet's opex forecast ($million, 2017–18)



Source: ElectraNet, *Revenue proposal, Opex model*, March 2017; AER analysis.

The key elements of ElectraNet's proposal are:

- ElectraNet applied a 'base–step–trend' approach similar to the approach we outlined in the Guideline to forecast opex.[6]
- ElectraNet used the opex it incurred in 2015–16 as the base to forecast opex.[7] If no other adjustments were made, this would lead to base opex of $446.3 million ($2017–18) over the 2018–23 regulatory control period.[8]
- However, ElectraNet adjusted base opex by removing non-recurrent expenditure. This reduced base opex by $18.5 million ($2017–18).[9]

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6 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 15.

7 ElectraNet, *Revenue proposal, Attachment 7 Operating Expenditure*, March 2017, p. 18.

8 ElectraNet, *Revenue proposal*, *Opex model*, March 2017.

- ElectraNet applied its forecast of the rate of change to base year opex to forecast the increase in opex between the base year (2015–16) and the last year of the current regulatory control period (2017–18). This increased ElectraNet's total opex forecast by $3.5 million ($2017–18).[10]
- ElectraNet proposed a positive rate of change, driven by real labour price growth, of $7.0 million ($2017–18).[11] It forecast no output growth or productivity growth.[12]
- ElectraNet proposed a category specific forecast of $1.0 million ($2017–18) for revenue reset costs.[13]
- ElectraNet proposed debt raising costs of $0.8 million ($2017–18).[14]

This resulted in a total opex forecast of $440.1 million ($2017–18).[15]

7.3 Assessment approach

Our role is to decide whether to accept a business' forecast opex. We are to form a view about whether a business' forecast of total opex 'reasonably reflects the opex criteria'.[16] In doing so, we must have regard to the opex factors specified in the NER.[17]

The Guideline, together with an explanatory statement, sets out our assessment approach in detail. [18] 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.[19]

Our approach is to assess the business' 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.[20] 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

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9 ElectraNet, *Revenue proposal*, *Opex model*, March 2017.
10 ElectraNet, *Revenue proposal*, *Opex model*, March 2017.
11 ElectraNet, *Revenue proposal*, *Opex model*, March 2017.
12 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, pp. 21–23.
13 ElectraNet, *Revenue proposal*, *Opex model*, March 2017.
14 ElectraNet, *Revenue proposal*, *PTRM*, March 2017.
15 ElectraNet, *Response to AER's information request #008,* 31 July 2017, p. 5.
16 NER, cl. 6A.6.6(c).
17 NER, cl. 6A.6.6(e).
18 AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013; AER, *Expenditure forecast assessment guideline*, *Explanatory statement*, November 2013.
19 NER, cl. 6A.2.3(c).
20 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'.

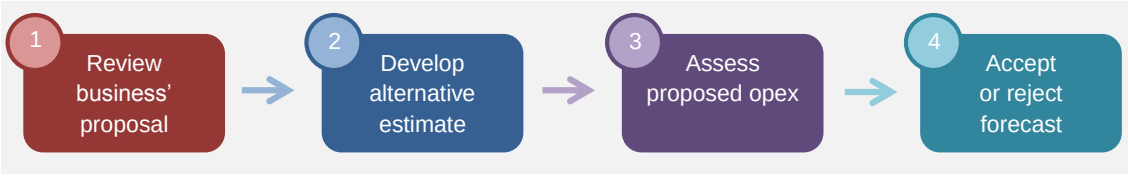
accept the forecast.[21] If we are not satisfied, we substitute the business' forecast with our alternative estimate, which we are satisfied reasonably reflects the opex criteria.[22]

In making this decision, we take into account the reasons for the difference between our alternative estimate and the business' proposal, and the materiality of the difference. We also consider the interrelationships between opex and the other building block components of our decision.[23]

Figure 7.3 summarises the base–step–trend forecasting approach.

[21] NER, cl. 6A.6.6(c).
[22] NER, cll. 6A.6.6(d) and 6A.14.1(3)(ii).
[23] NEL, s.16(1)(c).

Figure 7.3 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.

7.3.1 Submissions

We received eight submissions on ElectraNet's revenue proposal. Two of these related to its opex forecast.[24] The Consumer Challenge Panel (CCP 9) supported ElectraNet's

[24] Business SA, *Submission on ElectraNet's 2018–23 Revenue Proposal,* 6 July 2017; Consumer Challenge Panel, *Submission on ElectraNet's proposal 2018–23* , 12 July 2017; SA Department of Premier and Cabinet, *Submission on ElectraNet revenue proposal submission,* 13 July 2017; Iron Road Limited, *Submission on ElectraNet Revenue*

opex proposal, stating that it is open for us to adopt it.[25] Business SA submitted that we should carefully consider the proposed labour price growth forecasts to ensure they are in the long-term interests of consumers.[26] We have considered these submissions in forming our view.

7.4 Reasons for draft decision

Our draft decision is to accept ElectraNet's total opex forecast of $440.1 million ($2017–18).[27] We are satisfied this forecast reasonably reflects the opex criteria.[28] ElectraNet adopted a base–step–trend forecasting approach similar to the approach we set out in the Guideline.[29]

Our alternative estimate of total opex is $474.4 million ($2017–18). Our forecast differs from ElectraNet's because:

- we have not removed non-recurrent expenditure from base opex
- we have used the approach in the Guideline to forecast the change in opex between the base year (2015–16) and 2017–18[30]
- our forecast of the rate change includes forecast output growth and productivity growth
- we have forecast network support costs as a category specific forecast
- our forecast of debt raising costs is higher than ElectraNet's.

Table 7.2 Our alternative estimate compared to ElectraNet's proposal ($million, 2017–18)

	ElectraNet	Our alternative estimate	Difference
Based on reported opex in 2015–16	446.3	435.7	–10.6
Base year adjustments	–18.5	–	18.5
2015–16 to 2017–18 increment	3.5	26.9	23.4
Output growth	–	3.1	3.1

Proposal 2018–2023—Eyre Peninsula Reinforcement, 7 July 2017; Leigh Creek Energy, *ElectraNet Revenue Proposal 2018–2013 Submission,* 7 July 2017; South Australian Chamber of Mines and Energy (SACOME), *Submission on ElectraNet revenue proposal 2018–2023 ,* 11 July 2017; South Australian Council of Social Service (SACOSS), *Submission on ElectraNet revenue proposal 2018–23,* 13 July 2017; Uniting Communities, *Submission on ElectraNet electricity transmission revenue proposal 2018–23,* 25 July 2017.

25 Consumer Challenge Panel (CCP 9), *Submission on ElectraNet's proposal 2018–23*, 12 July 2017, p. iv.

26 Business SA, *Submission on ElectraNet's 2018–23 Revenue Proposal,* 6 July 2017, p. 3.

27 Including debt raising costs.

28 NER, cl. 6A.6.6(c).

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

30 AER, *Expenditure forecast assessment guideline for electricity transmission*, November 2013, pp. 22–23.

Price growth	7.0	7.2	0.1
Productivity growth	–	–2.5	–2.5
Category specific forecasts	1.0	–2.3	–3.3
Debt raising costs	0.8	6.3	5.6
Total opex	**440.1**	**474.4**	**34.2**

Source: ElectraNet, *Revenue proposal*, *Opex model,* March 2017; AER, ElectraNet 2018–23 Draft Decision opex model, October 2017; AER analysis.

Note: Numbers may not add up to the 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 available on our website.

7.4.1 Base opex

We have used the opex ElectraNet incurred in 2015–16 to forecast its opex. This is consistent with ElectraNet's proposal. We have removed movements in provisions, network support costs and added our forecast increase in opex between 2015–16 and 2017–18. We have forecast network support separately as a category specific forecast to facilitate the network support pass through process.[31]

Our benchmarking results suggest that ElectraNet's relative efficiency has remained stable.[32] ElectraNet's multilateral total factor productivity (MTFP) results have consistently ranked it second out of the five electricity transmission providers. However, ElectraNet ranks fifth for opex multilateral partial factor productivity (MPFP). The fact that ElectraNet has incurred higher network support costs than the other electricity transmission providers may explain part of this relatively poor opex MPFP performance.[33] Higher network support costs would adversely affect its relative opex MPFP ranking and network support costs represent approximately 10 per cent of ElectraNet's total opex.[34] ElectraNet's partial performance indicator (PPI) results are mixed. ElectraNet rates well in some measures, such as total cost per circuit kilometre, but poorly on other measures, such as total cost per MWh of energy transported.[35]

ElectraNet's opex was subject to the incentives of an ex ante regulatory framework, including the application of the efficiency benefit sharing scheme in the 2013–18 period. This gave it a continuous incentive to reduce its opex, including in its proposed base year. Given these considerations, we are satisfied that it is reasonable to use the opex ElectraNet incurred in 2015–16 to forecast base opex (excluding movements in provisions and network support costs).

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31 NER, cl. 6A.7.2.

32 AER, *Annual benchmarking report, Electricity transmission network service providers*, November 2016, pp. 14–18.

33 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 20.

34 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 20.

35 AER, *Annual benchmarking report, Electricity transmission network service providers*, November 2016, pp. 19–23.

7.4.2 Rate of change

We have forecast an average annual rate of change of 0.66 per cent, compared to the 0.61 per cent forecast by ElectraNet. Our forecast includes forecast growth in price, output and productivity. In contrast, ElectraNet only forecast price growth. It forecast no growth in output or productivity.

Forecast price growth

We have included forecast real average annual price growth of 0.63 per cent in our alternative opex estimate, compared to the 0.61 per cent forecast by ElectraNet. This increased our alternative estimate by $7.2 million ($2017–18).

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

- To forecast labour price growth, we, like ElectraNet, have used the average growth in the wage price index (WPI) for the South Australian utilities industry forecast by Deloitte Access Economics (DAE) and BIS Shrapnel.[36] We have used more recent WPI forecasts from DAE, which we received after ElectraNet submitted its revenue proposal.
- To forecast non-labour price growth, we, like ElectraNet, have applied the forecast change in CPI.[37]
- We and ElectraNet have applied weights to account for the proportion of opex that is labour and the proportion that is non-labour.[38] However, our labour and non-labour price weights reflect the benchmark efficient mix of labour and non-labour inputs (62:38). In contrast, ElectraNet applied labour and non-labour input price weights that reflect its own costs (67:33).[39]

We consider that using a network business' actual input price weights would distort its incentive to use the most efficient mix of labour and non-labour inputs. The revenue and pricing principles require that we provide a regulated network business with effective incentives in order to promote economic efficiency.[40] It is important, in our revealed cost approach to forecast opex, that the past performance of a network business does not influence the rate of change used to trend forward the base year revealed opex. Forecasting the rate of change based on a network business' past performance, including its past input mix, would not provide a business an incentive to reveal its efficient costs. Using a business' revealed input mix provides a disincentive

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36 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure,* March 2017, p. 22.

37 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 22.

38 We applied Economic Insights' benchmark opex price weightings for labour and non-labour: 62 per cent for labour and 38 per cent for non-labour. For more detail for our approach to forecasting price changes refer to AER, *AusNet Services transmission determination 2017–18 to 2021–22*, *Draft decision*, Attachment 7, 20 July 2016, pp. 47–53.

39 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 22.

40 NEL, s. 7A(3).

to use less of an input that is increasing more rapidly in price because it would reduce the forecast rate of change.

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 $3.1 million ($2017–18).

We assume opex would reasonably increase with increases in output. We forecast ElectraNet's output growth using our standard approach which is based on the weighted average of circuit line length, maximum demand, energy throughput and voltage weighted entry and exit points. The output measures and weights we used are consistent with those we use in our transmission benchmarking analysis.[41]

We used ElectraNet's forecasts of each of these output measures. It forecast a modest increase in energy delivered and no increase in the other three output measures.

ElectraNet proposed no output growth.[42] However, it noted if a contingent project were triggered, it would reassess the impact on the size of the network.[43]

Forecast productivity growth

We have included forecast annual productivity growth of 0.2 per cent in our alternative opex estimate. This decreased our total opex forecast by $2.5 million ($2017–18). Our opex productivity growth forecast reflects our best estimate of the shift in the productivity frontier.[44] ElectraNet did not include any productivity growth in its opex forecast.[45]

Our productivity growth forecast reflects our expectation of the productivity 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.

We note that the productivity growth forecast approach in this decision departs from the approach we applied to transmission businesses prior to our determination for AusNet Services (2017–22). Our productivity growth forecast reflects the trend of annual productivity growth rate for the period 2006–2015 by taking a line of best fit through all the data points.[46] Previously, we applied the average annual growth rate method, which measures the productivity growth rate between the first and last

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41 AER, *Annual benchmarking report, electricity transmission network service providers*, November 2016, pp. 26–30.

42 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 22.

43 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 22.

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

45 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 23.

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

observations. We discuss our current and previous methods as well as the reasons for the change in our decision for AusNet Services transmission.[47]

7.4.3 Step changes

We have not included any step changes in our alternative estimate. This is consistent with ElectraNet's proposal.[48]

7.4.4 Category specific forecasts

We have included category specific forecasts for debt raising costs and network support costs in our alternative estimate. We have not included any of the other category specific forecasts proposed by ElectraNet in our alternative estimate.

Our preferred forecasting approach is the revealed cost forecasting approach. However, in limited circumstances, we may forecast a particular category of opex independently. For example, this may be required to ensure consistency with other parts of the building block model. Alternatively, we may use a category specific forecast if the total opex forecast becomes highly volatile when a specific category of opex is included in base opex.

Debt raising costs

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 business' 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.

We have accepted ElectraNet's debt raising costs of $0.8 million ($2017–18). ElectraNet stated that it used our benchmark approach to forecast debt raising costs.[49] However, we used our own estimate of debt raising costs (of $6.3 million, $2017–18) in our alternative total opex estimate.

Network support costs

We are required to pass through ElectraNet's network support costs.[50] We have included network support costs as category specific forecasts to facilitate the pass through process. We have forecast annual network support equal to the amount ElectraNet incurred in the base year. This gives total network support costs of $41.9 million ($2017–18), which we included in our alternative total opex estimate. In

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47 AER, *AusNet Services transmission determination 2017–22*, *Final decision*, Attachment 7, April 2017, p. 34.

48 ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, p. 27.

49 ElectraNet, *Revenue proposal*, *Attachment 3 Rate of Return*, March 2017, p. 22.

50 NER, cl. 6A.7.2

contrast, ElectraNet forecast network support by applying the base-trend-step approach.

Revenue reset costs

ElectraNet included a category specific forecast totalling $1.0 million ($2017–18) for revenue reset costs in its total opex forecast. We have not included these costs as a category specific forecast in our alternative estimate. We consider base opex, escalated by the rate of change, is sufficient for these costs.

We recognise that certain categories of expenditure will vary across the regulatory control period. In a given year, some category of opex will be higher than average and others will be lower. If a business adopts a category specific forecast for categories of opex that are lower than average in the base year, but not for those that are higher than average, its forecast will be upwardly biased.

Insurance and self-insurance costs

Like ElectraNet, we have not included category specific forecasts for insurance and self-insurance.

We note that ElectraNet used a bottom-up approach to forecast insurance and self-insurance costs. However, ElectraNet did not include these category specific forecasts in its opex forecast. It stated that by doing so it had implicitly included an efficiency adjustment.[51]

As discussed for reset costs, we do not assume that the amount incurred for a specific cost category in the base year will necessarily reflect the efficient costs of a business going forward. Nor do we assume, when we apply our forecast rate of change, that all categories of opex will increase at that same rate. Consequently, if business adopts a category specific forecast for categories of opex that is increasing at a greater rate than total opex, but not for those that are increasing at a lower rate than total opex, its forecast will be upwardly biased. For this reason we do not consider the fact that ElectraNet did not include category specific forecasts for insurance and self-insurance reflects an implicit efficiency adjustment, as suggested by ElectraNet.

7.4.5 Interrelationships

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

- the operation of the EBSS in the 2013–18 regulatory control period, which provided ElectraNet an incentive to reduce opex in the base year
- substitution possibilities between opex and capex

[51] ElectraNet, *Revenue proposal*, *Attachment 7 Operating Expenditure*, March 2017, pp. 24–25.

- the impact of cost drivers that affect both forecast opex and forecast capex—for example, forecast maximum demand affects forecast augmentation capex and forecast output growth used in estimating 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.