



FINAL DECISION
Endeavour Energy
Distribution Determination

2019 to 2024

Attachment 6
Operating expenditure

April 2019

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Note

This attachment forms part of the AER's final decision on the distribution determination that will apply to Endeavour Energy for the 2019-2024 regulatory control period. It should be read with all other parts of the final decision.

As a number of issues were settled at the draft decision stage or required only minor updates, we have not prepared all attachments. The attachments have been numbered consistently with the equivalent attachments to our longer draft decision. In these circumstances, our draft decision reasons form part of this 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

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 12 – Classification of services

Attachment 13 – Control mechanisms

Attachment 15 – Alternative control services

Attachment 18 – Tariff structure statement

Attachment A – Negotiating framework

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Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
capex	capital expenditure
CCP 10	Consumer Challenge Panel, sub-panel 10
CPI	consumer price index
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
EBSS	efficiency benefit sharing scheme
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	National Electricity Rules
NSP	network service provider
opex	operating expenditure
PPI	partial performance indicators
RBA	Reserve Bank of Australia
RIN	regulatory information notice
RPP	revenue and pricing principles

Operating expenditure

Operating expenditure (opex) is the operating, maintenance and other non-capital expenses incurred in the provision of network services. Forecast opex for standard control services is one of the building blocks we use to determine a service provider's annual total revenue requirement.¹

This attachment sets out our final decision on Endeavour Energy's (Endeavour) forecast opex for the 2019–24 regulatory control period.

6.1 Final decision

Our final decision on Endeavour's revenue includes \$1437.5 million (\$2018–19) in total forecast opex for the 2019–24 regulatory control period. Our final decision represents a decrease of \$95.8 million (6.2 per cent) from Endeavour's actual opex in the current regulatory control period, which:

- reflects the significant opex efficiency gains Endeavour made in 2017–18, and maintains these over the 2019–24 regulatory control period
- accounts for expected ongoing improvements in opex productivity
- makes allowance for expected increases in input costs (including the cost of labour), and in the costs of operating a larger network with more customers.

Endeavour's revised opex proposal adopted the approach we used in our November 2018 draft decision, with updates to account for the most recent available information.²

We have used our standard 'base-step-trend' approach to develop our estimate of total forecast opex, which we compare to Endeavour's revised proposal. This forecast starts with Endeavour's actual costs in 2017-18 as its base year. We have then forecast growth in prices, output and productivity in accordance with our expenditure forecast assessment guideline.³

Our alternative estimate is \$32.1 million (2.2 per cent) lower than Endeavour's revised total opex proposal of \$1469.6 million (\$2018–19), which we do not accept. The primary reason we have not accepted Endeavour's revised opex proposal is our decision to include a productivity growth forecast of 0.5 per cent per year in our estimate of efficient forecast opex. This reflects the opex productivity that can be achieved by a prudent electricity distributor acting efficiently under business-as-usual conditions. Endeavour did not include any forecast opex productivity growth in its revised proposal, which was consistent with its April 2018 initial regulatory proposal.

¹ NER, cl.6.4.3(a)(7).

² *Endeavour Energy Revised Regulatory Proposal, 1 July 2019-30 June 2024*, p.22.

³ AER, *Expenditure Forecast Assessment Guideline for Electricity Distribution*, November 2013.

This difference in forecast productivity leads to a difference between Endeavour's and our opex forecasts of \$20.1 million (1.4 per cent).

In formulating our alternative total opex estimate, we have also:

- Updated Endeavour's base opex to reflect the most recent Reserve Bank of Australia's (RBA) inflation forecast from February 2019.
- Updated our output growth forecast, using an average of the output weights from the four benchmarking models adopted in our draft decision, updated with data for the period 2006–17. This differs from Endeavour's approach, which involved taking an average of the weights derived from five benchmarking models.⁴
- Updated our labour price growth forecast according to Deloitte Access Economics' wage price index forecast updated in February 2019, which we averaged with Endeavour's forecast prepared by BIS Oxford Economics.

We have substituted our alternative estimate as the forecast opex in Endeavour's revenue determination for the 2019–24 regulatory control period. The reasons for our final decision are set out in further detail in section 6.4.

Table 6.1 shows our decision compared to Endeavour's revised opex forecast.

Table 6.1 AER final decision on total opex (\$million, 2018–19)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Endeavour's proposed opex	280.8	286.2	293.4	300.9	308.3	1469.6
AER final decision	277.6	281.4	287.2	292.9	298.4	1437.5
Difference	-3.2	-4.7	-6.3	-8.0	-9.9	-32.1

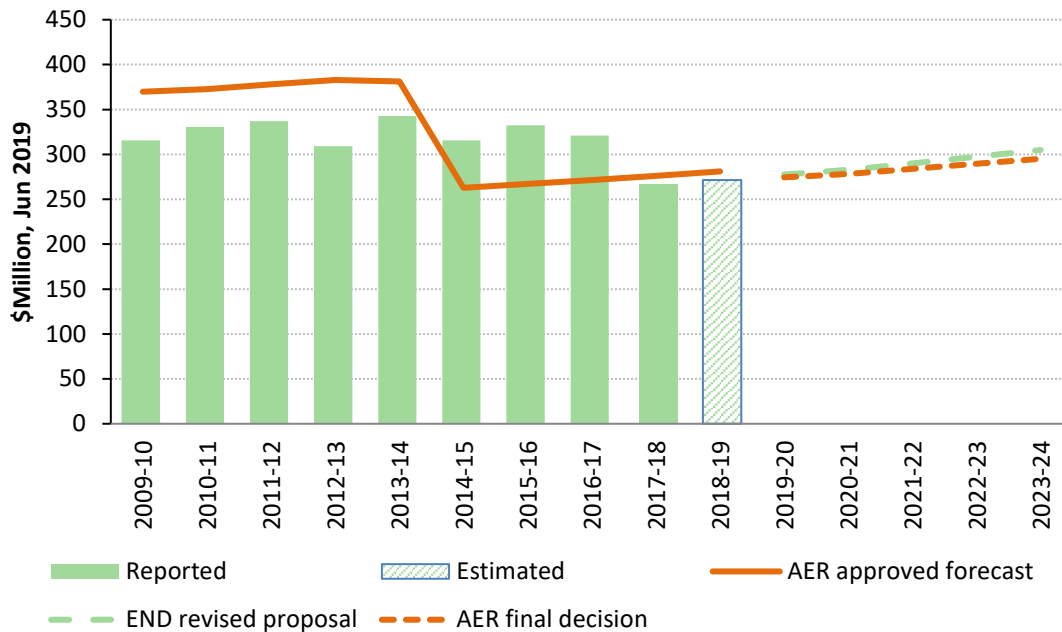
Source: Endeavour Energy, Revised regulatory proposal, post tax revenue model (PTRM), April 2019; AER analysis.

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

Figure 6.1 shows our opex decision compared to Endeavour's revised proposal, its past allowances and past actual expenditure.

⁴ These included four econometric models based on data from 2012–17 published as part of our 2018 annual benchmarking report and the multilateral partial factor productivity (MPFP) model based on data from 2006-16 published as part of our 2017 benchmarking report.

Figure 6.1 AER final decision on total forecast opex (\$m, 2018–19)



Source: AER analysis

Note: Excludes debt-raising costs.

6.2 Endeavour Energy's revised proposal

In its revised proposal, Endeavour forecasts opex of \$1469.6 million (\$2018–19, inclusive of debt raising costs), a decrease of 4.2 per cent from its actual and estimated opex for the 2014–19 regulatory control period. Endeavour's revised opex forecast is 0.1 per cent higher than that of our draft decision, and 2.3 per cent below its January 2018 regulatory proposal.

Table 6.2 Endeavour's proposed opex (\$ million, 2018–19)

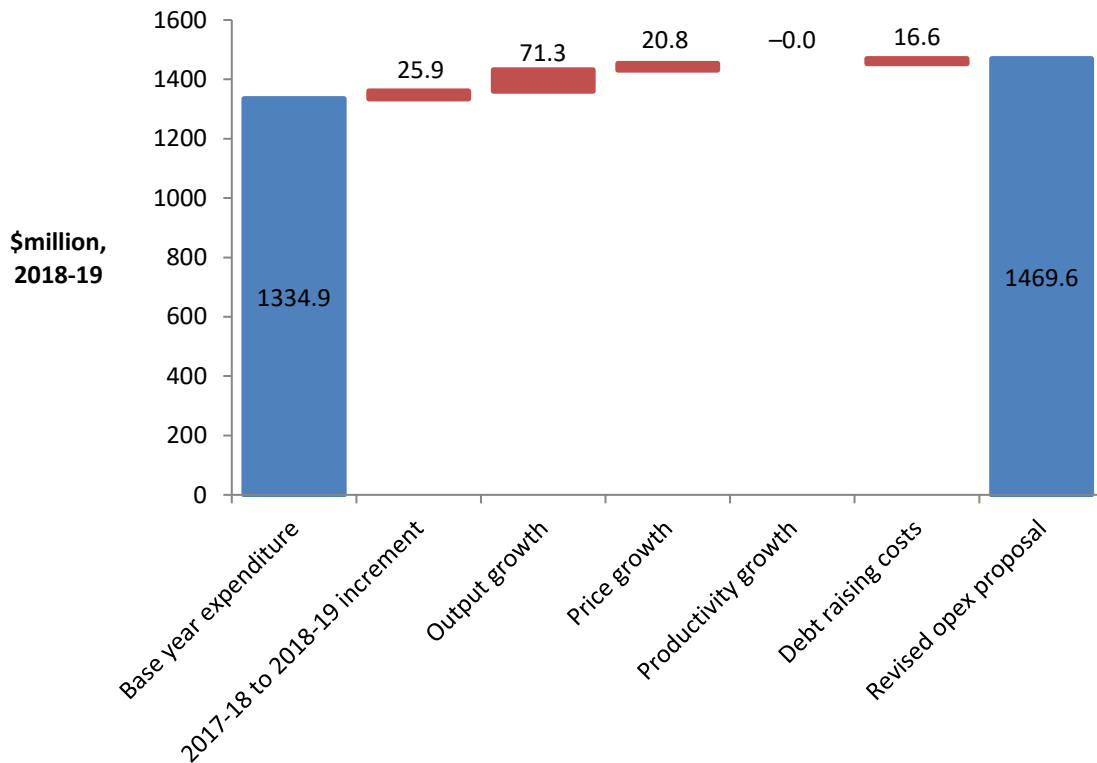
	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Opex excluding debt raising costs	277.5	282.9	290.1	297.5	304.9	1453.0
Debt raising costs	3.2	3.3	3.3	3.4	3.4	16.6
Total opex	280.8	286.2	293.4	300.9	308.3	1469.6

Source: Endeavour Energy, *Revised proposal, 0.14-Revised Opex Model, January 2019*; AER analysis

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

Figure 6.2 provides a breakdown of Endeavour's revised opex forecast into key components.

Figure 6.2 Endeavour's opex forecast breakdown



Source: AER analysis.

Endeavour states that it has adopted the changes in our draft decision, with two updates that involve revising its base year opex from an estimated to an actual number, and applying the output weightings published in our final 2018 annual benchmarking report. The key elements of Endeavour's proposal are:

- Endeavour uses its reported opex in 2017–18 to derive a base opex of \$1334.9 million (\$2018–19). This is 0.2 per cent higher than its January 2018 regulatory proposal base opex.
- Endeavour applies the final year formula in our expenditure forecast assessment guideline to derive a final year increment of \$25.9 million (\$2018–19).
- Endeavour then trends 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 Endeavour of operating its network (\$71.3 million, \$2018–19).
 - Expected increases in real input prices, including forecast increases in labour costs and an increase in line with CPI for non-labour costs (\$20.8 million, \$2018–19).
 - Forecast zero change in opex productivity over the regulatory period.

- Endeavour has forecast \$16.6 million (\$2018–19) of debt raising costs. Debt raising costs are transaction costs incurred each time debt is raised or refinanced.

6.2.1 Submissions on our draft decision and Endeavour Energy's revised proposal

We received seven submissions on our draft decision and Endeavour's revised proposal; five of which commented on Endeavour's opex forecast. Where relevant, we will discuss their submissions in our reasoning for our decision in section 6.4.

6.3 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' 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 criteria, we accept the forecast.⁵ If we are not satisfied, we substitute an alternative estimate that we are satisfied reasonably reflects the opex criteria for the business's forecast.⁶ 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.⁷

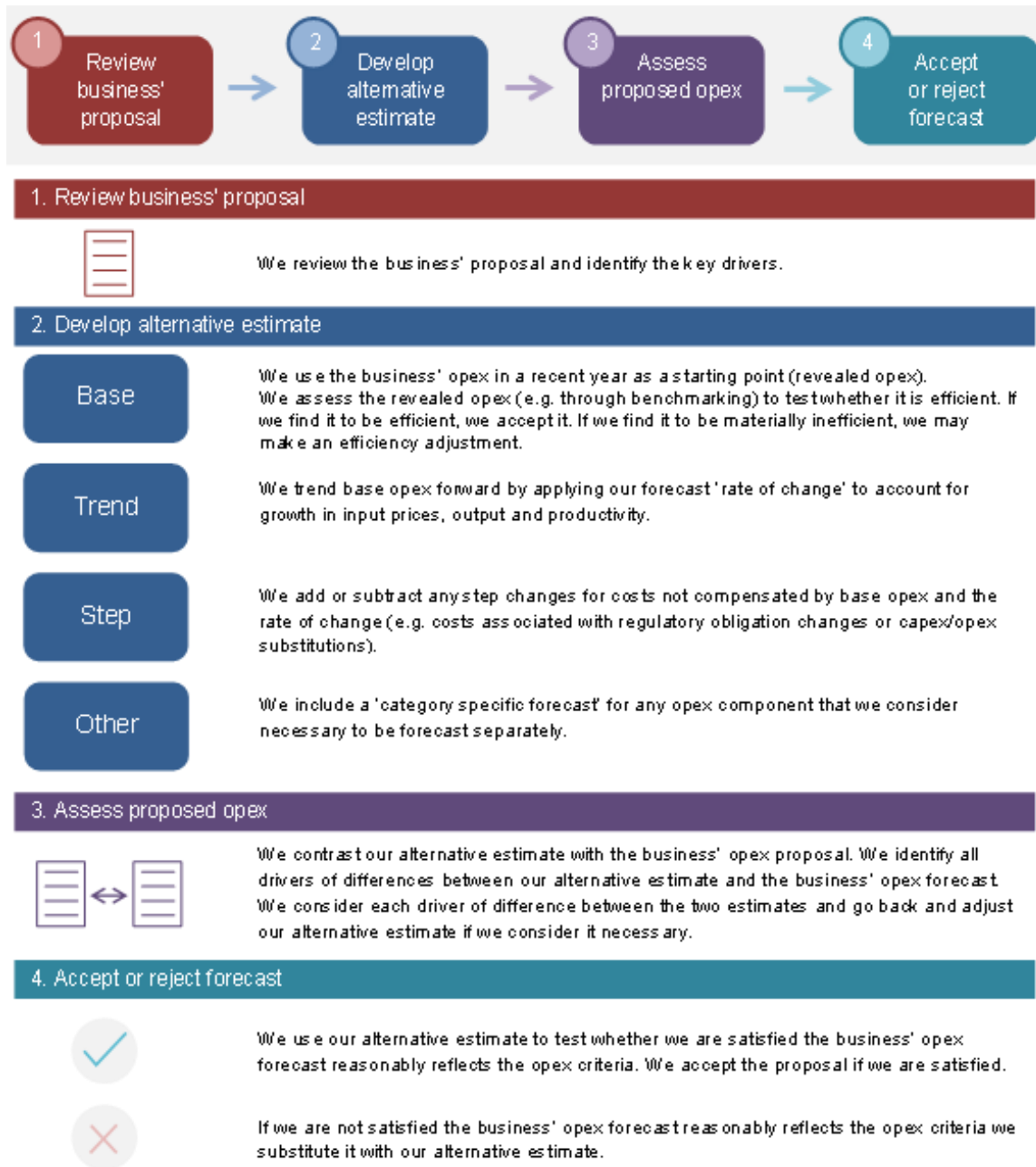
As set out in our draft decision in detail, we generally assess a business's forecast total opex using a 'base-step-trend' approach, as summarised in Figure 6.3.

⁵ NER, cl. 6.5.6(c).

⁶ NER, cll. 6.5.6(d) and 6.12.1(4)(ii).

⁷ NEL, s. 16(1)(c).

Figure 6.3 Our opex assessment approach



6.3.1 Interrelationships

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

- 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 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 Endeavour's engagement with consumers.

6.4 Reasons for final decision

Our final decision is to include total forecast opex of \$1437.5 million (\$2018–19, inclusive of debt raising costs) in Endeavour's revenue for the 2019–24 regulatory control period. We consider that this forecast reasonably reflects the opex criteria. Our total opex forecast is 2.2 per cent lower than Endeavour's revised proposal of \$1469.6 million (\$2018–19, inclusive of debt raising costs).

The difference between our alternative estimate and Endeavour's revised opex proposal of 2.2 per cent is not immaterial. Therefore, we are not satisfied that Endeavour's proposed forecast reasonably reflects the opex criteria. We have adopted our alternative estimate as the forecast opex in Endeavour's revenue determination for the 2019-24 regulatory control period.

Table 6.3 presents the components of our alternative estimate compared to Endeavour's revised proposal. It shows that the primary reason for the difference between our total forecast opex and Endeavour's revised proposal is forecast opex productivity growth. We have forecast opex productivity growth of 0.5 per cent per annum reflecting the outcome of our recent opex productivity growth forecast review,⁸ whereas Endeavour forecast zero opex productivity growth.

Table 6.3 Our alternative estimate compared to Endeavour's revised proposal (\$ million, 2018–19)

	Endeavour revised proposal	Our alternative estimate	Difference
Base opex	1334.9	1325.1	-9.8
2017–18 to 2018–19 increment	25.9	26.0	0.1
Price growth	71.3	67.5	-3.8
Output growth	20.8	22.6	1.7
Productivity growth	–	-20.1	-20.1
Debt raising costs	71.3	67.5	-3.8
Total opex	1469.6	1437.5	-32.1

Source: Endeavour Energy, Revised Proposal 0.14 Revised Opex Model, January 2019; 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.

⁸ AER, *Final decision - Forecasting productivity growth for electricity distributors*, March 2019.

6.4.1 Base opex

In its revised proposal, Endeavour replaces the estimate of opex used in its initial proposal with its actual opex for 2017–18 as the base to forecast opex over the 2019–24 regulatory control period. After appropriate adjustments, its base year opex is \$267.0 million (\$2018–19), which is 0.3 per cent higher than the estimated base year opex it relied on in its initial opex proposal.

Using Endeavour's updated actual opex in 2017–18, and taking into account the movement in Endeavour's provisions and DMIA, and updated inflation forecasts from the RBA released in February 2019, the base year opex that we use in our alternative estimate is \$265.0 million (\$2018–19). This provides us with a base opex of \$1325.1 million (\$2018–19) for the 2019–24 regulatory control period.

6.4.2 Rate of change

We trend the base opex forward to account for the forecast growth in prices, output and productivity. We refer to this as the rate of change.

In its revised proposal, Endeavour has largely adopted our approach in our draft decision to forecasting the rate of change, including price growth, output growth and productivity growth. We have forecast an average annual rate of change of 1.8 per cent, compared to Endeavour's forecast of 2.3 per cent. The reasons for our forecast, and the difference compared to Endeavour's forecast, are set out below.

Price growth forecast

We have included forecast real average annual price growth of 0.60 per cent in developing our alternative opex estimate. This increases base opex by \$67.5 million (\$2018–19). In contrast, Endeavour forecasts price growth of 0.58 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 New South Wales utilities industry forecast by Deloitte Access Economics and Endeavour's consultant, BIS Oxford Economics. Endeavour has adopted this approach in its revised proposal.
- We forecast non-labour price growth in line with CPI.

Since our draft decision, we have received updated wage price index forecast by Deloitte Access Economics and incorporated this into our alternative estimate.

Output growth forecast

We have included forecast average annual output growth of 1.68 per cent in developing our alternative opex estimate. This increases base opex by \$22.6 million (\$2018–19). In contrast, Endeavour forecasts average annual output growth of 1.71 per cent.

In our draft decision, we estimated output growth using an average of the weights from the results of four benchmarking models based on data from 2006–16. The results of these models were presented in our 2017 annual benchmarking report.⁹ This was a change to our previous approach, which used weights from one benchmarking model — the Cobb Douglas Stochastic Frontier Analysis (CD SFA).

For our final decision, we have updated our opex forecast using the most recent available weights from the same four models and based on an extra year of data for 2016–17. These weights are contained in the Economic Insights data files of the *2018 Annual benchmarking report — Electricity distribution network service providers*, November 2018.

In its revised proposal, Endeavour stated it had adopted our draft decision method to estimate output growth weights.¹⁰ In practice, Endeavour’s approach involves taking an average of weights derived from the results of five benchmarking models. These included four econometric models based on data from 2012–17 published as part of our 2018 annual benchmarking report, and the MPFP model based on data from 2006–16 published as part of our 2017 annual benchmarking report.¹¹

For our final decision, we have adopted output weights derived from the four benchmarking models used in our draft decision, with an updated time series that includes data for 2016–17. This approach has regard to the results of our most recent annual benchmarking report. It is based on a larger data set, and maintains consistency with the approach we used in our draft decision. We consider it inappropriate at this point in the determination process to introduce another change in our approach to estimating output growth weights.

Table 6.4 shows the output specification and weights from each model as reflected in the 2018 annual benchmarking report.

⁹ AER, *2017 Annual benchmarking report - Electricity distribution network service providers*, November 2017. The four benchmarking models are the Cobb Douglas Stochastic Frontier Analysis, the Cobb Douglas Least Squares Econometrics, the Translog Least Squares Econometrics and the Opex Multilateral Partial Factor Productivity analysis.

¹⁰ Endeavour Energy, *Revised Regulatory Proposal*, January 2019 p.22.

¹¹ The additional econometric model is the Translog Stochastic Frontier Analysis (Translog SFA).

Table 6.4 Outputs specification and weights derived from economic benchmarking models for 2006–2017 (per cent)

Output	MPFP	SFACD	LSECD	LSETLG
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			

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

Productivity growth forecast

We have included a productivity growth forecast of 0.5 per cent per year in our alternative estimate. As foreshadowed in our draft decision, we have undertaken an industry wide consultation on our opex productivity growth forecast review.¹² We have taken the outcome of this review into consideration when deriving our alternative estimate.

Endeavour made a submission to our opex productivity growth forecast review, providing its views on the AER's initial forecasting approach.¹³ Endeavour did not support a positive productivity growth estimate submitting that the evidence favoured a negative number. Endeavour's concerns on the review's draft decision included:

- its reliance on productivity estimates based on the shorter time period (i.e. 2012–16 rather than 2006–16)
- that productivity estimates from this time period may capture a significant amount of 'catch up' productivity improvement rather than 'frontier shift'
- that the drivers of productivity had not been identified and quantified
- the procedural fairness of changing the approach to forecasting productivity growth during a network revenue determination process.

The Consumer Challenge Panel (CCP10) submitted that it is reasonable for customers to expect improving efficiency over time. While recognising Endeavour's improved productivity over the past couple of years, CCP10 stated that the opex productivity

¹² AER, *Draft decision - Endeavour Energy distribution determination 2019–24, Attachment 6 Operating expenditure*, November 2018, p.6-6.

¹³ Endeavour Energy, *Submission to the AER Opex Productivity Growth Forecast Review Draft Decision Paper*, 21 December 2018.

measures it has proposed are dynamic, meaning that productivity cannot be considered as a one-off action, no matter how significant the one-off improvement.¹⁴

In our final decision of the opex productivity growth forecast review, we set out the analysis and evidence we have relied on to forecast productivity growth.¹⁵ 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.

¹⁴ CCP, *CCP10 Response to the Endeavour Energy Revised Regulatory Proposal 2019-24 and AER Draft Determination* February 2019, pp. 37-38.

¹⁵ AER, *Final decision - Forecasting productivity growth for electricity distributors*, March 2019.