



FINAL DECISION
Endeavour Energy
Distribution Determination

2019 to 2024

Attachment 5
Capital 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
augex	augmentation expenditure
capex	capital expenditure
CAM	Cost Allocation Methodology
CCP10	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIA	demand management innovation allowance
DMIS	demand management incentive scheme
distributor	distribution network service provider
EBSS	efficiency benefit sharing scheme
ECA	Energy Consumers Australia
EMCa	Energy Market Consulting associates
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
EUAA	Energy Users Association of Australia
F&A	framework and approach
NEL	national electricity law
NIEIR	National Institute of Economic and Industry Research
NEM	national electricity market
NEO	national electricity objective
NER	National Electricity Rules
NSP	network service provider
opex	operating expenditure

Shortened form	Extended form
PIAC	Public Interest Advocacy Centre
PTRM	post-tax revenue model
RAB	regulatory asset base
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
STPIS	service target performance incentive scheme
WACC	weighted average cost of capital

5 Capital expenditure

Capital expenditure (capex) refers to the investment made in the network to provide standard control services. This investment mostly relates to assets with long lives (30-50 years is typical) and these costs are recovered over several regulatory control periods.

On an annual basis, the financing cost and depreciation associated with these assets are recovered (return on and of capital) as part of the building blocks that form Endeavour Energy's (Endeavour) total revenue requirement.¹

This attachment sets out our final decision on Endeavour's total capex forecast. Further detailed analysis is provided in the following appendix

- Appendix A - Assessment of the Western Sydney Aerotropolis augex project.

Our final decision is based on the information before us. We have been informed by Endeavour's revised proposal, stakeholder submissions and further supporting analysis to arrive at our final decision.

5.1 Final decision

Our final decision accepts Endeavour's revised capex forecast of \$1,715 million (net capex, \$2018–19) for the 2019–24 regulatory control period.² Endeavour has largely accepted our draft decision for the majority of its capex. The only revision is to its augex forecast, which is an increase from our draft decision by \$39.3 million for the Western Sydney Aerotropolis project. The project was included as a contingent project in Endeavour's initial proposal, but is now included as part of its capex forecast for the 2019–24 period. Endeavour has justified that the additional forecast augex of \$39.3 million (\$2018–19) for the Western Sydney Aerotropolis is prudent and efficient.

In assessing forecast capex, we are guided by the National Electricity Objective (NEO) and underpinning capex criteria and objectives set out in the National Electricity Rules (NER). We must accept a distributor's capex forecast if we are satisfied that the total forecast capex for the regulatory control period reasonably reflects the capex criteria.³

These criteria outline that a distributor's capex forecast must reasonably reflect the efficient costs of achieving the capex objectives, the costs that a prudent operator would require to achieve the capex objectives, and a realistic expectation of the demand forecast and cost inputs required to achieve the capex objectives.

¹ NER, cl. 6.5.2 and NER, cl.6.5.5.

² Net capex excludes capital contribution, equity raising costs and asset disposals.

³ NER cl. 6.5.7(c).

The capex objectives relate to a distributor's ability to comply with regulatory obligations and maintain the quality, reliability and security of supply of standard control services.

Where a distributor is unable to demonstrate that its proposal complies with the capex criteria and objectives, the NER requires us to set out a substitute estimate of total capex that we are satisfied reasonably reflects the capex criteria, taking into account the capex factors. Table 5.1 outlines our draft decision, Endeavour's revised total capex forecast and our final decision.

Table 5.1 – Final decision on Endeavour's total net capex forecast (\$2018–19, million)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Endeavour initial proposal	499.5	430.7	423.9	411.8	417.5	2,133.5
AER draft decision ⁴	349.4	331.2	327.4	337.9	329.6	1,675.7
Endeavour's revised proposal	349.4	331.2	335.3	353.6	345.3	1,715.0
AER final decision	349.4	331.2	335.3	353.6	345.3	1,715.0

Source: Endeavour's distribution PTRM and AER analysis.

Note: Numbers may not add due to rounding.

Our assessment is that Endeavour has justified that its revised total capex forecast reasonably reflects the capex criteria, taking into account the capex factors and the revenue and pricing principles.

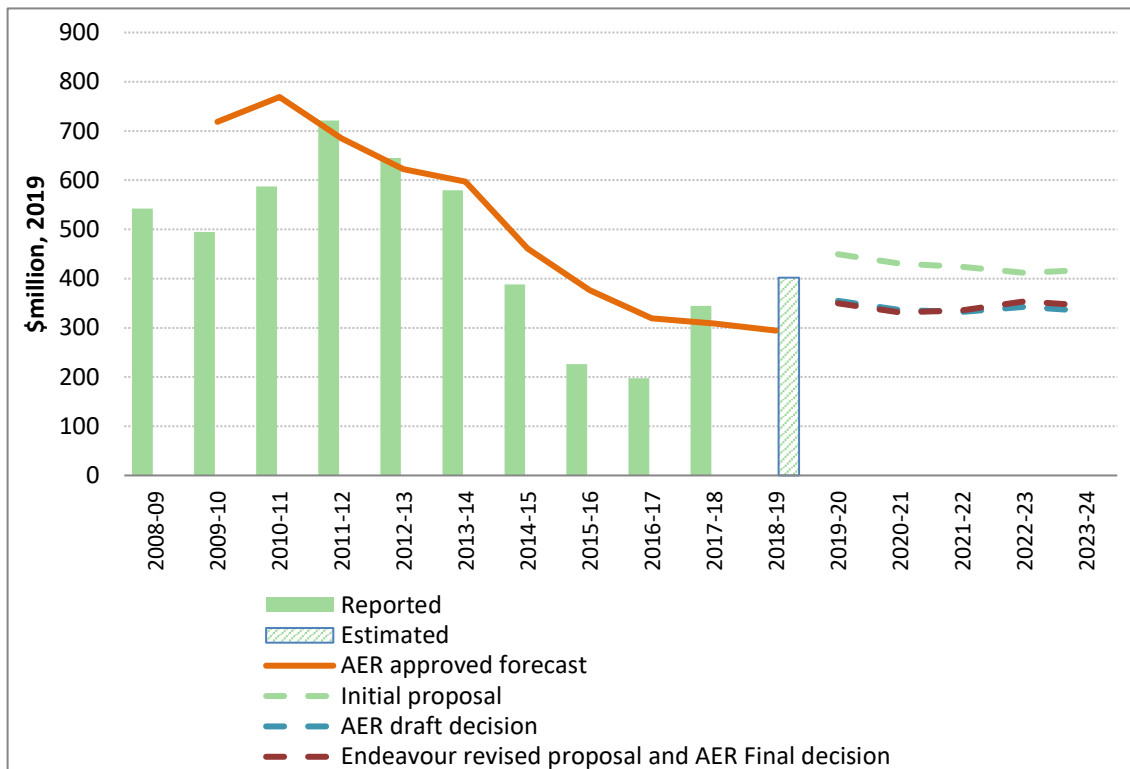
5.2 Endeavour Energy's revised proposal

In its revised proposal, Endeavour's proposed total net capex is \$1,715 million (net capex, \$2018–19) for the 2019–24 regulatory control period.⁵ This forecast is approximately 10 per cent higher than its actual/expected capex over the 2014–19 period.

⁴ The figures correct the draft decision's modelling error, which inadvertently included asset disposals as part of Endeavour's net capex in the draft decision. The correct net capex amount is presented here.

⁵ Net capex does not include capital contributions and asset disposals.

Figure 5.1 Endeavour's historical vs forecast capex, including 2014–19 allowance (\$m 2018–19)



The key drivers of Endeavour's revised forecast capex proposal are:

- Forecast repex of \$600.3 million for asset replacement, which is a reduction of 6 per cent from the estimated current period spend.
- Forecast augex of \$389.1 million, including targeted augex projects to meet expected demand; this compares to its actual/estimated augex in the current regulatory control period of \$255.4 million. Endeavour submits that its forecast augex is heavily driven by its greenfields developments.
- Forecast net connections capex of \$118.8 million for connection works for new and existing customers.
- Non-network capex of \$170.1 million relating to Information, Communication and Technology (ICT); fleet and plant; buildings and property; and, tools and equipment assets. Forecast capex in this category is below the estimated current period expenditure of \$196.6 million.
- Capitalised overheads of \$400 million, including \$323 million of total business overheads that are allocated to capex in accordance with Endeavour's cost allocation method, and \$77 million of direct capex overheads, which relate only to the capex program.

5.3 Reasons for final decision

In this final decision, we accept Endeavour's revised proposal of \$1,715 million (net capex, \$2018-19). Endeavour's revised proposal is largely consistent with our draft

decision. Table 5.2 sets out the capex amounts by driver. Aside from the augex forecast, all other capex categories are consistent with our draft decision. More detailed discussion on our assessment on Endeavour’s Western Sydney Aerotropolis is found in A.1 of this attachment.

Table 5.2 – Assessment of required capex by driver 2019–24 (\$2018–19, million)

Driver	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Augmentation	64.81	64.51	77.99	94.03	87.79	389.14
Gross connections (inc capital contributions)	182.38	164.27	159.97	159.42	162.41	828.45
Replacement	109.29	120.30	118.79	124.14	127.82	600.34
Non-network	49.69	35.11	31.71	30.02	23.56	170.09
Capitalised overheads	79.39	79.66	80.46	79.96	80.54	400.00
Other System	17.64	12.24	10.42	10.35	10.72	61.37
Gross Capex	503.18	476.09	479.35	497.93	492.84	2,449.39
Less capital contributions	148.40	139.80	139.10	139.50	142.80	709.80
Less disposals	5.30	5.00	4.80	4.70	4.60	24.50
Net capex	349.47	331.25	335.33	353.64	345.38	1,715.07

Source: AER analysis.

Notes: Numbers may not add due to rounding. Net capex = gross capex less capital contributions and less asset disposals.

In our draft decision, we noted our, including EMCa’s, assessment of Endeavour’s initial capex forecast. The draft decision detailed our concerns with Endeavour’s forecasting methodology and risk assessment. However, we also welcomed Endeavour’s response to the issues paper, particularly the update to its capex forecast, from \$2.16 billion to \$1.70 billion (\$2018-19, including asset disposals) ahead of our draft decision. We considered that the updated capex forecast reflected Endeavour’s willingness to understand and respond to the AER and other stakeholders’ concerns.⁶

The CCP supported Endeavour’s revision to its forecast ahead of the draft decision, which in the CCP’s opinion reflected the significant commitment to address the

⁶ Endeavour Energy, *Response to AER issues paper – NSW electricity distribution determinations 2019-24*, public, p.1. CCP10, *Endeavour Energy 19–24 draft revenue proposal - letter to the AER*, Public, 21 September 2018. Public Interest Advocacy Centre, *Endeavour Energy - Revised 2019-24 Capital Forecast*, Public, 19 September 2018. Energy Consumers Australia, *Endeavour Energy’s response to the AER Issues paper: NSW Electricity Distribution Determinations 2019-24*, Public, 30 August 2018.

consumer groups' concerns.⁷ The Public Interest Advocacy Centre (PIAC) commended Endeavour on its reversal to the application of its connection policy and its responsiveness to consumer input.⁸ PIAC added that it strongly supports the direction of the revision, but noted that it is not able to determine if \$1.7 billion is more efficient than \$1.6 billion or even \$1.8 billion.⁹

Our final decision position, on the majority of the capex categories, apart from the revised component of augex forecast, has been informed by our draft decision assessment of Endeavour's initial capex forecast. The initial capex forecast, of \$2,133 million (net capex, \$2018-19) had all the accompanying supporting documentation, regulatory information notices, strategic asset management plans and expenditure modelling, which enabled our, including EMCA's, assessment of Endeavour's capex.

Our conclusion regarding the prudence and efficiency of the updated capex forecast, which was the basis of our draft decision, was not made in its own right, rather, it is made in reference to our, including EMCA's, initial assessment of Endeavour's capex. Endeavour has accepted our draft decision and therefore, we have not replicated our assessment in this final decision. Further details on our, including EMCA's, assessment of Endeavour's initial capex forecast is in the draft decision.¹⁰

The only change from our draft decision is in relation to Endeavour's revised augex forecast, particularly for the Western Sydney Aerotropolis. Endeavour has justified that its forecast augex of \$39.3 million (\$2018-19) for the Western Sydney Aerotropolis is prudent and efficient. In coming to our view, we have assessed:

- Endeavour's investment options analysis.
- Endeavour's unit rates for its preferred investment option.
- The issue of who bears the costs of the investment.

Based on the information before us, and relying on the assessment approach as detailed in our draft decision,¹¹ Endeavour has justified that its total capex forecast reasonably reflects the capex criteria and is consistent with an amount that would be incurred by a prudent and efficient operator.

⁷ CCP10, *Response to Endeavour Energy Revised Regulatory proposal 2019-24 – AER draft determination*, February 2019, public, p.23.

⁸ In July 2017, Endeavour changed its application of the connection policy so that certain classes of shared assets, which until then had been funded by the connecting customer, would instead be added to the RAB so that all network customers would fund these costs through Endeavour's distribution tariffs. As a result, the net connections capex that would be rolled into the RAB would increase by approximately four times, when compared to immediately prior to the change in policy.

⁹ Public Interest Advocacy Centre, *Submission to the AER's draft determinations and the NSW DNSP's 2019-24 revisited proposals*, 7th February 2019, public, p.7.

¹⁰ AER, *Endeavour Energy 2019-24 – Draft Decision – Attachment 5 – Capital Expenditure*, November 2018, public.

¹¹ Please refer to Appendix A in our draft decision for detailed discussion on the assessment approach, AER, *Endeavour Energy 2019-24 – Draft Decision – Attachment 5 – Capital Expenditure*, November 2018, p.21-26.

A Assessment of capex drivers

This appendix outlines our analysis of Endeavour's revised augex forecast, particularly for the Western Sydney Aerotropolis for the 2019–24 regulatory control period. As the Western Sydney Aerotropolis project is the only change from our draft decision, this appendix focuses solely on the Aerotropolis project. All other components of Endeavour's capex, such as repex, customer connections capex, overheads and non-network capex are unchanged from our draft decision.¹²

In this appendix, we set out our analysis of new information that we have not considered in our draft decision. In coming to our views, we applied the assessment techniques outlined in Appendix A.

The structure of this appendix is:

- Section A.1: Western Sydney Aerotropolis

A.1 Forecast Western Sydney Aerotropolis augex

Network augmentation (augex) is directed at increasing the capacity of the existing network to meet the demand of existing and future customers. It can also be triggered by the need to upgrade the network to comply with quality, safety, reliability and security of supply requirements.

A.1.1 Revised proposal

Endeavour revised its capex forecast to incorporate \$39.3 million in augex for the Western Sydney Aerotropolis. This was included as a contingent project in Endeavour's initial proposal, this project is now included as part of its capex forecast.

Following our draft decision and stakeholder consultation, Endeavour further updated its forecast to reflect the following:

- Greater certainty in requiring the airport connection, which clarified the need for investment. This resulted in the project being incorporated into forecast capex rather than as a contingent project.
- A lower cost option of a single 132kV feeder and to use the existing 33kV network to cater for the early stages of development. This approach is more consistent with Endeavour's staged approach to augex and allows for greater flexibility to respond to capacity constraints.
- Consideration of who bears the cost of the shared network investment.¹³

¹² For our assessment of all Endeavour's capex categories, please refer to our draft decision. AER, *Endeavour Energy 2019-24 – Draft Decision – Attachment 5 – Capital Expenditure*, November 2018.

¹³ Endeavour Energy, *0.11 Western Sydney Aerotropolis plan*, January 2019, public, p. 26.

A.1.2 Position

Endeavour has justified that its forecast augex of \$39.3 million (\$2018–19) for the Western Sydney Aerotropolis is prudent and efficient. In coming to our view, we have assessed:

- Endeavour's investment options analysis.
- Endeavour's unit rates for its preferred investment option.
- The issue of who bears the costs of the investment.

In assessing these issues, we are satisfied that Endeavour has sufficiently justified its choice of investment and the costs associated with the connection. Further, we are satisfied that there is no issue of a cross subsidy between existing customers and new customers.

A.1.3 Reasons for position

In our draft decision on Endeavour's contingent project for the Western Sydney Aerotropolis, we considered Endeavour would require some augmentation of its assets in the future, but we did not accept the proposed project. We considered further work was required before costings could be finalised because demand forecasts were uncertain and Endeavour had not adequately considered lower cost options.¹⁴

In response to our draft decision, Endeavour revised its forecast with a hybrid option of a 132kV for initial connection and 33kV to provide the N-1 requirement. Endeavour also noted that it had consulted extensively with stakeholders on the requirements of this project.¹⁵

In response to Endeavour's revised proposal, submissions agreed that the connection was required. PIAC considered any allowance for this project should be prudent and efficient.¹⁶

CCP10 also endorsed Endeavour's consultation and expressed support for the project. However, CCP10 raised the following issues:

- There should be an assessment of the level of capital contribution by the developers related to the airport project, consistent with the 'causer pays' approach supported by consumer groups.
- The AER should consider whether the capex forecast in the Draft Decision is sufficient to absorb the costs of the project.

¹⁴ AER, *Endeavour Energy 2019-24 – Draft Decision – Attachment 5 – Capital Expenditure*, November 2018, public, pp. 115–119.

¹⁵ Endeavour Energy, *0.11 Western Sydney Aerotropolis plan*, January 2019, public, p. 10

¹⁶ Public Interest Advocacy Centre, *Submission to the AER's draft determinations and the NSW DNSP's 2019-24 revised proposals*, 7th February 2019, public, p.11.

- Consideration should be given to developing an oversight committee comprising representatives from the business and community stakeholders. The oversight committee would provide input into the timing, scope and quantum of investment of the project.¹⁷

Assessment of cost

We have undertaken an assessment of Endeavour's proposed investment to construct a single 132kV line and a 33kV line to provide N-1 reliability. We are satisfied that this option is prudent and efficient given the requirements of the airport connection. Endeavour has justified that the proposed lower cost option does not rely on uncertain long term demand forecasts. This less capital-intensive approach adopts shorter-term demand forecasts to 2026 which covers the first stage of airport development.¹⁸ This also provides Endeavour the ability to respond to actual demand growth and use non-network solutions.

As part of our assessment we reviewed the project's costs, alternative options and information related to comparable projects. We found that the cost of the connection was higher than Endeavour's unit rates for past projects. In response to an information request, Endeavour noted that its historical unit rates included both underground and overhead line projects. The airport connection is based on an underground connection. Endeavour also noted the requirement for undergrounding were due to the proximity of the line to airport runways. Further, Endeavour noted that it has not been allowed, by Road and Maritime Services (RMS), to construct 132kV overhead lines within the road reserve.¹⁹

Based on the information before us, Endeavour has justified that the cost of the project is prudent and efficient.

Other considerations

In addition to assessing the prudence and efficiency of the proposed project, we have also considered other issues raised in CCP's submission.

We assessed to what extent this project requires a capital contribution based on a 'causer pays' approach. In response to our concerns that there may be a cross subsidy between existing and new customers, Endeavour considered the project to be self-funding based on the expected additional connections and associated loads.²⁰

Further, Endeavour noted that, based on expected load, WSA Co will qualify for a site-specific cost-reflective network price once they connect to the network. This means a cost-reflective network tariff will be applied to the airport. This tariff accounts

¹⁷ CCP10, *Response to Endeavour Energy Revised Regulatory proposal 2019-24 – AER draft determination*, February 2019, public, p. 35.

¹⁸ Endeavour, *0.11 Western Sydney Aerotropolis plan*, January 2019, public, p. 14.

¹⁹ Endeavour, *Response to information request #037*, February 2019, public, p. 2.

²⁰ Endeavour, *Response to information request #038*, February 2019, public, p. 2.

for the contribution of costs to shared network assets avoiding cross subsidies from the existing customer base to WSA Co.²¹

Based on this information, we are satisfied that a capital contribution is not required in this circumstance.

CCP asked whether the costs of the project could be absorbed by the total capex forecast we adopted in the Draft Decision. CCP noted that the capex forecast adopted in the draft decision was approximately \$26 million more than our alternative forecast. We note our initial assessment of Endeavour's updated proposal did not reflect the Western Sydney Aerotropolis connection.²² Had this project been considered as a part of capex, rather than a contingent project, then we would expect our initial estimate and Endeavour's updated proposal to reflect a higher capex forecast. For this reason, we have considered the costs of the project as incremental to our draft decision.

CCP suggested an oversight committee,²³ but given the circumstances we don't consider this is required. Western Sydney Airport will bear most of the costs of the project. Endeavour has already worked closely with Western Sydney Airport in developing its proposals. We do not consider an additional oversight committee in this instance is required.

²¹ Endeavour, *Response to information request #038*, February 2019, public, p. 2.

²² CCP10, *Response to Endeavour Energy Revised Regulatory proposal 2019-24 – AER draft determination*, February 2019, public, p. 35.

²³ CCP10, *Response to Endeavour Energy Revised Regulatory proposal 2019-24 – AER draft determination*, February 2019, public, p. 35.