DRAFT DECISION
Endeavour Energy
Distribution determination

2019−24

Attachment 1 − Annual revenue requirement

November 2018

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Note

This attachment forms part of the AER's draft decision on the distribution determination that will apply to Endeavour Energy for the 2019–24 regulatory control period. It should be read with all other parts of the draft decision.

The draft decision includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

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 – Demand management incentive scheme

Attachment 12 – Classification of services

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Attachment 14– Pass through events

Attachment 15 – Alternative control services

Attachment 16 – Negotiated services framework and criteria

Attachment 17 – Connection policy

Attachment 18 – Tariff structure statement

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Shortened forms

Shortened form	Extended form
AER	Australian Energy Regulator
ARR	annual revenue requirement
capex	capital expenditure
CESS	capital expenditure sharing scheme
CPI	consumer price index
distributor	distribution network service provider
DMIAM	demand management innovation allowance mechanism
EBSS	efficiency benefit sharing scheme
kWh	kilowatt-hour
MWh	megawatt-hour
NER	National Electricity Rules
NSW	New South Wales
opex	operating expenditure
PTRM	post-tax revenue model
RAB	regulatory asset base
RIN	regulatory information notice

1 Annual revenue requirement

The annual revenue requirement (ARR) is the sum of the various building block costs for each year of the regulatory control period before smoothing. The ARRs are smoothed across the period to reduce fluctuations between years and to determine expected revenues for each year. The expected revenues are the amounts that Endeavour Energy (Endeavour) will target for annual pricing purposes and recover from customers for the provision of standard control services for each year of the regulatory control period. This attachment sets out our draft decision on Endeavour's ARRs and expected revenues for the 2019–24 regulatory control period.

1.1 Draft decision

We do not accept Endeavour's proposed total ARR of $4688.6 million ($ nominal) over the 2019–24 regulatory control period. This is because we have not accepted the building block costs in Endeavour's proposal. We determine a total ARR of $4446.9 million ($ nominal) for Endeavour for the 2019–24 regulatory control period, reflecting our draft decision on the various building block costs. This is a reduction of $241.7 million ($ nominal) or 5.2 per cent to Endeavour's proposal.

Our draft decision includes Endeavour's proposal for an estimated $227.1 million ($ 2018–19) being returned to customers over the 2019–24 regulatory control period, as confirmed in our final remade decision for the 2014–19 period.[1] This amount is:

- Based on the difference between the revenues Endeavour recovered during the 2014–19 period (where it set network charges in accordance with enforceable undertakings during 2016–17 to 2018–19) and the revenues we approved in our remade decision.[2]
- Treated as a negative revenue adjustment in establishing the 2019–20 ARR and we smooth this out as part of setting the expected revenues over the 2019–24 regulatory control period.

We determine the annual expected revenue (smoothed) and X factor for each regulatory year of the 2019–24 regulatory control period by smoothing the ARR. Our draft decision is to approve total expected revenues (smoothed) of $4413.0 million ($ nominal) for Endeavour for the 2019–24 regulatory control period.

Figure 1.1 shows the difference between Endeavour's proposal and our draft decision.

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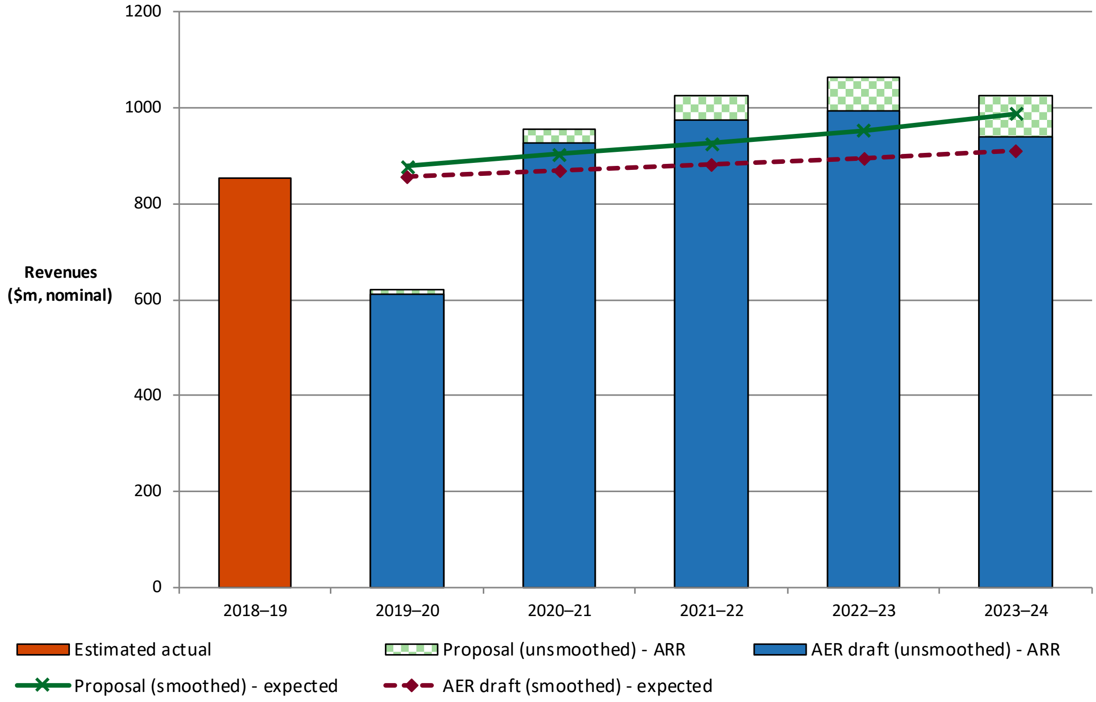
1 AER, *Final decision, Endeavour Energy 2014–19 electricity distribution determination*, September 2018. p. 7.

2 The undertakings from Endeavour addressed pricing uncertainties arising from limited merits and judicial review processes.

Figure 1.1 AER's draft decision on Endeavour's revenue for the 2019–24 regulatory control period ($million, nominal)



Source: AER analysis; Endeavour Energy, *0.04 Post-Tax Revenue Model*, April 2018.

Table 1.1 shows our draft decision on the building block costs, the ARR, annual expected revenue and X factor for the 2019–24 regulatory control period.

Table 1.1 AER's draft decision on Endeavour's revenues for the 2019–24 regulatory control period ($million, nominal)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Return on capital	387.8	396.0	401.4	405.9	410.4	2001.5
Regulatory depreciation[a]	106.5	120.3	130.8	139.0	135.1	631.7
Operating expenditure[b]	287.4	300.0	315.1	330.9	347.3	1580.7
Revenue adjustments[c]	–206.8	75.9	88.2	74.2	3.7	35.2
Net tax allowance	36.0	35.0	40.5	43.6	42.7	197.8
Annual revenue requirement (unsmoothed)	611.0	927.1	975.9	993.6	939.3	4446.9
Annual expected revenue (smoothed)	**856.4**	**868.4**	**881.5**	**895.6**	**910.9**	**4413.0**
X factor[d]	n/a[e]	1.00%	0.90%	0.80%	0.70%	n/a

Source: AER analysis.

(a) Regulatory depreciation is straight-line depreciation net of the inflation indexation on the opening RAB.

(b) Includes debt raising costs.

(c) Includes revenue adjustments from the efficiency benefit sharing scheme (EBSS), capital expenditure sharing scheme (CESS), demand management innovation allowance mechanism (DMIAM) and an amount resulting from the remittal decision for the 2014–19 regulatory control period.

(d) The X factors will be revised to reflect the annual return on debt update. Under the CPI–X framework, the X factor measures the real rate of change in annual expected revenue from one year to the next. A negative X factor represents a real increase in revenue. Conversely, a positive X factor represents a real decrease in revenue.

(e) Endeavour is not required to apply an X factor for 2019–20 because we set the 2019–20 expected revenue in this decision. The expected revenue for 2019–20 is around 1.8 per cent lower than the expected revenue for 2018–19 in real terms or 0.5 per cent higher in nominal terms.

1.2 Endeavour Energy's proposal

Endeavour proposed a total revenue requirement of $4649.2 million ($ nominal) for the 2019–24 regulatory control period. This included a (negative) revenue adjustment expected to occur from a remittal process for the 2014–19 regulatory control period.[3] Table 1.2 shows Endeavour's proposed building block costs, the ARR, expected revenue and X factor for each year of the 2019–24 regulatory control period.

3 We have since confirmed Endeavour's remittal proposal in our final remade decision for the 2014–19 regulatory control period; see AER, *Final decision, Endeavour Energy 2014–19 electricity distribution determination*, September 2018.

Table 1.2 Endeavour's proposed revenues for the 2019–24 regulatory control period ($million, nominal)

	2019–20	2020–21	2021–22	2022–23	2023–24	Total
Return on capital	397.9	420.8	441.9	462.6	482.7	2205.9
Regulatory depreciation[a]	101.8	115.1	125.3	133.4	129.2	604.8
Operating expenditure[b]	289.4	305.0	323.5	342.8	362.4	1623.2
Revenue adjustments[c]	–207.7	73.5	85.7	71.7	1.0	24.1
Net tax allowance	40.6	40.3	47.5	51.6	50.6	230.6
Annual revenue requirement (unsmoothed)	622.1	954.6	1023.9	1062.2	1025.8	4688.6
Annual expected revenue (smoothed)	**877.7**	**902.8**	**926.6**	**953.5**	**988.5**	**4649.2**
X factor	n/a[d]	–0.36%	–0.13%	–0.39%	–1.14%	n/a

Source: Endeavour Energy, *0.04 Post-Tax Revenue Model*, April 2018.

(a) Regulatory depreciation is straight-line depreciation net of the inflation indexation on the opening RAB.

(b) Includes debt raising costs.

(c) Includes revenue adjustments for EBSS, CESS, DMIAM and an amount resulting from the remittal decision for the 2014–19 regulatory control period.

(d) Endeavour is not required to apply an X factor for 2019–20 because we set the 2019–20 expected revenue in this decision.

1.3 AER's assessment approach

In this section, we describe the approach used to determine the ARR and expected revenue for Endeavour for each year of the 2019–24 regulatory control period.[4]

In this determination we first calculate the ARR for each year of the 2019–24 regulatory control period. To do this we consider the various costs facing the distributor and the trade-offs and interactions between these costs, service quality and across years. This reflects our holistic assessment of the distributor's proposal.

The ARR for each year is the sum of the building block costs. These building block costs are set out in section 1.3.1. The AER's post-tax revenue model (PTRM) brings together these building block costs and calculates the resulting ARRs.

We understand the trade-offs that occur between building block costs and test the sensitivity of these costs to their various driver elements. These trade-offs are discussed in the interrelationships section of the various attachments to this draft decision and are reflected in the calculations made in the PTRM.[5] Such understanding

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4 NER, cll. 6.3.2(a)(1) and 6.5.9(b)(2).

5 There are trade-offs that are not modelled in the PTRM but are reflected in the inputs to the PTRM. For example, service quality is not explicitly modelled in the PTRM, but the trade-offs between service quality and price are reflected in the forecast capex and opex inputs to the model. Other trade-offs are obvious from the calculations in

allows us to exercise judgement in determining the final inputs into the PTRM and the ARRs that result from this modelling.

Having calculated the total revenue requirement for the 2019–24 regulatory control period, we smooth the ARRs for each regulatory year across that period. This step reduces revenue variations between years, and calculates the expected revenue and X factor for each year.[6] The X factors equalise (in net present value terms) the total expected revenues to be earned by the distributor with the total revenue requirement for the 2019–24 regulatory control period.[7] They must usually minimise, as far as reasonably possible, the variance between the expected revenue and ARR for the last regulatory year of the period.[8] By minimising this divergence, it helps to manage the prospect of a significant revenue change (and consequently prices) between the last year of the 2019–24 regulatory control period, and first year of the following 2024–29 regulatory control period. We therefore consider a divergence of up to 3 per cent between the expected revenue and ARR for the last year of the regulatory control period is reasonable, if this can promote smoother price changes over the regulatory control period.

The building block costs (and the elements that drive those costs) used to determine the unsmoothed ARR are set out in section 1.3.1.

1.3.1 The building block costs

The efficient costs to be recovered by a distributor can be thought of as being made up of various building block costs. Our draft decision assesses each of the building block costs and the elements that drive these costs. The building block costs are approved reflecting trade-offs and interactions between the cost elements, service quality and across years.

Table 1.3 shows the building block costs that form the ARR for each year and where discussion on the elements that drive these costs can be found within this draft decision.

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the PTRM. For example, while someone may expect a lower regulatory asset base to also lower revenues, the PTRM shows that this will not occur if the reduction in the regulatory asset base is due solely to an increase in the depreciation rate. In such circumstances, revenues increase as the increased depreciation allowance more than offsets the reduction in the return on capital caused by the lower regulatory asset base.

6 NER, cl. 6.5.9(a).

7 NER, cl. 6.5.9(b)(3)(i). The X factors represent the real revenue path over the 2019–24 regulatory control period under the CPI–X framework.

8 NER, cl. 6.5.9(b)(2).

Table 1.3 Building block costs

Building block costs	Attachments where elements are discussed
Return on capital	Regulatory asset base (attachment 2) Rate of return (attachment 3) Capital expenditure (attachment 5)
Regulatory depreciation (return of capital)	Regulatory asset base (attachment 2) Regulatory depreciation (attachment 4) Capital expenditure (attachment 5)
Operating expenditure	Operating expenditure (attachment 6)
Estimated cost of corporate tax	Corporate income tax (attachment 7)
Other revenue adjustments	
Adjustment for shared assets	Annual revenue requirement (attachment 1)
Operating efficiency benefits/penalties	Efficiency benefit sharing scheme (attachment 8)
Capital efficiency benefits/penalties	Capital expenditure sharing scheme (attachment 9)
Demand management innovation allowance	Demand management incentive scheme (attachment 11)

1.4 Reasons for draft decision

We determine a total ARR of $4446.9 million ($ nominal) for Endeavour over the 2019–24 regulatory control period. This is a reduction of $241.7 million ($ nominal) or 5.2 per cent to Endeavour's proposed total ARR of $4688.6 million ($ nominal) for this period. This reflects the impact of our draft decision on the various building block costs.

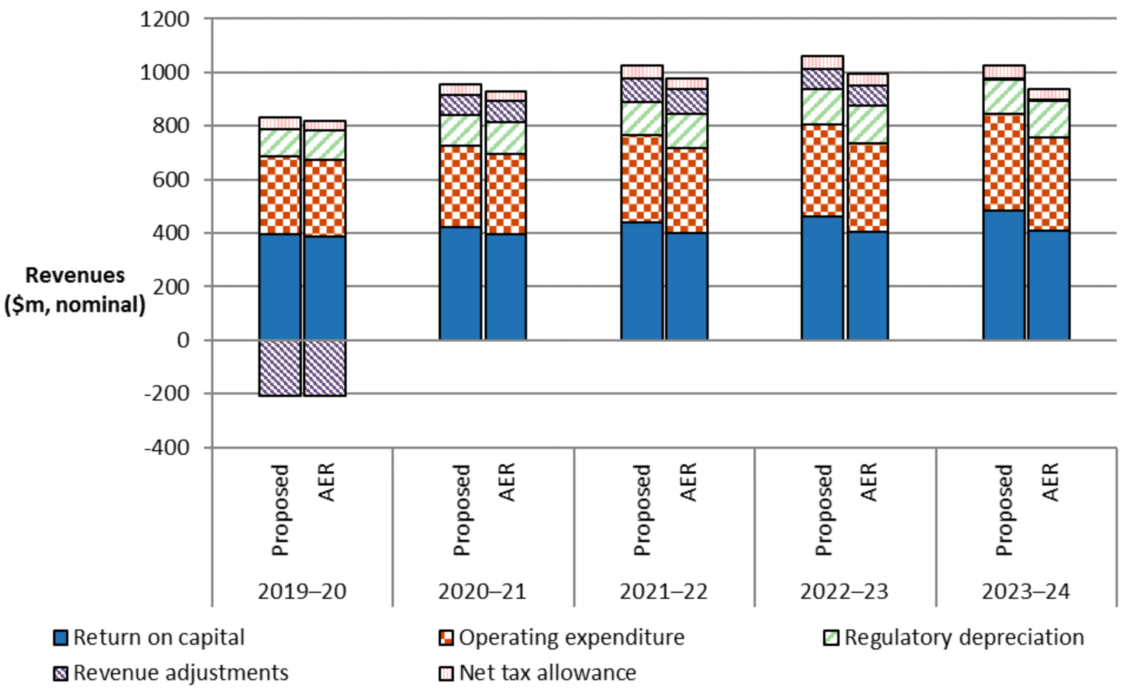
Figure 1.2 shows the building block components from our determination that make up the ARR for Endeavour, and the corresponding components from its proposal.

The changes we made to Endeavour's proposed building blocks include (in nominal terms):

- a reduction in the return on capital allowance of $204.4 million or 9.3 per cent (attachments 2, 3 and 5)
- an increase in the regulatory depreciation of $26.9 million or 4.5 per cent (attachments 2, 4 and 5)
- a reduction in the opex allowance of $42.5 million or 2.6 per cent (attachment 6)
- a reduction in the cost of corporate income tax allowance of $32.8 million or 14.2 per cent (attachment 7 and section 2.2 of the overview)
- an increase in the revenue adjustments of $11.0 million or 45.7 per cent arising from changes to EBSS (attachment 8), CESS (attachment 9) and DMIAM

(attachment 11), and updates made to the (negative) adjustment for the remittal decision in respect of the 2014–19 regulatory control period.[9]

Figure 1.2 AER's draft decision and Endeavour's proposed annual revenue requirement ($million, nominal)



Source: Endeavour Energy, *0.04 Post-Tax Revenue Model*, April 2018.
AER analysis.

Note: Revenue adjustments include EBSS, CESS, DMIAM and an amount resulting from the remittal decision for the 2014–19 regulatory control period. Opex includes debt raising costs.

1.4.1 Revenue smoothing

We have taken into account the building block costs determined in this decision when smoothing the expected revenues for Endeavour over the 2019–24 regulatory control period. In doing so, we first set the expected revenue for the first regulatory year (2019–20) at $856.4 million ($ nominal). This is higher than the 2019–20 ARR (unsmoothed) of $611.0 million we determined.[10] It is also $4.6 million higher than the expected revenue for 2018–19. We then applied a profile of X factors to determine the expected revenue in subsequent years.

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9 Our draft decision 2019–24 PTRM for Endeavour contains a revenue adjustment of –$227.1 million ($2018–19) in 2019–20 to account for the outcome of the remittal decision for the 2014–19 regulatory control period.

10 The large difference between the first year ARR and expected revenue is due to our approach to smoothing the inclusion of a negative adjustment arising from Endeavour's 2014–19 remittal decision in respect of its revenue to be returned to customers.

To smooth the revenue movements from the second regulatory year (2020–21) onwards, we have applied a profile of X factors that gradually decreases over the entire length of the period. This allows for a relatively predictable price movement over the regulatory control period, and provides a stable trend moving forward. This approach smooths the revenues by allowing for a more gradual path for revenues over the 2019–24 regulatory control period that increase at a rate below expected inflation.

Based on the X factors we have determined for Endeavour, the difference between the expected revenue and ARR for 2023–24 is 3.0 per cent. This divergence aligns with our target band of 3 per cent. Therefore, we consider that our profile of X factors results in an expected revenue in the last year of the regulatory control period that is as close as reasonably possible to the ARR for that year.[11] We will review this smoothing for the final decision.

1.4.2 Shared assets

Distributors, such as Endeavour, may use assets to provide both the standard control services we regulate and unregulated services. These assets are called 'shared assets'.[12] If the revenue from shared assets is material, ten per cent of the unregulated revenues that a distributor earns from shared assets will be used to reduce the distributor's revenue for standard control services.[13]

The shared asset principles establish that use of shared assets should be material before cost reductions are applied.[14] The NER does not define materiality in this context. Our approach to what constitutes a material use of shared assets is that unregulated use of shared assets in a specific regulatory year is material when a distributor's annual average unregulated revenue from shared assets is expected to be greater than one per cent of its expected revenue for that regulatory year.[15]

Endeavour submitted that its total revenue requirement is not subject to a shared asset adjustment because its forecast annual unregulated revenue from shared assets does not exceed the AER's materiality threshold.[16]

We consider Endeavour's forecast unregulated revenues from shared assets for the 2019–24 regulatory control period are reasonable because they are comparable with its historical unregulated revenues from shared assets. However, Endeavour's forecast unregulated revenues must be compared to the regulated revenues we determine, rather than those proposed by Endeavour. Our draft decision sets lower expected revenues than Endeavour's proposal, so we estimate that the unregulated revenues will be less than one per cent of its expected revenues in each year of the 2019–24

11 NER, cl. 6.5.9(b)(2).

12 NER, cl. 6.4.4.

13 AER, *Shared asset guideline*, November 2013.

14 NER, cl. 6.4.4(c)(3).

15 AER, *Shared asset guideline*, November 2013, p. 8.

16 Endeavour Energy, *0.01 Regulatory Proposal*, April 2018, p. 100.

regulatory control period. Hence, the materiality threshold is not met in any year of the 2019–24 regulatory control period and we do not apply a shared asset revenue adjustment.

We note unregulated revenues from shared assets may in future become material.[17] We will monitor Endeavour's shared asset unregulated revenues for future regulatory control periods.

1.4.3 Indicative average distribution price impact

Our draft decision on Endeavour's expected revenues ultimately affects the prices consumers pay for electricity. There are several steps required in translating our revenue decision into indicative distribution price impact.

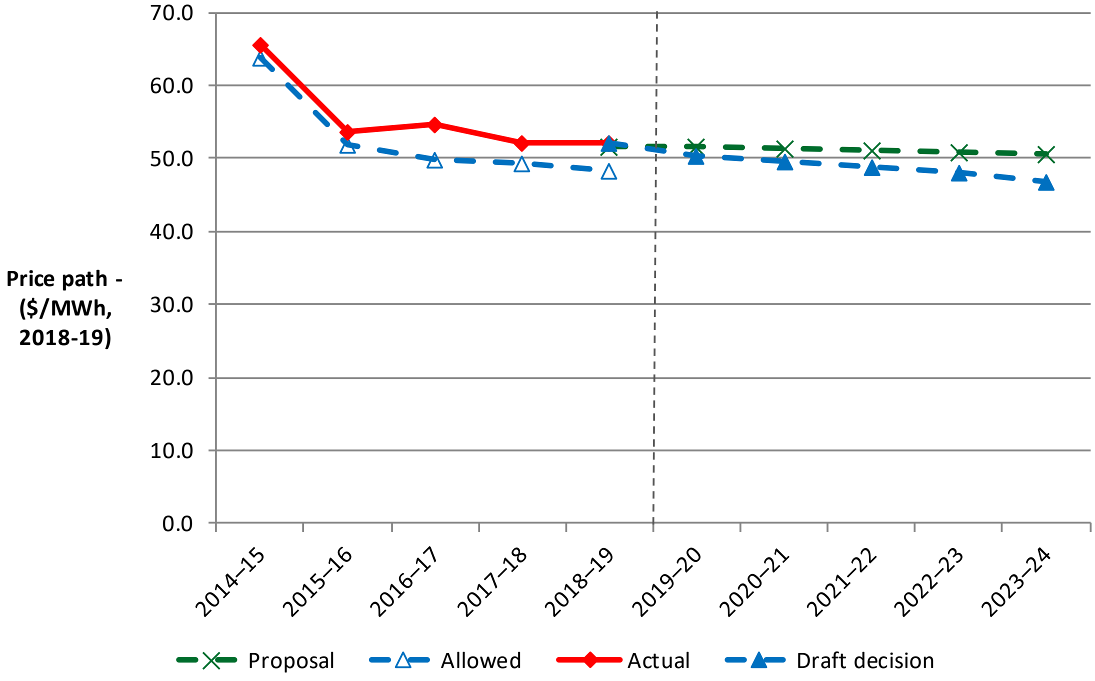
We regulate Endeavour's standard control services under a revenue cap form of control. This means our draft decision on Endeavour's expected revenues does not directly translate to price impacts. This is because Endeavour's revenue is fixed under the revenue cap form of control, so changes in the consumption of electricity will affect the prices ultimately charged to consumers. We are not required to establish the distribution prices for Endeavour as part of this determination. However, we will assess Endeavour's annual pricing proposals before the commencement of each regulatory year within the 2019–24 regulatory control period. In each assessment we will administer the pricing requirements set in this distribution determination.

For this draft decision, we have estimated some indicative average distribution price impacts flowing from our determination on the expected revenues for Endeavour over the 2019–24 regulatory control period. In this section, our estimates only relate to standard control services (that is, the core electricity distribution charges), not alternative control services (such as metering charges). These indicative price impacts assume that actual energy consumption across the 2019–24 regulatory control period matches Endeavour's forecast energy consumption, which we have adopted for this draft decision.

Figure 1.3 shows Endeavour's indicative average price path over the period 2014–15 to 2023–24 in real 2018–19 dollar terms based on the expected revenues established in our draft decision compared to Endeavour's proposed revenue requirement.

[17] We will reassess the materiality of the forecast shared asset unregulated revenues for our final decision.

Figure 1.3 Indicative distribution price path for Endeavour ($/MWh, 2018–19)



Source: AER analysis.

We estimate that our draft decision on Endeavour's annual expected revenue will result in a decrease to average distribution charges by about 2.1 per cent per annum over the 2019–24 regulatory control period in real 2018–19 dollar terms.[18] This compares to the real average decrease of approximately 0.4 per cent per annum proposed by Endeavour over the 2019–24 regulatory control period. These high-level estimates reflect the aggregate change across the entire network and do not reflect the particular tariff components for specific end users.

Table 1.4 displays in nominal terms the comparison of the revenue and price impacts of Endeavour's proposal and our draft decision.

[18] In nominal terms we estimate average distribution charges to increase by 0.3 per cent per annum, compared to an increase of 2.1 per cent proposed by Endeavour. This amount reflects an expected inflation rate of 2.42 per cent per annum as determined in this draft decision.

Table 1.4 Comparison of revenue and price impacts of Endeavour's proposal and the AER's draft decision

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
AER draft decision						
Revenue ($m, nominal)	851.9	856.4	868.4	881.5	895.6	910.9
Price path ($, nominal/MWh)[a]	52.22	51.53	51.91	52.37	52.83	52.88
Revenue (change %)		0.5%	1.4%	1.5%	1.6%	1.7%
Price path (change %)		–1.3%	0.7%	0.9%	0.9%	0.1%
Endeavour proposal						
Revenue ($m, nominal)	843.6	877.7	902.8	926.6	953.5	988.5
Price path ($, nominal/MWh)[a]	51.71	52.80	53.97	55.05	56.24	57.38
Revenue (change %)		4.0%	2.9%	2.6%	2.9%	3.7%
Price path (change %)		2.1%	2.2%	2.0%	2.2%	2.0%

Source: AER analysis

(a) The price path is in nominal terms and is constructed by dividing nominal expected revenue for standard control services by forecast energy consumption for each year of the regulatory control period.

1.4.4 Expected impact of decision on electricity bills

The annual electricity bill for customers in Endeavour's network reflects the combined cost of all the electricity supply chain components—wholesale energy generation, transmission, distribution, metering, and retail costs. This draft decision primarily relates to the distribution charges for standard control services, which represent approximately 29.7 per cent on average for residential and small business customers' annual electricity bill in Endeavour's network area.[19]

We estimate the expected bill impact by varying the distribution charges in accordance with our draft decision, while holding all other components—including the metering component—constant. This approach isolates the effect of our draft decision on the core distribution charges only. However, this does not imply that other components will remain unchanged across the regulatory control period.[20]

Based on this approach in our draft decision, we expect that the distribution component of the average annual residential electricity bill in 2023–24 to increase by about $6 or 0.4 per cent ($ nominal) from the 2018–19 total bill level. By comparison, had we

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19 Endeavour Energy, *RIN0.01 Final RIN workbook 1 reset (actual)*, April 2018.

20 It also assumes that actual energy consumption will equal the forecast adopted in our draft decision. Since Endeavour operates under a revenue cap, changes in energy consumption will also affect annual electricity bills across the 2019–24 regulatory control period.

accepted Endeavour's proposal, the expected distribution component of the average annual residential electricity bill in 2023–24 would increase by about $52 or 3.3 per cent ($ nominal) from the 2018–19 total bill level.

Similarly, for an average small business customer in Endeavour's network, we expect the distribution component of the average annual small business electricity bill in 2023–24 to increase by about $12 or 0.4 per cent ($ nominal) from the 2018–19 total bill level. By comparison, had we accepted Endeavour's proposal, the expected distribution component of the average small business customer electricity bill in 2023–24 would increase by about $101 or 3.3 per cent ($ nominal) from the 2018–19 total bill level.

Our estimated impact is based on an average annual electricity usage of around 5000 kWh per annum for residential households and 10000 kWh for small businesses.[21] Therefore, customers with different usage will experience different changes in their bills. We also note that there are other factors, such as metering, wholesale and retail costs, which affect electricity bills.

Table 1.5 shows our estimated impact of our draft decision and Endeavour's proposal on the average annual electricity bills for residential and small business customers in its network over the 2019–24 regulatory control period.

[21] Endeavour Energy, *RIN0.01 Final RIN Workbook 1 Reset (Consolidated)*, April 2018.

Table 1.5 Estimated impact of Endeavour's revenue proposal and AER's draft decision on annual electricity bills for the 2019–24 regulatory control period ($ nominal)

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24
AER draft decision						
Residential annual bill	1610[a]	1604	1607	1611	1616	1616
Annual change[c]		–6 (–0.4%)	4 (0.2%)	4 (0.3%)	4 (0.3%)	0 (0%)
Small business annual bill	3110[b]	3098	3105	3113	3121	3122
Annual change[c]		–12 (–0.4%)	7 (0.2%)	8 (0.3%)	8 (0.3%)	1 (0%)
Endeavour's proposal						
Residential annual bill	1610[a]	1620	1631	1641	1652	1662
Annual change[c]		10 (0.6%)	11 (0.7%)	10 (0.6%)	11 (0.7%)	11 (0.6%)
Small business annual bill	3110[b]	3129	3150	3170	3191	3211
Annual change[c]		19 (0.6%)	21 (0.7%)	19 (0.6%)	21 (0.7%)	20 (0.6%)

Source: AER analysis; AER, Energy Made Easy website (standing offer), Endeavour Energy, *RIN0.01 Final RIN Workbook 1 Reset (Consolidated)*, April 2018.

(a) Annual bill for 2018–19 is sourced from Energy Made Easy and reflects the average consumption of 5000 kWh for residential customers in NSW (postcode 2500).

(b) Annual bill for 2018–19 is sourced from Energy Made Easy and reflects the average consumption of 10000kWh for small business customers in NSW (postcode 2500).

(c) Annual change amounts and percentages are indicative. They are derived by varying the distribution component of the 2018–19 bill amounts in proportion to yearly expected revenue divided by forecast energy as provided by Endeavour. Actual bill impacts will vary depending on electricity consumption and tariff class.