Draft Decision

Transgrid Transmission Determination 2023 to 2028

(1 July 2023 to 30 June 2028)

Attachment 1
Maximum allowed revenue

September 2022

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on Transgrid's transmission network revenue determination for the 2023-28 regulatory control period. 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 – 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 innovation allowance mechanism

Attachment 12 – Pricing methodology

Attachment 13 – Pass through events

Contents

1 Maximum allowed revenue

This attachment sets out our draft decision on Transgrid's maximum allowed revenue (MAR) for the provision of prescribed transmission services over the 2023–28 regulatory control period. Specifically, it sets out our draft decision on:[1]

- the estimated total revenue cap, which is the sum of the annual expected MAR
- the annual building block revenue requirement
- the annual expected MAR
- the X factors.

We determine Transgrid's annual building block revenue requirement using a building block approach. We determine the X factors by smoothing the annual building block revenue requirement over the regulatory control period. The X factors are used in the CPI–X methodology to determine the annual expected MAR.

1.1 Draft decision

We determine a total annual building block revenue requirement of $4,764.6 million (nominal, unsmoothed) for Transgrid for the 2023–28 period. Our determination represents an increase of $548.9 million (13.0%) to Transgrid's proposal. This is largely driven by our draft decision approving a higher return on capital building block, which is $710.4 million higher than that proposed by Transgrid due to a higher rate of return reflecting updated market data as required by the binding 2018 *Rate of Return Instrument* (Instrument)[2], and also a higher opening regulatory asset base (RAB) as at 1 July 2023 determined in this draft decision.[3] For the reasons discussed in the attachments to this draft determination, our decisions on Transgrid's proposed building block costs have a consequential impact on its annual building block revenue requirement.

We determine the annual expected MAR (smoothed) and X factor for each regulatory year of the 2023–28 period by smoothing the annual building block revenue requirement. Our draft decision is to approve an estimated total revenue cap of $4,758.1 million (nominal, smoothed) for Transgrid for the 2023–28 period. Our approved X factor for 2024–25 is 2.00%, followed by X factors of –1.25% per annum over the remaining years of 2025–26 to 2027–28.[4]

At the time of making this draft decision, we have used placeholder values for certain components, such as the rate of return and expected inflation. We will make further updates for these values as part of our final decision. It is for this reason that we expect the total revenue cap approved in our final decision to be different to this draft decision.

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1 NER, cll. 6A.4.2(a)(1)–(3), 6A.5.3(c) and 6A.6.8.

2 AER, *Rate of Return Instrument*, December 2018.

3 Our draft decision on the opening RAB as at 1 July 2023 was primarily a result of higher indexation on the RAB due to the updates we made for actual and estimated CPI for the final 2 years of the 2018–23 period.

4 Transgrid is not required to apply an X factor for 2023–24 because we set the 2023–24 MAR in this decision.

Table 1.1 sets out our draft decision on Transgrid's annual building block revenue requirement, the X factor, the annual expected MAR and the estimated total revenue cap for the 2023–28 period.

Table 1.1 AER's draft decision on Transgrid's annual building block revenue requirement, annual expected MAR, estimated total revenue cap and X factor ($ million, nominal)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Return on capital	532.9	569.7	593.8	608.2	624.2	2,928.8
Regulatory depreciation[a]	73.2	93.5	129.2	134.4	148.8	579.1
Operating expenditure[b]	203.6	220.4	229.1	237.5	246.3	1,136.8
Revenue adjustments[c]	22.3	7.0	-3.6	-2.8	-8.3	14.6
Net tax allowance	22.2	20.3	16.9	21.6	24.3	105.3
Annual building block revenue requirement (unsmoothed)	854.2	910.9	965.3	998.9	1,035.3	4,764.6
Annual expected MAR (smoothed)	**897.0**	**905.4**	**944.2**	**984.7**	**1,026.9**	**4,758.1[d]**
X factors[e]	n/a[f]	2.00%	–1.25%	–1.25%	–1.25%	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), shared asset decrements and demand management innovation allowance mechanism (DMIAM).

(d) The estimated total revenue cap is equal to the total annual expected MAR.

(e) 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 smoothed 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.

(f) Transgrid is not required to apply an X factor for 2023–24 because we set the 2023–24 MAR in this decision. The MAR for 2023–24 is around 3.0% lower than the approved MAR for 2022–23 in real terms, or approximately equal in nominal terms.

1.2 Transgrid's proposal

Transgrid proposed a total (smoothed) revenue cap of $4,208.1 million (nominal) for the 2023–28 period.

Table 1.2 sets out Transgrid's proposed annual building block revenue requirement, the X factor, the annual expected MAR and the estimated total revenue cap.

Table 1.2 Transgrid's proposed annual building block revenue requirement, annual expected MAR, estimated total revenue cap and X factor ($million, nominal)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Return on capital	409.8	439.1	451.3	457.1	461.2	2,218.4
Regulatory depreciation[a]	111.3	135.1	171.6	184.2	199.6	801.8
Operating expenditure[b]	198.4	212.4	220.0	225.5	233.3	1,089.6
Revenue adjustments[c]	23.2	4.6	-5.1	-8.1	20.9	35.5
Net tax allowance	16.0	13.6	10.0	14.4	16.4	70.4
Annual building block revenue requirement (unsmoothed)	758.7	804.9	847.7	873.1	931.3	4,215.7
Annual expected MAR (smoothed)	**797.6**	**816.4**	**835.6**	**855.2**	**903.4**	**4,208.1[d]**
X factors[e]	n/a[f]	0.00%	0.00%	0.00%	–3.21%	n/a

Source: Transgrid, *2023–28 Revenue proposal, Post-tax revenue model,* January 2022.

(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 EBSS CESS, shared asset decrements and DMIAM.

(d) The estimated total revenue cap is equal to the total annual expected MAR.

(e) 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 smoothed 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.

(f) Transgrid is not required to apply an X factor for 2023–24 because we set the 2023–24 MAR in this decision.

1.3 Assessment approach

In this section, we describe the building block approach used to determine Transgrid's expected MAR. We also set out the annual revenue adjustment to be applied to Transgrid's MAR over the 2023–28 period.

1.3.1 The building block approach

The expected MAR is calculated using the post-tax revenue model (PTRM).[5] The PTRM must be such that the expected MAR for each year of the regulatory control period is equal to the net present value (NPV) of the annual building block revenue requirement.[6] The total revenue cap is the sum of the MARs for the regulatory control period.[7] In turn, the annual building block revenue requirement must be determined using a building block approach.[8] Therefore, we adopt a building block approach when making our decision on Transgrid's total revenue cap and expected MAR for each regulatory year of the regulatory control period. Under this approach, we determine the value of the building block costs that make up the annual building block revenue requirement for each regulatory year. These building block costs are set out in section 1.3.2.

5 NER, cll. 6A.5.1 and 6A.5.3.

6 NER, cl. 6A.5.3(c)(1).

7 NER, cl. 6A.5.3(c)(4).

8 NER, cl. 6A.5.4.

We developed the PTRM, which brings together the various building block costs and calculates the annual building block revenue requirement for each year of the regulatory control period.[9] The PTRM also calculates the X factors required under the CPI–X methodology which is used to escalate the expected MAR for each year (other than the first year) of the regulatory control period.[10] Using the X factors and annual building block revenue requirement, the annual expected MAR (smoothed) is forecast for each year of the regulatory control period. Transgrid's revenue proposal must be prepared using our PTRM.[11] Our draft decision used version 5.1 of the PTRM, which was published after Transgrid submitted its revenue proposal.[12] This new version of the PTRM applies the same inflation approach[13] as version 5 and makes a minor amendment to the expected inflation calculation (related to regulatory control periods greater than 5 years).[14]

The annual building block revenue requirement can be lumpy over the regulatory control period. To minimise price shocks, revenues are smoothed within a regulatory control period while maintaining the principle of cost recovery under the building block approach. Smoothing requires diverting some of the cost recovery to adjacent years within the regulatory control period so that the NPV of the annual expected MAR (smoothed revenues) is equal to the NPV of the annual building block revenue requirement (unsmoothed revenues). That is, a smoothed profile of the expected MAR is determined for the regulatory control period under the CPI–X methodology.

The expected MAR for the first year is generally set equal to the annual building block revenue requirement for the first year of the regulatory control period. At times, it may be more appropriate to set the expected MAR for the first year to align with the MAR from the last year of the previous regulatory control period to avoid any large revenue variation between periods (or P_0):[15]

$$MAR_1 = AR_1 \text{ or } MAR_L$$

where:

MAR_1 = the maximum allowed revenue for year 1 of the regulatory control period

AR_1 = the annual building block revenue requirement for year 1 of the regulatory control period

9 NER, cl. 6A.5.

10 NER, cll. 6A.5.3(b)(5), (c)(3) and (d) and 6A.6.8.

11 NER, cl. 6A.5.1(a).

12 AER, *Electricity transmission network service providers: Post-tax revenue model (version 5.1)*, May 2022.

13 AER, *Final position – Regulatory treatment of inflation*, December 2020, pp. 6–8.

14 As Transgrid's forecast 2023–28 regulatory control period is 5 years, this amendment does not affect it.

15 The MAR for year 1 of the next regulatory control period may include adjustment for the performance incentive that applied during the previous regulatory control period, and under or over recovery adjustments from previous regulatory years.

MAR_L ~ the maximum allowed revenue for the last year of the previous regulatory control period.

In this determination for Transgrid, we first calculate annual building block revenue requirements for each year of the 2023–28 period. To do this, we consider the various costs facing Transgrid and the trade-offs and interactions between these costs, service quality and across years. This reflects our holistic assessment of Transgrid's proposal.

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.[16] Such understanding allows us to exercise judgement in determining the final inputs into the PTRM and the annual building block revenue requirements that result from this modelling.

Having determined the total annual building block revenue requirement for the 2023–28 period, we smooth the annual building block revenue requirements for each regulatory year across that period. This step reduces revenue variations between years, and calculates the expected MAR and X factor for each year.[17] The X factors equalise (in NPV terms) the total expected revenue cap to be earned by Transgrid with the total building block revenue requirement for the 2023–28 period.[18] The X factor profile must also minimise, as far as reasonably possible, the variance between the expected MAR and annual building block revenue requirement for the last regulatory year of the period.[19] By minimising this divergence, it helps to manage the prospect of a significant revenue change (and consequently prices) between the last year of the 2023–28 period, and first year of the following 2028–33 period. We consider a divergence of up to 3% between the expected MAR and annual building block revenue requirement 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 annual building block revenue requirements are set out in section 1.3.2.

1.3.2 The building block costs

The efficient costs to be recovered by Transgrid can be thought of as being made up of various building block costs. Our draft decision assesses each of the building block costs and

16 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 capital expenditure and operating expenditure inputs to the model. Other trade-offs are obvious from the calculations in the PTRM. For example, while it may be expected that a lower regulatory asset base would 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 amount more than offsets the reduction in the return on capital caused by the lower regulatory asset base.

17 NER, cl. 6A.6.8(a).

18 NER, cl. 6A.6.8(c)(1).

19 NER, cl. 6A.6.8(c)(2).

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 annual building block revenue requirement for each year and where discussion on the elements that drive these costs can be found within this draft determination.

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	Maximum allowed revenue (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 innovation allowance mechanism (Attachment 11)

1.3.3 Annual revenue adjustment process

The PTRM incorporates an expected inflation rate to calculate the expected MAR in nominal dollar terms, whereas the actual MAR from the second year onwards is adjusted for actual inflation. As discussed in the Instrument, we will also update Transgrid's return on debt annually.[20] This means the actual MAR from the second year onwards will also be adjusted for revised X factors after the annual return on debt update. This annual revenue adjustment process is set out below.

To enable the formula for the annual revenue adjustment process to operate correctly, we will refer to the expected MAR determined in this decision using the building block costs as the allowed revenue (AR). This is because the expected MAR determined using the building

[20] AER, *Rate of return instrument*, December 2018, cl. 24, Note 29.

block costs does not incorporate performance incentive scheme revenue adjustments and pass through amounts that may apply to each regulatory year.

The AR for the subsequent year of the regulatory control period requires an annual adjustment based on the previous year's allowed revenue.[21] That is, the subsequent year's allowed revenue is determined by adjusting the previous year's allowed revenue for actual inflation and the X factor determined after the annual return on debt update:

$$\mathrm{AR}_t = \mathrm{AR}_{t-1} \times (1 + \Delta\mathrm{CPI}) \times (1 - \mathrm{X}_t)$$

where:

AR	=	the allowed revenue
t	=	time period/financial year (for *t* = 2 (2024–25), 3 (2025–26), 4 (2026–27), 5 (2027–28))
$\Delta\mathrm{CPI}$	=	the annual percentage change in the ABS Consumer price index all groups, weighted average of eight capital cities from December in year *t* – 2 to December in year *t* – 1
X	=	the smoothing factor determined in accordance with the PTRM as approved in the AER's final decision, and annually revised for the return on debt update in accordance with the formula specified in the *Rate of Return Instrument* calculated for the relevant year.[22]

The MAR used for transmission pricing is determined annually as part of the annual revenue adjustment process in accordance with the National Electricity Rules (NER). The MAR is determined each year by adding to (or deducting from) the allowed revenue:

- the service target performance incentive scheme revenue increment (or revenue decrement)[23]
- any approved pass through amounts.[24]

The annual MAR is established according to the following formula:

$$\mathrm{MAR}_t = \text{(allowed revenue) + (performance incentive) + (pass through)}$$

$$= \mathrm{AR}_t + \left(\left(\mathrm{AR}_{t-2} \times \frac{1}{2}\right) + \left(\mathrm{AR}_{t-1} \times \frac{1}{2}\right)\right) \times \mathrm{S}_{ct} + \mathrm{P}_t$$

21 In the case of making the annual adjustment for year 2, the previous year's AR would be the same as the approved expected MAR for year 1 as contained in the PTRM.

22 AER, *Rate of Return Instrument*, December 2018, cl. 9.

23 NER, cl. 6A.7.4.

24 NER, cll. 6A.7.2 and 6A.7.3.

where:

MAR	=	the maximum allowed revenue
AR	=	the allowed revenue
S	=	the percentage revenue increment or decrement determined in accordance with the service target performance incentive scheme
P	=	the pass through amount (positive or negative) that the AER has determined in accordance with clauses 6A.7.2 and 6A.7.3 of the NER
t	=	time period/financial year (for *t* = 2 (2024–25), 3 (2025–26), 4 (2026–27), 5 (2027–28))
ct	=	time period/calendar year (for *ct* = 2 (2023), 3 (2024), 4 (2025), 5 (2026)).

Transgrid may also adjust the MAR for under- or over-recovery amounts.[25] That is, if the revenue amounts earned from providing prescribed transmission services in previous regulatory years are higher or lower than the sum of the approved MAR for those years, the difference can be included in the subsequent year's MAR. In the case of an under-recovery, the amount is added to the subsequent year's MAR. In the case of an over-recovery, the amount is subtracted from the subsequent year's MAR.

Table 1.4 sets out the timing of the annual calculation of the AR and performance incentive.

Table 1.4 Timing of the calculation of allowed revenues and the performance incentive for Transgrid

t	Allowed revenue (financial year)	*ct*	Performance incentive (calendar year)
2	1 July 2024 – 30 June 2025	2	1 January 2023 – 31 December 2023
3	1 July 2025 – 30 June 2026	3	1 January 2024 – 31 December 2024
4	1 July 2026 – 30 June 2027	4	1 January 2025 – 31 December 2025
5	1 July 2027 – 30 June 2028	5	1 January 2026 – 31 December 2026

Note: The performance incentive for the period 1 January 2022 to 31 December 2022 is to be applied to the AR determined for 2023–24 (AR_1).

25 NER, cl. 6A.23.3(e)(5).

We are not required to determine the transmission charges for Transgrid. Nonetheless, we provide the indicative transmission charges (and the resulting impact on annual electricity bills) that flow from this revenue determination as discussed in section 1.4.3.

1.4 Reasons for draft decision

We determine a total annual building block revenue requirement of $4,764.6 million (nominal, unsmoothed) for Transgrid for the 2023–28 period. This is an increase of $548.9 million (13.0%) to Transgrid's proposed total annual building block revenue requirement of $4,215.7 million for this period. This increase reflects the impact of our draft decision on the various building block costs. In particular, we have determined:

- a higher opening RAB as at 1 July 2023 (Attachment 2), based on CPI inputs for 2021–22 and 2022–23 reflecting more up-to-date values
- a higher rate of return (Attachment 3), reflecting updated market data as required by the binding Instrument.[26] The update for market data results in a higher rate of return on both equity and debt.

These amendments have resulted in an increase of $710.4 million (32.0%) in the return on capital building block in our draft decision compared to Transgrid's proposal. The higher rate of return on equity has also increased the cost of corporate income tax amount in our draft decision by $34.9 million compared to Transgrid's proposal.[27]

Figure 1.1 shows the building block components from our determination that make up the annual building block revenue requirement for Transgrid, and the corresponding components from its proposal.

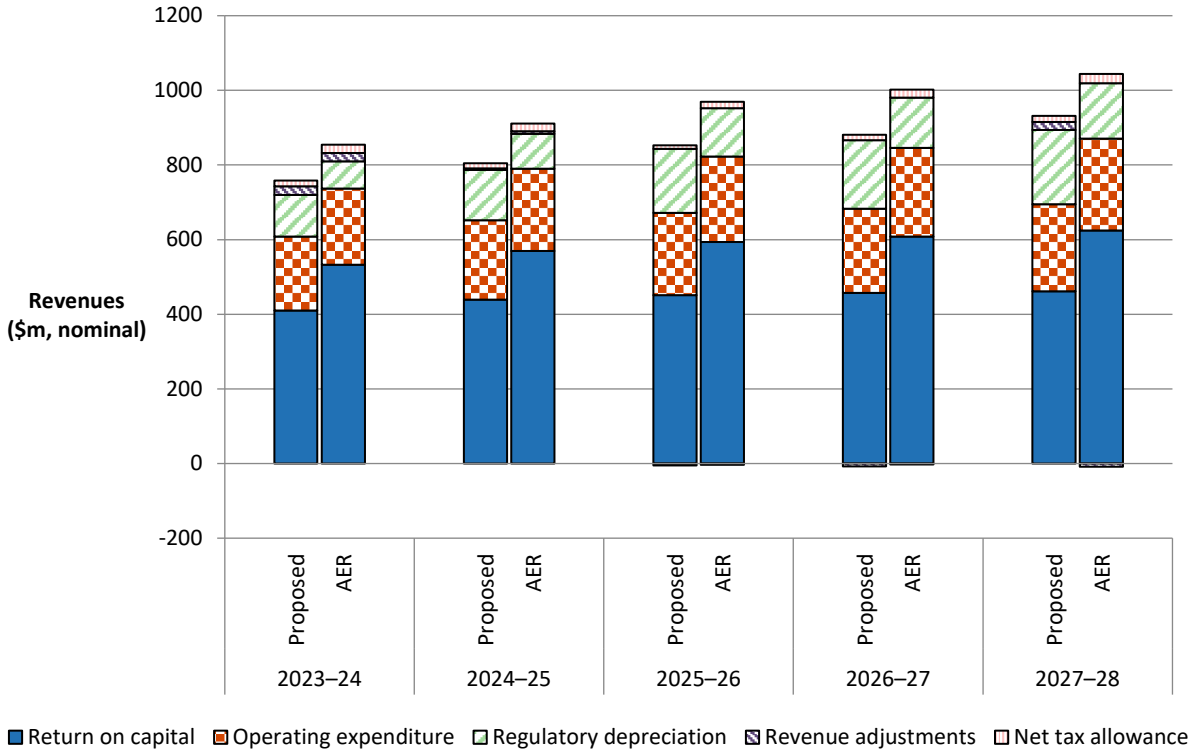
The changes we made to Transgrid's proposed building blocks include (in nominal terms):

- an increase in the return on capital of $710.4 million (32.0%) (Attachments 2, 3 and 5)
- a decrease in the regulatory depreciation of $222.7 million (27.8%) (Attachment 4)
- an increase in the operating expenditure (opex) forecast of $47.3 million (4.3%) (Attachment 6)
- an increase in the cost of corporate income tax of $34.9 million (49.6%) (Attachment 7)
- a decrease in the revenue adjustments of $20.9 million (59.0%) (Attachments 8, 9 and 13).

26 AER, *Rate of Return Instrument*, December 2018.

27 All else being equal, a higher rate of return on equity will increase the cost of corporate income tax because it increases the return on equity, a component of taxable income.

Figure 1.1 AER's draft decision and Transgrid's proposed annual building block revenue requirement ($million, nominal)



Source: AER analysis; Transgrid, *2023–28 Revenue proposal, Post-tax revenue model, January 2022*.

Note: Revenue adjustments include EBSS, CESS, shared asset decrements and DMIAM amounts. Opex includes debt raising costs.

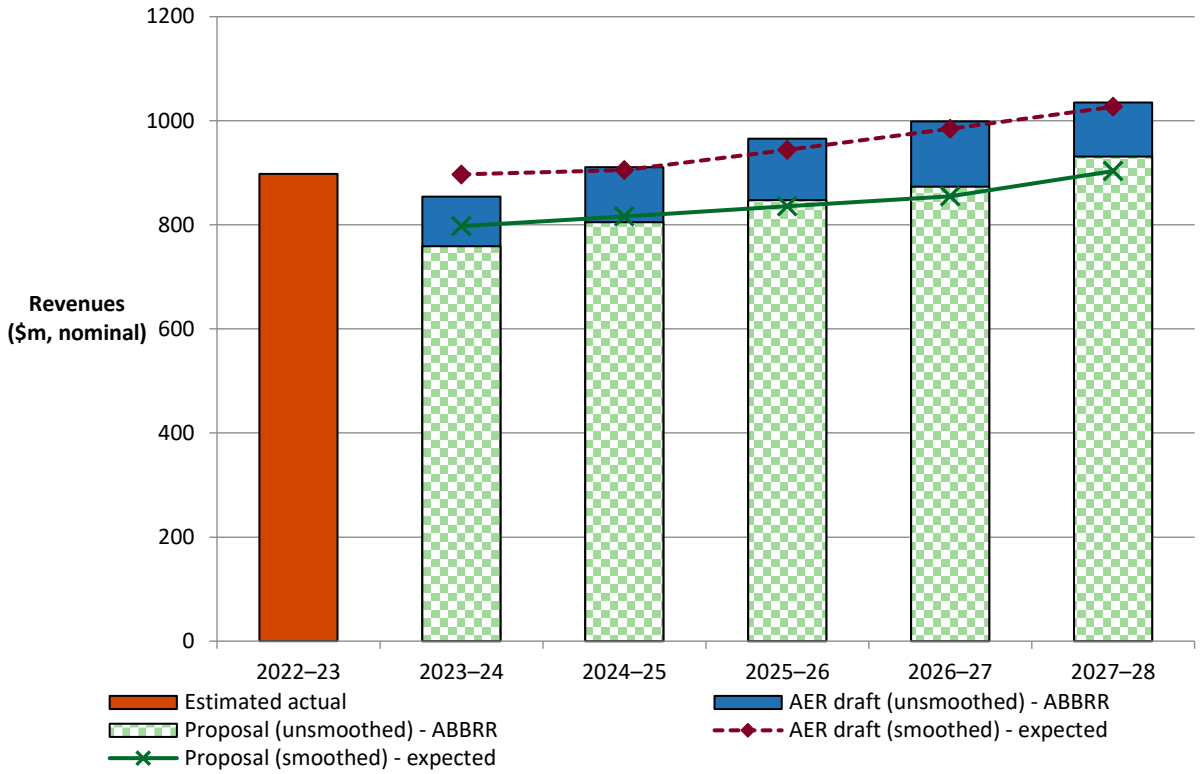
1.4.1 X factor, annual expected MAR and estimated total revenue cap

For this draft decision, we determine X factors for Transgrid of 2.00% in 2024–25, the second year of the regulatory control period, followed by –1.25% per annum for the remaining 3 years of the regulatory control period from 2025–26 to 2027–28.[28] The NPV of the annual building block revenue requirement is $4,012.6 million (nominal) as at 1 July 2023. Based on this NPV and applying the CPI–X method, we determine that the annual expected MAR (smoothed) for Transgrid is $897.0 million in 2023–24 increasing to $1,026.9 million in 2027–28. The resulting estimated total revenue cap for Transgrid is $4,758.1 million for the 2023–28 period.

Figure 1.2 shows our draft decision on Transgrid's annual expected MAR (smoothed revenue) and the annual building block revenue requirement (unsmoothed revenue) for the 2023–28 period.

28 Transgrid is not required to apply an X factor for 2023–24 because we set the 2023–24 MAR in this decision.

Figure 1.2 AER's draft decision on Transgrid's revenue for the 2023–28 regulatory control period ($ million, nominal)



Source: AER analysis.

Note: Annual building block revenue requirement (ABBRR).

To determine the expected MAR for Transgrid, we have set the MAR for the first regulatory year at $897.0 million (nominal), which is $42.8 million higher than the annual building block revenue requirement. However, this maintains the revenue in 2023–24 at a similar level to 2022–23 in nominal dollar terms. We then apply an expected inflation rate of 3.0% per annum and X factors of 2.00% in 2024–25 followed by –1.25% per annum for 2025–26 to 2027–28 to determine the expected MAR in subsequent years.[29] The real decrease in the second year of the regulatory control period is to accommodate the incremental revenue Transgrid will recover as a result of our final decision on Transgrid's HumeLink stage 1 contingent project application.[30]

We consider that our profile of X factors results in an expected MAR in the last year of the regulatory control period that is as close as reasonably possible to the annual building block

29 NER, cl. 6A.5.3(c)(3).

30 As discussed in our final decision for the HumeLink contingent project application, Transgrid's recovery of the incremental revenue for this contingent project commences in the second year of the 2023–28 period. As a result, by applying an X factor of 2.00% in year 2, we are able to smooth the anticipated increase in Transgrid's MAR due to the incremental revenue associated with HumeLink. AER, *Determination – HumeLink,* August 2022, p. 16; NER, cl. 6A.8.2(n)(1).

revenue requirement for that year.[31] We will review this smoothing profile for the final decision, including consideration of any stakeholder views on alternative approaches to revenue smoothing. For example, an alternative smoothing approach would be to set the revenue in 2023–24 at a higher level than for 2022–23, followed by smaller annual increases (i.e. lower X factors) for the remaining years of the 2023–28 period.

Our draft decision results in an average increase of 2.7% per annum ($ nominal) in the expected MAR over the 2023–28 period.[32] This consists of no change from 2022–23 to 2023–24, followed by a small increase of 0.9% from 2023–24 to 2024–25. We then determine average annual increases of 4.3% during the final 3 years of the 2023–28 period.[33]

Our draft decision also results in the average annual unsmoothed revenue to be 1.0% higher than that allowed in the 2018–23 period, in real terms ($2022–23). This is because we have determined a higher return on capital amount in this draft decision for the 2023–28 period than that approved in the 2018–23 determination.

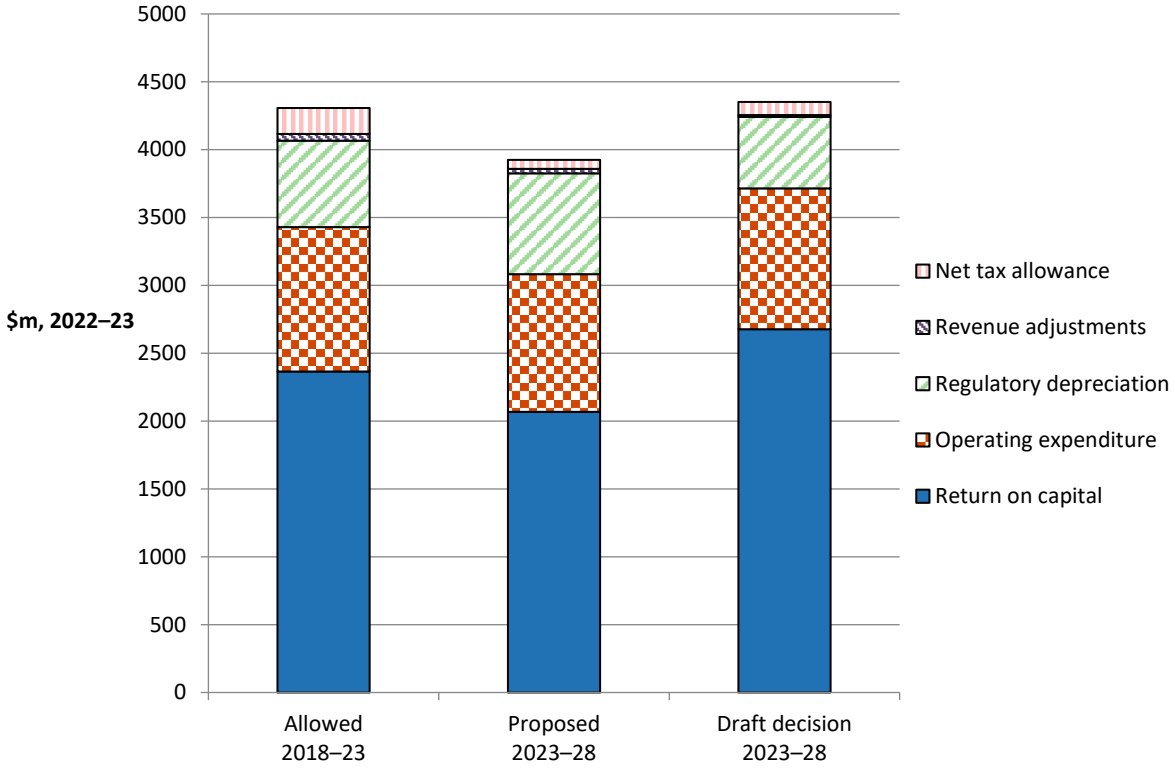
Figure 1.3 compares our draft decision building blocks with Transgrid's proposal for the 2023–28 period, and the approved unsmoothed revenue for the 2018–23 period.

31 NER, cl. 6A.6.8(c)(2). We consider a divergence of up to 3% between the expected MAR and annual building block revenue requirement for the last year of the regulatory control period is appropriate if this can achieve smoother price changes for users over the regulatory control period. In the present circumstances, based on the X factors we have determined for Transgrid, this divergence is around –0.8%.

32 In real 2022–23 dollar terms, our approved expected MAR for Transgrid results in an average decrease of 0.3% per annum over the 2023–28 regulatory control period.

33 In real 2022–23 dollar terms, this consists an initial decrease of 3.0% from 2022–23 to 2023–24, a smaller decrease of 2.0% from 2023–24 to 2024–25, followed by an annual increase of 1.25% during the remaining 3 years of the 2023–28 regulatory control period.

Figure 1.3 Total revenue by building block components ($ million, 2022–23)



Source: AER analysis.

1.4.2 Shared assets

Service providers, such as Transgrid, may use assets to provide both prescribed transmission services we regulate and unregulated services, for example by the stringing of telecommunications cables on the electricity network poles for the provision of telecommunication services. These assets are called 'shared assets'.[34] If the revenue from shared assets is material,[35] 10% of the unregulated revenues that a service provider earns from shared assets will be used to reduce the service provider's revenue for prescribed transmission services.[36]

Shared asset revenue reductions are subject to a materiality threshold. Unregulated use of shared assets is material when a service provider's annual average unregulated revenues from shared assets in a specific regulatory year is expected to be greater than 1% of its expected MAR for that regulatory year.[37]

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34 NER, cl. 6A.5.5.

35 The shared asset principles establish that use of share assets should be material before cost reductions are applied. 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 service provider's annual average unregulated revenue from shared assets is expected to be greater than 1% of its MAR for that regulatory year.

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

37 Ibid, p. 8–9.

Transgrid forecast that it will receive $10.6 million ($2022–23) in shared asset revenues over the 2023–28 period.[38] These additional revenues exceed the AER's materiality threshold of 1% of total regulated revenues Transgrid receives and therefore is subject to a shared asset adjustment.[39] Accordingly, 10% of these additional revenues will be shared with customers through a revenue adjustment in the PTRM.

We consider Transgrid's forecast unregulated revenues from shared assets for the 2023–28 period are reasonable as they are comparable with its historical unregulated revenues from shared assets. However, Transgrid's forecast unregulated revenues must be compared to the regulated revenues we determine, rather than those proposed by Transgrid. Because our draft decision sets higher expected revenues than Transgrid's proposal, we estimate that the unregulated revenues will still be greater than 1% of its expected MAR in each year of the 2023–28 period. Hence, the materiality threshold is met in each year of the 2023–28 period and we apply a shared asset revenue adjustment.[40]

For this draft decision, we have determined a shared asset revenue adjustment as shown in Table 1.5. The adjustment will see $10.6 million ($2022–23) shared with customers across the 2023–28 period.

Table 1.5 AER's draft decision on Transgrid's shared asset revenue adjustment ($ million, 2022–23)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Transgrid's proposal	–1.8	–1.9	–2.0	–2.3	–2.6	–10.6
AER's draft decision	**–1.8**	**–1.9**	**–2.0**	**–2.3**	**–2.6**	**–10.6**

Source: AER analysis; Transgrid, *2023–28 Post-tax revenue model*, January 2022.

1.4.3 Indicative average transmission charges

Transgrid is the transmission network service provider for NSW and the ACT. Therefore, our draft decision on Transgrid's expected MAR will ultimately affect the annual electricity bills paid by customers in NSW and the ACT. There are several steps required to translate our revenue decision into indicative transmission charges, and then to estimate the bill impact.

Since we regulate Transgrid's prescribed transmission services under a revenue cap, changes in the consumption of electricity will affect the transmission charges ultimately paid by customers. Although Transgrid is the main transmission network service provider in NSW and the ACT, smaller components of the transmission network are owned and operated by Ausgrid, Evoenergy and Directlink. Hence, the transmission charges in NSW/ACT are also affected by the revenue determinations for Directlink's transmission network, and Ausgrid's and Evoenergy's transmission assets. However, our estimations do not take the revenue approved for the prescribed transmission services provided by these businesses as their regulatory control periods have not ended and, hence, do not align with Transgrid's 2018–23 period.

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38 Transgrid, *2023–28 Revenue proposal*, January 2022, pp. 168–171.

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

40 We will reassess the materiality of the forecast shared asset unregulated revenues for our final decision

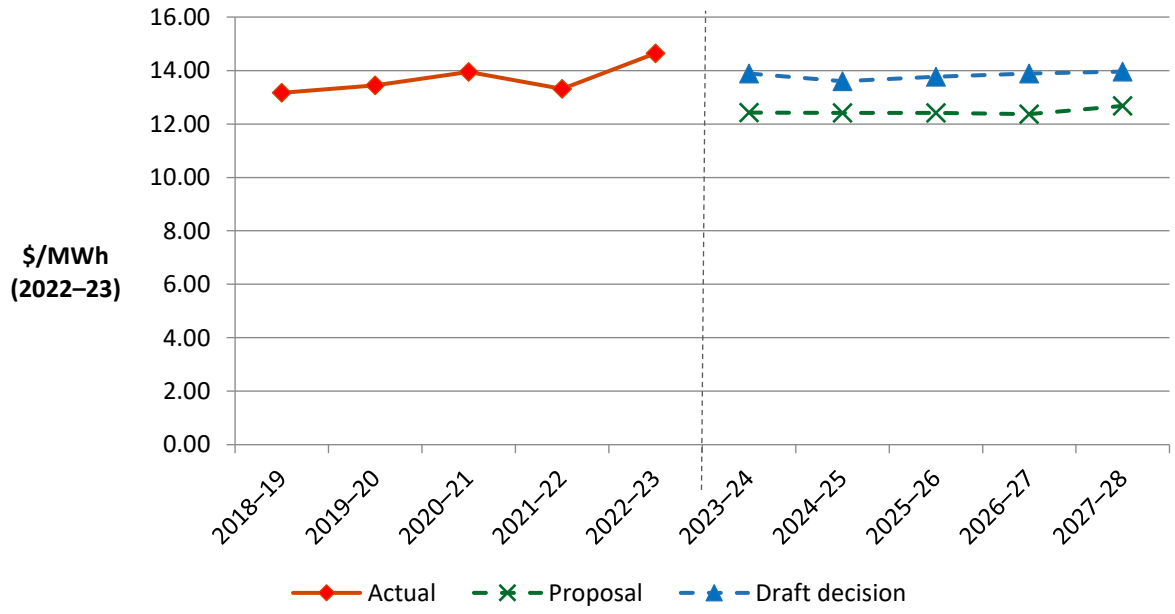
Therefore, we estimate the indicative effect of our draft decision on forecast average transmission charges in NSW/ACT by:

- taking Transgrid's annual expected MAR determined in this draft decision, and
- dividing it by the forecast annual energy delivered in NSW/ACT as submitted by Transgrid in its reset regulatory information notice, after adjusting for energy delivered to other connected transmission networks.[41]

Based on our approach, we estimate that this draft decision will result in a nominal increase in annual average transmission charges from 2022–23 to 2027–28.[42]

Figure 1.4 shows the indicative average transmission charges over the period 2018–23 to 2023–28 in real 2022–23 dollar terms based on the expected revenues established in our draft decision compared to Transgrid's proposed revenue requirement. The average transmission charges are expected to decrease from around $14.2 per MWh in 2022–23 to $14.0 per MWh in 2027–28.[43]

Figure 1.4 Indicative transmission price path for NSW/ACT ($/MWh, $2022–23)



Source: AER analysis.

Notes: The price path for the transmission network is based on actual and forecast energy throughput amounts for Transgrid's transmission network across NSW/ACT.

41 Transgrid, *2023–28 RIN Workbook 1 forecast*, January 2022; Transgrid *Response to information request #040*, 12 August 2022. This amount is also approximately equivalent to the operational (sent out) forecast electricity annual consumption published by AEMO under the 'step change' scenario.

42 On average, the draft decision transmission smoothed revenues will increase by 2.7% ($ nominal) per annum from 2022–23 to 2027–28. The forecast energy delivered in NSW/ACT will stay broadly consistent across that period. As a result, the indicative transmission charge will increase by 2.6% ($ nominal) per annum from 2022–23 to 2027–28.

43 In nominal terms, we expect average transmission charges to increase from around $14.2 per MWh in 2022–23 to $16.2 per MWh in 2027–28.

Revenue used to calculate the 'Actual' indicative price path includes revenue from Inter- and Intra-Regional Settlements Residue collections and may not fully reflect the price path experienced by end-users.

1.4.4 Expected impact of decision on electricity bills

The annual electricity bill for customers in NSW and the ACT 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 transmission charges for Transgrid's prescribed transmission services.[44]

We estimate the expected bill impact by varying Transgrid's transmission charges in accordance with our draft decision, while holding all other component costs that make up the electricity bill constant. This approach isolates the effect of our draft decision on the core transmission charges for Transgrid only. However, this does not imply that other components will remain unchanged across the regulatory control period.[45]

Our draft decision determines higher revenues than proposed by Transgrid—largely due to the impact of updated market data on the rate of return and inflation. As a result, bills are expected to increase compared to Transgrid's proposal of bill decreases, holding all else constant.

Transmission charges in NSW and the ACT represent approximately 9% and 7% of an average residential customer's typical annual electricity bill, respectively.[46] We expect that our draft decision will result in the transmission component of the average annual residential electricity bill for NSW and ACT customers to increase moderately over the 2023–28 period:

- for NSW, the transmission component of a representative residential customer's[47] annual electricity bill will increase by about $21 (nominal) or 1.2% by 2027–28 from the 2022–23 total bill level[48]
- for the ACT, the transmission component of a representative residential customer's[49] annual electricity bill will increase by about $17 (nominal) or 0.9% by 2027–28 from the 2022–23 total bill level.[50]

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44 Transgrid, *2023–28 RIN Workbook 7 Indicative bill impacts,* January 2022.

45 It also assumes that actual energy consumption will equal the forecast adopted in our draft decision. Since Transgrid operates under a revenue cap, changes in energy consumption will also affect annual electricity bills across the 2023–28 regulatory control period.

46 AEMC, *2021 Residential Electricity Price Trends Report,* November 2021, pp. 10–12.

47 AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022. We have calculated the representative residential customer's bill in NSW as an average of the AER default market offer price for each of the distribution regions in NSW weighted against the number of customers in each distribution region.

48 This consists of an initial nominal increase of $1 per annum in 2023–24 and 2024–25, followed by average annual increases of $6 in the remaining 3 years of the 2023–28 period.

49 ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5. The representative residential customer's bill in the ACT is based on an 'average' consumption.

50 This consists of an initial nominal increase of $1 per annum in 2023–24 and 2024–25, followed by average annual increases of $5 in the remaining 3 years of the 2023–28 period.

Our estimated bill impact is based on the typical annual electricity usage of 4,351 kWh per annum for a residential customer in NSW.[51] For a residential customer in the ACT, our estimated potential impact is based on a typical annual electricity usage of 6,500 kWh per annum.[52] 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 the estimated impact from our draft decision and Transgrid's proposal on the average annual electricity bills for residential customers in NSW and the ACT over the 2023–28 period.

Table 1.5 Estimated impact of Transgrid's revenue proposal and the AER's draft decision on average annual electricity bills for residential customers over the 2023–28 period (nominal)

	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28
AER draft decision						
NSW residential annual electricity bill	1,740[a]	1,741	1,742	1,749	1,756	1,762
Annual change[c]		1 (0%)	1 (0.1%)	7 (0.4%)	6 (0.4%)	6 (0.3%)
ACT residential annual electricity bill	1,807[b]	1,808	1,809	1,814	1,819	1,824
Annual change[c]		1 (0%)	1 (0.1%)	5 (0.3%)	5 (0.3%)	5 (0.3%)
Transgrid proposal						
NSW residential annual electricity bill	1,740[a]	1,724	1,727	1,730	1,733	1,740
Annual change[c]		–17 (–1%)	3 (0.2%)	3 (0.2%)	3 (0.2%)	7 (0.4%)
ACT residential annual electricity bill	1,807[b]	1,794	1,797	1,799	1,801	1,807
Annual change[c]		–13 (–0.7%)	3 (0.1%)	3 (0.1%)	2 (0.1%)	6 (0.3%)

Source: AER analysis; Transgrid, *Post-Tax Revenue Model*, January 2022; AEMC, *2021 Residential Electricity Price Trends Report*, November 2021, pp. 10–12; AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022; ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5.

(a) AER analysis; AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022.

(b) ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5. Our representative customer's bill in the ACT is based on an 'average' consumption.

(c) Annual change amounts and percentages are indicative. They are derived by varying the transmission component of 2022–23 bill amounts in proportion to yearly expected revenue divided by Transgrid's forecast energy. Actual bill impacts will vary depending on electricity consumption and tariff class.

51 AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022. This typical usage is a weighted average of the residential annual consumption amounts for each of the distribution regions in NSW.

52 ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5. We have adopted an 'average' consumption for a residential customer in the ACT.

Similarly, for average small business customers in NSW and the ACT that consume 10,000 kWh per annum,[53] transmission charges represent approximately 8% and 7% of a typical annual electricity bill, respectively.[54] We expect that our draft decision will result in the transmission component of the average annual small business electricity bill for NSW and ACT customers to also increase moderately over the 2023–28 period:

- for NSW, the transmission component of a representative small business customer's[55] annual electricity bill will increase by about $45 (nominal) or 1.0% by 2027–28 from the 2022–23 total bill level[56]
- for the ACT, the transmission component of a representative small business customer's[57] annual electricity bill will increase by about $26 (nominal) or 0.9% by 2027–28 from the 2022–23 total bill level.[58]

Table 1.6 shows the estimated impact from our draft decision and Transgrid's proposal on the average annual electricity bills for small business customers in NSW and the ACT over the 2023–28 period.

Table 1.6 Estimated impact of Transgrid's revenue proposal and the AER's draft decision on average annual electricity bills for small business customers over the 2023–28 period (nominal)

	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28
AER draft decision						
NSW small business annual electricity bill	4,348[a]	4,349	4,352	4,367	4,380	4,393
Annual change[c]		1 (0%)	3 (0.1%)	14 (0.3%)	14 (0.3%)	13 (0.3%)
ACT small business annual electricity bill	2,780[b]	2,781	2,783	2,791	2,798	2,806
Annual change[c]		1 (0%)	2 (0.1%)	8 (0.3%)	8 (0.3%)	7 (0.3%)
Transgrid proposal						
NSW small business annual electricity bill	4,348[a]	4,312	4,319	4,326	4,332	4,348
Annual change[c]		–36 (–0.8%)	7 (0.2%)	7 (0.2%)	6 (0.1%)	15 (0.4%)
ACT small business annual electricity bill	2,780[b]	2,760	2,764	2,768	2,771	2,780
Annual change[c]		–20 (–0.7%)	4 (0.1%)	4 (0.1%)	3 (0.1%)	9 (0.3%)

53 AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022; ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5.

54 Transgrid, *2023–28 RIN Workbook 7 Indicative bill impacts,* January 2022; AEMC, *2021 Residential Electricity Price Trends Report,* November 2021, p. 12.

55 AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022. We have calculated the representative small business customer's bill in NSW as an average of the AER default market offer price for each of the distribution regions in NSW weighted against the number of customers in each distribution region.

56 This consists of an initial nominal increase of $1 and $3 in 2023–24 and 2024–25 respectively, followed by average annual increases of $14 in the remaining 3 years of the 2023–28 period.

57 ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5. The representative small business customer's bill in the ACT is based on a 'small' consumption.

58 This consists of an initial nominal increase of $1 and $2 in 2023–24 and 2024–25 respectively, followed by average annual increases of $8 in the remaining 3 years of the 2023–28 period.

Source: AER analysis; Transgrid, *Post-Tax Revenue Model*, January 2022*;* Transgrid, *2023–28 RIN Workbook 7 Indicative bill impacts,* January 2022; AEMC, *2021 Residential Electricity Price Trends Report,* November 2021, p. 12; AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022; ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5.

(a) AER analysis; AER, *Default market offer prices 2022–23 – Final determination – Cost assessment model*, May 2022.

(b) ICRC, *Report 3 of 2022 – Retail electricity price recalibration 2022–23*, June 2022, p. 5. Our representative small business customer's bill in the ACT is based on a 'small' consumption.

(c) Annual change amounts and percentages are indicative. They are derived by varying the transmission component of 2022–23 bill amounts in proportion to yearly expected revenue divided by Transgrid's forecast energy. Actual bill impacts will vary depending on electricity consumption and tariff class.

Glossary

Term	Definition
ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AR	Allowed revenue
Capex	Capital expenditure
CESS	Capital expenditure sharing scheme
CPI	Consumer price index
DMIAM	Demand management innovation allowance mechanism
EBSS	Efficiency benefit sharing scheme
2018 Instrument	2018 Rate of Return Instrument
MAR	Maximum allowed revenue
NER	National Electricity Rules
NPV	Net present value
Opex	Operating expenditure
PTRM	Post-tax revenue model
RAB	Regulatory asset base
TNSP	Transmission network service provider