Draft decision

TransGrid transmission determination

2015–16 to 2017–18

Attachment 1: Maximum allowed revenue

November 2014

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on TransGrid's revenue proposal 2015–18. It should be read with other parts of the draft decision.

The draft decision includes the following documents:

Overview

Attachment 1 – maximum allowed revenue

Attachment 2 – regulatory asset base

Attachment 3 – rate of return

Attachment 4 – value of imputation credits

Attachment 5 – regulatory depreciation

Attachment 6 – capital expenditure

Attachment 7 – operating expenditure

Attachment 8 – corporate income tax

Attachment 9 – efficiency benefit sharing scheme

Attachment 10 – capital expenditure sharing scheme

Attachment 11 – service target performance incentive scheme

Attachment 12 – pricing methodology

Attachment 13 – pass through events

Attachment 14 – negotiated services

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Shortened forms

Shortened form	Extended form
AARR	aggregate annual revenue requirement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ASRR	aggregate service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DRP	debt risk premium
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
MAR	maximum allowed revenue
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules
NSP	network service provider
NTSC	negotiated transmission service criteria

Shortened form	Extended form
opex	operating expenditure
PPI	partial performance indicators
PTRM	post-tax revenue model
RAB	regulatory asset base
RBA	Reserve Bank of Australia
repex	replacement expenditure
RFM	roll forward model
RIN	regulatory information notice
RPP	revenue pricing principles
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TNSP	transmission network service provider
TUoS	transmission use of system
WACC	weighted average cost of capital

1 Maximum allowed revenue

This attachment sets out the AER's draft decision on the maximum allowed revenue (MAR) for the provision of prescribed transmission services for each year of TransGrid's 2014–18 period. Specifically, the attachment addresses:[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 factor.

We determine the TNSP'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 factor is used in the CPI–X methodology to determine the annual expected MAR (smoothed).

1.1 Draft decision

We do not accept TransGrid's proposed annual building block revenue requirement, annual expected MAR and total revenue cap. 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 have calculated the X factor and the annual expected MAR (smoothed) to reflect our draft decision on TransGrid's annual building block revenue requirement.

We determine a total annual building block revenue requirement for TransGrid of $3169.6 million ($ nominal) for the 2014–18 period. This is a reduction of $717.1 million ($ nominal) or 18.5 per cent to TransGrid's proposal and reflects the impact of our draft decisions on the various building block costs.

To account for the placeholder revenue ($845.4 million) for 2014–15 that we approved in our transitional determination, we have calculated the difference to be adjusted between the placeholder revenue and our notional annual building block revenue requirement ($751.1 million) for 2014–15. Our draft decision is that this adjustment amounts to $94.3 million. We have applied this adjustment as part of the smoothing process to establish the annual expected MAR for the 2015–18 regulatory control period.

As a result of our smoothing of the annual building block revenue requirement, our draft decision on the annual expected MAR and X factor for each regulatory year of the 2015–18 regulatory control period is set out in Table 1-1. Our draft decision is to approve an estimated total revenue cap of $2310.5 million ($ nominal) for TransGrid for the 2015–18 regulatory control period.[2] Our approved X factor is –0.5 per cent per annum for 2016–17 and 2017–18.

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 2014–18 period.

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

2 Our smoothing involves a 'true-up' for the 2014–15 (transitional regulatory control period) placeholder revenue as required under clauses 11.58.4(i) and (j) of the NER.

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)

	2014–15	2015–16	2016–17	2017–18	Total
Return on capital	445.1	456.5	466.9	475.4	1843.9
Regulatory depreciation[a]	93.2	109.9	126.1	111.7	440.9
Operating expenditure	170.2	172.6	177.0	182.1	701.9
Efficiency benefit sharing scheme (carryover amounts)	21.5	14.4	17.3	11.5	64.6
Net tax allowance	21.1	22.9	36.9	37.4	118.4
Annual building block revenue requirement (unsmoothed)	751.1	776.3	824.3	818.0	3169.6
Annual expected MAR (smoothed)	**845.4**	**747.4**	**769.9**	**793.1**	**3155.9**[b]
X factor (%)[d]	n/a[c]	n/a[d]	–0.5%[e]	–0.5%[e]	n/a

Source: AER analysis.
Note: TransGrid has an under-recovery of $71 million in its allowed MAR for 2013–14. Any decision by TransGrid to recover this revenue would affect transmission charges for its customers independently of the AER's determination for the 2014–18 period. The AER's decision on the annual expected MAR in this table does not include recovery of any of this amount in the 2014–18 period.
(a) Regulatory depreciation is straight-line depreciation net of the inflation indexation on the opening RAB.
(b) The estimated total revenue cap is equal to the total annual expected MAR.
(c) TransGrid is not required to apply an X factor for 2014–15 because we set the 2014–15 MAR in this decision consistent with the placeholder MAR approved in the transitional determination. We have set the 2014–15 MAR equal to TransGrid's placeholder MAR ($845.4 million) for 2014–15. The MAR for 2014–15 is around 11.7 per cent lower than the approved MAR ($934.2 million) in the final year of the 2009–14 regulatory control period (2013–14) in real terms, or 9.5 per cent lower in nominal terms.
(d) TransGrid is not required to apply an X factor for 2015–16 because we set the 2015–16 MAR in this decision. The MAR for 2015–16 is around 13.7 per cent lower than the approved MAR for 2014–15 in real terms, or 11.6 per cent lower in nominal terms.
(e) The X factor will be revised to reflect the annual return on debt update.

1.2 TransGrid's proposal

TransGrid proposed a total (smoothed) revenue cap of $3875.5 million ($ nominal) for the 2014–18 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)

	2014–15	2015–16	2016–17	2017–18	Total
Return on capital	542.8	567.4	596.1	615.6	2322.0
Regulatory depreciation[a]	91.7	106.7	121.6	107.5	427.6
Operating expenditure	192.3	206.3	218.7	218.5	835.7
Efficiency benefit sharing scheme (carryover amounts)	21.0	12.1	14.5	23.5	71.1
Net tax allowance	44.6	48.1	68.0	69.6	230.4
Annual building block revenue requirement (unsmoothed)	892.4	940.7	1018.9	1034.8	3886.8
Annual expected MAR (smoothed)[b]	**932.9**	**956.5**	**980.7**	**1005.4**	**3875.5**[c]
X factor (%)	n/a	0.00	0.00	0.00	n/a

Source: TransGrid, *Post tax revenue model*, May 2014.
(a) Regulatory depreciation is straight-line depreciation net of the inflation indexation on the opening RAB.
(b) TransGrid did not make a true-up adjustment to account for the transitional determination. Therefore, these are expected MARs before the 2014–15 placeholder revenue true-up discussed in section 1.3.2**Error! Reference source not found.**.
(c) The estimated total revenue cap is equal to the total annual expected MAR.

1.3 AER's assessment approach

The MAR is calculated using the post-tax revenue model (PTRM).[3] 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 for the TNSP for each year, and the total revenue cap is the sum of the MARs for each year.[4] In turn, the annual building block revenue requirement must be determined using a building block approach.[5] Therefore, we adopt a building block approach when making our decision on a TNSP'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, including:

- Indexation of the regulatory asset base (RAB)
- the return on capital, which is a function of the rate of return and the opening RAB (including the addition of capital expenditure)
- the return of capital (depreciation), which is based on the straight-line method to calculating depreciation of the RAB
- the estimated cost of corporate income tax

3 NER, cll.6A.5.1 and 6A.5.3.
4 NER, cll. 6A.5.3(c)(1) and (4).
5 NER, cl. 6A.5.4.

- other amounts associated with any relevant schemes carried over from a previous regulatory control period
- operating expenditure.[6]

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.[7] The PTRM also calculates the X factors required under the CPI–X methodology which is used to escalate the MAR for each year (other than the first year) of the regulatory control period.[8] 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. A TNSP's revenue proposal must be prepared using our PTRM.[9]

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. It may be appropriate to set the expected MAR for the first year to or 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):[10]

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

where:

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

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

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

The process for determining TransGrid's total revenue cap for the 2014–18 period is affected by the transitional rules that apply to this determination. We previously approved an amount of $845.4 million as the placeholder revenue for 2014–15 for TransGrid,[11] until a full assessment of costs for the 2014–15 year could be carried out in the current determination.

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6 NER, cl. 6A.5.4(a).
7 NER, cl. 6A.5.
8 NER, cll. 6A.5.3 and 6A.6.8.
9 NER, cl. 6A.5.1(a).
10 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.
11 See NER cl. 11.58.4 and TransGrid's placeholder determination for the transitional regulatory control period 2014–15.

In this determination we first calculate annual building block revenue requirements for each year of the 2014–18 period, including the 2014–15 transitional year. To do this we consider the various costs facing the TNSP and the trade-offs and interactions between these costs, service quality and across years. This reflects our holistic assessment of the TNSP'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 developed by the AER.[12] 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.

The difference between the annual building block revenue requirement we determine for 2014–15 and our previously determined placeholder revenue gives rise to the required true-up adjustment amount under the transitional rules.[13] The true-up adjustment amount is applied as part of smoothing the annual building block revenue requirements to establish the annual expected MAR for each year of the 2015–18 regulatory control period.

Having determined the total annual building block revenue requirement for the 2014–18 period, the annual building block revenue requirements for each regulatory year are smoothed across the 2015–18 regulatory control period to reduce revenue variations between years and to come up with the expected MAR for each year.[14] This is done through the determination of the X factors and the application of our true-up adjustment.[15] The X factor must equalise (in net present value terms) the total expected revenue cap to be earned by the TNSP with the total building block revenue requirement for the 2014–18 period.[16] The X factor must usually 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.[17]

For this draft decision, the expected MAR in the last year of the regulatory control period are not required to be as close as reasonably possible to the annual building block revenue requirement for that year, due to the transitional provisions.[18] However, where practical we have sought to maintain this principle to avoid potential revenue shocks at the next reset. We therefore consider a divergence of up to 3 per cent 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 below.

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12 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 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.

13 NER, clause 11.58.4(i)-(k).

14 For the purposes of operating the PTRM, the placeholder revenue is set as the smoothed expected revenue for 2014–15.

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

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

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

18 NER, cl. 11.58.4(c).

1.3.1 The building block costs

The efficient costs to be recovered by a TNSP 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 annual building block revenue requirement for each year and where discussion on the elements that drive these costs can be found within this draft decision.

Table 1-3 Building block costs

Building block costs	Attachments where elements are discussed
Return on capital	Regulatory asset base (attachment 2) Capex (attachment 6) Rate of return (attachment 3)
Regulatory depreciation (return of capital)	Regulatory asset base (attachment 2) Capex (attachment 6) Depreciation (attachment 5)
Operating expenditure (opex)	Opex (attachment 7)
Efficiency benefits/penalties	Efficiency benefit sharing scheme (attachment 9)
Estimated cost of corporate tax	Corporate income tax (attachment 8) Value of imputation credits (attachment 4)

1.3.2 Placeholder revenue true-up for 2014–15

The four regulatory years from 2014–18 are split over two regulatory control periods due to the transitional rules.[19] There is a 'transitional regulatory control period' for 2014–15, and a 'subsequent regulatory control period' for 2015–18. We are required to make both a decision on the transitional placeholder revenue for 2014–15 and then a decision on the revenues for the full 2014–18 period.

In March 2014, as required under the transitional rules, we conducted a high level review of TransGrid's proposed revenue requirement for its transitional regulatory control period (2014–15). We determined a placeholder revenue allowance of $845.4 million ($ nominal) for TransGrid in the transitional determination.[20]

In this draft decision, we make a full revenue determination for the 2014–18 period. The NER requires us to use an NPV neutral true-up mechanism to account for any difference between:

- the placeholder revenue for the transitional regulatory control period, and
- the revenue requirement for the transitional regulatory control period that is established through the full determination process.[21]

To do this, we set TransGrid's first year MAR in the PTRM equal to its placeholder revenue for 2014–15 of $845.4 million. We then estimate the expected MAR for each remaining year of the

19 NER, cl. 11.58.3-4.
20 AER, *TransGrid Transend, Transitional transmission determination 2014–15*, March 2014, p. 17.
21 NER, cl. 11.58.4(i) to (k).

regulatory control period (2015–16 to 2017–18) by escalating the previous year's expected MAR using the CPI–X method, starting from the MAR for 2014–15. This has the effect of calculating the difference between the placeholder revenue ($845.4 million) and the notional MAR, i.e. equal to the annual building block revenue requirement, for 2014–15 ($751.1 million) established in this draft decision and smoothing the expected MAR for the remaining three regulatory years to account for that difference. In this case, the difference of $94.3 million is the true-up amount to be returned to customers over the 2015–18 regulatory control period (adjusted for the time value of money). We set the annual X factor (the smoothing factor) so that the NPVs of the annual building block revenue requirement (unsmoothed revenue) and the annual expected MAR (smoothed revenue) are equal.

To enable the formula for the annual revenue adjustment process (discussed below in section 1.3.3) to operate correctly, we will refer to the MAR determined in this decision as the allowed revenue (AR). This is because the expected MAR determined using the building block costs do not incorporate performance incentive scheme revenue adjustments and pass through amounts that may apply to each regulatory year.

For this decision, we set:

$$AR_1 = \$845.4 \text{ million}$$

where:

AR_1 = the allowed revenue for year 1 of TransGrid's 2014–18 period.

Applying the true-up to account for the above placeholder revenue determined for 2014–15 and the notional MAR for 2014–15 of $751.1 million, we set:

$$AR_2 = \$747.4 \text{ million}$$

where:

AR_2 = the allowed revenue for year 2 of TransGrid's 2014–18 period.

1.3.3 Annual revenue adjustment process

The PTRM incorporates a forecast inflation rate to calculate the expected MAR (excluding performance incentive scheme revenue adjustments and pass through amount that may apply to each regulatory year) in nominal dollar terms, whereas the actual MAR for each year is adjusted for actual inflation. As discussed in the return on debt appendix, we will update TransGrid's return on debt annually. This means the actual MAR for each year will also be adjusted for revised X factors after the annual return on debt update. This annual revenue adjustment process is set out below.

The MAR for the subsequent year of the regulatory control period requires an annual adjustment based on the previous year's AR.[22] That is, the subsequent year's AR is determined by adjusting the previous year's AR for actual inflation and the X factor determined after the annual return on debt update:

$$AR_t = AR_{t-1} \times (1 + \Delta CPI) \times (1 - X_t)$$

where:

[22] In the case of making the annual adjustment for year 3, the previous year's AR would be the same as the approved smoothed revenue for year 2 as contained in the PTRM.

AR = the allowed revenue

t = time period/financial year (for t = 3 (2016–17), 4 (2017–18))

ΔCPI = 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[23]

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 return on debt appendix calculated for the relevant year.

The MAR is determined annually in accordance with the NER by adding to (or deducting from) the AR:

- the service target performance incentive scheme revenue increment (or revenue decrement)[24]
- any approved pass through amounts.[25]

Table 1-4 sets out the timing of the annual calculation of the AR and performance incentive:

MAR_t = (allowed revenue) + (performance incentive) + (pass through)

$$= AR_t + \left(\frac{(AR_{t-1} + AR_{t-2})}{2} \times S_{ct} \right) + P_t$$

where:

MAR = the maximum allowed revenue

AR = the allowed revenue

S = the 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 (2015–16), 3 (2016–17, 4 (2017–18))

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[23] In the transmission determination for TransGrid's 2009–14 regulatory control period, the CPI required for the annual MAR adjustment process reflects the March quarter CPI, which is typically published by the ABS in late April. For this transmission determination we require TransGrid to use the December quarter of the previous calendar year CPI for the annual MAR adjustment for its next regulatory control period. December quarter CPI is typically released by the ABS towards the end of January of the following year. As the same set of CPI will be used for the RAB roll forward at the next reset for TransGrid in 2018, this change will allow us to update the actual CPI for RAB roll forward purposes well before the publication date of the AER's final decision at the next reset. We note that there will be an overlapping issue of the March quarter CPI when the transition to the December quarter CPI occurs (this will be in the year 2014–15 for the TNSP). This is because the CPI for March quarter 2014 will be reflected in both 2013–14 and 2014–15. However, we consider this is only a transitional issue and does not have a material impact on the revenue to be recovered by the TNSP.

[24] NER, cl. 6A.7.4.

[25] NER, cll. 6A.7.2 and 6A.7.3.

ct = time period/calendar year (for *t* = 2 (2014), 3 (2015), 4 (2016)).

Under the NER, a TNSP may also adjust the MAR for under or over-recovery amounts.[26] That is, the revenue amounts recovered higher or lower than the approved MAR for each year would be included in the subsequent year's MAR. In the case of an under-recovery, the amount would be added to the future year's MAR. In the case of an over-recovery, the amount would be subtracted from the future year's MAR.

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 2015–30 June 2016	2	1 January 2014–31 December 2014
3	1 July 2016–30 June 2017	3	1 January 2015–31 December 2015
4	1 July 2017–30 June 2018	4	1 January 2016–31 December 2016

Note: The performance incentive for 1 January 2013–31 December 2013 is to be applied to the AR determined for 2014–15 (AR_1).

1.3.4 Average transmission charges

The NER does not require an estimate of transmission charges for a revenue determination of a TNSP. Nonetheless, we typically provide some indicative transmission charges (and the resulting impact on annual electricity bills) flowing from the revenue determination as discussed in section 1.4.3. Although we assess TransGrid's proposed pricing methodology as part of this determination, actual transmission charges established at particular connection points are not determined by us. TransGrid establishes the transmission charges in accordance with its approved pricing methodology and the NER.[27]

1.4 Reasons for draft decision

We determine a total annual building block revenue requirement of $3169.6 million ($ nominal) for TransGrid for the 2014–18 period. This compares to TransGrid's proposed total annual building block revenue requirement of $3886.8 million ($ nominal) for this period.

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.

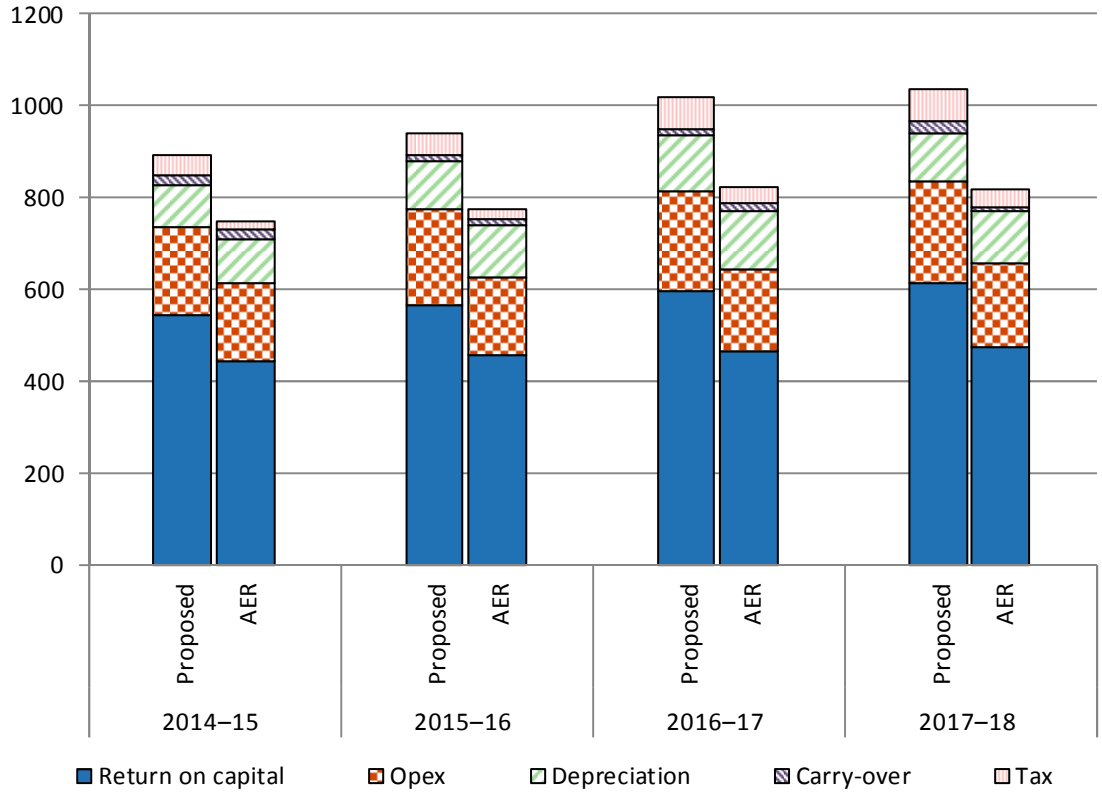
We have calculated the annual building block revenue requirement for TransGrid based on our draft decision on each of these building block components. The revenues are affected by our changes to TransGrid's proposed building blocks. These changes include:

- forecast operating expenditure (attachment 7)
- the rate of return (attachment 3)

[26] NER, cll. 6A.23.3(c)(2)(iii) and 6A.24.4(c).
[27] NER, cl. 6A.24.1(d). TransGrid, as coordinating TNSP for NSW, includes Directlink's, Ausgrid's and ActewAGL's (transmission) revenue requirement in calculating the transmission charges applying to NSW.

- the forecast opening RAB (attachment 2) and forecast capital expenditure (attachment 6)
- forecast regulatory depreciation (attachment 5)
- the estimated cost of corporate income tax (attachment 8).

Figure 1-1 AER's draft decision and TransGrid's proposed annual building block revenue requirement ($ million, nominal)



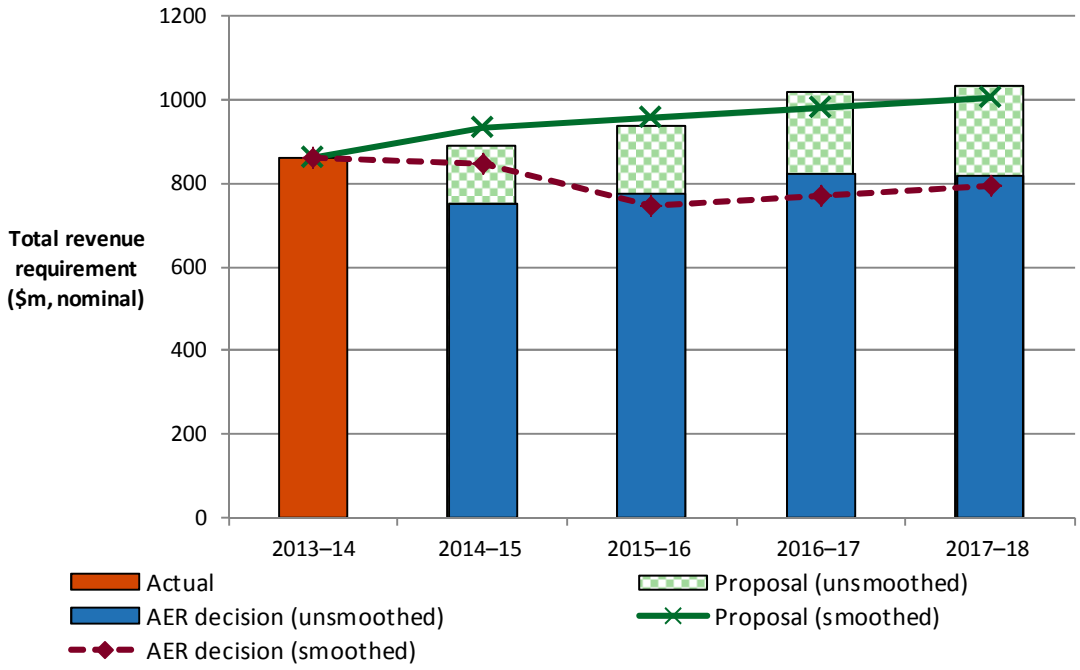
Source: AER analysis.

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

For this draft decision, we determine an X factor of –0.5 per cent per annum for the years 2016–17 and 2017–18 for TransGrid. The NPV of the annual building block revenue requirement is $2662.1 million ($ nominal) as at 1 July 2014. Based on this NPV and applying the CPI–X method (including the true-up requirement for the transitional regulatory control period), we determine that the annual expected MAR (smoothed) for TransGrid decreases from $845.4 million in 2014–15 to $793.1 million in 2017–18 ($ nominal). The resulting estimated total revenue cap for TransGrid is $3155.9 million for the 2014–18 period or $2310.5 million ($ nominal) for the 2015–18 regulatory control 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 2014–18 period.

Figure 1-2 AER's draft decision on TransGrid's annual expected MAR (smoothed) and annual building block revenue requirement (unsmoothed) ($ million, nominal)



Source: AER analysis.

To determine the expected MAR for TransGrid, we first set the MAR for the first regulatory year (2014–15) at $845.4 million ($ nominal). This is equal to the placeholder revenue for 2014–15 that we determined for TransGrid in the transitional determination, and is $94.3 million higher than the 2014–15 annual building block revenue requirement, i.e. the notional MAR for 2014–15. We then applied an X factor of 13.7 per cent for 2015–16 and –0.5 per cent for both 2016–17 and 2017–18 to determine the expected MAR in subsequent years.[28] This gives effect to the true-up requirements under the NER and ensures that the difference of $94.3 million is returned to customers over the 2015–18 regulatory control period (adjusted for the time value of money). This is achieved as part of the smoothing process to determine the appropriate X factors for the 2015–18 regulatory control period.

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 revenue requirement for that year.[29]

We note that TransGrid has an under-recovery of $71 million in its allowed MAR for 2013–14.[30] The CCP and EUAA submitted that there needs to be transparency over the under-recovery by TransGrid.[31] We understand that this under-recovery for TransGrid has arisen as a result of its decision to adopt a 'revenue freeze' in 2013–14. We have no role in considering the regulatory treatment of this under-recovery. TransGrid is able to recover in future years any shortfall in revenue that is below the approved MAR. Any decision by TransGrid to recover this revenue would affect

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

29 In the present circumstances, based on the X factors we have determined for TransGrid, this divergence is around 3.0 per cent.

30 TransGrid, *Transitional revenue proposal 2014/15*, January 2014, p. 65.

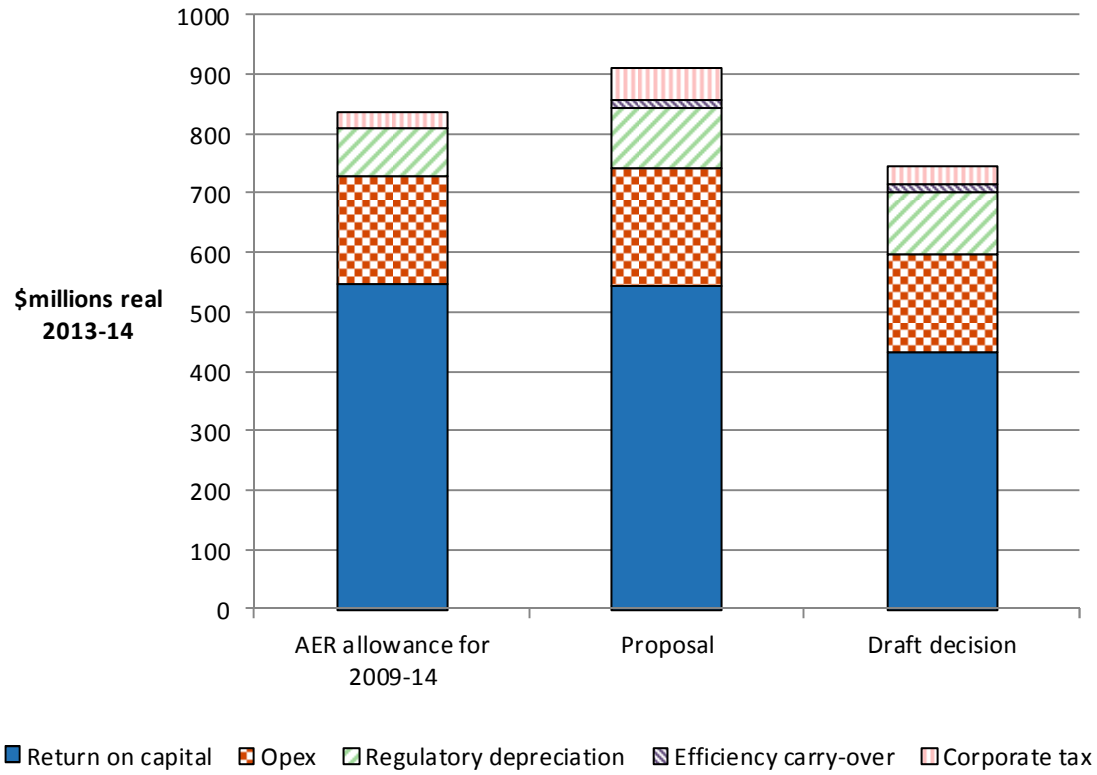
31 AER Consumer Challenge Panel, *(CCP6 Sub panel) Submission on the TransGrid revenue proposal*, 8 August 2014, pp. 4–5; EUAA, *Submission on TransGrid's revenue proposal 2014-2019*, 8 August 2014, p. 13.

transmission charges for its customers independently of the AER's determination for the 2014–18 period.

The average decrease in our approved expected MAR is 3.8 per cent per annum ($ nominal) over the 2014–18 period.[32] This consists of an initial decrease of 9.5 per cent from 2013–14 to 2014–15, followed by another decrease of 11.6 per cent in 2015–16, and a subsequent average annual increase of 3 per cent during the remainder of the 2014–18 period.[33] Our draft decision results in a decrease of 11.1 per cent in real terms ($2013–14) to TransGrid's total revenue relative to that in the 2009–14 regulatory control period. This decrease is primarily because of a lower rate of return, forecast opex and capex applied in this draft decision for the 2014–18 period than were approved in the 2009–14 revenue cap decision.

Figure 1-3 compares our draft decision building blocks for TransGrid's 2014–18 period with TransGrid's proposed revenue requirement for that same period, and the approved revenue for the 2009–14 regulatory control period.

Figure 1-3 Annual average of AER's draft decision building blocks compared to TransGrid's proposed revenue requirement and approved revenue for 2009–14 ($ million, 2013–14)



Source: AER analysis.

[32] This is based on the approved MAR of $934.2 million for 2013–14. TransGrid's actual revenue to be recovered for 2013–14 is lower due to its 'revenue freeze', at $863 million.

[33] In real dollar terms, the average decrease in our approved expected MAR for TransGrid is 6.1 per cent per annum over the 2014–18 period. This consists an initial decrease of 11.7 per cent from 2014–15 to 2015–16, followed by another decrease of 13.7 per cent, and a subsequent average annual increase of 0.5 per cent during the remainder of the 2014–18 period.

1.4.2 Shared assets

Service providers, such as TransGrid, may use assets to provide both prescribed transmission services we regulate and unregulated services. These assets are called 'shared assets'.[34] Of the unregulated revenues a service provider earns from shared assets, 10 per cent will be used to reduce the service provider's prices for prescribed transmission services.[35] However, price reductions are subject to a materiality threshold. Unregulated use of shared assets is material when a service provider's unregulated revenues from shared assets in a specific regulatory year are expected to be greater than 1 per cent of its MAR for that regulatory year.[36]

TransGrid submitted that its shared asset unregulated revenues are forecast to be between 0.52 and 0.63 per cent of its total expected MAR in each year of the 2014–18 regulatory control period.[37] Based on our previous assessment of service provider unregulated revenues, we consider TransGrid's forecasts are reasonable.[38] However, TransGrid's forecast unregulated revenues must be compared to the regulated MARs we determine, rather than those proposed by TransGrid. On that basis, we consider TransGrid's unregulated revenues to be between 0.58 and 0.80 per cent of its MAR in each year of the 2014–18 regulatory control period.

We note that unregulated revenues from shared assets may in future become material. We will monitor TransGrid's shared asset unregulated revenues and, if necessary, determine our own forecasts for future regulatory control periods.

1.4.3 Indicative transmission charges and impact on electricity bills

Our draft decision on TransGrid's expected MAR ultimately affects the annual electricity bills paid by customers. There are several steps required to translate our revenue decision into indicative transmission charges, and then to estimate bill impact.

First, because 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 consumers.

Second, although TransGrid is the main transmission network service provider in NSW and ACT, smaller components of the transmission network are owned and operated by Ausgrid, ActewAGL and Directlink. TransGrid is the coordinating TNSP for this region, and so it collects and administers all transmission revenues for the region. Hence, the transmission charges in NSW/ACT are also affected by the revenue determinations for Directlink's transmission network and Ausgrid's and ActewAGL's transmission assets.[39]

We therefore estimate the forecast average transmission charges in NSW/ACT by:

- taking the sum of:
    - the annual expected MAR determined for TransGrid in this draft decision

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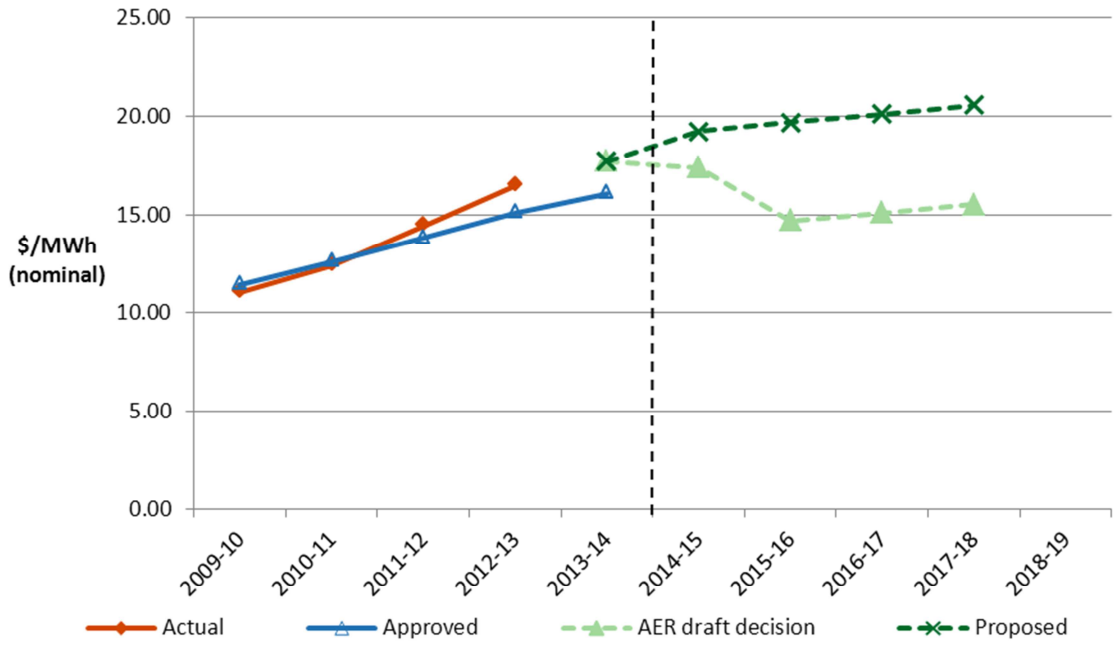
34 NER, cl. 6A.5.5.
35 AER, *Shared asset guideline*, November 2013.
36 AER, *Shared asset guideline*, November 2013, p. 8.
37 TransGrid, *Regulatory Information Notice*, template 6.4 - shared assets; TransGrid, *Revenue proposal*, p. 14.
38 Undertaken as we developed our shared asset guideline, during the 2013 calendar year, as part of our Better Regulation work program.
39 While Ausgrid and ActewAGL are predominantly an electricity distribution business, they also own and operate some transmission assets. These assets operate in parallel and support TransGrid's transmission network to provide transmission network services to NSW and ACT.

- the annual expected MAR determined for Directlink in that draft decision[40]
- the annual expected revenues for Ausgrid and ActewAGL's transmission assets[41]

- dividing it by the forecast annual energy delivered in NSW/ACT as published by AEMO.[42]

Based on this approach, we estimate that our draft decision for these TNSPs will result in a decrease in annual average transmission charges from 2013–14 to 2017–18.[43] Figure 1-4 shows the indicative average transmission charges resulting from our draft decisions compared with the average transmission charges from 2009 to 2014 in nominal dollar terms. The average transmission charges are forecast to decrease from around $17.7 per MWh in 2013–14 to $15.6 per MWh in 2017–18.

Figure 1-4 Indicative transmission charges from 2009–10 to 2017–18 for NSW and ACT ($/MWh, nominal)



Source: AER analysis.

We then estimate the indicative impact of transmission charges on electricity bills. In NSW and the ACT, transmission charges represent approximately 7 per cent on average of a typical customer's annual electricity bill.[44] We expect that our draft decisions, other things being equal, will reduce the average residential customer electricity bills in NSW and the ACT:

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40 Our draft decision for Directlink can be found on our website at www.aer.gov.au. For this analysis, we used Directlink's expected MAR for the 2014–18 period to be consistent with TransGrid's 2014–18 period.

41 We made draft decisions on Ausgrid and ActewAGL's proposed annual expected revenues for the 2014–19 period. Our draft decision for Ausgrid and Actew AGL can be found on our website at www.aer.gov.au. For this analysis, we used Ausgrid and ActewAGL's 2014–15 to 2017–18 transmission revenues from our draft decision to be consistent with TransGrid's 2014–18 period.

42 AEMO, *National electricity forecasting report for the national electricity market*, June 2014, table 6, Medium.

43 On average, the draft decision transmission revenues will decrease by 3.06 per cent ($ nominal) per annum from 2013–14 to 2017–18. The forecast energy delivered in NSW/ACT will slightly increase, by an average of 0.06 per cent per annum across that period. As a result, the indicative transmission charge will decrease by 3.12 per cent ($ nominal) per annum from 2013–14 to 2017–18.

44 TransGrid, *Revenue proposal*, p. 18.

- For NSW, if the lower transmission charges from our transitional determinations were passed through to end customers, the average residential customer's annual electricity bill in NSW could be expected to decrease by about $2 or 0.1 per cent ($ nominal) in 2014–15. If the lower transmission charges from our draft decisions are passed through to customers, we would expect the average residential customer's annual electricity bill in NSW to decrease by a further $24 or 1.1 per cent ($ nominal) in 2015–16. This would be followed by increases of about $4 or 0.2 per cent ($ nominal) per annum from 2016–17 to 2017–18.
    - In comparison, if the TNSPs' proposals were accepted by us, the average annual electricity bills for residential customers in NSW would increase by approximately $6 or 0.3 per cent ($ nominal) per annum over the 2014–18 period.
- For the ACT, if the lower transmission charges from our transitional determinations were passed through to end customers, the average residential customer's annual electricity bill in the ACT could be expected to decrease by about $2 or 0.1 per cent ($ nominal) in 2014–15. If the lower transmission charges from our draft decisions are passed through to customers, we would expect the average residential customer's annual electricity bill in the ACT to decrease by a further $21 or 1.1 per cent ($ nominal) in 2015–16. This would be followed by increases of about $3 or 0.2 per cent ($ nominal) per annum from 2016–17 to 2017–18.
    - In comparison, if the TNSPs' proposals were accepted by us, the average annual electricity bills for residential customers in the ACT would increase by approximately $5 or 0.3 per cent ($ nominal) per annum over the 2014–18 period.

Our estimated potential impact is based on the typical annual electricity usage of 6500 kWh per annum for a residential customer in NSW.[45] For a residential customer in the ACT, our estimated potential impact is based on the typical annual electricity usage of 8000 kWh.[46] Customers with different usage will experience different changes in their bills. We also note that there are other factors, such as distribution network costs, wholesale and retail costs, which affect electricity bills.

[45] IPART, *Final report: Review of regulated retail prices for Electricity from 1 July 2013 to 30 June 2016*, June 2013, p. 5.
[46] ICRC, *Draft report-Standing offer electricity prices from 1 July 2014*, p. 160.

Table 1-5 shows the estimated impact of our draft decisions over the 2014–18 period compared with the TNSPs' proposals on the average annual electricity bills for residential customers in NSW and ACT.

Table 1-5 AER's estimated impact of our transmission draft decisions on the average annual electricity bills for residential customers in NSW and ACT over 2014–18 ($ nominal)

	2013–14	2014–15	2015–16	2016–17	2017–18
TNSP proposals					
NSW residential annual bill[a]	2227	2240	2244	2248	2252
Annual change		13 (0.6%)	4 (0.2%)	4 (0.2%)	4 (0.2%)
ACT residential annual bill[b]	1959	1971	1974	1977	1981
Annual change		12 (0.6%)	3 (0.2%)	3 (0.2%)	3 (0.2%)
AER draft decision					
NSW residential annual bill[a]	2227	2225	2201	2205	2208
Annual change		–2 (–0.1%)	–24 (–1.1%)	4 (0.2%)	4 (0.2%)
ACT residential annual bill[b]	1959	1957	1936	1939	1942
Annual change		–2 (–0.1%)	–21 (–1.1%)	3 (0.2%)	3 (0.2%)

Source: AER analysis; AER, Energy Made Easy; IPART, *Final report: Review of regulated retail prices for electricity - from 1 July 2013 to 30 June 2016*, June 2013, p. 5; ICRC, *Draft report-Standing offer electricity prices from 1 July 2014*, p. 160.

(a) Based on the annual electricity bill for a typical consumption of 6500 kWh per year during the period 1 July 2013 to 30 June 2014. The bill reflects regulated charges in each distribution zone only. Sample postcode: Ausgrid (2112), Endeavour Energy (2500), Essential Energy(2650).

(b) Based on an average residential customer in the ACT consuming 8000 kWh of electricity per year.

Similarly, for an average small business customer in NSW and in the ACT that uses approximately 10 MWh of electricity per annum, our draft decision for the TNSPs is expected to lead to lower average annual electricity bills.[47]

- For NSW, we estimate that if the lower transmission charges arising from our transitional determination were passed through to end customers, the average small business customer's annual electricity bill in NSW could be expected to decrease by about $4 or 0.1 per cent ($ nominal) in 2014–15. If the lower transmission charges from our draft decisions are passed through to customers, we would expect the average small business customer's annual electricity bill in NSW to decrease by a further $38 or 1.1 per cent ($ nominal) in 2015–16. This would be followed by increases of about $6 or 0.2 per cent ($ nominal) per annum from 2016–17 to 2017–18.
    - In comparison, if the TNSPs' proposals were accepted by us, the average annual electricity bills for small business customers in NSW would increase by approximately $10 or 0.3 per cent per annum ($ nominal) over the 2014–18 period.

[47] IPART, *Final report: Review of regulated retail prices for electricity - from 1 July 2013 to 30 June 2016*, June 2013, p. 5; ICRC, *Draft report-Standing offer electricity prices from 1 July 2014*, p. 160.

- For the ACT, we estimate that if the lower transmission charges arising from our transitional determination were passed through to end customers, the average small business customer's annual electricity bill in the ACT could be expected to decrease by about $3 or 0.1 per cent ($ nominal) in 2014–15. If the lower transmission charges from our draft decisions are passed through to customers, we would expect the average small business customer's annual electricity bill in the ACT to decrease by a further $31 or 1.1 per cent ($ nominal) in 2015–16. This would be followed by increases of about $5 or 0.2 per cent ($ nominal) per annum from 2016–17 to 2017–18.
    - In comparison, if the TNSPs' proposals were accepted by us, the average annual electricity bills for small business customers in the ACT would increase by approximately $8 or 0.3 per cent ($ nominal) per annum over the 2014–18 period.

Table 1-6 shows our estimated impact of our draft decisions over the 2014–18 period and the TNSPs' proposals on the average annual electricity bills for small business customers in NSW and ACT.

Table 1-6 AER's estimated impact of the transmission draft decisions on the average annual electricity bills for small business customers in NSW and ACT over 2014–18 ($ nominal)

	2013–14	2014–15	2015–16	2016–17	2017–18
TNSP proposals					
NSW small business annual bill[a]	3584	3605	3611	3617	3624
Annual change		21 (0.6%)	6 (0.2%)	6 (0.2%)	6 (0.2%)
ACT small business annual bill[b]	2939	2956	2962	2966	2972
Annual change		17 (0.6%)	5 (0.2%)	5 (0.2%)	5 (0.2%)
AER draft decision					
NSW small business annual bill[a]	3584	3580	3542	3547	3553
Annual change		–4 (–0.1%)	–38 (–1.1%)	6 (0.2%)	6 (0.2%)
ACT small business annual bill[b]	2939	2936	2905	2909	2914
Annual change		–3 (–0.1%)	–31 (–1.1%)	5 (0.2%)	5 (0.2%)

Source: AER analysis; AER, Energy Made Easy; IPART, *Final report: Review of regulated retail prices for electricity - from 1 July 2013 to 30 June 2016*, June 2013, p. 5; ICRC, *Draft report-Standing offer electricity prices from 1 July 2014*, p. 160.

(a) Based on the annual bill sourced from Energy Made Easy for a typical consumption of 10000 kWh per year during the period 1 July 2013 to 30 June 2014. The bill reflects regulated charges in each distribution zone only. Sample postcode: Ausgrid (2112), Endeavour Energy (2500), Essential Energy (2650).

(b) Based on an average small non-residential customer in the ACT consuming 10000 kWh of electricity per year.