DRAFT DECISION
TransGrid transmission determination
2018 to 2023

Attachment 10 – Capital expenditure sharing scheme

September 2017

AUSTRALIAN ENERGY REGULATOR

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Note

This attachment forms part of the AER's draft decision on TransGrid's transmission determination for 2018–23. 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 – 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	annual service revenue requirement
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
DMIA	demand management innovation allowance
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
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

Shortened form	Extended form
RPP	revenue and 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

10 Capital expenditure sharing scheme

The capital expenditure sharing scheme (CESS) provides financial rewards to transmission network service providers (TNSPs) whose capex becomes more efficient and financial penalties for those that become less efficient. Consumers benefit from improved efficiency through lower regulated prices.

The CESS approximates efficiency gains and efficiency losses by calculating the difference between forecast and actual capex. It shares these gains or losses between service providers and consumers. Under the CESS a service provider retains 30 per cent of an under-spend or over-spend, while consumers retain 70 per cent of the under-spend on over-spend. This means that for a one dollar saving in capex the service provider keeps 30 cents of the benefit while consumers keep 70 cents of the benefit.

The CESS works as follows:

1. We calculate the cumulative efficiency gains or losses for the current regulatory control period in net present value terms.
2. We apply a ratio of 30 per cent to the cumulative under-spend or over-spend to work out what the service provider's share of the under-spend or over-spend should be.
3. We calculate the CESS payments taking into account the financing benefit or cost to the service provider of the under-spends or over-spends.[1] We can also make further adjustments to account for deferral of capex and ex post exclusions of capex from the RAB.[2]
4. The CESS payments will be added or subtracted to the service provider's regulated revenue as a separate building block in the next regulatory control period.

This attachment sets out our decision for both the determination of the revenue impacts and the application of the CESS for TransGrid in the 2018–23 regulatory control period.

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[1] We calculate benefits as the benefits to the service provider of financing the under-spend since the amount of the under-spend can be put to some other income generating use during the period. Losses are similarly calculated as the financing cost to the service provider of the over-spend.

[2] The capex incentive guideline outlines how we may exclude capex from the RAB. AER, *Capex incentive guideline*, November 2013, pp. 13–20.

10.1 Draft decision

Revenue impacts for 2018–23 regulatory control period

Our draft decision is to approve a CESS revenue increment amount of $26.5 million ($2017–18) from the application of the CESS in the 2014–18 regulatory control period.[3]

The difference between our calculations and TransGrid's proposal is due to:

- the adoption of a different CPI adjustment
- the adoption of updated discount rates; and
- differences in the calculation methodology, with respect to smoothing the CESS revenue increment across the 2018-23 regulatory control period.

Our draft decision on the revenue impact of the application of the CESS in 2015–18 regulatory control period compared to TransGrid's proposal is summarised in **Error! Reference source not found.**.

Table 1 AER's draft decision on TransGrid's CESS revenue increment ($ million, 2017–18)

	2018-19	2019-20	2020-21	2021-22	2022-23	Total
TransGrid's proposal	4.9	4.9	4.9	4.9	4.9	24.3
AER draft decision	5.3	5.3	5.3	5.3	5.3	26.5

Source: TransGrid, *Post Tax Revenue Model*, 31 January 2017; AER analysis.

Note: Numbers may not add up due to rounding.

We note that given the timing our draft decision we will update our calculation using TransGrid's actual expenditure for 2016–17 in our final decision.[4]

Application of scheme in the 2018–23 regulatory control period

We will apply the CESS as set out in version 1 of the capital expenditure incentives guideline to TransGrid in the 2018–23 regulatory control period.[5] The guideline provides for the exclusion from the CESS of capex the service provider incurs in delivering a priority project approved under the network capability component of the Service Target Performance Incentive Scheme (STPIS) for transmission network service providers.[6] This is consistent with the proposed approach we set out in our framework and approach paper.[7]

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3 AER, *Capital Expenditure Incentive Guideline for Electricity Network Service Providers*, November 2013.

4 Given the timing of when TransGrid submitted its initial proposal, TransGrid was only able to provide an estimate of its capex for the 2015–16 regulatory year. When we make our final decision we will be able to update the CESS payment calculation for the actual capex TransGrid incurred in 2015–16.

5 AER, *Capex incentive guideline*, November 2013, pp. 5–9.

6 AER, *Capex incentive guideline*, November 2013, p. 6.

7 AER, *TransGrid 2018–23, Final Framework and approach*, July 2016 p.18

10.2 TransGrid's proposal

Revenue impacts for 2018–23 regulatory control period

TransGrid proposed a $24.3 million ($2017–18) CESS revenue increment to its regulated revenue in the 2018–23 regulatory control period.[8]

In estimating its proposed CESS revenue increments, TransGrid adjusted its actual and forecast capex for the following:

- priority projects approved under the network capability component of the transmission STPIS known as NCIPAP capex[9]
- capex deferred across regulatory control periods; and
- asset disposals.

Application of scheme in the 2018–23 regulatory control period

TransGrid proposed to apply the CESS mechanism as set out in the existing AER Guideline for the 2018–23 regulatory control period.[10] TransGrid proposed that the revenue impact of the CESS applying in the 2018–23 regulatory control period will be determined in our next TransGrid decision.[11]

10.3 Assessment approach

Under the National Electricity Rules (NER) we must decide:

- the revenue impacts on TransGrid arising from applying the CESS in 2015–18 regulatory control period; and
- whether or not to apply the CESS to TransGrid in the 2018–23 regulatory control period and how any applicable scheme will apply.[12]

Our assessment approach to deciding the above is set out below.

We must determine the appropriate revenue increments or decrements (if any) for each year of the 2018–23 regulatory control period arising from the application of the CESS during the 2015–18 regulatory control period.[13]

The NER requires that our draft decision include a determination on how any applicable capital expenditure sharing scheme is to apply to TransGrid.[14] In deciding

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8 TransGrid, *Regulatory* proposal, January 2016, p. 209 and TransGrid, Capital Efficiency Sharing Scheme Model-0117-PUBLIC identified a building block allowance of $22.5 million. The CESS increments included in TransGrid's proposal post tax revenue model amount to $24.3 million, we have cited this figure as this is the increment which is relied on to determine TransGrid's overall proposed revenue.

9 AER, *TransGrid 2018–23, Final Framework and approach*, July 2016 p.19

10 TransGrid, *Revenue Proposal 2018-19 to 2022-23*, 31 January 2017, p 209.

11 TransGrid, *Revenue Proposal 2018-19 to 2022-23*, 31 January 2017, p 209.

12 NER, cl. 6A.14.5(5A).

13 NER, cl. 6A.5.4(a)(5).

whether to apply a CESS to TransGrid for the 2018–23 regulatory control period, and the nature and details of the scheme, we must:[15]

- make that decision in a manner that contributes to the capex incentive objective[16]
- take into account the CESS principles,[17] the capex objectives,[18] other incentive schemes, and, where relevant the opex objectives, as they apply to the particular service provider, and the circumstances of the service provider.

Broadly, the capex incentive objective is to ensure that only capex that meets the capex criteria enters the RAB used to set prices. Therefore, consumers only fund capex that is efficient and prudent.

10.3.1 Interrelationships

The approval of CESS payments/penalties determines the associated CESS building block and therefore TransGrid's overall forecast revenue requirement for the 2018–23 regulatory control period.

As set out in the AER's incentive guidelines, without applying a CESS for the 2018–23 regulatory control period TransGrid will face incentives that decline over the period. That is, if TransGrid makes an efficiency gain in the first year of the 2018–23 regulatory control period any benefit will last for four more years before the RAB is updated for actual capex. In the final year however, the benefit will be approximately zero. This may lead to inefficient capex and inefficient substitution of opex for capex towards the end of a regulatory control period.[19] In developing the guideline we took into account the capex incentive objective, capex criteria, capex objectives and the NEO.

The CESS relates to other incentives TransGrid faces to incur efficient opex, conduct demand management and maintain or improve service levels. Related schemes are the efficiency benefit sharing scheme (EBSS) for opex, and the service target performance incentive scheme (STPIS) for service levels. The AER aims to incentivise network service providers to make efficient decisions on when and what type of expenditure to incur and to balance expenditure efficiencies with service quality. We discuss these interrelationships where relevant as part of our expenditure attachments.

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14 NER, cl. 6A.14.5(5A).
15 NER, cl. 6A.6.5A.
16 NER, cl. 6A.5A(a); the capex criteria are set out in cl. 6A.6.7(c)(1)-(3) of the NER.
17 NER, cl. 6A.6.5A(c).
18 NER, cl. 6A.6.7(a).
19 AER, *Better Regulation Capital Expenditure Incentive Guideline,* November 2013*,* p.5

10.4 Reasons for draft decision

10.4.1 CESS revenue increments from the 2015–18 regulatory control period

We consider TransGrid should receive a positive CESS payment amount of $26.5 million ($2017–18) from the application of version one of the CESS during the 2015–18 regulatory control period. We note that the scheme operates only over the 2015-16 2016–17 and 2017–18 regulatory years. This is because the 2014–15 transitional year of the determination was excluded when Version 1 of the CESS was applied.[20] The timing of our draft decision means that the 2016–17 and 2017–18 regulatory years are estimates. The actual capex incurred by TransGrid for the 2016–17 regulatory year will be known in time for the final decision. We will update the CESS revenue increment in the final determination to reflect this updated information. Given that the 2017–18 regulatory year will be an estimate at the time of our final decision we may need to make further adjustments to the revenue increment where actual underspending or overspending in the 2017–18 regulatory year final is different to the estimate. Consistent with our incentive guideline these adjustments will be made when undertaking a revenue determination for the subsequent regulatory control period.[21]

Our calculation of the CESS is in accordance with section 2.3 of as set out in version one of the capital expenditure incentives guideline.[22]

In the 2015–18 regulatory control period, TransGrid was subject to version one of the CESS Guideline. Under this scheme the CESS revenue increments are to be based on the difference between:

- approved forecast capex which is set out in our determination for TransGrid for the 2015–18 regulatory control period
- actual capex for the regulatory years from 2015–16 to 2017–18, after the removal of any excluded cost categories.[23]

The formulas for calculating the revenue increments are set out in our determination CESS model.[24]

The CESS revenue increments we calculated ($26.5 million) is different to the revenue increment that TransGrid proposed ($24.3 million) because we used updated and different CPI adjustments to be consistent with our roll forward model (RFM). We also

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20 AER, *Better Regulation Capital Expenditure Incentive Guideline,* November 2013.

21 AER, *Better Regulation, Explanatory Statement Capital Expenditure Incentive Guideline for Electricity Network Service Providers, November 2013.* p. 21.

22 AER, *Better Regulation, Capital Expenditure Incentive Guideline for Electricity Network Service Providers*, November 2013, p. 6.

23 An estimate of 2016–17 capex will be used for the draft decision as actual capex for 2016–17 will not be available until after the draft decision.

24 AER, *Draft decision TransGrid transmission determination, CESS model*, 29 September 2017.

updated the discount rate and adopted a different approach to determining how the revenue increments are recovered across the 2018–23 regulatory control period.

These issues are discussed below.

CPI adjustment

In its proposed CESS model, TransGrid converted capex allowance values (real 2013–14) to nominal values using a lagged consumer price index (CPI) index (June quarter CPI).[25] This contrasts with our approach, which uses a lagged December quarter CPI. We have adopted our approach to be consistent with the RFM. Further, TransGrid has relied on forecasts of inflation for part of the CESS calculation, whereas we have used actual inflation, where available. We have also amended our estimate of inflation for the 2017–18 year to match the way we have calculated the opening RAB.

Consistency between the CESS revenue increment and the determination of the opening RAB for 2018–23

TransGrid's capex in the 2015–18 regulatory control period is used to determine both the CESS revenue increments and the opening regulatory asset base for the 2018–23 regulatory control period. This being the case we consider it is important to use the same CPI adjustments for both the CESS and RFM. TransGrid has used CPI (June on June) to convert the capex allowance from real to nominal dollars, whereas in our calculation we have used CPI (December on December). Given that, the RFM relies on December on December CPI figures we consider that converting TransGrid's capex allowance from real to nominal dollars should also be determined this way.

Actual and forecast CPI figures

TransGrid's proposal model uses actual CPI figures for 2014–15 and then relies on forecasts of CPI for the regulatory years 2015–16 to 2017–18. TransGrid's forecast inflation rate is consistent with TransGrid's capital accumulation model.[26] We have updated these inflation estimates for the years up to 2016–17 using the latest available CPI publication issued by the Australian Bureau of Statistics.[27] Given the timing of the draft decision being before the publication of the CPI relating to the 2017–18 regulatory year we must rely on an estimate of expected inflation. Our method for estimating expected inflation for the 2018–23 regulatory control period is set out in our PTRM and discussed in attachment 3.

Discount rate

The CESS calculation relies on determining the level of under-spends or over-spends for each regulatory year in which the scheme applies with each of these underspend/overspends occurring at different times. These underspends are then

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25 TransGrid, *Response to AER information request #033*, 26 May 2017.

26 TransGrid, *Response to AER information request #033,* 26 May 2017 p. 2.

27 Australian Bureau of Statistics, *6401.0 - Consumer Price Index, Australia, June 2017*, 26 July 2017.

equated to be in net present value (NPV) terms and as such an appropriate discount rate needs to be determined for each regulatory year. Consistent with our capex forecast we assume capex is incurred in the middle of each year.

TransGrid's proposal relies on using the nominal vanilla WACC updated for return on debt for the regulatory years 2015–16, 2016–17 and 2017–18.[28] We consider that this approach is appropriate. However since TransGrid has submitted its proposal, we have published our return on debt update for the 2017–18 year.[29] We have given effect to these updated WACC values to determine the discount rate in our draft decision.

Model function

TransGrid submitted that its calculation followed the model we published as part of our capital expenditure incentives guideline. In doing so, TransGrid made a modification to allowing for a time varying discount rate.[30] TransGrid is the first NSP to have operated under the CESS, and as such our draft decision model represents the first calculation of the CESS revenue increment in the context of a revenue determination. We have adapted the functioning of the guideline model to reflect the practicalities of the determination. For example, our decision model accommodates different regulatory period lengths of the scheme and whether a 'partial' of' 'fully lagged' approach to inflation adjustments applies. We have further modified the model to transform the net present value of the revenue increment into inputs for the PTRM. Our approach differs from TransGrid's.[31] In particular, we consider that the NPV of the CESS revenue increment should not be discounted before smoothing the revenue increments across the 2018-23 regulatory control period in the PTRM.

10.4.2 Application of the CESS in the 2018–23 regulatory control period

We will apply version one of the CESS to TransGrid in the 2018–23 regulatory control period.[32] As we have set out in the framework and approach we consider the CESS is needed to provide TransGrid with a continuous incentive to pursue efficiency gains.

The CESS allows for exclusions of categories of costs from the CESS calculation. For reasons consistent with the 2015–18 determination and our final framework and approach for the 2018–23 determination, we propose to exclude NCIPAP capex and asset disposals from the CESS applying in the 2018–23 regulatory control period.

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28 TransGrid, *Response to AER information request #033, 26 May 2017* p. 2

29 AER, *TransGrid transmission determination - 2016-17 return on debt update - PTRM*, June 2016.

30 TransGrid, *Response to AER information request #033*, 26 May 2017.

31 TransGrid, *Response to AER information request #035*, 2 June 2017.

32 AER, *Capital expenditure incentive guideline*, November 2013.