



DRAFT DECISION

**TasNetworks Distribution
Determination
2019 to 2024**

**Attachment 13
Control mechanisms**

September 2018

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Note

This overview forms part of the AER's draft decision on the distribution determination that will apply to TasNetworks for the 2019–2024 regulatory control period. It should be read with all other parts of the draft determination.

The draft determination includes the following attachments:

Overview

Attachment 1 – Annual revenue requirement

Attachment 2 – Regulatory asset base

Attachment 3 – Rate of return

Attachment 4 – Regulatory depreciation

Attachment 5 – Capital expenditure

Attachment 6 – Operating expenditure

Attachment 7 – Corporate income tax

Attachment 8 – Efficiency benefit sharing scheme

Attachment 9 – Capital expenditure sharing scheme

Attachment 10 – Service target performance incentive scheme

Attachment 11 – Demand management incentive scheme

Attachment 12 – Classification of services

Attachment 13 – Control mechanisms

Attachment 14 – Pass through events

Attachment 15 – Alternative control services

Attachment 16 – Negotiated services framework and criteria

Attachment 17 – Connection policy

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Shortened forms

Shortened form	Extended form
ACS	alternative control services
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
augex	augmentation expenditure
capex	capital expenditure
CCP	Consumer Challenge Panel
CESS	capital expenditure sharing scheme
CPI	consumer price index
distributor	distribution network service provider
DMIAM	demand management innovation allowance (mechanism)
DMIS	demand management incentive scheme
DPPC	designated pricing proposal charges
DRP	debt risk premium
DUoS	distribution use of system
EBSS	efficiency benefit sharing scheme
ERP	equity risk premium
Expenditure Assessment Guideline	Expenditure Forecast Assessment Guideline for Electricity Distribution
F&A	framework and approach
LED	Light Emitting Diode
MRP	market risk premium
NEL	national electricity law
NEM	national electricity market
NEO	national electricity objective
NER	national electricity rules

NSP	network service provider
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 and pricing principles
SAIDI	system average interruption duration index
SAIFI	system average interruption frequency index
SCS	standard control services
SLCAPM	Sharpe-Lintner capital asset pricing model
STPIS	service target performance incentive scheme
TAR	total allowable revenue
WACC	weighted average cost of capital

13 Control mechanisms

A control mechanism imposes limits over the prices of both direct control services and alternative control services and/or the revenues that a distribution network service provider can recover from customers. For standard control services, the National Electricity Rules requires the control mechanism be of the prospective CPI-X form (or some incentive-based variant).¹

This attachment sets out the revenue cap as the control mechanism for TasNetworks' standard control services for the 2019–24 regulatory control period. It discusses:

- the application of the revenue cap
- compliance with the price controls²
- the mechanism through which TasNetworks will recover distribution use of system (DUoS) charges including adjustments for revenue under or over recovery³
- reporting of recovery of designated pricing proposal charges and jurisdictional scheme amounts⁴

This attachment sets out price caps as the control mechanism for TasNetworks' alternative control services for the 2019–24 regulatory control period.

13.1 Draft decision

Our draft decision for TasNetworks is as follows:

- The control mechanism for standard control services is a revenue cap.
- The control mechanism for alternative control services is a price cap.
- Section 13.4.6 contains the revenue cap formulas.
 - The revenue cap for any given regulatory year is the total annual revenue, or TAR, calculated using the formula in Figure 13.1.
 - The side constraints applying to price movements for each of TasNetworks' tariff classes must be consistent with the formula in Figure 13.2.
- Section 13.5.2 contains the price cap formulas.
 - The cap on TasNetworks' prices for services for legacy metering, public lighting and ancillary services (fee based) are defined in Figure 13.3.
 - The formula applying to TasNetworks' quoted services is included in Figure 13.4.

¹ NER, cl. 6.2.6(a).

² NER, cl. 6.12.1(13).

³ NER, cl. 6.12.1(11).

⁴ NER, cl. 6.12.1(19) and 6.12.1(20).

- TasNetworks must demonstrate compliance with the revenue cap—in accordance with Figure 13.1—by including adjustments for DUoS revenue under or over recovery in accordance with appendix A of this attachment.
- TasNetworks must submit as part of its annual pricing proposal, a record of the amount of revenue recovered from designated pricing proposal charges and associated payments in accordance with appendix B of this attachment.
- TasNetworks must submit as part of its annual pricing proposal, a record of any jurisdictional scheme amounts it recovers and associated payments in accordance with appendix C of this attachment.
- Appendix D of this attachment details rules about how rounding is to be handled in the annual pricing approval process.

13.2 TasNetworks' proposal

TasNetworks has accepted the decision:

- to apply a revenue cap to standard control services⁵
- to apply price caps to alternative control services

TasNetworks proposed the inclusion of a D factor to be included in the total allowable revenue formula for its proposed demand based time of use tariff incentive. This is discussed under Section 13.4.2.

TasNetworks further proposed an adjustment to the formula for nominal vanilla WACC as this applied to the true up on any variance in the forecast as against actual for the Electrical Safety Inspection charge and National Energy Market charge.⁶ This is discussed under the 13-9 section.

TasNetworks further accepted the formulas that gave effect to the price caps for:

- type 5 and 6 metering services;⁷
- public lighting;⁸
- ancillary fee based services; and
- ancillary quoted services, with the exception of a requested margin for ancillary quoted services.⁹

⁵ TasNetworks, *Submission on AER Preliminary Framework and Approach*, 21 April 2017, p. 2

⁶ TasNetworks, *AER Information Request 009 TasNetworks response to questions raised by the AER*, 29 March 2018, p. 5

⁷ TasNetworks, *Tasmanian Transmission Revenue and Distribution Regulatory Proposal; Regulatory Control Period 1 July 2019 to 30 June 2024*, 31 January 2018, p. 204.

⁸ TasNetworks, *Tasmanian Transmission Revenue and Distribution Regulatory Proposal; Regulatory Control Period 1 July 2019 to 30 June 2024*, 31 January 2018, p. 205.

⁹ TasNetworks, *Tasmanian Transmission Revenue and Distribution Regulatory Proposal; Regulatory Control Period 1 July 2019 to 30 June 2024*, 31 January 2018, p. 206.

13.3 Assessment approach

Our assessment of the control mechanism was set out in our final Framework and Approach. The final Framework and Approach set the control mechanism for standard control services as a revenue cap which is then binding on our determination.¹⁰ The basis of the revenue cap must be of the prospective CPI–X form (or some incentive based variant).¹¹

Our final Framework and Approach set out a generic formula to give effect to the control mechanism for standard control services.¹² The generic formula requires the control mechanism parameters be specified with more precision in order to be implemented. This draft determination sets out in more detail our position regarding the control mechanism formula and its respective parameters.

Our final Framework and Approach sets out the control mechanism for alternative control services as a price cap. This is detailed below in section 13.5.3.

13.4 Draft decision for standard control services

The following discusses the reasons for our draft decision for each parameter of the revenue cap control mechanism, including the reporting on designated pricing proposal charges and jurisdictional scheme amounts.

13.4.1 Reasons for draft decision for standard control services

Total allowable revenue

In this draft decision the revenue cap for any given regulatory year is the TAR for distribution services. Section 13.4.6 contains the formula that gives effect to the revenue cap.

Intra-period adjustment to the weighted average cost of capital

Changes to the TAR resulting from the trailing average cost of debt update will be implemented through annual revisions to the X factors. Further discussion on this adjustment can be found in attachment 3—rate of return—which discusses the WACC annual adjustment and attachment 1—annual revenue requirement—which details issues relating to X factors.

Incentive scheme adjustments (I factor)

¹⁰ AER, *Framework and approach for TasNetworks; Regulatory control period commencing 1 July 2019*, July 2017, p. 28 NER, cl. 6.12.3(c).

¹¹ NER, cl. 6.2.6(a).

¹² AER, *Framework and approach for TasNetworks; Regulatory control period commencing 1 July 2019*, July 2017, pp. 38–39.

The I factor parameter is for annual TAR adjustments relating to a service provider's performance against the incentive schemes, excluding the Service Target Performance Incentive Scheme.¹³

The details of the demand management innovation allowance mechanism, and of the new demand management incentive scheme, were proposed by the AER in November 2017.^{14 15}

The current demand management innovation allowance applies to TasNetworks in the current regulatory control period. The operation of this mechanism requires that we determine and apply any carryover amount from underspending the allowance as a deduction from the distributor's revenue requirement in the subsequent regulatory control period.¹⁶

As a consequence, it is necessary to include a factor adjusting for the carryover amount for this mechanism in the next regulatory control period.

For the new demand management incentive scheme, TasNetworks will submit a compliance report for year t-2 eight months before the start of year t, as part of the annual pricing process. We will then determine the total financial incentive recoverable for year t-2 four months before the start of year t. This amount will then be included in TasNetworks' annual pricing proposal and be recoverable by DUOS charges in year t.¹⁷

For this reason, we will include an adjustment in the I factor accounting for this incentive.

Annual adjustments (B factor)

The B factor parameter is for annual TAR adjustments required within the 2019–24 regulatory control period. Consistent with our final Framework and Approach the B factor will include 'true-up' adjustments for DUoS revenue under or over recovery.¹⁸

In addition to the above, during the current regulatory control period, the B factor for TasNetworks includes a true-up adjustment which accounts for the difference between

¹³ The I factor excludes adjustments relating to performance against the service target performance incentive scheme which is applied under a specified S factor. The S factor is discussed below.

¹⁴ AER, *Demand management incentive scheme, Electricity distribution network service providers*, December 2017.

¹⁵ AER 2017, *Demand management incentive scheme*, November 2017; AER 2017, *Explanatory Statement, Demand management incentive scheme*, November 2017; AER 2017, *Demand management innovation allowance mechanism*, November 2017; AER 2017, *Explanatory statement, Demand management innovation allowance mechanism*, November 2017.

¹⁶ AER, *Demand Management Innovation Allowance Mechanism; Electricity distribution network service providers*, December 2017, p. 7.

¹⁷ AER, *Demand Management Incentive Scheme; Electricity distribution network service providers*, December 2017, p. 7.

¹⁸ AER, *Framework and approach for TasNetworks Distribution for the Regulatory control period commencing 1 July 2019*, July 2017, p. 39.

actual and forecast values for the Electrical Safety Inspection Service charge and the National Energy Market charge.

The following discusses our draft decision on the elements that make up the B factor.

True-up for the current balance of the DUoS unders and overs account in year t

In the Framework and Approach we noted that the B factor was likely to include adjustments for the unders and overs account. Our draft decision is that the B factor will include a true-up for the net present value of under or over recovered revenue. This true-up will be calculated based upon the DUoS unders and overs account kept in accordance with the method in appendix A.

Under a revenue cap, TasNetworks' revenues in year t will be adjusted annually to clear (or true-up) any under or over recovery of actual revenue collected through DUoS charges in year t-2 and any estimated under or over recovery of revenues in year t-1. In regulatory year t, we will therefore base the level of this adjustment on the opening balance of the DUoS unders and overs account.

As the under or over recovery in regulatory year t will have six months of nominal WACC applied to it during the regulatory year, while the opening balance of the DUoS unders and overs account will have one year of nominal WACC applied during the regulatory year, we consider that the true-up requires an adjustment by six months of WACC to be on a common basis. As the purpose is to offset the opening balance, we further consider that the sign of the true-up should be the reverse of the sign of the opening balance. For clarity, if TasNetworks has recovered below its allowable revenue prior to year t, this balance will be negative and this true-up should be positive to allow TasNetworks to recover that revenue in year t to bring the balance of the unders and overs account to 0.

The formula for this true-up is included in Figure 13.1.

This true-up will not apply in the calculation of TAR for the purpose of the unders and overs account.

True-up adjustments for the Electrical Safety Inspection Service charge and the National Energy Market charge.

Our draft decision is to continue to apply the true-ups for the Electrical Safety Inspection Service charge and the National Energy Market charges.

However, we will change the form of the true-ups.

These true-ups currently are of the form (Actual - Estimated) x WACC where WACC is nominal vanilla WACC which is currently defined as follows:

$$\textit{Nominal vanilla WACC}_t = ((1 + \textit{real vanilla WACC}_t) \times (1 + \Delta\textit{CPI}_t)) - 1$$

TasNetworks has proposed that this formula is not currently applying as intended and that that "-1" should be removed from the end of this nominal vanilla WACC definition. TasNetworks submitted that the current definition fails to allow for the initial variance between forecast and actual outcomes; it only for the gross-up for WACC and CPI.¹⁹

We accept that TasNetworks is correct that this formula is not applying as intended. However, we consider that removing the "-1" would result in WACC values over 100% which are not meaningful.

Rather, we believe it is more meaningful to maintain the current nominal vanilla WACC definition and change the true-up formulas to be of the form below:

$(\text{Actual} - \text{Estimated}) \times (1 + \text{WACC})$

We note that mathematically this results in the same outcome. We further observe that nominal vanilla WACC is used elsewhere in TasNetworks' proposal, such as the proposed margin applying to TasNetworks' ancillary quoted services, and that a change to the nominal vanilla WACC formula here could ambiguously imply an unintended change to that formula.

Cost pass through adjustments (C factor)

The C factor is for annual TAR adjustments relating to AER approved cost pass through amounts. The types of costs that can be included as a cost pass through are set out in attachment 14—pass through events.

S factor adjustments

The S factor parameter is for annual TAR adjustments relating to a distributor's performance against the service target performance incentive scheme. The S factor gives effect to any rewards or penalties related to this scheme—including across regulatory control periods. The scheme requires the S factor to be applied as a percentage adjustment to annual revenue.²⁰

Our proposed position in the Framework and Approach was to apply the s-factor component of the STPIS to TasNetworks in the next regulatory control period which TasNetworks has accepted. We have maintained this approach in our draft decision.²¹

Calculation of the consumer price index escalation

¹⁹ TasNetworks, *AER Information Request 009 TasNetworks response to questions raised by the AER: Standard Control Services Control Mechanism*, 29 March 2018, p. 5.

²⁰ AER, *Electricity distribution network service providers: Service target performance incentive scheme: Appendix C*, 1 November 2009, p. 32.

²¹ AER, *Framework and approach TasNetworks Regulatory control period commencing 1 July 2019*, July 2017, p. 44.

We will apply the annual movement between the Australian Bureau of Statistics' (ABS) published December quarter data for calculating the consumer price index (CPI) escalation.

We note the use of the December quarter data will mean that TasNetworks will apply an actual CPI escalation (rather than an estimated or 'placeholder' CPI escalation) when it submits its pricing proposals.²² The use of an actual CPI escalation will allow the process for setting prices to be more transparent which is consistent with the intent of the pricing rule provisions.²³

The application of this calculation is set out in appendix A.

13.4.2 Deliberately under-recovered revenue

We accept that there are times when TasNetworks may decide to recover below its allowed level of revenue. This is in contrast to unintentional under recovery due to a natural variation between forecast quantities of a services offered and actual quantities achieved. In this event of intentional under-recovery, this revenue will not be counted as an under recovery for the purpose of the under and overs account and by extension will therefore not subsequently increase the total allowable revenue in future years.

TasNetworks proposed the inclusion of an additional variable D_t in the control mechanism. TasNetworks advised us that there will be circumstances where it will discount its demand based time of use network tariffs and that this revenue will therefore be foregone (so not recoverable from other customers). This D_t factor would serve to account for this.²⁴

We consider that, given the changes to the unders and overs mechanism where intentionally under recovered revenue will not contribute to the B factor adjustment, this will already be accounted for without the need to include this additional factor.

The application of this calculation is set out in appendix A.

13.4.3 Reporting on designated pricing proposal charges

We must decide how TasNetworks will report on the recovery of designated pricing proposal charges²⁵ for each year of the 2019–24 regulatory control period and how to account for any under or over recovery of revenue associated with those charges.²⁶

²² Apart from the initial year of the regulatory control period.

²³ NER, cl. 6.18.5 (g)(3).

²⁴ TasNetworks, *AER Information Request 009 TasNetworks response to questions raised by the AER: Standard Control Services Control Mechanism*, 29 March 2018, p. 5.

²⁵ Designated pricing proposal charges are charges related to: designated pricing proposal services (prescribed exit fees, prescribed common transmission services and prescribed transmission use of system services); avoided customer transmission use of system charges; charges provided by another distributor (but only to the extent they comprise of designated pricing proposal services or standard control services); and charges or payments related specified in NER clause 11.39.

We apply an under and over recovery mechanism to facilitate this reporting and account for the true-up of under and over recovery of revenue. This approach is the same as the DUoS revenue under and over recovery mechanism and is consistent with the requirements of the NER.²⁷ The operation of this method is detailed in appendix B.

13.4.4 Reporting on jurisdictional scheme amounts

We must decide how TasNetworks will report on the recovery of jurisdictional scheme amounts for each year of the 2019–24 regulatory control period and how to account for any under or over recovery of revenue associated with those charges.²⁸

Our draft decision jurisdictional scheme amounts under and over recovery mechanism approach is consistent with the requirements of the NER.²⁹ It is also consistent with the approach applied to electricity distributors in other jurisdictions.³⁰ The operation of this method is detailed in appendix C.

13.4.5 Rounding of inputs in annual pricing proposal process

When reporting on compliance as part of the annual pricing proposal process each year of the 2019–24 regulatory control period, we require that certain calculation inputs be used on an unrounded basis while others may be used on a rounded basis.

The process for rounding and the specific inputs to be rounded is detailed in Appendix D.

13.4.6 Control mechanism for standard control services

Figure 13.1 Revenue cap formula³¹

1.
$$TAR_t \geq \sum_{i=1}^n \sum_{j=1}^m p_t^{ij} q_t^{ij}$$
 $i = 1, \dots, n$ and $j = 1, \dots, m$ and $t = 1, 2, \dots, 5$
2.
$$TAR_t = AAR_t + I_t + B_t + C_t$$
 $t = 1, 2, \dots, 5$
3.
$$AAR_t = AR_t \times (1 + S_t)$$
 $t = 1$

²⁶ NER, cl. 6.12.1 (19).

²⁷ NER, cll. 6.12.1(19), 6.18.7.

²⁸ NER, cl. 6.12.1 (20).

²⁹ NER, cl. 6.18.7A.

³⁰ For example, see: AER, *Final decision: Ausgrid distribution determination 2015–16 to 2018–19: Attachment 14–Control mechanisms*, April 2015, Appendix C; AER, *Final decision: SA Power Networks determination 2015–16 to 2019–20: Attachment 14–Control mechanisms*, October 2015, Appendix C; AER, *Final decision: AusNet Services distribution determination 2016 to 2020: Attachment 14–Control mechanisms*, May 2016, Appendix C.

³¹ All parameters are in nominal terms unless otherwise specified.

$$4. \quad AAR_t = AAR_{t-1} \times (1 + \Delta CPI_t) \times (1 - X_t) \times (1 + S_t) \quad t = 2, \dots, 5$$

where:

TAR_t is the total allowable revenue in year t.

p_t^{ij} is the price of component 'j' of tariff 'i' in year t.

q_t^{ij} is the forecast quantity of component 'j' of tariff 'i' in year t.

t is the regulatory year.

AR_t is the annual smoothed revenue requirement in the Post Tax Revenue Model (PTRM) for year t.

AAR_t is the adjusted annual smoothed revenue requirement for year t.

I_t is the sum of demand management incentive scheme and innovation allowance adjustments in year t relating to:

- the final carryover amount from the application of the old demand management innovation allowance (DMIA) from the 2017–19 distribution determination. This amount will be deducted from/added to allowed revenue in the 2020-21 pricing proposal.³²
- approved demand management incentive scheme amounts from year t-2.

B_t is the sum of the following annual adjustment factors for year t:

- true-up for any under or over recovery of actual revenue collected through DUoS charges calculated using the following method:

$$DUoS \text{ Under and Overs True} - Up_t = -(Opening \text{ Balance}_t)(1 + WACC_t)^{0.5}$$

where:

$DUoS \text{ Under and Overs True} - Up_t$ is the true-up for the balance of the DUoS unders and overs account in year t.

³² Rather than including a final carryover from the old DMIA, our subsequent distribution determination for TasNetworks will include a final carryover from the new demand management innovation allowance mechanism (DMIAM). Like the old DMIA, the new DMIAM will enter the control mechanism for a regulatory control period as a lump-sum carryover from the previous regulatory control period that will be deducted from/added to allowed revenue in the second regulatory year.

$Opening\ Balance_t$ is the opening balance of the DUoS unders and overs account in year t as calculated by the method in Appendix A.

$WACC_t$ is the approved weighted average cost of capital used in regulatory year t in the DUoS unders and overs account in Appendix A.

- any under or over recovery of the Electrical Safety Inspection Service charge, calculated using the following method:

$$ESISC_t = (ESISCa_{t-1} - ESISCe_{t-1}) \times (1 + Nominal\ vanilla\ WACC_t)$$

where:

$ESISCa_{t-1}$ is the actual Electrical Safety Inspection Service charge for year t-1

$ESISCe_{t-1}$ is the estimated Electrical Safety Inspection Service charge for year t-1 as per the amount to be set in the final distribution determination.

$Nominal\ vanilla\ WACC_t$ is the approved nominal weighted average cost of capital (WACC) for the relevant regulatory year using the following method:

$$Nominal\ vanilla\ WACC_t = ((1 + real\ vanilla\ WACC_t) \times (1 + \Delta CPI_t)) - 1$$

where the $real\ vanilla\ WACC_t$ is as set out in our final decision PTRM and updated annually.

- any under or over recovery of the National Energy Market charge, calculated used the following method:

$$NEMC_t = (NEMCa_{t-1} - NEMCe_{t-1}) \times (1 + Nominal\ vanilla\ WACC_t)$$

where:

$NEMCa_{t-1}$ is the actual National Energy Market charge for year t-1

$NEMCe_{t-1}$ is the estimated National Energy Market charge for year t-1 as per the amount to be set in the final distribution determination.

$Nominal\ vanilla\ WACC_t$ is the approved nominal weighted average cost of capital (WACC) for the relevant regulatory year as calculated above.

C_t is the sum of approved cost pass through amounts (positive or negative) with respect to regulatory year t, as determined by the AER. It will also include any end-of-period adjustments in year t.

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities³³ from the December quarter in year t–2 to the December quarter in year t–1, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t–1

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t–2

minus one.

For example, for 2020–21, year t–2 is the December quarter 2018 and year t–1 is the December quarter 2019.

X_t is the X factor for each year of the 2019–24 regulatory control period as determined in the PTRM, and annually revised for the return on debt update in accordance with the formula specified in attachment 3—rate of return—calculated for the relevant year.

S_t is the s-factor for regulatory year t.³⁴ It will also incorporate any adjustments required due to the application of the STPIS in the 2019–24 regulatory control period consistent with the AER's STPIS.³⁵

Side constraints

Figure 13.2 sets out the side constraints formula. For each regulatory year after the first year of a regulatory control period, side constraints apply to the weighted average revenue raised from each tariff class. In accordance with the NER, the permissible percentage increase is the greater of CPI–X plus 2 per cent or CPI plus 2 per cent.³⁶ Recovery of certain revenues, such as those to accommodate pass throughs, is disregarded in deciding whether the permissible percentage has been exceeded.³⁷

³³ If the ABS does not or ceases to publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

³⁴ The meaning for year “t” under the price control formula is different to that in Appendix C of STPIS. Year “t+1” in Appendix C of STPIS is equivalent to year “t” in the price control formula of this decision.

³⁵ AER, *Electricity distribution network service providers - service target performance incentive scheme*, 1 November 2009.

³⁶ NER, cl. 6.18.6(c).

³⁷ NER, cl. 6.18.6(d).

Figure 13.2 Side constraints formula³⁸

$$\frac{\left(\sum_{i=1}^n \sum_{j=1}^m d_t^{ij} q_t^{ij}\right)}{\left(\sum_{i=1}^n \sum_{j=1}^m d_{t-1}^{ij} q_t^{ij}\right)} \leq (1 + \Delta CPI_t) \times (1 - X_t) \times (1 + 2\%) + B'_t + C'_t$$

where each tariff class has "n" tariffs, with each up to "m" components, and where:

d_t^{ij} is the proposed price for component 'j' of tariff 'i' for year t.

d_{t-1}^{ij} is the price charged for component 'j' of tariff 'i' in year t-1.

q_t^{ij} is the forecast quantity of component 'j' of tariff 'i' in year t.

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities³⁹ from the December quarter in year t-2 to the December quarter in year t-1, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-1

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-2

minus one.

For example, for 2020-21, year t-2 is the December quarter 2018 and year t-1 is the December quarter 2019.

X_t is the X factor for each year of the 2019-24 regulatory control period as determined in the PTRM, and annually revised for the return on debt update in accordance with the formula specified in attachment 3—rate of return—calculated for the relevant year. If $X > 0$, then X will be set equal to zero for the purposes of the side constraint formula.

B'_t is the percentage change from the sum of the following annual adjustment factors for year t:

- true-up for any under or over recovery of actual revenue collected through DUoS charges calculated using the method in Figure 13.1.

³⁸ All parameters are in nominal terms unless otherwise specified.

³⁹ If the ABS does not or ceases to publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

- Electrical Safety Inspection Service charge, calculated using the method in Figure 13.1
- any under or over recovery of the National Energy Market charge, calculated used the method in Figure 13.1.

C_t' is the annual percentage change from the sum of approved cost pass through amounts (positive or negative) with respect to regulatory year t, as determined by the AER.

With the exception of the CPI, X factor and S factor, the percentage for each of the other factors above can be calculated by dividing the incremental revenues (as used in the total annual revenue formula) for each factor by the expected revenues for regulatory year t-1 (based on the prices in year t-1 multiplied by the forecast quantities for year t).

13.5 Draft decision for alternative control services

In our final Framework and Approach, we set out our decision to apply price caps to alternative control services. TasNetworks' proposed control mechanism for alternative control services for the 2019–2014 regulatory control period is identical to that set out by us in section 2.4.6 of the Framework and Approach paper.⁴⁰ An exception to this is TasNetworks' ancillary services (quoted).

Under normal circumstances, our final formulas in the Framework and Approach are binding. We may only vary our proposed control mechanism formulas where we consider that a material change in circumstances justifies varying these formulas.⁴¹

Unlike standard control services, the definitions of the price cap formulas were already set out in the Framework and Approach, however, TasNetworks proposed the addition of a *margin* to its quoted service formula equivalent to its WACC.⁴² TasNetworks further provided supporting evidence and reasoning in favour of this inclusion of a *margin* which was not available at the time of the preparation of the Framework and Approach which meant that, at the time of the Framework and Approach, our position in favour of a *margin* could not be established. We consider this constitutes a material change in circumstances.

We accept this addition. See Attachment 15 for further detail and TasNetworks' reasoning.

⁴⁰ TasNetworks, *TasNetworks' Transmission and Distribution Regulatory Proposal 2019-2024*, January 2018, p. 205.

⁴¹ NER, cl. 6.12.3(c1).

⁴² TasNetworks, *TasNetworks' Transmission and Distribution Regulatory Proposal 2019-2024*, January 2018, p. 209.

13.5.1 New services introduced during the regulatory control period

A further consideration relates to the treatment of new services that might be offered by TasNetworks within the regulatory control period. Where such services were not identified at the time of our determination but for which the service clearly falls within one of the established service groupings, we propose that a quoted price approach be adopted based on a similar service within that same service grouping.

For example, the price for a new type of meter installation would be set based on the same approach as a similar meter installation service. This approach would give TasNetworks additional flexibility to introduce new services while offering consumers the protections associated with price regulation. If there was no other similar service, the new service would be unregulated and may therefore be subject to ring-fencing restrictions that affect use of the TasNetworks' brand as well as sharing of staff and offices in offering the new services.

Application for the introduction of a new ACS service, within the regulatory control period, is to be made at the time of the annual price submission. The application should provide a detailed description of the service to be introduced along with a plan for how the new service will be charged.

13.5.2 Form of control for alternative control services

As proposed in our final Framework and Approach, the price cap formula that will apply to TasNetworks' alternative control services (except for quoted services) is below.⁴³

Figure 13.3 Price cap formula to apply to TasNetworks' legacy metering, public lighting and ancillary services (fee based)

$$\bar{p}_t^i \geq p_t^i \quad i=1, \dots, n \text{ and } t=1, 2, \dots, 5$$

$$\bar{p}_t^i = \bar{p}_{t-1}^i \times (1 + \Delta CPI_t) \times (1 - X_t^i) + A_t^i$$

Where:

\bar{p}_t^i is the cap on the price of service i in year t . For the first year of the regulatory control period, the cap on the price of service i will be as per the schedule of approved charges set out in Attachment 15.

p_t^i is the price of service i in year t . The initial value is to be decided in the distribution determination.

⁴³ AER, *Final Framework and approach for TasNetworks distribution and transmission - July 2017*, pp. 46-7.

\bar{p}_{t-1}^i is the cap on the price of service i in year $t-1$.

t is the regulatory year.

ΔCPI_t is the annual percentage change in the ABS consumer price index (CPI) All Groups, Weighted Average of Eight Capital Cities⁴⁴ from the December quarter in year $t-2$ to the December quarter in year $t-1$, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year $t-1$

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year $t-2$

minus one.

For example, for 2020–21, year $t-2$ is the December quarter 2018 and year $t-1$ is the December quarter 2019.

X_t^i is the X factor for service i in year t . The value of this factor is as specified in Attachment 15 – Alternative Control Services.

A_t^i is the sum of any adjustments for service i in year t . Likely to include, but not limited to adjustments for any approved cost pass through amounts (positive or negative) with respect to regulatory year t , as determined by the AER.

Quoted services

While we proposed a price cap formula to apply to TasNetworks' quoted services, we accept their rationale for the addition of a *Margin*. The price cap formula for quoted services is therefore equivalent to what was set out in our final Framework and Approach⁴⁵, plus the addition of a *Margin*. The definition of a *Margin* is based on the additional information provided by TasNetworks, where it explained that the *Margin* was intended to be equal to its nominal vanilla WACC.⁴⁶ See Attachment 15 for further details.

Figure 13.4 Price cap formula to apply to TasNetworks' quoted services

$Price = Labour + Contractor Services + Materials + Margin$

⁴⁴ If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

⁴⁵ AER, *Final Framework and approach for TasNetworks distribution and transmission - July 2017*, pp. 47–48.

⁴⁶ TasNetworks, *TasNetworks response to AER information request #024*, 21 June 2018, p. 5.

Where:

Labour consists of all labour costs directly incurred in the provision of the service which may include labour on-costs, fleet on-costs and overheads. Labour is escalated annually by $(1 + \Delta CPI_t)(1 - X_t^i)$ where:

ΔCPI_t is the annual percentage change in the ABS CPI All Groups, Weighted Average of Eight Capital Cities⁴⁷ from the December quarter in year t-2 to the December quarter in year t-1, calculated using the following method:

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-1

divided by

The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-2

minus one.

For example, for 2020-21, year t-2 is the December quarter 2018 and year t-1 is the December quarter 2019.

X_t^i is the X factor for service i in year t. The X factor is to be decided in the distribution determination and will be based on the approach the distributor undertakes to develop its initial prices.

Contractor Services reflect all costs associated with the use of external labour including overheads and any direct costs incurred. The contracted services charge applies the rates under existing contractual arrangements. Direct costs incurred are passed on to the customer.

Materials reflect the cost of materials directly incurred in the provision of the service, material storage and logistics on-costs and overheads.

Margin is an amount equal to TasNetworks' nominal vanilla WACC applied to the total costs of *Labour*, *Contractor Services* and *Materials*.

⁴⁷ If the ABS does not, or ceases to, publish the index, then CPI will mean an index which the AER considers is the best available alternative index.

A DUoS unders and overs account

To demonstrate compliance with the distribution determination applicable to it during the 2019–24 regulatory control period, TasNetworks must maintain a DUoS unders and overs account in its annual pricing proposal.⁴⁸

TasNetworks must provide the amounts for the following entries in its DUoS unders and overs account for the most recently completed regulatory year (t–2), the current regulatory year (t–1) and the next regulatory year (t):⁴⁹

1. An opening balance for year t–2, year t–1 and year t;
2. An interest charge for one year on the opening balance for each regulatory year (t–2, t–1 and t). These adjustments are to be calculated using the respective nominal weighted average cost of capital (WACC) for each intervening year between regulatory year t–2 and year t.⁵⁰ The WACC applied for each year will be that approved by the AER for the relevant year;
3. The amount of revenue recovered from DUoS charges in respect of that year, less the total annual revenue for the year in question;
4. An adjustment to the net amount in item 3 by six months of interest. These adjustments are to be calculated using the approved nominal WACC;
5. The total sum of items 1–4 to derive the closing balance for each year.

TasNetworks must provide details of calculations in the format set out in Table 13.4. Amounts provided for the most recently completed regulatory year (t–2) must be audited. Amounts provided for the current regulatory year (t–1) will be regarded as an estimate. Amounts for the next regulatory year (t) will be regarded as a forecast.

In proposing variations to the amount and structure of DUoS charges, TasNetworks is expected to achieve a closing balance as close to zero as practicable in its DUoS unders and overs account in each forecast year in its annual pricing proposals during the 2019–24 regulatory control period.

Table 13.4 Example calculation of DUoS unders and overs account (\$'000, nominal)

	Year t–2 (actual)	Year t–1 (estimate)	Year t (forecast)
(A) Revenue from DUoS charges	45 779	40 269	39 510

⁴⁸ NER, cl. 6.18.2(b)(7).

⁴⁹ In exceptional circumstances, the DUoS unders and overs account can accommodate additional years—such as year t–3. If available, amounts provided for additional years must be audited.

⁵⁰ The WACC for each year will be that approved by the AER for the respective year and as calculated as set out in Figure 13.1.

(B) Less TAR for regulatory year =	43 039	41 427	44 429
+ Adjusted annual smoothed revenues (AAR _t)	40 189	41 393	44 393
+ DMIA carryover amount and demand management incentive scheme amounts (I _t)	1013	0	0
+ Annual adjustments (B _t) ^a	13	34	36
+ Cost pass through amount (C _t)	1824	0	0
(C) Revenue deliberately under-recovered in year	1000	0	0
(A minus B plus C) Under/over recovery of revenue for regulatory year	3740	-1158	-4919^b
<i>DUoS unders and overs account</i>			
Nominal WACC (per cent)	5.00%	5.50%	6.00%
Opening balance	1737	5656 ^c	4778
Interest on opening balance	87	311	287
Under/over recovery of revenue for regulatory year	3740	-1158	-4919
Interest on under/over recovery for regulatory year	92	-31	-145
Closing balance	5656	4778	0^d

- Notes:
- (a) B_t parameter calculations in the DUoS unders and overs account exclude the true-up for DUoS revenue under/over recovery for regulatory year.
 - (b) Approved DUoS revenue under/over recovery for regulatory year t.
 - (c) Opening balance is the previous year's closing balance.
 - (d) TasNetworks is expected to achieve a closing balance as close to zero as practicable in its DUoS unders and overs account in each forecast year in its annual pricing proposals in the 2019–24 regulatory control period.

B Designated pricing proposal charges⁵¹ unders and overs account

To demonstrate compliance with the distribution determination applicable to it during the 2019–24 regulatory control period, TasNetworks must maintain a designated pricing proposal charges unders and overs account in its annual pricing proposal.⁵²

TasNetworks must provide the amounts for the following entries in its designated pricing proposal charges unders and overs account for the most recently completed regulatory year (t–2), the current regulatory year (t–1) and the next regulatory year (t):⁵³

1. An opening balance for year t–2, year t–1 and year t;
2. An interest charge for one year on the opening balance for each regulatory year (t–2, t–1 and t). These adjustments are to be calculated using the respective nominal weighted average cost of capital (WACC) for each intervening year between regulatory year t–2 and year t.⁵⁴ The WACC applied for each year will be that approved by the AER for the relevant year;
3. The amount of revenue recovered from designated pricing proposal charges in respect of that year, less the total annual revenue for the year in question;
4. An adjustment to the net amount in item 3 by six months of interest. These adjustments are to be calculated using the approved nominal WACC;
5. The total sum of items 1–4 to derive the closing balance for each year.

TasNetworks must provide details of calculations in the format set out in Table 13.5. Amounts provided for the most recently completed regulatory year (t–2) must be audited. Amounts provided for the current regulatory year (t–1) will be regarded as an estimate. Amounts for the next regulatory year (t) will be regarded as a forecast.

In proposing variations to the amount and structure of designated pricing proposal charges, TasNetworks is expected to achieve a closing balance as close to zero as practicable in its designated pricing proposal charges unders and overs account in each forecast year in its annual pricing proposals during the 2019–24 regulatory control period.

⁵¹ Designated pricing proposal charges are charges related to: designated pricing proposal services (prescribed exit fees, prescribed common transmission services and prescribed transmission use of system services); avoided customer transmission use of system charges; charges provided by another distributor (but only to the extent they comprise of designated pricing proposal services or standard control services); and charges or payments related specified in NER clause 11.39.

⁵² NER, cll. 6.18.2(b)(6), 6.12.1(19), 6.18.7.

⁵³ In exceptional circumstances, the designated pricing proposal charges unders and overs account can accommodate additional years—such as year t–3. If available, amounts provided for additional years must be audited.

⁵⁴ The WACC for each year will be that approved by the AER for the respective year and as calculated as set out in Figure 13.1.

Table 13.5 Example calculation of designated pricing proposal changes unders and overs account (\$'000, nominal)

	Year t-2 (actual)	Year t-1 (estimate)	Year t (forecast)
(A) Revenue from designated pricing proposal charges (DPPC)	40 077	34 944	36 609
(B) Less DPPC related payments for regulatory year =	34 365	38 734	39 200
+ DPPC charges to be paid to TNSP	33 672	37 933	38 000
+ Avoided TUoS & DPPC payments	693	801	1200
(A minus B) Under/over recovery of revenue for regulatory year	5712	-3790	-2540^a
DPPC unders and overs account			
Nominal WACC (per cent)	5.00%	5.50%	6.00%
Opening balance	167	6028 ^b	2467
Interest on opening balance	8	332	148
Under/over recovery of revenue for regulatory year	5712	-3790	-2540 ^a
Interest on under/over recovery for regulatory year	141	-103	-75
Closing balance	6028	2467	0^c

Notes: (a) Approved DPPC revenue under/over recovery for regulatory year t.
(b) Opening balance is the previous year's closing balance.
(c) TasNetworks is expected to achieve a closing balance as close to zero as practicable in its DPPC unders and overs account in each forecast year in its annual pricing proposals in the 2019–24 regulatory control period.

C Jurisdictional scheme amounts⁵⁵ unders and overs account

To demonstrate compliance with the distribution determination applicable to it during the 2019–24 regulatory control period, TasNetworks must maintain a jurisdictional scheme amounts unders and overs account in its annual pricing proposal.⁵⁶

TasNetworks must provide the amounts for the following entries in its jurisdictional scheme amounts unders and overs account for the most recently completed regulatory year (t–2), the current regulatory year (t–1) and the next regulatory year (t):⁵⁷

1. An opening balance for year t–2, year t–1 and year t;
2. An interest charge for one year on the opening balance for each regulatory year (t–2, t–1 and t). These adjustments are to be calculated using the respective nominal weighted average cost of capital (WACC) for each intervening year between regulatory year t–2 and year t.⁵⁸ The WACC applied for each year will be that approved by the AER for the relevant year;
3. The amount of revenue recovered from jurisdictional scheme amounts charges in respect of that year, less the total annual revenue for the year in question;
4. An adjustment to the net amount in item 3 by six months of interest. These adjustments are to be calculated using the approved nominal WACC;
5. The total sum of items 1–4 to derive the closing balance for each year.

TasNetworks must provide details of calculations in the format set out in Table 13.6. Amounts provided for the most recently completed regulatory year (t–2) must be audited. Amounts provided for the current regulatory year (t–1) will be regarded as an estimate. Amounts for the next regulatory year (t) will be regarded as a forecast.

In proposing variations to the amount and structure of jurisdictional scheme charges, TasNetworks is expected to achieve a closing balance as close to zero as practicable in its jurisdictional scheme amounts unders and overs account in each forecast year in its annual pricing proposal during the 2019–24 regulatory control period.

⁵⁵ Jurisdictional scheme amounts, are amounts a distributor is required under a jurisdictional scheme obligation as defined by the NER to: pay a person; pay into a fund established under an Act of a participating jurisdiction; credit against charges payable by a person; or reimburse a person, less any amounts recovered by the distributor from any person in respect of those amounts other than under the NER.

⁵⁶ NER, cll. 6.12.1(20), 6.18.2(b)(6A), 6.18.7(A)(b) and (c).

⁵⁷ In exceptional circumstances, the jurisdictional scheme amounts unders and overs account can accommodate additional years—such as year t–3. If available, amounts provided for additional years must be audited.

⁵⁸ The WACC for each year will be that approved by the AER for the respective year and as calculated as set out in Figure 13.1.

Table 13.6 Example calculation of jurisdictional scheme amounts unders and overs account (\$'000, nominal)

	Year t-2 (actual)	Year t-1 (estimate)	Year t (forecast)
(A) Revenue from jurisdictional schemes	19 777	23 121	26 965
(B) Less jurisdictional scheme payments for regulatory year =	20 272	20 959	28 641
+ Jurisdictional scheme 1 payments	14 159	13 954	13 961
+ Jurisdictional scheme 2 payments	6113	7005	14 680
(A minus B) Under/over recovery of revenue for regulatory year	-495	2162	-1676^a
<i>Jurisdictional scheme amount unders and overs account</i>			
Nominal WACC (per cent)	5.00%	5.50%	6.00%
Opening balance	-52	-562 ^b	1628
Interest on opening balance	-3	-31	98
Under/over recovery of revenue for regulatory year	-495	2162	-1676 ^a
Interest on under/over recovery for regulatory year	-12	59	-50
Closing balance	-562	1628	0^c

Notes: (a) Approved jurisdictional scheme amounts revenue under/over recovery for regulatory year t.
(b) Opening balance is the previous year's closing balance.
(c) TasNetworks is expected to achieve a closing balance as close to zero as practicable in its jurisdictional scheme amount unders and overs account in each forecast year in its annual pricing proposals in the 2019–24 regulatory control period.

D Rounding of inputs in annual pricing proposals

The following sets out our draft decision on how TasNetworks must use calculation inputs, whether on a rounded or unrounded basis, in the annual pricing approval process.

'Unrounded', for this purpose, will be taken to mean at least fifteen digit floating point precision (the level of accuracy at which numbers will be stored in Microsoft Excel workbooks of .XLS, .XLSX, .XLSM or .XLSB). This definition accepts that numbers with fewer than fifteen floating digits may not require fifteen digits to express (such as 2.25 being equivalent to 2.25000000000000) but will meet the definition of fifteen digit floating point precision.

Rounding in calculations must be done on a 'nearest' basis. So rounding to two decimal places means rounding to the nearest two decimal places, not rounding up automatically or down automatically. This accepts the convention that if a number falls precisely between two points, it can be rounded up (e.g. 2.245 can be rounded to 2.25 rather than 2.24).

Unrounded inputs should be taken from approved Excel models where appropriate. X factors should be unrounded inputs taken from the approved model. Where necessary, inputs should be calculated as an alternative to using a rounded value. For example, inflation should be used as calculated based around the CPI tables as provided by the Australian Bureau of Statistics, or the AER's nominated best available substitute should this index cease to be calculated. The result of this calculation should be taken as is, not rounded before use. Table 13.7 sets out the required level of precision for an inflation calculation.

Table 13.7 Demonstration of inflation calculation

	Required Precision
The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-2 (example)	112.1
The ABS CPI All Groups, Weighted Average of Eight Capital Cities for the December quarter in regulatory year t-1 (example)	114.6
ΔCPI_t	2.23015165031222%

When applying a price cap, the value of \bar{p}_t^i should be rounded to the nearest two decimal places each year.

Table 13.8 Demonstration of price cap calculation (with rounding)

	Required Precision
\bar{p}_{t-1}^i	\$23.28
x-factor (example: should be taken from model)	-7.125%
ΔCPI_t	2.23015165031222%
\bar{p}_t^i (unrounded)	\$25.4948708296164
\bar{p}_t^i (rounded)	\$25.49

Prices p_t^i can be rounded to as few or as many decimal places as required, subject to being less than or equal the two decimal place value of \bar{p}_t^i . In the above table, this would mean a price of \$25.49 would be acceptable, as would a price of \$25.4899. However, a price of \$25.494 would not be compliant.

For avoidance of ambiguity, where a price is expressible as a rate for a period of time, rounding of the price cap will apply to the largest relevant time period. So an hourly, service will be capped on an hourly basis. However, a service which can be priced either on a daily rate or an annual rate will have rounding apply to the cap on the annual rate. The daily rate should then represent the annual rate divided by 365, or 366 should the regulatory year to which the price applies include 29 February 2020. This daily rate may be expressed on a rounded basis (with discretion from TasNetworks on the appropriate level of decimal places to apply) but must be based on a rounding to the nearest decimal place.

The factors of the revenue cap formula, as per Figure 13.1 adjusted annual smoothed revenue requirement, sum of incentive scheme adjustments, sum of annual adjustment factors and sum of approved cost pass through amounts should be rounded to no fewer than two decimal places. Prices, quantities, X factors and CPI must be used unrounded in the revenue cap formula.

Unrounded inputs include all those not specified above as being rounded.