Final decision

Gas transmission and distribution network service providers

Post-tax revenue models (version 1)

April 2020

AUSTRALIAN ENERGY REGULATOR

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Shortened forms

Shortened form	Extended form
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ARS	ancillary reference services
CPI	Consumer price index
NEL	National Electricity Law
NEO	National Electricity Objective
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NPV	net present value
NSP	network service provider
opex	operating expenditure
PTRM	post-tax revenue model
RFM	roll forward model
WAPC	weighted average price cap

Contents

About us

We, the Australian Energy Regulator (AER), work to make all Australian energy consumers better off, now and in the future. We are the independent regulator of energy network service providers (NSPs) in all jurisdictions in Australia except for Western Australia. We set the revenue requirements these NSPs can recover from customers using their networks.

The National Electricity Law and Rules (NEL and NER) and the National Gas Law and Rules (NGL and NGR) provide the regulatory framework which govern the NSPs. Our role is guided by the National Electricity and Gas Objectives (NEO and NGO).

NEO:[1]

> …to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

NGO:[2]

> …to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

The decisions we make and the actions we take affect a wide range of individuals, businesses and organisations. Effective and meaningful engagement with stakeholders across all our functions is essential to fulfilling our role, and it provides stakeholders with an opportunity to inform and influence what we do. Engaging with those affected by our work helps us make better decisions, provides greater transparency and predictability, and builds trust and confidence in the regulatory regime. This is reflected in our *Stakeholder engagement framework* and in the consultation process we have conducted.[3]

1 NEL, s. 7.
2 NGL, s. 23.
3 AER, *Revised stakeholder engagement framework*, September 2017.

1 Introduction

This final decision (with associated handbooks) describes the final transmission and distribution revenue models to apply to gas service providers.[4] We have prepared two gas revenue models: one for distribution and one for transmission. We released an explanatory statement for the proposed revenue models in December 2019 and received two submissions.[5] This document sets out our final decision (including reasons), and response to submissions, in accordance with the NGR.[6]

These revenue models have been developed using our published electricity distribution and transmission revenue models, which incorporates relevant findings from our final report on the review of the regulatory tax framework (the tax review).[7] They also incorporate several amendments to account for gas specific requirements. This section provides an overview of the purpose of the template gas revenue models and the reason for developing them. Section 2 outlines the process for developing the revenue models, key differences compared to the electricity models, and our response to submissions on the draft models.

1.1 What does the revenue model do?

The revenue model is used to calculate the forecast revenues required to meet the efficient costs of providing haulage reference services to customers for a given access arrangement period.[8] This forecast revenue requirement is either smoothed over the period to set annual caps on the revenue to be recovered from customers, or combined with expected demand to set a limit on tariffs able to be charged for reference services. Reference service revenues for all gas NSPs we currently regulate are determined on a post-tax basis, which is consistent with the approach applied to electricity NSPs. This means that the forecast revenues include an estimate for the cost of corporate income tax incurred in providing reference services.[9] We have continued this approach in developing the template gas revenue models and therefore we refer to these models as post-tax revenue models (PTRMs).

The PTRM performs iterative calculations to derive the total (unsmoothed) revenue required to provide the relevant haulage reference services for an access arrangement. It also determines the forecast (smoothed) revenue for each regulatory year of the access arrangement period from a given set of inputs. The PTRM incorporates a mechanism to allow for revenue equalisation (net present value neutrality) over the course of an access

4 Included in the appendices.

5 AGIG, *Gas PTRM and roll-forward model review*, January 2020; Jemena, *Submission regarding proposed financial models*, January 2020.

6 NGR, r. 75A(7).

7 AER, *Final report: Review of regulatory tax approach*, December 2018, p. 20.

8 NGR, rr. 75B(2) and 76 set out the contents of the revenue model.

9 NGR, rr. 75B(2)(e) and 76(c) require the revenue model to include an estimated cost of corporate income tax in determining total revenue.

arrangement period as required in the NGR by allowing the user to enter the relevant inputs, and then calculates and displays the relevant revenue/tariff outcomes.[10]

We adopt a building block approach when determining an NSP's regulated revenue for each year of an access arrangement period. Under this approach we determine the value of the building block costs that make up the total revenue requirement for each regulatory year. The building block costs include:

- a return on capital
- an indexation of the capital base together with a return of capital (depreciation)[11]
- forecast operating expenditure (opex)
- the estimated cost of corporate income tax
- revenue increments or decrements arising from applicable incentive schemes.[12]

The PTRM brings together the various building block costs and calculates the total revenue for each year of an access arrangement period.[13] In the case of distribution businesses, the PTRM also calculates X factors which, under the CPI–X methodology, are used to escalate the forecast revenue and/or tariffs for each year (other than the first year) of the access arrangement period.[14] The X factors serve to function as a revenue equalisation mechanism, ensuring the present value of total and forecast revenues are equal over the access arrangement period.[15] All gas distribution NSPs we regulate currently use the weighted average price cap (WAPC) mechanism to vary reference tariffs. However, as the NGR allows for other mechanisms, the distribution PTRM is constructed to calculate X factors for revenue cap, WAPC (tariff cap), and revenue yield mechanisms.[16]

The gas transmission PTRM has been developed to include a calculation of forecast revenues using a revenue cap mechanism, under a CPI–X methodology. However, it also provides for smoothed forecast revenues to be derived from an external tariff model and subsequently entered into the PTRM as inputs. This approach is necessary as gas transmission tariff setting typically spans many different zones and classes. It is not practical to standardise the different transmission tariff calculations within the PTRM. Instead, the PTRM will perform the function of checking the forecast revenues from the tariff model against the required building block revenues for net present value (NPV) neutrality (revenue equalisation) and ensuring the revenues are updated for the appropriate benchmark equity raising costs.

10 NGR, r. 75B.
11 The net outcome of the addition of the indexation of the capital base and depreciation building block costs is referred to as 'regulatory depreciation'.
12 Being any efficiency carryover mechanisms or capital expenditure sharing schemes.
13 NGR, r. 76.
14 NGR, r. 97.
15 NGR, r. 92.
16 NGR, r. 97(2).

1.2 Why are we preparing template gas models?

On 14 March 2019 the Australian Energy Market Commission made a final determination to implement a range of improvements to the regulation of covered transmission and distribution gas pipelines across Australia.[17] Part of this determination included an amendment to the NGR, to allow us to prepare and publish revenue and capital base roll forward models (financial models).[18] When published, these models must subsequently be used by NSPs as part of their access arrangement proposals.[19] The provisions for these rules relating to the publishing of financial models came into effect on 21 March 2019.

The NGR has not historically required gas businesses to use models published by us—NSPs instead submitted business-specific financial models or made ad-hoc adjustments to our published template electricity models. The absence of a standard binding structure impacts the ability of stakeholders to fully engage in the determination process where resources must be devoted to comprehend the specific workings of bespoke financial models.

In line with the recently amended NGR we have published two models—one for the purposes of rolling forward the capital base, known as the roll forward model (RFM), and another for determining forecast revenues for an upcoming access arrangement period, known as the PTRM. These models have been developed from the latest versions of the electricity RFMs and PTRMs, with adjustments allowing for gas business-specific details and requirements.[20] As with the electricity models, we have developed models for distribution and transmission NSPs due to the differences in approaches to capital expenditure recognition, tariff variation mechanism and revenue equalisation.

The final gas transmission and distribution PTRMs, and associated handbooks are published with this decision, in accordance with the NGR.[21] This final decision sets out our reasons for developing these models, including changes made since the December 2019 draft versions. As required by the NGR, these models must be used by gas NSPs as part of all subsequent access arrangement proposals.[22] To ensure the PTRM remains fit for purpose, we may amend or replace it as necessary. In doing so, we will consult on the amendments in line with the requirements of the NGR.[23]

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17 AEMC, *Rule determination—Regulation of covered pipelines*, 14 March 2019. A covered pipeline is a pipeline regulated by the AER or Economic Regulation Authority in Western Australia.

18 NGR, r. 75A.

19 NGR, rr. 72(3) and 75A(2). This applies to access arrangement information provided for a full access arrangement proposal.

20 The RFM templates for gas NSPs have been developed in parallel with revisions to the RFM templates for electricity NSPs.

21 NGR, r. 75A(9).

22 NGR, rr. 72(3) and 75A(2). This applies to access arrangement information provided for a full access arrangement proposal.

23 NGR, r. 75A(3)–(9).

2 Preparing the PTRMs

We prepared the template gas PTRMs by amending the latest version (version 4) of the electricity PTRMs published on our website to allow for gas business-specific details and requirements as set out in our explanatory statement.[24] We have done this because most gas NSPs already use these published models as the basis for the revenue models provided as part of their access arrangement proposals, making ad-hoc adjustments to fit their needs. The template gas PTRMs also include the relevant findings from our final report of the tax review.[25] As with the electricity PTRMs, we have separated the gas PTRMs for distribution and transmission NSPs, due to the differences in approaches to capital expenditure recognition, tariff variation mechanism and revenue equalisation.

We wanted all stakeholders to have the opportunity to consider our proposed gas PTRMs and make written comments in response. On 5 December 2019, we commenced the consultation process by publishing:[26]

- an explanatory statement, which described the proposed PTRMs and the reasons for them
- the proposed gas PTRMs and associated handbooks.[27]

We asked stakeholders to make submissions on the proposed template PTRMs by 20 January 2020.[28] We received two written submissions from the Australian Gas Infrastructure Group (AGIG) and Jemena.[29] AGIG submitted that it did not see any major issues with our changes made to the PTRM and believed the model reflects what's been proposed. The submission did request, however, that we remain open to allowing other modifications to the PTRM as necessary. Jemena's submission focused primarily on our approach to estimating expected inflation, as well as some suggested minor improvements to the proposed PTRM.

Our response to this submission is set out in section 2.1 below.[30] We have also included our response to Jemena's submission regarding expected inflation in section 2.2.

2.1 Key differences between gas and electricity PTRMs

In preparing the gas PTRMs, we have made the following key changes from the electricity PTRMs for which we requested stakeholder feedback:

- ancillary reference services (ARS) for distribution NSPs

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24 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019.

25 Amendments to the electricity PTRM templates to implement the findings of the 2018 tax review (as well as other amendments) were finalised in April 2019. Refer to: https://www.aer.gov.au/node/62656.

26 NGR, r. 75A(4).

27 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019.

28 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019, p. 9.

29 AGIG, *Gas PTRM and roll-forward model review*, January 2020; Jemena, *Submission regarding proposed financial models*, January 2020.

30 NGR, r. 75A(7)(c).

- reference tariff base year for distribution NSPs
- revenue equalisation calculations for transmission NSPs.

Ancillary reference services

Gas distribution NSPs may provide services that are ancillary to the haulage reference services for an access arrangement. These are services relating to particular activities that are provided only when users or customers request them. This may include services such as special meter reads, disconnection at street level, and meter investigation. The cost associated with providing these services are recovered directly from the customers who request them.

As set out in our explanatory statement we proposed to adopt the common approach of including the forecast costs from providing ARS in the opex section of the PTRM.[31]

Submission and response

AGIG submitted that our approach to treating ARS costs as opex is reasonable.[32] Jemena's submission suggested that we could consider making provisions in the PTRM for any capex related to ARS.[33]

We consider that if there are capex and depreciation related calculations for ARS costs, these would need to be modelled separately from the PTRM for reference services. This is to maintain separate capital base values to properly allocate the costs to customers. The output of the separate modelling for ARS capex costs would then feed into the PTRM as an opex line item.

We have therefore maintained the approach set out in our explanatory statement to treat ARS as an opex line item in the final gas distribution PTRM, including the necessary adjustments to the relevant worksheets.

Reference tariff base year

In determining the reference tariffs for the access arrangement period, gas distribution NSPs may elect to use either the final year of the current access arrangement period (year t–1) or the first year of the next access arrangement period (year t) as the base year for tariff calculations.

As set out in the explanatory statement we have included a switch allowing distribution NSPs the option to designate which base year to adopt for their tariff calculations.[34] This base year option switch in the gas distribution PTRM facilitates a common modification required by gas NSPs. The tariff related areas of the PTRM are still able to be modified where required to suit the specific needs of the NSP.[35]

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31 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019, pp. 11–12.
32 AGIG, *Gas PTRM and roll-forward model review*, January 2020, p. 1.
33 Jemena, *Submission regarding proposed financial models*, January 2020, p. 3.
34 AER, *Explanatory statement - Proposed gas post-tax revenue models*, December 2019, p. 12.
35 The electricity distribution PTRM already allows for modification of the tariff input sections (and flow on calculations) to suit

Submission and response

AGIG's submission noted this option switch and stated that it does not have any particular requirements for additional switches at this time. It submitted that we should remain open to allowing other modifications as necessary in future.

Our final gas distribution PTRM maintains the approach set out in our explanatory statement in respect of the base year switch for tariff calculations. We note that the NGR provides for the PTRM to be amended so that it remains fit for purpose, which includes the required consultation process.[36]

Transmission revenue smoothing

Gas transmission NSPs have historically used their own tariff model in conjunction with the PTRM to determine forecast (smoothed) revenues for the access arrangement period. These tariff models involve a large number of calculations which are unique to each business and therefore not practical to standardise as a template calculation within the PTRM. For example, the Victorian gas transmission business' tariff setting spans many different zones and involve multiple classes, which are calculated in the tariff model. We expect this tariff approach will continue and be assessed as part of new access arrangement reviews.

Our approach as set out in the explanatory statement allows for forecast revenue to be an input to the PTRM, sourced from the NSP's individual tariff model.[37] The smoothing macros are still required to be initiated (via button) to ensure the NPV of total (unsmoothed) revenue and forecast (smoothed) revenue are equal.[38] They also perform the function of updating the building block revenues for the required benchmark equity raising cost updates. However, transmission NSPs have the option of using the X factors to perform these functions and update revenues, or only change a specific year's revenue—calculated in an external tariff model—for any updates required.

Submission and response

We did not receive any submissions that raised issues with our approach.

Therefore, the smoothing function as set out in the explanatory statement has been maintained in the final transmission PTRM for gas NSPs.

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the individual NSP's needs—such as adding tariff classes and components. This feature has been retained in the gas distribution PTRM.

36 NGR, r. 75A(3)–(9).

37 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019, p. 13. We have also maintained our inclusion of a 'default smoothing' option in the transmission PTRM that determines a profile of forecast revenues that meets the revenue equalisation requirements of the NGR without the need for an external tariff model. The default smoothing option operates in the same fashion as the existing default smoothing option in the electricity transmission PTRM.

38 NGR, r. 92(2); The macros also ensure that the correct benchmark equity raising cost is included in the building block revenues as required.

Other minor changes

In our explanatory statement we noted a number of minor changes from the electricity PTRMs for both gas distribution and transmission NSPs primarily relating to labelling issues and NGR references.[39]

Submission and response

Jemena's submission suggested modifying the smoothing macros in the **X factors** worksheet so that it also includes the ability to perform the macro that sets the effective tax rates for equity (T_e) and debt (T_d) in the **WACC** worksheet.[40] Currently, a user is required to manually run the 'Set Te and Td' macro button located in the **WACC** worksheet after they have finished smoothing the revenues as a final step in the PTRM.[41] Jemena stated that combining the two macros together will avoid the risk that the user fails to run the macro in the **WACC** worksheet. We agree with this suggestion and have amended the smoothing macros to also run the 'Set Te and Td' macro.[42] As a result, we have removed the macro button from the **WACC** worksheet as it is no longer required.

The final gas PTRMs and handbooks for distribution and transmission are at appendices A to D. To assist stakeholders to identify all changes made between the gas and electricity PTRMs (including proposed and final stages), there is a detailed change log at appendix E.

2.2 Expected inflation

Jemena's submission on the proposed models focused primarily on our approach to estimating expected inflation.[43] Building on its earlier submission,[44] Jemena stated:

- The AER's current inflation approach results in under compensation for NSPs.
- The current review of gas financial models was the appropriate place to consider changes to the AER's treatment of inflation.
- The inflation approach should change to either:
    - adopt a nominal rate of return target (for at least the return on debt), or
    - estimate expected inflation using a market based approach such as the bond breakeven method (either in isolation, or averaged with another method).

39 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019, p. 14.

40 The purpose of the 'Set Te and Td' macro is to copy calculated Te and Td values from the **Analysis** worksheet to the **WACC** worksheet.

41 These effective tax rates for equity and debt are indicative values only. The cashflow calculations presume a constant WACC is maintained across the access arrangement period.

42 A condition has been set so that this is only performed at the start of the regulatory control period. For mid-period updates that require smoothing of revenues, the smoothing macro is not required to update the Te and Td values in the **WACC** worksheet.

43 Jemena, *Submission regarding proposed financial models*, January 2020, pp. 1–3.

44 Jemena, *Response to preliminary regulatory model consultation*, September 2019, p. 1.

Consistent with our position in the explanatory statement,[45] we consider that the economy-wide impact of inflation means there should be a unified treatment of inflation across gas and electricity service providers.[46] Inflation is also best considered through a dedicated review, such as that undertaken in 2017, allowing broad stakeholder consultation. We would then initiate an implementation phase after that review, if required, in accordance with the type of changes recommended (rule changes, model changes, or otherwise).

On 7 April 2020, coincident with the release of this final decision, we announced that we would commence a review of our inflation approach that would cover both gas and electricity service providers. The issues raised by Jemena through this gas model template process will be considered as part of the wider inflation review. Further details of the review can be found at the AER website.[47]

The inflation review is expected to be completed and any model-based changes implemented (if required) before this PTRM template would be applied to any gas service provider as part of an access arrangement.

We note that a number of implementation processes are possible, depending on the recommended changes (if any) in our final position.

- If a change to our regulatory models is recommended, we expect model changes could be completed by April 2021.
- If a rule change process is required, this will mean that we submit a rule change request to the Australian Energy Market Commission (AEMC). The AEMC would then run a rule change process and consider whether to make a change. This process may take several months.
- If we recommend inflation-related changes to how we estimate the rate of return, we will consider these further when developing the 2022 *Rate of return instrument*.

45 AER, *Explanatory statement – Proposed gas post-tax revenue models*, December 2019, pp. 15–16.
46 This prevents any inflation-related distortion to investment incentives.
47 See: https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-treatment-of-inflation-2020

Appendices

The appendices include the template PTRMs (transmission and distribution), associated handbooks and a detailed list of changes from the electricity PTRMs.

Appendix A: Transmission post-tax revenue model

Appendix B: Distribution post-tax revenue model

Appendix C: Transmission post-tax revenue model handbook

Appendix D: Distribution post-tax revenue model handbook

Appendix E: List of changes from electricity post-tax revenue model