Attachment 6.6

Response to Draft Decision on Depreciation- Incenta Expert Report

Revised Final Plan 2026/27 – 2030/31

January 2026

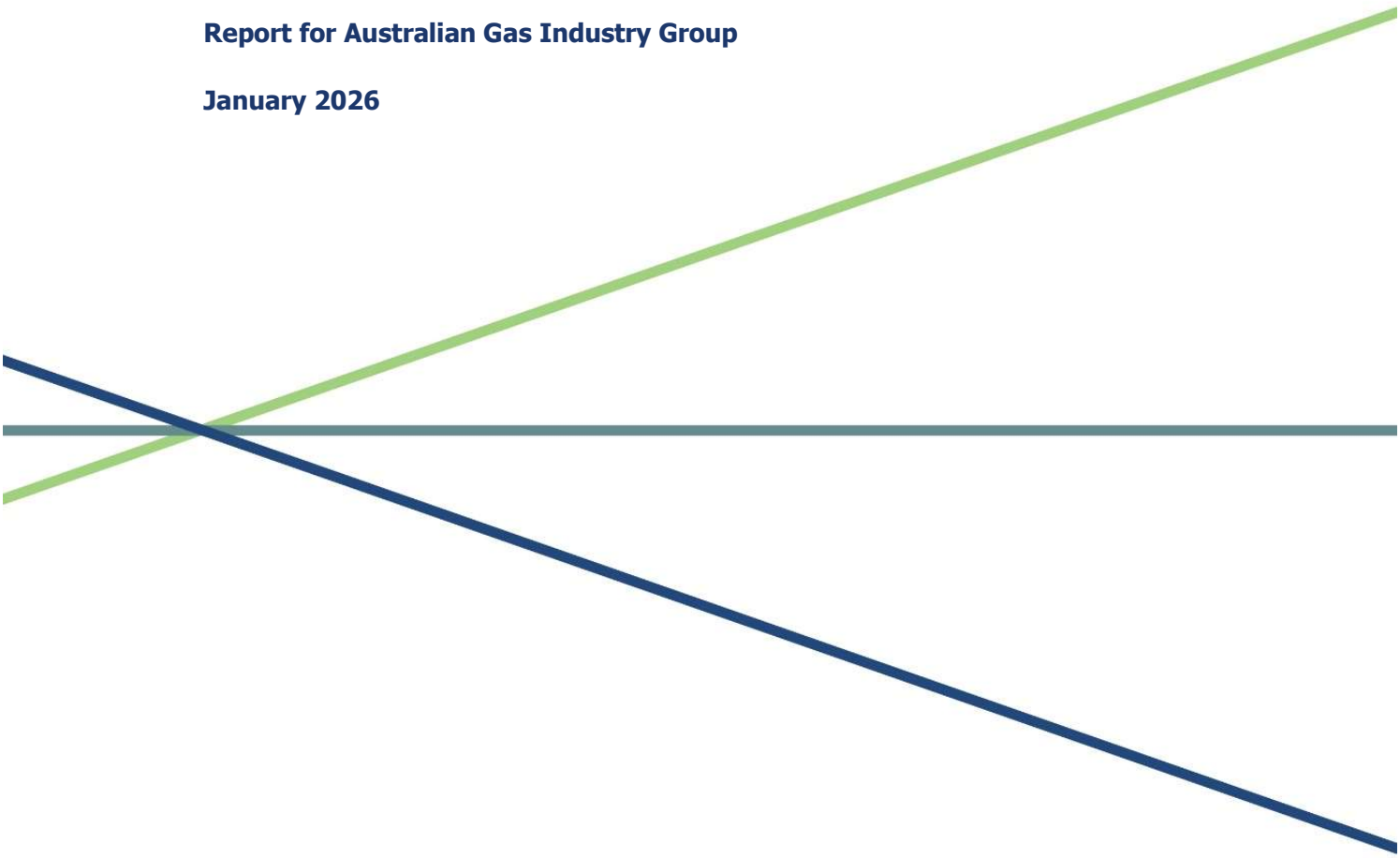
PUBLIC

Australian Gas Networks

Draft decision on AGN SA – stranded asset risk and regulatory depreciation

Report for Australian Gas Industry Group

January 2026



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1. Introduction and summary

1.1 Background

1. The AER has recently released draft decisions in relation to the AGN SA and Evo Energy ACT gas distribution networks, in which the AER either rejected or modified (and reduced materially) the extent of advancement of regulatory depreciation that had been proposed to address the risk of asset stranding. While the AER applied the same broad framework in relation to each of the two draft decisions (I discuss this more fully below), the context – and decision reached – varied between the businesses:

   a. In relation to AGN SA the AER was not convinced that there was sufficient evidence at this stage to prove that asset stranding was going to take place, and so declined the proposal.[1]

   b. In relation to Evo Energy the AER accepted that Evo faced the risk of asset stranding, but restricted the extent of advancement of depreciation to the level that would be consistent with a 4 per cent per annum real price increase over the next access arrangement period.[2] The AER was conscious that the depreciation permitted would be less than the level that would minimise the extent of Evo's unrecovered costs.

1.2 My brief

2. AGN SA has requested brief comment on the AER's overall analytical approach to regulatory depreciation, as well as responses to the following specific questions:

   a. Is the AER adopting an appropriate approach in terms of balancing the uncertainty about the future with the need to act in a timely fashion? In the context of the "window" in the Crew and Kleindorfer model, do you consider that the AER may find this window closing via inaction?

   b. Is the AER focussing depreciation correctly, in respect of whether it is dealing with economic or physical asset stranding? Do you consider that changes to depreciation can be used as a tool for allowing a network to remain sustainable, or is it only a tool for networks in decline, and networks which are sustainable should keep their current asset lives? In examining these questions, please consider the work you did for DBP in 2021, looking at kinked schedules for depreciation, and the impacts of assuming sustainability without considering price.

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1 The AER also formed the view that there would be an inconsistency between allowing AGN SA to advance its depreciation and accepting AGN SA's capital expenditure forecast of approximately $470 million over the next regulatory period. However, it is understood that the vast majority of the growth-related expenditure will be removed because connections capex will now be directly recoverable from the new customers as a consequence of the recent rule change ($155 million), with only $8 million for preparedness for alternative fuels and $6 million is for pressure increase for certain parts of the network. The remainder of the forecast capex is not growth-related.

2 I understand that the 4 per cent permitted price increase includes the effect of jurisdictional charges, and so the step up permitted in regulatory depreciation is less than this headline figure would suggest.

c. Do you consider that the AER's approach of considering "current real price changes" (whereby, for example, they cap Evo's price increase at 4%) is capable of meeting the long run interests of consumers? Has the AER provided evidence of this?

d. What threshold for change should be appropriate for depreciation? What does the economic theory, starting with Schmalensee, and moving to Crew and Kleidorfer, say? What was the intent of the original drafts of the various rules? In this, please draw upon what you have produced for us for the AEMC.

e. Does NGR 89(1) focus on economic or technical asset lives (refer the Evo decision on this point)? What leeway does the AER have to consider one or the other? Likewise, does the NGR focus solely on the length of economic lives, or on changes in the nature of the asset during its economic life?

f. How should the AER balance the requirements of investors in respect of returns of expended capital and customers in respect of price increases? Does the NGR provide sufficient guidance? Should it be seen as a trade-off, or is there a complementarity between these interests?

g. To what extent should the AER treat additional depreciation as consistent or inconsistent with short-term network expansion (that is, to meet customer requirements over the next AA) and with spending on renewable gas? Is it a question of relative levels (for example, would a very large augmentation capex spend be inconsistent with more depreciation, but a smaller spend be consistent)?

h. How can the AER manage uncertainty? More specifically, should it err on the side of acting even though there is little certainty, or should it wait until some threshold is reached? In treating uncertainty, should the AER only focus on expected lives, or should it focus on the "tail risks" associated with how future states of the world might evolve?

i. The AER suggests that our risk of asset stranding (see p15 in the link above) is not "significant". This is in the context of a one-third risk of network failure prior to 2050. Do the rules provide any guidance as to whether this is an appropriate definition of significant?

3. While the focus of my brief is on the AER's draft decision in relation to AGN SA, I have also been asked to take account of how the AER has applied its analytical framework to the different context of Evo Energy.

1.3 Authorship

4. This report has been prepared by Jeff Balchin, the Managing Director of Incenta Economic Consulting. Jeff has over 30 years of experience in relation to economic regulation issues across the electricity, gas, ports, airports, telecommunications, and water infrastructure sectors in Australia and New Zealand, which has included substantial advice in relation to the design and application of cost-based regulation in the energy sector in Australia and New Zealand.

1.4 Responses to questions

1.4.1 Overall framework

5. The AER's analytical framework comprises three key components:

   a. a belief that the current gas regulatory arrangements do not include the tools to deal with the gas demand uncertainty arising from the decarbonisation of the energy sector

   b. the view that the reference to a "reasonable opportunity" to recover efficient cost in the revenue and pricing principles permits the AER to circumscribe cost recovery if it considers the resulting price increase to be "unreasonable", and

   c. the view that the long term interests of gas consumers would be best served by limiting a distributor's ability to recover its efficient costs where this otherwise would cause a price increase that the AER deems to be unreasonable.

6. In my view, there are serious flaws in each of the AER's key propositions.

   a. The gas regulatory regime was developed in the clear understanding that the gas sector could be subject to a binding competitive constraint at some stage (e.g., from electricity), with some of the potential threats already visible. This was reflected in some of the unique features of the gas regulatory regime compared to the electricity regime, and was a key consideration of the early gas regulatory decisions. A review of that material suggests that providers of regulated gas services were provided with a strong commitment that depreciation would be applied in a flexible manner to maximise the opportunity for costs that had been efficiently incurred to be recoverable if adverse events occurred. The AER's current draft decisions are a marked departure from these past commitments.[3]

   b. The AER's view that cost recovery will not be reasonable if it would cause prices to increase by an amount the AER deems to be excessive is economically implausible. This interpretation essentially nullifies the operation of a clause that is fundamental to the incentive for efficient investment and therefore to the pursuit of the long term interests of consumers.

      i. From the available materials, the "reasonable" qualifier was simply meant to allow for the facts that (i) an incentive regulation regime was intended, and so whether costs are recovered will depend on a firm's performance, and/or that (ii) an unforeseeable change to the market environment may occur (i.e., one for which advance action was not possible) that makes cost recovery impossible.

[3] A criticism that has been made of the NGR is that the "capital redundancy" provisions do not deal adequately with the potential for economic asset stranding. However, this criticism is misplaced – the capital redundancy provisions were intended to authorise a form of regulatory stranding to be applied to provide incentives for asset utilisation, rather than to address potential economic asset stranding. This matter is discussed in my expert report for AGIG in the recent AEMC Gas Networks in Transition Rule change (available at: https://www.aemc.gov.au/sites/default/files/2025-11/AGIG%20-%20GRC0082%20CP%20Submission.pdf), pp9-11.

This latter circumstance is where the "window of opportunity" for cost recovery (as the term was used by Crew and Kleindorfer) had already passed.[4]

ii. This qualifier was not intended to provide an opportunity for the AER to preclude efficiently incurred costs to be recovered where cost recovery otherwise would be possible, and such a qualifier would be economic nonsense.

c. The AER has given limited consideration to the effects that circumscribing cost recovery have on investment and thereby on the long term interests of consumers. Three points can be made to this end.

i. First, the historical commitment regulators provided for cost recovery as discussed above – including the commitment to apply a flexible approach to depreciation – clearly was in the long term interests of consumers in that:

1. efficient investment has been supported

2. prices to consumers have been kept low through spreading the cost of investment over a very long period that would not have been possible in the absence of the commitment to cost recovery, and

3. regulators were able to avoid the difficult and contentious matter of quantifying and compensating for potential stranding asset risk.

ii. Secondly, a commitment to cost recovery will provide benefits to gas consumers on a forward-looking basis as this will support continued investment. Even if there is no role for gas distribution in a net zero world, continued service provision will nonetheless be required over the next two or three decades, which requires investment.

iii. Thirdly, the NGO now defines the long-term interest of consumers to include the achievement of targets for reducing Australia's greenhouse gas emissions. It follows that, when making a decision in relation to gas distribution, the AER also needs to take account of how that decision may affect the incentive to invest in other sectors where that investment is important to meeting targets for greenhouse gas reduction. If the AER places a low importance on providing the opportunity for cost recovery for gas distribution – and in so doing resiles from the commitments of past regulators – then this is likely to make investors think twice about investing in the "Integrated System Plan" electricity transmission projects, given that the future use of those new investments (in common with gas transport infrastructure) is also subject to material uncertainty. Dissuading

[4] Refer to: Crew, M and Kleindorfer, P (1992), Economic Depreciation and the Regulated Firm under Competition and Technological Change', Journal of Regulatory Economics, Vol 4, pp.51 61. Regulators in the early days of cost-based regulation in Australia were aware of the thesis of Crew and Kleindorfer that a time-limited "window of opportunity" may exist to recover efficiently incurred costs. See, for example: Allen Consulting Group (2003), Principles for determining regulatory depreciation allowances, report for IPART, September (available at: https://www.ipart.nsw.gov.au/Home/Industries/Energy/Reviews/Electricity/Electricity-Distribution-Network-Review-2004/11-Sep-2003-Allen-Consulting-Report-on-Principles-for-determinging-regulatory-depreciation-allowances/Allen-Consulting-Group-Principles-for-determining-regu-1).

investment in large electricity transmission projects is likely to be materially adverse to meeting jurisdictions targets for greenhouse gas emission reduction.

7. I elaborate on this historical context for the AER's current draft decisions in section 2 of this note.

1.4.2 Responses to specific questions

8. For convenience I have grouped the specific questions I have been asked into the following thematic sets:

Nomenclature and defining the problem : economic vs physical asset stranding and economic vs physical lives. Questions (a) and (e)

9. The economic issue with "asset stranding" is the costs that have been prudently and efficiently incurred (i.e., based on the best information and forecasts at the time) are unable to be recovered from consumers or elsewhere over the lives of the relevant assets. If asset owners perceive that prudently and efficiently incurred costs may not be able to be recovered in full then the NPV=0 criterion for investment will not be met and prudent and efficient investment is likely to be deterred.[5] I refer to the fact that the cost of efficient investment may not be fully recovered as "economic" asset stranding.[6] It is inherent in the concept of economic asset stranding that there is a shortfall of revenue from the regulated services against cost.

10. I distinguish the concept of economic asset stranding (which focusses on whether costs are able to be recovered) from the different concept of physical asset stranding, the latter referring to a situation where there is either no physical use of an asset (e.g., a sufficient number of customers switch away from gas to other sources of energy that it is no longer viable to operate the network), or a substantially reduced use of an asset. I observe that whilst economic asset stranding and physical asset stranding may both occur, this need not be the case.

    a. It may be the case that the market for an asset disappears before the end of its technical life, and so the network ceases operation. However, if the physical stranding event had been foreseen as a real possibility, and cost recovery had been advanced in preparation, then no economic asset stranding may occur.

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5 It would be possible in principle to quantify the compensation that is required for stranded asset risk and to provide this compensation, and so maintain NPV=0. However, such an exercise faces substantial practical hurdles, including that errors may generate material windfall gains or losses. The best reading of history is that the Australian regulators have never provided gas distribution networks with compensation for stranded asset risk (the AER's rate of return decisions being clear on this point), but instead foreshadowed that regulatory depreciation would be adjusted as necessary to remove stranded asset risk to the extent practicable.

6 As a practical matter, part of the cost of investment will always be recovered (except in very unusual cases, such as where an asset is constructed but never serves a customer and so never earns revenue), and so economic asset stranding will refer to situations of partial cost recovery. Economic asset stranding spans situations where most (but not all) of the efficiently incurred cost is recovered, to those where only a small part of the efficiently incurred cost is recovered. I note that Crew and Kleindorfer (referenced in footnote 4) adopt a similar definition of economic asset stranding.

b. Equally, the network operator may respond to competition by lowering prices and even converting a network to an alternative fuel, which may be prudent and efficient acts, and the network may continue to be used in a physical sense. However, even though the network continues to be used, it may nonetheless be impossible to recover its prudently and efficiently incurred costs (i.e., its capital base) given the constraints placed on its pricing by competition. This situation would be one where economic asset stranding occurs without physical asset stranding.

11. Accordingly, physical stranding may occur without economic stranding, and economic stranding may occur without physical stranding. I confirm that whether there is likely to be economic asset stranding is the correct concern from the perspective of economic principles and the gas regulatory framework.

12. The "economic life" of an asset or network refers to the duration over which it is prudent and efficient for a network to remain in operation. The economic life of an asset may be its technical (physical) life, although the economic life may be shorter if the effects of competition and/or changes in consumer tastes reduce its market to the point where it is no longer prudent and efficient to remain in operation (i.e., where forward-looking revenue is not expected to exceed forward-looking cost). I note, however, that simply calculating depreciation over its economic life is not sufficient to avoid economic asset stranding, but consideration must also be given to how the nature of the market may change over the economic life when calculating depreciation – I return to this matter below.

13. The relationship between these concepts of asset lives, regulatory depreciation and economic asset stranding are as follows:

a. Avoiding economic asset stranding means that costs are able to be recovered from consumers. It follows that cost recovery must be permitted over the period whilst the asset is expected to remain in operation (i.e., when there are consumers from which cost recovery may be achieved). Thus, the correct life for regulatory depreciation purposes is the economic life of the assets. Permitting depreciation over the economic life of the assets is a necessary condition for providing the opportunity for costs to be recovered.

b. However, as noted earlier, simply permitting depreciation over the economic life of the assets is not sufficient to provide the opportunity for cost recovery. As remarked earlier, an asset may remain in operation and so not have reached the end of its economic life, and yet the constraints placed by competition from some time in the future may not permit the network to recover all of its prudently and efficiently incurred costs. Accordingly, providing the opportunity for costs to be recovered requires both that (i) deprecation is permitted over the economic life of the assets, and (ii) that profile of recovery optimises the prospects of cost recovery given the anticipated future constraints to pricing.

14. This latter point means that, while it is necessary for depreciation to be calculated over the economic lives of the assets (from the point of view of economic principles and promoting the NGO and complying with the revenue and pricing principles), simply applying economic lives in a depreciation calculation (for example, with simple

straight-line depreciation) may not be sufficient (again, from the point of view of economic principles and promoting the NGO and complying with the revenue and pricing principles). Two points are relevant here.

a. First, as noted in the previous paragraph, the profile of depreciation over those economic asset lives must take account of the potential capacity for cost recovery and how this may change over time. To the extent that the capacity to recover costs may be more constrained in the future than it is at present, then the profile of depreciation should reflect this (i.e., apply a more front-ended recovery of cost).

b. Secondly, the discussion above assumes that economic lives can be knowable, whereas economic asset lives themselves will frequently be subject to material uncertainty. Where there is uncertainty, it would be incorrect to apply the *expected*[7] economic asset lives when calculating depreciation as this would not be expected to result in cost recovery in the more pessimistic scenarios for economic lives. Rather, the economic asset lives should be based on those that would result in cost recovery in all plausible scenarios, noting that lives can be extended (and cost recovery spread over a longer period) over time if it transpires than the actual economic lives turn out to be longer than the pessimistic scenario.

What should be the threshold for a change to regulatory depreciation? Questions (a), (d), (h) and (i)

15. Economic principles suggest that an adjustment to depreciation should be permitted whenever there is a risk of asset stranding as this implies the NPV=0 criterion is not being met. Pragmatically, however, it would be reasonable there to be evidence that this risk is material (i.e., as a risk of asset stranding that is trivial would be unlikely to affect investment). As discussed above,

16. However, clearly, a high threshold must not be imposed for the "evidence" of stranding risk. There will always be a high degree of uncertainty about whether and to what extent stranding occurs, and the best that could be expected is a demonstration that stranding is a real possibility rather than to be definitively proven. This is especially the case for the gas distribution sector where the energy supply future is subject to such uncertainty that it is typically modelled via different scenarios and each of which has key inputs that are subject to uncertainty. Moreover, the proper action is to act early rather than to wait, recognising the fundamental asymmetry in outcomes. The potential downside from acting early is that costs are recovered more quickly than what turns out to be necessary, but this cannot result in an over-recovery (and, indeed, the period and profile of cost recovery can be revised at future periods – and potentially extended – as new information arrives). In contrast, the longer that action is delayed the more likely it becomes that the constraints applied by competition (either directly or as encouraged by government policy measures) make it impossible to recover costs in full even if all regulatory constrains were removed.

[7] The term "expected" as applied here refers to a mathematical expectation, that is, the weighted average of potential outcomes with the probabilities of each outcome applied as weights.

17. To this end, it is relevant to reiterate the comments made earlier about how uncertainty should flow to the calculation of depreciation, that is:

    a. the lives that are applied to calculate depreciation should not simply be the expected economic asset lives, rather should reflect the lower bound of the economic lives across the material scenarios, otherwise a material exposure to (uncompensated) stranded asset risk will remain, and

    b. as well as applying the correct economic asset lives, the profile of depreciation should take account of the potential constraints to cost recovery that may be imposed from competition and other factors (like government policy) in the future, and again derive this profile based on a pessimistic scenario rather than the expected outcomes.

18. As noted earlier, acting early cannot create a windfall gain, it can only avoid an (uncompensated) windfall loss. Moreover, the earlier that action is taken the lower the price change that would be required to achieve cost recovery. In addition, if it transpires in future reviews that the prospects for cost recovery are better (i.e., the pessimistic scenarios turn out to be overly pessimistic) then the rate of deprecation can be adjusted downwards to reflect this.

19. I confirm that AGIG's modelling – which identify material unrecovered costs in almost one third of the modelling runs – clearly meets the threshold for action.

How much regulatory depreciation should be permitted? Questions (c) and (f)

20. From the discussion above, the AER should permit regulatory depreciation to be adjusted to the point where efficiently incurred costs would be recoverable under all plausible scenarios. There is no balancing required in this regard – it is in the long term interests of consumers for an environment that is conducive to investment to be maintained, which presupposes a capacity to recover costs that were prudently and efficiently incurred.

21. The AER's proposal in relation to Evo Energy to limit depreciation to the point whereby prices increase by a predetermined limit is arbitrary, lacks any economic merit and is inconsistent with any economically meaningful interpretation of the depreciation rules (Rule 89(1)) and the Revenue and Pricing Principles, and is unlikely to best meet the National Gas Objective.

22. There may be cases where it is no longer possible for costs to be recovered – for example, where the stranding event was not foreseen sufficiently in advance (for example, a change in consumer tastes and/or a change in the price of a competitor caused a substantial decline in revenue). However, the correct regulatory response at this point is to remove price controls (and so to permit the business to price as it sees fit), in view of the fact that competition had made price regulation redundant.

23. Similarly, it may well be that a gas distributor may self-limit the advancement in depreciation that it proposes given that a greater advancement of depreciation will raise near-term prices, and so increase the rate at which customers switch to a competitor (being electricity in this case). This would mean that competition is providing a constraint on gas distribution pricing, and so regulation is reducing in relevance. The

AER can rely on this incentive for self-limitation created from competition to protect the long term interests of consumers. Importantly, as gas distributors do not (and practically, cannot) distinguish between different consumers within a class, the benefits of consumers will flow through to all consumers regardless of their own capacity to switch suppliers.

How should expansions capital expenditure be treated? Question g

24. Whether or not growth-related capital expenditure should be included in forecasts that flow through to reference tariffs should be evaluated applying the standard tests of prudence and efficiency, in the context of the gas network (i.e., taking account of the limited life / demand uncertainty). Modest expenditure on connecting new consumers will improve the competitiveness of gas relative to the competition (electricity) where those new customers contribute more than the incremental cost, and so may be prudent even where the network has a limited life or faces demand uncertainty.

25. At the present time, the remaining economic life of the AGN SA network is still likely to equate to one or more consumer appliance lifetimes, and so there is still a potential for new connections to be prudent. Moreover, as the direct costs of connecting customers will now be recovered upfront from the new customers that connect, the potential for connecting new consumers to add to stranded asset risk or to raise the price to existing consumers is substantially lessened (rather the more marginal or risky consumers are likely instead to choose not to connect, which is efficient, and the more likely outcome is that the new connections lead to price reductions for existing customers).[8]

26. Furthermore, it would be unreasonable for the AER to reject a change to regulatory depreciation on the basis that the AER does not agree with the forecast of capital expenditure. If the AER thinks that a portion of AGN SA's forecast capital expenditure is imprudent in the context of asset stranding risk, then the correct approach would be for the AER to not include that capital expenditure in the allowance rather than to modify the regulatory depreciation allowance. Moreover, under the NGR AGN SA would have the opportunity to undertake the expenditure as "speculative capital expenditure". This would involve the expenditure being initially kept out of the capital base (i.e., as potentially imprudent), but then brought in progressively if the expenditure is revealed to be efficient.

[8] To be clear, where the new customers contribute (via upfront and ongoing charges) and more than their incremental cost, then a given degree of cost recovery (e.g., full recovery) will be achieved with a lower average regulated price to the existing customers compared to a situation where those connections did not occur.

2. Elaboration on the historical context for the AER's draft decisions

2.1 Introduction

27. The previous chapter responded to the specific question posed. This chapter sets out in fuller detail the economic meaning of – and historical context for – the aspects of the gas regulatory regime that are most relevant to this matter.

2.2 National gas regulatory regime

2.2.1 National gas objective and revenue and pricing principles

28. The objective of the gas regulatory regime is provided as follows:[9]

The objective of this Law is to promote efficient investment in, and efficient operation and use of, covered gas services for the long term interests of consumers of covered gas with respect to—

(a) price, quality, safety, reliability and security of supply of covered gas; and

(b) the achievement of targets set by a participating jurisdiction—

(i) for reducing Australia's greenhouse gas emissions; or

(ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

29. The interests of consumers are defined (non-controversially) to include the price as well as the quality/reliability of provision. Importantly, the requirement for consumers' interests to be pursued from a long term perspective means that achieving the ongoing investment required to provide the services that consumers want (i.e., the quality and reliability) is a core concern of the objective.

30. The Revenue and Pricing Principles provide the instruction to the AER (as applier of the rules) as to how the NGO is to be achieved when setting regulated prices. The principles (excluding the introductory provision) are as follows:[10]

(2) A scheme pipeline service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in—

(a) providing reference services; and

(b) complying with a regulatory obligation or requirement or making a regulatory payment.

9 NGL, section 23.
10 NGL, section 24.

> *(3) A scheme pipeline service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes—*
>
> *(a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and*
>
> *(b) the efficient provision of pipeline services; and*
>
> *(c) the efficient use of the pipeline.*
>
> *(4) Regard should be had to the capital base with respect to a pipeline adopted—*
>
> *(a) in any previous—*
>
> *(i) access arrangement decision; or*
>
> *(ii) decision of a relevant Regulator under section 2 of the Gas Code;*
>
> *(b) in the Rules.*
>
> *(5) A reference tariff should allow for a return commensurate with the regulatory and commercial risks involved in providing the reference service to which that tariff relates.*
>
> *(6) Regard should be had to the economic costs and risks of the potential for under and over investment by a scheme pipeline service provider in a pipeline with which the service provider provides pipeline services.*
>
> *(7) Regard should be had to the economic costs and risks of the potential for under and over utilisation of a pipeline with which a scheme pipeline service provider provides pipeline services.*

31. The first of these principles (RPP1)[11] is typically seen as a cornerstone of utility regulation, namely that regulated business should be provided with confidence that costs that have been efficiently incurred will be recoverable under the regulated prices, which in turn is critical to providing networks with the incentive and capacity to invest in regulated assets.[12] The importance of a legal provision of confidence with respect to cost recovery arises because:

    a. investment typically cannot be reversed or redeployed once made, and so investors will be exposed to the decisions that regulators take over the life of the assets, and

[11] I refer to the revenue and pricing principle in section 24(2) as RPP1, the pricing principle in section 24(3) as RPP2 and so forth for the remainder of the revenue and pricing principles.

[12] This cost recovery principle is often re-stated by regulators as requiring the (expected) net present value of regulated cash flows to be zero, which is a key criterion for whether an investment (and committing funds to an investment) is commercially viable.

b. regulated assets are typically recovered over an extended period (and far in excess of the period over which cost recovery would be expected in a competitive market), and so this exposure to future events – including potentially major changes in markets – will be substantial.

32. I observe for completeness that this protection that efficiently incurred costs will be recoverable is most important where cost recovery may require price increases, such as in the current circumstances where the energy transition and increasing competition from electricity means that real increases in regulated prices will be required to be consistent with the principle of enabling costs to be recovered. While it is true that the principle in the NGL is subject to the caveat that there should be a "reasonable" opportunity for cost recovery, a reading of the historical materials and good regulatory principles suggests that the "reasonable" rider was intended to:

a. allow for the fact that incentive regulation applies under the gas and electricity regimes, so that the recovery of cost is always subject to meeting the forecasts determined by the regulator, and furthermore that the regime cannot provide guarantees for matters that are beyond the control of the regulator, but that

b. there was never an intention that the fundamental principle that costs should be able to be recovered would be limited otherwise (for example, that cost recovery would only be permitted where price increases were deemed acceptable) – limiting the clause in this manner would essentially nullify any operation of the principle that is a cornerstone of utility regulation.

33. Many of the remaining revenue and pricing principles add to the meaning of the cost recovery principle, which include:[13]

a. emphasising the importance of incentives for investment (as discussed above), as well as the incentive to operating the pipeline efficiently and the incentive to encourage efficient use of the pipeline (RPP2)

b. also emphasising the importance of continuity over time in the asset values that are used for regulated pricing (RPP3), which is embedded within the NGR, and

c. that the return on capital element that is factored into prices should include compensation for all commercial and regulatory risks (RPP4), which is implicit when regulators have expressed this principle as requiring regulated cash flows that generate an expected NPV=0.

[13] The final two revenue and pricing principles provide guidance for the regulator when deciding how the uncertainty in deriving regulated prices should affect the final prices that are derived, that is, whether the price should be chosen at a higher or lower point in the range. The principles suggest that the economic costs and risks of under- or over-investment, and under- or over-use of the pipeline are relevant to this issue. I do not see this principle as directly relevant to the current rule change proposal.

2.2.2 Depreciation principles

34. The current rules in relation to (regulatory) depreciation are set out in Rule 89(1) and are as follows:[14]

> *The depreciation schedule should be designed:*
>
> *(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and*
>
> *(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and*
>
> *(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets; and*
>
> *(d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and*
>
> *(e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.*

35. The most relevant principles to the current rule proposals are those set out in (b) and (c), which requires assets to be depreciated for pricing purposes over their economic lives (i.e., the period over which a market for the services provided by the asset will remain) and that further requires these lives to be updated over time as new information on the economic lives of the assets is received. In other words, it is the intent of the Rules for economic lives and profile of depreciation to be reviewed and changed as market conditions change to ensure that networks continue to have a reasonable opportunity to recover their efficiently incurred capital expenditure whilst those assets are being used, and to head-off potential risks by acting in a timely manner before external constraints place a material limit to cost recovery. Given that asset lives of up to 80 years have been applied for gas assets, it is to be expected (rather than being exceptional) that one of any number of events could occur over that life (i.e., changes in operational performance, technology, the market and/or the policy environment) that would warrant a revision to the remaining economic life of the asset.

36. In relation to the remaining depreciation principles, these require that:[15]

    a. the costs are to be recovered only once, which means that changes to depreciation alter only the timing of cash flows (although advancing cash flow will reduce the

[14] I note rule 89(2) observes that back-ended depreciation may best meet these principles under specific circumstances (namely, where an asset is constructed with substantially more capacity than initially required in order to meet strong forecast growth in demand), which is not the main case at issue here.

[15] The final principle suggests that depreciation may be adjusted to address financeability issues (i.e., in the same way that the AEMC has recently enabled for electricity transmission ISP projects), although this is not directly relevant to the topic of the rule changes.

exposure to economic asset stranding where this is a risk, and so increase the confidence that costs will be recovered), and

b. the costs to be recovered should be spread over time in a manner that optimises the use of the asset, noting that this objective is equally relevant to the situations where overall demand is growing as well as where overall demand is declining.

37. These principles taken together direct depreciation to ensure (to the extent possible) that costs are to be recovered, but recovered only once, and that this cost recovery should be spread over time in the most efficient manner.

2.3 Regulators made commitments to apply depreciation flexibly

38. The potential for gas distribution businesses to face future constraints with respect to their ability to recover costs was in the minds of the original drafters of the gas regulatory instruments. The gas sector had always faced competition from electricity and referred to gas as a "fuel of choice" (I recall that the effect of reverse-cycle air conditioning on the demand for gas for heating was front of mind around the time the gas regulatory regime was first drafted). Indeed, this consideration explains some of the unusual features that have always been present in the gas regulatory regime, including the capacity to remove price controls where regulation is no longer necessary and, more subtly, the assumption that distributors (rather than developers as is the case for electricity) would be the parties that arrange the installation of gas infrastructure in new subdivisions.

39. This idea that depreciation would be flexible and varied over time as necessary to ensure that a reasonable opportunity remains for efficient cost to be recovered has been emphasised by statements of regulators, including those around the time the new gas regime commenced, and used as a justification for not providing compensation for the risk that would otherwise be borne (i.e., if excessively long asset lives were retained as market circumstances changed).

40. For example, the Victorian regulator (then the Office of the Regulator General) commented on the role of depreciation as a means of addressing potential economic stranding as follows:[16]

The competitive market paradigm provides a useful reference point for considering Depreciation methodologies. In a competitive market, if an investor thought that an asset bought in this period would be made redundant in the next period by a technological advance, then the investment would only take place if the investment could be recovered in this period. This expected decline in the economic value of the asset over a period is true economic depreciation of that asset, which should be recovered in that period.

[16] Office of the Regulator-General Victoria (1998), Access Arrangements for Multinet, Westar and Stratus – Final Decision, October, p.95. The assumption in the ORG's discussion is that the DORC valuation for a gas distribution service would reflect the cost of providing the same service (i.e., delivery of energy to consumers) using different technology (i.e., an electricity network) and so capture the economic stranding of gas distribution assets. This broader concept of optimisation is part of a DORC valuation if applied consistently with its theoretical roots.

- *More generally, given that the DORC value of assets is the value of second-hand assets at any point in time, the decline in the DORC value between two points in time is economic depreciation which should be reflected in current period charges.*

A number of participants raised the issue of stranded asset risk and suggested an adjustment to the Rate of Return is necessary to take this into account. While it was stated in section 4.5 that the regulator will not impose stranding of common-use assets in the near future, it is noted that the regulator cannot guarantee that the asset owner will be able to recover its investment over its regulatory life, for example, in the face of major technological change which introduces a cheaper substitute for gas. It is also noted that by-pass of the system is permitted, which could lead to stranding of assets.

To the extent that there is some risk of stranding for some assets before the end of their proposed regulatory life, conceptually there are two options for recognising this in the regulatory framework: to increase the rate of return on capital, or to increase the rate of return of capital. However, following from the discussion above, the Office considers that the perception of stranded asset risk reflects a concern that capital is not being depreciated sufficiently fast to keep pace with its DORC valuation. This would imply that regulatory depreciation is lagging true economic depreciation, so that the most appropriate response is to realign the two by increasing the rate of regulatory depreciation.

41. Notably, this statement of the regulator was made in a regulatory decision that predated the privatisation of the Victorian gas distribution businesses.

42. The ORG further expanded on its views about the importance of flexibility in depreciation – and using this to provide confidence that costs will be recovered – when undertaking its next review (in that case, the price controls for electricity distributors) which was around the time of the privatisation of the Victorian gas businesses, as follows:[17]

The regulatory asset base represents the regulator's view of the market value of the regulated business at any point in time. Accordingly, the regulator can be interpreted as making an implicit commitment to ensure that the market value of those assets does not fall below the regulatory asset base over time. The objectives of encouraging efficient investment will only be met if this remains a credible commitment.

This has important implications for the design of the regulatory depreciation profile. In particular, in order to ensure that the regulatory asset base remains at or below the market value of the assets, the regulatory regime must permit each distribution licensee to have their capital returned at a rate that keeps pace with the decline in the economic value of their assets. This in turn implies that regulatory depreciation must at least keep pace with economic depreciation. This will ensure that the value of the distribution licensee should not be placed in a position in the future where it is not able to set tariffs that are expected to recover the benchmark revenue requirement.

…

[17] Office of the Regulator-General Victoria (1999), 2001 Electricity Distribution Price Review – Consultation Paper No.4: Cost of capital financing, May, p.15.

> *As the assessment of economic depreciation requires a view to be taken on all of these factors, its assessment is a complex and information intensive exercise. Hence, the estimation of economic depreciation will involve a degree of imprecision. The potential complexity of determining economic depreciation, combined with the likely imprecision, suggest that a relatively simple method for calculating regulatory depreciation would be appropriate. However, as information on the factors that influence economic depreciation will be revealed over time, there should also be a preparedness to review the method at future price reviews. In addition, this level of uncertainty, coupled with the advantages of reducing the level of risk faced by the distribution licensees, suggests that the method should err on the side of exceeding, rather than lagging, expected economic depreciation.*

43. Accordingly, not only do the rules contain the flexibility to maintain the confidence with respect to cost recovery in the face of future market events, this flexibility was emphasised by regulators in the formative years of the gas regime. I observe that the commitment of regulators in those early years that depreciation would be applied in a flexible manner if required to head off potential risks to cost recovery were consistent with the long term interests of consumers at the time, and indeed this was the lens through which the issue was analysed. The commitment to flexibility permitted very long asset lives to be assumed when calculating regulated prices, and also allowed regulators to side-step the question of whether an additional premium should be applied in respect of potential future economic asset stranding, as had been advocated at the time (the position reached was that this risk could be avoided via an appropriate approach to depreciation).

44. From these discussions, it would be reasonable for regulated network businesses to have formed the expectation that regulatory depreciation would be applied in a flexible manner to head off foreseeable risks to cost recovery to the extent possible.