# Appendix 4.3

## Responding to stranded asset risk

### Incenta Economic Consulting

### Access arrangement information

### ACT and Queanbeyan-Palerang gas network 2021–26

**Submission to the Australian Energy Regulator**

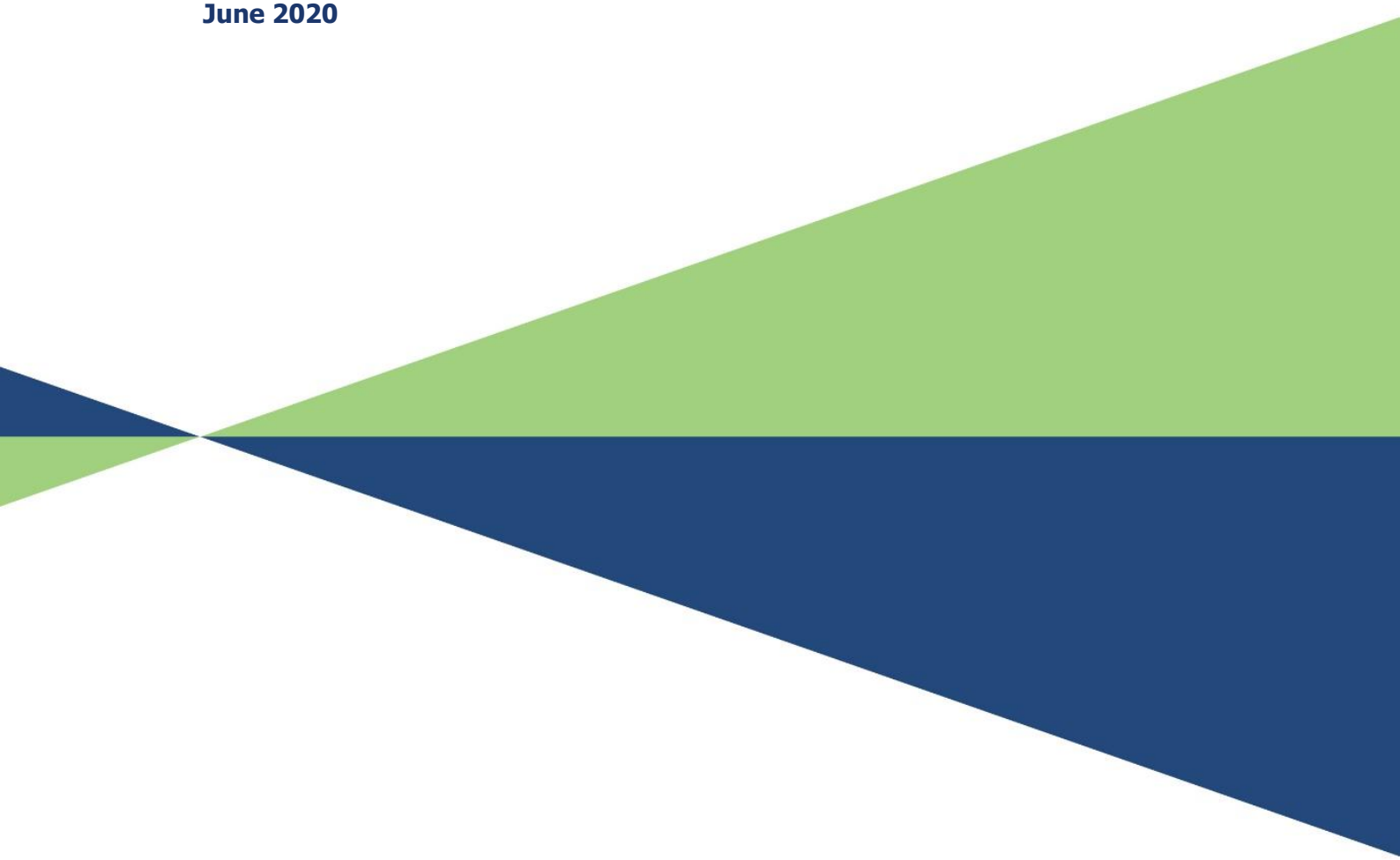
**June 2020**

evoenergy

# Responding to stranded asset risk

**Evoenergy**

**June 2020**



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# 1. Introduction and summary

## 1.1 Introduction

Incenta Economic Consulting (Incenta) has been engaged by Evoenergy to provide advice regarding its proposed approach for its 2021 to 2026 access arrangement period to manage stranded asset risk. Evoenergy has asked that we address the following specific topics in our advice:

- our view on the specific stranded asset risk faced by Evoenergy and what that implies for the timing of actions to address that risk
- what do economic principles tell us about how to address stranded asset risk for regulated businesses, including what economic principles tell us about who should bear the cost of stranded asset risk
- our views on Evoenergy's specific proposal to shorten asset lives for new investment, and
- our views on the AER's final decision for the Jemena Gas Network's (JGN) access arrangement with respect to its proposal on asset lives.

In preparing this advice Evoenergy asked us to draw on the report we provided for JGN in December 2019 which centred on the topic of adjustments to asset lives to address stranded asset risks.[1] Consequently, this paper focuses most on those issues that are particularly relevant for Evoenergy and summarises, or refers to, that past analysis where relevant.

The remainder of this introductory chapter provides a brief outline of the stranded asset risk that Evoenergy faces and then it provides a summary of the key points made in this paper.

## 1.2 Stranded asset risk faced by Evoenergy

Evoenergy faces a material risk that, if depreciation of its assets continues to be calculated over the underlying technical lives of its assets – which extend to 80 years for some classes of assets[2] – that it will not be able to recover all the amounts that have been invested. The risk arises because of increasing recognition world-wide on the need to de-carbonise economies – and which has been translated into explicit legislation in the ACT[3], and as a policy goal for the New South Wales Government. The shift towards de-carbonisation, and the competitiveness of alternative energy sources, is also contributing to a decline in the demand for natural gas, which then exacerbates the stranding risk. – In response, Evoenergy has proposed to reduce the asset life associated with new investments forecast to be undertaken over the next access arrangement period to reflect their expected economic life as constrained by these developments. The asset life associated with past investments is proposed to remain unchanged for the time being.

1 Incenta, 'Using asset lives to manage stranded asset risks', December 2019.

2 This is for high-pressure mains, and implies an assumed useful life that extends beyond 2100 for capital expenditure undertaken during the next access arrangement period. The current lives for high-pressure services and medium-pressure mains and services is 50 years, which implies an assumed useful life beyond 2072 for investment undertaken during the next access arrangement period.

3 See: Section 6 of the *Climate Change and Greenhouse Reduction Act 2010*.

The most significant driver of the shortening of the economic lives of Evoenergy's assets – and hence stranded asset risk under current settings – is the ACT Government's policy for 100 per cent renewable energy and, consequently, zero emissions from natural gas by 2045.[4][5] This policy to ban the use of natural gas in the ACT will also be supported by government campaigns to support the transition from gas to electricity by promoting electric options and associated savings opportunities. Some of the particular features of the ACT Government's policy are as follows:

- The ACT Government is seeking to deter investment in infrastructure and appliances that would lock in emissions from natural gas. To this end, the mandate that existed for Evoenergy to reticulate new developments has been removed. The Government also raises the prospect of taking this further and actively banning gas connections to either residences, or all buildings, in new developments.[6] This, obviously, would also mean that these areas would not be expected to form part of any future with hydrogen or alternative net zero emitting gas should these be technology options that become economic in the future.

- The ACT Government has indicated it will work with retailers to support consumers wishing to switch from gas to electric appliances with tailored programs to smooth the transition. It notes that as customers switch to electricity the price of gas will increase given network costs will be spread across fewer customers. The Government's proposed approach to this issue appears to be to speed up the transition away from gas, including to provide support to lower income customers that use gas to switch. The implication being that customer numbers may be very low much earlier than 2045 such that cost recovery is very difficult. There is no discussion on the implications this will have for the gas pipeline business.

- The ACT Government is also sceptical about the economics of a conversion to hydrogen or other net zero emitting gases, noting that this brings requirements for new infrastructure and new appliances, on top of higher commodity costs.[7] Conversely, it notes that electrification is a proven technology for most services currently delivered by gas. We would infer from this that the ACT Government can be reasonably expected to direct its support measures towards full electrification rather than developing a hydrogen or net zero emitting gas solution.[8]

Moreover, there is no suggestion in the ACT Government policy statements that specific compensation for any unrecovered gas network costs will be considered.

In addition to these actions from the ACT Government, average demand has been falling for natural gas in the ACT, reflecting the same trend being experienced at the small customer level in all Australian jurisdictions. This, in turn, will increases the challenge of recovering costs in the future.

We would highlight that the new ACT Government policy comes against the backdrop of past policies that had sought to actively encouraged a switch *towards* gas based on the view it was relatively cheap, clean and efficient. This included rebates if customers installed items that improved energy efficiency,

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4 ACT Government, 'ACT Climate Change Strategy, 2019-25', 2019, p.10

5 We understand also that the NSW Government has a goal of net zero emissions by 2050. This will clearly impact on stranded asset risk with respect to those customers Evoenergy has outside of the ACT. However, given the majority of assets, and customer base, reside within the ACT this is clearly the primary concern with respect to stranded asset risk.

6 ACT Government, 'ACT Sustainable Energy Policy 2020-25, Discussion Paper', 2019, p.57

7 ACT Government, 'ACT Sustainable Energy Policy 2020-25, Discussion Paper', 2019, p.55.

8 ACT Government, 'ACT Climate Change Strategy, 2019-25', 2019, p.65.

such as gas-ducted space heating and instantaneous gas hot water. In addition, natural gas reticulation has been mandated for new developments. This policy history means that Evoenergy has had limited control over whether, and on what conditions, it extended or expanded the network.

## 1.3 Summary of our views

The key findings in this paper are as follows:

- Providing a reasonable expectation of cost recovery is a pre-requisite for there being an incentive for investment in both regulated and unregulated (competitive) markets.[9] Providing such an expectation is also consistent with the implicit bargain between suppliers and customers whereby regulated firms invest on behalf of customers with prices capped to avoid monopoly pricing, and in response customers commit to compensating the regulated firm for the cost of undertaking this activity.

- Stranded asset risk refers to the prospect that an event may occur in the future that leaves an asset owner unable to recover the costs that it has incurred but has not as yet recovered at the time of the event. Two principal mechanisms exist in any market for providing (economic) cost recovery in the presence of stranded asset risk.

  – *Removing*: which is removing, or substantially reducing, the prospect of a stranding event occurring. In economic regulation this option is implemented by permitting a sufficiently fast recovery of costs such that there is only an immaterial risk that costs will remain unrecovered notwithstanding the stranding event.[10]

  – *Compensating*: allowing the stranding risk with the business to remain but with the business being compensated for bearing this risk. In this case the amount of compensation would be based on estimates of the probability and consequences of a stranding event occurring.

  Importantly, even in vigorously competitive markets prices would be expected to reflect the cost of supply, and this will include compensation for stranded asset risk where this exists – investment would not occur otherwise.

- As noted above, our view is that Evoenergy faces material stranded asset risk under the current regulatory asset lives, and the AER has been clear that the rate of return it provides does not contain compensation for this risk.[11] Accordingly, a change to regulatory settings is required to provide Evoenergy with a reasonable opportunity to recover efficient cost and hence preserve incentives for investment.

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9 We use cost in the economic sense to include receiving a return that compensates for the opportunity cost of capital.

10 The same outcome (remove) may be achieved in competitive markets through long term contracting.

11 Stranded asset risk is quite different in nature to the risk for which compensation is provided by the WACC. The WACC compensates investors for the *variation* in returns to the extent that the variation cannot be eliminated via diversification, and reflects an assumption that agents have a preference for stable returns over variable returns. The appropriate compensation for stranded asset risk, in contrast, would be akin to a self-insurance premium for accepting a one-sided liability, the magnitude of which would depend on the specific nature of that downside risk.

  - An absence of incentives for efficient investment may manifest in an inefficient substitution of capital and operating expenditure, inefficient deferral of asset replacement (and so an increase risk of supply losses), and / or an avoidance of discretionary projects that would benefit customers, all of which is detrimental to the long term interests of customers.

- It is our view that advancing depreciation is the preferred method for addressing stranded asset risk for regulated entities, and particularly for Evoenergy, for two reasons:

  - it does not create any windfall gains or losses and so is NPV neutral, and

  - the circumstances associated with the expected end of life for the assets means that relying on compensation would likely lead to similar prices to advancing depreciation (due to the near certainty of the stranding) but with the prospect that windfall gains or losses are created given uncertainty as to the exact timing of stranding (e.g. customers may transition from gas faster) and the remaining possibility for transition to hydrogen or other net zero emitting gas.

- The most critical factor for advancing depreciation for Evoenergy is that action is taken as early as possible. This is to preserve incentives for investment, ensures a fairer outcome for customers (i.e., where cost recovery is focused on periods when demand is greatest) and to recognise the fact that the consequences of acting late, or with the wrong profile, are asymmetric. That is, at some point it will become too late either to remove or properly compensate for stranding risk anymore and stranding will be inevitable.

  - In the case of Evoenergy, not acting fast enough to address stranded asset risk would also impose an unfair burden on those customers that continue to be supplied outside of the ACT.

- In terms of acting early, Evoenergy's current proposal to shorten the regulatory lives for only new investments is intended as a first step. We observe that this action will nonetheless leave Evoenergy exposed to a material proportion of its existing assets becoming stranded, given that their useful lives extend past the ACT Government's stated target for carbon neutrality in the ACT. Accordingly, the next steps should be contemplated and set out as early as possible.

- We observe that the potential for the natural gas network to convert to hydrogen or other net zero emitting gas is insufficient to conclude that the risk of asset stranding is low.

  - At best, the potential for conversion to hydrogen or other net zero emitting gas means that the risk of asset stranding is less than 100 per cent – there is no guarantee that the conversion will occur or, if the conversion does occur, that the unrecovered costs at the time of conversion will be recoverable from consumers of hydrogen.

    - In this regard, as noted above, a conversion to hydrogen or other net zero emitting gas faces technical and commercial challenges, and in view of these challenges the ACT Government appears to be promoting a shift to electricity for ACT energy users.

  - It is also unlikely that the potential conversion to hydrogen or other net zero emitting gas could generate an "upside" that compensates for the risk that a conversion does not occur (i.e., the "downside"). The technical and commercial challenges of conversion mean that a material "upside" is unlikely. Moreover, in the event a conversion does occur and becomes a success,

we would expect continued cost-based regulation of the network, so that the benefits of this success would be transferred to customers.

  - Moreover, to the extent that a conversion to hydrogen or some other net zero emitting gas is likely to occur, then this will likely be known some time in advance, at which time it would be appropriate to revise the lives of the assets to recognise the additional useful life of the relevant assets.

- It is our view that the Evoenergy proposal for the recognition of stranded asset risk is consistent with the regulatory framework. It is permitted under the Rules and is consistent with the promotion of the National Gas Objective (NGO) and revenue and pricing principles in the National Gas Law (Law).

  - Adjusting the asset lives to address stranded asset risk is likely to lead to a price path that better promotes efficiency than the status quo. While it first reflects the economic life of the assets, it also increases the competitiveness of gas in later periods, it mutes the impact on customers in the future by recovering more of the cost while the customer base is largest, and it better facilitates a transition to hydrogen or other net zero emitting gas should that occur.

- In terms of the AER's recent final decision on asset lives for JGN, we welcome the AER clearly stating that it supports the principles that a firm should expect to earn a normal return on investment and that accelerated depreciation is an appropriate tool for managing stranded asset risk. Our main critique of the decision is that the AER has set the threshold for evidence too high, and in our view, is at the opposite end of the spectrum to what is required for an effective and principled response to emerging stranded asset. Nevertheless, given the ACT Government's policy position, Evoenergy circumstances meets the high threshold for evidence set by the AER. Further, there is nothing else in its proposal that should trigger any of the other concerns identified by the AER with respect to JGN. Indeed, given the AER's commentary we consider that it may wish also to extend the adjustment of lives to the past investments also.

# 2. Economics of stranded asset risks

## 2.1 Introduction

Stranded asset risk is the potential that an event occurs that means investors will not be able to recover all the amounts that have been invested but that had not been recovered at the time of the event.

In this chapter we apply economic principles to the treatment of stranded asset risks to identify why this is something that requires attention and what strategies for managing the risk would be consistent with economic principles.

## 2.2 Relevance of stranded asset risk

### 2.2.1 The importance of cost-recovery

The proposition that regulated prices should be derived such that regulated businesses expect to recover the costs they incur including a reasonable ("commercial", "competitive" or "normal") rate of return – at least where those costs pass reasonable hurdles for prudence and efficiency – is a central plank of cost-based regulation as conventionally applied, for a number of reasons.

- First, an expectation of cost recovery is required for regulated businesses to have both the financial incentive and capacity[12] to continue to invest in the regulated activity. Possible effects of this diminished incentive are the inefficient substitution between capital and operating expenditure, inefficient deferral of asset replacement (and so an increased risk of outage), and / or an avoidance of discretionary projects that would otherwise be valued by customers.[13]

- Secondly, setting prices to permit a recovery of cost – but not materially more than this – is a key part of the arrangements in utility regulation to secure a fair balancing of the interests between regulated businesses and their customers. Irreversible investment is undertaken by regulated businesses to meet the supply needs of customers. In response, regulated businesses agree to having the costs of these investments recovered over an extended period, ensure that minimum service levels are delivered, and commit also to prices that reflect efficient costs rather than monopoly prices. In return for this, regulated firms are provided a reasonable assurance that customers will eventually pay for the costs of the investments made on their behalf.

  – The alternative to this would be for customers to pay for all new investment upfront. Given the lumpy nature of infrastructure such as gas pipelines, as well as the material size of the cost, this is not a practical option.

The situation of regulated sectors is not different in this regard to unregulated sectors, including vigorously competitive markets. For investment to be attracted into a particular sector, the returns

12 That is, regulated businesses need to attract investment funds, and so require settings sufficient for these funds to be attracted.

13 The expectation of earning returns below the cost of capital would not be expected to lead to an immediate cessation of investment given some investment would be driven by various regulatory requirements and some is required to provide existing services. Therefore, some capital investment would take place to avoid potential for even larger losses if existing services were not provided.

must be as good as available in alternative sectors – but will be competed down if materially higher than this – so that, ultimately, prices will reflect costs.

### 2.2.2 Implication of stranded asset risk

Stranded asset risk impacts on a firm's expectation that it will recover the cost of investments made. A material threat of not recovering the costs of investment then negatively impacts on the firm's incentive to undertake any new investment. This is an outcome that is not in the long-term interests of customers.

Asset stranding risk where it exists and is material is a one-sided risk for a regulated firm. If stranding occurs then costs will not be recovered, and so the firm cannot expect to earn at least a normal return on investment. However, where a firm is subject to cost-based regulation, there is no corresponding upside benefit. The best that can happen is that asset stranding does not occur, and costs are recovered, but regulation limits the firm to this. This means that unlike some other risks that a firm may face, asset stranding exposes a firm to losses but without a prospect of earning more than a normal return on the upside.

Accordingly, where stranded asset risk becomes material under the current regulatory settings, a change is required to preserve the expectation that a firm will be able to earn a normal return on investment.[14] In competitive markets, an expectation of earning a normal return on investment is a necessary condition for participation in an economic activity. As such, in competitive markets the cost of managing the risk associated with asset stranding will typically be factored into the price paid by customers. This is because, without this risk being priced in, and so an expectation of earning a normal return over the long-term, firms will simply not invest and ultimately exit the market.

It has previously been assumed that the potential for asset stranding of gas networks in Australia is low, even with the extremely long useful lives for some of these assets that are commonly applied. However, whilst this assumption may have been reasonable in past decades, technological change, in combination with the increasing likelihood that governments will take actions to de-carbonise economies, have fundamentally changed the risk environment of gas pipelines, and hence create the need to review past assumptions.

## 2.3 Response to stranded asset risk

While the exact mechanisms may differ, there are similarities between the approaches taken in competitive markets to address stranded asset risks and those that are available in regulation. In both competitive and regulated sectors, the principal mechanisms for achieving cost recovery in the presence of stranded asset risk are either:

- removing, or substantially reducing, the prospect of a stranding event occurring, or
- allowing the stranding risk to remain with the business being compensated for bearing this risk.

[14] The proposition that the WACC when estimated in a conventional manner does not compensate for stranded asset risk has been well-accepted by finance experts and regulators and so is not expanded upon further here. For further discussion see AER, 'Discussion paper, The allowed rate of return, compensation for risk and the use of data when judgement is required', February 2018, p.93, and AER, 'Discussion paper, Equity Beta', March 2018, p.29.

The common factor to these is that prices would be expected to permit a recovery of cost, with the difference being whether it is the customer or supplier that implicitly or explicitly bears risk associated with whether, and to what extent, the potential stranding event actually occurs.

- By way of example, in competitive markets that feature large, economically-sunk assets that give rise to high exit costs it is typical for firms to agree to long-term contracts to determine how the risks that otherwise may give rise to stranded asset risk are to be dealt with. A common outcome is that the parties sign a long-term contract with fixed commitments. Such an arrangement implicitly allocates technological and other risk to the customer.

The remainder of this section focuses on the two main options available for addressing stranded asset risk, we also consider some other alternatives that we are aware have been suggested by various parties.

### 2.3.1 Removing stranded assert risk

Removing, or substantially reducing, stranded asset risk for regulated entities requires that invested funds are recovered at a sufficiently fast rate so that there is reasonable certainty that costs will be recovered. Importantly, this solution only changes the timing of cash flow to the business and so sees no change in value. That is, it is NPV neutral.

For a business in the circumstances of Evoenergy, where an end-date has been foreshadowed for the technology[15], removing stranded asset risk requires that costs be fully recovered prior to the time that the assets will no longer be used. To the extent that Evoenergy would have remaining supply requirements outside of the ACT removing stranded asset risk would require that capital is returned sufficiently fast that there is not material risk that any remaining costs cannot be recovered in the future. That is, the amount of capital to be recovered should be compatible with the reduced scope of the service and associated customer base.

In order to avoid the negative economic consequences of stranded asset risk identified above, the firm would need to have sufficient confidence that the profile of recovery does not impose any material risk to costs being recovered within that time. For instance, leaving a large amount of costs to be recovered late would likely leave the firm with a material concern that some material stranding might still occur. That is, as time gets closer to the stated end-date, there may not be a sufficient customer base remaining for costs to be fully recovered. Conversely, the price of alternative energy supply options may mean that the market does not permit prices being set high enough to allow for cost recovery to occur. Such outcomes would compromise the purpose of choosing to remove the stranded asset risk.

### 2.3.2 Compensating for stranded asset risk

The main alternative to removing stranded asset risk is for the business to retain that risk but receive compensation for doing so. The compensation would be based on the stranded asset risk remaining with the business noting that if asset stranding actually occurred the business would incur a loss. This

[15] Subject to the assets not being re-deployed for hydrogen or other technology, which we note is highly uncertain at this point.

option is akin to an insurance premium that maintains the expectation of earning a normal return in the face of a future asset stranding risk.

The difficulty with the compensation option is estimating how much compensation should be paid on an ex-ante basis. If the compensation amount is perfectly estimated customers would expect to be no better or worse off in an economic sense because of the ex-ante stranding compensation. However, it is very difficult to accurately estimate the probability and consequences of a stranding event occurring. In the case of Evoenergy, while Government policy establishes an end-date for the use of gas fuel for end-use customers in the ACT, what is uncertain is exactly how quickly customers will transition and at what rate and so at what point prices might rise to levels that mean it is not economic for customers to remain served by gas and so expedite the shift away from gas.

### 2.3.3 Other options

In our report for JGN on stranded asset risk we identified three other options that might be available in economic regulation to address stranded asset risks. These options are largely in the category of removing the stranding risk, such that additional compensation is not required. It is our view that these options are not feasible for Evoenergy. These options, and why they are not appropriate for Evoenergy, are described here:

- **Increase capital contributions** – requiring new connections to make a higher contribution to the fixed costs of supply upfront is unlikely to address Evoenergy's problems. First, it is expected that no new developments will be permitted to have gas reticulation in the ACT. Second, for connections outside of the ACT higher capital contributions would serve only to deter otherwise efficient connections and so exacerbate cost recovery issues by reducing the base over which fixed charges are recovered.[16]

- **Higher fixed charges –** this option is seen as a means of managing stranded asset risk by making fixed cost recovery less reliant on usage. However, for Evoenergy the stranded asset risk is primarily a function of government policy, rather than a declining use problem, and so raising fixed prices will not materially impact on the management of stranded asset risk.

- **Exit fees** – under this option customers would pay a lump sum upon disconnecting from gas supply that reflects an estimate of the amount of unrecovered costs associated with the connection. This option would be difficult to apply in practice, not least because there is no clear means to force customers to pay when they stop receiving a service.

A further option that was not discussed in our report for JGN would be for the beneficiaries of the carbon reductions associated with ceasing natural gas supply to pay for the cost of asset stranding. In the ACT it is clear that natural gas is being banned for the sake of reducing carbon in the environment. This is a benefit that extends beyond merely users of natural gas. This option effectively would require that taxpayers pay for asset stranding so that the cost recovery objective can be maintained for Evoenergy. A further justification for taxpayers to pay for asset stranding is that this is a government driven policy and not something that could have been adequately managed by Evoenergy, in particular, in the face of a mandate to this point that required it to expand the gas network to new developments. Conversely, a case could be made that not all taxpayers benefited from

[16] It is also not clear why new customers should bear a greater burden of the fixed costs upfront than had applied to customer connections preceding the change.

the existing gas pipeline and so should not be required to pay for it simply because it is being shut down. In any event, it is our view that given appropriate regulatory measures exist to avoid (or substantially avoid) asset stranding that these should be used in the first instance, and in particular that it would be unwise to delay action in the hope that some form of government support may be forthcoming in the future.

# 3. Responding to Evoenergy's stranded asset risk

## 3.1 Introduction

In this chapter we apply the economic principles and approaches to managing stranded assets discussed in the previous chapter to the specific circumstances of Evoenergy. We also consider if the proposal is consistent with regulatory framework that applies to gas pipelines in Australia.

## 3.2 Evoenergy proposal to address stranded asset risk

Evoenergy has indicated to us that its proposal to shorten asset lives is a first step to managing its stranded asset risk. That is, it recognises that more action is likely to be needed in the future to properly address the risk. This first step is to shorten the asset life for only new investments that are undertaken over the next regulatory control period. The proposed asset life for new investments is intended to reflect the expectation that the economic life of the assets will be reduced, which is a function of government policy for the future banning of natural gas as a fuel. This will have the effect of the assets being depreciated faster than if the technical lives of the assets were used. Evoenergy has not proposed any adjustment to the asset lives for any past investments made. However, have been advised that approximately 30 per cent of the assets in place at the start of the next access arrangement period (in real terms) will remain unrecovered by 2045, when the ACT's policy would have natural gas supply to have ceased. This means that this proposal is materially inadequate for removing in full the stranded asset risk facing Evoenergy, and that further measures would be required.

In conjunction with advancing depreciation, Evoenergy is also forecasting a considerable reduction to its future capital expenditure requirements relative to past periods. This reflects in part the effect of the expected removal of the current mandate for gas reticulation in new developments being removed. The implication of this is that the amount of depreciation brought forward is quite modest and so has a relatively small impact on annual customer prices (i.e. less than a $1 increase in gas supply cost per year).

## 3.3 Our assessment of Evoenergy's proposal to address stranded asset risk

Given the policy of the ACT Government as described in section 1.2, we do not believe there is any question over whether Evoenergy faces a material stranded asset risk. That is, the policy position of the ACT Government is clear.[17] Indeed, given the past mandates for natural gas reticulation and the promotion of natural gas as a fuel in the ACT there is additional force to the argument that the preservation of a fair balance of interests between Evoenergy and customers justifies action on this issue.

Consistent with the discussion in the previous chapter, we recommend advancing depreciation as the preferred method for responding to stranded asset risk in this context. There are two reasons for this:

[17] This does not mean that if no action is taken that asset stranding is certain. It simply means that the risk is real and it is material. In this case, however, we note there are only limited scenarios where asset stranding does not occur if no action is taken.

- First, advancing depreciation does not create any windfall gains or losses and so is NPV neutral, and

- Secondly, the circumstances associated with the expected end of life for the assets means that relying on compensation is particularly troublesome in the case of Evoenergy.

Evoenergy's proposal to advance depreciation on new investments only speeds up the return of investment relative to the status quo and so the timing of cash flow. It does not change the value of the investment (in present value terms). Therefore, customers are not exposed to any additional cost, on an NPV basis, to address the risk of asset stranding using this mechanism.

The proposal from Evoenergy to rely on depreciation is also one that is supported by regulators across a variety of jurisdictions and sectors. There is substantial regulatory precedent and support for using depreciation to remove, or substantially reduce, stranded asset risk. Our report for JGN provided an appendix setting out some of the regulatory precedent for regulators supporting the advancement of depreciation to address asset stranding risk. That analysis shows that a key justification by regulators for supporting accelerated depreciation to address stranded asset risk is that the option is NPV neutral and so did not require customers to pay a 'premium' as a means of managing the risk.[18]

We acknowledge that Evoenergy is proposing that the asset life for new investments only be adopted as a starting point for managing stranded asset risk. The rationale for this approach is that it is the *minimum* change required to ensure there is an incentive for that new investment to proceed in the forthcoming access arrangement period. It is our view, however, that this action is not sufficient to address stranded asset risk given most of the risk is associated with past investments. As such, we would recommend Evoenergy sets out its plans for managing this more material risk as soon as possible to foreshadow the future task that is required.

In terms of the compensation option, the complications with this option in the case of Evoenergy are two-fold. The first issue is that, assuming the assets are not converted to supply hydrogen and no risk mitigation is taken, asset stranding is a certainty in the ACT. Recognising that compensation is akin to an insurance premium, the implicit insurance premium for an event with certainty is just the total cost of stranding. Therefore, the compensation needs to equal all the expected redundancy and so it is mathematically equivalent to accelerating depreciation. The second issue is that there is still uncertainty about the time when the assets are redundant, noting that there is a reasonable chance this occurs before the time that natural gas is banned in the ACT. Therefore, there would be a remaining risk that the compensation premium is incorrectly calibrated and so leads to windfall gains or losses.

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[18] We note that in New Zealand the Commerce Commission has recently rejected a proposal to advance depreciation for an electricity distribution business despite it providing support for the shortening of asset lives where stranding risks were real, and commenting that it only sought to impose a low threshold for evidence as to the presence of stranding risk. However, in that matter only one of the 17 businesses being reviewed considered the stranding risk to be sufficiently material to apply for a shortening of lives, and the Commission seems to have been quite correct to conclude that the application lacked virtually any empirical justification. In its discussion, the Commission observed that an industry consensus had emerged that the risk of asset stranding for electricity distributors was very low – and that this risk was much lower than believed at the time it provided the flexibility for the shortening of asset lives – which may explain why the sole unsuccessful applicant was unable to provide empirical justification for its proposal.

For completeness, the current regulatory settings do not provide compensation for stranded asset risk.[19]

Below we:

- address whether it is necessary to commence addressing the stranded asset issue now, especially given the potential for the development of reticulated hydrogen or other net zero emitting gas, and
- address how the change to asset lives is likely to affect the efficiency of use of Evoenergy's assets.

### 3.3.1 Should changes occur now?

Economic principles, as well as good regulatory practice, suggest that it is prudent to take action to address stranded asset risk at the earliest time when there is sufficient reason to believe that a material stranded asset risk exists. This does not mean that there is no uncertainty about the extent of the asset stranding risk, or that the risk is fully understood. Instead, the nature of it being a "risk" is that the event is not expected to occur with certainty; the risk must simply be real. There are two main reasons for acting early in this way.

- First, as indicated in the previous chapter, absent measures to address stranded asset risk firms will be discouraged from making otherwise efficient investments, which is an outcome that is detrimental to customers. That is, if there is a stranded asset risk present, and this is not addressed in some way, then this is sufficient to effect incentives for investment. Importantly, even though the supply of natural gas is expected to end in the ACT by 2045, this does not mean that investment incentives do not remain important for Evoenergy.
  - Ongoing incentives for efficient investment remain important for Evoenergy for several reasons. The first reason being that maintaining a service until 2045 will inevitably require some capital expenditure, noting that a high-quality service is necessary for the safe operation of gas supply and that without ongoing supply cost recovery is not possible. The second main reason to maintain investment incentives is that Evoenergy will still be required to supply customers in those areas that it services outside of the ACT.[20] The third reason is that if hydrogen or other net zero emissions gas does become a realistic option this will require investment by Evoenergy to convert the network.
- Secondly, the consequences of acting too late or adopting the wrong profile for accelerated depreciation for stranded asset risk are asymmetric. The asymmetry occurs because there will become a point where it is too late to address the stranding risk anymore and stranding will be inevitable. This would occur where the assets are no longer able to remain in service (i.e. natural gas use is banned), the price of substitutes limits prices to below what would be required to recover cost, or the rapid decline in customer numbers means per customer prices become unreasonably high for remaining customers. Therefore, action to remove stranded asset risk

[19] The only element through which this may be achieved is the WACC, but it is clear that this does not provide compensation for this risk – refer to footnote 14.

[20] However, as noted above, the NSW Government has a goal for net zero emissions by 2050, which suggests that a material stranded asset risk exists for areas outside of the ACT also.

should only be delayed where there is compelling evidence that stranded asset risk does not exist or is not material.

In addition to these two main reasons, under a scenario where speeding up cost recovery does not occur fast enough, we note also that it would likely be unfair for the burden of cost recovery to be left with customers outside of the ACT or those customers that do not have the means to switch to electricity sufficiently early to avoid higher gas prices.

Given Government policy in the ACT, the only real remaining uncertainty as to the end of the economic life of the assets is whether the assets might subsequently be used to transport hydrogen or some other net zero emitting gas. It is our view that this does not change the case for acting early on the approach to address stranded asset risk for the following reasons:

- The transition and take up of hydrogen or other net zero emitting gas is uncertain, particularly relative to the real likelihood of natural gas services being banned in the ACT. Substantial expenditure would be required to convert the gas network for hydrogen or other net zero emitting gases and the current and projected cost of producing carbon-neutral hydrogen or biofuels is expensive relative to the cost of producing natural gas. This implies the cost of the delivered commodity would be higher than for natural gas. Further, customers would incur a cost to install appliances suitable for hydrogen or alternative gasses. Given this higher cost, and the likelihood that many customers will have switched to electricity before the point that hydrogen or other net zero emitting gasses became feasible, it is not clear that the transition would make economic sense or if a sufficiently large customer base would remain to ensure unrecovered costs are able to be recovered. We note that these transition issues and costs are something that has been recognised by the ACT Government, and as identified above, it appears to favour a transition to electricity.

- If a conversion to hydrogen or other net zero emitting gases were to occur, this would be unlikely to deliver an upside that is sufficient to address the downside risk of asset stranding. This is because returns will either be capped by the market or through regulation. We note, however, that under a scenario where hydrogen or other net zero gas transport is regulated customers would naturally benefit from the depreciation that has already taken place.

- If there becomes a point when a transition to hydrogen or other net zero emitting gas appears more likely it is possible at that time to slow down the rate of depreciation to reflect an expectation that the assets have a longer life. However, in this case more certainty would be needed on the assets being used for hydrogen or other gases than is needed for taking action in the first place given the asymmetric consequences of excessive stranding asset risk remaining discussed above.

- There should be no concern that returning funds quickly now will distort expenditure decisions in a future where hydrogen or other net zero emitting gas is used. If the assets remain regulated the regulatory regime is designed to promote efficient capital expenditure and so discourage any investment that is not necessary. Further, ex-ante assessments of capital expenditure requirements are also undertaken that limit the expenditure allowance that is provided for new capital expenditure to what is deemed as necessary.

### 3.3.2 Implications for the efficiency of use of Evoenergy's gas network[21]

For gas pipelines an efficient price is one that reflects the costs of supplying an additional unit of consumption – which is the marginal cost. As pricing at marginal cost for a firm with economies of scale and scope will leave a substantial share of the cost unrecovered, the aim is to recover these "residual" costs in a way that has the least impact on the efficient use of the service at any point in time. Regulatory depreciation is the tool to alter how recovery of the residual costs are spread over time.

Reducing regulatory lives will cause prices to be higher initially, and then lower in the future than what would have been the case under the status quo. However, there is good reason to believe that the status quo would not promote an efficient price path and that such a change to regulatory lives would deliver a superior outcome.

- With the projected increased competitiveness of electricity as a gas substitute, it is efficient for the price of gas to decline over time to reflect the increasing price sensitivity. This is so that gas can adequately compete with electricity in the future and so enable sufficient cost recovery in later years.

- It makes sense for cost recovery to be higher at a time when there is a sufficient customer base in order to limit the size of the price increase that is needed initially. In this way, as customers inevitably move to other fuel sources the need to raise prices further in order to achieve cost recovery is muted. That is, moving early reduces the effect on future customers, noting that those remaining customers in the future are perhaps the least able to transition away from gas.

- If hydrogen or other zero emitting gasses emerge as a use for the assets, given the costs this will impose, early recovery of pipeline costs will improve the competitiveness of these alternatives given the burden of recovering past investment costs is reduced.

On the question of acting early and the impact this might have on prices, we note the Commerce Commission in New Zealand has the view that, recognising it is an NPV neutral solution, acting early and adjusting the regulatory lives of assets, even in the face of uncertainty, has the benefit of avoiding potential future price shock that would occur if the decision to act was delayed until there was more certainty about asset stranding occurring, stating:[22]

> *88. Our chosen solution mitigates the risk of potential future price shocks for consumers, which would likely be required to maintain the expectation of ex-ante FCM if (and when) the downside risk scenario becomes more likely. In that sense, this is a precautionary measure consistent with the nature of the problem – one of increased uncertainty. By allowing EDBs the option of a more rapid time profile of capital recovery, should the risk of widespread disconnections eventuate, the amount of remaining capital to recover at that time will be less than would otherwise be the case. Not permitting asset life adjustments now would risk increasing the materiality*

[21] As discussed above, Evoenergy's proposal is to alter the regulatory lives only for new capital expenditure, and so is not expected to have a material effect on prices. Accordingly, this discussion is more relevant to measures to address the stranded asset risk associated with existing assets as well.

[22] Commerce Commission, 2016, Input Methodologies – final decision reasons paper, topic paper 4, para.88.

> *of any potential future adjustment to asset lives, if the risk becomes more likely. The resulting price shock would be larger, and we therefore consider that acting now is a prudent way for the IMs to reflect the changed environment.*

Based on this discussion, it is our view that reducing regulatory lives is more likely to advance allocative efficiency of cost recovery over time in light of the expected transition to electricity and the costs of converting to hydrogen, or other net zero emitting gases, if this were to proceed.

## 3.4 Consistency with regulatory framework

In our paper for JGN we set out in detail the regulatory framework that is relevant for the consideration of stranded asset risk. Consistent with our views in that report, our principal conclusion is that the high-level guidance and detailed provisions in the Law and Rules lead to the application of economic and regulatory principles that are materially the same as we discussed above and in the previous chapter. Therefore, the regulatory arrangements do not cause us to reach a different conclusion on whether stranded asset risk should be addressed and the best approach to address it and indeed provide support for the approach.

The features of this framework and how it aligns with Evoenergy's proposed approach is summarised here:

- The Law contains an overarching objective and revenue and pricing principles that are squarely focused on promoting efficiency with respect to investment and the need for a service provider to be provided *"with a reasonable opportunity to recover at least the efficient costs"* the operator incurs. Implied in the objective, and made explicit in the principles, is for the return to reflect the regulatory and commercial risks involved in the service. The objectives and principles also point towards efficient pricing and promoting the efficient use of services.

- The depreciation criteria contained in the Rules direct the regulator to consider the following:

  – an efficient time path for reference tariffs, noting as identified above that this is most likely achieved by advancing depreciation

  – that assets or a group of assets are depreciated over their economic life, which is the life that an asset is expected to remain in service. Given ACT Government policy, the expected economic life for the assets used within the ACT is 2045, absent any transition to hydrogen or other net zero emitting gas, and

  – that the depreciation schedule can adjust to reflect changes in the expected economic life, which in addition to supporting an advancing of depreciation now, would also permit slowing depreciation at a future date should the stranding risk be removed, for instance, because hydrogen use becomes a reality.

- The regulatory approach for gas pipelines is intended to provide pipelines with flexibility to tailor the approach to regulation for their individual pipelines. This is quite different to the approach in electricity where there is a high degree of codification in the Rules and so a greater expectation for a sector wide approach. This difference is apparent in a pipeline regulatory decision being an "access arrangement" which sets out the complete details of the regulatory decision and approach, whereas for electricity these details are largely set out in the Rules.

# 4. Views on the AER's final decision for JGN

## 4.1 Introduction

The AER's final decision on JGN's access arrangement is to not accept its proposal for the adjustment of asset lives for the purpose of responding to the emerging stranded asset risks.[23] The AER's primary concern was its view that there was a lack of evidence to support the adjustment to depreciation profiles. We discuss our views on the AER's justification for not accepting the JGN proposal in this chapter.

At the outset, however, we welcome two statements of principle that have been confirmed by the AER, namely:

- "*We are also required by the NGR to allow the business to recover the full costs of its assets, and apply a net present value (NPV) neutral approach so the business is compensated for its investment."*;[24] and

- That "*we remain open to approving proposals for accelerated depreciation in our network decisions"*[25]

Through these statements the AER is providing a clear signal to regulated entities that the regulatory regime intends to provide an expectation of a normal return and that depreciation is an appropriate means of managing that expectation in the face of stranded asset risk. Given the discussion in the previous chapters, we clearly support these sentiments and consider this a positive development.

We set out the AER's justification for not accepting the JGN asset life proposal in the next section. However, we note upfront that the concerns the AER had for JGN appear to not apply to Evoenergy, specifically:

- Notwithstanding our concerns that the AER has applied an inappropriately high threshold for evidence before accepting regulatory lives that are shorter than technical lives, this evidentiary standard is met in the context of Evoenergy. Indeed, for JGN the AER identifies the absence of a government position and specific policies directed at the end of gas use and decarbonisation, stating:[26]

  *The NSW Government has not adopted a position which is likely to end use of gas in NSW by 2050. Its plan provides a NSW economy-wide target for decarbonisation with no specific policies directed at curtailing gas consumption. Further, it has recently entered into a bilateral agreement with the Commonwealth Government to support the supply and development of gas in NSW*

  However, for the ACT there is a Government position on the end of use for gas in the jurisdiction

[23] The AER did accept an adjustment to the asset life for meters; however, this was accepted as better reflecting technical lives of the assets.

[24] AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.12.

[25] AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Overview' June 2020, p.8.

[26] AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.12.

and also specific policies for achieving that aim. Further, the ACT Government has indicated that it intends to implement policies that are likely to speed up the transition away from gas and towards electricity; noting it has expressed scepticism for the potential for hydrogen and other net zero emitting gasses.

- While we believe that material capex programs can be justified even with a future stranding risk, the future capex proposal for Evoenergy is modest and so should not trigger any concerns from the AER.

- Given the evidence as to the expected economic life of the assets, it is also the case that time path for prices for new assets reflects the expected economic life of those assets.

## 4.2 AER reasons for not accepting the JGN asset lives proposal

The main reasons given by the AER for not accepting JGN's proposal to adjust asset lives to address stranded asset risk were as follows:

- *Stranding risk in the gas regulatory regime* – the AER appeared to suggest that, as the removal of assets from the RAB by the regulator is not a feature of the gas regulatory regime (i.e., there is no such mechanism in place and the AER has no plans to develop one) that stranding risk also cannot exist in the gas regime.

- *Evidence threshold* –the AER states with respect to the evidence threshold required that:[27]

  *As we have stated in other decisions, and will do so again here, there is a significant burden of proof needed for demand factors to dominate a decision on the relevant economic lives of assets*.

  The implication of this is that the future stranding event would need to be high certainty before the AER would agree to a reduction in regulatory lives, with the onus of proof resting with the regulated business to prove this.

- *Treatment of past and future investments* – in response to JGN's proposal to only adjust the asset life for new investments, the AER stated that it would be inconsistent to set asset lives for some assets as if demand was ceasing by 2050, but then allow economic lives for similar assets to continue beyond this time and to 2100.

- *Time path of price* – the AER believes because it concluded that the proposed asset lives do not reflect what it considers to be the economic life of the assets, that as a consequence the time profile of prices, particularly in the short to medium term, would not reflect an efficient time path for prices. It also indicates that it does not advocate the use of depreciation to facilitate a smoothing of prices over time.

- *Future capex plans* – the AER states that it is inconsistent to be concerned about asset stranding, but at the same time to continue to indicate a need for 'business as usual' capex programs, including substantial new connection projects. The AER also stated that: "*capex is typically only*

[27] AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.14

*approved by us on the basis that the asset will be used for its technical life".*[28] Indicating in a footnote that this was because to apply a shorter asset life would increase the annualised cost of the asset without changing the benefits, making the approval of capex more uncertain.

- *Effects of hydrogen* – the AER considers that hydrogen has the potential to mitigate against stranded asset risk.

## 4.3 Our comments on the AER's final decision

As identified above, it is our view that the Evoenergy circumstances meets the high threshold for evidence set by the AER and there is nothing else in its proposal that should trigger any of the other concerns identified by the AER with respect to JGN. This, combined with the statements from the AER that a normal return should be expected and that accelerated depreciation is an appropriate tool, suggest that the AER should be open to accepting the Evoenergy proposal for asset lives. Indeed, based on the JGN decision, the AER should be more likely to determine that a preferable course of action would be to extend the proposed adjustment to new assets to apply also to existing assets.

In terms of the JGN decision itself, it is our view that aspects of the AER's justification for not accepting JGN's proposal are not well founded or contain errors. In this section we briefly respond to the AER's main arguments here. Our focus here is mainly on the underlying principles of the AER's positions rather than the specifics as they relate to JGN.

### 4.3.1 Stranding risk in the gas regulatory regime

As indicated above, as part of its assessment of JGN's proposal, the AER appeared to comment that stranding risk is not a feature of the gas regulatory regime.[29]

> *JGN's consultant Incenta Economic Consulting (Incenta) stated that the AER has accepted that 'stranded asset risk is not compensated via the [regulatory] regime'. However, we consider that there is effectively no stranding risk from underutilised assets in the current regulatory regime. Although an asset may become unused (or underutilised) on one part of the network, other consumers in other areas will continue to cover the residual costs of these assets.*

The AER further clarified that, whilst the gas regulatory regime may provide some ability for assets to be removed from the regulatory asset base in certain circumstances – which it appeared to accept would give rise to stranding risk – it noted that there is no such mechanism in place and that it had no plans to develop one.

We observe that the critical factor the AER ignores in the discussion quoted above is the potential for an event to occur that implied that a regulated business was unable to set prices that recover the allowed (regulated) revenues. That is, whilst there is no asset stranding if a reduction in demand from one group of customers is able to be made up by recovering that shortfall from the remaining customers, clearly there are limits to this, and the possibility exists that it may not be possible to

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28 AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.14.

29 AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.12.

recover that shortfall from the remaining customers given the alternatives open to those customers (for example, converting to electricity or disconnecting and ceasing use of the relevant gas appliances). There is also the possibility that a government policy change may result in the consumption of gas being banned beyond a certain date, which would also result in costs that could not be recovered if it was not possible – again given alternatives open to those customers, as well as the limits of politically acceptable price increases to customers without alternatives – to recover the unrecovered costs by that date. These sources of asset stranding are not matters that are within the AER's control.

In both our previous and current report, we have been careful to distinguish asset stranding that arises as a consequence of:

- the regulator seeking to remove assets from the RAB that are subject to a material reduction in use, without this change in asset values flowing through to the revenue requirement (i.e., as an additional depreciation allowance), and

- changes in technology, the policy environment or both that constrain the prices that a regulated business are able to sustain, or the demand that it is able to serve, and so constrains the extent of cost that, within these constraints, it is able to recover.

The New Zealand Commerce Commission has explained these concepts in very similar terms, as follows:[30]

> *72. The IMs [Input Methodologies] allow for assets to stay in the RAB even though they have ceased to be used (ie, become physically stranded). Therefore, physical asset stranding is not the risk under consideration. Rather, it is the risk that the network becomes economically stranded. That is, the risk is that at some future point enough consumers elect to disconnect from EDBs' [electricity distribution businesses'] networks such that the revenue EDBs are able to recover from the remaining customer base is insufficient to allow them to fully recover their historic capital investment (hence the title 'risk of partial capital recovery'). This is because prices to those remaining consumers would need to rise beyond their willingness to pay given their economic alternatives (or beyond politically acceptable levels).*
>
> *73. Therefore, partial capital recovery does not necessarily imply that the network stops being used altogether. Rather, that the revenues EDBs are able to recover do not cover their return of and on investment. EDBs not expecting to recover their return of and on capital would be inconsistent with our principle of ex-ante financial capital maintenance (FCM).*

As the AER has correctly summarised, we did comment that regulator-driven asset stranding has not been a significant feature of the Australian energy regimes, and so stranding risk arising from this source is low. However, the materiality of stranding occurring from changes in technology, the policy environment or both is an empirical question that cannot be dismissed out of hand. To the extent that there is a risk that such external factors may in the future constrain the revenue that a regulated

[30] Commerce Commission, 2016, Input Methodologies – final decision reasons paper, topic paper 4, paras.72-73. Ex ante financial capital maintenance is an alternative way of referring to an NPV=0 (or NPV neutral) outcome.

business is able to generate below the regulated revenue, then there is a risk of asset stranding and consequently an NPV=0 outcome will not result.[31] Faced with this outcome, for an NPV=0 outcome to be restored, it is necessary either to compensate for the stranded asset risk or, where possible, alter the regulatory settings to remove the risk (i.e., permitting a greater share of costs to be recovered earlier and hence reduce the likelihood that future constraints will either bind or cause a material loss), and it is the latter that we favour.

We observe, however, that the AER's subsequent discussion of regulatory depreciation would appear to accept that the lives of assets should be reduced where there is sufficient evidence that cost recovery may be reduced or precluded altogether after a date, which is consistent with the position that we advocate.

### 4.3.2 Evidence threshold

The AER's view that a high threshold needs to be satisfied before a change to asset lives will be granted is, in our view, at the opposite end of the spectrum to what is required for an effective and principled response to emerging stranded asset risk. As discussed above, the consequences of stranded assets are asymmetric and there is a point where it simply becomes too late to address the risk. This is why the prudent approach is to address stranded asset risk once the risk is real, rather than waiting for the occurrence of the stranding event to be certain, noting that all risks come with uncertainty as to whether they will occur. Indeed, in New Zealand the Commerce Commission has been explicit that a "*relatively low level of evidence being required"* for it to approve accelerated depreciation for stranded asset risk.[32]

In addition, much of the AER's counter-evidence about the potential for gas distribution assets being stranded is focused on the period until 2040-50. However, the technical lives for the assets of concern extend for another 50-60 years after this point. In a world where there is increasing pressure on governments to address carbon emissions, it is not clear to us how there cannot be material uncertainty about the ability for gas to be a viable fuel post 2050. The fact that gas is being promoted now only reflects that it is a transition fuel to a lower carbon future and not that it is expected to be the fuel of choice for future generations to come, let alone to continue to be reticulated to residential and small business consumers, who contribute the vast majority of gas distributors' revenues.[33] Therefore, it is difficult to believe than an objective observer would consider that there is not a non-material risk of asset stranding prior to the 80-year life of some regulated assets.

### 4.3.3 Treatment of past and future investments

It is our view that concern over different asset lives applying for future and past investments is misplaced. While we agree that a more appropriate response to emerging stranded asset risk would be to adjust the lives of all assets, adjusting the lives for only new investments could be seen as a prudent first step to addressing stranded asset risks.

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31 That is, the expected return the business receives via regulated revenue stream will be lower than the WACC because the expected return must also factor in the future capital loss associated with asset stranding.

32 Commerce Commission, 'EDB DPP reset – final, reasons paper', 2019, paras.D.22-D.23.

33 To the extent that natural gas consumption continues longer term it is more likely to be for fast-start generation and/or manufacturing processes for which ready, low-carbon substitutes are not available (and then be matched with CCS technology), which typically do not use gas distribution networks.

Shortening the asset lives for new investments only is a prudent first step because it is the minimum that is required in order to maintain an incentive for new investment. This is because it adjusts the size of the risk associated with new investment, which is the only investment that incentives can influence, which it does by improving the confidence that a reasonable opportunity will exist to recover those costs. As such, investors are more likely to be motivated to undertake such new investment when it is efficient to do so. Nevertheless, in the case of Evoenergy and its very real stranded asset risk we would support the AER extending the adjustment to asset lives to existing assets.

It is worth noting also that as past investments will already be partly depreciated, it is an empirical question as to how material is a regulated business's exposure to stranding risk in relation to those assets. Our analysis of JGN's situation was that there was expected to be only a small proportion of its existing asset base that would remain undepreciated by 2050 (being the NSW Government's target date for net-zero emissions), and so it is not surprising that its proposal was directed to its larger challenge, being the recovery of its new, prudent investment.

### 4.3.4 Time path of prices

The AER's view with respect to JGN was that when the regulatory asset life matches the economic life of the assets that the time path for tariffs will promote the efficient growth for the reference service. In the case of Evoenergy, given the strong evidence as to the shorter economic life of the assets, there should be no concerns in this context as to the efficiency of the time path of prices.

With respect to the AER's comments on the merits of smoothing prices over time, it is our view that there is no ambiguity that efficiency is advanced by recovering fixed sunk costs at times when the customer base, and capacity for the market to bear the price, is at its highest. This is because these are not marginal costs, and so the efficiency question is about how to spread their recovery over time in a way that least distorts the pattern of consumption.[34] In terms of hydrogen and its future costs should it eventuate, we agree that as this will imply a higher marginal cost of delivered gas, it is appropriate for the usage-based element of prices to increase to signal this higher marginal cost. However, it is our view that efficiency, and equity, may both be advanced by recovering more fixed costs now so that there is less fixed cost remaining to be recovered at that time. By reducing the extent of fixed costs left to be recovered in the future, the prospect that customers will be dissuaded from connecting as a consequence of the overall delivered cost being high relative to alternatives, which will increase the efficiency of consumption.[35]

### 4.3.5 Future capex plans

In our view, the AER has overstated the case that if it were to assume a remaining market life of 30 years as suggested by JGN's proposal that it would have needed to apply a fundamentally different approach to the assessment of JGN's capital expenditure proposal.

There is no inconsistency in a firm facing stranded asset risk but continuing to invest. Indeed, undertaking new prudent investment can serve to minimise the impact of stranding risk. Specifically, connecting new customers works to spread fixed costs over more customers and so lower the impact that declining usage may otherwise have on bills. Even if assets are expected to be stranded in the

[34] This is just an expression of the familiar Ramsey rule for pricing applied intertemporally.

[35] To be clear, where customers are dissuaded from connecting to gas as a consequence of charges that recover fixed costs, then inefficiency in the selection of energy choices will result.

future, JGN's proposal assumed a likelihood that it would continue to be required to provide a safe and secure service for 30 years, and so capital expenditure – including some replacement of existing assets – will inevitably be required to achieve this. Whilst one would expect a more fundamental re-thinking of asset management as the end of the market drew very near – and may even involve prematurely shutting down areas of the network if expensive renewals were required to maintain a safe and secure service – the need for such radical change should still be some time away.[36]

Contrary to the apparent suggestion of the AER, it is certainly not necessary for an asset to be expected to remain useful for its technical life for investment in that asset to be efficient. What matters is that the benefits of the investment outweigh its costs.[37] This is central to economic tests for investment across regulated sectors in Australia and internationally and so not something we believe to be disputed. The technical life of an asset is somewhat arbitrary in this assessment of economic benefits, other than to place an upper limit on the period over which benefits may be generated. Indeed, the AER in a later part of its final decision reveals that a 30 year period is used to assess the economic merits of new connections,[38] which is quite consistent with the remaining life of the market that JGN argued to be a likelihood. We note that the AER has suggested that if it was to accept JGN's proposal, it would need to assume a 20 year life for residential connections.[39] However, this does not follow – as noted above, JGN's position was that there was a potential for the market to have only a 30 year remaining life, and even then its proposal was to retain lives of certain key assets at 50 years. Moreover, the AER also did not make any observation as to whether the change in the assumed life of connections would have changed the assessment of the efficiency of the project which, given the large positive NPVs that JGN identified for the expansion projects, appears unlikely in any event.

### 4.3.6 Effects of hydrogen and net zero emitting gas

As discussed in section 3.3.1. above, it is our view that the argument that hydrogen, or some other net zero emitting gas, will extend the life of the assets needs to be much stronger than the case that a stranding risk exists. This is because if this development does not eventuate, but was relied upon, asset stranding will occur. To reiterate, it is our view that the prospect for hydrogen or net zero emitting gas transition does not change the case for acting early to address stranded asset risk for the following reasons:

- The transition and take up of hydrogen or other net zero emitting gas is uncertain given the substantial expenditure required in converting the network and also the costs of production, implying a higher delivered cost than natural gas, as well as the costs for customers to install suitable appliances.

- It is likely a large component of the customer base would have switched to electricity prior to hydrogen or other net zero emitting gasses becoming economic.

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36 To be clear, a 30 year supply horizon is still a very long time – it only looks short when compared to the extremely long standard asset lives assumed in the gas sector that border on arrogancy.

37 Indeed for mining projects this may mean that installing infrastructure that has a potential technical life of more than half a century may be efficient, notwithstanding an expected use – based on reserve life – of no more than a decade.

38 We note that 30 years is only used for residential connections, with 15 years used for commercial / industrial connections.

39 AER, 'FINAL DECISION, Jemena Gas Networks (NSW) Ltd, Access Arrangement, 2020 to 2025, Attachment 4, Regulatory Depreciation' June 2020, p.25

- There is unlikely to be an upside from transition to hydrogen or other net zero emitting gas given it will either be regulated or have prices caped by the market.
- Returning funds quickly now will not distort expenditure decisions in the future when hydrogen or another zero emitting gas is used given the regulatory regime protects against inefficient investment.