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Ms Anna Collyer
Chair
Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

Submitted electronically via the AEMC Rule change portal

RULE CHANGE REQUESTS: GAS DISTRIBUTION NETWORKS.

Dear Ms ~~Collyer~~ Anna

Energy Consumers Australia (ECA) is pleased to submit four rule change proposals which aim to update the National Gas Rules (NGR) and ensure they remain fit-for-purpose in a transitioning energy system.

The current NGR are no longer adequately promoting the long-term interests of consumers in the context of increased household and small business electrification and a gas distribution network in decline. This document outlines four urgent amendments we believe are necessary for the NGR to continue to meet the National Gas Objective (NGO).

As consumers take up the opportunities electrification presents, they leave behind a network of gas distribution pipelines worth a combined $11 billion.[1] However, the reality of gas network decline is not currently reflected in the NGR, which were created with the expectation of ongoing growth of the network.

This suite of rule changes will require gas distribution networks to proactively plan for the future of their networks and make decisions which will minimise any further non-critical investment. They also aim to increase the tools and information regulators, councils, governments, electricity distribution networks, advocates and other stakeholders have available to them to start actively planning for how we can fairly transition away from gas.

Failing to proactively and effectively address the decline of the network poses significant risk to consumers. Our Stepping Up report found that network prices on household gas bills would more than quadruple – from $280 per year today to $1,170 in 2050.[2] This is because, as consumers leave the gas network, the costs of maintaining and operating the network will be shared by an ever-decreasing pool of consumers, many or perhaps most of whom will be in profoundly vulnerable circumstances and least able to electrify.

Our report with Dynamic Analysis found that limiting any further spending on gas networks must be a priority for reducing the risks associated with stranded assets.[3] We are confident that these four proposed changes to the NGR are necessary to ensure any future spending is prudent and that consumer interests are being prosecuted in gas network planning arrangements.

The enclosed rule change proposal includes relevant detail and argument on the four rule change requests along with suggested drafting – as an appendix – for one (that is, requiring new consumers to pay the upfront costs of connecting to the network).

Throughout the development of these rule change proposals we have engaged with a range of stakeholders, including the AEMC, AEMO, AER, Commonwealth and jurisdictional departments, Energy Networks Australia, the Australian Energy Council, and other consumer advocates.

We sincerely thank members of your team who provided critical and constructive feedback on early drafts of the rule change requests. We also thank Kieran Donoghue from Newgrange Consulting and the Justice and Equity Centre, who provided essential support in the development of the enclosed proposals.

These rule changes are crucial to ensure that consumer interests are adequately protected in the transition from gas. We look forward to engaging with the Commission and other stakeholders throughout the rule change process. Please contact me should you wish to discuss further.

Yours sincerely

Brendan French

Brendan French
Chief Executive Officer

ENERGY CONSUMERS AUSTRALIA

Gas Distribution Network Rule Change Requests

DATE: 14/02/2025

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1 Rule Change Proponent Details

Brendan French
Chief Executive Officer
Energy Consumers Australia

2 Executive Summary

Net zero targets and the economic benefits of electrification for households have profound implications for gas distribution networks and create risks for gas consumers. Australian residential and commercial gas use is expected to decline 72% by 2043[1] and to be largely non-existent by 2050[2] as households and businesses electrify and leave the gas network.

The Commonwealth Government's Future Gas Strategy says "households and small businesses will have, for the most part, electrified by 2050"[3] as:

> *"Most households are likely to embrace opportunities to reduce their energy bills and emissions by switching from gas to electric appliances when existing appliances need replacing."*[4]

The Commonwealth has also provided funding to support this transition.[5]

Multiple analyses indicate that electric cooking, heating and hot water is cheaper across a wide range of household customers. In many cases, this holds even after accounting for appliance conversion costs; the cost advantage is even higher for new homes.

If households and small businesses take advantage of government incentives and realize the benefits of electrification, there are multiple impacts to gas distribution networks. As large numbers of users leave, many of their assets will become stranded – unused before their economic life ends. Furthermore, because households pay more than 90% of gas distribution network revenue, these networks may lack the funding necessary to pay for on-going operations.[6]

The impacts on gas consumers are just as significant. In a 2023 report for Energy Consumers Australia, CSIRO undertook modelling to determine the impacts to household energy bills under the Integrated System Plan's 'step change' or central planning scenario. The modelling showed that network prices on household gas bills would more than quadruple – from roughly $280/year today to $1,170 in 2050.[7] Overseas industry observers have noted that the price impacts could be even more severe. Ofgem, the British energy regulator, states that "network charges could rise by a factor of 10 within 20 years."[8]

The Commonwealth's *Future Gas Strategy* notes these issues and potential repercussions: "The rising cost of remaining on the reticulated gas network can provide the economic incentive to transition for those

[1] AEMO, 2024 Gas Statement of Opportunities (GSOO), Step Change Scenario accessed via gas forecasting data portal.
[2] Reedman, et. al., Multi-sector energy modelling 2022: Methodology and results: Final report, CSIRO Report No. EP2022-5553, Australia. P. 59
[3] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 38
[4] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 42
[5] For example via the Household Energy Upgrades Fund
[6] AER, 2022 Gas Network Performance Report, Figure 7-9.
[7] Graham, P., et. al., 2023, Consumer impacts of the energy transition: modelling report, CSIRO, Newcastle.
[8] Jan Rosenow, et. al. 2024 "The elephant in the room: How do we regulate gas transportation infrastructure as gas demand declines?, One Earth, Volume 7, Issue 7, pp. 1158-1161

able to control – and afford – the cost of switching. However, renters, those in community and social housing, and low-income households, have limited or no control over whether they electrify, even where they might want to transition."[9] Many if not all of these consumers are likely to be left using the gas network into the future.

Some are holding out for the possibility of widespread conversion of gas distribution networks to carry green hydrogen or biomethane. There are barriers to this happening at scale for low pressure networks: green hydrogen would be significantly more expensive than electrification while also requiring appliance conversion and multiple logistical challenges.[10;11] The total annual production potential for biomethane in Australia is 371 PJ – only 25% of annual domestic gas use.[12] Outside of residential and commercial users, the existing gas demand that must be decarbonised to meet 2050 net zero targets is 3 times larger than biomethane potential.[13] The feedstocks for biomethane are limited, and there are expected to be higher value uses for the scarce and expensive feedstock (e.g. aviation fuel, hard-to-abate industrial uses, gas powered generation) than household and small business use.

Even if some parts of the low-pressure gas network are still used by hard-to-electrify customers beyond net zero target dates, there is an overwhelming likelihood that large parts of the network will no longer be used. Recently, AusNet Gas Services stated the conclusion concisely in its application to the Australian Energy Regulator (AER) to reopen its access arrangement: "long term [gas] network decline is now inevitable".[14]

Despite this obvious and growing risk, current and recent regulatory processes have seen gas distribution networks continue to seek large capital expenditure (capex) allowances. In two cases (Multinet in Victoria and ATCO in Western Australia), allowed capex exceeds that of the previous period. Simultaneously, gas distribution networks have also sought accelerated depreciation allowances, protecting their investors against stranded asset risk by recovering revenue at a faster rate from customers. Gas distribution networks have also sought to introduce high abolishment fees ($800-$1,500), which serve to disincentivise customers from disconnecting from the network. In addition, the likelihood of future abolishment costs does not appear to be factored into relevant capex assessments, such as connections and replacement (repex).

This inconsistent approach to stranded asset risk is not in the long-term interest of consumers, who are losing all ways: being exposed to future stranded asset risk while paying for accelerated depreciation on existing assets. While the relevant regulators – the Australian Energy Regulator (AER) and the Economic Regulation Authority (ERA) of WA – have used their powers under the Rules to reduce capex claims, we are concerned that this does not result in a significant enough reduction in expenditure when the full context is considered.

Gas distribution networks have fewer information provision requirements compared to electricity networks.[15] While the electricity system has widespread planning requirements – the Integrated System Plan, Distribution Annual Planning Reports, and Regulatory Investment Tests for new investments – there

[9] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 41
[10] Rosenow, J. 2024, A meta-review of 54 studies on hydrogen heating. Cell Reports Sustainability
[11] Rosenow, J. 2022, Is heating homes with hydrogen all but a pipe dream? An evidence review.
[12] ECA analysis of DISR Future Gas Strategy Analytical Report and ARENA, Australia's Bioenergy Roadmap Appendix – Resource Availability, November 2021
[13] ECA analysis of DISR Future Gas Strategy Analytical Report and ARENA, Australia's Bioenergy Roadmap Appendix – Resource Availability, November 2021
[14] AusNet, Reopener cover letter, October 2024
[15] See Dynamic Analysis, Turning down the gas - Minimising consumer risk, September 2024 for an outline of the differences in data collected

is, in fact, no planning requirement on gas distribution networks. Despite facing a high degree of uncertainty, gas distribution networks have no requirement to develop and share plans for the expected future of their systems. Gas distribution networks do not share maps of their network indicating where many consumers still exist and where only few are left, nor do they make forward looking projections about where they anticipate disconnections to happen most quickly. They also fail to provide insights into gas pipelines that may require replacement beyond the five-year cycle of their existing access arrangement. Such information would be valuable to many stakeholders, including state, territory, and local governments and electricity distribution networks, who could use these insights to deliver a lower cost energy transition overall.

Regulatory change is urgently needed to reflect these growing risks and deficiencies in order to better meet the National Gas Objective (NGO).

Energy Consumers Australia has identified four key areas in which the National Gas Rules (NGR) should be amended to recognise and address these risks:

a. Amendment to the rules for new gas connections to require the connecting party to pay up front for their connection, to ensure other users of the gas network are not exposed to the risk of these connections becoming stranded assets.

b. New planning requirements for gas distribution networks, to ensure regulators, governments, electricity distribution networks and other stakeholders have the necessary information to better understand opportunities to minimise capital expenditure and overall energy system costs.

c. Amendment to the depreciation rules, to put stronger conditions around the ability of gas distribution networks to accelerate the depreciation of their regulated assets.

d. Amendment to the capital expenditure criteria rules, to ensure that declining use of the gas network is properly considered in evaluating whether a capital project is justifiable.

3 Applicability of rule change proposals

The focus of our rule change proposals is on gas distribution networks. Energy Consumers Australia represents household and small business energy consumers. In the context of reticulated gas, small users are connected to the low-pressure component of distribution networks. They outnumber large customers and pay the vast majority of distribution charges. Indeed, the best data available indicates that households alone pay more than 93% of the cost of the gas distribution network.[16]

While all gas distribution consumers indirectly pay transmission costs, they are a smaller part of the bill. Transmission costs are apportioned more broadly, including to some very large users connected directly to transmission pipelines. While gas transmission networks are not immune to the same issues that threaten distribution networks, they are a discrete topic that we have not explored in detail. Seventy percent of Australia's overall gas production is sent overseas, and it reaches port via transmission networks;[17] the impact on these facilities is not our focus or area of expertise. Other large consumers that connect directly to gas transmission networks use gas in ways that are less easily substitutable than gas consumed via the distribution network.

Two of the four rule change proposals – the accelerated depreciation and the capex proposals – are relevant only to scheme pipelines. Non-scheme pipelines are not price-regulated and do not have to seek regulatory approval to recover the costs of their capital expenditure. The other two proposals – the connections and planning proposals – are intended to apply to all distribution network pipelines.

[16] AER, 2022 Gas Network Performance Report, Figure 7-9.
[17] Geosciences Australia, Australia's Energy Commodity Resources 2024

4 Background

Australians have been aware of the need to reduce greenhouse gas emissions for several decades. Natural gas (methane) is a greenhouse gas with a global warming potential 28 times carbon-dioxide.[18] When combusted, it converts into carbon dioxide. Most of the gas that flows through their networks will be combusted (some is used as a feedstock for chemical processes) and thus contribute to climate change. Methane that leaks from gas pipelines contributes directly to climate change as well.

The more recent introduction of legislated net zero targets at both national and jurisdictional levels[19] has only crystallised the timeframes for decarbonisation rather than introduced it as a constraint. To facilitate achievement of these targets, Victoria[20] and ACT[21] have already introduced restrictions on gas network connections and incentives for gas users to switch to electric alternatives. In both cases, these policies are forecast to drive a significant reduction in reticulated gas use over the next decade. Four of the seven gas distribution networks subject to full regulation are in these jurisdictions (See Table 1).

Table 1: List of major gas distribution networks

Network	Jurisdiction	form of regulation	Jurisdictional policy	customers	km pipelines	RAB ($m)	regulatory period
Multinet	Vic	full	Gas Substitution Roadmap	719,436	10,143	1,300	1 Jul 2023 - 30 Jun 2028
Australian Gas Networks (Vic)	Vic	Scheme	Gas Substitution Roadmap	739,621	11,984	1,800	1 Jul 2023 - 30 Jun 2028
AusNet Services	Vic	Scheme	Gas Substitution Roadmap	778,752	12,337	1,800	1 Jul 2023 - 30 Jun 2028
Jemena Gas Networks	NSW	Scheme	n/a	1,476,686	25,481	3,400	1 Jul 2025 - 30 Jun 2030
Evoenergy	ACT/NSW	Scheme	Integrated Energy Plan	157,205	4,614	390	1 Jul 2022 - 30 Jun 2027
Australian Gas Networks (SA)	SA	Scheme	n/a	466,417	8,484	1,800	1 Jul 2022 - 30 Jun 2027

[18] Clean Energy Regulator, Global Warming Potential, updated March 2024
[19] AEMC, Targets statement for greenhouse gas emissions
[20] Victorian Government, Gas substitution Roadmap, 2022
[21] ACT Government, Canberra's electrification pathway

Mid-West and South-West Gas Distribution Systems (ATCO)	WA	Scheme	n/a	796,665	14,500	1,600	1 July 2025 – 30 June 2030
Allgas Energy	QLD	Non-scheme	n/a	100,000	3,218	n/a	N/a
AGN Queensland	QLD	Non-scheme	n/a	89,100	3,463	n/a	N/a
Tasmanian Gas Networks	TAS	Non-scheme	n/a	15,000	839	n/a	N/a

Source: AER, ERAWA, company websites

Given that jurisdictions without specific policies in place have net zero targets by 2050 at the latest we consider there are two realistic scenarios: either they will introduce relevant policies shortly, or they are confident that the economics of electric alternatives or customer sentiment will drive a switch away from gas by small customers. Other options include:

- that the gas system is decarbonised by other means, which is highly improbable as discussed further below; or
- that the net zero targets are missed or abandoned, which we do not consider an appropriate scenario to contemplate under the NGO.

In other words, it is reasonable to suppose that even in jurisdictions that have not at this time introduced policies aimed at reducing demand on the gas networks, that demand will fall in any case.

Indeed, this thesis is supported by relevant authorities and expert forecasters. According to the Australian Energy Market Operator (AEMO), residential and commercial gas use is expected to decline 72% by 2043[22]. In multiple studies, CSIRO, the national science agency, projects residential and commercial gas use to be largely non-existent by 2050 as households and businesses electrify and leave the gas network.[23;24]

The Climate Change Authority's recent Sector Pathways review asserts that "the long-term complete electrification of buildings is the optimal decarbonisation approach, and governments should develop strategies to efficiently and equitably realise this."[25] The Commonwealth Government's Future Gas Strategy says "households and small businesses will have, for the most part, electrified by 2050"[26]

The number of customers connecting to the gas network has slowed significantly in recent years.[27] An increasing number of property developers advertise themselves as building all-electric homes in response

[22] AEMO, 2024 Gas Statement of Opportunities (GSOO), Step Change Scenario accessed via gas forecasting data portal.
[23] Reedman, et. al., Multi-sector energy modelling 2022: Methodology and results: CSIRO Report No. EP2022-5553, Australia. P. 59
[24] Verikios, G. et. al, 2024, Modelling Sectoral Pathways to Net Zero Emissions, EP2024-4366, CSIRO, Australia.
[25] Climate Change Authority, Sector Pathways Review – Built Environment (2024), p. 13
[26] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 38
[27] Analysis of Essential Services Commission, Energy Market Dashboard and Australian Energy Regulator, Retail Energy Performance Updates - accessed July 2024

to climate and health concerns. AusNet, the largest Victorian gas network, recently stated that property developers active in their service area expect "around 85% of [new housing] lots…to be all-electric," even though many of these lots have planning permission to use gas.[28] Jemena, the largest gas distribution network in Australia, is forecasting customer numbers to decrease from 2028 due to slowing construction rates, changing building practices, and electrification trends.[29] Notably, they operate in NSW, where there is currently no state government policy prohibiting new gas connections.

There are clear financial benefits to consumers, particularly households, from electrifying. ECA's own analysis, incorporating detailed modelling by CSIRO, found that the average household in states covered by the National Electricity Market, would save by electrifying their gas use – and that these savings would grow over time. Their analysis found that the average household saved $290/year by electrifying their gas use in 2030, with benefits growing to $660/year and $810/year for households electrifying in 2040 and 2050, respectively. Households that have solar and therefore cheaper electricity would save more.[30]

The AEMC's own retail price projections support the thesis that electrification is in consumers' financial interests.[31] The Commission's most recent Price Trends report forecasts that "electrification (including transport) is projected to reduce average household energy costs by nearly $1,000 per year, or by almost 20% of current spending on energy."[32]

Multiple analyses over a decade have found similar results. It has been cost-effective for new homes to go all electric for several years, as can be seen from Table 2. Increasingly, retrofits of existing houses are cheaper across a wide range of household customers, even after accounting for appliance conversion costs. For example, in 2020 ACIL Allen modelling for the ACT determined that fuel switching was net present value positive for 10 of the 12 household archetypes modelled if the households did not have rooftop PV installed and 12/12 if they did have rooftop PV.[33]

The Grattan institute's 2023 analysis Flame out - the future of natural gas, found retrofits to be net present value positive across multiple jurisdictions and numbers of appliances, with only Perth homes with no gas heating returning a NPV negative outcome.[34]

Table 2: Selected analyses of costs and benefits of household electrification

Report	Author	Year	Retrofit/ New Build	Review process	Key takeouts
Household energy choice in the ACT – Modelling and analysis	ACIL Allen	2020	Retrofit	ACT	Many customer archetypes are financially better off, and all are if they have rooftop PV. Tariff structure changes could influence results
Saving money with efficient, all-electric homes	Renew	2022	new build	Inquiry into Renewable Energy in Victoria	New build cheaper for all-electric plus ongoing savings

[28] AusNet, Gas Access Arrangement Review 2024-28 Variation Proposal, September 2024, p. 8.
[29] Jemena, 2025 Draft Plan
[30] Graham, P. Consumer impacts of the energy transition: modelling report, CSIRO, Newcastle 2023.
[31] AEMC, Price Trends 2024 Final Report, November
[32] Ibid., p18
[33] ACIL Allen, Household energy choice in the ACT – Modelling and analysis, 2020
[34] Grattan, Flame out - the future of natural gas, 2023, Appendix

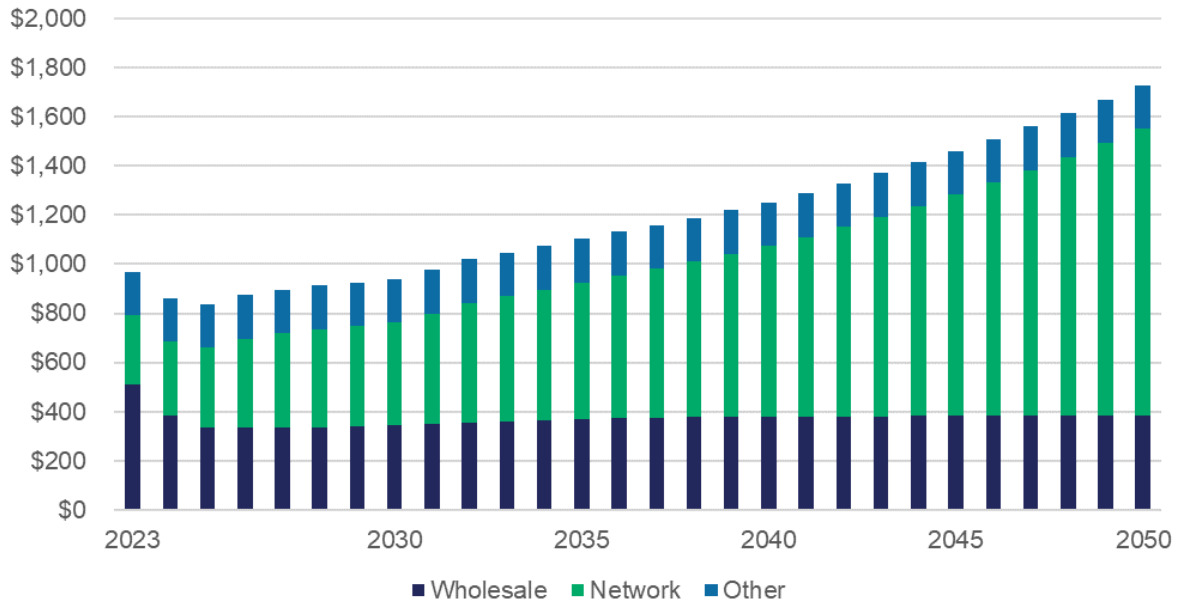
All-Electric New Homes Cost assessment	GHD	2022	new build	Victoria Gas Substitution Roadmap	All-electric lower cost and manageable on single phase
Are We Still Cooking with Gas?	Renew	2014	both	n/a	New homes cheaper to go all electric Existing homes dependent on multiple factors.
The Household Fuel Choice in the National Electricity Market	Renew	2018	both	n/a	New homes cheaper to go all electric. Existing homes dependent on various factors.
Flame out - the future of natural gas	Grattan	2020	New build	n/a	A new all-electric house is generally cheaper to live in than a dual-fuel house. Retrofitting was not specifically modelled.
Getting off gas: why, how, and who should pay?	Grattan	2023	both	n/a	Retrofitting NPV positive across all jurisdictions, with the exception of Perth homes without gas heating.
Castles and cars	Rewiring Australia	2021	retrofit	n/a	Large savings on average from electrification
Cost of switching from gas to electric appliances in the home	Frontier Economics	2022	retrofit	Gas Substitution Roadmap	Electrification could be costly, especially if replacing ducted heating, due to electrical upgrade costs

Source: Risks to gas consumers of declining gas demand, Boardroom Energy, February 2022, updated with some subsequent analyses

The economics of staying connected to gas will only get worse as other customers leave the network, and network charges per customer need to keep rising if gas distribution networks are to recover their costs. In a 2023 report for Energy Consumers Australia, CSIRO undertook modelling to determine the impacts to household energy bills under the Integrated System Plan's 'step change' or central planning scenario. The modelling showed that network prices on household gas bills would more than quadruple – from roughly $280/year today to $1,170 in 2050. Overseas industry observers have noted that the price impacts could be even more severe. Ofgem, the British energy regulator, states that "network charges could rise by a factor of 10 within 20 years."[35]

[35] Jan Rosenow, et. al. 2024 "The elephant in the room: How do we regulate gas transportation infrastructure as gas demand declines?, One Earth, Volume 7, Issue 7, pp. 1158-1161

Chart 1: Projected national average annual household gas bill with decreasing customer numbers



Source: CSIRO, Dynamic Analysis and ECA, Consumer impacts of the energy transition: modelling report, July 2023

These higher prices will inevitably cause more consumers to leave, creating a reinforcing spiral where prices continually increase until most remaining gas users are consumers without the agency or financial resources to leave the network. The precise timing and pace of the decline in gas demand is unknown. If gas consumers are especially price responsive and additional support is provided to go all electric, the decline could happen more quickly. If electricity prices remain high or increase and fewer consumers than expected adopt rooftop solar (reducing the prices they pay for electricity), then the decline may happen somewhat less dramatically.

The Commonwealth's *Future Gas Strategy* notes these issues and potential repercussions: "The rising cost of remaining on the reticulated gas network can provide the economic incentive to transition for those able to control – and afford – the cost of switching. However, renters, those in community and social housing, and low-income households, have limited or no control over whether they electrify, even where they might want to transition."[36]

We recognise that there are myriad challenges for consumers to electrify. The half (48%) of Australian households who rent or live in multi-family buildings will face additional barriers to going all electric. Renters rely on their landlord to invest in the necessary changes to enable electrification, but landlords have limited incentives to do so. Those in multi-unit buildings often rely on shared energy services, such as shared hot water provided by a central boiler. Large changes, such as shutting off gas supply, can require agreement from all unit owners in a building or complex.

Even detached owner-occupied houses can encounter barriers such as space limitations, wiring upgrades, and heritage listing. Barriers can also derive from people's personal circumstances, such as where they live, infirmity/disability, income, level of literacy, fluency in English, and access to internet and digital capabilities.

[36] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 41

While there is substantial research and evidence on the benefits for households to electrify, there is significantly less for small business. Large commercial and industrial customers may have fewer options for electrification (or finding some other net zero alternative to gas). Such customers are typically larger users and more likely to be connected to higher pressure parts of the network. It is certainly plausible (though by no means certain) that they may benefit from a renewable gas pathway to decarbonisation, and that there may be vestigial parts of the network retained to serve such customers.

However, there is no reason why other gas customers who will eventually electrify should underwrite a gas distribution network's transition to renewable gas. Conversely, if there is a small group of commercial users who still need reticulated gas, it's unlikely to be cost-effective for them to bear the full burden of cost recovery of assets that have been stranded due to other customers leaving the network.

We recognise that there are multiple factors that customers take account of in considering electrification. Some customers prefer gas for non-economic reasons and may continue to use it even as it becomes increasingly the costlier option. Such customers may prefer to use bottled gas if and when their part of the network is decommissioned or if reticulated gas becomes prohibitively expensive, provided they can do so safely at their premises.

As noted above, other customers may wish to switch but face barriers to doing so. We are especially concerned that such customers – often those least able to afford it – will bear the brunt of ever-increasing network charges if action is not taken now to find ways to reduce the costs gas networks can charge them.

Notwithstanding these factors, economic outcomes are a powerful driver and customer defection from gas networks will generate a positive feedback loop of higher gas prices making electric alternatives ever more financially attractive.

Some have suggested that renewable gases, particularly hydrogen and biomethane, can provide an enduring alternative to fossil gas for households and small businesses. Unfortunately, there is substantial evidence that renewable gas is not a viable solution for the main users of the gas distribution network: households and small businesses.

The Victorian Government identifies in its Industrial Renewable Gas Guarantee that electrification is the least cost alternative for household fossil gas use and will ensure any renewable gases are reserved for the most hard-to-abate industries. Their Directions Paper says: "Victoria's household energy consumption will be gradually decarbonised by electrification" while "renewable gases be deployed where there is no feasible decarbonisation alternative."[37] The ACT's Integrated Energy Plan also acknowledges renewable gases will only be used for some "niche applications."[38]

While many hope hydrogen has a role to play in replacing Australia's gas exports and some industrial gas use, the use of hydrogen by households and small businesses is economically inefficient and technically difficult. More than fifty independent studies on the use of hydrogen have concluded that hydrogen is inefficient and not recommended for heating buildings.[39] An exhaustive review of the peer-reviewed literature demonstrates that electrification is likely to always be more cost-effective than hydrogen.[40] It

[37] Victorian Government Department of Energy, Environment and Climate Action, Victorian Industrial Renewable Gas Guarantee Directions Paper, December 2024, p. 3.
[38] ACT Government, The Integrated Energy Plan 2024-2030, June 2024, p. 3.
[39] Rosenow, J. 2024, A meta-review of 54 studies on hydrogen heating. Cell Reports Sustainability
[40] Rosenow, J. 2022, Is heating homes with hydrogen all but a pipe dream? An evidence review.

cannot replace gas “in heating or consumer appliances above a 5 to 20 percent blend without enormous costs and disruption.”[41]

Unlike hydrogen, biomethane can operate without any modification to the existing gas network and is useable by existing gas appliances. Unfortunately, there is not enough domestic biomethane to replace Australia’s gas consumption. As a network-sponsored report summarises, “current projections of biomass in Australia indicate insufficient quantities will be produced to meet the scale required to entirely replace natural gas."[42] The Commonwealth’s Future Gas Strategy states: “biomethane is likely to be more valuable to gas users where electrification is not feasible.”[43]

According to the Bio-Energy Roadmap, the total annual production potential for biomethane in Australia is 371 PJ[44] – only 25% of annual domestic gas use.[45] Outside of residential and commercial users, the existing gas demand that must be decarbonised to meet 2050 net zero targets is 3 times larger than biomethane potential.[46] Australia’s limited biomethane supplies are likely to focus on this market because it is more difficult and expensive for it to electrify.

Today, biogas production is around 4TJ/year,[47] or 0.001 per cent of domestic gas consumption, and biogas will still need upgrading to biomethane. The infrastructure investment required for a biomethane future is also very significant – Jemena’s demonstration plant at Malabar is intended to have initial capacity of 95 terajoules of renewable gas per annum[48] (with no guarantee that production will reach that level). This is about equivalent to the average annual gas usage of 6,300[49] NSW homes. Even if there was enough feedstock, Jemena would need more than 200 such plants to supply all its household customers let alone its larger commercial and industrial customers. Meanwhile, as AEMO’s Integrated System Plan demonstrates, the electricity system is working to build the infrastructure required to meet the new load expected from electrifying gas.

Even if some parts of the low-pressure network are still used beyond net zero target dates (2045-2050 depending on the jurisdiction), the above analysis indicates that large parts of the network will no longer be used, and so there will be no customers left on those parts of the network to pay for any outstanding costs related to those parts of the network. Recently, AusNet Gas Services, one of the Victorian gas distribution networks stated in a letter to the AER what the above evidence demonstrates: “long term network decline is now inevitable.”[50]

An analogy commonly used in considering how monopoly networks should be regulated is that regulation should seek to mimic the pressures competition would exert in a competitive, unregulated market with a view to achieving similar outcomes. Accordingly, we consider it is reasonable to contemplate how a business such as a gas distribution network that was facing a permanent decline in demand would behave if it didn’t enjoy the regulatory protection of a regulated asset base (RAB). It would not assume that it would be able to recover costs through ongoing, exponential increases to its charges, given that many of its customers had viable alternative options.

[41] Sara Baldwin, et. al, “Assessing The Viability Of Hydrogen Proposals: Considerations For State Utility Regulators And Policymakers,” Energy Innovation, 2022.
[42] Deloitte, Decarbonising Australia’s gas distribution networks, December 2017, p. 79
[43] Australian Government Department of Industry, Science and Resources, Future Gas Strategy, 2024. p. 31
[44] Deloitte, Decarbonising Australia’s gas distribution networks, December 2017, p. 45
[45] DISR Future Gas Strategy Analytical Report
[46] DISR Future Gas Strategy Analytical Report
[47] https://arena.gov.au/knowledge-bank/biogas-opportunities-for-australia/
[48] https://www.jemena.com.au/future-energy/future-gas/Malabar-Biomethane-Injection-Plant/
[49] https://www.jemena.com.au/future-energy/future-gas/Malabar-Biomethane-Injection-Plant/
[50] Letter from David Smales, CEO Ausnet Services, to Clare Savage, Chair, AER, 30 September 2024.

A rational business in this situation would seek to reduce expenditure wherever possible, in particular minimising capex which might be difficult to recover in full over the longer term. In doing so, it would not neglect its statutory and regulatory obligations, but it would proactively seek change to those where they were an impediment to expenditure reduction and the underlying policy goals could be achieved more cost effectively. A corollary of this is that the network's customers would be better protected in the future against the risk of the business collapsing financially. This is the approach we consider that the gas distribution networks should be demonstrably taking, and the rules should be amended, to the extent they are able, to facilitate such an approach.

We have identified four key areas in which the NGR should be amended to better recognise and reduce the risks consumers face: connection fees, planning, depreciation, and capex criteria. We are proposing a rule change to address the issues with each of these areas. In sections 4-7 below we set out the issues, options and impacts of each of our proposed rule changes. We consider there is enough connection between each proposed rule change that the AEMC could engage in a single consultation process to consider all four. Equally we consider that each proposed change could be implemented independent of the others. We leave it to the AEMC to determine how best to consult on and consider these proposals.

In canvassing the issues as set out above, we are aware that some of these issues could be facilitated by a more holistic review of the relevant national laws and jurisdictional requirements as well as the NGR. For the avoidance of doubt, we consider that each of these rule change proposals has merit whether or not such other reforms eventuate, but we consider the benefits could be magnified with such reforms.

5 Accelerated depreciation

5.1 What is the issue to be addressed?

With the expected decline of gas customer numbers, gas distribution networks are facing the real prospect that some of the infrastructure they have invested in will become stranded. Our analysis found there is a risk that the Jemena network alone may face $2.1 billion of stranded assets in 2055.[51] This risk is, of course, exacerbated by any additional discretionary capital investment, much of which is currently proposed by gas networks despite acknowledging the underlying risk.

Gas distribution networks' response has been to propose the use of accelerated depreciation to reduce their stranded asset risk. The impact of accelerated depreciation is that gas consumers pay a greater share of the RAB now to reduce the amount to be paid – or lost by network businesses – later.

The gas distribution networks' underlying logic is that they must be able to recover the full cost of all their past and current investments, regardless of whether it is reasonable for them to do so in the context of a precipitous decline in the real value of distribution assets.

Fundamentally, the issue with the use of accelerated depreciation today is that it implies consumers are the only entity that must pay for the costs of stranded assets. While no one can state with certainty how the future of the gas distribution network will be negotiated, someone will have to pay for investments in gas distribution pipelines that are no longer useful and whose costs have not fully been recovered. There are three primary potential payers for these costs: gas consumers, network investors, and taxpayers.

As used today, accelerated depreciation makes gas consumers pay the costs of stranded assets, while imposing no costs (or write-downs) to network investors. While the AER and the NGR cannot directly compel governments to help pay the costs of stranded assets, it still holds that AER decisions on accelerated depreciation make consumers pay for stranded assets while other do not. Moreover, accelerated depreciation is shifting costs to consumers in an overarching environment or access arrangement in which gas distribution networks are not demonstrating full, good faith efforts to reduce asset stranding risk in the future.

However, there is no provision in the NGL or NGR which shifts the gas distribution networks' investment risk from their investors to consumers. Gas distribution networks are not automatically entitled to fully recover the costs of past investment that make up its RAB. The NGL only entitles gas distribution networks to a 'reasonable opportunity' to recover their efficient costs, and rule 85 indicates that in the case of redundancy or a decline in demand, full cost recovery is not automatic. Presumably, gas distribution networks do not wish to wait until asset redundancy (e.g. partial decommissioning) has occurred, in case the customer base by then is too small to fully recover any redundancy costs allowed by the regulator at that time.

Instead, gas distribution networks are taking advantage of Rule 89, which sets out the depreciation criteria through which service providers can recover the costs of their assets. This rule is being used to justify accelerated depreciation. While all five clauses of the rule must be met, it appears that clauses 1(b) and 1(c) are the main basis of their claims. These clauses set out that the depreciation schedule should be designed:

[51] Dynamic Analysis, Turning down the gas - Minimising consumer risk, September 2024

"(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;".

Conceivably, a gas distribution network could also cite clause 1(e) "to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs" but it does not appear that this is the rationale they are using.

The regulatory response has been to allow accelerated depreciation where they consider the gas distribution networks have demonstrated a risk of asset stranding due to declining use of the network, albeit the regulators have typically varied the amount allowed from what the gas distribution networks have proposed.

ERAWA has only recently issued its first decision on a gas distribution network seeking accelerated depreciation. Its approach has been informed by various considerations arising from the current rules:

- Managing the risk of stranding assets
- Reasonable opportunity to recover efficient costs
- Intergenerational equity and efficient pricing over time
- Financeability of investments for gas network services
- Supporting gas network utilisation and emissions reduction[52].

The AER's response has been informed by their analysis of stranded asset risk in the *Regulating gas pipelines under uncertainty* information paper.[53] This paper identified eight potential options (not including government support) that could be used to address such risks. To date, accelerated depreciation is the only one that has been used.

The AER appears to have adopted a heuristic that limits the amount of accelerated depreciation to an amount that does not result in material real price increases for customers. The AER describes this as a "price path approach" and considers it appropriate "because it allows the AER to balance accelerated depreciation price impacts on consumers and uncertainty around demand forecasts and policy developments."[54] The price path approach is not hard and fast - while at the draft decision stage of the Victorian gas distribution network 2023-28 Access Arrangements, the AER set a limit of 0 per cent real price increase, at the final decision it allowed a 1.5 per cent real increase.

Regardless of the arguable merits of this approach, it has the following implications:

- A price path approach cannot entirely reduce the asset stranding risk (see below for further discussion of the very limited effectiveness of accelerated depreciation in achieving this outcome).
- Because the constraint is based on price impacts in the short run, it avoids any consideration on what the split of stranded asset risk *should* be between gas distribution networks and their customers (let alone governments - noting that the AER cannot compel governments to contribute).

[52] ERAWA, Final Decision - Overview, November 2024
[53] AER, Regulating gas pipelines under uncertainty, November 2021
[54] AER, Multinet final decision

- Further, the constraint is influenced by the other components of the building blocks that go to make up the final decision. A gas distribution network with higher opex and capex (relative to its existing RAB) than its peers will thus be allowed less accelerated depreciation. This can be seen in the Victorian decision, where Multinet's accelerated depreciation allowance was considerably less as a proportion of its RAB than the other two gas distribution networks. This is because Multinet had a higher capex allowance, largely due to its more extensive repex program. In this instance, accelerated depreciation is being applied in a way that illustrates that it is not – on its own – able to avoid asset stranding, given that if Multinet has higher ongoing capex requirements, then it is at *greater* risk of asset stranding
- This characteristic of the price path approach could in principle serve as a useful incentive for gas distribution networks to take further steps to reduce their ongoing and future expenditure requirements. This would create greater "headroom" for higher levels of accelerated depreciation and thus lower their asset stranding risk. Further, it's unclear how effective this incentive is, given that it is not a hard and fast rule. While any reduction in capex has the potential to reduce stranding asset risk, for consumers any potential savings would be offset by higher levels of accelerated depreciation. In other words, the only outcome is for consumers to lose.

In any case, accelerated depreciation - whether or not it is constrained by a price path approach does not in itself fully address stranded asset risk. Modelling carried out for ECA by Dynamic Analysis based on Jemena's Draft Plan found that Jemena's proposed accelerated depreciation would result in a typical customer paying about $130 more over the 2026-30 period, while only leading to a ten per cent reduction in the RAB by 2055 (from $2.3 billion to $2.1 billion)[55]. A ten per cent reduction in the asset base at risk of stranding does little at all to protect customers from any adverse consequences arising from asset stranding, such as gas distribution networks experiencing financial distress such that safe and reliable supply is compromised.

Other tools are required to protect customers from such consequences. In the UK, Ofgem applies a "financial ringfence" and other licence conditions designed to ensure continuity of supply during a period of financial distress.

Accelerated depreciation takes potential future stranding costs from a gas network and shifts it to consumers. The AER has previously approved some accelerated depreciation for Victorian and ACT gas networks, framing this as a shift in costs from consumers in the future to consumers today, albeit while also recognising the potential for assets to become economically stranded. But if there are no consumers in the future – or not enough for the network business to remain viable – then the cost shift is not between consumers; it is asking today's consumers to reduce the losses a gas network's investors face in the future. We recognize that regulators are in a difficult position, as they must navigate the future of the gas network in the absence of broader policy response to the challenge of declining gas network use.

Accelerated depreciation is an incomplete and, as exercised today, unfair policy response to the challenge of the retreat of gas networks. Accelerated depreciation might be part of the long-term policy to reduce the costs and risks of the gas distribution network, but only if the gas distribution network business is making a real, consistent effort to reduce the overall risk of its own investments and its ongoing ability to finance them.

In other words, we think accelerated depreciation should only be a reasonable option if there are other criteria and frameworks in place that help reduce costs and risks for consumers. We also consider that it is only one component of an effective package of policies and regulations, noting that some if not most of

[55]ECA and Dynamic Analysis, Turning Down the Gas: Reducing consumer risk, commissioned by ECA, September 2024

these components will lie outside the NGR. The absence of any clauses in the rules explicitly tying accelerated depreciation to clear evidence of other activity consistent with concern that assets could be stranded has precluded regulators applying such criteria themselves. In other words, while we accept that they have discretion to vary the amount of depreciation proposed, this discretion does not extend to making accelerated depreciation contingent on other actions by the networks.

5.2 What options have been considered?

There are a range of potential options that could mitigate this issue. Our preferred option is contingent accelerated depreciation. Accelerated depreciation would be an available expense category if certain conditions are met. We consider that the most appropriate conditions are those that ensure consumers are protected from being unavoidably exposed to higher prices arising from accelerated depreciation. That is, that there are appropriate policies in place that adequately protect customers from stranded asset risk, as a quid pro quo for them paying to help protect gas distribution networks' investors from this risk. These could include:

- policies or regulations that ensure existing customers do not bear the cost of any new connections that are still allowed;
- data collection and sharing on gas disconnections from the gas network with the electricity distribution network and state and local government;
- established policies for ensuring sufficient funding to support permanent consumer disconnection and overall gas network decommissioning, and;
- the gas distribution network demonstrating that they have written down the value of their assets to demonstrate that they are incurring the same or similar costs as their consumers.

While not all off these conditions are directly in the hands of the gas distribution networks to implement, it would create an effective incentive for gas distribution networks to advocate for such policies on behalf of their customers. Indeed, the NGR could create criteria based on the gas distribution network's public statements and advocacy for creating a more certain and stable policy environment to help reduce consumer risk arising from their declining network. Further criteria could be based on demonstrable actions and behaviour by a gas distribution network that are consistent with a service provider that is facing a material risk of stranded assets. These could include:

- conservative assumptions about effective asset lives and demand projections in cost benefit assessments;
- a reduction in debt gearing;
- active consideration of non-network options such as demand management or decommissioning; and
- engagement with the jurisdictional safety regulator on how to meet safety requirements while minimising investment.

This is not necessarily an exhaustive list, and we would welcome suggestions from other stakeholders of any other relevant indicators.

Additionally, we are concerned that a clause in the rules that refers to a service provider's "reasonable needs for cash flow" contains unwelcome ambiguity and should be removed.

A simpler approach would be to introduce a prohibition on varying the depreciation rates for existing assets. Gas distribution networks have chosen their asset lives based on an assessment at the time of investment of how long those assets will be economically useful.

Australia has participated in international climate negotiations since the 1980s, and has had emissions reduction commitments for many years, including

- a domestic climate change target since 1990;
- ratifying the Kyoto Protocol in 2007;
- making Nationally Determined Contributions (NDCs) of progressively greater ambition in 2010, 2015 and 2022.

Accordingly, gas distribution networks have been aware for many years that emissions reduction will affect their business. Consequently, they should bear the risks of making inadequate or poor decisions during this period. However, this approach may be unduly inflexible. It may also shift gas distribution networks' focus onto other levers to bring forward revenue.

In summary, Energy Consumers Australia believes that accelerated depreciation may be a necessary, though unwelcome, tool that should be retained by the regulator, but there must be significantly greater scrutiny placed on its use to ensure consumers are effectively protected from the costs of future stranded assets while requiring them to pay for stranded assets costs now. At most it could be one tool to be utilised with great care alongside others; it cannot be the *only* tool, as it demonstrably is now.

5.3 Description of the proposed changes to the rules

To give effect to our preferred option in the rules, it is necessary to amend Rule 89 to set out the criteria under which accelerated depreciation may be allowed. The important elements of this are set out below.

An amendment to subrule 1a) both to remove the presumption of growth by removing the words "promotes efficient growth in the market for reference services"; and to limit the allocation of depreciation to customers to only that which is fair and reasonable for them to bear. This in turn requires a change to subrule 1e) to ensure that "reasonable needs for cash flow" cannot be construed in a way that obliges customers to fund cash flow beyond what is fair and reasonable for them to bear.

An amendment to subrule 1c) to limit changes in asset lives to circumstances where the relevant conditions have been met (as set out in subrule 3).

The deletion of the current subrule 2, which we consider is only appropriate in a context of ongoing demand growth.

The addition of a new subrule 3 that sets out the conditions on which an adjustment in asset lives (as described in subrule 1c) may be allowed. The kinds of conditions we envisage are along the lines of:

(a) where the relevant legislation or regulations of a participating jurisdiction support strategic decommissioning and electrification; and

(b) there is no connections expenditure in the Distributor's conforming capex; and

(c) the Distributor has published its Gas Annual Planning Report by the GAPR date; and

(d) the factors that have led to the proposed adjustment to the economic life of the assets are also recognized in the forecast of conforming capital expenditure; and

(e) the Distributor has demonstrated a reduction in the value of the RAB incurred by investors that is commensurate with the cost of accelerated depreciation.

We recognise that item (c) is contingent on the success of our fourth rule change introducing a Gas Annual Planning Report. More broadly, we recognise that the drafting of this subrule will likely entail some new terms that would require definition either here or in one of the general definitional rules.

5.4 How will ECA's preferred option address the issue?

Our preferred option addresses the issue by ensuring that gas distribution networks cannot claim accelerated depreciation without also explicitly and transparently factoring in the underlying basis of this claim into their expenditure proposals and also customer funding for renewable gas development. These positions are mutually inconsistent and illustrate the need for greater rigour to be applied via the rules to gas distribution network expenditure plans.

Clearer constraints on when accelerated depreciation applies also signals to the gas distribution networks that they should evaluate stranding asset risk on all new expenditure and so serves as an incentive for them to better orient their capex programs to a declining customer base. It also only allows consumers to pay for accelerated depreciation when network investors themselves have demonstrated that they are bearing a reasonable proportion of the crystallised investment risk – as investors in any other declining business would expect to do. In short, it better aligns gas distribution network interests with consumer interests than the current approach.

5.5 How do these rule changes contribute to the achievement of the NGO?

The changes will advance the long-term interest of customers by facilitating more efficient investment and operation of the pipelines, which is in the long-term interests of consumers of covered gas with respect to price. Specifically, it will protect them against the use of accelerated depreciation solely to protect network investors (since accelerated depreciation will not fundamentally change the long-term risks of stranded assets) and also by strengthening the incentive for gas distribution networks to better orient their spending plans to the context of a declining network.

The rule change will not have any impact on the safety, reliability and security of the gas network. It does not preclude the gas distribution networks carrying out necessary expenditure to maintain the network in line with these requirements. Given that accelerated depreciation alone is not sufficient to protect against asset stranding, it also does not materially impact any risk to their ability to do so in the future.

5.6 What are the costs, benefits and other impacts of the rule changes?

Costs

There are no obvious direct costs to this rule change, as it focuses on how sunk costs are allocated. Noting that stranded asset risk is not considered a systemic risk in the financial sense, there is no reason to suppose that gas distribution networks' cost of capital will be materially affected, especially since there is still scope for accelerated depreciation as long as the conditions are met.

Benefits

The benefits are that customers will be less exposed to risks they are not well placed to manage, in this instance the risks of stranded assets. It will promote a fairer approach to deciding who pays for stranded assets, and in this way could be argued to increase consumer trust in and support for the energy transition. Other things being equal, this change will also likely drive less overall discretionary expenditure on gas networks. It should constrain if not reduce network prices.

Impacts

We would expect there to be some impacts on jurisdictional regulation of networks, as networks will be more strongly incentivised to seek regulatory changes that allow them to minimise expenditure while still meeting underlying policy goals. Indeed, the rule change may help networks bring governments to the table to negotiate a long-term plan for the health of the gas network, ensuring that households and small businesses pay a fair and affordable price for gas as long as they use it. The rule change could help catalyse discussions that create more long-term certainty on the future of gas distribution networks, providing a more orderly transition for all parties.

There may be impacts on network investors if the initial impact of the rule change is to constrain accelerated depreciation, as it may expose them further to the consequences of stranded assets in the long term. But, as we have explained above, accelerated depreciation alone is not enough to protect them against these consequences, and any incremental exposure can be mitigated by the network activity and potential regulatory reforms we are seeking to catalyse through this rule change.

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