SACOSS
South Australian Council of Social Service

SACOSS' Submission to the *Australian Gas Networks regulatory framework review 2026-2031 Issues Paper*

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SACOSS' Submission to the Australian Gas Networks regulatory framework review 2026-2031 – Issues Paper

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The South Australian Council of Social Service (SACOSS) welcomes the opportunity to respond to ESCOSA's Issues Paper on the Australian Gas Networks (AGN) regulatory framework review 2026-2031. SACOSS is the peak body for non-government, not-for-profit health and community services in South Australia, with a mission to advocate for the interests of people on low incomes or experiencing disadvantage across the state.

We note that the aim of this review is to ensure the Commission, in its regulation of AGN, continues to protect the long-term interests of consumers with respect to the price, quality, and reliability of gas as an essential service in South Australia.

In our feedback, SACOSS will focus on the future of gas in South Australia and identify emerging issues that need to be addressed (some of which are flagged in the Issues Paper). We suggest that there are some fundamental questions that need to be addressed to ensure an equitable and affordable energy transition for our state. SACOSS recognises that, as identified in the Issues Paper, the Commission does not have a position on the long-term role of gas and gas distribution networks in South Australia's energy transition. However, SACOSS thinks it is important to consider the future of gas and the gas network when reviewing the regulatory network – particularly to ensure that it allows for equity and affordability alongside consumer protections for vulnerable consumers.

The future of gas

Our key concern lies in energy affordability for South Australian households being increasingly compromised by residential gas use. Electrification, fuel-switching, demand flexibility, energy efficiency and broader emissions reduction actions mean that the future of gas in households must be one of rapid retreat. We strongly suggest that regulatory frameworks need to not only recognise but enable and prioritise this rapid retreat – otherwise the necessary and inevitable retreat from gas will be slower, inconsistent, more expensive and unfair and result in poor outcomes for South Australian consumers, particularly those experiencing disadvantage such as low-income households, renters and people in rural and remote communities.

Without a clear and well-communicated roadmap for the future of gas networks, and regulation that will enable their swift retreat, some consumers risk being stranded with escalating network costs, and unusable or expensive gas appliances, exacerbating inequality.

South Australia is in a unique position in terms of decarbonizing residential gas use, as we have a lower penetration of homes connected to gas and are less reliant on it for heating. Approximately 450,000 or 56 per cent of South Australian households are currently connected to the gas network. South Australia has the highest percentage of connected homes with gas hot water (91 per cent of connected homes or approx. 409,500 households). This presents a

unique opportunity for accelerating the energy transition via switching from gas to hot water heat pumps, which are more efficient and can be set to heating in the middle of the day to shift demand from peak periods and soak up excess solar. Further, as only 22 per cent of gas connected households in South Australia use gas heating (approx. 99,000 households), our winter gas peak is very low and converting all gas use to electricity would only increase peak electricity demand by 2 per cent.[1]

Jurisdiction	Homes connected to gas ('000)	Percentage of homes connected to gas	Average household gas consumption (GJ pa)	Percentage of connected homes with gas heating	Percentage of connected homes with gas hot water
ACT	153	73%	33	64%	70%
NSW	1,491	43%	20	39%	78%
QLD	211	10%	9	4%	>90%
SA	450	56%	17	22%	91%
TAS	13	5%	30	83%	69%
VIC	2,089	76%	54	78%	90%
WA	757	68%	13	37%	87%

Source: Residential baseline study, ENA

Figure 1: Australian residential gas use by jurisdiction. Source: ENA

Acting earlier and decisively will give South Australia the best opportunity to meet our net zero goals and ensure that no one is left behind in the energy transition. In terms of the future role of gas, there has been an evolving body of work examining the risk of gas consumers being stranded on the gas network and bearing the brunt of rising network costs as more people transition away from gas.[2] Low-income households, renters, those living in apartments, and culturally and linguistically diverse customers in particular are likely to face higher barriers in transitioning away from gas.

As more people shift away from gas and electrify, residential gas demand is likely to decline, increasing costs for the remaining customers on the gas network. If there is a material decline in gas demand and fewer customers to share the fixed network costs, increased network costs are likely to prompt more people to shift away from gas (likely those who can afford it) creating

[1]Grattan Institute (2020) Flame Out: The Future of Natural Gas, https://grattan.edu.au/wp-content/uploads/2020/11/Flame-out-Grattan-report.pdf, p. 47

[2] ACTCOSS (2023) A just gas transition in the ACT, https://actcoss.org.au/publication/report-a-just-gas-transition-in-the-act/; Boardroom Energy (2022) Risks to gas consumers of declining demand, https://energyconsumersaustralia.com.au/wp-content/uploads/230109_Report_Risks-to-gas-consumers-of-declining-gas-demand_final.pdf; AER (2021) Regulating gas pipelines under uncertainty – Information paper, https://www.aer.gov.au/system/files/AER%20Information%20Paper%20-%20Regulating%20gas%20pipelines%20under%20uncertainty%20-%2015%20November%202021.pdf; IEEFA (2023) 'Renewable gas' campaigns leave Victorian gas distribution networks and consumers at risk, HYPERLINK "https://ieefa.org/media/3904/download?attachment"https://ieefa.org/media/3904/download?attachment

a ‘death spiral’. Recent modelling by CSIRO suggests that without changes to how network costs are recovered, the network component of gas bills across the NEM will increase from roughly 30 per cent of the total gas bill in 2030 to almost 70 per cent in 2050.[3] (See Figure below).

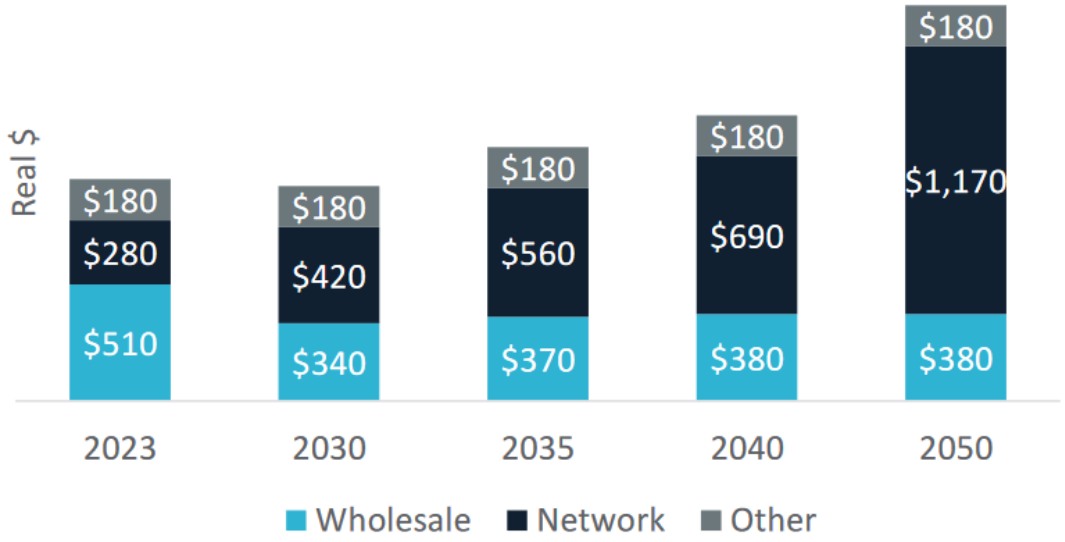

Figure 2: Projected average annual households gas bill in the NEM. Source: CSIRO (2023)

While modelling across such a time scale can be fraught, it does demonstrate the magnitude of the issue facing consumers who are unable to transition away from gas. Mismanaging the future of gas networks will have a significant and disproportionate impact on low-income households and those facing barriers to electrification, locking people into energy poverty. Without a long-term plan and policy leadership, we risk leaving behind those with the least resources to manage the energy transition.

This is further supported by modelling from the Institute for Energy Economics and Financial Analysis (IEEFA) which highlights the savings present to South Australian households for getting off gas – where the average cost for household gas per GJ gas is $51.53, whereas the average cost for running electric appliances is $24.84 per GJ of gas replaced. It is estimated that if the yearly amount of gas appliances installed in South Australia was switched to electric appliances, South Australians would save $108 million in upfront and lifetime running costs[4]. It is therefore our view that regulation needs to better enable households to make this switch. Part of this

[3] CSIRO (2023) Consumer impacts of the energy transition: modelling report, https://energyconsumersaustralia.com.au/wp-content/uploads/CSIRO-Technical-Report-Stepping-Up.pdf, p. 22

[4] IEEFA (2024) As gas bills rise in South Australia, all-electric homes are the most cost-effective solution https://ieefa.org/resources/fact-sheet-gas-bills-rise-south-australia-all-electric-homes-are-most-cost-effective

should be the consideration of capping gas network disconnection costs, as has become practice in Victoria as part of Victoria's Gas Substitution Roadmap[5].

Reporting from the APA, Australian Gas Infrastructure Group (AGIG) and Jemena concede that that 'low-carbon gas' might only be a viable option for *some* existing gas-using households in a net-zero future, acknowledging that for "new builds, in the central case it would be lower cost to electrify as gas appliance removal and disconnection costs are not applicable."[6] This presents another equity dilemma around who should pay for a 'low-carbon' gas future and how costs are recovered – between current or future customers; or between gas consumers and investors, particularly if future gas networks are more likely to favour industrial use.[7]

In South Australia, approximately 75 percent of the gas distribution network's revenue was recovered from residential households in 2021-22. This is despite residential demand being roughly on par with industrial loads, although this could be in part due to some information around certain industrial customers have been marked as commercial in confidence in the performance reporting. Nevertheless, the implication is clear – current and future residential households will bear the risk of the gas transition, unless there is a significant policy shift. Further, the burden of future costs is likely to fall on low-income households and those facing barriers to switching to electricity.

AGN (SA) 2021-22	**Demand (GJ)**	**Customer Numbers**	**Revenue ($, nominal)**	**Revenue (%)**
Residential	7,526,767	454,966	179,693,442	74.6%
Commercial	3,304,917	11,338	31,849,131	13.2%
Industrial	8,550,750	113	29,306,383	12.2%
Total	**19,382,434**	**466,417**	**240,848,955**	100.0%

Figure 3: Australian Gas Networks (SA) Revenue recovery by consumer type, 2021-22. Source: SACOSS analysis of share of revenue recovery from each tariff type based on 2021-22 performance reporting for AGN (SA) [8]

The prudent, no-regrets policy answer would therefore be to minimise unnecessary costs and the risk of stranded assets by limiting new connections. As noted by the Grattan Institute,

[5] Victoria State Government (2023) Gas Substitution Roadmap Update https://www.energy.vic.gov.au/renewable-energy/victorias-gas-substitution-roadmap

[6] https://www.apa.com.au/globalassets/media-statements/2023/230814-rogiet-summary-article.pdf, p. 13, 7

[7] See Ron-Ben David (2023) Regulatory over-reach in the energy transition. A case study: Gas tariffs for further discussion on this

[8] Australian Gas Networks (SA) Gas pipeline information - RIN responses (2022), https://www.aer.gov.au/networks-pipelines/performance-reporting/australian-gas-networks-sa-gas-pipeline-information-rin-responses

> "If new connections to the gas network continue to grow – it's like pouring water into a bucket with a hole. Before they start encouraging homes to get off gas, state governments should do two things.
>
> First, they should set a date by which residential network gas use in their state will end. This may be the same as its net-zero target date. It may have limited exceptions where eliminating gas use look unusually difficult […] But setting a clear date creates certainty for homeowners, tenants, building managers, and gas network businesses."[9]

Although not a current policy, the South Australian Government has not ruled out a moratorium on gas connections for new residential builds, following a recent announcement in Victoria.[10] Recent analysis of jurisdictional policies has highlighted that South Australia does not currently have specific targets or goals for the gas network as part of its decarbonisation policies or a clear roadmap to get there.[11] As noted above, South Australia is a unique jurisdiction and what is appropriate for Victoria and the ACT may not be fully transferrable to our context.

ACT have a head start compared to other jurisdictions, with their latest position paper outlining a phased approach which essentially gives the ACT more than twenty years to plan for an orderly transition away from fossil gas.[12] The ACT example demonstrates the advantage of early, decisive action to ensure that the costs of transition are borne equitably. It is worth noting that the current ACT strategy does not rule out the potential for renewable gases for specific uses where electrification is not a viable option. SACOSS suggests that there are lessons to learn from the ACT's regulatory approach to transitioning away from gas, and highlights in particular regulation that prevents new fossil gas network connections in most areas. There is a need to limit the growth of new gas connections, particularly as there is a risk with new developments lending themselves to increased costs to consumers to maintain an expanded network, and grow the potential pool of consumers stranded on an increasingly expensive

[9] Grattan (2023) Getting off gas: why, how, and who should pay? https://grattan.edu.au/wp-content/uploads/2023/06/Getting-off-gas-why-how-and-who-should-pay.pdf

[10] https://indaily.com.au/news/2023/07/31/premier-eyes-hydrogen-fix-for-home-gas-connections/

[11] https://energyconsumersaustralia.com.au/wp-content/uploads/230109_Report_Risks-to-gas-consumers-of-declining-gas-demand_final.pdf

[12] ACT Government (2023) Developing ACT's Integrated Energy Plan – Position Paper, https://hdp-au-prod-app-act-yoursay-files.s3.ap-southeast-2.amazonaws.com/1216/9138/6293/Integrated_Energy_Plan_Position_Paper_ACCESS_FA2.pdf

network. For this reason, SACOSS has called for a ban on new gas connections for new developments[13].

Ambitious targets are needed to provide certainty for consumers, regulators, investors and gas businesses, the regulatory framework is a key tool in enabling those targets to be delivered.

Existing regulations of gas businesses, particularly gas network businesses, are not consistent with climate change policies nor with energy affordability, as outlined above. Put simply, they are not capable of delivering investment and use of energy that is in the long-term interests of consumers. Existing legislation, regulation and governance is predicated on supporting investment in expanding gas networks and increasing gas utilisation. Within the context of a regulatory framework review, it is essential to prioritise an equitable shrinking of the gas network rather than seeking to facilitate its expansion.

Considering the role of hydrogen

We note as well that the ESCOSA Issues Paper points to an emerging discussion around the potential integration of hydrogen gas.

SACOSS believes that green hydrogen should only be pursued and prioritised in no-regrets situations and hard-to-abate sectors where there is a lack of alternative decarbonization options.

The International Renewable Energy Agency (IRENA) have analysed the uses cases of green hydrogen by considering the technological readiness of hydrogen against other decarbonisation solutions such as electrification (see Figure below). They have identified industrial uses such as production of green steel, ammonia products, chemical processes and refineries, and international shipping as high priority applications. High-grade heat applications are considered a medium priority area as either electrification and/or green hydrogen could be used. There are a range of applications where there are already commercially and technologically viable decarbonisation alternatives to hydrogen such as for transport options.

[13] SACOSS (2022) Submission to the 2022 Planning Review https://www.sacoss.org.au/submission-2022-planning-review

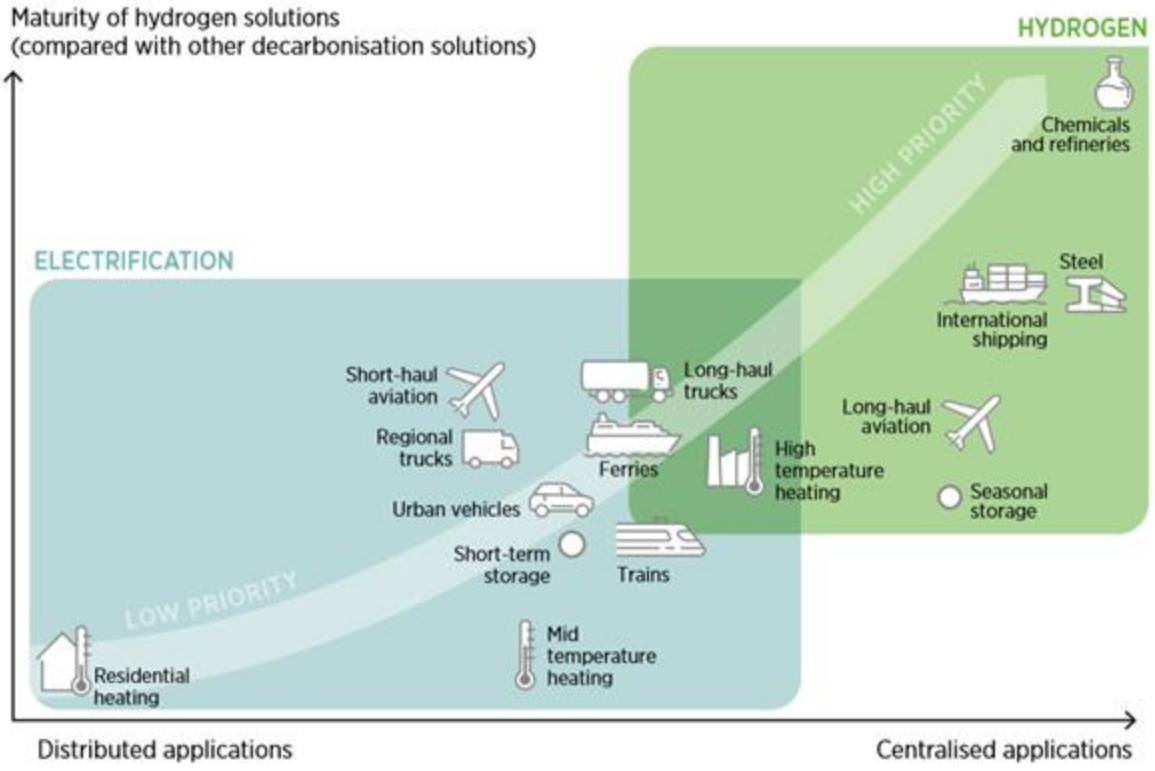

Figure 4: Comparison of technological readiness of hydrogen vs. electrification and potential size of hydrogen demand. Source: IRENA (2022)[14]

A no-regrets vision for hydrogen infrastructure needs to focus on uses where it is best placed to meet South Australia's net-zero goals. SACOSS does not support the widespread adoption of blended hydrogen in reticulated gas networks. Current evidence suggests that South Australia's gas distribution network can only safely support blends of up to 10 per cent hydrogen by volume[15]. While hydrogen blending in gas networks is currently being trialled in some jurisdictions, they are in the nascent stages, including the current 5 per cent blend in Hydrogen Park South Australia. It is worth noting that due to the lower energy density of hydrogen, a 5 per cent hydrogen blend by volume is equivalent to approximately 1.5 per cent by energy content[16]. This means that the current emissions reduction capacity of "renewable hydrogen" is

[14] IRENA (2022) Green Hydrogen for Industry – a guide to policy making https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Mar/IRENA_Green_Hydrogen_Industry_2022_.pdf?rev=720f138dbfc44e30a2224b476b6dfb77

[15] GPA Engineering for the Government of South Australian in partnership with Future fuels CRC on behalf of the COAG Energy Council. (2019) Hydrogen in gas distribution networks, https://www.dcceew.gov.au/sites/default/files/documents/nhs-hydrogen-in-the-gas-distribution-networks-report-2019.pdf

[16] Frontier Economics (2020) Indicative analysis of blending hydrogen in gas networks, https://www.dcceew.gov.au/sites/default/files/documents/nhs-hydrogen-in-the-gas-distribution-networks-report-2019.pdf

relatively trivial – even a theoretically feasible 20 per cent renewable hydrogen blend would only deliver 6 per cent emissions reduction.

We note that the gas networks have a stretch target of full decarbonisation of its gas networks by 2040 (or 2050 at the latest)[17]. However, there is little detail in the jump from 10 per cent renewable hydrogen in 2030 to full conversion by 2040.

Pursuing hydrogen in situations where there are already economic and technically viable alternatives for decarbonisation (I.e., electrification), risks delaying the energy transition and driving up costs for consumers. Even studies cited by gas network and related interest groups as evidence of the long-term cost competitiveness of green hydrogen for distribution networks raise several limitations and uncertainties around the blending to 100 per cent hydrogen pathway. For example, the Clean Energy Finance Corporation (CEFC) study[18] cited in the Australian Gas Infrastructure Group (AGIG)'s submission to Victoria's Gas Substitution Roadmap[19] notes that:

- Hydrogen blending concentrations above 50% are not currently considered feasible in existing distribution networks due to increased impact on safety, leakage and material integrity. Adding more than 50% hydrogen to a distribution pipeline yields a significant increase in overall risk due to increase in probability and severity of ignition and explosion scenarios.
- Blending hydrogen into the existing natural gas distribution network at low concentrations, less than 10% hydrogen by volume, is generally considered viable without significantly increasing risks associated with utilisation, overall public safety, or the durability and integrity of the existing natural gas pipeline network.

The study goes on to conclude that "the blending of hydrogen into natural gas networks is considered to have moderate dependence on hydrogen for decarbonisation, with a rating of 5 out of 10. Other alternatives, such as electrification and 100% hydrogen networks, are likely to be more important." Curiously, the economic gap analysis / capacity to pay metrics were not determined for the 100% hydrogen gas network scenario because these are not the "ultimate end-users".[20] There remains very little detail on how the above technical and safety issues around hydrogen blending will be resolved. Further, there is significant uncertainty around costs for the residential use of hydrogen gas – though IEEFA estimates that the current cost

[17] Energy Networks Australia (2020) Gas Vision 2050, https://www.energynetworks.com.au/projects/gas-vision-2050/

[18] CEFC (2021) Australian Hydrogen Market Study, https://www.cefc.com.au/media/nkmljvkc/australian-hydrogen-market-study.pdf

[19] Ibid

[20] Ibid

would be around $141 per GJ of hydrogen used in a home[21]. This would indicate that it is not a cost-effective energy source for the home and as such SACOSS would not support regulations that would encourage residential use of hydrogen – particularly given the necessary costs to upgrade existing distribution networks and home appliances to be compatible with higher blends of hydrogen.

Similarly, the Australian Industry Energy Transitions Initiative[22] cited in the AGIG submission focuses on decarbonizing the 'hard-to-abate' industrial sectors such as steel, aluminium, liquified natural gas, other metals (e.g. copper, nickel and lithium) and chemicals (e.g. fertilisers and explosives).

The level of uncertainty in the cost, timing and magnitude of Australia's prospective hydrogen economy has led to AEMO replacing its 'Hydrogen Superpower' scenario with a 'Green Energy Exports' scenario, where the role of hydrogen has been scaled down .[23] Put simply, South Australia does not have time to wait for hydrogen to be proved to be economic for residential use cases – nor should we, in SACOSS' view, be pursuing regulation that would enable this at the expense of residential electrification.

If you have any questions in relation to this submission, please contact Malwina Wyra at malwina@sacoss.org.au or 8305 4228.

Yours sincerely,

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[21] Ibid

[22] Australian Industry Energy Transitions Initiative https://energytransitionsinitiative.org/

[23] AEMO (2023) 2023 Inputs, Assumptions and Scenarios Report https://aemo.com.au/-/media/files/major-publications/isp/2023/2023-inputs-assumptions-and-scenarios-report.pdf?la=en