

## How pipelines help keep energy prices down

The cost of transporting energy is a key factor in ensuring energy affordability for Australian consumers and industry. Energy sources are often located far from homes and businesses, and energy infrastructure will continue to be important for security of supply. The lower the costs of transporting the energy used in Australia, the lower the total cost of energy will be.

Transporting natural and renewable gases is cheaper than electricity transmission in Australia, with pipeline infrastructure essential to delivering low-cost energy to Australians now and in a net-zero future. An independent study demonstrated energy transported through new natural gas or hydrogen pipelines costs significantly less than energy transport via new HVAC and HVDC powerlines.

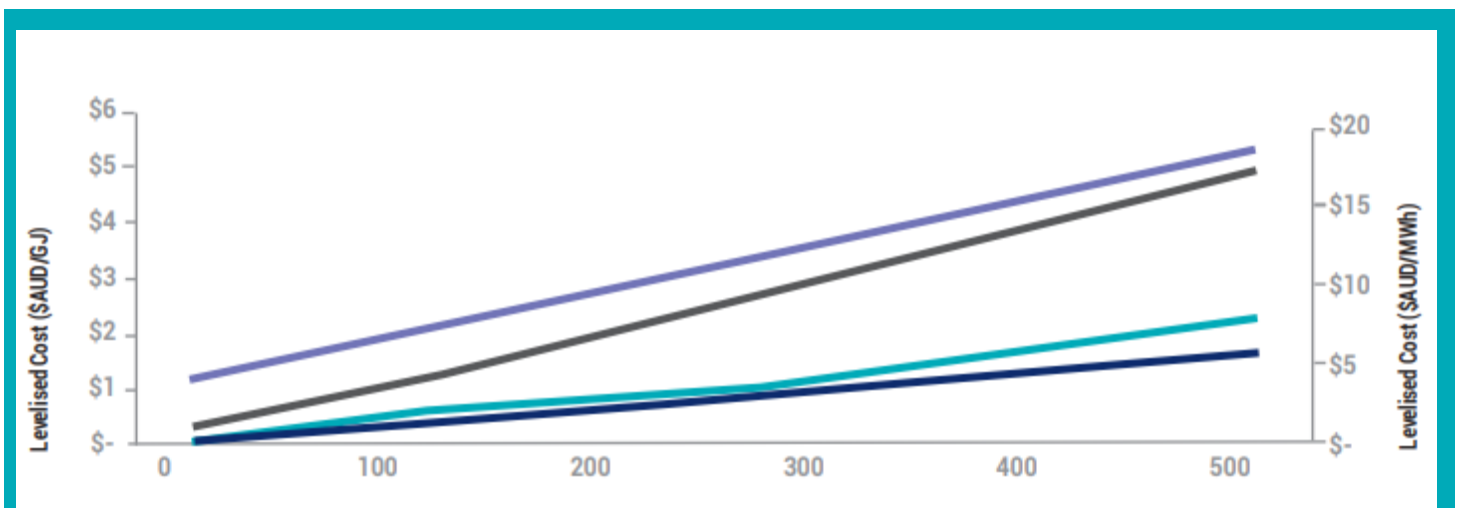
Repurposing existing natural gas pipelines for natural gas/hydrogen blends or pure hydrogen could further reduce transport costs in the immediate term. The technical feasibility of repurposing pipelines is complex and undergoing further research. The Future Fuels Cooperative Research Centre and other organisations are undertaking this valuable research into Australia's renewable gas future.

Pipeline energy transport affords significant benefits to Australian consumers from a cost perspective, as well as having reduced environmental impacts and improved safety for landowners with minimal risk of causing bushfire events in the event of an infrastructure asset failure. Additionally, the reliability of pipeline infrastructure is significantly higher than powerlines, with

powerlines experiencing 10 times more loss of supply events than pipelines over the past decade [2].

The ability to store energy in gas pipelines is also a key benefit as one piece of infrastructure serves as both energy transport and energy storage. Powerlines can only transport energy, with energy storage (such as batteries) an additional cost. This is partly why gas infrastructure can support larger variations in energy demand than electricity infrastructure at a lower total cost [3].

As Australia transitions to a decarbonised future, it is clear that pipelines will continue to be the lowest cost option for transporting the large volumes of energy required by Australian households and businesses across the expanse of the Australian continent.



**Figure 1: Levelised Cost of Transport**  
(50TJ/day | 580MW | 350t/day H2)

## References:

- 1 [State of the Energy Market - Retail energy markets, Australian Energy Regulator 2021](https://www.aer.gov.au/system/files/State%20of%20the%20energy%20market%202021%20-%20Chapter%206%20-%20Retail%20energy%20markets.pdf)  
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- 2 Pipelines vs Powerlines: a summary, Australian Pipelines and Gas Association 2022  
[https://www.apga.org.au/sites/default/files/uploaded-content/field\\_f\\_content\\_file/pipelines\\_vs\\_powerlines\\_-\\_a\\_summary.pdf](https://www.apga.org.au/sites/default/files/uploaded-content/field_f_content_file/pipelines_vs_powerlines_-_a_summary.pdf)
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<https://www.aer.gov.au/>
- 4 L. Welder, P. Stenzel, N. Ebersbach, P. Markewitz, M. Robinius, B. Emonts, D. Stolten Design and evaluation of hydrogen electricity reconversion pathways in national energy systems using spatially and temporally resolved energy system optimization Int. J. Hydrogen Energy (2019), 10.1016/j.ijhydene.2018.11.194

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