

Grand opportunities for Australia's hydrogen industry – and for a strategic regional rebalancing

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In Australia, 2019 should be remembered for crystallising a set of unprecedented economic, environmental and geostrategic opportunities — opportunities that could ignite a techno-industrial revolution and establish Australia as a renewable hydrogen superpower.



On the economic and environmental front, seizing this opportunity means Australia could rapidly revive and decarbonise its economy while meeting [East Asia's growing appetite](#) ^[1] for zero-emissions energy solutions. On the geostrategic front, by pursuing a renewable hydrogen revolution, Australia could reduce its dependence on imported liquid fossil fuels — a key source of energy insecurity and [a major strategic concern](#) ^[2]. Australia could also [rebalance its regional economic relationships](#) ^[3], reducing its export dependence on China and strengthening its trade and investment ties with Japan, South Korea and, perhaps most crucially, ASEAN.

These new opportunities have emerged in the context of [Japan](#) ^[4] and [South Korea's](#) ^[5] decision to transform themselves into 'hydrogen societies' by 2050. These countries aspire to solve their pressing environmental, energy and economic security challenges and usher in a new era of sustainable growth and techno-industrial competitiveness.

Japan and South Korea's national hydrogen strategies clearly articulate these ambitions and are backed by massive investments in the research, development and commercialisation of clean hydrogen-related technologies. Japan and South Korea have also been investing heavily in developing international clean hydrogen supply chains.

This is where Australia comes in.

Japan and South Korea have recently emerged as [major supporters of Australia's emergent renewable hydrogen industry](#) ^[6]. Australia's appeal as a clean hydrogen partner for these countries is obvious. Australia's abundant water, wind and solar resources, its technological know-how and its established track record as a trusted energy exporter give it a clear advantage over other countries looking to enter the renewable hydrogen race.

The sheer scale of the economic and environmental opportunities involved are well appreciated among Australia's policy and political elite at both federal and state levels, and are outlined in Australia's recently released [National Hydrogen Strategy](#) ^[7]. The Strategy estimates that by expanding a clean hydrogen industry, Australia could dramatically reduce its fossil-fuelled energy imports and vastly expand its clean energy exports, helping to create approximately 7600 skilled and semi-skilled jobs and adding about AU\$11 billion (US\$7.6 million) each year to Australia's GDP to 2050.

These figures do not include the possibility that rapid technological advances could reduce costs and expand market opportunities much more rapidly than anticipated. This means the estimated economic benefits could be even greater: an additional 10,000 jobs and at least AU\$26 billion per year in GDP.

Then there is the additional boon of the revival of Australia's techno-industrial base likely to flow from the rapid reduction in local energy prices. These falls would make energy-intensive manufacturing viable for Australia and enable the reshoring of its long-lost materials-processing industries. As [Ross Garnaut](#) ^[8] recently emphasised, Australia could again emerge as a world-leading exporter of (clean) steel and aluminium, derived from green hydrogen use in place of coal. This would further diversify Australia's value-added export base, opening up new market opportunities abroad.

Still, the path to Australia's renewable hydrogen superpower status is not obstacle free. Government and business must collaborate closely to address technical challenges and major infrastructure costs. But the Strategy is equally clear on how these challenges and costs can be managed, not least through major efforts centred on techno-industrial clustering and domestic demand creation.

The Strategy also revealed the deep divisions that continue to plague energy policy in Australia. On [one side](#) ^[9] stand those who view renewable hydrogen as the only 'clean hydrogen' worth pursuing — an opportunity to break with Australia's fossil-fuelled past and to seize a leadership role in the global renewable energy transition.

[On the other](#) ^[10] side stand those who view 'clean hydrogen' as a lifeline for Australia's coal and gas industries and insist that hydrogen derived from coal and gas with carbon capture and storage is 'clean'.

[The final draft of the Strategy highlights these divisions](#) ^[11]. While the introduction embraces 'technological neutrality', a number of Australia's states declare their intention to focus on

renewable hydrogen. Only New South Wales and Victoria hold the line on the broader definition of ‘clean’ — perhaps unsurprising given their established gas and coal production activities.

But the pro-renewables faction did secure a win in establishing as a key goal of the Strategy the development of a clean hydrogen certification system, which would make it possible for end-users to determine if the ‘clean hydrogen’ they are purchasing is truly zero-emissions. Having this system adopted at the international level will be a key challenge for Australian policymakers in 2020 and beyond.

The ultimate challenge will be resolving the fossil-fuel versus renewable debate in Australia once and for all. While the Federal government’s generous definition of ‘clean hydrogen’ might be an economic and political winner in the short-term, in the long-term it is likely to hamper Australia’s quest to establish itself as a clean energy powerhouse and reshape its regional relationships.

In particular, by renouncing thermal coal and advocating a rapid global renewable shift, Australia now has an unprecedented opportunity to compete with China in the ASEAN energy space. While China is pursuing a domestic clean energy shift, its investments in energy-hungry ASEAN are growing dramatically but [remain overwhelmingly focussed on coal](#)^[12].

The benefits of deepening Australia’s economic relationships with ASEAN are more than economic, they respond to an important geostrategic opportunity as well. But to fully grasp these opportunities, Australian policymakers need to think long and hard about the true meaning of ‘clean’.

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URL to article: <https://www.eastasiaforum.org/?p=222897>

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[6] major supporters of Australia's emergent renewable hydrogen

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[7] *National Hydrogen Strategy*:

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[8] Ross Garnaut: <https://www.blackincbooks.com.au/books/superpower>

[9] one side:

<https://reneweconomy.com.au/finkels-national-hydrogen-strategy-gets-green-light-but-coal-should-be-lifeline-for-coal-69939/>

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[11] The final draft of the Strategy highlights these divisions:

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[12] remain overwhelmingly focussed on coal:

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