

16<sup>th</sup> October 2023

Renewable Hydrogen Unit  
Department of Jobs, Tourism, Science and Innovation  
Government of Western Australia  
Level 11, 1 William Street  
PERTH WA 6000

To the Renewable Hydrogen Unit,

**Re: Western Australia Renewable Hydrogen Strategy Refresh**

The Australian Hydrogen Council (AHC) is the peak body for the hydrogen industry, with over 100 members from across the hydrogen value chain. Our members are at the forefront of Australia's hydrogen industry, developing the technology, skills and partnerships necessary to ensure that hydrogen plays a meaningful role in decarbonising Australian industry.

AHC welcomes the opportunity to respond to the Western Australia Renewable Hydrogen Strategy Refresh. Hydrogen will be necessary across Australia, especially to enable the decarbonisation of hard to abate sectors. However, hydrogen is far from commercial. Without significant planning, policy support and investment, the scale will not be available when needed.

AHC recently developed a paper<sup>1</sup> in response to the 2023 National Hydrogen Strategy consultation process. Our paper provides a comprehensive record of the current hydrogen policy state of play and provides recommendations for next steps. We suggest that the Renewable Hydrogen Unit reviews the paper to engage with the issues and steps to get hydrogen to scale to support Western Australian needs in the energy transition. For initial reference, we have provided the 53 recommendations grouped by topic as an appendix to this letter.

Getting hydrogen to the scale required for Western Australia will be an enormous task, with competition for inputs at each point, and competition for the hydrogen from multiple sectors of the economy.

There is a need to plan and engage across portfolios and jurisdictions in new ways. Energy, transport, environment, water, industry and workforce need to essentially work together on master planning for the next several decades for new technologies, new supply chains, new equipment and skilled up workers.

Bringing these issues together to plan is a complex task. This is why one of the key priorities and immediately actionable recommendations in our paper is the implementation of Hydrogen (or low carbon) Economic Zones. It is easier to manage and deliver complexity with some boundaries; Hydrogen Economic Zones go beyond Clusters or Hubs to foster more intensive engagement between parties, such as ports, electricity and workforce planning.

We also recommend that the Renewable Hydrogen Unit work closely with the National Hydrogen Strategy team within the Department of Climate Change, Energy, the Environment and Water to ensure that a coordinated approach is undertaken. Especially as hydrogen stakeholders are currently experiencing consultation fatigue between all sectors and jurisdictions, it would be beneficial to review

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<sup>1</sup> AHC (2023) *A fit-for-purpose refreshed National Hydrogen Strategy: next steps for building Australia's hydrogen industry*, August, <https://h2council.com.au/ahc-publications/>.

the feedback to the National Hydrogen Strategy Refresh and undergo targeted consultation on the topics and enablers specific to Western Australia and outside the scope of the national strategy, once this is published.

In terms of what the Western Australian Government can implement outside of our paper's coordinated, national approach, there are a series of levers ranging from ambition and timing, to realising the government's potential to drive transition, as well as provide confidence through financial and non-financial mechanisms.

A strong hydrogen strategy combines practicality, ambition, enablers, funding, and is itself a signal of seriousness to domestic and international stakeholders. It needs to provide confidence and mitigate risk to attract investment and transition. We recognise the significant developments already undertaken by the Western Australian Government and acknowledge that the consultation paper produced identified the shifts in national and international visions and research. However, this strategy needs to be supported with a mix of carrots and sticks. In the first instance, this vision could be stronger by utilising an action plan complete with timelines, targets and measurable activities. We note that international parties are observing Australia and looking for prime locations to invest, and the hydrogen strategies are an integral forum to compare ambition and results. Therefore, it is vital that Western Australia finds the balance for ambitious yet practical actions for the hydrogen strategy that are measurable, objectively demonstrating progress and viability.

These actions should include financial and non-financial levers, be this concerning emissions reduction targets, subsidies, grants, fuel efficiency standards, or committed funding to close the gap, etc. These should be developed to align with international milestones and should incorporate the lessons and tactics from other jurisdictions. Please review our paper for comprehensive context and recommendations to develop these mechanisms.

One way that the state can further show seriousness is to personally drive the market. There is an opportunity to leverage state capabilities to produce and buy (supply and/or demand) hydrogen, its derivatives, or associated technologies. Examples across Australia include the state-owned Stanwell Corporation in Queensland where the government is sharing risk and investment with international organisations to develop domestic and international supply chains, or the South Australian Jobs Plan where the government is being a first mover in building a hydrogen production facility to incentivise fast followers.

Alternatively, states can use their procurement powers to support technology and demand. For example, we are seeing this in Victoria through the Zero Emission Bus Transition, where the state is mandating that all new buses purchased from 2025 will be zero emissions. This is having a flow on effect of transition impacting depots, refuelling and recharging infrastructure, training programs and could even help clarify total cost of ownership data for zero emissions bus technologies.

These are some key examples across Australia which reflect different risk appetites, strategies and levers that the states can influence.

Western Australia has already proven to be a key location and player in the hydrogen ecosystem of Australia, which means that there is potentially a lot more to gain, but also a lot to lose. The factors mentioned already are all the more important to consider given the acute challenges in Western Australia, particularly regarding workforce. The isolation from other states prevents mobility of workers across jurisdictions and consequently, the workforce will be self-contained or rely on FIFO, compounded by the rural nature of much of the state (eg the Pilbara). This presents challenges to the social licence of hydrogen (and renewable energy more broadly) where social infrastructure may not support these

fluctuating communities, and these factors increase the competition for skilled workers which is already forecast to be in deficit of the volume required. Furthermore, a low mobility or FIFO workforce significantly increases labour costs, further impacting competitiveness. Net Zero Australia modelled these challenges when regional cost modifiers were applied to all jurisdictions and subsequently the model showed that the hydrogen projects migrated from Western Australia to South Australia and the east coast.<sup>2</sup>

At this stage, planning is crucial to Western Australia addressing and mitigating these concerns. For example, the Renewable Hydrogen Unit should consider managing the development of the hydrogen industry alongside decarbonisation planning more broadly. We recommend that Western Australia collaborates with other states to develop a workforce strategy, utilising proven lessons and tactics while not duplicating work. We also encourage the Renewable Hydrogen Unit to engage with the Queensland Energy and Jobs Plan<sup>3</sup> and Renewable Energy Zone Roadmap<sup>4</sup> as examples of best practice. Western Australia must use all the tools at its disposal to address workforce concerns, as this is paramount to the success of a Renewable Hydrogen Strategy.

We thank you again for the opportunity to respond to the Western Australia Renewable Hydrogen Strategy Refresh and look forward to further developments on this strategy.

If you wish to discuss any element of this in further detail, please contact me at [ncerexhe@h2council.com.au](mailto:ncerexhe@h2council.com.au).

Yours sincerely,

**Natasha Cerexhe**  
Policy Officer  
**Australian Hydrogen Council**

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<sup>2</sup> Net Zero Australia (2023) *Final modelling results*, April, <https://www.netzeroaustralia.net.au/wp-content/uploads/2023/04/Net-Zero-Australia-final-results-full-results-pack-19-April-23.pdf>.

<sup>3</sup> Queensland Government (2022) *Queensland Energy and Jobs Plan*, September, [https://www.epw.qld.gov.au/data/assets/pdf\\_file/0031/32989/queensland-energy-and-jobs-plan-overview.pdf](https://www.epw.qld.gov.au/data/assets/pdf_file/0031/32989/queensland-energy-and-jobs-plan-overview.pdf).

<sup>4</sup> Queensland Government (2023) *2023 Queensland Renewable Energy Zone Roadmap*, July, [https://www.epw.qld.gov.au/data/assets/pdf\\_file/0019/36037/draft-2023-queensland-rez-roadmap.pdf](https://www.epw.qld.gov.au/data/assets/pdf_file/0019/36037/draft-2023-queensland-rez-roadmap.pdf).

## APPENDIX A: Recommendations from AHC's response to the National Hydrogen Strategy Refresh

### Government role

Topic	Recommendation	Section of paper
Overall	<b>Recommendation 1:</b> Commit to significant market making and ecosystem building in the public interest	2.1
	<b>Recommendation 2:</b> Task the Net Zero Economy Agency with overseeing the implementation of the refreshed NHS.	2.1
	<b>Recommendation 10:</b> Support the refreshed NHS with public implementation plans and stakeholder engagement.	2.3

### Priorities

Topic	Recommendation	Section of paper
Domestic	<b>Recommendation 6:</b> Prioritise hard to abate and scalable domestic demand sources.	2.2
Export	<b>Recommendation 7:</b> Support hydrogen for export as an energy vector and for value added products such as green iron.	2.2
Emissions	<b>Recommendation 21:</b> Remain open to blue hydrogen for regions that can support it without unnecessarily delaying renewable hydrogen developments.	4.2

### Targets

Topic	Recommendation	Section of paper
Targets	<b>Recommendation 9:</b> Set hydrogen targets for 2030 and 2040, with a range for 2050.	2.3

### Analysis

Topic	Recommendation	Section of paper
Overall	<b>Recommendation 3:</b> Task the Net Zero Economy Agency to oversee a rolling programme of industry analysis to support ecosystem planning.	2.1
Costs	<b>Recommendation 4:</b> Task the Net Zero Economy Agency to oversee an assessment of cost and clarify investment needs from the public and private sectors.	2.1
NHIA	<b>Recommendation 5:</b> Extend and re-run the NHIA analysis to support decision-making for the refreshed NHS.	2.1

Topic	Recommendation	Section of paper
	<b>Recommendation 29:</b> Ensure a refreshed NHIA addresses refuelling infrastructure.	4.2
<b>Supply chain</b>	<b>Recommendation 8:</b> Assess Australia's hydrogen supply chain risks and opportunities.	2.2
<b>Energy</b>	<b>Recommendation 20:</b> Develop consistent energy planning scenarios and cost recovery mechanisms by connecting AEMO, AEMC and energy regulators with the Net Zero Economy Agency and the refreshed NHS.	4.2
	<b>Recommendation 52:</b> Undertake a full energy market and grid impact analysis for wide scale adoption of electrolysers as flexible load in the electricity grid.	5.4
<b>Water</b>	<b>Recommendation 22:</b> Develop a national assessment of hydrogen industry water needs and required planning to meet the revised NHS objectives and support long-term water security.	4.2
<b>Pipelines</b>	<b>Recommendation 23:</b> Develop a national assessment of hydrogen pipeline corridors, easements, and route alignment.	4.2
<b>Ports</b>	<b>Recommendation 24:</b> Develop a national assessment of port capability to meet the revised NHS objectives and targets.	4.2
<b>Storage</b>	<b>Recommendation 27:</b> Develop a national assessment of hydrogen storage needs for different purposes, timeframes, and locations.	4.2
<b>Workforce</b>	<b>Recommendation 34:</b> Undertake capacity gap analyses to support regional development.	4.3
<b>RD&amp;D</b>	<b>Recommendation 39:</b> Develop and articulate RD&D priorities for hydrogen.	4.3
<b>Regulation</b>	<b>Recommendation 42:</b> Undertake and publish a regulatory gap analysis and programme of reform.	4.3
<b>Shipping</b>	<b>Recommendation 51:</b> Develop a national assessment of shipping routes and refuelling requirements.	5.3
<b>Aviation</b>	<b>Recommendation 53:</b> Work with the Department of Infrastructure, Transport, Regional Development, Communications and the Arts and its Jet Zero Council to consider the next steps for hydrogen for SAF production, using the CSIRO Futures report.	5.5

## Ecosystem, engagement and implementation

### *Tier 1: Short term implementation priorities*

Topic	Recommendation	Section of paper
Overall	<b>Recommendation 15:</b> Create Hydrogen Economic Zones to support regional hydrogen initiatives and connect the relevant supply, demand, infrastructure and workforce.	4.1
	<b>Recommendation 31:</b> Boost Australian Government ability to attract and deploy private capital.	4.3
Emissions	<b>Recommendation 46:</b> Clarify the next steps and fast-track the process to implement the GO scheme.	4.3
Export	<b>Recommendation 11:</b> Support the refreshed NHS through a clear investment proposition.	3.1
	<b>Recommendation 12:</b> Develop joint support packages between Australia and its trading partners to support trade in hydrogen and hydrogen derivatives.	3.1
	<b>Recommendation 13:</b> Explicitly locate hydrogen production and use within the current international agreements on critical minerals.	3.3
	<b>Recommendation 14:</b> Actively seek risk and information sharing opportunities with like-minded international partners.	3.3
Industry capability	<b>Recommendation 38:</b> Create a 'one stop shop' and case management to assist with funding and permissions.	4.3
Ports	<b>Recommendation 26:</b> Commit to a funding envelope for ports.	4.2
Storage	<b>Recommendation 28:</b> Commit to a funding envelope for common user storage.	4.2
Heavy transport	<b>Recommendation 30:</b> Commit to a funding envelope for refuelling infrastructure.	4.2
	<b>Recommendation 48:</b> Support hydrogen in heavy road transport with a national ZLEV strategy, fleet trials, transition funds, and either a heavy vehicle fuel efficiency standard or sales target.	5.1
Industrial sectors	<b>Recommendation 49:</b> Attract private investment for hard-to-abate industrial processes.	5.2

**Tier 2: Medium term implementation priorities**

Topic	Recommendation	Section of paper
Community	<b>Recommendation 32:</b> Support a new programme of work on community water values and hydrogen awareness.	4.3
	<b>Recommendation 33:</b> Develop messages and communications support for the refreshed NHS to roll out to all governments and industry.	4.3
	<b>Recommendation 45:</b> Work with AEMC and AER on cost and price models to ensure affordable energy bills.	4.3
Industry capability	<b>Recommendation 36:</b> Support a lessons learned repository through CSIRO's Knowledge Hub.	4.3
	<b>Recommendation 37:</b> Support the Australian Hydrogen Council to expand the scope of HyCapability.	4.3
	<b>Recommendation 16:</b> Support a nationally connected and coordinated regional network facilitated by the Australian Hydrogen Council.	4.1
	<b>Recommendation 17:</b> Support Business Renewables Centre Australia to expand its remit and create hydrogen specific modules.	4.1
Supply chain	<b>Recommendation 18:</b> Support the development of domestic electrolyser production and assembly through a domestic manufacturing package.	4.2
	<b>Recommendation 19:</b> Secure supplies of raw materials (e.g., nickel and platinum group metals) and other key components.	4.2
Workforce	<b>Recommendation 35:</b> Drive coordination of competency standards and training packages for hydrogen.	4.3
RD&D	<b>Recommendation 40:</b> Work with CSIRO and the Chief Scientist, and other RD&D leaders to deliver hydrogen RD&D priorities and knowledge sharing.	4.3
	<b>Recommendation 41:</b> Establish common testing and prototyping infrastructure.	4.3
Ports	<b>Recommendation 25:</b> Select and support ports with existing industry connections to be demonstration ports.	4.2
Heavy transport	<b>Recommendation 43:</b> Harmonise Australian heavy vehicle regulation with international standards.	4.3
Industrial sectors	<b>Recommendation 44:</b> Develop harm prevention regulations to support industrial sectors.	4.3
	<b>Recommendation 47:</b> Support Australian-made clean products in hard-to-abate industries, supported by government procurement.	4.3
	<b>Recommendation 50:</b> Develop bespoke packages for other early adopters in high temperature process heating.	5.2