AUSTRALIAN HYDROGEN COUNCIL

Unlocking Australia's hydrogen opportunity

Australian Hydrogen Council

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The Australian Hydrogen Council

The Australian Hydrogen Council, or AHC, is the peak body for the emerging hydrogen industry.

We represent the emerging hydrogen industry and connect it with its stakeholders to collectively create a clean and resilient energy future that has hydrogen as a key part of the energy mix.

Our members are companies from the energy, transport, technology, consulting and financial sectors.

Executive summary

We have an enormous opportunity in this country to create a vibrant hydrogen industry, both for domestic and export use.

Australia has the renewable energy resources, the technical skills, and the track record with international partners to become a global hydrogen leader.

Meeting Australia's stated hydrogen objectives requires strong national leadership to plan, collaborate and communicate with partners and stakeholders. Government must drive and lead the creation of the clean hydrogen industry. With the world moving to net zero there is no real alternative.

Planning is vital

An Australian hydrogen industry will require large-scale electrolysers, renewable electricity, hydrogen storage, water and water pipelines, electricity infrastructure, CCS as appropriate, and hydrogen pipelines (which may be repurposed from existing pipelines). Industrial and port facilities will need to be developed to process and export hydrogen and its derivatives, including ammonia. Mineral and chemical companies will invest in new production processes, and transport and logistics companies will procure new vehicle technologies. Refuelling stations will be required to supply hydrogen for vehicles. Households and businesses can convert from gas and oil-based fuels to hydrogen or electricity for heating and mobility.

Each of these elements will have its own costs, dependencies, and engineering reality, which in turn affects the business case for different means of producing, storing, transporting and using hydrogen. Several elements will also have long timeframes for project design, feasibility and planning.

Impacts on local economies will also need to be understood and planned for, as will important community (and societal) questions about competing uses for land and water, and priorities for infrastructure for different purposes. The emerging industry will require a fit-for-purpose regulatory approach with the flexibility to work across sectors and jurisdictions.

The task ahead will thus need whole-of-economy planning that addresses multiple hydrogen production, delivery and use pathways, and lays the foundation for regulatory developments and community engagement.

Comprehensive and published planning information – defined here as projections and assessments of future energy supply and demand pathways to net zero – would assist governments, the private sector and the public to make informed decisions about their options and actions.

Funding key applications will develop the market

The hydrogen industry is not yet commercial and considerable investment is required. It is likely that capital investments to produce hydrogen alone could run to tens of billions of dollars.

Until the industry has reached commercial scale, grant funding is essential. Public investment will unlock several times its value from the private sector.

In the short to medium term, it is worth prioritising funding for applications that are more dependent on clean hydrogen for decarbonisation and have a medium economic gap to commerciality. If we can close the economic gap (and technology and knowledge gaps in some cases) for applications like ammonia production and heavy transport, we start to see the new hydrogen domestic industry take shape. Further, if we can drive large sources of new demand, which could be production of steel, ammonia and other chemicals for local and particularly export markets, as well as blending into natural gas networks, we will start to see scale and reduced costs.

Focussing on building scale and capability in the sectors and applications that will be hard to abate without hydrogen is the best 'no regrets' approach that can be taken in an uncertain environment. This approach should also actively build room for other applications that might value hydrogen at lower prices and with an established (and shared) infrastructure.

Recommendation 1: Plan in the national interest

We recommend that the Australian Government establishes a body to develop an evidence-based approach to planning and coordinating the transition to net zero – including the development of hydrogen infrastructure – and reporting progress. An initial annual budget of approximately A$10 million would be required.

Recommendation 2: Establish a Net Zero Fund

We recommend that the Australian Government establishes a Net Zero Fund, with an initial allocation of A$10 billion and a top up of A$1 billion each year to 2030. Drawdowns should be decided in response to planning and market soundings.

Recommendation 3: Prioritise hard to abate and scalable demand sources

We recommend that the Australian Government prioritises project funding to grow demand for hydrogen in the applications that are more likely to require clean hydrogen to decarbonise, and more likely to achieve large scale. Ideally these should demonstrate an ability to open the market to other applications, through knowledge/ technology sharing, geographic proximity, and/or cost reduction. Recommendations 6 and 8 provide further information on these priorities.

Recommendation 4: Build sector coupling into planning

We recommend that the Australian Government explicitly tasks the planning body under Recommendation 1 to address how the gas and electricity infrastructure can be co-optimised for delivering lowest cost hydrogen to end consumers.

Recommendation 5: Blend hydrogen into natural gas to create demand

We recommend that the Australian Government sets a target of 10 per cent hydrogen by volume in the natural gas networks, by 2030.

Recommendation 6: Trial heavy transport

We recommend that the Australian Government funds:

- At least two heavy vehicle trials of large fleets, at a minimum amount of A$200 million each, focussed on heavily-trafficked truck routes (e.g. Sydney-Melbourne).
- At least three larger trials for lighter trucks for logistics near hydrogen centres, at A$25 million each.
- At least two larger trials for bus routes near hydrogen centres, at A$45 million each for 40 buses (or a combination of smaller and larger, at A$12 million per small trial for 10 buses).

Funding would be drawn from the Net Zero Fund and should be aligned with funding from state/territory governments. Some of this work might be funded by the Future Fuels Fund, which we note has just under A$50 million available after the first BEV round.

Processes to commence these projects should start as soon as possible given that they will take time to implement; beyond the contracting process (which may take a year) there will be time required to procure the vehicles in sufficient numbers.

Use of funding to replace diesel should also extend to other means of transport – such as trains and ferries – as the business cases and demand for these evolve.

Recommendation 7: Incentivise markets in FCEVs

We recommend that the Australian Government:

- Sets carbon emissions standards for all vehicle types.
- Provides tax offsets for vehicle purchases and removes taxes that inhibit purchasing.
- Sets a 50 per cent ZEV target for fleets of cars, buses and ancillary vehicles for 2030. This would include privately operated public transport fleets and government owned logistics providers.
- Supports ZEV fleet procurement across state/territory and the federal government, with information sharing and guidance on relevant matters, such as available operators, manufacturers and optimal contractual measures for the evolving markets.

Recommendation 8: Support hydrogen for hard-to-abate industries

We recommend that the Australian Government funds a hydrogen readiness programme of at least A$1 billion for industrial processes that cannot readily be electrified, including (and not exclusively) for the production of iron/steel, ammonia, methanol, and alumina/aluminium.

Funding would be drawn from the Net Zero Fund and should be aligned with funding from state/territory governments.

Funding should be prioritised for projects that protect or create local jobs and have a detailed plan for skilling and re-skilling. Applicants should be required to share information to support industry knowledge development – this could be assisted by engaging with industry associations to support delivery.