Submission No 38

INQUIRY INTO DEVELOPMENT OF A HYDROGEN INDUSTRY IN NEW SOUTH WALES

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hunter business chamber

Inquiry into the Development of a Hydrogen Industry in NSW

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INQUIRY INTO THE DEVELOPMENT OF A HYDROGEN INDUSTRY IN NSW

Introduction

The Hunter Business Chamber (the Chamber) appreciates this opportunity to submit to the inquiry into the development of a hydrogen industry in New South Wales.

The Chamber is the Hunter Region's peak business and industry group, representing more than 2,500 member and affiliate businesses across all sectors, ranging from SMEs to large corporations and organisations. We are connected to the business community statewide and nationally through affiliations with Business NSW and the Australian Chamber of Commerce and Industry and we advocate to government at all levels for policies that promote investment, growth and regional prosperity.

Our membership includes many businesses and organisations with an interest in the energy industry. We also have a close association with the research institutions and particularly the Newcastle Institute and Energy and Resources (NIER). The Chamber is also a member of the Energy and Resource NSW Steering Committee chaired by NIER.

The Chamber has championed the interests of business in the Hunter region since its inception in 1886. The Chamber not only seeks to strengthen the industry and business already located in the region but also works to make the region as attractive as possible for new business to establish here in response to the changing and diversifying economy and manufacturing industry particularly. The Hunter is well-placed for and already playing a part in stimulating the emergence of a hydrogen economy in the Hunter, as is outlined in this submission.

Response

This submission responds to the following respective Terms of Reference of the inquiry.

1. The size of the economic and employment opportunity created by the development of a hydrogen industry in NSW, in particular those opportunities for regional NSW, including having regard to:

(a) the emerging domestic and international trends in the production and demand for hydrogen, including in South Korea, the Netherlands, Japan and other Australian states and territories.

A hydrogen industry in NSW has the opportunity to respond to the growth pulses generated both nationally and internationally. This stems from not only NSW and Australia but also nations around the world seeking to reduce carbon emissions by setting policies that drive the growth and development of clean and renewable sources, of which hydrogen is likely to play a role in the future as a key energy resource.

The Grattan Institute has noted "*Hydrogen is now surging to the top of the global decarbonisation agenda. Australia's competitive advantages, including local expertise*

and infrastructure, proximity to Asian markets, and abundance of renewable energy, could mean we become a globally significant player through hydrogen exports, with important domestic spill-over benefits. The dual objectives of the strategy are to build a clean, innovative and competitive hydrogen industry, and to position Australia's hydrogen industry as a major global player by 2030[1]

In addition, ACIL Allen's 2018 Report[2] estimates under a scenario of medium hydrogen demand, Australia's share of global trade in hydrogen could be worth $5.7 billion in 2040. This would provide support for up to 788 direct and indirect jobs by 2025, up to 2,787 in 2030 and 7,142 jobs by 2040. The total economic contribution to the Australian economy was estimated at up to $473 million in 2025. The report also noted if hydrogen production reaches the higher level of its range of estimates, the job numbers could be comparable to those generated by Liquefied Natural Gas (LNG) and its supply chain.

(b) NSW's existing and potential linkages to those markets.

NSW has a capacity and capability to benefit from the increased interest and eventually trade and development of hydrogen owing to the presence of three ports able to accommodate the shipping that will resource and service the hydrogen export industry. Furthermore, the Hunter region is well-placed to play a major leading role in the opportunity that could develop in NSW.

The Hunter region already has strong existing trade links with many countries around the world and many of these countries are known to be acutely interested in the development and use of hydrogen in their energy markets. These relationships include Japan, India, Indonesia, Taiwan, Korea and other parts of south east Asia and the Pacific. It is understood a number of these nations are already engaged and in dialogue with various Australian and NSW based interests concerned with the hydrogen industry and research.

2. The State's existing hydrogen capabilities, including:

(a) NSW's research and development capacity for all elements of the hydrogen supply and demand chain, including existing research and development work of the Government, academic and private sector;

(b) The State's energy and industrial infrastructure which could support the production, storage, distribution, use and export of hydrogen.

The energy and resources sectors in the Hunter region play an important part in the support for the regional and state economy. The region is also a significant generator and supplier of electricity. This associated energy and industrial infrastructure gives the state and the Hunter region an enormous comparative advantage over other regions to establish and develop a hydrogen industry.

[1] Energy Futures: Hydrogen, worth the hype? Grattan Institute podcast 9 January 2020
[2] Opportunities for Australia from Hydrogen Exports, ACIL Allen Consulting for ARENA, 2018

With the world's move toward renewable energy sources, the Hunter region is ideally suited to diversify and expand its industrial focus to realise potential new opportunity including hydrogen industry.

The region boasts:

- Advanced manufacturing industries and large-scale energy users;
- Energy generation networks and infrastructure;
- A highly skilled workforce and education institutions attuned to equipping the workforce with relevant qualifications;
- Deep-water port and export facilities;
- World-class research institutions focused on energy technology in the Newcastle Institute of Energy and Resources NIER (University of Newcastle) and the CSIRO Energy Centre in Newcastle.

The NSW Government can position regions across the state for success by co-investing in enabling activities and infrastructure, supporting efforts to build social licence, and overcoming safety and regulatory barriers. Projects that support capacity-building and capitalise on inter-regional and international connectivity will be critical for investor attraction.

Investment by government in regional demonstration projects will generate lessons for other industrial users, build community acceptance and enable the development of appropriate regulatory frameworks.

3. The capacity of and barriers to NSW becoming a major production, storage and export hub for hydrogen, including NSW's capacity to:

(a) develop and commercialise hydrogen technologies;
(b) manufacture and export hydrogen production componentry, including electrolysis componentry;
(c) manufacture and export hydrogen storage and transport infrastructure, including in heavy transport and shipping vessels;
(d) generate green hydrogen through renewable energy sources;
(e) use hydrogen for transport;
(f) use hydrogen in its own industrial processes, such as in steel, aluminium and chemical production;
(g) use hydrogen for electricity generation, including the feasibility of retrofitting existing and proposed electricity generation assets to use hydrogen; and
(h) manage the safety and safeguarding of hydrogen utilisation.

The capacity for NSW, and in particular the Hunter, to become a major focus in the hydrogen industry is noted in respective sections of this submission. At a high level, port access, land availability, skills and innovative industry are key ingredients to support a hydrogen industry

capability however this does not mean there will be significant challenges and barriers to success.

To have a sustainable hydrogen industry will place emphasis on producing the product at a competitive price, which in turn is influenced by having in place enabling infrastructure, consistent demand for the product and certainty in the regulation and frameworks put in place around the industry. Government and the private sector will both have responsibilities and roles to play in this context. Investment is unlikely to occur unless there is confidence in the market and community about the industry and its prospects.

The Chamber is aware of the strong interest by industry and business in the development of a hydrogen industry. The pathway to the development of hydrogen technology and the establishment of a hydrogen industry would be clearer if a roadmap that addresses the regulatory environment and investment priorities was in place and this will be a task for government along with industry to work on.

Within Australia, the federal government has sent strong signals about its intent to support hydrogen with its National Hydrogen Strategy and funding for Hydrogen Technology Clusters and Hydrogen Hubs. At a state level, there is opportunity to stimulate demand while having hydrogen compete and complement other decarbonisation pathways. The possibilities in hydrogen, however, have a disruptive element whereby existing businesses in the energy market have a natural and strong interest while the attraction to new players is also apparent. Clear government policy and messaging about it support for the industry and the benefits to the community and business will help address this challenge.

The Chamber is also aware that hydrogen as a gas has the capacity to be blended into existing gas supply systems. The process is potentially fraught depending on systems and infrastructure in place to support this activity. However, uses of this nature will present the opportunity to transparently demonstrate the advantages of hydrogen in decarbonization, which will in turn enhance the wider acceptance of hydrogen as an alternative energy source.

5. The infrastructure, technology, skills, workforce capabilities and other things needed to realise the economic opportunities of hydrogen as and when it becomes commercial in different sectors of the economy.

Realising the economic opportunities of hydrogen will depend largely on the confidence built around hydrogen as a commodity or product. It will be vital to ensure there is a staged take up of its use and there has been much discussion about utility in forms of heavy transport before the applications are broadened. In time, heavy industrial processes and power generation will provide larger scale and ideal applications for hydrogen products. This will also allow investments to be incremental and not demand huge commitments of capital in short time periods that would otherwise stress markets.

6. The actions needed of the public and private sectors, to support the development of a hydrogen industry in NSW and to realise the associated economic opportunities, including actions to manage any safety risks in the hydrogen industry.

This question has to some extent been addressed in earlier comments. However, it should be noted that government will play a key role in undertaking effective communication in the consumer market. It is clear, for example, that the Electricity Infrastructure Roadmap shows that a continuation of past practices is not an option. The combination of reinforcing the potential for cheaper and reliable power with the benefits of decarbonising need to be clear so that industry can be confident in the market take-up. Safety around the use and transport of hydrogen in this context will need to be part of this discussion.

Industry and the market will have an important role to play. Energy markets across Australia already influence business decisions owing to the variable cost of energy. Gas prices, for example, on the east cost are consistently quoted higher than the west coast of Australia. A concentration of hydrogen business on the east coast could make the circumstances for industry growth and investment more favourable as a consequence of more favourable price and supply circumstances.

7. The potential for jobs in New South Wales, both directly in the hydrogen industry and in other industries powered by hydrogen.

See response to question 1. The significance of a new industry supporting new jobs is important, but we should not lose sight of the cost of losing existing jobs if we fail to provide solutions to challenges around the supply of reliable and affordable energy and the question of lowering carbon emissions over the long term. Job losses are a real prospect in regions like the Hunter, where industry could be forced to close as a consequence of the task and costs being too great for existing industry to adapt or comply.

Many of the region's businesses are already engaged in innovative efforts to meet these challenges however the process of converting to alternative energy sources can make marginal operations unviable and closure an inevitable consequence. Hydrogen brings some prospect to address this or at least provide an opportunity to underwrite sustainability that will allow business to survive and grow.

8. Any other pertinent matters.

Notwithstanding the export-oriented opportunities concerned with hydrogen, the Chamber has consistently noted that in the context of energy generation, renewables are currently not the complete answer for many heavy industries based in the Hunter region. The need for despatchable power around the clock is ever-present. Like hydro-generated power, hydrogen has the capacity to buffer and overcome the shortcoming of having to rely on solar, wind and battery power.

The challenge will be to produce the commodity in a useable form at a competitive price and in sufficient quantities to underwrite reliability. The Chamber is supportive of collaborative efforts between government and industry (research, infrastructure and production) to ensure this occurs.

Should the Committee require clarification or further discussion on any of the details provided in this submission, please do not hesitate to contact the undersigned.

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