

INQUIRY INTO DEVELOPMENT OF A HYDROGEN INDUSTRY IN NEW SOUTH WALES

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Innovation

Collaboration

Networking

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STANDING COMMITTEE ON STATE DEVELOPMENT
LEGISLATIVE COUNCIL
Parliament of NSW

INQUIRY INTO THE DEVELOPMENT OF A HYDROGEN INDUSTRY IN NSW

Dear Standing Committee,

Thank you for providing the opportunity to submit HunterNet's consideration against the inquiry into the current state of, and opportunities for, the development of a hydrogen industry in New South Wales.

As background, HunterNet has safeguarded the Hunter region's SME manufacturing sector since it formed in 1992 in response to the shifting economic climate which saw many of the smaller manufacturing and engineering companies competing in a more limited market. Local businesses needed to create new opportunities for themselves and the region in order to survive so they formed a co-operative to focus on competing globally.

Today HunterNet involves more than 130 small and medium-sized manufacturing, engineering and consulting companies active in national and international markets in defence, power generation, mineral processing, transportation, environmental and major resource projects. HunterNet markets the combined capability of the members, provides business development and training opportunities, and promotes the Hunter as a manufacturing and engineering region of excellence.

It Manages 140 apprenticeships and trainees across its business members which represent a combined 70,000 jobs in the Hunter. The success of HunterNet winning work in areas such as ship building, aerospace, rail and mining will be a key factor in achieving future success for the region as the Hunter gears up for its next stage of industrial development, in particular, already playing a part in renewables and stimulating the emergence of a hydrogen economy in the Hunter.

This submission attempts to treat the Terms of Reference detailed by 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; and

Nations all over the world are setting targets to achieve net zero emissions. Such policies are driving nations toward clean and renewable sources, with many favouring hydrogen as a key energy resource.

ACIL Allen's 2018 Report Opportunities for Australia From Hydrogen Exports estimates just with a medium hydrogen demand scenario that Australia's share of global trade in hydrogen could be worth circa \$5.7 billion in 2040, while the total economic contribution to the Australian economy could be up to \$473 million in the near term, 2025.

The Report Opportunities for Australia from Hydrogen Exports, estimates just with a medium growth scenario, there would be up to 788 direct and indirect jobs created by 2025, up to 2787 in 2030 and 7142 jobs by 2040. The report says that 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, and the Hunter in particular, is well-placed to seize the hydrogen opportunity.

The Hunter has strong linkage in particular with Japan, with much of the existing coal exported from the Hunter going to Japan. With Japan's posture and aggression on achieving its targets, and with its highly detailed National Hydrogen Roadmap, its existing supply chain supporting the coal-derived production of energy, will endeavour to build relevance in the clean energy space, with hydrogen an obvious target. The Hunter's existing linkages with those in Japan's coal-derived supply chain will bestow our local supply chain to leverage those linkages.

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; and

The Hunter region is the engine room for energy for NSW and Australia.

The energy and resources sectors employ more than 16,000 people in the Hunter, or 47,600 people indirectly. This region also produces 63% of NSW's electricity.

Australia's economic and energy transition depends on the Hunter. Dominant in Australia's energy and resources, the nation's economic diversification from resource-led to the smart economy along with the decarbonisation of the economy, has to occur within the Hunter region.

With the world's move toward renewable energy sources, the Hunter region needs to diversify its industrial focus to sustain its prosperity and remain relevant. A hydrogen industry, and an overall hydrogen economy is an ideal opportunity.

The Hunter has key assets, infrastructure, and capabilities that would be needed and can already be leveraged upon to develop a globally competitive hydrogen economy. The region showcases:

- A mix of advanced manufacturing industries and large-scale energy users. This unique to the Hunter region,
- Energy generation networks and infrastructure,
- A highly skilled workforce,
- Port and export facilities,
- World-class research institutions at CSIRO and the University of Newcastle.

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

The NSW Government can position regions across the state for success by co-investing in enabling activities and infrastructure, supporting efforts to build social license, 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.

Nations are signaling their intent to invest in hydrogen, and to produce hydrogen.

Within Australia, the federal government has sent strong signals about its intent to support hydrogen with its National Hydrogen Strategy and funding for Hydrogen Hubs, as well as Clusters. The Hunter was recently awarded seed funding for such a cluster, the only one in NSW (details provided later).

States and territories are already making gains. Projects are emerging across WA, QLD and Victoria in particular, with support from respective State Governments.

NSW Government's Electricity Infrastructure Investment Roadmap is a great step forward. However, action is needed to ready NSW and ensure the State does not miss a window of opportunity.

4. The economics of hydrogen's use in different sectors of the economy, including emerging opportunities to use hydrogen in industrial processes and as a feedstock.

Hydrogen can be used in the production of ammonia as well as used as a feedstock for production of aluminium (green aluminium) and green steel, supplanting coal as a reductant in the steel making process with hydrogen. \$2/L of hydrogen appears to be the target to economically attain production for these, in some cases, resurrected exportable commodities.

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.

Communities and businesses of the Hunter are optimistic about the leadership role the region can play in our nation's future.

Collaboration and coordination is already well underway to position the Hunter to meet the hydrogen opportunity. We are a shining exemplar for collaboration, and collaboration that works.

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.

We need people within government departments to act like business people. Examples include offering to "tour" inwards investors and founders to visit capable manufacturers and R&D experts. This soft touch is greatly appreciated by potential investors and when experienced by them, distinguishes that the region and the department as being "open for

business”, and serious about helping organisations on their journey to commercializing efforts. It also exemplifies that people do business with other people in organisations, rather than a monolithic view on how business and investment is conducted – they are investing in the people and the region, not a technology in isolation.

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

The Hunter provides an investment-ready platform for a hydrogen economy. Much of the existing carbon workforce can re-train and re-purpose existing skills into Hydrogen. It would be an oblique jump, not a total change in vocation.

8. Any other pertinent matters.

NERA’s Regional Hydrogen Technology Cluster

- The Hunter was named as a recipient of \$100,000 in NERA Hydrogen Technology Cluster Seed Funding. The Hunter is the only NSW Cluster to receive funding.
- Key partners include HunterNet, University of Newcastle, Hunter Business Chamber, Australian Industry Group, NSW Energy and Resources Hub, Committee for the Hunter, Department of Regional NSW.
- The General Manager of HunterNet has accepted the appointment as Chair of the Cluster
- Key directions
 - The Hunter Hydrogen Technology Cluster will take a market-driven, industry-led approach to supporting knowledge exchange and skill development.
 - Activity will focus on facilitating an increase in the development and demonstration of new technologies, products and services.
 - NERA seed funding will be used to support engagement activities to connect cluster stakeholders and facilitate the development of a collaborative knowledge sharing platform.

Hunter Hydrogen Taskforce

- HunterNet is a member of the Task Force. The Task Force and many of the stakeholders within the group collaborated to form the Cluster detailed above.
- The Hunter Hydrogen Taskforce was established in 2020 via the leadership of the University of Newcastle.
- Membership includes a diversity of representation across the region from key commercial entities and peak body associations.
- The aim of the Taskforce is to collaborate strategically on hydrogen, identifying and mobilising key assets (including skills and expertise) to position the Hunter competitively in the future hydrogen economy, including in the manufacturing sector.
- The taskforce is currently developing two key products: a roadmap, and major demonstration project (at concept/modelling phase).

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

Yours sincerely,

Boris Novak
General Manager
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