

**Submission
No 37**

**INQUIRY INTO DEVELOPMENT OF A HYDROGEN
INDUSTRY IN NEW SOUTH WALES**

Organisation: ENGIE
Date Received: 26 February 2021



The Hon. Sam Faraway MLC
NSW Legislative Council
Chair Standing Committee on State Development

Lodged online

26 February 2021

Dear Hon. Sam Faraway MLC,

Inquiry into the development of a hydrogen industry in New South Wales

ENGIE Australia & New Zealand (ENGIE) appreciates the opportunity to respond to the New South Wales Legislative Council's Standing Committee on State Development ("the Committee"), in response to the inquiry into the development of a hydrogen industry in New South Wales ("the Inquiry").

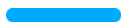
The ENGIE Group is a global energy operator in the businesses of electricity, natural gas and energy services. In Australia, ENGIE has interests in generation, renewable energy development, and energy services. ENGIE also owns Simply Energy which provides electricity and gas to more than 725,000 retail customer accounts across Victoria, South Australia, New South Wales, Queensland, and Western Australia.

ENGIE has interests in several ongoing Hydrogen business projects in Australia, including:

- blending hydrogen gas into existing gas networks for use by existing residential users and commercial businesses;
- a dispersed mobility network building of the back of existing projects to provide refuelling options for multiple transport modes;
- development of renewable ammonia by feeding an existing ammonia plant with renewable hydrogen; and
- ongoing studies to decarbonise the mining industry in Australia using renewable hydrogen.

Hydrogen is an important component of a future carbon free world

ENGIE believes that hydrogen is the key that will unlock the full potential of renewables and carbon-free energy solutions. It will accelerate the energy transition by allowing numerous green energy technologies to be used with much greater flexibility.





ENGIE is committed to developing solutions based on renewable hydrogen, produced by electrolysis using a green energy supply. Hydrogen is the missing link for a decarbonised ecosystem, allowing for the harmonious progress of cities, territories and societies around the globe.

ENGIE's aim is to operate across the entire value chain of renewable hydrogen, from carbon-free power generation to the three key end uses: mobility, industry, and energy storage. ENGIE welcomes a holistic vision on hydrogen production and end-uses across the value chain as a vector to enhance smart energy systems: including the decarbonisation of gas infrastructures through blending; sector coupling; the use as a renewable feedstock (e.g. to produce renewable ammonia); mobility applications (bus fleets, heavy duty vehicles and mining trucks); and the consumption of renewable hydrogen product by final consumers.

ENGIE is already partnering with governments and other businesses on trials, feasibility studies, and early commercial projects in order to develop the know-how that will allow the hydrogen sector to scale up over quickly. This involvement has a global footprint, including projects in (amongst others) France, Singapore and Australia.

By way of example, a concept study is being progressed a large university to look at potential users for hydrogen within the local university precinct. This concept study is planned to progress through the feasibility stage during 2020. The output of the feasibility study will be used to inform a final investment decision.

Laying the foundations of the NSW hydrogen economy

ENGIE considers that community acceptance and support will be critical to the success of the industry, and this is one area that governments have a very important role to play. Another is policy alignment – as far as possible, Australian governments should be pulling in the same direction and co-ordinating their efforts.

Nationally, the gas industry forecast for Australian industry recognises the need to update training packages for hydrogen related skills, especially in the areas of storage and safe handling¹.

The development of a New South Wales hydrogen hub is likely to be an efficient way to configure hydrogen infrastructure and facilitate synergies between different elements of the hydrogen supply chain. Given that this will require co-ordination of multiple supply chain participants and entail navigation of the planning framework, the Government will need to play a key role in identifying suitable locations and facilitating the hub's development.

Legislation and regulations – at both national and state level – will need to be reviewed in order to ensure they do not inhibit the development of the hydrogen economy. The Clayton Utz Hydrogen Industry Legislation Report for the National Hydrogen Strategy provides a useful starting point in this respect². As many supply chain participants will be operating on a national (if not international footprint), consistency and harmonisation of regulatory settings wherever possible is crucial.

¹ The report can be found at https://www.australianindustrystandards.org.au/wp-content/uploads/2019/06/ueg_sf2019_final_pages_lowres.pdf

² The report can be found at <http://www.coagenergycouncil.gov.au/publications/reports-support-national-hydrogen-strategy>



As an example, certification of green or renewable hydrogen will be an important component of building confidence in the sources of hydrogen. This needs to be internationally recognised, which entails consistency of approach with other certification processes. ENGIE is involved in the CertifHy process in the European Union and would be very happy to share its experience with the Government. ENGIE also acknowledges that this is a key objective identified in the aforementioned National Hydrogen Strategy.

The roles of government and the private sector

ENGIE considers that as in many capital-intensive industries, the major role of governments is in co-ordination, including in development of a potential hydrogen hub and supporting infrastructure, as well as building community understanding and support for the industry. Appropriate planning frameworks are important in this regard.

The private sector, meanwhile, brings capital and expertise. While the primary risk-takers should be the providers of private capital, their need to earn a risk-adjusted return means that some form of risk sharing with governments may be necessary in the early stages to maximise opportunities.

Some support for domestic use cases may help to stimulate the domestic market, especially in cases where hydrogen is competing against a fossil fuel equivalent and cost structures do not recognise the zero-emissions benefits of renewable hydrogen.

The Government should also be aware that internationally, many countries are developing support policies that may help make them attractive destinations for hydrogen investment and that New South Wales is essentially competing against these international jurisdictions for hydrogen investment. Specific examples of supporting policies, including the countries where they are in place or under consideration can be found in the attached leaflet.

Adaptability is key to good policy design in an emerging industry such as hydrogen, i.e. the approach should not be “set and forget”, but conversely abrupt U-turns in policy and regulation will undermine investor confidence.

Aspects of the hydrogen economy, including the way in which different elements of the supply chain and different use cases interact, are still in their early stages and government support for research development and demonstration projects (RD&D) remains appropriate.

At the national level, Australia has good energy RD&D support institutions such as the Australian Renewable Energy Agency (ARENA), the Clean Energy Finance Corporation (CEFC) and the Clean Energy Innovation Fund (CEIF). These either already can or could be oriented towards supporting projects right across the hydrogen supply chain.

However, while ARENA for example has \$70m allocated to hydrogen from its current funding profile, this is unlikely to be adequate. The Australian Hydrogen Council estimates that around \$700m would be required over the next 7 years³. ENGIE recognises that the Government does not directly influence the funding of ARENA/CEFC/CEIF, and

³ <https://h2council.com.au/about/policy-and-regulation>



that it may prefer to have its own RD&D fund that it can ensure is directed towards NSW projects. If so, ARENA and CEFC are useful templates on which to draw in setting up RD&D funding agencies.

Developing export markets

Australia has a long history of providing energy and other key resources to the world and hydrogen has the potential to follow on from commodities such as coal, LNG and iron ore. This is another area where governments and the private sector can work effectively together. ENGIE have long existing partnerships with players in key potential export markets (Japan, Korea, Singapore) that we could leverage on, while governments have trade and export arrangements, such as Invest NSW that they can utilise.

ENGIE is part of a European consortium aiming to establish a full renewable hydrogen import value chain. The consortium announced on 27 January the completion of a feasibility study concluding that the project is both technically and economically feasible⁴, this includes from Australia.

Conclusion

ENGIE welcomes the opportunity to provide a submission to the response to the inquiry into the development of a hydrogen industry and trusts the information contained in this submission is of assistance. Attached to this submission is a leaflet outlining further information on ENGIE's hydrogen vision and the respective policy settings for governments to consider.

Should you have any queries in relation to this submission please do not hesitate to contact me on, telephone,

Yours sincerely,

Jamie Lowe
Head of Regulation,
Compliance and Sustainability

⁴ Although importing from Australia seems to be on the more expensive side at first glance, some carriers remain very cost effective. The impact of the long shipping distance mainly affects the cost for hydrogen (and to a lesser extent methane), as the energy required to propel the ship (as a fraction of the energy transported) has a significant impact on the shipping cost (Ship-Efficiency). Compared to Australia, the similarly long shipping distance for Chile and more nearby Oman is partially compensated by the lower production costs of the energy due the better full load hours of wind and sun.