3 February 2023

Submission: National Reconstruction Fund

The Australian Pipelines and Gas Association (APGA) represents the owners, operators, designers, constructors and service providers of Australia's pipeline infrastructure, connecting natural and renewable gas production to demand centres in cities and other locations across Australia. Offering a wide range of services to gas users, retailers and producers, APGA members ensure the safe and reliable delivery of 28 per cent of the end-use energy consumed in Australia and are at the forefront of Australia's renewable gas industry, helping achieve net-zero as quickly and affordably as possible.

APGA welcomes the opportunity to contribute to the Department of Industry, Science and Resources' consultation on the National Reconstruction Fund (NRF). Overall, APGA applauds the scale of the NRF and appreciate its potential for accelerating investments in critically important industries, particularly low emissions technologies.

APGA supports a net zero emission future for Australia by 2050[1]. Renewable gases represent a real, technically viable approach to lowest-cost energy decarbonisation in Australia. As set out in Gas Vision 2050[2], APGA sees renewable gases such as hydrogen and biomethane playing a critical role in decarbonising gas use for both wholesale and retail customers. APGA is the largest industry contributor to the Future Fuels CRC[3], which has over 80 research projects dedicated to leveraging the value of Australia's gas infrastructure to deliver decarbonised energy to homes, businesses, and industry throughout Australia.

The NRF represents an excellent opportunity to turbocharge Australia's advanced manufacturing sector, especially with the Federal Government driving investment as a co-investor (similar to the Clean Energy Finance Corporation). To meet this objective, APGA believes that this fund should, where possible, prioritise least-cost product output through leveraging Australia's advanced manufacturing capabilities, rather than prioritising job creation. This is particularly relevant for renewable energy, where renewable gases can provide least-cost emissions reduction assuming the appropriate level of automation is deployed in the supply chain.

Renewable and low-emissions technologies

APGA appreciates that a key focus of the NRF is renewable and low-emissions energy technologies. Given Australia's comparable advantages in the production of renewable

[1] APGA, *Climate Statement*, available at: https://www.apga.org.au/apga-climate-statement
[2] APGA, 2020, *Gas Vision 2050*, https://www.apga.org.au/sites/default/files/uploaded-content/website-content/gasinnovation_04.pdf
[3] Future Fuels CRC - https://www.futurefuelscrc.com/

energy, this is an obvious area for government co-investment which will help commercialise these opportunities locally, and we are pleased to see that hydrogen electrolysers are specifically noted in the consultation document.

Electrolysers are a key technology in the production of green hydrogen, and Australia's research efforts towards highly efficient, large-scale alkaline electrolysers are already nearing commercialisation[4]. However, there are other specialised technologies and componentry which are also necessary, and which Australia could take the lead in development and manufacture. This includes, but is not limited to:

- A number of different types of valves, manufactured to hydrogen specifications,
- Compressors and hydrogen gas turbines, and conversion of natural gas turbines,
- High efficiency hydrogen-ready appliances.

APGA proposes expanding the scope of the renewable and low-emissions technologies from "hydrogen electrolysers", to "renewable hydrogen technologies". This would explicitly support the other necessary components towards delivering green hydrogen beyond hydrogen electrolysers.

Transport

There are key opportunities for renewable gases to contribute to future transport supply chains, as APGA demonstrated in our submission[5] to the National Electric Vehicles Strategy consultation. The submission above is attached to this document for reference.

A domestic haulage fleet powered by hydrogen fuel cells has considerable advantages over electric haulage in Australia, particularly when considering the supply chains necessary to 'refuel'.

We believe there are significant opportunities for hydrogen refuelling networks, supplied by hydrogen pipelines, to provide a high availability, cost effective supply chain model for hydrogen fuel-cell haulage vehicles.

There are a number of potential models through which a hydrogen refuelling network could operate, as noted in the submission. A hydrogen pipeline network would provide significant advantages over other options in terms of a national network along freight routes for supplying hydrogen-powered haulage – for instance, along the Pacific and Hume highways. Such a network would represent no regrets hydrogen infrastructure, where hydrogen uptake is recognised as necessary to achieving net zero emission in Australia.

[4] Such as Hysata's capillary-fed electrolyser, developed at the University of Wollongong's ARC Centre of Excellence for Electromaterials Science, https://reneweconomy.com.au/australian-electrolyser-breakthrough-promises-worlds-cheapest-green-hydrogen/

[5] APGA, 2022, *Submission: National Electric Vehicle Strategy Consultation*, https://www.apga.org.au/sites/default/files/uploaded-content/field_f_content_file/221031_apga_submission_to_national_electric_vehicle_strategy_consultation.pdf

To discuss any of the above feedback further, please contact me on +61 422 057 856 or jmccollum@apga.org.au.

Yours Sincerely,

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