



Response to the Renewable Hydrogen Target for electricity generation in the South West Interconnected System Consultation Paper

Australian Hydrogen Council

10 November 2022

Submission to the WA Department of Mines, Industry Regulation and Safety

Joe Kremzer

General Manager Policy

Australian Hydrogen Council

m: +61 413 266 081

e: jkremzer@h2council.com.au

w: [H2council.com.au](https://www.h2council.com.au)

Introduction

The Australian Hydrogen Council (AHC) is the peak body for the emerging clean hydrogen industry.

We recognise the role that Western Australia will have in helping the nation to achieve its ambitions to be a leader in the clean hydrogen economy and the extent to which this will drive Australia towards its net zero ambitions target. We welcome moves to establish a hydrogen industry in the state while the production and use of green hydrogen is largely pre-commercial and we appreciate the opportunity to engage on this matter.

In order to play a role in displacing fossil fuels for energy and carbon emitting feedstocks for manufacturing, the hydrogen industry will need policy support to achieve the scale needed to reach cost parity with incumbents. The proposed Renewable Hydrogen Target for electricity generation is an example of the type of policy which could provide the initial support required to establish the industry and allow it ultimately reach a self-sustaining scale.

We broadly agree with the objectives outlined in the consultation paper; however, we foresee some design elements of the proposed scheme which could be altered in order to better meet the objectives in a way which could ultimately be delivered at a lower cost.

Challenges relating to electricity grid reliability and stability will increase as Australia transitions towards a decarbonised electricity supply. Hydrogen is certainly likely to play a role in addressing these challenges; however, AHC considers that this role is likely to relate to firming and grid services such as demand response (via shedding of electrolyser load) rather than generation. Hydrogen can also provide long term storage which is particularly relevant in the context of the SWIS where hydro generation does not exist as a storage option.

These will be increasingly important as the proportion of variable renewable electricity generation in the grid increases. The consultation paper seems to anticipate that hydrogen will be used as a fuel in existing dispatchable generation which would obviously lead to a reduction in emissions from this sector, but may not be the most economical or effective way of using hydrogen to reduce emissions across the economy.

Green hydrogen is produced by powering electrolysis with renewable electricity. The round trip efficiency of using hydrogen for gas fired generation is relatively low in comparison to its other applications. More practical alternatives to meeting electricity demand exist, namely energy efficiency measures, demand management, direct use of renewables or the use of hydrogen fuel cells. Green hydrogen is currently of greatest value where such decarbonisation alternatives do not exist. With this in mind, AHC considers the use-agnostic renewable hydrogen certificate scheme mentioned in the consultation paper an option worthy of further exploration.

This approach presents a number of benefits over the proposed Renewable Hydrogen Target for electricity generation.

Allocative efficiency – A use-agnostic scheme would see hydrogen deployed to the most commercially viable end use, ie where the cost of using hydrogen is closest to the cost of the incumbent technology. This could include applications such as heavy transport, replacing grey

hydrogen as a feedstock or for high temperature process heating. This approach would not preclude electricity generation where the economics allow it. Such a scheme could be coupled with additional incentives for the production of hydrogen for long term energy storage, noting that co-locating storage with mobility solutions could create synergies through the use of shared infrastructure.

We consider that restricting the scheme to electricity generation would impact the relative commerciality of hydrogen use cases. This could see some applications which would otherwise be commercially viable not have access to the required hydrogen as it is not being produced in sufficient quantities to meet demand. Such an outcome would ultimately impact the long term development of the industry and hamper the transition to hydrogen. Ensuring that hydrogen is first available to those projects which are closer to economic feasibility will help the industry grow to scale in a relatively orderly manner it and ensure that demand and supply grow concurrently.

Potential for harmonisation – AHC note that the NSW Government has legislated a Renewable Fuel Scheme, which is in effect the use-agnostic scheme described in the consultation paper. AHC advocates for national consistency in the hydrogen industry and consider that the existence of multiple, broadly compatible schemes could ultimately lead to a nationally harmonised approach with the potential for efficiency gains through lower compliance costs and centralised administration.

Lower cost to consumers – Having the market determine the end use of green hydrogen will result in lower overall costs. While current levels of inflation are putting pressure on household finances, it is important that additional costs to support a future industry are minimised even when this industry will provide consumers with longer term benefits. In addition, removing the direct focus on electricity generation could enable the Western Australian government to consider broadening the base of liable entities to parties other than electricity retailers so that the cost to the consumer is defrayed. This model would also allow the scheme to be applied outside the SWIS as the hydrogen use would not be confined to the electricity grid and would create the opportunity to decarbonise remote area power systems via the use of fuel cells.

Conclusion

AHC welcomes the Western Australian Government's commitment to developing a clean hydrogen industry. We appreciate that the alternative model outlined in this submission will require further consideration of matters such as the fact that the target would have to be set as kilograms of hydrogen production rather as a percentage of electricity consumption. AHC is committed to engaging productively to assist in the development of a scheme which will further Western Australia's hydrogen and decarbonisation goals and do not consider that such matters would unduly delay the commencement of the scheme.

We look forward to continuing to engage on this matter.

If you wish to discuss any element of this submission in further detail, please contact Joe Kremzer, General Manager, Policy on 0413 266 081 or email jkremzer@h2council.com.au.