



10 November 2022

To: [Epwa-info@dmirs.wa.gov.au](mailto:Epwa-info@dmirs.wa.gov.au)

## **Western Australia's proposed Renewable Hydrogen Target**

The Clean Energy Council welcomes the opportunity to provide feedback on Energy Policy WA and the Department of Jobs, Tourism, Science and Innovation's consultation paper on a proposed Renewable Hydrogen Target for the South-West Interconnected System (SWIS) of Western Australia.

The Clean Energy Council (CEC) is the peak body for the renewable energy sector in Australia. We represent and work with more than 1,000 businesses operating in Australia across solar, wind and hydro power, energy storage, and renewable hydrogen.

### **1. Industrial demand from abroad is likely to be the biggest driver for green hydrogen projects in the long term**

Western Australia has tremendous potential as a globally significant green hydrogen producer. Indeed the scale of early proposed projects in the state has propelled Australia to the top of the list of rankings of green hydrogen producers<sup>1</sup>, with a pipeline of prospective green hydrogen projects of over 9 million tonnes – much of it at a major project scale.

Over the medium to long term, the CEC expects that it will be industrial demand – and particularly from international markets – for zero-emissions alternatives to natural gas and oil that will be the largest source of demand for the Western Australian hydrogen sector. Indeed, real offtake potential already exists in markets such as Europe. The challenge is to both support and attract the multi-billion dollar investments in renewable electricity generation capacity, water treatment facilities, port infrastructure, and electricity and gas transmission, which will be required, through detailed strategic planning and funding support from state and Commonwealth governments in co-operation with the private sector, to set this sector up for long-term success.

### **2. Government support should facilitate the deployment of hydrogen for compelling use cases**

We acknowledge the efforts by the Western Australian Government to help this nascent sector get moving with policy settings that can incentivise the local development of renewable hydrogen production and consumption. There is strong merit in the State Government's objective to develop a scheme which will encourage 'industry development', noting that it will be important for Western Australia to broaden the technical expertise and capability in producing, using and safely managing hydrogen along the supply chain if this energy carrier/feedstock is to play a larger role than today.

Given that renewable hydrogen today is around nine times more expensive than the current WA spot price for natural gas<sup>2</sup>, the policy design of any support scheme must be carefully considered,

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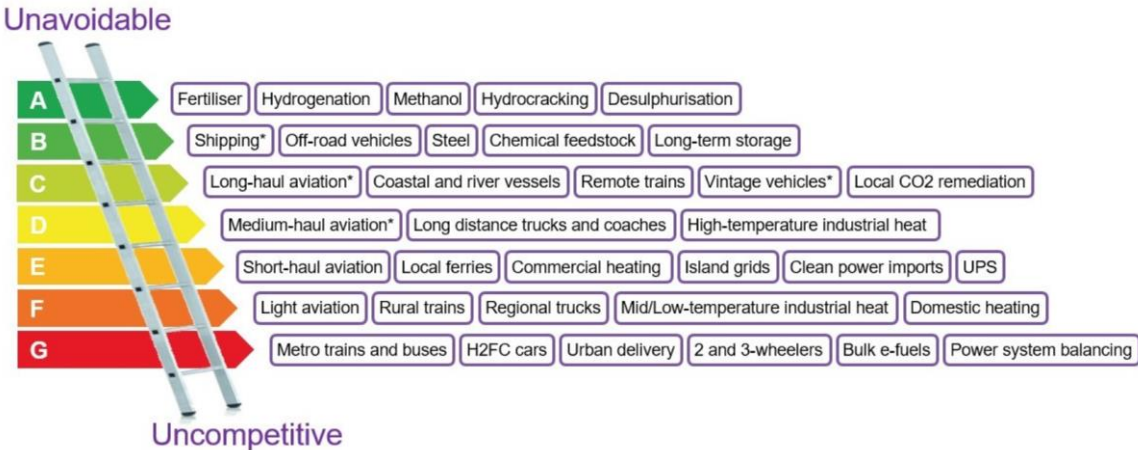
<sup>1</sup> Rystad Energy Hydrogen Analytics, 4 October 2022, 'Egypt soars up hydrogen production table as pledged investments top \$100 billion'  
<sup>2</sup> Consultation Paper on the Renewable Hydrogen Target for Electricity Generation in the South-West Interconnected System (2022)

to ensure that any public money is appropriately spent and that cost impacts on energy consumers are appropriately targeted and minimised. This is also critical for maintaining social licence for the development of the hydrogen sector.

**In principle, the CEC considers that any demand-creation policy should allow the market to select and deploy renewable hydrogen for the most compelling use cases.**

Renewable hydrogen is an energy intensive product, requiring just over 50KWh of electricity (enough power to run 2-3 family homes for a day) to produce 1 kg of renewable hydrogen. This makes it a premium product that should be reserved for those purposes where there is no other immediate or more efficient clean energy alternative (such as electrification).

The most compelling use cases for hydrogen are currently found in industrial-scale manufacturing and heavy transport, where it can displace natural gas and diesel in chemical feedstock production, steel production and heavy transport including heavy-duty trucks, shipping and aviation. See the hydrogen use case ladder below, ranking potential applications of hydrogen from ‘unavoidable’ to ‘uncompetitive’.



\* Via ammonia or e-fuel rather than H2 gas or liquid

Source: Liebreich Associates (concept credit: Adrian Hiel/Energy Cities)

These use cases are not set in stone – they are likely to evolve over time, as technologies develop and project economics change (eg. hydrogen fuel cell vehicles are no longer considered to be competitive with battery electric cars). However, this overview provides useful guidance on the most efficient deployment of hydrogen within the global economy.

You will note that according to this analysis (and others), the use of hydrogen for power generation – which involves generating electricity to produce hydrogen, to in turn generate electricity – is not considered to be an efficient or commercially attractive application of hydrogen. Hydrogen-fired power generation could however be used to play a highly targeted role as a long-term energy storage solution, standing in reserve to step in during extended periods of low-solar or wind production, in which battery storage is insufficient to meet the system needs.

**3. A ‘use-agnostic’ scheme, with the liability on gas retailers and wholesale users, would be preferable to the proposed design**

The CEC sees merit in the alternative option flagged within the paper for a ‘use-agnostic’ Renewable Hydrogen Certificate scheme, which, according to the paper would allow hydrogen to be used ‘for any purpose, such as to displace diesel, natural gas and grey hydrogen used as a feedstock for chemical processing’.

The policy design challenge arises in where best to place the liability for the certificate purchases in an 'any use' scheme, given that the hydrogen could be used as a replacement for gas and oil-based products across multiple sectors, and not all of these sectors (eg. transport fuels) are within the purview of the state government.

On balance however, if the government were to proceed with this scheme, we consider that a more appropriate point of liability would be on gas retailers and/or wholesale gas customers, as it essentially provides a green fuel alternative to gas and oil. We are concerned that if the liability is placed instead on the electricity sector, we compel households and small businesses to pay a cost impost on their electricity bills for a clean energy solution that is typically intended for industrial use cases outside of the electricity sector.

Were the scheme to proceed, we would recommend that it were expanded beyond the SWIS to cover all of Western Australia, in order to maximise the market opportunities for production, consumption and certificate trade, and to draw in remote mining and industrial regions who would likely have an inherent interest in the development of a green hydrogen sector.

Further, EPWA/DJTSI could also explore options for aligning the design of the WA Renewable Hydrogen Target with the NSW Renewable Fuel Scheme (which the NSW State Government is also progressing for introduction in 2024), with a view to potentially expanding the scheme beyond state borders over time. Access to larger markets for production, consumption and trade would further enhance scheme efficiency.

#### **4. Other support policies remain important to accelerate the development of the renewable hydrogen sector**

The consultation paper also seeks feedback on 'other approaches' that could support the Government's objectives.

First, the CEC is very supportive of the leading role that the State Government is taking in supporting the development of **hydrogen hubs** through strategic planning and investment. This work is of critical importance to the scaling of the industrial hydrogen sector, noting – as mentioned earlier in this submission – that the largest source of demand for green hydrogen (and its derivatives) appears likely to come from industries offshore (eg. Korea, Japan, Germany), and the magnitude of investment required to scale up for such an opportunity is very large.

Secondly, the State Government should also work with the Federal, state and territory governments to **explore broad-based policy frameworks** that can provide the 'pull' for green manufacturing and commodities in Australia, in the absence of a carbon price. A revamped Safeguard Mechanism – as intended by the new Australian Government – will begin to require heavy emitters to reduce their emissions over time, and this should help to pull through clean fuels/feedstocks like green hydrogen. The proposed fuel efficiency standards for vehicles being considered by the Federal Government will also be important for driving the uptake of cleaner technologies for transport.

Other opportunities remain: For example, the West Australian Government, together with the Federal, state and territory governments, could incentivise green manufacturing and commodities by utilising their significant purchasing power in relation to major construction and infrastructure projects.

The Grattan Institute set out its proposal for a **national embodied carbon-intensity standard for construction** (leveraging NGERs) earlier this year in its report, [The Next Industrial Revolution](#), outlining that:

*'[The] standard would require developers of infrastructure projects to estimate the carbon emissions from the cement, concrete, steel, glass, aluminium, copper, and other commodities they used in construction of infrastructure and buildings. Through planning regulations, state governments could*

*cap the embodied carbon per unit (for buildings this could be per square metre of floor space; for roads, it could be per kilometre).<sup>3</sup>*

An incentive for green materials provides market pull for green inputs, such as renewable electricity or green hydrogen, without ‘picking winners’, and as such, it provides a technology-agnostic policy framework that can encourage the private sector to find the optimal solutions.

Beyond our own borders, we note that the new *Inflation Reduction Act* in the United States, which will direct US\$369 billion to energy and climate related programs, has committed the US Government to prioritise the purchase of steel, concrete, asphalt and flat glass that have lower levels of emissions. The establishment of a greenhouse gas emissions transparency scheme for supply chains will support these procurement goals.

Support schemes of this kind can assist industry to build new markets for low-emissions products, and a national scheme – with the participation of the federal, state and territory governments – should be considered by Australian governments.

### **Conclusion**

The Clean Energy Council commends the initiative of the West Australian Government’s efforts to support the emerging renewable hydrogen sector in WA, and we would encourage it to refine the proposal in such a way that allows flexibility for market actors to determine the best use cases for a premium clean commodity anywhere across the state.

We would also encourage Western Australia to continue to prioritise the strategic planning and investment in its ports and hydrogen export infrastructure, and examine the benefits of other broad-based policy frameworks that could be developed across Australia, such as the carbon-intensity standard, which can help to create domestic demand for green commodities, including renewable hydrogen.

Please don’t hesitate to contact me at [afreeman@cleanenergycouncil.org.au](mailto:afreeman@cleanenergycouncil.org.au) should you like to discuss this submission further.

Yours sincerely,



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<sup>3</sup> Pg. 35, *The next industrial revolution: Transforming Australia to flourish in a net-zero world* ([grattan.edu.au](http://grattan.edu.au)), 2022