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Why the time is right for hydrogen

The increase of fires, floods, drought and heat this year means more Australians are grappling with the key question: What can we do to prevent or minimise these tough, climate related events in the future?

At the same time, government and business is asking: How can we power the future? This is clearly the goal of the recent New South Wales Government deal with Federal Government where \$960 million in Federal funding was announced for NSW-based emissions reductions initiatives.

One thing is for sure, even though our future is not clear, we are all heading there at high speed and the consequences can't be avoided.

Too often long-term plans are laid out that do not take the future into consideration. Think of bridges designed only for current traffic, computers only for current data, and cities only for current populations.

We need to identify solid, viable green shoots and new pathways that are not just anchored in the past. A key future pathway must be hydrogen, as it can provide energy, environmental and economic benefits when we need them in ten or twenty years.

The hydrogen sector will accelerate as more renewable energy generation comes online – which is happening quickly. Between 2018 and 2020, Australian's are expected to install more than 16 gigawatts of wind and solar, an average rate of 220 watts per person per year. This is four to five times the rate in Europe, Japan, the US or China, and ten times the world average.¹

The time is now

As the most abundant element in the universe, hydrogen has a role to play in Australia's transition to low-carbon energy that is supplied on a balanced, on-demand grid and storage network.

We know that hydrogen has huge potential to be part of Australia's new domestic energy mix. It can fuel Australian vehicles, heat Australian homes and power Australian industry. It can also help solve the storage puzzle for our renewable energy rich nation by storing excess generated electricity and feeding it back into our grid during periods of high demand or low production.

The export opportunity is also massive, and we are already building relationships with major trading partners looking to accelerate their own hydrogen economies to reduce carbon emissions and greenhouse gases.

The tiger countries in Asia are particularly hungry to share knowledge and establish trustworthy partnerships with potential supply partners. Australia features heavily in their plans, but we need to plan to be in their plans, or get left out.

¹ <https://www.industry.gov.au/sites/default/files/2019-11/australias-national-hydrogen-strategy.pdf> p.16

The technology to produce hydrogen through the application of electricity to water (called electrolysis) is well established. If the electricity used in the process is from renewable sources, such as solar and wind, the resulting hydrogen is clean.

At the moment our energy network is mixed, so pragmatically we need to ensure any incentives or government policies created to drive scalability should initially be technology neutral. In a few years, this can be skewed towards zero carbon hydrogen production and emissions.

Collaborate to compete

The National Hydrogen Strategy Taskforce perfectly captured what is required for Australia to complete on a global scale in the emerging hydrogen export sector when it said in November 2019: “Australia must be prepared for sustained effort, beginning now and extending to the long term. We need to collaborate to compete ... to develop the scientific, technical and regulatory expertise to create an industry.”

Government and business must work together to accelerate the progress from current hydrogen on demonstration scale to hydrogen on commercial scale. There is a clear need for policy and funding support if we incentivise industry to build commercial scale hydrogen generation facilities and deliver benefit to Australian consumers.

The key to unlock the industry

The cost of producing hydrogen will fall sharply within this new decade, by up to 50% for a wide range of applications, making hydrogen competitive with other low-carbon energy alternatives. Even though costs will decline, there will be larger demand for hydrogen generation, distribution, equipment and skills.

The sector is concerned that the Australian Renewable Energy Agency (ARENA) is scheduled to wind down during 2021 and there is no clarity on alternative funding options for the new growth market. The Australian Hydrogen Council estimates that \$500 million in funding is needed to unlock the full potential of hydrogen – to drive intensive research and development, co-sponsor technological innovations and to support pilots and early commercial scale hydrogen facilities.

Government can support the hydrogen market (which comprises several, interconnected markets) in two primary ways: direct funding of production via projects (such as via ARENA); and policy to activate the market.

Now is the time to turn Australia’s incredible potential into a future full of power with a much lighter footprint.

The Australian Hydrogen Council will hold its inaugural conference on March 30th and 31st.