

Hydrogen in Regional Australia

Project Central-West

The Economist stated in October 2021 that “The age of fossil-fuel abundance, is dead”; the energy source that literally fuelled the development of the world we know today, has become less available and desirable. As a result we are now seeing global commitment to leverage newer technologies that capture and store energy from existing waste streams and renewable sources.



Hydrogen is a ‘vessel’ that can store created energy. It has certain properties that can make it superior to other storage technologies; it is light, and at pressure stores a large amount of energy in a relatively small space, making it space-energy-weight efficient.

What this means is that hydrogen provides an ideal storage vessel of renewable energy for applications that require high amounts of power but have limited space to store it in (ie. heavy vehicles, high energy users). It can be



transported easily to where it is needed, and energy stored doesn’t deplete over time; it can store energy from summer to winter to counter seasonal energy generation profiles.

Where large amounts of energy are needed to run a site, move a heavy vehicle, or for when the energy needs to be stored for long periods of time (which has also been an advantage of fossil fuels), Hydrogen provides an ideal alternative to displace fossil fuel.

Why is this important?

The economics of using fossil fuels is becoming (and will continue to become) untenable:

- Carbon taxes will impact goods being exported throughout the world.
- Investors will demand accountability by companies for their emissions.
- Reliability of obtaining fossil fuel will be challenged.
- Insurers will impose implications for customers that do not reduce emissions.
- Customers will spend with companies that are acting on their use of fossil fuel.
- Fossil fuel costs will continue to increase.

No matter the specific reason that might impact any given business, change has to happen.

So the world needs to transition, but transitioning to anything new has challenges. It takes bold first steps by those who have the early capacity to change, to support a broader movement for the wider industry and community. Business and Government must work together to bring developers and early users to a shared vision for how hydrogen can be of use to regional Australia, so the broader community can eventually take part in the new direction and share in those benefits.

Project Central-West?

Project Central-West will support the early adopters of hydrogen, and bring them together with equipment manufacturers to support them in the transition from fossil fuels. It will also create necessary local infrastructure to support this transition and maximise the opportunity for those involved. It begins by:

1. identifying and bringing together the parties to take first steps, and
2. defining a roadmap for:
 - a) installing hydrogen generation and dispensing facility(s), and
 - b) Supporting vehicle acquisition for the early adopters.

Understanding the needs of those visionary parties will support the formation of the infrastructure ‘project’ that then supplies them. Key to success will be collaboration and focussing on the needs of the end-user.



“We begin with a solution to support the visionary adopter and continue with infrastructure growth to support the whole region.”

The Project is underpinned today by a group of organisations who will provide the essential infrastructure to generate and distribute hydrogen. Through phase 1. new organisations joining this group will become integral to support the adoption and growth of ‘new energy’ for the region.



Foundation Developers

Core to the Project, has been the formation of a consortium with the experience and capability to deliver hydrogen solutions. Underpinned by Harelec Solar, who are experts in power and power solutions, the founding team each bring key expertise.



What are the specific elements of Project Central-West?

This Project must provide support to the real-world operation of the organisations that can move first. These organisations will be brought together with equipment manufacturers to assist them in understanding the product and equipment operational parameters. As this activity is carried out, the tangible 'project' will be developed, to provide:

1. Renewable Hydrogen Generation & Distribution

- Install solar to generate renewable energy.
- Install electrolyzers to make green hydrogen.
- Develop distribution to support use of hydrogen.
- Develop a hydrogen filling station for public access.
- Grow network of stations, as the demand grows.

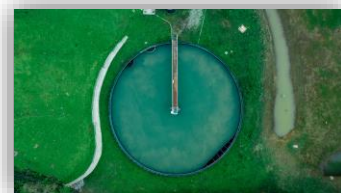


2. Conversation and Education for all community stakeholders

- Build awareness of opportunities to use hydrogen.
- Facilitate conversations between users and suppliers.
- Facilitate conversations with community and experts.
- Build local skills and knowledge in using hydrogen.
- Support knowledge transfer from suppliers to technicians.
- Bring opportunities for further education to the region.
- Support the region in becoming a centre of expertise.

3. Research opportunities for use of waste and further fossil fuel transition in the region

- Oxygen supply for local use; industrial or medical.
- Fuel security for other transport and stationary applications.
- Opportunities for use of ambient heat output from the hardware.
- Testing opportunities for other research into energy use.
- Export of bulk hydrogen.



Next Steps.

To aid in this project, numerous organisations have already indicated a willingness to bring their knowledge and expertise.

- Deakin University (Conversations about Hydrogen, and Education)
- NightHawk Transport (Understanding operations of logistics providers)
- Hzyon Motors (Designer/Builder of heavy duty fuel cell electric vehicles (FCEVs))
- JCB (Designer/Builder of hydrogen powered excavator)

and more original equipment manufacturers are to come.

What part do you want to play in this critical transition?