CLARA energy

Project Rosedale

CLARA Energy acknowledges the Wadjuri people, the Traditional Owners of the land on which Project Rosedale is planned to be developed.

GREEN HYDROGEN

CLARA Energy has engaged in a community survey to understand regional attitudes towards renewable energy. This survey found that when it comes to renewable energy regional communities are most familiar with solar power and wind power. Those surveyed were least familiar with green hydrogen.

What is Hydrogen?

Hydrogen is the most common chemical element in the universe. It can be stored as a gas or liquid.

When hydrogen is produced using renewable energy or processes, hydrogen is an emissions free fuel.

What can hydrogen energy be used for?

- To fuel hydrogen powered cars and trucks
- As a substitute for natural gas for cooking and heating in homes
- A way to store energy

> Hydrogen produced by the Project would be used to fuel fleets of heavy vehicles that transport freight around Australia and provide green hydrogen to other hard to abate energy sectors.

What are the different colours of Hydrogen?

Green Hydrogen

As the name suggests, green hydrogen is sustainable and environmentally friendly. Green hydrogen is produced using a method that does not create green house gas emissions as a by-product.

Blue Hydrogen

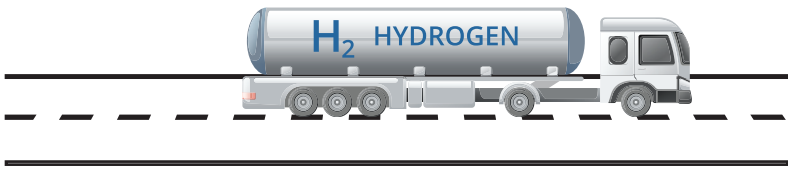
Is produced using steam to separate hydrogen from natural gas. The process results in emissions of carbon dioxide which is captured and stored.

Grey Hydrogen

Is produced by the same means as blue hydrogen, however, in this case the resulting emissions are released into the atmosphere.

Brown & Black Hydrogen

Brown hydrogen (made from brown coal) and black hydrogen (made from black coal) are produced via gasification. By-products of this process are released into the atmosphere.



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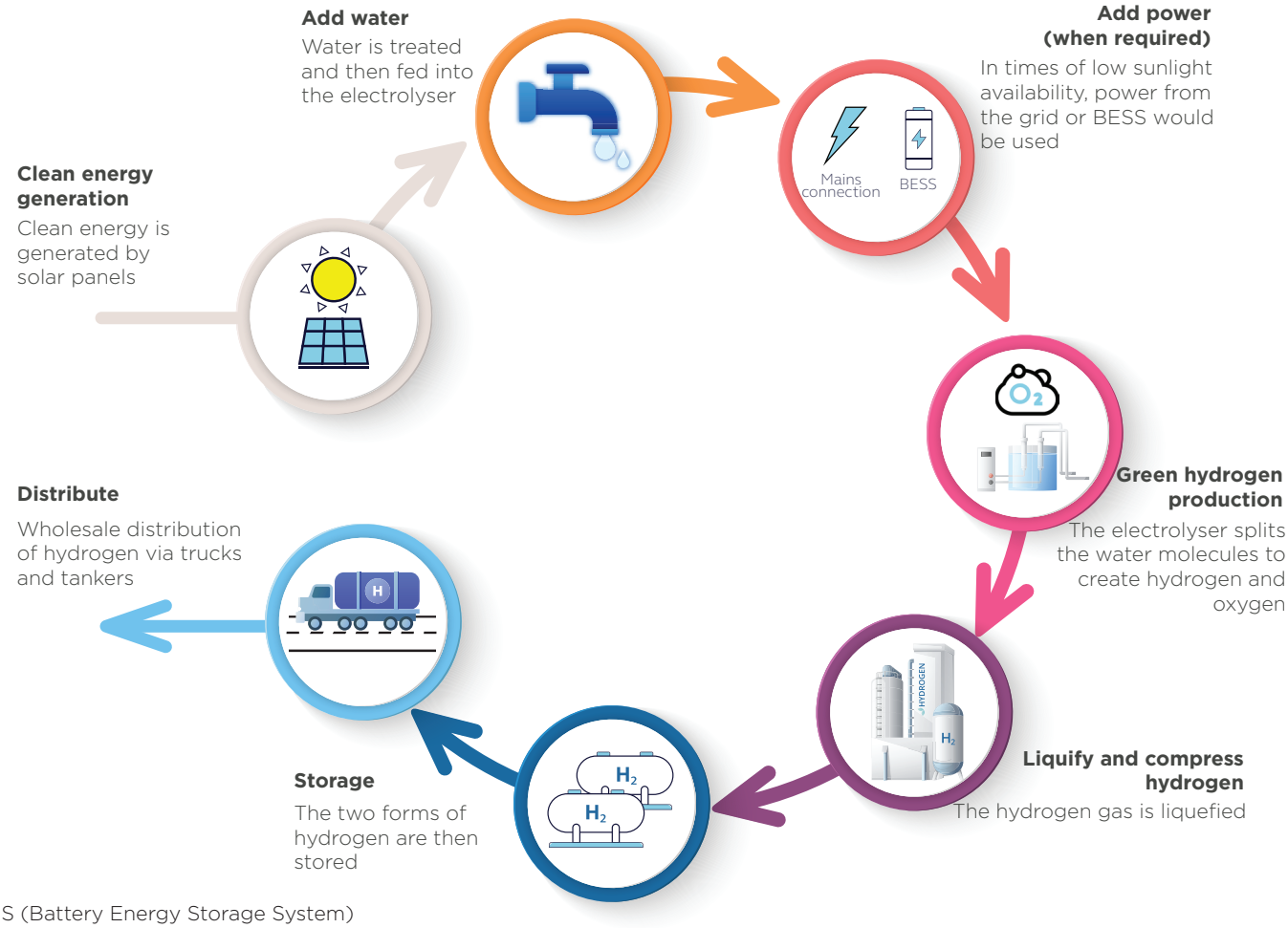
How is green hydrogen produced?



*BESS (Battery Energy Storage System)

Common misunderstandings about Hydrogen

Hydrogen is too dangerous to ever be used on a large scale:

Similar to all technologies, hydrogen carries inherent risks that cannot be entirely eliminated. However, hydrogen's benefit lies in its swift dispersion. In case of a leak into the atmosphere, hydrogen, being significantly lighter than air, ascends and its concentration diminishes rapidly (reducing its explosiveness). With proper management, hydrogen poses no greater risk than the fuels commonly used today.

Hydrogen is a dirty fuel:

This misconception stems from a lack of understanding about the various methods of hydrogen production. -

In the past, the predominant method for hydrogen production has been grey hydrogen, which generates carbon dioxide as a secondary output.

However, the Project aims to generate green hydrogen, a process that does not yield any greenhouse gas emissions as by-products.

Hydrogen production is too costly:

The hydrogen production sector has a firm foundation, and with the decreasing expenses of generating renewable energy, the affordability of producing green hydrogen is on the rise. Consequently, green hydrogen emerges as a viable and cost-effective solution for reducing carbon emissions within the heavy haulage sector.

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