Title: **Hydrogen price race in Australia**

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Abstract

Objective/Scope

In December 2018, the Council of Australian Governments set a vision (Australia Hydrogen Strategy) for a clean, innovative, safe, and competitive hydrogen industry that benefits all Australians and will be a major global player by 2030.

The study was to summarise the current and forecast uses and volumes of hydrogen along with estimating the potential future range of hydrogen prices and prices’ key drivers across Australia seven territories.

Methods, Procedures, Process

The seven hubs are the basis to understand the range in hydrogen prices combined with the technologies available to produce hydrogen across Australia. These seven hubs are planned as a springboard to large scale production, although hydrogen projects can be outside these hubs as well. The hubs planned include: Bell Bay – Tasmania, Pilbara – Western Australia, Gladstone – Queensland, La Trobe Valley – Victoria, Eyre Peninsula – South Australia, Hunter Valley – New South Wales, Darwin – Northern Territory.

The impact of the drivers and price assessment across the green and blue hydrogen technologies were studied.

Green and blue hydrogen price ranges were calculated for the different Australian states and territories. The ranges were calculated based on the LCOH for AE and PEM Electrolysis technology and SMR, black coal and lignite gasification with CCS methods. Since the model is based on LCOH it does not incorporate additional costs such as transport or company overheads and market forces such as supply and demand. The price is equivalent to a Free on Board (“FOB”) or at wellhead price. The model was built to replicate CSIRO’s LCOH for the mentioned technologies, which was then used to model the price for green and blue hydrogen across the seven states and territories.

Results, Observations, Conclusions

A comparison of the hydrogen price for various generation methods across the states and territories of Australia was generated. This has been performed at the monthly dates of different months.

Key observations from the results include:
1. There is neither a leading technology nor a leading territory for the Low or High hydrogen price

2. Variations in energy commodity prices are directly linked to the hydrogen price

3. Decreases in costs suggest efficiencies in technology across the green and blue hydrogen industry are being achieved

4. Short-term volatility is expected as the industry develops but over the longer term the price should stabilise towards the lower end of the range. Japan is a strong partner and aims to achieve hydrogen cost to A$3/kg. Australia must reduce the hydrogen cost as low as possible to keep its competitive advantage amongst competitors.