

Pre-FEED Study commences for Green Hydrogen Facility

Frontier Energy Limited (ASX: FHE; OTCQB: FRHYF) (Frontier or the Company) is pleased to announce the appointment of highly experienced, global engineering firm, GHD, to complete the Pre-Front End Engineering Design ("Pre-FEED" or the "Study") relating to the proposed hydrogen facility to be built at the Company's Bristol Springs Renewable Energy Project (the "BSS Project") in Western Australia.

HIGHLIGHTS

- The Company has commenced a Pre-FEED Study for the hydrogen facility at the Company's BSS Project
 - The Pre-FEED Study (Class 3 CAPEX and OPEX) will provide a higher level of confidence compared to a Definitive Feasibility Study and will be completed in 4Q2022
- The Study will be completed by global engineering and construction firm, GHD. GHD has been selected, given its vast experience in the hydrogen industry
- The Study is an essential step prior to concluding offtake and project financing negotiations
- The Pre-FEED follows the Hydrogen Study¹ that outlined a Stage One (114MW) solar farm powering a 36.6MW alkaline electrolyser, with estimated green hydrogen production of 4.4 million kilogram per annum

Executive Chairman Grant Davey commented: "GHD is widely regarded as one of the leaders in the hydrogen industry regarding design and development and we are pleased to have them on board. We continue to see significant interest in the sector, and we are moving at an accelerated rate to ensure we have the ability to be one of the first significant green hydrogen projects into production in Western Australia."



¹ ASX announcement – 4th August 2022

Image 1: Illustration of hydrogen facility

Pre-FEED Study underway for Hydrogen Facility

In August 2022, the Company completed a Pre-Feasibility Study for Stage One of its Bristol Springs Renewable Energy Project. The Study examined a 114MW solar farm to power a 36.6MW alkaline electrolyser for annual production of approximately 4.4 million kilograms of green hydrogen.

The Company is now accelerating the Project's development with the commencement of a Pre-FEED focused on the 36.6MW alkaline electrolyser (hydrogen facility). In simple terms, electrolysis is the process of using electricity (solar energy) to split water into hydrogen and oxygen.

The Company has engaged global engineering firm, GHD, to complete this work. GHD was selected due to its excellent reputation, specifically its vast experience in the Australian hydrogen industry (refer to 'About GHD' below for recent work completed).

The scope of work will be to assess the hydrogen production case for a 36 MW NEL electrolyser. GHD will perform engineering for input to a Class 3 CAPEX and OPEX estimate, including:

- a) Electrolyser integration and assessment of utility requirements
- b) Cooling plant selection and high-level sizing
- c) Water supply/storage system design
- d) Power system design
- e) Hydrogen compression, storage and delivery to users including pipeline to nearby blending point and tube trailer loading
- f) Balance of Plant assessment including buildings, control systems, vent, safety and utility systems

The Pre-FEED is an essential step prior to completing offtake and project financing discussions. The Pre-FEED will be completed during 4Q2022.

Alkaline Water Electrolyser

Alkaline Water Electrolyser (AWE) was selected based on its lower overall cost and robustness to produce green hydrogen at purity >99.98%. AWE is a mature green hydrogen technology having been available at MW-scale for longer than other leading technologies, including Proton Exchange Membrane ("PEM") Electrolyser. As such, it offers the lowest cost per kW of installed capacity, long-term operational stability and extended plant life. The reduced price compared to PEM is largely explained by the maturity of the technology and the use of precious metals within the PEM stack.

As electrolyser plants are modular, the selection of AWE at this time does not lock the Company in to a particular technology in the event of future advances. The current size of the modules is approximately 18.3MW. Given the forecast power generation from the solar

facility, the current selected size of the facility is 36.6MW (or two modules). The Company will however look to refine the size of the facility in the future by assessing the potential to add additional modules.

About GHD

Established in 1928, GHD is multi-disciplinary engineering, environmental, design and construction company. GHD has over 10,000 employees and over 200 offices, across the world. GHD has significant experience regarding the design, cost estimation and development of projects in the hydrogen industry in Australia. This includes:

- **ATCO Clean Energy Innovation Park (CEIP)** - GHD have been supporting the ATCO CEIP project as it has moved from concept towards FID. CEIP is a 10MW green hydrogen project that received close to \$30 Million funding from ARENA.
- **BHP Kwinana Nickel Refinery** - Studies (Class 4 & 5) to assess a range of green hydrogen production scenarios for integration into the existing nickel process plant.
- **Murchison Renewable Hydrogen – CIP (Copenhagen Infrastructure Partners)** - GHD is providing technical support (hydrogen and ammonia pipelines and export facility focus) and environmental permitting and approval works to support the GW scale Murchison Renewable Hydrogen project.
- **Hydrogen Energy Supply Chain Project - Kawasaki Heavy Industries & J-Power** - GHD was engaged for the role of EPCM for the Latrobe Valley H2 Plant.
- **Yara Fertilizer Brownfield Piping & Tie In Design (Green Hydrogen Facility integration)** - Piping design of key utilities to support the integration of Yara Fertiliser Plant with the Yuri Green Hydrogen Facility.
- **Esperance Hydrogen Hub – Horizon Power** - GHD have been engaged by Horizon Power to assess potential large scale hydrogen export opportunities in the Esperance region.

Authorised for release by Frontier Energy's Board of Directors.

To learn more about the Company, please visit www.frontierhe.com, or contact:

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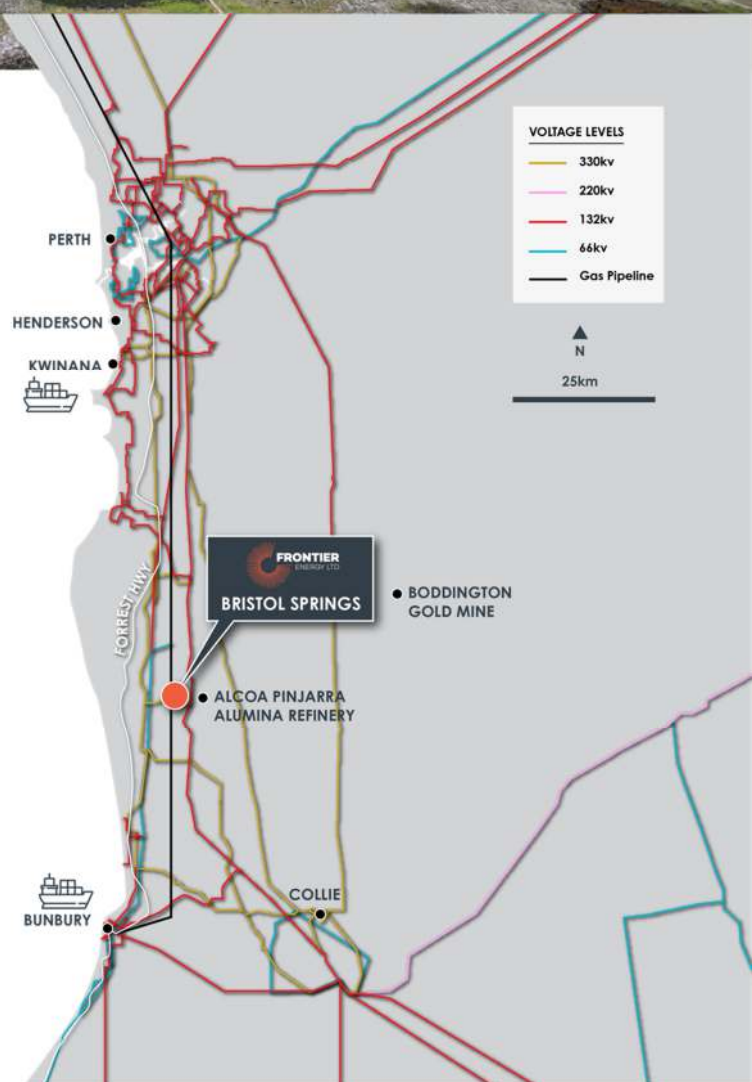
About Frontier Energy

Frontier Energy Ltd (ASX: FHE; OTCQB: FRHYF) is developing the Bristol Springs Green Hydrogen Project (the Project) located 120km from Perth in Western Australia.

The Company recently completed a Pre-Feasibility Study¹ that outlined the Project's potential to be both an earlier mover and one of the lowest cost green hydrogen assets in Australia.

The Project benefits from its unique location surrounded by major infrastructure. This reduces operating and capital costs compared to more remote hydrogen projects, whilst also being surrounded by likely early adopters into the hydrogen industry in the transition from fossil fuels.

¹ASX Announcement 4th August 2022



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For a comprehensive view of information that has been lodged on the ASX online lodgement system and the Company website, please visit asx.com.au and frontierhe.com, respectively.