

Waroona Energy Inc. commences a Study to assess a Dual Fuel Green Hydrogen Peaking Plant

Frontier Energy Limited (ASX: FHE; OTCQB: FRHYF (Frontier or the Company)) is pleased to announce that Waroona Energy Inc. **(TSXV: WHE) (Waroona)** has commenced a study to assess a Dual Fuel Green Hydrogen Peaking Plant. Dual fuel peaking plants are a mature technology and have emerged as an early consumer of green hydrogen.

Frontier is the major shareholder of Waroona with a 20% interest in the Company. Further details of this announcement are attached or can be found at Waroona's website <https://waroonaenergy.com/>.

Given the shared boundaries of Waroona's Renewable Energy Project and Frontier's Project Waroona and the Company have entered into a Collaboration Agreement (see ASX announcement – [6th October 2022](#)). The key areas of collaboration include:

- Shared discussions with stakeholders
- Shared services and shared IP (through Study works); and
- Long term potential for capital cost savings by sharing infrastructure

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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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.

Study commences on a Dual Fuel Green Hydrogen Peaking Plant

Waroona Energy Inc. (TSXV: WHE) (“Waroona” of the “Company”) is pleased to announce the Company has commenced a study to assess a Dual Fuel Hydrogen Peaking Plant (“Peaking Plant”) at the Company’s Waroona Renewable Energy Project (the “Project”) in Western Australia. Dual fuel peaking plants are a mature technology and have emerged as an early consumer of green hydrogen.

HIGHLIGHTS

- The Company has commenced a Study to assess a Peaking Plant at the Project with a minimum capacity of 100 MegaWatts (MW)
- Peaking Plants are a mature technology and are used to supply power in the market and operate during periods of high demand (and pricing) for electricity
- Peaking Plants are a first mover in the consumption of hydrogen as a fuel, given existing market mechanisms already in place and planned in Western Australia (WA)
 - *The WA Government has announced plans to legislate that 1% of the South-West's electricity generation will come from green hydrogen*
- EnergyAustralia is currently constructing the Tallawarra B Power Station 314MW dual fuel hydrogen power plant in New South Wales, with operations expected to commence later this year
 - *Construction at Tallawarra B Power Station commenced in 2021 at an estimated capex of ~\$300 million. The project received \$83 million in Federal and State government funding*
- The Peaking Plant opportunity is available to the Company due to its location and access to existing infrastructure, including an existing connection to the WA electricity grid
- This Study will be completed with the assistance of Frontier Energy (FHE.ASX), with which the Company has a Collaboration Agreement regarding future development opportunities and shared IP across the renewable energy sector
 - *Frontier recently completed a Definitive Feasibility Study on the Bristol Springs Hydrogen Project, which is one of the lowest cost hydrogen projects in Australia and adjacent to Waroona’s site*
- The Company is finalising the Lead Engineer to complete the Study; this appointment is expected later this month

Adam Kiley, President, and CEO, said: *“To be a successful early mover in the hydrogen industry, you not only need the potential for low cost hydrogen production with scalability, but also a clear pathway for commercialisation through existing markets and mechanisms.”*

Waroona is fortunate to be in close proximity and have access to two of the most advanced and likely pathways for delivery of green hydrogen in the sectors early stage of development. The first being through direct injection of hydrogen into the Dampier to Bunbury Natural Gas Pipeline (DBNGP), which



has shown¹ is already prepared for hydrogen injection. The second is through power generation through this proposed Peaking Plant opportunity, which is available through the Company's existing connection to the Western Australia electricity grid.

The Peaking Plant opportunity would not only see the Company create its own pathway for renewable hydrogen consumption, but also assist Western Australia with its medium-term baseload energy supply, given the planned closure of coal fired power generation assets by 2029. Coal currently provides 30% of the State's baseload energy needs which increases during "peak energy periods" (3pm to 9pm).

Dual Fuel Peaking Plant Study commences

Waroona Energy has commenced a Study to assess a minimum 100 MW dual fuel peaking power facility at the Project. The Study will be completed with the assistance of Frontier Energy under the existing Collaboration Agreement between the companies. Frontier released a Definitive Feasibility Study on their Bristol Springs Hydrogen Project in March 2023, which highlighted the project's potential to be one of the lowest cost hydrogen projects in Australia. Further details on the Collaboration Agreement and an overview of Frontier Energy are detailed below.

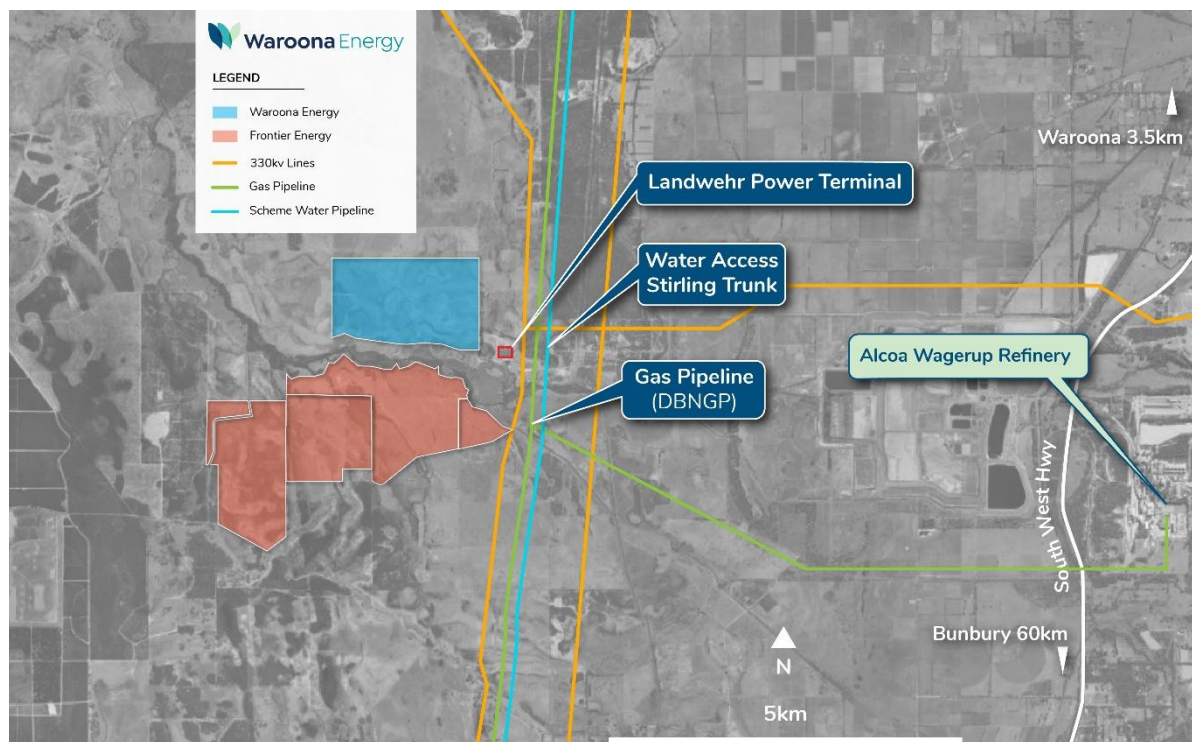


Image 1: Project location of Waroona Renewable Energy Project and Frontier Energy's Bristol Springs Project

¹ <https://www.agig.com.au/western-australian-feasibility-study>



The Peaking Plant will be fuelled by natural gas sourced from suppliers and transported via the Dampier to Bunbury Natural Gas Pipeline (DBNGP), whilst renewable hydrogen to be produced from the solar energy generated at the Project or Frontier's Bristol Springs Renewable Energy Project.

The Company has selected a number of highly experience engineering groups to tender for project design. This scope includes:

- Outline the selected options for the different reference dual fuel Power Plant, engineering, permitting, and emissions analysis/pathways;
- Detail the estimation of the capital and annual fixed costs for the reference technologies;
- Provide the expected system services and net energy market revenues for the reference dual-fuel power plant; and
- Provide for an overview of the Capacity Market and explains how the Reserve Capacity Price is expected to be used.

This Study is expected to be completed in late 2023.

What is a Peaking Plant?

Dual fuel peaking plants are designed to balance the fluctuating power requirement in the electricity network and operate during periods of high-level demand for electricity or shortfalls of electricity supply. Peaking Plants are a mature technology, with multiple operations already in production throughout the world including Western Australia.

Examples include the Wagerup dual fuel (gas and distillate) peaking plant, located 5km from the Project which has a capacity of 380MW. This peaking plant has been operational since 2007. The Tallawarra B 316 MW dual fuel (hydrogen and natural gas) in New South Wales is under construction and due to commence power generation later this year (see case study below).

Peaking Plants provide important balancing services as the world switches towards renewable energy solutions where weather conditions, i.e., lack of wind or sun, prevent output. Peaking plants address this imbalance and reduce stress on the electricity grid, by providing power stability to potentially avoid blackouts and maintain the security of electricity supply.

Case Study: Tallawarra B Power Station Dual Fuel Peaking Plant

EnergyAustralia is developing the Tallawarra B Power Station, a 316 MW dual fuel (hydrogen and natural gas) peaking plant in New South Wales, which will be Australia's first net zero emissions gas and hydrogen capable power station. The power plant will operate with high operational flexibility as a "Peaking plant"—firing up rapidly when needed to stabilize the power grid during demand peaks and it will utilize partial volumes of hydrogen as fuel to decrease its carbon emissions footprint.

Tallawarra B will be the first project to use GE's advanced 9F.05 gas turbine in Asia. GE's gas turbine portfolio has the capability to burn hydrogen levels from 5% (by volume) up to 100%. The project had



a reported estimated cost of approximately A\$300 million and started construction in 2022 with first power production expected in late 2023.



Image 2: Tallawarra B Power Station will sit next to EnergyAustralia's existing power station in NSW

In May 2021, EnergyAustralia and the New South Wales Government announced that the Tallawarra B Power Station development would proceed to construction following execution of a funding agreement between the two parties.

Funding support of AUD\$78 million is to be provided by the New South Wales (NSW) Government and AUD\$5 million from the Australian Federal Government in support of financial close of the project and to support the project being hydrogen-ready.

Under the funding agreement, EnergyAustralia will offer to buy 200,000 kilograms per year of renewable-based hydrogen from 2025 (equivalent to over five per cent of the plant's fuel use) and will offset direct carbon emissions from the project over its operational life.

The project is being developed in a consortium between Clough and GE. EnergyAustralia is an electricity generation, electricity and gas retailing private company in Australia, a wholly owned subsidiary of the Hong Kong-based and listed China Light and Power (CLP Group).



Collaboration Agreement with Frontier Energy

The Waroona Project is adjacent to Frontier Energy's (FHE:ASX) Bristol Springs Green Hydrogen Project. Frontier Energy, an Australia Stock Exchange listed Company, is one of the more advanced green hydrogen developers in Australia.

Both projects share the benefits of nearby infrastructure for green hydrogen production and supply. Given the shared boundaries of the projects, the groups have entered a collaboration agreement to allow for:

- Shared discussions with stakeholders;
- Shared services and shared IP (through Study works); and
- Long term potential for capital cost savings through shared infrastructure.

Frontier released a Definitive Feasibility Study (DFS) in March 2023, outlining the potential for its Project to be one of the lowest cost hydrogen projects in Australia. Key highlights of the DFS included:

- Hydrogen Production of 4.9 Mkg pa;
- Low initial capital cost – A\$242.5m (114MW solar + 36MW electrolyser); and
- Low total unit cost of A\$2.77 / kg hydrogen (inc. capex).

ON BEHALF OF THE BOARD

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Cautionary Note Regarding Forward-Looking Statements

Certain statements contained in this news release constitute forward-looking statements within the

Certain statements contained in this news release constitute forward-looking statements within the meaning of Canadian securities legislation. All statements included herein, other than statements of historical fact, are forward-looking statements and include, without limitation, statements about the Company's development plans for the Project and the studies on a potential Peaking Plant. Often, but not always, these forward looking statements can be identified by the use of words such as "estimate", "estimates", "estimated", "potential", "open", "future", "assumed", "projected", "used", "detailed", "has been", "gain", "upgraded", "offset", "limited", "contained", "reflecting", "containing", "remaining", "to be", "periodically", or statements that events, "could" or "should" occur or be achieved and similar expressions, including negative variations.

Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different

from any results, performance or achievements expressed or implied by forward-looking statements. Such uncertainties and factors include, among others, the uncertainties inherent in the estimated economics of the Project, and whether the Company will arrange any offtake related financing; whether exploration and development of the Company's properties will proceed as planned; changes in general economic conditions and financial markets; the Company or any joint venture partner not having the financial ability to meet its exploration and development goals; risks associated with the results of exploration and development activities, estimation of mineral resources and the geology, grade and continuity of mineral deposits; unanticipated costs and expenses; risks associated with COVID-19 including adverse impacts on the world economy, exploration and development efforts and the availability of personnel; and such other risks detailed from time to time in the Company's quarterly and annual filings with securities regulators and available under the Company's profile on SEDAR at www.sedar.com. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended.

Forward-looking statements contained herein are based on the assumptions, beliefs, expectations and opinions of management, including but not limited to: the accuracy of the estimated economics of the Project; that the Company will arrange offtake related financing; that the Company's stated goals and planned exploration and development activities will be achieved; that there will be no material adverse change affecting the Company or its properties; and such other assumptions as set out herein. Forward-looking statements are made as of the date hereof and the Company disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by law. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, investors should not place undue reliance on forward-looking statements.