

## **SODAR Wind and Solar Monitoring commences at the HyEnergy ZERO CARBON HYDROGEN™ Project**

### **Highlights:**

- **Feasibility Studies Data Collection commences with the installation of the first Fulcrum3D SODAR (Sonic Detection and Ranging) weather monitoring station at site**
- **Fulcrum3D's flagship Sodar data collection is required to support feasibility studies and is one of only five remote sensing instruments globally considered to provide bankable wind data by leading independent consultants, such as DNV**

**Province Resources Ltd** (ASX: PRL) (**Province** or the **Company**) is pleased to announce that it has successfully begun collecting wind and solar data at the HyEnergy ZERO CARBON HYDROGEN™ Project (**HyEnergy Project**).

The Fulcrum3D Sodar monitoring station is critical in collecting preliminary wind and solar data within the project area to assess the wind and solar resource potential. Fulcrum3D's flagship Sodar wind monitoring system is one of only five remote sensing instruments globally considered to provide bankable wind data by leading independent consultants, such as DNV. The data collected will enable the proposed wind turbines and solar array network to be optimised, prior to the final project scope and scale decision point.

Managing Director, David Frances, commented "It is great to be able to hit the ground running on the exciting HyEnergy green hydrogen project, I look forward to progressing the feasibility studies as quickly as possible."

The HyEnergy ZERO CARBON HYDROGEN™ Project is located in Western Australia's north-west and covers an area of 1,408 square kilometres. The town of Carnarvon is the administrative centre and adjoins the project area; it has first class infrastructure in place, including the Dampier Bunbury Natural Gas Pipeline (DBNGP) and the major North West Coastal Highway.



*Figure 1. Fulcrum3D Sodar trailer mounted wind and solar monitoring station installed at the HyEnergy Project.*

## **Company Background**

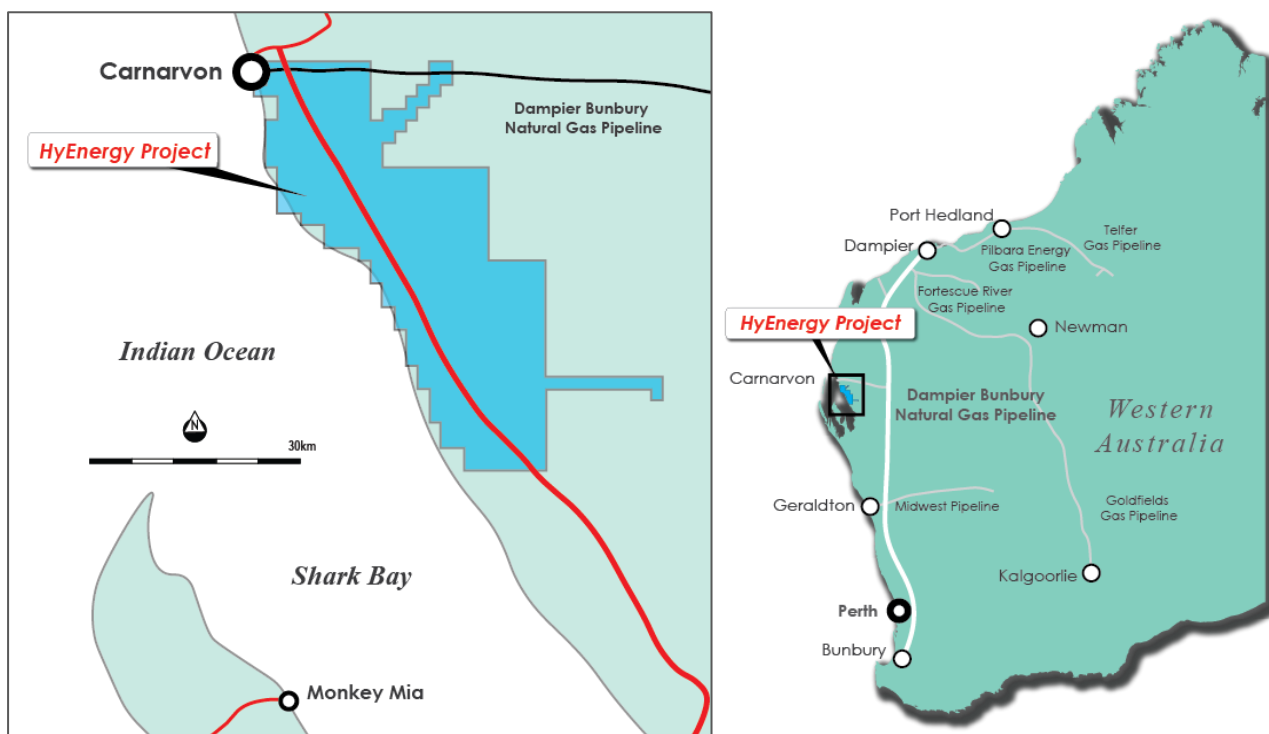
As set out in the Company's ASX release dated 17 February 2021, the Company has entered into a conditional agreement to acquire all of the shares in Ozexco Pty Ltd. A shareholders' meeting will be held shortly to seek shareholder approval to complete this acquisition. The Company is an ASX listed natural resources company currently focused on the completion of the acquisition and progression of the HyEnergy ZERO CARBON HYDROGEN™ Project in the Gascoyne region of Western Australia. The Company also has some legacy mineral exploration projects with potential for copper, gold, nickel, cobalt, vanadium and other mineral opportunities that have a long mine life and play a critical role in the economic development of world economies. The Company's projects are located in Australia and Sweden.

## **The HyEnergy ZERO CARBON HYDROGEN™ Project**

The HyEnergy ZERO CARBON HYDROGEN™ Project is in Western Australia's Gascoyne Region and covers a flat lying arid landscape with low intensity pastoral land use. With the Gascoyne's climate and wind patterns, renewable energy is an attractive and viable option<sup>1</sup>. This low competing land use and proximity to a large regional centre and associated infrastructure of Carnarvon, means the project area is ideal for installation of a commercial scale wind and/or solar farm. The hydrogen industry is in its infancy in Western Australia, but it is truly amazing how swift and significant the move into sustainable energy by both governments and corporations around the globe has been of late.

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Green hydrogen produced from renewable sources, such as wind and solar energy, looks set to play a significant role in navigating society towards a decarbonised future and meeting the global aim of net zero emissions by 2050.



**Figure 2. Location Map of the Gascoyne and HyEnergy Projects in the Gascoyne Region of Western Australia.**

Some of the key fundamentals of the green hydrogen market are listed below:

- Western Australia's Hydrogen Strategy to support renewable hydrogen industry with a goal of 10% mix of renewable hydrogen in the DBNGP by 2030.
- Funding from Government on both a State and Federal level include:
  - Western Australian Renewable Hydrogen Strategy \$10m.
  - Australian Renewable Energy Agency (ARENA) \$70m.
  - Australian Government Advancing Hydrogen Fund \$300m.
- And globally:
  - \$347b in ESG funds invested in 2020<sup>2</sup>.
  - \$490b govt and corporations selling ESG bonds<sup>2</sup>.
  - Moody's expects 2021 sustainable debt issuance to reach \$650b and no signs of the ESG funds slowing<sup>2</sup>.
  - > 100 countries pledged to Net Zero by 2050<sup>3</sup>.
  - Estimated that \$3 trillion or more in capital investment for decades will be needed<sup>3</sup>.

Some of the key highlights of the HyEnergy Project are listed below:

- Infrastructure, existing Dampier Bunbury gas pipeline within close proximity to potentially instal spur line and provide Hydrogen Feedstock in DBNGP for domestic or export use.
- Infrastructure, room for offshore Ship Loading Facility in the future for export market.
- Wind, ranked 4th in Western Australia for mean wind speeds recorded per annum<sup>4</sup>.
- Wind, located along coastal region with the greatest wind potential.
- Solar, identified flat arid area with minimal competing land uses for large solar array network.
- Solar, Carnarvon has a very rich solar resource averaging 211 sunny days per year, with an average solar exposure of 22 MJ/m<sup>2</sup> /day (or 6.24 kWh/m<sup>2</sup> /day)<sup>5</sup>.
- Water, potential site to extract sea water for electrolyser plant.
- Supportive Government, The Regional Centres Development Plan (RCDP) is about attracting business, investment and people to support the growth of WA's Regional Centres and SuperTowns. This means a stronger economy and a better quality of life for the people in regional WA – and for the benefit of all Western Australians.



**Figure 2. Location Map of HyEnergy Project highlighting highest suitability ranking by Geoscience Australia for prospective hydrogen production regions of Australia.**

## Fulcrum3D Company Profile

Fulcrum3D is a Sydney based technology company founded in 2011 and focused on the renewable energy sector. A wholly Australian owned company, they have established themselves as the go-to suppliers of wind and solar monitoring stations, supplying to the major developers and operators alike.

Fulcrum3D's monitoring systems have been installed and remain operational worldwide, maintaining a strong focus here in Australia. In each case, Fulcrum3D provides high quality and accurate data through their systems which are proven to be robust and reliable in even the harshest of environments.

Fulcrum3D's flagship Sodar wind monitoring system is one of only five remote sensing instruments globally considered to provide bankable wind data by leading independent consultants such as DNV-GL. Development of the Fulcrum3D Sodar resulted in a robust telemetry platform and associated web access portal FlightDECK where clients can download data.

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Fulcrum offers clients holistic monitoring solutions from system design, integration, and installation through to data management and subsequent analysis. Fulcrum3D regularly works with financiers, engineers and developers in the wind and solar sectors to generate bankable analysis and understands the required traceability and confidentiality. Fulcrum's in-house team includes chemical, renewable energy, mechanical and electrical engineers along with WHS professionals and physicists. This experienced team has decades of experience in successful renewable energy project development and resource monitoring, as well as research and development.

## **Wind Monitoring**

The Fulcrum3D Sodar measures wind speeds from 50m to 200m, providing wind speed and direction data up to and above wind turbine hub height. This data is used in bankability analysis and studies ahead of project construction. There are now over 170 Sodar units now in operation around the world, with Fulcrum tailoring to site specific project requests.

### **Advantages of the Fulcrum3D Sodar include;**

- Short lead time
- Cost-effective wind and solar measurements for multiple locations
- Easy to deploy, install and relocate
- Reliability – manufactured from long-lasting materials for harsh environments
- Largely maintenance free for >6 years
- Can be fitted with additional met and solar instrumentation
- Standard remote comms and standalone power kits
- Easy access to raw and processed data
- Readily available support from the Fulcrum3D team of engineers and scientists

## **Solar Monitoring**

Historically solar farms have not always carried out on-the-ground resource monitoring, instead relying on satellite data alone. This trend is changing and it's imperative that accurate solar data is captured for the specific site location for such large capital investments to build a solar array network of commercial scale. The Fulcrum Pyranometer solar monitoring station (Kipp & Zonen SMP11) is a high quality instrument suitable for the development of solar farms. The raw 1-second data is recorded, stored and sent back to Fulcrum servers for data quality control and collection.

**-ENDS-**

This announcement has been approved by the Board.

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The information referred to in this announcement relates to the following sources:

<sup>1</sup> Gascoyne Regional Development Plan 2010-2020 (February 2010)

<sup>2</sup> Quinson, Tim. "The Boom in ESG Shows No Signs of Slowing." Bloomberg Green, 10 February 2021  
[www.bloomberg.com/news/articles/2021-02-10/the-490-billion-boom-in-esg-shows-no-signs-of-slowing-green-insight](http://www.bloomberg.com/news/articles/2021-02-10/the-490-billion-boom-in-esg-shows-no-signs-of-slowing-green-insight)

<sup>3</sup> Kelly, Jason. "Brookfield Pursues \$7.5 Billion Fund Devoted to 'Net-Zero' Shift" Bloomberg Green, 10 February 2021  
[www.bloomberg.com/news/articles/2021-02-10/brookfield-pursues-7-5-billion-fund-devoted-to-net-zero-shift](http://www.bloomberg.com/news/articles/2021-02-10/brookfield-pursues-7-5-billion-fund-devoted-to-net-zero-shift)

<sup>4</sup> Bonzle Digital Atlas of Australia

<sup>5</sup> Carnarvon A Case Study of Increasing Levels of PV Penetration in an Isolated Electricity Supply System (April 2012)