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ASX:14D

## 1414 DEGREES LAUNCHES HYDROGEN DEVELOPMENT PROJECT

**1414 Degrees Ltd** (ASX: 14D) ("1414 Degrees" the "Company") is pleased to announce a Partnership Agreement (Agreement) with key companies and institutions to develop its SiPHyR™ (SiBrick integrated Pyrolytic Hydrogen Reactor) technology.

The SiPHyR project, which is designed to produce hydrogen and solid carbon using methane pyrolysis, has received a significant boost to its development from Woodside Energy Technologies (Woodside). A \$1 million contribution will be made by Woodside consisting of direct funding and the provision of subject matter expertise. This investment underscores the commitment of all parties involved in advancing lower-carbon energy solutions.

1414 Degrees' Executive Chairman, Dr Kevin Moriarty, said that "the signing of the Agreement is a critical milestone. The contribution from Woodside will support the integration of our silicon thermal energy storage with a new fluid reactor technology to potentially reduce hydrogen production costs and emissions."

SiPHyR integrates licensed designs from the University of Adelaide (UoA) with 1414 Degrees' silicon-based thermal energy storage technology, SiBrick®, to enable continuous hydrogen production from intermittent renewable electricity. The technology team includes experts from UoA, Woodside, Vulcan Steel, and the Royal Melbourne Institute of Technology, supported by a \$2.5 million Australian Government grant under the Cooperative Research Centres Project.

The project aims to advance SiPHyR from its current Technology Readiness Level (TRL) of 2 to TRL 5 within three years. A critical deliverable of this project is a detailed plan for a scaled demonstration at TRL 7 within two years of this project's completion, ensuring the technology's readiness for commercialisation.

### How it works:

Methane pyrolysis is a high-temperature process that converts natural gas or biogas into hydrogen gas and solid carbon. Existing methods face challenges with scalability and carbon buildup. The UoA's dual-column bubble reactor patent addresses these issues by effectively separating heating from carbon production. Integrating SiBrick will allow the process to utilise intermittent renewable energy while maintaining the constant high temperatures required.

### The benefits:

SiPHyR aims to produce lower-emissions hydrogen at a cost comparable to current emissions-intensive methods, targeting less than US\$2 per kilogram. This technology could be used to decarbonise natural gas by removing carbon directly from pipeline gas and offers a compelling business case for hydrogen use in various production processes.

1414 Degrees will continue to provide updates on the progress of the SiPHyR project. For more information, please visit 1414 Degrees' website.

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## AUTHORISED BY:

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## ABOUT 1414 DEGREES LIMITED

1414 Degrees is a leader in industrial decarbonisation with its cutting-edge silicon-based solutions. Our key technologies include:

**SiBrick®:** This thermal energy storage technology safely and efficiently stores renewable electricity as latent heat, available for use on demand.

**SiBox®:** Facilitating the transition to sustainable industrial processes, SiBox delivers consistent, high-temperature heat. It can be seamlessly retrofitted into heavy industry processes, offering a viable alternative to conventional energy sources.

**SiPHyR™:** A methane pyrolysis reactor with integrated storage, SiPHyR will produce low-emission hydrogen and solid carbon using renewable energy sources.

1414 Degrees has showcased its capabilities through successful pilot projects that highlight the reliability and effectiveness of its solutions. SiBox has proven its ability to deliver high-temperature air or steam on demand from stored heat. The development of SiPHyR underscores our commitment to innovation and sustainability.

Collectively, these technologies enable the alignment of energy supply with demand, fostering the widespread adoption of renewable energy and significantly contributing to industrial decarbonisation and grid stability.

In 2019 the Company made the strategic purchase of the Aurora Energy Project (AEP) located near Port Augusta, South Australia. The project is a long-term renewable energy initiative to deliver reliable electricity to the region and National Electricity Market. The AEP has approval for 14D to pilot and demonstrate a large commercial scale version of the SiBox technology.

For more information, please visit [www.1414degrees.com.au](http://www.1414degrees.com.au)

## Forward-looking statements

This announcement includes forward-looking statements which may be identified by words such as 'anticipates', 'believes', 'expects', 'intends', 'may', 'will', 'could', or 'should' and other similar words that involve risks and uncertainties. These forward-looking statements are based on the 1414 Degrees' expectations and beliefs concerning future events as at the date of this announcement. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of 1414 Degrees, which could cause actual results to differ materially from such statements. 1414 Degrees makes no undertaking to update or revise the forward-looking statements made in this announcement to reflect any change in circumstances or events after the date of this announcement.