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ASX:14D

June 2024 Quarterly Activity Report

1414 Degrees Ltd (ASX: 14D) ("1414 Degrees" the "Company") is pleased to release its Quarterly Report for the period ending 30 June 2024.

Chairman's Letter

Your Company has significantly advanced the commercial readiness of its technology and its strategic partnerships; successfully completing industrial process tests of SiBox®, announcing rights to another patent and a further grant for its SiPHyR hydrogen reactor technology, and signing a term sheet with BHP to progress the Aurora Renewable Energy Precinct connection to the national electricity grid.

Cash grants for SiPHyR™ development now total \$3.2m after Woodside Energy Technologies Ltd (Woodside) increased its contribution to \$1m, consisting of \$700,000 in cash and \$300,000 in technical support. The \$5.2m SiPHyR project involves significant engineering and scientific expertise from the Royal Melbourne Institute Technology (RMIT), Woodside and the University of Adelaide (UoA) to design and test this innovative solution for decarbonisation.

1414 Degrees' aim is to own and commercialise a SiPHyR device that can be connected to existing natural gas and biogas supplies, replacing methane with hydrogen. Hydrogen was a major constituent of piped town gas supplies up to 50 years ago. Your Company's very high temperature silicon storage makes it possible to power continuous hydrogen production, using intermittent electricity supply, as we recently demonstrated in SiBox, which is now in the commercialisation phase. We want to make hydrogen at a price point competitive with current steam methane reformed hydrogen, and much less than high-cost electrolysis hydrogen production.

We have created additional engineering positions to speed-up development and commercialisation of the hydrogen technology. The commercialisation strategy will target a pipeline of customers for hydrogen at a competitive rate, enabling them to meet their emissions target without substantial modifications of their equipment.

We have the only energy storage technology that has demonstrated reliable and constant supply of hot clean air at temperatures up to 900°C using our SiBox. Customer enquiries for SiBox technology increased after our announcement of the completion of testing for commercial readiness under the SiBox Development Agreement with Woodside. Our commercial team has been invited to study prospective industry sites and, in turn, hosted several industry teams to view our SiBox Demonstration Module. Commercial and technical feasibility assessments are progressing through proposal stages.

The quarter commenced with the signing of a term sheet to obtain access to the 275 kV transmission line at the Aurora Energy Precinct. This transmission line connects BHP mines to the north through Davenport substation at Port Augusta to the National Electricity Market (NEM). The SiliconAurora Pty Ltd joint venture company is working toward technical and commercial agreements with BHP and advancing applications with ElectraNet and AEMO for a transmission connection agreement (TCA).

As reported in the previous period, 1414 Degrees engaged London investment bank Hannam & Partners to seek investors for the 140MW 2-hour lithium-ion battery energy storage system (BESS) that the SiliconAurora partnership has been developing. That process is proceeding positively.

Your Company has a supportive cash flow outlook from grants, \$1.5m from the Aurora Joint Venture partner Vast Solar Pty Ltd, and potential substantial revenue from the Aurora BESS project. The SiBox Development Agreement is progressing to a decision point when Woodside will decide if it wishes to jointly commercialise SiBox to earn up to 49% of the SiBox IP.

I look forward to reporting substantial progress for your Company.

Dr Kevin Moriarty



Executive Chairman

Commercialisation

Industry Engagement

Completing commercial readiness tests of the SiBox Demonstration Module, at the end of the previous quarter, generated increased interest in SiBox's emission reduction potential from a variety of industries. The Company's immediate focus is to identify target markets and areas for development, which will form the basis of SiBox's commercialisation. Our commercial team, headed by Dr Jason Chaffey, has been undertaking reciprocal site visits with potential customers to assess and determine the most appropriate site for a commercial pilot of our technology.

Cost Reduction

The Company is working to reduce the cost of the SiBox system to increase its competitiveness with conventional natural gas heat supply for different temperature requirements. This initiative aims to solidify the Company's position by showcasing the potential of its heat storage solution to facilitate the decarbonisation of industrial processes.

Government Assistance

The Company has been notified that it is eligible for up to \$5m in assistance from the Australian Government's Industry Growth Fund to commercialise its SiBox and SiBrick technology.

SiBrick®

Our new R&D facility in the Tonsley Innovation District of Adelaide will be fully functional by the end of July. The Company continued to work with Refratechnik Steel GMBH toward mass production of SiBrick in existing factories to drive down costs through economies of scale.

We have conducted small scale production trials and will continue refining the recipe over the current quarter. Our aim is to have a mass producible brick ready for the first industrial pilots of SiBox when the commercial team secure industry partners.

SiPHyR™

The \$5.2m SiPHyR project represents a significant opportunity for your Company to participate in the 70 million tonnes per annum hydrogen economy that is projected to expand into many new sectors over the next decade. We're pleased to be moving the project forward, after reaching significant agreements during the quarter.

In late April, the Company acquired additional exclusive patent rights from the UoA, enabling us to further enhance this lower-cost, low-emissions hydrogen production solution. These intellectual property rights, in

addition to those acquired from the UoA in January, are for a new method for producing net zero hydrogen from natural gas.

These rights are critical to our goal: to own and commercialise a device that can be connected into existing natural gas and biogas supplies, replacing methane with hydrogen. From the 19th century, town gas supplies typically consisted of a mixture with over 50% hydrogen, along with methane and other components. This switched to predominantly natural methane as underground gas fields were developed. We envision retaining the advantages of existing reticulated gas supply to homes and industry by using pyrolysis to break down methane into solid carbon and hydrogen. SiPHyR pyrolysis is estimated to use much less electricity than electrolytic hydrogen produced from water using electric energy. It will also operate stably using intermittent electricity to charge the silicon storage, thereby reducing hydrogen cost further. This has the potential to provide an easier way for many hard to decarbonise industries and appliances to transition to low-emissions alternatives, at an affordable price.

We made further progress in the quarter, securing \$1 million in funding and expertise from Woodside, and formalising our partnership with key industry players and institutions, including the RMIT, Kanthal (through Vulcan Steel Ltd) and the UoA, who will collectively contribute significant engineering and scientific expertise to advance the technology from Technology Readiness Level (TRL) 2 to TRL 5 within three years.

This is an opportune time to advance low-cost, low-emissions hydrogen production technology. Global demand for hydrogen is increasing to supply expanding fertiliser, chemical production and energy needs. Existing methods of “grey” hydrogen production create substantial emissions. The International Energy Agency (<https://www.iea.org/reports/global-hydrogen-review-2023/executive-summary>) and other bodies have predicted that net zero emission targets for steel and transport will drive exponential demand for low emission hydrogen over coming decades, requiring innovative technologies like SiPHyR that can supply high volume hydrogen without the extreme expansion of electricity supply by electrolysis to make so called “green” hydrogen.

The SiPHyR technology uses methane pyrolysis for low emission “turquoise” hydrogen from natural gas, or negative emissions from biogas. The integration with 1414 Degrees’ proprietary energy storage, charging from low-cost and intermittent electricity sources will produce hydrogen around the clock. Most importantly, our silicon brick technology has proven its ability to operate in the very high temperature range necessary for pyrolysis, thereby providing an independent commercial path for our SiBrick in pyrolysis applications.

We are hiring expert engineers to fast-track development of SiPHyR by anticipating the requirements for commercial use, and sourcing and building systems for the reactors.

SiBox®

The SiBox Demonstration Module (SDM) advanced the silicon-based energy storage and recovery system to Technology Readiness Level 7, fit for larger-scale deployment in industrial sites. The engineering team continued advancing the system for market engagement, reviewing engineering design tools and software to update the SiBox design, and engaging with key equipment vendors to identify opportunities for cost reduction and performance improvements.

Pre-feasibility assessment and initial designs for larger scale SiBox systems included process integration studies for a variety of industrial heat applications, particularly steam raising.

As previously reported, the SiBox Demonstration Module showed no significant variation in performance after 230 cycles, and full SiBrick material sample analyses completed in the quarter confirmed no degradation of the material properties after 12 months.

The SDM has been successfully relocated to the Tonsley Innovation District.

Aurora Energy Precinct

In April, we made progress in our efforts to negotiate access to the 275kV Hill-to-Hill Transmission Line, which will connect the Aurora Energy Precinct to the National Electricity Market.

Negotiations have been underway following the agreement on a term sheet which set out an in-principle process for obtaining access to the ElectraNet-owned transmission line, which is necessary to connect the initial stages of the Aurora Energy Precinct.

The SiliconAurora Joint Venture is working toward technical and commercial agreements with BHP and advancing applications with ElectraNet and AEMO for transmission connection agreement (TCA) of a 140MW battery, a 30MW concentrated solar generator and other projects planned for the Precinct.

Our joint venture partner (Vast) is developing a concentrated solar generator with a 30 MW turbine and has been advancing a separate TCA for that generator. As announced in 2022, when that agreement is reached, Vast will be required to make a further \$1.5 million payment to 1414 Degrees.

Corporate and Financial

Our SiBox development team completed the final report for a successful grant awarded by the Federal Government's Modern Manufacturing Initiative (MMI). The Company was paid \$550,000 to conclude the \$2.2m project in the quarter. The move to the Tonsley Innovation District incurred costs to fit out the new premises, particularly to ensure sufficient electricity supply for the Company's prototype and SiBox modules to test SiBrick under industrial operating conditions.

Your Company has a strong outlook for continuing cash flow. The first instalment of grants for the SiPHyR project were also received in the quarter and further instalments will be received in August and quarterly during the term of this \$5.2m project. The Company will disburse funds to the UoA and RMIT in the next quarter.

The SiBox Development Agreement with Woodside is in its final phase, during which Woodside will decide if it wishes to exercise its right to earn up to 49% of the SiBox IP. If affirmative, over \$14m in SiBox IP will be transferred to a subsidiary to support a commercial valuation.

Your Company ended the quarter with \$1.8 million in cash, a decrease of \$504,000 from the previous quarter. As required by ASX Listing Rule 4.7C3, the Company notes that \$80,000 was paid to related parties during the quarter. These payments were Directors Fees.

AUTHORISED BY:

Dr Kevin Moriarty, Executive Chairman on behalf of the Board of Directors

For investor enquiries or further information, please contact:

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ABOUT 1414 DEGREES LIMITED

1414 Degrees is a leader in industrial decarbonisation with its cutting-edge silicon-based solutions, enabling the alignment of energy supply with demand, fostering the widespread adoption of renewable energy. Our key technologies include:

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

SiBox®: facilitates 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™: 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.

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

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.