CLEAN SCALABLE ENERGY STORAGE™

28 April 2023 ASX:14D

March 2023 Quarterly Activity Report

Highlights:

- SiBox™ commissioning underway and performing to expectations
- Mass producible silicon brick product revealed
- Improved commercial timescale for silicon energy storage
- Aurora Energy Project progressing
- Cash on hand increases to $2.7m

Chairman's letter

Your Company has made significant steps to commercial success in this quarter, commencing commissioning of the SiBox™, revealing our high energy density silicon brick walls in the SiBox™, and progress toward a mass producible silicon brick product. Three years of effort has transformed our silicon technology into the most advanced replacement for fossil fuel in high temperature industrial processes.

The Aurora Energy Project is nearing major milestones on the path to revenue. The generator performance study to connect a battery energy storage system (BESS) to the National Electricity Market (NEM) network is scheduled for completion in May, and a term sheet for sharing of the 275kV transmission line with OzMinerals is being finalised. Following this the SiliconAurora JV partners will commission a major professional services firm to prepare the business case for financing.

Hundreds of our 14D silicon bricks were built into walls within the SiBox™ and heated to over 1414°C. Our current choice of silicon phase-change material (PCM) allows SiBox™ to supply constant temperature clean air up to 1000°C, meeting the temperature requirements of most industries. However, the PCM could be varied to deliver even higher temperatures. SiBox™ represents a significant advance in thermal energy storage technology, providing a compact "plug and play" design with high energy density and efficient heat transfer properties. Other energy storage products utilising storage media such as sand or concrete have unfavorable thermal properties, and we are not aware of a technology that can compete with the performance of SiBox™.

During the quarter we revealed that the internal structure of SiBox™ facilitates scale up of energy storage by extending the internal walls of brick, while also allowing for simultaneous discharging of heat even while charging from the grid or renewable sources. The current quarter will see our team providing the first performance data for the SiBox™, and we will then engage an independent engineering firm to prepare a report to assist in securing access to an operating site for a SiBox™ commercial pilot.

Our commercialisation team analysed data received from large companies interested in reducing emissions and costs of production. These industries require very high temperature heat provided in a stable controlled fashion to produce their steel, cement, and aluminium - products that are the

backbone of societal infrastructure. Currently most of this heat is provided by burning gas and other fossil fuels. The successful commissioning of our SiBox™ in the next quarter will provide a viable alternative that can partially or completely replace gas burning with a stable supply of ~1000°C clean air powered from renewable electricity.

High prices and gas supply constraints are bringing forward our commercialisation time frame. Our analysis of the data provided by industry indicates that SiBox™ is already competitive with fossil fuel in some countries and will become increasingly so in the next 2 to 5 years as we scale up with a mass producible brick product. We have therefore accelerated engagement with industry partners to select an operating site for the next generation commercial SiBox™. This will be built and sized as a commercial pilot, possibly providing up to 100 MWh of usable stable heat over 8 or more hours.

We expect to augment our existing funding from government and industry partnerships to fund the next SiBox™ pilot, and will commence its design as soon as our engineers and an independent consultant have verified the performance of the current demonstration module. We anticipate attracting substantial grants from industries and governments that are interested in emissions reduction technologies for the future.

Overall, we are making significant strides towards commercial success, and I look forward to reporting substantial progress for shareholders.

Dr Kevin Moriarty

Executive Chairman

SiBox™ Technical Development

As announced during the quarter, the 14D Brick silicon based storage media in the SiBox™ Demonstration Module (SDM) underwent its first heating to 1414°C and on inspection proved to be in excellent condition consistent with our expectations. A representative sample was removed for further analysis to provide a benchmark of material properties and performance over time.

Significant progress was made in commissioning the SDM. The initial results are consistent with expectations of the engineering models. Once the ATMS is optomised and commissioning is complete, the team will commence a 12-month validation test to assess the performance of the SiBox™ system and thermal storage media performance.

We are working with our current industry partners and potential end users to optimise the SiBox™ solution for their applications as well as incorporating lessons learnt from construction and commissioning of the SiBox™ Demonstration Module to improve future iterations of the SiBox™ technology.

The SiBox™ Demonstration Module is designed to capture all the features and information needed to physically validate engineering design tools, minimise risk and increase technical confidence in the

SiBox™ technology to ready it for commercial use. The SDM comprises an insulated heat store built from walls of 14D Bricks, a heating system and an energy recovery system designed to replicate commercial applications. It is controlled by an Advanced Temperature Management System (ATMS). The equipment specifications and designs for the Demonstration Module can be scaled to build long duration thermal storage solutions for industry.

Commercialisation

SiBox™ thermal energy storage targets cost-efficient electrification and renewable penetration of even the hardest-to-decarbonise industrial sectors. To achieve this our analysts have built computer models of SiBox™ performance with energy dispatch algorithms to determine the cost of electrically sourced heat energy compared to fossil fuels in industry. During the quarter target industries supplied proprietary data on their energy intensive processes that our analysts have been incorporating into the commercial models. The results Indicate a faster path to commercial viability for SiBox™ than anticipated. To meet this challenge, we need to accelerate development of new versions of our mass producible silicon bricks for future commercial SiBox™.

The Long Duration Energy Storage (LDES) Council found that firming green heat with cost-efficient thermal storage solutions can have significant system-wide monetary benefits globally. Our commercial strategy is to integrate SiBox™ into industries that are key to realising cashflow potential from decarbonising heavy industry. Our team is currently assessing opportunities in high temperature heavy industries, both internally and in conjunction with the Heavy Industries Low-Carbon Transition Cooperative Research Centre (HILT-CRC) led-by University of Adelaide. We are engaging with alumina, cement, and lime producers in Australia and globally to identify a site for a commercial-scale SiBox™ pilot installation.

Aurora Energy Project

The SiliconAurora joint venture (50% 14D) with Vast Solar continues to advance the battery energy storage system (BESS) project. A letter of intent was issued to a major battery supplier. Government, environmental and statutory approvals are well advanced, terms for an agreement to connect to the 275 kV transmission line are awaiting confirmation by the parties.

Consultants Emanden and AECOM are expected to complete the generator performance study in May for submission to Electranet which will lead to an application to participate in the National Electricity Market. The JV partners intend to retain a big four professional firm to obtain updated revenue modelling and prepare the business case for financing. It is anticipated that site works will commence in the later part of 2023 and construction of the battery will follow. Future stages allow Vast Solar and 1414 Degrees to construct and connect their respective solar capture and storage technologies to the NEM.

Finance

Your Company ended the quarter with $2.7 million in cash, an increase of $1.6 million. Receipts included a $300,000 placement to a venture fund of 3 million shares at 10 cents a share.

As required by ASX Listing Rule 4.7C3, the Company notes that $55,000 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

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ABOUT 1414 DEGREES LIMITED

1414 Degrees is commercialising its proprietary silicon-based thermal energy storage brick. The brick is used in its SiBox™ thermal energy storage technology. SiBox™ allows renewable electricity to provide high temperature carbon free heat for large industrial applications by using the latent heat characteristics of silicon-based alloys to deliver constant heat on-demand – a critical requirement for industries. The Company is commissioning a demonstration module of the SiBox™ technology which is accelerating the commercialisation of SiBox™ as a competitive clean energy product. The Company is also developing the Aurora Energy Project (AEP), located near Port Augusta, South Australia, a long-term renewable energy project delivering reliable electricity to the region.

For more information, please visit www.1414degrees.com.au