CLEAN SCALABLE ENERGY STORAGE™

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SiNTL ADVANCES COMMERCIAL PATHWAY AS NEXT-GENERATION UPGRADE TO LITHIUM-ION BATTERIES

14D TO COMMENCE ENGAGEMENT WITH DRONE & UAV BATTERY SUPPLY CHAIN

HIGHLIGHTS

- **OUTPERFORMS GRAPHITE:**

SiNTL is 14D's proprietary next-generation battery anode, offering significant benefits over traditional graphite-based Li-ion batteries as well as competing silicon batteries, including:

- **Improved energy capacity (i.e. superior battery life)**
- **Faster charging**
- **Maintained cycle stability**

- **HIGHER CAPACITY:**

The capacity of SiNTL based batteries is estimated by 14D to be multiples of traditional graphite-based Li-ion batteries. Li-ion batteries typically offer ~350 mAh/g whereas theoretical silicon capacity is 10x.

To date, 14D has achieved specific capacity of 530 mAh/g in SiNTL test cells (already a 50% increase over graphite) and is rapidly progressing toward achieving 600 mAh/g and beyond.

- **DRONE & UAV APPLICATIONS:**

14D preparing to commence engagement with the high-growth commercial and military drone and UAV industry, leveraging SiNTL's ability to extend drone range and payload, as well as shortening charging times.

- **DRONE MARKET - A US$160 BILLION GROWTH OPPORTUNITY:**

The global commercial and military drone market is experiencing rapid growth amidst ongoing wars, geopolitical tension, rising focus on defence, as well as increasing uptake in the commercial logistics/delivery sector, and is forecast to reach circa US$160 billion by 2030[1]

- **EASY TO INTEGRATE:**

SiNTL designed to be compatible with and integrate with existing battery manufacturing processes, without the need for costly changes to the manufacturing set up. This is expected to speed adoption by the battery industry.

- **KEY TECHNICAL HURDLE SOLVED:**

SiNTL batteries use a special aluminium coating on the silicon nanoparticle anode, which helps mitigate volume expansion, allowing stability over a prolonged period. By adopting this approach, 14D has overcome a key technical issue that has hampered competing technologies.

1414 Degrees Ltd (ASX: 14D) ("1414 Degrees" or the "Company") is pleased to provide an update on its SiNTL™ silicon nanoparticle anode program, following a recent technical visit to George Washington University (GWU) by Chief Technology and Operations Officer, Peter Yaron.

Positioned as a lower-cost, drop-in upgrade to graphite anodes

SiNTL is being developed as a drop-in upgrade to existing graphite-based lithium-ion battery anodes, replacing conventional silicon oxide (SiOx) additives without requiring changes to established battery manufacturing processes.

This approach differentiates SiNTL from costly high-silicon anode technologies using complex manufacturing, instead targeting improved performance alongside a simpler and potentially lower-cost manufacturing pathway.

Cycle Life progress supports initial market entry

The Company has achieved specific capacity of approximately 530 mAh/g in SiNTL test cells and is progressing toward an initial target of 600 mAh/g as part of its ongoing development program, with further capacity increases to be explored.

Ongoing testing of SiNTL anodes has demonstrated continued improvements in cycling performance, with results progressing toward levels the Company considers relevant for initial commercial applications.

Drone & UAV market applications

Based on current performance, the Company is preparing to commence engagement with participants in the lucrative and fast-growing drone and unmanned aerial vehicle (UAV) battery supply chain, where energy density is prioritised and cycle life requirements are lower than in electric vehicle (EV) applications.

This represents an early potential market opportunity for 14D, and the Company expects significant interest from the market given the SiNTL technology offers the potential to extend drone range, increase payload and shorten charging times.

Further development, to achieve the higher cycle life thresholds typically required for EV battery applications continues,

Focus on scale-up and manufacturing pathway

The SiNTL production pathway has been deliberately developed to use utility grade materials and processes to deliver a substantially lower-cost and simpler manufacturing approach compared to some high-capacity silicon anode technologies, including those utilising complex nanostructures.

Work is increasingly focused on process optimisation and defining a scalable manufacturing pathway, including considerations such as precursor utilisation and material recovery.

Figure 1 SiNTL™ anode material coated onto copper foil using conventional slurry-based processing methods, demonstrating compatibility with standard lithium-ion battery manufacturing.

Commenting on the program, CTO Peter Yaron said:

"The work at GWU continues to reinforce that SiNTL has a genuinely differentiated position, not just in performance but in how simply it can be manufactured.

A key advantage is that SiNTL is designed to integrate with existing battery manufacturing processes, rather than requiring a complete redesign of the anode. This matters to manufacturers who need to move quickly.

We're now moving beyond pure materials development and into the next phase of aligning our experimental program with real-world applications and defining what a scalable production process looks like."

AUTHORISED BY:

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ABOUT 1414 DEGREES LIMITED

1414 Degrees (ASX:14D) is advancing an integrated clean-energy and industrial decarbonisation platform spanning grid-scale storage, industrial heat, hydrogen and advanced battery materials.

The Company's strategy combines near-term infrastructure revenue with scalable technology commercialisation, underpinned by deep expertise in energy-dense silicon systems and materials engineering. **1**414 Degrees owns the Aurora Energy Precinct in South Australia, a development-ready energy and industrial site designed for firmed renewable electricity and co-located high-demand users. The Stage 1 140 MW / 280 MWh Battery Energy Storage System (BESS) represents a near-term revenue opportunity, with expansion potential aligned to customer demand.

Core Platforms:

SiBrick®: Silicon-based thermal energy storage media forming the foundation of the Company's long-duration energy storage systems.

SiBox® (Industrial Heat-as-a-Service): Long duration energy storage technology that converts low-cost renewable electricity into dispatchable high-temperature heat, supporting industrial decarbonisation across energy-intensive sectors.

SiPHyR®: A silicon-based methane pyrolysis reactor integrating thermal storage to produce low-emissions hydrogen and solid carbon.

SiNTL™: A silicon-enhanced anode material designed to increase lithium-ion battery energy density while remaining compatible with existing manufacturing processes.

1414 Degrees' technologies are unified by a single materials platform — leveraging silicon to store, convert and enhance energy across multiple sectors.

For more information, 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.

References:

1. https://ts2.tech/en/global-drone-market-outlook-2025-2030/