

# 1414 Degrees Limited

## SiBox demonstration phase complete; advancing the path to commercialisation

1414 Degrees Ltd. (“14D”) announced its SiBox Demonstration Module (“SDM”) has successfully completed the 12-month testing phase. This key milestone on the path to commercialisation not only fulfils objectives of the SiBox Development Agreement with Woodside Energy Technologies and the Federal Government Modern Manufacturing Initiative, but also advances the technology readiness level (TRL) score from 4 to 7. The SDM has now completed more than 230 testing cycles, delivering stable outlet temperatures ranging from 650°C to 900°C. The robust performance of 14D’s thermal energy storage system showcases its operational flexibility and suitability for diverse industries. Alongside its core business, 14D has begun the development of a low-carbon hydrogen model, securing a 20-year license to commercialise the University of Adelaide’s dual column bubble reactor. 14D intends to build the dual column pyrolysis reactor at its new facility in the Tonsley Innovation District, alongside the testing of its low-cost SiBrick™ for mass production. In February 2024, the Australian Government awarded 14D with a grant for A\$2.5m to advance its clean hydrogen technology, which will be received in stages. We see an incrementally positive impact of the grant to our target valuation, from A\$0.152/sh to A\$0.155/sh, 135% above the current share price.

### Completion of SDM testing phase validates the technology’s viability

The extensive testing period of the SDM has produced strong operational results, while ensuring the thorough assessment of the SiBox system performance and thermal storage media. The ability of the SiBox® to charge and discharge the system simultaneously offers significant flexibility in use, allowing intermittent charging while electricity is cheap, while providing carbon-free, consistent, and high temperature heat on demand. This advantage has been demonstrated during testing by the successful adaptation of the SDM to follow prices in the NEM and its ability to provide Frequency Control Ancillary Services, to help maintain grid stability and reduce energy costs. Looking to commercialisation, the equipment specifications, and designs for the SDM can be readily scaled to build long duration thermal storage solutions for diverse industrial applications, such as cement, alumina and steel production.

### A new hydrogen business model

Earlier this year, 14D announced the development of the SiBrick Integrated Pyrolytic Hydrogen Reactor (“SiPHyR”). The SiPHyR project combines methane pyrolysis with 14D’s silicon-based Thermal energy storage technology, to produce emission free hydrogen. The methane pyrolysis process applies heat in the absence of oxygen to split natural gas into hydrogen and solid carbon, providing a low-emission alternative to steam methane reforming. Integrating thermal storage into the methane pyrolysis process is anticipated to minimise thermal losses, lower input electricity cost, increase reactor utilisation and ensure the reactor functions at a steady state. The Australian Government has provided 14D with a grant for A\$2.5m to advance the SiPHyR technology, aiding the Company’s progression of the technology to prototype, with the view to scale up the process for commercial rollout by 2030.

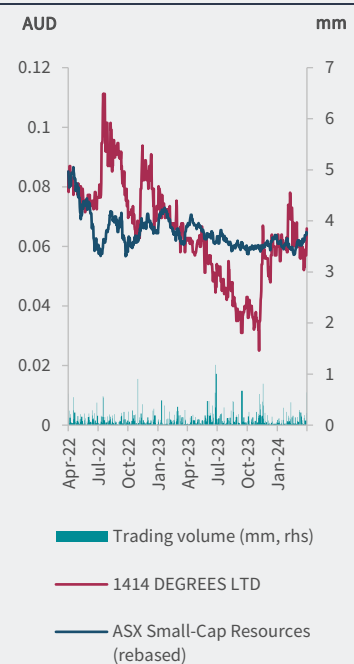
### Valuation: A\$0.155/sh target price for 135% upside potential

The inclusion of the A\$2.5m grant from the Australian Government (to be received in instalments), has incrementally increased our target valuation to A\$0.155/sh. This implies 135% upside potential from the current share price of A\$0.066/sh. All our assumptions remain in line with our initial DCF model (see [initiation report](#) dated 2’Oct 24), including the roll-out of 1 GWh per annum of SiBox storage by 2031, 10% WACC and a target P/NPV of 0.3x chance of success.

GICS Sector	Energy
Ticker	ASX:14D
Market cap 2-Apr-24 (US\$m)	10.24
Share price 2-Apr-24 (A\$)	0.066
Target valuation Jun-24 (A\$)	0.155

## +135%

Upside from current share price to our A\$0.155/sh risked NPV



Roger Bell

Managing Director, Research

T +44-207-907-8534

E [rb@hannam.partners](mailto:rb@hannam.partners)

India Fitzpatrick

Research Analyst

Andy Crispin

Director, Energy Sales

T +44-207-907-2022

E [andy.crispin@hannam.partners](mailto:andy.crispin@hannam.partners)

H&P Advisory Ltd

3rd Floor, 7-10 Chandos Street

London W1G 9DQ

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