



25 November 2021

ASX:14D

Annual General Meeting Addresses from the Chairman and Chief Executive Officer

Chairman's Address to the Annual General Meeting

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Good morning, ladies and gentlemen, my name is Tony Sacre, and I am 1414 Degrees' Chairman. I am delighted to welcome you all to 1414 Degrees' Annual General Meeting of Shareholders for 2021. Thank you all for joining us, albeit in a 'virtual' format. The Covid 19 pandemic has presented many challenges across the world, and it has led to us having to host 1414 Degrees' AGM 'virtually', for only the second time in our history. I sincerely look forward to a world where business and economic activity returns to 'normal', and we can all gather together, in person, at future AGMs. That said, this technology will continue to allow us to host 'hybrid' sessions in the future, allowing those who cannot join us in the room at future AGMs to at least join virtually.

The year of 2021 was certainly a year of change for 1414 Degrees and this change has already started to reap positive steps forward from an organisational, transactional, and reputational perspective.

Organisationally, we've had some changes at a senior executive and Board level. I've been pleased to see these changes having been successfully bedded down during the second half of the year and believe that there is a solid foundation of leadership at both Board and Executive level to take 1414 Degrees on our path towards the successful delivery, prioritisation and execution of our key strategies. These strategies have most recently been outlined by our Chief Executive Officer in an investor presentation released to the ASX. More on that shortly.

From a transactional and reputational perspective, I was delighted to see our Chief Executive Officer sign off on our agreement with Woodside to further the development of our SiBox technology. That agreement is testament to the quality of work our technical team of engineers perform on a daily basis. Our engineers, admirably led by our Chief Operating Officer, Dr Jordan Parham, are committed to their work and we are starting to see the fruits of their labour.

Reputationally, of course, partnering with such a highly reputable firm as Woodside has allowed 1414 Degrees a sense of gravitas within the industry as we continue to promote both our SiBox technology and work on our other key projects which will be discussed by our Chief Executive Officer shortly. Further to this, many of you would have seen our recent announcement about 1414 Degrees being successful in our application for a \$2.2 million grant from the Australian Federal Government's Modern Manufacturing Initiative (MMI) to accelerate the commercialisation of our SiBox thermal energy storage technology. Whilst this is good news from a financial perspective, it is, to me, further ratification of the path we are on, commercialising the SiBox technology.



The conclusion of COP 26 has again raised the awareness of the need to act quickly on controlling global warming. The need for clean energy technology to support a global drive towards decarbonisation could not be any clearer. It is my opinion that our company is on the right path at absolutely the right time in history. I believe that our renewable high temperature heat technology will provide a solution to one of the greatest engineering and commercial challenges the world has faced, moving towards a low-carbon future. The Federal Government's clear support for our work and our partnership with Woodside are evidence that we are on the right path.

To that very end, 2021 has seen our team focus on the development and refinement of the SiBox technology, and our work with Woodside on this front has already commenced. We believe that SiBox offers unique and competitive advantages in the provision of heat solutions for industrial and combined heat and power applications. Clearly, the demand for this type of capability will only increase in the future and our successes over the past six months have meant that 1414 Degrees is now in a great position to capitalise on this.

Leading our charge on this front is our new Chief Executive Officer, Matt Squire. Matt has only been in the role for four months but has already risen to the challenges of executing a major contract, refining our strategic objectives, and has brought a very commercial focus to our activities and, thus, delivering real shareholder value to you all. You will all have the pleasure of hearing from Matt shortly.

In closing, I would say that the past six months have certainly had their challenges, but in overcoming these challenges and moving 1414 Degrees to its next chapter has been one of the most rewarding periods of my career. I personally am looking forward to the ensuing twelve months where we will see further development of our technological capabilities, progress on the commercialisation of our strategic objectives, and an advancement in our approach to the Aurora Energy Project. Many of these elements have recently been articulated by Matt in the Strategic document prepared by Matt and the team and released to the ASX earlier in the week. If you haven't viewed that document yet, I encourage you to do so.

I would like to thank everyone involved, both past and present, in supporting the growth and development of 1414 Degrees. Principally I'd like to thank our shareholders for your continued support, I'd also like to thank my fellow Board members for their professionalism and strategic support, and I'd like to thank the 1414 Degrees Leadership team and all staff at 1414 Degrees for your continued passion, energy and professionalism. I would of course like to acknowledge and pass on my thanks and appreciation to our strategic partner Woodside, and also our broader ecosystem of suppliers and business partners who contribute to the success of 1414 Degrees.

Again, thank you all for joining us here today. The year ahead looks to be an extremely exciting and pivotal one for the company, and I do hope that you will all continue to share the journey of helping build a sustainable future through clean energy technology.

I will now ask our Chief Executive Officer, Matt Squire, to provide an operational update on our projects before we move onto the formal part of the meeting.



Tony Sacre
Chairman and Non-Executive director
1414 Degrees Ltd
November 25, 2021

Chief Executive Officer's Address to the Annual General Meeting

25 November 2021

Thanks Tony and good morning, ladies and gentlemen.

I'd also like to acknowledge the Traditional Owners of the land on which 1414 Degrees operates, being the Kurna People of the Adelaide Plains, where we are meeting today, and the Barngarla People of the Upper Spencer Gulf where our Aurora Energy Project site is located. We pay our respect to their Elders including those past, present and emerging. We acknowledge and respect their beliefs and cultural heritage, in particular the spiritual relationship the Kurna and Barngarla have with the land and the importance of that relationship in the past, present and future.

Introduction

It gives me great pleasure to speak with you today as the Chief Executive Officer of 1414 Degrees in what is a very exciting time for our company. After nearly 25 years working in the energy industry, I have never seen a period like the one we are in, and about to experience from the demands of the planet to decarbonise. The world has finally woken up, and whether or not there is specific legislated outcomes at gatherings like COP 26 in Glasgow, it is clear that there is now a general consensus that we all need to cut emissions if we are to leave behind a habitable planet for the children of the future. The world's largest energy companies and capital providers are also clearly of this opinion.

Already technology is playing a massive part in providing climate friendly energy solutions. The advances in solar and wind have now led to them becoming what I believe will be the primary energy sources of the future. This is already leading to significant changes to many energy delivery systems in modern economies. An example of this is the recent graph which I put in our investor presentation this week from the California systems operator showing the changes in system demand over the last 5 years - the duck curve. Just last weekend we saw more extreme evidence of this with the South Australian electricity grid actually going into negative demand as a consequence of the penetration of rooftop solar. The focus is now turning towards energy storage of what looks like an abundance of future renewable electricity. The need for electricity storage and in particular long duration energy storage will become acute.

While decarbonisation of electricity networks is well underway, more energy is used globally in the form of heat than electricity¹. Hence if carbon emissions are to be limited to meet targets, fossil fuels-based heat sources must also be replaced with cost-effective zero carbon energy sources.



1414 Degrees technology

The need for long-duration energy storage and renewable heat was recognised by our company's founding shareholders. The benefits of utilising the latent heat properties and high melting temperature of Silicon for this purpose were understood, however the practical application of it in a usable energy storage system had not been undertaken before. 1414 Degrees pioneered the concept through its technology development and initial demonstration projects - it is the most advanced company in the world commercialising silicon-based thermal energy storage technology; most others are still at R&D level or recently spun out.

Our initial projects have provided the foundation of knowledge that has led to our intellectual property and our understanding of how to optimise a silicon-based thermal energy storage system through our new design which we are calling – SiBox.

SiBox leverages 1414 Degrees' extensive expertise and experience of silicon-based thermal energy storage that it has built since inception, from commissioning our first prototype and subsequently progressively scaled up and more sophisticated units. The key lessons learnt from these projects that are embodied in SiBox are:

- SiBox storage media is more robust - the combination of a unique silicon-based alloy and containment design, harnesses the advantages of silicon-based alloys, while solving the challenges of preventing oxidation, managing volume change during melting and solidification in a design that is more scalable and can operate in air
- SiBox module design is more efficient – the combination of SiBox storage media and module arrangement enables a flexible geometry that can be optimised for heat transfer, reduced losses and readily customisable for cost reduction
- SiBox is our focus – 1414 Degrees' technical resources need to focus on our core technology, complemented by strategic partnerships with organisations to access specialised skills and experience in areas outside this, such as energy recovery system design if required

We believe the SiBox has the potential to set a new benchmark for energy storage and offers a unique product that will enable a far greater penetration of renewable energy. The differentiating factor of our SiBox technology is in its simplicity, scalability and prospective durability that will enable it to be used in many different industrial applications. SiBox has the potential to provide energy customers with a clean source of renewable heat. And not just heat, but heat at high temperature in the form of low pressure air at over 1,000° Celsius. The importance of high temperature cannot be overstated. This means that energy is being released in a very concentrated manner and could be applied to a larger array of industrial applications where fossil fuels such as natural gas or LPG are being used.

Utilising silicon's combined benefits of high latent heat capacity and melt temperature means a much higher relative energy storage density can be achieved compared to other materials, providing for more efficient energy storage and consistent delivery of heat at the required temperature. The SiBox concept could also see industrial energy users install thermal energy storage systems in "behind the meter"



applications that provide them with greater flexibility in managing their electricity and gas purchasing arrangements. This could in turn increase the efficient utilisation of energy supply infrastructure and potentially reduce their wholesale purchase costs of energy. Technology such as SiBox will be needed if we are to substantially decarbonise manufacturing in the future and maximise the utilisation of our vast renewable energy potential.

1414 Degrees is an Affiliate Partner of The Heavy Industries Low-carbon Transition Cooperative Research Centre (HILT CRC), which aims to transform the Australian heavy industry sector to compete in the low-carbon global economy. HILT-CRC is an opportunity for 1414 Degrees to contribute to research and engage with prospective customers in heavy industries seeking to cost-effectively decarbonise and hence aligns well with our vision for developing and commercialising the SiBox technology.

1414 Degrees was also recently announced as a successful applicant for a \$2.2 million grant by the Australian Federal Government's Modern Manufacturing Initiative which will provide us with much needed financial support and recognition to accelerate the commercialisation of SiBox. We are extremely grateful for this support and acknowledge those who supported us in our grant application.

The best form of validation we could have achieved for the potential of our SiBox concept was the execution of a Development Agreement with Woodside Energy Technologies (Woodside) in October. This agreement not only provides us with a further \$2 million towards our clearly defined SiBox validation project, it sets up the potential to create a longer term partnership with Australia's largest energy company who is embracing the energy transition and is going to be a major developer of decarbonisation projects and exporter of cleaner energy in the future.

Our agreement with Woodside is a compelling opportunity for us. 1414 Degrees will receive up to \$2 million funding for specific project milestones that culminate in a full testing program to demonstrate the SiBox performance. Following review of the results of the testing program, Woodside will then have the exclusive opportunity to notify us if they wish to proceed to jointly develop and commercialise the SiBox technology. In this instance a jointly owned Special Purpose Vehicle would be created into which the SiBox Intellectual Property would be transferred. The ownership interests of Woodside would be determined at that point in time as a proportion of Woodside's investment and the assessed fair value of the SPV. 1414 Degrees will have an ownership interest not less than 51%. Just to clarify as there has been some confusion, Woodside does not yet own any direct interest in our Intellectual Property. This is a decision for Woodside following completion of the Validation Project.

Following successful completion of our SiBox validation project, the technology will require significant further investment in the future. This is to develop commercial pilots and build up manufacturing scale in order to generate unit cost benefits. We believe Woodside would be an ideal partner for 1414 Degrees to make these potential future investments and we certainly hope to have them as a partner for the longer term.

So, the strategy for advancing the company's Silicon-based thermal storage technology over the next 12-18 months is now on an excellent pathway and is very clear. We have commenced procurement activities and look forward to updating shareholders on construction progress of the demonstration module



throughout 2022. We will also be looking to engage with potential energy users interested in applying the SiBox technology for future commercialisation pilot opportunities in the future.

It has taken a lot of effort by our core technical team to continue the progress of our technology and drive us further forward on our commercialisation pathway. Jordan, Mahesh, Josh, Will and Nathan I thank you for your dedication and commitment. We are also excited that this team will be increasing in size when Callum and Sam join us next week on a permanent basis after completing their final year undergraduate studies in Mechanical Engineering at the University of Adelaide.

Before I leave discussing our storage technology, I also want to highlight the importance of the Glenelg project in getting us to where we are today. Following its commissioning in 2019 and testing through 2020, the commercial decision was made by SA Water not to proceed with procurement of the GAS-TESS unit. Hence, we made the decision to impair the project in our 2021 accounts, however the project is available for future reinvestment and demonstration. I would sincerely like to thank SA Water and the South Australian Government for their assistance in developing the Glenelg project and allowing us to showcase how renewable energy sources can be successfully time-shifted. It is an innovative project and again demonstrates how South Australia continues to embrace the renewable energy transition.

Aurora Energy Project update of status and next steps

This then leads me into updating you on our other primary asset, the Aurora Energy Project (Aurora) north of Port Augusta in a world class solar zone. Since acquiring in 2019, 1414 Degrees has continued its investment in the project and remains steadily focussed on securing its ultimate development.

Aurora is an excellent site upon which a long term renewable energy development can be established. It is directly adjacent to the ElectraNet 275kV transmission line that serves a globally significant minerals province further north in the state where Oz Minerals operate their Prominent Hill and Carrapateena mines. These mines produce significant volumes of copper which is a core metal required for the worlds decarbonised future. Our vision remains that large volumes of solar energy will be supplied from Aurora onto the transmission line that connects these mines to the National Electricity Market.

However, presently our focus is on the development of an initial 140 MW Battery Energy Storage System (BESS) with 1 hour of full rate discharge (or 140 MWhr storage). This Stage 1 of the Aurora project would then underpin electrical connection of the site and facilitate future renewable energy development where we have sought variations to our existing approvals to accommodate 70 MW of solar PV generation and 150 MW of Concentrated Solar Power. We have also sought in our approvals the opportunity to install a pilot plant for our thermal energy storage technology.

The variations to our Development Approvals have all been lodged and we hope to be able to update shareholders on this progress in the near future.

Following receipt of this variation to our Development Approval, we still have a lot of work to do at Aurora. In particular we will look to finalise preferred equipment with suppliers that will then facilitate the technical work required for the electrical connection process. We are targeting the second half of next year before we will be able to conclude connection agreements with ElectraNet that will enable us to make a



Final Investment Decision (FID) and commence construction. We remain hopeful that we could have the Battery project commencing operation in the first half of 2024.

Currently we are also considering the potential introduction of a partner to participate in and co-invest in the next development phase of the project. This would reduce the overall funding requirement for 1414 Degrees and allow us to secure more competitive financing at FID which would increase returns for our shareholders.

The Aurora Energy Project is an important opportunity not just for 1414 Degrees, but also for other stakeholders including pastoral leaseholders, the Barngarla Determination Aboriginal Corporation and the Port Augusta council and community. We gratefully acknowledge their future support and look forward to further engagement with them as we seek to further unlock what is emerging as a world class renewable energy region.

Concluding remarks

I believe that 1414 Degrees is now set for a very exciting period ahead. We have two well defined areas of activity being:

1. The progression of our technology through the successful construction of our SiBox Demonstration Module in conjunction with Woodside and,
2. Accelerating the Aurora Energy Project to a Final Investment Decision

Our work activities to achieve this are clearly mapped out and understood. Both of our projects are material opportunities to generate future value, however this value will not be created by simply looking at the short-term share price each day. We need to ensure we deliver tangible progress and generate sustainable, longer-term growth. I want to assure shareholders that we will remain focussed on achieving this and I'm sure the share price will follow.

In conclusion I would like to thank the team at 1414 Degrees and the board. In the relatively short time that I have been here I have felt nothing but welcome from you all and I appreciate and value your support. We are a small company with a lot ahead of us however I believe we are back on track and offer investors a compelling renewable energy investment opportunity.

Matthew Squire
Chief Executive Officer
1414 Degrees Ltd
November 25, 2021



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ABOUT 1414 DEGREES LIMITED

1414 Degrees is developing and commercialising its silicon-based thermal energy storage technology, SiBox™, to enable a clean energy future. SiBox will harness the extremely high latent heat capacity of silicon in its proprietary storage system. This will enable intermittent renewables to provide flexible, ultra-high temperature heat 24/7 for large industrial applications and to deliver reliable heat and power supply when required. It is envisaged that the flexibility of the SiBox™ modular development concept will also provide energy customers with the ability to optimise their energy systems in a way that maximises their utilisation of cheaper renewable power and simplifies their purchasing from wholesale energy suppliers.

The Company plans to commission a demonstration module of the SiBox™ technology in 2022 which will accelerate the commercialisation of SiBox™ as a competitive clean energy product. The Company has previously implemented pilots which have led to the refinement and evolution of its technology.

In 2019 the Company made the strategic purchase of the Aurora Energy Project (AEP) located near Port Augusta, South Australia. The focus of the project is to develop a long-term renewable energy project delivering reliable electricity to the region and NEM. Once ready for commercialisation, the AEP site will also allow 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 may contain certain "forward-looking statements" which may not have been based solely on historical facts, but rather are based on the Company's current expectations about future events and results.

Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward- looking statements are subject to risks, uncertainties, assumptions and other factors, which could cause actual results to differ materially to futures results expressed, projected or implied by such forward looking statements.

The Company does not undertake any obligation to release publicly any revisions to any "forward-looking statements" to reflect events or circumstances after the date of this announcement, or to reflect the occurrence of unanticipated events, except as may be required under the applicable securities laws.

¹ Honore, A. (2018). Decarbonisation of heat in Europe: implications for natural gas demand. Oxford Institute for Energy Studies.