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ASX:14D

QUARTERLY SHAREHOLDER UPDATE

- SiliconAurora has made significant progress defining the revenue stack for the Aurora Project
- SA Water is progressing approvals for ongoing development of the GAS-TESS at the Glenelg site
- New highly scalable system for PCM-containment will use **SiBox** trademark

CHAIRMAN'S LETTER

The quarter has been pivotal for your Company's technology development and revealed a potential strong revenue opportunity from the Aurora acquisition. Our breakthrough silicon technology, trademarked as SiBox, continues to perform robustly in air at high temperature, confirming its potential for large-scale phase change energy storage.

As Marie Pavlik reports below, our Aurora Project is looking positive for early strong revenue from a hybrid renewable energy plant utilising a combination of photovoltaic (PV) generation to the grid and a large battery selling frequency support to the NEM. The longer-term plan is to add a large 1414 Degrees TESS providing long duration firmed power to tap higher electricity prices.

Our immediate focus is revenue generation from the project using a large battery storage system (BESS) sharing inverters with the first stage 70MW of PV already approved for development in 2021.

We have proposals from other thermal generation and storage providers who had bid on the Aurora project before we acquired it. We are therefore considering a thermal energy park whereby several generators share the connection managed by our subsidiary, SiliconAurora. Under this arrangement, SiliconAurora would earn revenues based upon the amount of energy exported by each project.

The Aurora project team is targeting financial close in 2021 and is in discussions with potential project equity and finance partners. A project management group is being assembled from people with previous experience with large scale PV and battery installations in South Australia.

Maretta Layton and the engineering team are working with SA Water on a plan to raise the technology readiness of the GAS-TESS while designing and testing technology for the commercial model. As Jordan Parham reports below, the deficiencies in the energy recovery system have been assessed by the technology provider and they are collaborating to develop a higher temperature heat exchanger.

For the larger TESS-GRID, we are continuing to work with an international specialist supplier of energy recovery systems for large power plants. The aim is to cost-effectively generate electricity from our new SiBox silicon storage to provide long duration, high value firmed power supply. As reported during the Quarter, we have identified that our system could compete with large scale pumped hydro on a levelised cost of storage basis, but with the added advantage of being independent of location, unlike hydro dams.



Our R&D team is also continuing to develop the new SiBox silicon storage, which will provide the basis for a scalable TESS product and has the potential to also appeal directly to high temperature industry markets. The Business Development team is investigating these early commercial opportunities.

When I began with the Company four years ago, the Company's technical team were optimistic for early commercialisation of the technology, but that has been shown to be unrealistic, as outlined in the recent technology review. In the past two years, the Company has upskilled the technical team and acquired assets that can realise the twin objectives of revenue generation and technology development. Your Board is now working on a restructure of the corporate team and leadership to manage the immediate revenue opportunities while advancing the core technology. We expect to announce details in the current quarter.

CORPORATE OPERATIONS

1414 Degrees had \$4.4m in cash at quarter end and the Company is currently preparing for its FY19/20 R&D tax rebate. The payroll has been supported by JobKeeper receipts and this is expected to continue until the end of September.

With ongoing disruption from Covid-19 the Company maintains stringent fiscal controls over cash flow, while progressing core priorities of the Aurora project and storage technology development.

Workplace productivity remained high this quarter, with 95% of team members working from the corporate office and our research facility.

Following changes to staffing and reduced remuneration across the company in March for a contracted period of four months, 1414 Degrees has just completed another review of human resources. The Board and senior management have agreed to continued cuts of between 25% and 75%. The majority of other team members have reduced hours while some have returned to full time work on critical work requirements. These new agreements with staff will be reviewed again in September. Three redundancies have occurred.

ENGINEERING OPERATIONS

SA Water Glenelg Wastewater Treatment Project

In the last quarter, SA Water completed its business case evaluation for engines and GAS-TESS at the Glenelg Wastewater Treatment Plant. Although the GAS-TESS pilot was unsuccessful in the procurement process, SA Water remains supportive of the GAS-TESS technology and is progressing approvals for ongoing development at the Glenelg site. The installation is also important for development of our new silicon storage technology relevant to the scaling up required for the TESS-GRID.

We are focussed on increasing the electrical efficiency of the GAS-TESS to better demonstrate its competitive advantages of time-shifting, no gas pre-treatment and lower operating costs compared to reciprocating engines. A key step for higher electrical efficiency is to increase the electrical output of the turbine, which is currently limited by the heat exchanger not operating to its design specifications. Flex Energy, the heat exchanger supplier, is collaborating on the design of a supplementary sub-unit that will



increase heat exchanger and turbine performance. This will be supplied and tested jointly with the manufacturer on the GAS-TESS.

The technical data gathered to date and calculations used to inform the business case evaluation has provided a good basis for the commercial strategy for the GAS-TESS. Its advantages will be presented to other water utilities to drive commercialisation of the technology, in parallel with technical development work on a commercial model.

On-site testing has been suspended pending resolution of the heat exchanger performance limitations with the manufacturer and an extension from SA Water to current permits.

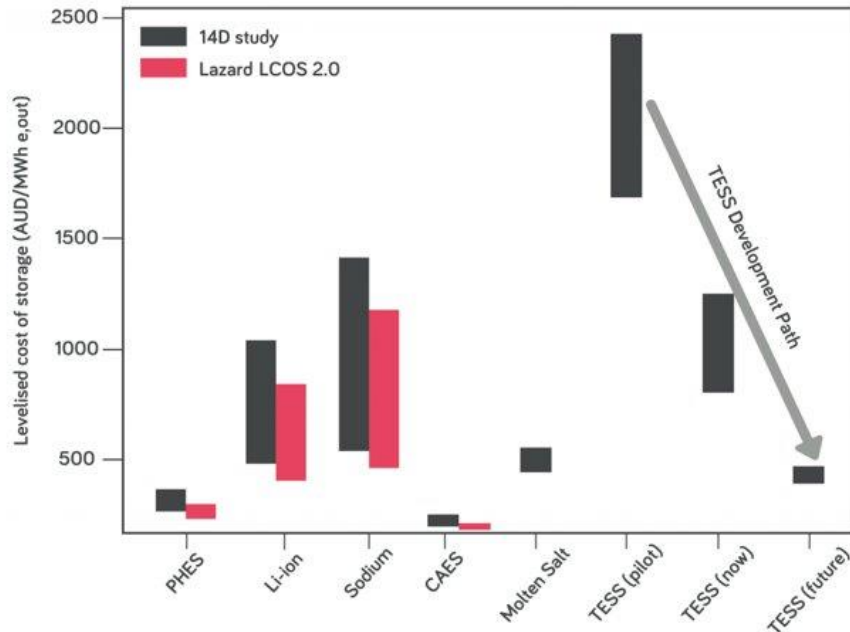
Storage Technology Development

Our technical team have continued intensive test work to validate the thermo-physical properties of our new highly scalable system for containing and storing heat in molten silicon phase change material (PCM). We will use our SiBox trademark for this new PCM-containment and its deployment in different configurations as a “thermal payload” in our thermal storage system (TES). SiBox continues to pass all tests to date for robustness, thermal storage capacity and heat transfer. Pre-manufacturing samples from our European partners are now being tested in their R&D laboratories and our facility to verify key performance metrics prior to deployment. The technical advantages of the SiBox product could open new markets in high temperature industry, which will be assessed as a commercialisation opportunity.

In addition to its improved robustness, a key benefit of SiBox is its flexibility in geometry and scalability for heat transfer and storage. Hence current design and development work on the TESS-GRID and GAS-TESS upgrade is focussed on optimising the heat transfer to and from the SiBox in different configurations. Our team is developing new, transient computational models of heat transfer to evaluate TES design configurations. The modelling predictions will also be validated by physical testing to provide confidence in designs before deployment in the TESS-GRID and GAS-TESS upgrade.

Our engineering team is also working closely with key external equipment suppliers on the energy recovery system (ERS) design configuration, as this is the key to maximum electrical efficiency. This evaluation of current and future technology options will result in more robust and higher efficiency energy recovery systems for heat and electricity supply.

It is an exciting time as major advances are being made by the 1414 Degrees technical team and our strategic partners delivering innovations in PCM-containment, heat store design and the energy recovery system. These developments will increase the energy efficiency and decrease costs of the TESS technology, in accordance with our overall R&D plan to drive down the



Levelised Cost of Storage of the TESS technology. Demonstrating them on the TESS-GRID and GAS-TESS will provide confidence in the TESS technology as a competitive, value-add clean energy solution to customers and partners.

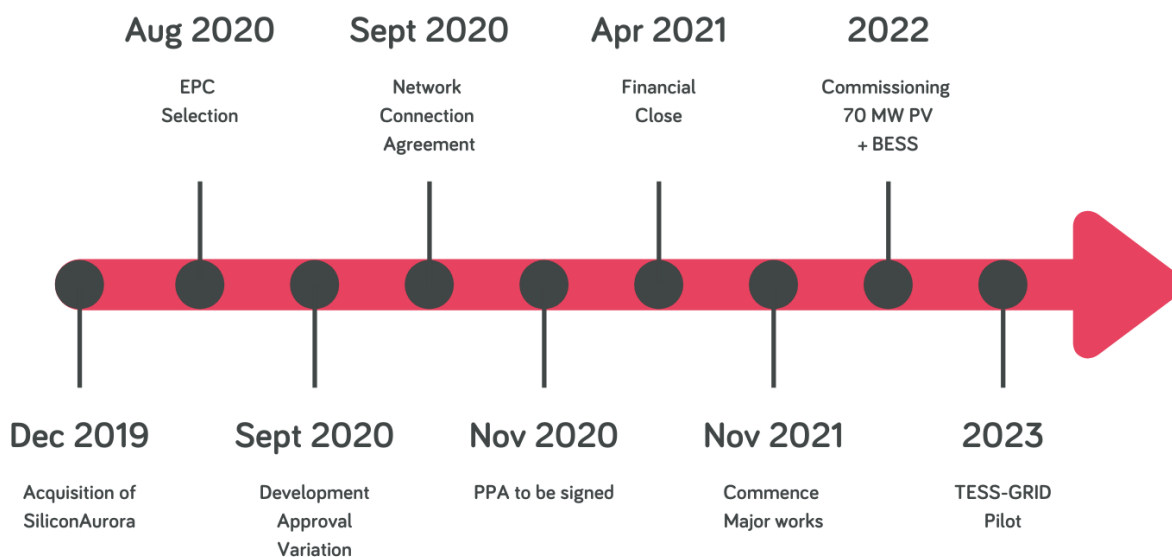
BUSINESS DEVELOPMENT

Members of the business development team have had a busy quarter working with a range of parties including energy recovery system providers for the TESS, potential PPA customers, and project partners for the Aurora Project.

Potential partners for future TESS-GRID sites continue to contact us. These range from multi-nationals with off-grid sites and heat requirements to large utilities planning for a low carbon future and integrating more renewables into their generation profile. These opportunities show there is a future market for large scale thermal storage in stabilising renewable generation.

We are advancing cooperative agreements with energy recovery providers to deliver the efficiency improvements required for the next stage of TESS. These involve progressing a number of innovative solutions for energy generation.

Aurora Project: In late 2019, the Company made a strategic acquisition of the Aurora Project to demonstrate its grid-scale thermal energy storage, however, the project planning has surprised with a strong early revenue case using a large battery. The resultant vision for 14D’s subsidiary company SiliconAurora, which owns the project, is to deploy a hybrid power station with a sustainable business model generating revenues from renewable power generation, frequency control and stability services commencing in 2021.



The next round of modelling is expected to provide a clear basis for individual asset sizing in an optimised business model and consequently the operational cost and required investment for the first stage.

Several other companies have expressed interest in investing and/or positioning their technologies in the project. SiliconAurora is, therefore, preparing a long term plan to deliver a larger solar power generation and storage park that fully utilises the 1100 hectare site under the 40 year lease from the South Australian government. The plan envisages SiliconAurora managing and owning the transmission connections to earn revenues from power supplied by multiple assets, including the hybrid power station and other technologies. The site’s potential is to capture higher electricity prices from firming power supply and providing generation on demand. The Aurora Solar Thermal Park would contribute to making clean, affordable energy available to all.

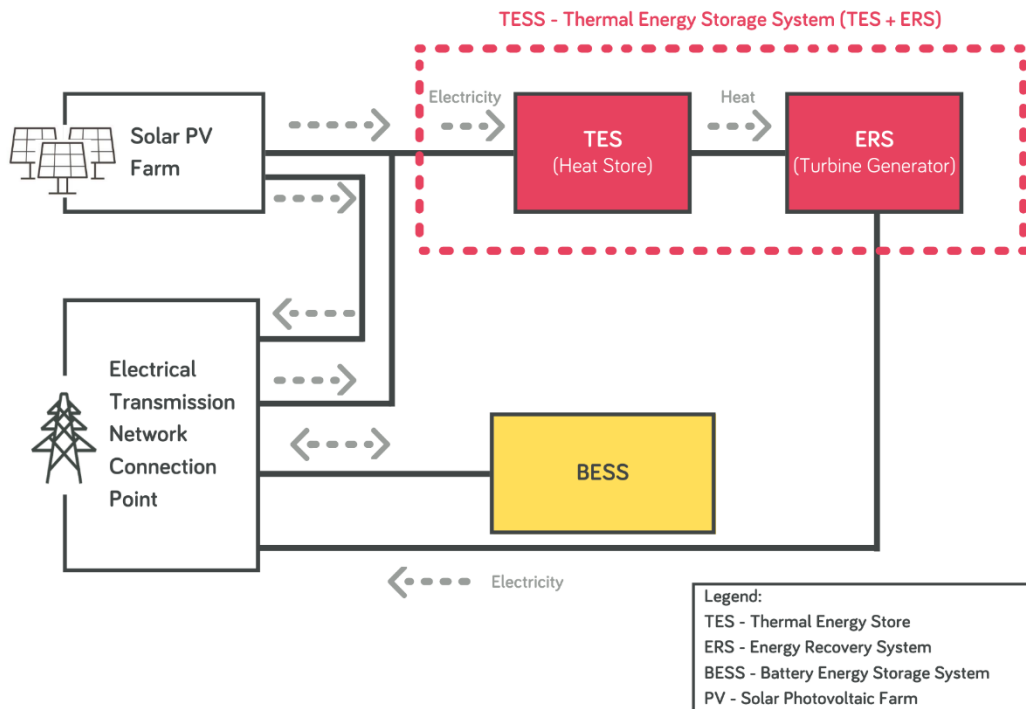
Development plans are progressing and will provide employment opportunities in the Upper Spencer Gulf and South Australia more widely, not only during construction but also permanent ongoing positions in maintenance and operations.

The Aurora project team is targeting early financial close. It has been actively seeking and negotiating with financing and equity partners. The transmission connection specifications are under study. A project management group is being assembled from people with previous experience with large scale PV and battery installations in South Australia.

Revenue Generation Opportunities:

In parallel with the development of the hybrid power station design, SiliconAurora has made significant progress defining the revenue stack and is in negotiation with retailers for long-term PPAs. A BESS could generate substantial revenue from frequency support services, and the aim is for the TESS to generate long duration, high value firming power.

The overall strategy is to grow the utilisation of the assets and increase the energy value. Solar PV will

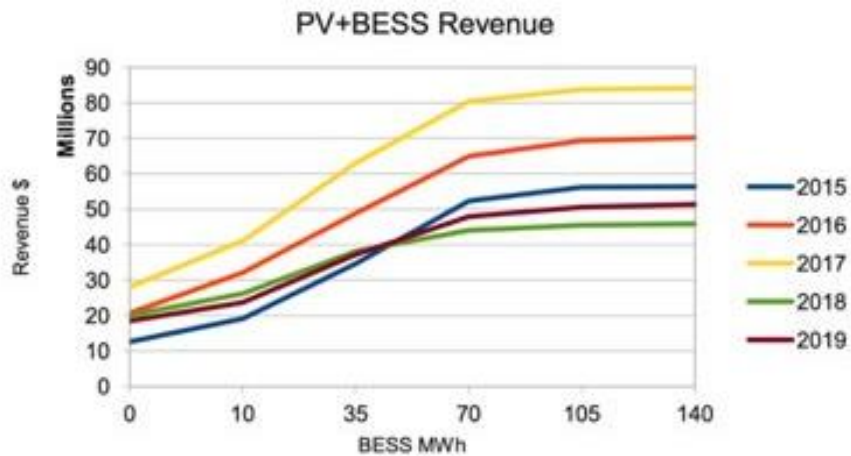


generate renewable electricity, short duration BESS will target high energy fast frequency services (FFR and FCAS) and long duration TESS-GRID will secure firming contracts and deploy grid stability services.

SiliconAurora commissioned specialist agencies CQ Energy and ITP Renewables (ITP) to test various scenarios on historical data. They reported positive simulation results with attractive revenues and margins based on the past five years of National Energy Market (NEM) and Frequency Control and Ancillary Services (FCAS) trading. ITP’s model co-optimises all its decision variables simultaneously to achieve the highest combined revenue for the parameterised data. As shown in the chart below the



report shows the maximum possible revenue if the system had perfect foresight and 100% access to available services. This indicative revenue stack combining solar PV generation and BESS (Battery Energy Storage System) is very encouraging.



Ongoing financial modelling includes simulating the effect of other BESS in the grid and then adding a TESS-GRID providing both FCAS and firmed power from the site.

Simulated annual revenues for a 70MW PV plant with varying battery storage size from zero up to 140MWh using historical NEM market data for South Australia. NB: this is not a projection.

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ABOUT 1414 DEGREES LIMITED

1414 Degrees believes in a sustainable energy future, where energy is available to all, at all times. Its clean energy storage is set to reduce energy costs by increasing the efficiency of renewable generation and stabilising grid supply. The 1414 Degrees thermal energy storage system (TESS) is unlike any other energy storage system in the world.

1414 Degrees' technology stores energy generated from electricity or gas and supplies both heat and electricity in the proportions required by consumers. It is unique in its combination of low cost, flexibility of location, scalability, and sustainability. Following the successful development of its electrically charged TESS demonstrator, and commissioning of its pilot GAS-TESS at SA Water's Wastewater Treatment Plant, the Company is now in an early stage of product development and commercialisation.

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