

June 2023 Quarterly Activities Report

HIGHLIGHTS

Sparc Hydrogen

- ▶ Agreement reached to undertake on-sun testing of Sparc Hydrogen's photocatalytic water splitting reactor at the CSIRO Energy Centre in Newcastle, NSW.
- ▶ Prototype on-sun testing will be conducted during Q3 and provide valuable information for ongoing R&D and pilot plant design.
- ▶ High power solar simulator acquired from the United States to continue to advance laboratory work in parallel with prototyping and pilot plant development.

Graphene

- ▶ Multiple global and domestic coating companies continue to undertake anti-corrosion coatings product evaluation of **ecosparc**®. Results from testing and qualification work with these companies are expected in H2 2023/H1 2024.
- ▶ In order to obtain real world data, Sparc is commencing a marketing campaign targeted at asset owners to complete field trials utilising graphene containing coatings onto specific assets such as steel frames, tanks and steel structures close to the ocean. Infrastructure owners being focussed upon include; government, defence, mining, and oil and gas companies.
- ▶ Most recent round of testing completed with a specific target epoxy paint reinforces the positive results from previous rounds including corrosion resistance, crack resistance and wear resistance, showing marked improvements in performance due to the inclusion of graphene.
- ▶ Leveraging the excellent coatings based results, focus is also being given to composite companies where the inclusion of graphene is known to also impart improved physical properties. Trials have commenced on various applications to overcome "pain points" where Graphene Based Additives may improve performing.



Sodium Ion Batteries

- ▶ Continued progress in the research program with QUT including testing of additional samples of bio-waste feedstock, benchmark testing against commercially available hard carbon materials and trialling methods to improve initial coulombic efficiencies.
- ▶ Further work planned during Q3 includes fabrication and testing of full cells and ongoing R&D targeting improvements in electrochemical performance.
- ▶ Sparc continues to evaluate opportunities to leverage its exposure to sodium-ion batteries given the positive developments and momentum behind this chemistry from global players.

Corporate

- ▶ \$2.957m cash at bank as at 30 June 2023.
- ▶ Sparc Technologies, through its 100% subsidiary, Sparc Operations Pty Ltd., received a total of \$934k in R&D Tax Rebates for FY22.
- ▶ Sparc to present at the TechKnow Invest Roadshow in the Gold Coast and Melbourne in early August.

Sparc Technologies Limited (ASX: SPN) (Sparc or the Company) is pleased to provide its June 2023 Quarterly Activities Report.

Sparc Hydrogen

During the quarter, activities at Sparc Hydrogen, which is a JV between the University of Adelaide, Fortescue Future Industries (FFI) and Sparc Technologies, included completing the design and commencing construction of the prototype photocatalytic water splitting (PWS) reactor, progressing early pilot plant development activities and ongoing research and development activities at the University of Adelaide. A high-power solar simulator was acquired from the United States to continue to advance the laboratory work in parallel with prototyping and pilot plant development. Sparc Hydrogen also submitted an expression of interest for grant funding during the quarter which would support the acceleration of ongoing and planned workstreams.

Subsequent to the quarter, Sparc Hydrogen executed a Kick-Start agreement with the CSIRO to undertake on-sun testing of Sparc Hydrogen's PWS reactor at the CSIRO Energy Centre in Newcastle, New South Wales. The prototype testing is due to be conducted in Q3 2023 which is in line with Sparc's announcement to the ASX on 3 March 2023. The key aims of this work are to advance the technology readiness level (TRL) of Sparc Hydrogen's PWS reactor and provide valuable data and information for the subsequent piloting phase.

Prototype testing of Sparc Hydrogen's reactor in real world conditions is the culmination of >5 years of research and development work conducted by the University of Adelaide and Flinders University. Laboratory proof of concept has been successfully established whereby several lab-scale reactor prototypes have been developed and tested under simulated solar



concentration. This testing has shown a hydrogen production and efficiency benefit from exposing certain photocatalyst materials to concentrated light and heat.



Figure 1: CSIRO Energy Centre solar concentrator facility

The **CSIRO Energy Centre in Newcastle** was identified as being an ideal facility to conduct the first on-sun testing of Sparc Hydrogen's PWS reactor. The facility is home to Australia's largest solar thermal research hub. The hub comprises a 30-metre-high solar tower surrounded by a 4,000 square metre field of 451 locally manufactured custom designed mirrors (heliostats), as shown in Figure 1, and is capable of generating temperatures of up to 1,500 degrees Celsius. The hub provides a platform that allows Australian researchers to develop, test and commercialise technologies which incorporate concentrated solar.

Sparc Hydrogen has received funding of \$28,688 through the CSIRO Kick-Start Program to contribute towards the costs of the prototype testing. Kick-Start is an initiative designed to support innovative Australian start-ups and small businesses in accessing CSIRO's research expertise and capabilities to foster growth and development. Sparc Hydrogen is grateful for the opportunity to work with the CSIRO on this world leading demonstration of PWS.

Design and construction of the prototype reactor module [is complete and commissioning is underway]. Sparc Hydrogen is aiming to commence testing of the prototype at the CSIRO in early August with results to be gathered over a period of 2-4 weeks. A second round of testing later in the year will be considered pending results.

The key aims of the prototype testing include:

- Advancing the TRL of Sparc Hydrogen's PWS reactor from 4 to 5 which is one level closer to a commercially deployable product.
- Providing valuable data and information for pilot plant reactor design.
- To enable benchmarking of laboratory testing under simulated solar conditions with real world results.
- Further establishing Sparc Hydrogen as a world leading proponent of PWS technology and particularly as having a viable reactor to test new and better photocatalysts under development by leading research groups around the world.

Graphene Additive Product **ecosparc**®

Sparc advised the commissioning of Sparc's **ecosparc**® commercial production facility. The state of the art facility enables Sparc to now produce commercial quantities of the graphene additive product, **ecosparc**® for trials with global coatings companies.



Target markets for **ecosparc**® include the global coatings industry, composites and other graphene additive applications. The Company is currently undertaking evaluations with potential global end users with results from these evaluations expected in 2H CY23 and 1H CY24, respectively. In parallel, the company is pursuing opportunities to target Australian coatings companies that are looking to enhance the anti-corrosive and environmental performance of their products, with the addition of **ecosparc**®.

ecosparc® can also be incorporated into composites and other bulk materials to improve sustainability and environmental outcomes. Sparc is also engaged with product trials for global and domestic companies in these markets.

Sodium Ion Batteries

Sparc Technologies, in collaboration with Queensland University of Technology (**QUT**), continued R&D into developing hard carbon materials using low cost, sustainably sourced green bio-waste for the sodium ion battery industry (**SIBs**).

Subsequent to quarter end, QUT delivered the second project milestone report which describes the progress during the quarter which included:

- Ongoing characterisation and electrochemical testing of hard carbon materials in half cell formats
- Testing of methods to improve initial coulombic efficiencies
- Testing of alternative samples of bio-waste feedstock to provide early indications of product quality consistency
- Characterisation and testing of commercially available hard carbon materials in order to provide additional benchmarking and allow for material comparisons
- Production and testing of initial full cells using commercially available cathode and electrolyte materials

Planned work during Q3 includes furthering the activities described above with a focus on verification of prior results using alternative bio-waste sources, fabrication and testing of full cells and ongoing R&D targeting improvements in initial coulombic efficiencies. Sparc Technologies also applied for grant funding during the quarter which if successful would support the acceleration of ongoing and additional work-streams.

Corporate

R&D Tax Refund

Sparc Hydrogen recently received a research and development (R&D) tax refund totalling \$418,655 as part of the Australian Government's R&D tax incentive, relating to the 2022 financial year. Sparc Technologies is a 52% shareholder of Sparc Hydrogen.

This amount is in addition to the R&D tax refund totalling \$934,195 received by Sparc Technologies, relating to activities for the fiscal year ending on 30 June 2022, and which was announced in April 2023.

The R&D Tax Incentive scheme is a program jointly administered by the Australian Taxation Office and AusIndustry, under which companies can receive up to a 48.5% refundable tax offset of eligible expenses on research and development activities. These refunds will provide continued support for Sparc's work on projects involving graphene, green hydrogen, and sustainable batteries.

Cash

As at 30 June 2023, the Company had a reported cash position of \$2.957m.

Related Party Payments



In line with its obligations under ASX Listing Rule 5.3.5 Sparc Technologies Limited notes that the only payments to related parties of the Company, as advised in the Appendix 4C for the period ended 30 June 2023, pertain to payments to directors for reimbursement of arrears of Directors Fees, salary and superannuation in the amount of \$85,241.

-ENDS-

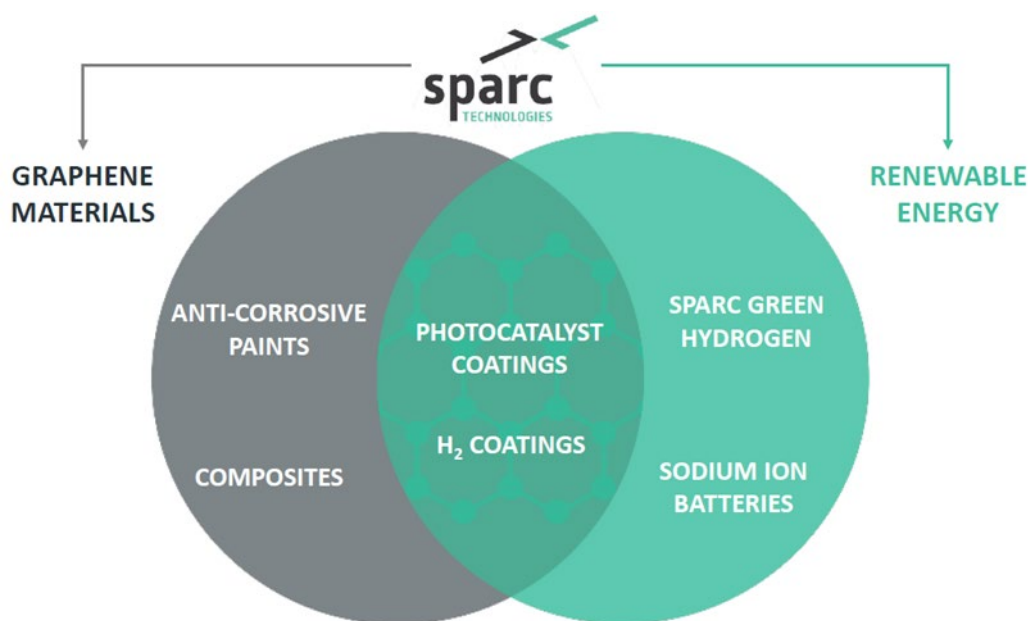
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About Sparc Technologies



Sparc Technologies Limited ('Sparc,' ASX: SPN) is an Australian company pioneering new technologies to disrupt and transform industry while seeking to deliver a more sustainable world. Sparc has established offices in Australia, Europe and North America and is focused on three core areas of technology development.

1. Sparc has spent over 4 years developing a **graphene based additive** product, **ecosparc®**, which has demonstrated up to 40% anti-corrosion improvement in commercially available epoxy coatings. Sparc recently commissioned a manufacturing facility to produce **ecosparc®** and is engaging with global paint companies and end users to advance commercial scale trials.
2. Sparc is a majority shareholder of **Sparc Hydrogen** which is a company pioneering the development of **photocatalytic water splitting** ('PWS') green hydrogen production technology. PWS is an alternative to producing green hydrogen via electrolysis, using only sunlight, water and a photocatalyst. Given lower infrastructure requirements and energy use, the process has the potential to deliver a cost and flexibility advantage over electrolysis.



3. Sparc is also developing **sodium ion battery technology** in partnership with Queensland University of Technology.

For more information please visit: sparctechnologies.com.au

Forward Looking Statements

Some information included in this release constitutes forward-looking statements. Forward-looking statements are statements that are not historical facts and are generally, but not always, identified by words such as the following: expects, plans, anticipates, forecasts, believes, intends, estimates, projects, assumes, potential and similar expressions. Forward-looking statements also include reference to events or conditions that will, would, may, could or should occur.

These forward-looking statements are necessarily based upon a number of estimates and assumptions that, while considered reasonable at the time they are made, are inherently subject to a variety of risks and uncertainties which could cause actual events or results to differ materially from those reflected in the forward-looking statements, including, without limitation the matters set out in this announcement.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.



Appendix 4C

Quarterly cash flow report for entities subject to Listing Rule 4.7B

Name of entity

Sparc Technologies Limited

ABN

13 009 092 068

Quarter ended ("current quarter")

30 June 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers	0	10
1.2 Payments for		
research and development	(96)	(519)
product manufacturing and operating costs	(30)	(125)
advertising and marketing	(80)	(209)
leased assets	0	0
staff costs	(376)	(1,605)
administration and corporate costs	(313)	(1,716)
1.3 Dividends received (see note 3)	0	0
1.4 Interest received	7	0
1.5 Interest and other costs of finance paid	0	0
1.6 Income taxes paid	0	0
1.7 Government grants and tax incentives	931	1,538
1.8 Other (provide details if material)	0	0
1.9 Net cash from / (used in) operating activities	43	(2,618)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
entities	0	0
businesses	0	0
property, plant and equipment	(1)	(117)
investments	0	0
intellectual property	0	(5)
other non-current assets	0	0



Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
2.2	Proceeds from disposal of:		
	entities	0	0
	businesses	0	0
	property, plant and equipment	0	1
	investments	0	0
	intellectual property	0	(5)
	other non-current assets	0	0
2.3	Cash flows from loans to other entities	0	0
2.4	Dividends received (see note 3)	0	0
2.5	Other (provide details if material)	0	0
2.6	Net cash from / (used in) investing activities	(1)	(122)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	0	3,333
3.2	Proceeds from issue of convertible debt securities	0	0
3.3	Proceeds from exercise of options	123	228
3.4	Transaction costs related to issues of equity securities or convertible debt securities	0	0
3.5	Proceeds from borrowings	0	0
3.6	Repayment of borrowings	0	0
3.7	Transaction costs related to loans and borrowings	0	0
3.8	Dividends paid	0	0
3.9	Other (provide details if material)	0	0
3.10	Net cash from / (used in) financing activities	123	3,561

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	2,793	2,136
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(43)	(2,618)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1)	(122)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	123	3,561



Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
4.5	Effect of movement in exchange rates on cash held		
4.6	Cash and cash equivalents at end of period	2,957	2,957

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	2,957	2,793
5.2	Call deposits		
5.3	Bank overdrafts		
5.4	Other (provide details)		
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	2,957	2,793

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	85
6.2	Aggregate amount of payments to related parties and their associates included in item 2	
Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.		



7.	Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity.</i> <i>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1	Loan facilities		
7.2	Credit standby arrangements		
7.3	Other (please specify)		
7.4	Total financing facilities	0	0
7.5	Unused financing facilities available at quarter end		0
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(888)
8.2	Cash and cash equivalents at quarter end (item 4.6)	2,957
8.3	Unused finance facilities available at quarter end (item 7.5)	0
8.4	Total available funding (item 8.2 + item 8.3)	2,957
8.5	Estimated quarters of funding available (item 8.4 divided by item 8.1)	3.33
<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>		
8.6	If item 8.5 is less than 2 quarters, please provide answers to the following questions:	
8.6.1	Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer:		
8.6.2	Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer:		



8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer:

Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date:27 July 2023.....

Authorised by:By the Board.....

(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

