

## DECEMBER 2021 QUARTERLY ACTIVITIES REPORT

### HIGHLIGHTS

#### Sparc's ecosparc Graphene Based Coatings Additives

- ▶ Up to 40% improvement verified in the anticorrosive performance of coatings subjected to a 6 month globally recognised test program
- ▶ Tests results confirm Sparc's research capabilities to develop proprietary graphene-based additives and positions the company to pursue commercial agreements
- ▶ In support of the Commercialisation of graphene-based additives, the Company's products intended for the P&M Coatings market will carry the "ecosparc Graphene Enhanced" branding



#### Sparc Hydrogen Joint Venture

- ▶ Sparc Technologies executed a non-binding Term Sheet with strategic partner and cornerstone shareholder, the University of Adelaide to form a Joint Venture (JV) hydrogen technology company
- ▶ As part of the JV Agreement, Sparc Technologies has made an initial Stage 1 investment of \$1.06m in support of advancing the project for the first 12 months
- ▶ Next generation hydrogen technology to employ photocatalysis and solar radiation to deliver Ultra-Green Hydrogen (UGH), with Sparc to focus on developing graphene coatings for use in conjunction with photocatalysts
- ▶ An Investor Presentation was released to the ASX detailing Ultra Green Technology and the opportunities now available to Sparc to exploit rapid hydrogen demand growth

#### Corporate

- ▶ At the Annual General Meeting of shareholders of the Company held on 30 November, all resolutions were put to a vote on a Poll and were passed
- ▶ \$3.375m cash at bank as at 31 December 2021

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Sparc Technologies Limited (ASX: SPN) (Sparc or the Company) is pleased to provide its December 2021 Quarterly Activities Report.

## **ecosparc Graphene Based Coatings Additives**

At the end of the quarter, Sparc advised that after 6 months of comprehensive testing to the ISO standards employed within the Protective & Marine (P&M) Coatings' market, Sparc *graphene-based additives* delivered up to 40% improvement in the anticorrosive performance of atmospheric epoxy coatings. ([ASX Announcement 23 December 2021](#)) Of note is the fact that the epoxy coatings used in testing with ecosparc, are amongst those that are commercially available from leading coatings manufacturers.

This test program built on test results previously announced, again confirming that significant results continue for the Company's proprietary graphene-based additives targeted for use in improving the performance of anti-corrosive coatings. Sparc's addressable coatings market is estimated to be US\$44bn by 2025 and these results support the Company's further engagement with major industry participants. (See [Sparc Presentation dated 22 March 2021](#))

With a continued focus on employing graphene as a raw material with which to formulate products, Sparc has screened and selected specific grades of graphene for the development of graphene-based additives for targeted end uses within the P&M Coatings market.

Sparc graphene-based additives are much more than simple dispersions, where the latter is primarily intended to aid the handleability of graphene. Graphene based additives are specifically formulated with the aim of delivering an intended performance outcome.

An improvement in anticorrosive performance translates into an extension in the life of a coating thereby extending '*time to first maintenance*'. Improved performance outcomes not only serve to lower the lifetime cost of a coatings' system, the extension of coatings' life also delivers quantitative benefits in terms of environmental and sustainability outcomes; a primary business objective for Sparc Technologies.

Chart 1 below illustrates improvement in corrosion performance achieved by addition of Sparc graphene-based additive to current commercially available anticorrosive coatings.

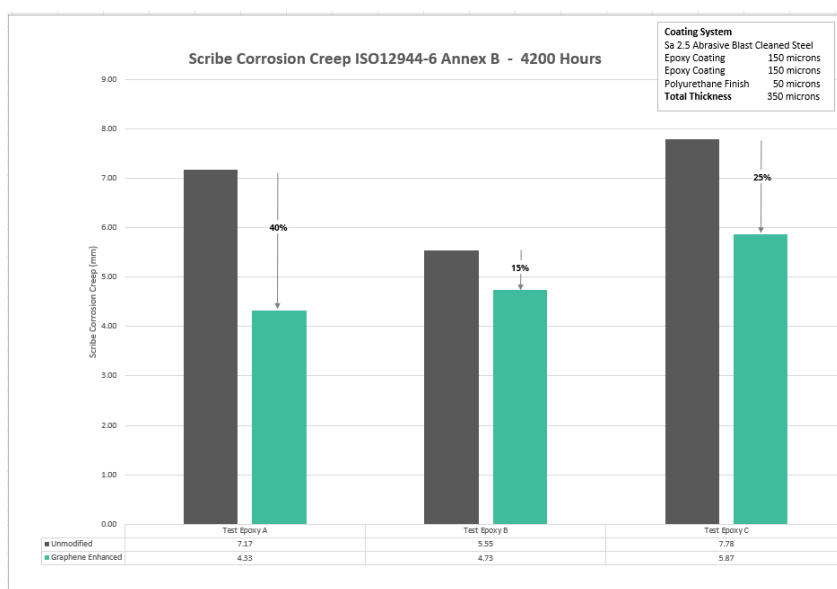


Chart 1: Scribe Corrosion Creep Results – 4200 Hours Cyclic Testing

Note: 6 month (4,200 hours), test referenced is designed to simulate high durability performance (15-25 years' service) in severe offshore environments, e.g., offshore oil platforms, wind towers

## Commercialisation

In support of the Commercialisation of graphene-based additives, Sparc Technologies' products intended for the P&M Coatings market will carry the "ecosparc Graphene Enhanced" branding.



## Disruptive Technologies

Testing continues of Sparc Technologies Antibacterial and Antifouling Coatings technologies – both technologies are well advanced in terms of testing and in the delivery of a finished product; both products represent novel technology platforms.

## Outlook for Next Quarter - Graphene

**Coatings** – With the launch of ecosparc, the Company is uniquely placed to advance discussions with Coatings companies especially since few companies are in a position to provide the necessary data in support of product claims. Sparc has the data that aligns with that typically generated and recognised by the global Coatings Industry and has delivered these results using commercially available products.

Importantly, Sparc's additives are 'drop-in', meaning that ecosparc can be readily incorporated into existing products without any significant modification to existing formulations. Ecosparc is ready for market adoption.

**Composites and Concrete** - The commitment to product development and testing is also being applied to activities in Composites and Concrete. The Company aims to be in a position to clearly demonstrate to Customers that it has products whose performance can be demonstrated to industry standards. After much research, Sparc understands what to look for when selecting a grade of graphene for its additives and will welcome any opportunity to work collaboratively with Customers operating within the Industrial Materials sector.

**Health** – Advancing the Sensor project and industry partner discussions to continue throughout the next quarter.

**Research & Development** – Establishment of further agreements with institutions aimed at supporting current activities and accelerating product commercialisation in Coatings, Composites and Concrete.

## Sparc Hydrogen Joint Venture

In late October, Sparc Technologies announced that it had entered a joint venture (**JV**) agreement with its strategic partner and cornerstone shareholder, the University of Adelaide, to jointly progress a project that will deliver a unique process with the aim of producing commercially viable ultra-green hydrogen (**UGH**) (the **Project**). ([ASX Announcement 27 October 2021](#)) The Ultra-Green Hydrogen technology has been developed by the University of Adelaide and Flinders University .

NOTE: Discussion of this JV announcement was already included in the [September 2021 Quarterly](#).

An [Investor Presentation](#) was released to the ASX the following week detailing Ultra Green Technology and the opportunities now available to Sparc to exploit rapid hydrogen demand growth.

The Project will seek to further develop a process known as Thermo-Photocatalysis, which employs the sun's radiation and thermal properties to convert water into hydrogen and oxygen. Adopting this process to produce ultra-green hydrogen means that renewable energy from wind farms, and/or photovoltaic solar panels, does not need to be exploited for hydrogen production, nor does the process of electrolysis need to be employed. (See Figure 1 below.)

As such, Capital Expenditure (CAPEX) and Operational Expenditure (OPEX) costs are anticipated to be significantly lower, supporting the production of ultra-green commercially viable energy in the form of hydrogen. Furthermore, without the need of the footprint associated with massive scale wind and/or solar farms, this technology can also be adopted remotely and for onsite use, thereby reducing the reliance on long distance hydrogen transportation and/or electricity transmission.

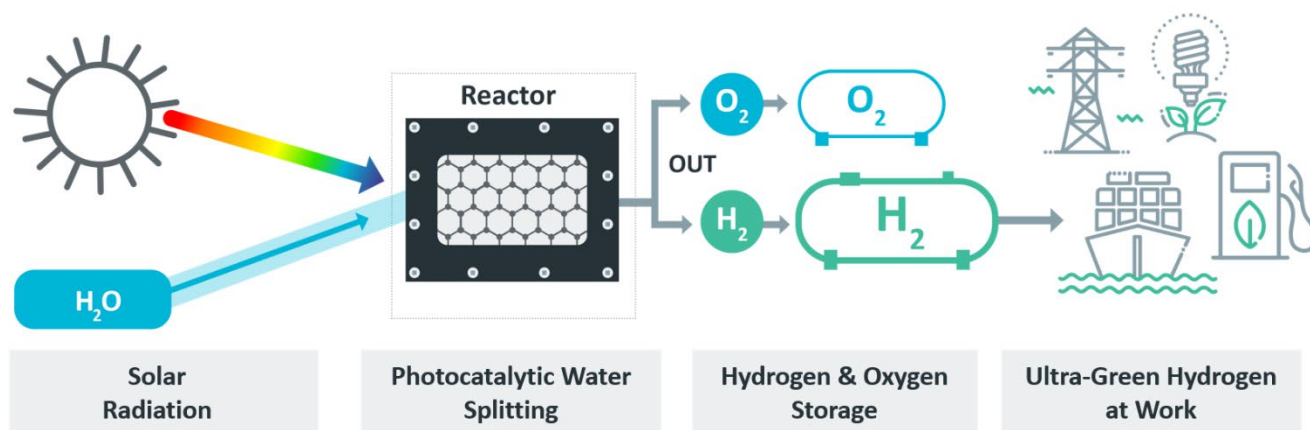


Figure 1: Sparc Ultra Green Hydrogen Process

It is important to note that, an electrolyser is not required so no electricity is used to split the water into oxygen and hydrogen. In keeping with Sparc's expertise in graphene, Sparc will seek to develop graphene coatings to be used in conjunction with photocatalysts.

### Project to date

The technology developed to date was supported by ASTRI (Australian Solar Thermal Research Institute), with contributions totalling A\$2.5m over a 4.5-year period from the University of Adelaide and Flinders University. Current research is focused on using the entire solar spectrum to increase the STH (Solar to Hydrogen) percentage with laboratory results demonstrating a significant increase in hydrogen production under optimised conditions. A provisional patent application (Australian Provisional Patent Application No. 2021900997 – Photocatalytic Apparatus) was filed by University of Adelaide in April 2021 for the use of the entire solar spectrum to increase the Solar to Hydrogen (STH) percentage rate.

## Corporate

### Results of Annual General Meeting

At the Annual General Meeting of shareholders of the Company held on 30 November 2021, all resolutions were put to a vote on a Poll, called by the Chairman, and were passed.

### Statement of Commitments

The current quarter is covered by the Statement of Commitments<sup>1</sup> outlined in the Prospectus dated 5 October 2020. A summary of expenditure to date is outlined below:

	Expenditure for the Qtr to 31 December 2021 (\$)	Expenditure described in Use of Funds in prospectus (\$)
Cost of offer	0	(470,000)
Corporate administration	(471,000)	(1,000,000)
Research and development	(1,477,000)	(1,300,000)
Graphene plant construction	(39,000)	(1,900,000)
Marketing and business development	(25,000)	(730,000)
Working capital		(900,000)
<b>Total</b>	<b>(2,012,000)</b>	<b>(6,300,000)</b>

<sup>1</sup> The above table is a statement of current intentions. Investors should note that the allocation of funds set out in the above table may change depending on a number of factors. In light of this the Board reserves the right to alter the way the funds are applied

## Cash

As at 31 December 2021, the Company had a reported cash position of \$3.375m

### Related Party Payments

In line with its obligations under ASX Listing Rule 4.7C.3, Sparc Technologies Limited notes that the only payments to related parties of the Company, as advised in the Appendix 4C for the period ended 31 December 2021, pertain to payments to directors for reimbursement of arrears of Directors Fees and Travel Expenses totalling \$138,000.

**-ENDS-**

**Authorised for release by:** Mike Bartels, Managing Director.

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## About Sparc Technologies

Sparc Technologies Limited (ASX: SPN) is a South Australian based company that is focussing on the development of innovative technology solutions.

Graphene, which is a major focus for Sparc, can be extracted from graphite, it is a 2-dimensional nano material made of carbon atoms arranged in a hexagonal pattern, giving it unique and powerful properties that, with the right technology, can be imparted on products to improve performance. Sparc is commercialising a number of graphene products in industrial materials applications, as well as health.

Sparc is also focussed on developing thermo-photocatalytic green hydrogen technology that does not require solar and/or wind farms, nor electrolysis as with conventional green hydrogen.

## 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")

31 December 2021

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	3	5
1.2 Payments for		
(a) research and development	(1,284)	(1,437)
(b) product manufacturing and operating costs		
(c) advertising and marketing	(25)	(38)
(d) leased assets	(28)	(68)
(e) staff costs	(387)	(820)
(f) administration and corporate costs	(253)	(521)
(g) exploration and evaluation (if expensed)		
1.3 Dividends received (see note 3)		
1.4 Interest received		
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Government grants and tax incentives		200
1.8 Other (provide details if material)		
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(1,973)</b>	<b>(2,679)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant and equipment	(39)	(78)
(d) investments		
(e) intellectual property		

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
2.2	(f) other non-current assets Proceeds from disposal of: (g) entities (h) businesses (i) property, plant and equipment (j) investments (k) intellectual property (l) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
2.6	<b>Net cash from / (used in) investing activities</b>	<b>(39)</b>	<b>(78)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	2,801	2,801
3.2	Proceeds from issue of convertible debt securities		
3.3	Proceeds from exercise of options	638	638
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(240)	(240)
3.5	Proceeds from borrowings		
3.6	Repayment of borrowings		
3.7	Transaction costs related to loans and borrowings		
3.8	Dividends paid		
3.9	Other (provide details if material)		
3.10	<b>Net cash from / (used in) financing activities</b>	<b>3,199</b>	<b>3,199</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	2,189	2,933
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,973)	(2,679)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(39)	(78)



Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	3,199	3,199
4.5	Effect of movement in exchange rates on cash held		
4.6	Cash and cash equivalents at end of period	3,375	3,375

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	3,375	2,933
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)	3,375	2,933

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	138
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.*

<b>7. Financing facilities</b> <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
7.1 Loan facilities		
7.2 Credit standby arrangements		
7.3 Other (please specify)		
7.4 <b>Total financing facilities</b>		
7.5 <b>Unused financing facilities available at quarter end</b>		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.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(1,973)
8.2 Cash and cash equivalents at quarter end (item 4.6)	3,375
8.3 Unused finance facilities available at quarter end (item 7.5)	0
8.4 Total available funding (item 8.2 + item 8.3)	3,375
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	1.71
<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?	
<p>Answer: The entity does not expect to have the current level of net operating cashflow ongoing as seen in the December quarter. The December quarter result has been impacted by a once off payment of \$1.059m to Adelaide University for the Ultra Green Hydrogen Project. Without this payment Operating expenses would have been \$914,000 The entity anticipates that future quarter operating cashflows will return to previous levels. Adjusting the December cashflows for the impact of the once off payment would provide the entity with an Estimated Quarters Funding Available of 3.69.</p>	
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?	
<p>Answer:</p>	

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: Yes, refer to 8.6.1

*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: .....31 January 2022.....

Authorised by: .....With the Authority of 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.