

June 2024 Quarterly Activities Report

HIGHLIGHTS

Sparc Hydrogen

- In-principle support to locate the pilot plant at the University of Adelaide's Roseworthy Campus, ~50km north of Adelaide, South Australia
- Collaboration Framework Agreement entered into with Shinshu University in Japan, a leading developer of photocatalyst materials, targeting pilot testing
- Completion of successful prototyping at CSIRO Energy Centre, validating key pilot scale reactor design principles
- Preparations made for the commencement of front-end engineering and design for the pilot plant

Graphene Based Additives

- Field trials of **ecosparc®** enhanced coating with the South Australian Department of Infrastructure and Transport commenced
- Field trial agreement with a wholly owned subsidiary of 29Metals Limited (ASX:29M), targeting testing of **ecosparc®** enhanced coating on processing plant infrastructure
- Ongoing testing of **ecosparc®** with several global coatings companies

Sodium-ion Batteries

- Engagement with global partners to advance the project collaboratively

Corporate

- Completed A\$2.25M share placement (before costs) in April
- Cash balance of A\$2.71M as at 30 June 2024, with >A\$1.0M FY24 R&D tax incentive claim expected to be paid in Q4 2024

Sparc Technologies Limited (ASX: SPN) (**Sparc** or the **Company**) is pleased to provide its June 2024 Quarterly Activities Report.

Sparc Hydrogen

During the quarter, Sparc Hydrogen, a joint venture between Sparc Technologies, the University of Adelaide and Fortescue, completed prototyping at CSIRO Energy Centre, progressed several key workstreams de-risking pilot plant development, continued laboratory-based R&D, submitted a CRC-P grant funding application and exhibited at the Australian Hydrogen Conference in Adelaide. The strong progress made by the team during the quarter culminated in the joint venture executing a Collaboration Framework Agreement with Shinshu University in Japan regarding photocatalyst supply and agreeing in principle to locate the pilot plant at the University of Adelaide's Roseworthy Campus, ~50km north of Adelaide.

Successful Completion of Prototyping

In April, the Company announced that Sparc Hydrogen had successfully completed a second round of prototyping at the CSIRO Energy Centre in Newcastle, New South Wales ([ASX Announcement 9 April 2024](#)). Performance of the prototype reactor over numerous trial runs and a range of concentrated solar and thermal operating conditions was significantly improved compared to the first generation prototype, with better temperature and pressure control, gas production and measurement. Hydrogen gas production was close to that estimated based on laboratory results using the same photocatalyst material, providing validation for laboratory testing under concentrated solar simulation going forward. Importantly, the second generation prototype has been designed to be easily scalable in order to slot into a linear Fresnel concentrated solar field for pilot scale testing.

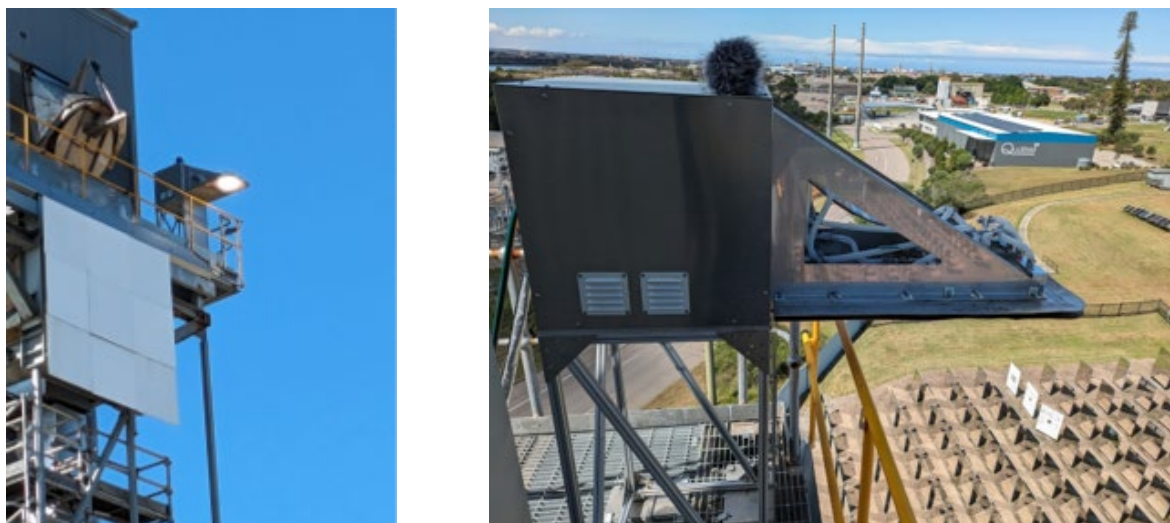


Figure 1: Photos of second generation prototype looking from ground up (left) and side view from the tower (right) ©2024 Sparc Hydrogen

Collaboration Framework Agreement with Shinshu University regarding Photocatalyst Supply

Sparc Hydrogen executed a Collaboration Framework Agreement (CFA) with Shinshu University (Shinshu) in Japan during the quarter. The CFA has been entered into to further each party's work in advancing photocatalytic water splitting (PWS) as a method to produce green hydrogen at a commercial scale. The CFA sets out the principal terms on which the parties have agreed to explore collaborations and pursue negotiations regarding the use of photocatalysts developed by Shinshu in solar reactors developed by Sparc Hydrogen. The provision of photocatalysts by Shinshu to Sparc Hydrogen will be governed by the terms of separate binding project agreements on terms to be agreed between the parties.

Shinshu University is a key participant in Japan's ARPCHEM project, a collaborative research initiative backed by Japan's New Energy and Industrial Technology Development Organization (NEDO), which has demonstrated the feasibility of producing hydrogen through photocatalytic water splitting on an area scale of 100m² over a



greater than 12 month period. Participants in ARPChem include the following Japanese companies and universities/research institutes:

- Companies: INPEX Corporation, JX Nippon Mining & Metals Corporation, Dai Nippon Printing Co., Ltd., Daxerials Corporation, Toray Industries Inc., Toyota Motor Corporation, Nippon Steel Corporation, Furuya Metal Co., Ltd., Mitsui Chemicals, Inc. and Mitsubishi Chemical Corporation.
- Universities and Research Institutes: Kyoto University, National Institute of Advanced Industrial Science and Technology, Shinshu University, The University of Tokyo, Tokyo University of Science, Tohoku University, Nagoya University and Yamaguchi University.

Sparc Hydrogen is seeking to collaborate with several leading photocatalyst developers, such as Shinshu, going forward.

Pilot Plant Site Selection

The University of Adelaide has provided Sparc Hydrogen with in-principle support to locate the pilot plant at its Roseworthy Campus, ~50km north of the Adelaide CBD. Roseworthy was assessed among several other sites in Adelaide and regional South Australia and was deemed the highest-ranking site considering a range of criteria. Key factors in this assessment included infrastructure access, proximity for researchers and other key stakeholders, and relative control over obtaining requisite approvals. The pre-FEED study completed in late 2023 was based on locating the plant at Roseworthy, although this did not factor into the site selection criteria. Roseworthy Campus is wholly owned by the University of Adelaide and is predominantly used for undergraduate teaching, postgraduate training, research and clinical services. The Campus is located on a 1,600 ha property, which includes a working farm, and has an international reputation for excellence in dryland agriculture, natural resource management and animal production. Securing the proposed site at Roseworthy is contingent on the execution of a formal lease agreement between the University of Adelaide and Sparc Hydrogen.

PWS Reactor Design and Engineering

Sparc Hydrogen has significantly progressed the design and engineering of a pilot scale PWS reactor during the quarter. Sparc Hydrogen has been working collaboratively with the chosen linear Fresnel equipment supplier to ensure the reactor's compatibility with their solar concentrator design. The Sparc Hydrogen team has also identified manufacturing capability within Australia to support local construction of the PWS reactors. Prototype testing completed at CSIRO Energy Centre provides confidence in the underlying design principles for the pilot scale reactor.

FEED Study

During the quarter, preparations were made to commence front-end engineering and design (FEED) for the pilot plant with the same engineering firm that led the pre-FEED study completed in Q4 2023. The FEED study will build on the flowsheet developed during the pre-FEED, which included four linear Fresnel modules within an end-to-end green hydrogen production system (Figure 2). The pilot plant will allow Sparc Hydrogen to independently and concurrently test different reactor designs and photocatalyst materials. Sparc Hydrogen is not aware of any similar facilities developed for testing photocatalytic water splitting under concentrated solar conditions around the world.



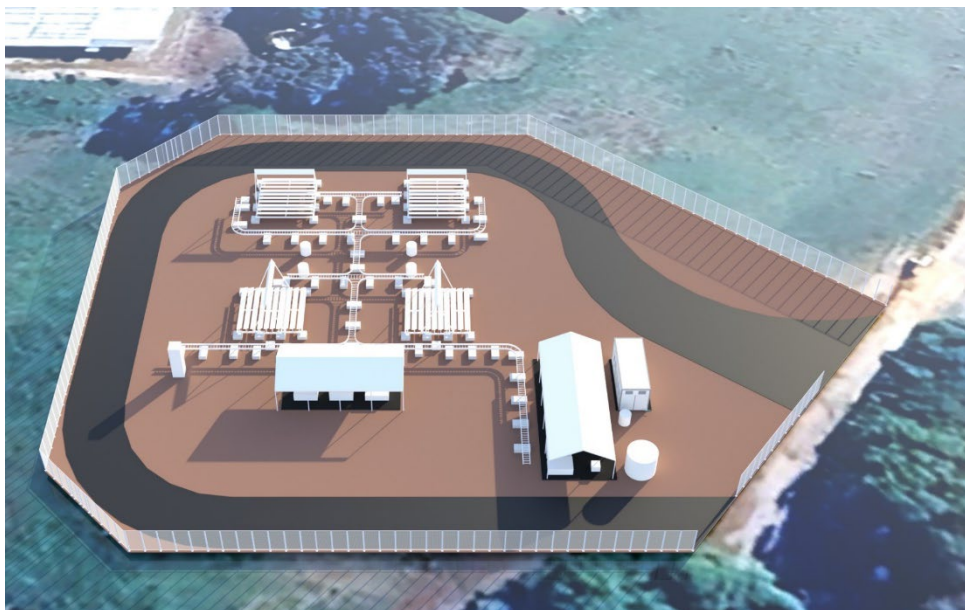


Figure 2: 3D pilot plant model based on pre-FEED study

Other Activities

Each of these milestones represents material de-risking of the pilot plant development workstreams building on from the pre-FEED study and the successful prototyping work completed at the CSIRO Energy Centre. In parallel, work continues in the laboratory to test and optimise Sparc Hydrogen's photocatalytic water splitting reactor under a range of conditions using different photocatalyst materials.

In June, Sparc Hydrogen submitted a CRC-P grant application, which, if successful, will provide additional funding towards pilot plant construction and R&D. Results from the CRC-P application are expected in late Q3 or early Q4 2024.

In June, the Sparc Hydrogen Team attended the [Australian Hydrogen Conference](#) in Adelaide. The team, consisting of Nick O'Loughlin, Vinod Gopalan and Anthony Pellicone, networked with other leaders in the Australian hydrogen industry and discussed its future (see Figure 3). The Australian Government's \$23bn investment in the ["Future Made in Australia" policy](#), which includes a \$6.7 billion tax incentive for hydrogen and an additional \$2 billion for the [Hydrogen Headstart program](#), has heightened the focus on the role of hydrogen in Australia's energy future.



Figure 3: Anthony Pellicone and Vinod Gopalan at the Australian Hydrogen Conference, June 2024



Graphene Based Additives

During the quarter, Sparc progressed discussions and testwork with several major companies in the coatings industry around the use of **ecosparc**® in protective coatings to improve anti-corrosive performance. Feedback from one major global customer during the quarter has encouraged Sparc with a clear objective in using **ecosparc**® as a key tool to improve the performance of a coating within its range. The same customer is facilitating the testing of an **ecosparc**® enhanced coating in collaboration with a significant oil & gas industry player. Commencement of this collaborative testing is expected during Q3, and results are expected in late 2024 or early 2025. This testing program, along with the field trials discussed below, is seen as validation of Sparc's strategy of concurrently targeting coatings companies and significant end users of anti-corrosive paints to commercialise **ecosparc**®.

Sparc has also been targeting existing suppliers to the paint industry which could act as distributors and/or manufacturers of the **ecosparc**® graphene based additive. Following meetings in Asia held during April, Sparc is pleased to be working with a Korean additive company that is facilitating testwork with three of the largest coatings companies in Korea. Samples were delivered to Korea during the quarter, and testing will take place during Q3 and Q4 of this year. Sparc's increasing traction with new and existing potential customers and end users of **ecosparc**® is being driven by targeted marketing, an uptick in general interest around graphene in the coatings industry and a compelling value proposition, as summarised below.

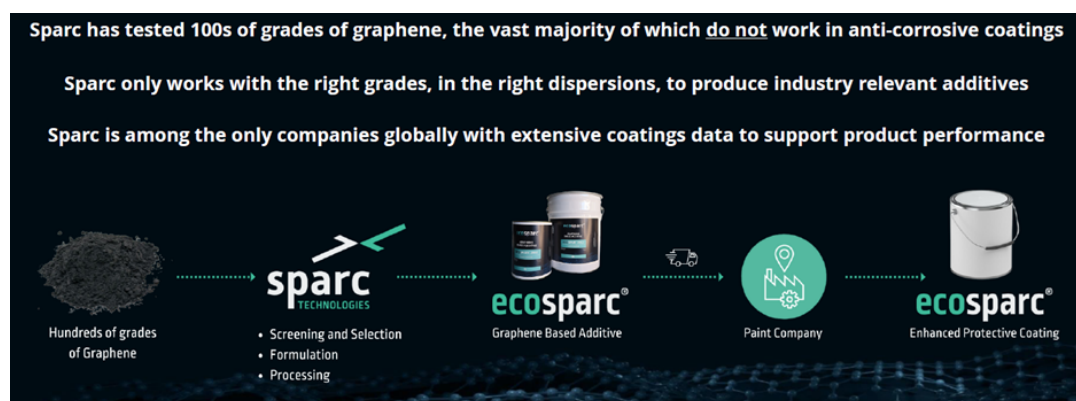


Figure 4: Sparc Technologies' value proposition

ecosparc® Field Trials

During the quarter, Sparc secured its second binding trial agreement with Golden Grove Operations Pty Ltd, a wholly owned subsidiary of 29Metals Limited (ASX:29M) (refer to [ASX Announcement 20 June 2024](#)). The Trial Agreement details the terms and conditions under which Sparc and 29Metals will conduct a collaborative field trial involving the application of an **ecosparc**® enhanced coating on steel processing plant infrastructure at the Golden Grove mine site in Western Australia.

The climatic and physical environment at the Golden Grove processing plant (see Figure 5), located 250km east of Geraldton in WA, is significantly different to the coastal environments being used for field trials with the South Australian Department for Infrastructure and Transport (DIT). This will provide Sparc and its potential customers with additional real-world performance data, building on over 5 years of research and development and >10,000 data points based on accelerated corrosion testing in Sparc's laboratory. Importantly, the agreement with 29Metals shows continuing market demand from industry for better performing anti-corrosive coatings.





Figure 5: Processing plant at Golden Grove Mine, WA

Field trials with the South Australian DIT also progressed during the quarter. Steel piles for the Streaky Bay Jetty remediation project were delivered to DIT's contractor for blasting and coating. Piles pertaining to the field trial will be placed at three locations along the jetty covering the full range of conditions and exposure on the asset. These piles will be monitored throughout the life of the trial, with a particular focus on adhesion over the first 6 months. Transport and erection of the piles is expected to occur during Q3 2024. Sparc expects to commence works for the second trial with DIT at West Beach Bridge in Adelaide later this year. Other details pertaining to the DIT field trials are as per Sparc's announcement in [March 2024](#).



Figure 6: Dr Denis Wright and Nick O'Loughlin in front of steel piles for the Streaky Bay Jetty remediation project

Other Activities

Sparc progressed R&D activities on graphene-based additives in sustainable anti-corrosive coatings, anti-fouling coatings, composites and sustainable plastics during the quarter. Sparc is working collaboratively with universities, industrial players and end users across these technology areas and is excited by the potential commercial opportunities in these new business areas.



Sparc's GM Graphene Materials (Dr Denis Wright) and Innovation, Growth and Sustainability Manager (Paul Baccanello) attended the Australian Coatings Show in Melbourne in June. Denis' presentation on "The Journey of Graphene and Its Utilisation in Protective Coatings" was well received by conference attendees, who included a number of potential customers from various segments of the coatings industry. Follow-up meetings have been held with several connections from the conference who expressed interest in Sparc's graphene-based additives.



Figure 7: Paul Baccanello and Denis Wright at the Australian Coatings Show, June 2024

Sodium-Ion Batteries

Limited R&D activities were conducted on Sparc's sustainable hard carbon anode project during the quarter following QUT's provision to Sparc of a final milestone report in April.

Sparc's focus is on discussions with research and industrial partners to advance the project collaboratively. Sparc believes this collaboration is crucial to ensuring the technology's industrial applicability in a highly competitive and technical market for battery materials. The Company looks forward to receiving market feedback on what it considers an attractive concept and technology.

Corporate

Capital Raising

In [April 2024](#), the Company announced that it had received binding commitments from sophisticated and other professional investors to raise A\$2.25M (before costs) through a share placement (Placement). New and existing investors strongly supported the Placement and Sparc's Directors subscribed for A\$100,000. Shareholder approval was granted for the issuance of the shares to Directors in [June 2024](#).



Cash

As at 30 June 2024, the Company had a reported cash position of A\$2.7M.

Cash expenditure for the quarter was in line with expectations and without any material movements from the previous quarter.

As previously mentioned, Sparc raised A\$2.25M (before costs) in a placement, strengthening the Company's cash position.

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 Appendix 4C for the period ended 30 June 2024, pertain to payments to directors for reimbursement of arrears of Directors Fees, salary and superannuation in the amount of A\$139K.

-ENDS-

Authorised for release by: Nick O'Loughlin, Managing Director.

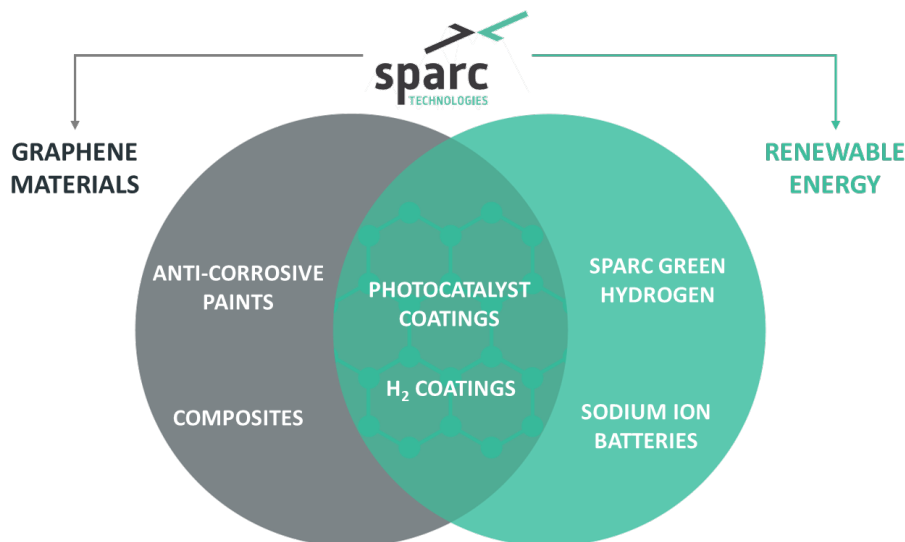
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About Sparc Technologies



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 5 years developing a **graphene based additive** product, **ecosparc®**, which has demonstrated 40% anti-corrosion improvement in commercially available epoxy coatings. Sparc recently commissioned a manufacturing facility to produce **ecosparc®** and is engaging with global coatings companies and asset owners to conduct field 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 sustainable **sodium ion battery anode technology** utilising agricultural bio-waste materials.

For more information about Sparc Technologies please visit: sparctechnologies.com.au

For more information about **ecosparc®** please visit: ecosparc.com.au

For more information about Sparc Hydrogen please visit: sparchydrogen.com



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 2024

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	0
1.2 Payments for		
research and development	(455)	(1,159)
product manufacturing and operating costs	(38)	(286)
advertising and marketing	(50)	(242)
leased assets	0	0
staff costs	(207)	(1,284)
administration and corporate costs	(94)	(817)
1.3 Dividends received (see note 3)	0	0
1.4 Interest received	11	25
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	0	1,422
1.8 Other (provide details if material)	0	0
1.9 Net cash from / (used in) operating activities	(833)	(2,339)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
entities	0	0
businesses	0	0
property, plant and equipment	(6)	(20)
investments	0	(6)
intellectual property	0	0
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	0
	investments	0	0
	intellectual property	0	0
	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	(6)	(26)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	2,115	2,115
3.2	Proceeds from issue of convertible debt securities	0	0
3.3	Proceeds from exercise of options	0	0
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	2,115	2,115

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	1,431	2,957
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(833)	(2,339)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(6)	(26)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	2,115	2,115



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	2,707	2,707

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	2,707	1,431
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)	2,707	1,431

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	139
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 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.	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)	(833)
8.2	Cash and cash equivalents at quarter end (item 4.6)	2,707
8.3	Unused finance facilities available at quarter end (item 7.5)	0
8.4	Total available funding (item 8.2 + item 8.3)	2,707
8.5	Estimated quarters of funding available (item 8.4 divided by item 8.1)	3.25

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.

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: ...31 July 2024.....

Authorised 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.

