

## September 2024 Quarterly Activities Report

### HIGHLIGHTS

#### Sparc Hydrogen

- Front-end engineering and design (FEED) for Sparc Hydrogen's first-of-its-kind pilot plant commenced, with completion due in November 2024
- FEED study is based on locating the pilot plant at the University of Adelaide's Roseworthy Campus, ~50km north of Adelaide, South Australia
- Site approvals and procurement of long lead equipment are underway
- Sparc Hydrogen received a \$490,285 R&D tax refund for FY24 in September 2024

#### Graphene Based Additives

- Field trials of **ecosparc®** enhanced coating are in progress with the South Australian Department of Infrastructure and Transport and 29Metals Limited
- The coating and application of **ecosparc®** enhanced coating was on par with, or better than, the control coating – a market leading anti-corrosive paint
- Sparc's world leading expertise in graphene and polymers has delivered proof of concept in solutions targeting water-based coatings, anti-fouling and plastics

#### Other Projects – Photocatalyst Coatings

- Australian provisional patent application lodged in relation to Sparc's development of advanced coating systems for photocatalyst materials
- Platform technology targeting higher efficiency, greater durability and improved handling of photocatalysts within water splitting reactors
- Intellectual property is 100% owned by Sparc Technologies

#### Corporate

- Cash balance of A\$1.83M as at 30 September 2024
- ~A\$1.1M FY24 R&D tax incentive claim expected to be paid in November 2024

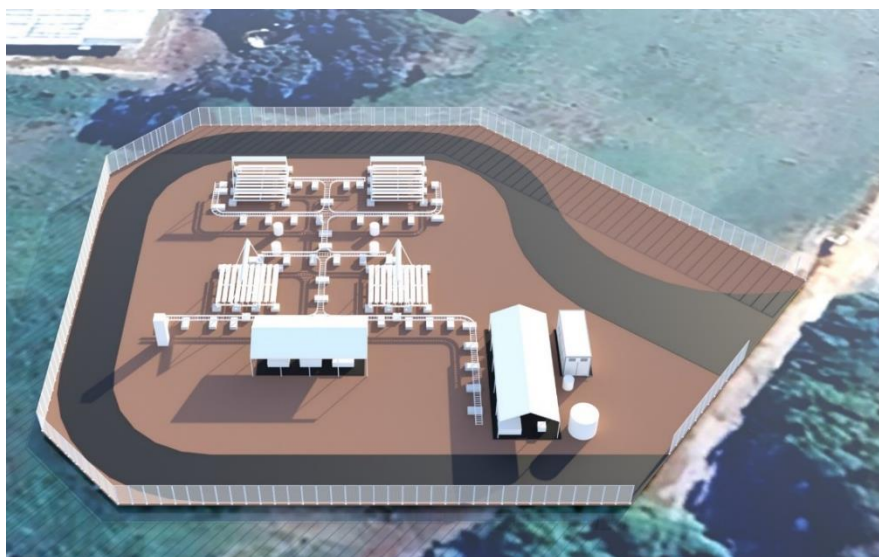


**Sparc Technologies Limited** (ASX: SPN) (**Sparc** or the **Company**) is pleased to provide its September 2024 Quarterly Activities Report.

## Sparc Hydrogen

During the quarter, Sparc Hydrogen – a joint venture between Sparc Technologies, the University of Adelaide and Fortescue – substantially advanced pilot plant development activities, including front-end engineering and design (FEED) for the project. Global engineering and commercial service provider Incitias Pty Ltd is leading the FEED study which is expected to be completed in November 2024 aligning with expected timing of a final investment decision. Site approvals and procurement of long-lead equipment for the pilot plant also advanced during the quarter, with construction completion currently expected in Q2 2025, subject to requisite approvals. When built, 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 for testing photocatalytic water splitting (PWS) under concentrated solar conditions worldwide.

Laboratory-based testing and optimisation of Sparc Hydrogen's photocatalytic water splitting reactors under a range of conditions using different photocatalyst materials continued during the quarter.



**Figure 1: 3D pilot plant model based on pre-FEED study**

In September, Sparc Hydrogen attended the Asia-Pacific Hydrogen Summit and Exhibition in Brisbane as part of the 'Technology Showcase'. The team, consisting of Vinod Gopalan and Anthony Pellicone, networked with other leaders in the Australian hydrogen industry and met with suppliers, future customers and collaborators (see Figure 2). During the quarter, Sparc's Managing Director, Nick O'Loughlin, presented at the RIU Essential Energy Conference in Perth and participated in The Market Bull - Daily Stock News and ASX Briefs podcasts to discuss Sparc's differentiated position in green hydrogen.





**Figure 2: Anthony Pellicone and Vinod Gopalan at the Asia-Pacific Hydrogen Summit & Exhibition, September 2024**

Sparc continues to differentiate its novel utilisation of PWS technology, setting it apart from conventional approaches in the production of green hydrogen. Crucially, PWS does not rely on renewable electricity sources such as solar or wind farms, nor expensive electrolyzers, to produce hydrogen from water. This addresses a fundamental challenge in the nascent green hydrogen industry - the cost of electricity. Sparc Hydrogen's pioneering technology employs a photocatalyst material and sunlight to produce green hydrogen directly from water. Hydrogen produced from PWS can serve as a clean fuel or feedstock to support the decarbonisation of hard-to-abate industries. Key advantages over electrolysis include:

- Photocatalysis does not use electricity to split water into hydrogen and oxygen thereby decoupling green hydrogen and electricity costs;
- The simplicity of PWS, as a direct solar to hydrogen production system, enables potential for very low costs;
- Sparc Hydrogen utilises concentrated solar infrastructure, which is inherently flexible and scalable; and
- PWS has a comparative advantage over electrolysis in off-grid and remote locations.

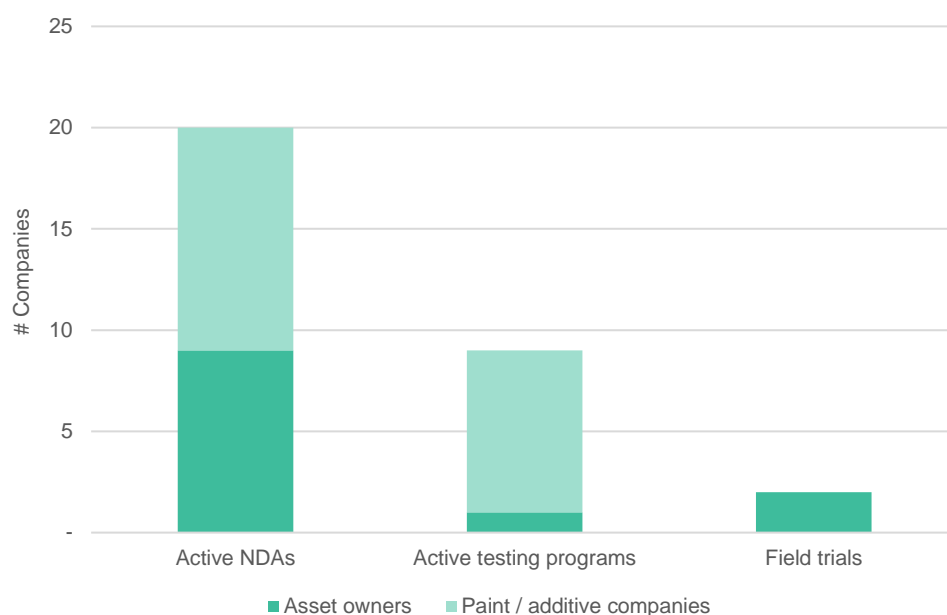
## Graphene Based Additives

### Anti-corrosive Coatings: **ecosparc®**

Field trials with the South Australian Department of Infrastructure and Transport (DIT) and 29Metals Limited progressed well during the quarter. Steel sections within processing plant infrastructure at the Golden Grove mine site were coated and feedback from the applicator of the **ecosparc®** enhanced coating was very positive. Initial 6-month inspections at both Streaky Bay and Golden Grove are expected to occur in Q1 2025. Sparc awaits specific guidance on the timing of commencement of works for the second trial with DIT at West Beach Bridge in Adelaide. Sparc is targeting the announcement of additional end user led trials during Q4 2024.

Sparc continues its dual-track approach to develop the market for **ecosparc®** in protective coatings, focusing on both major coatings companies and large asset owners (end users). During the quarter, Sparc successfully engaged with several additional coatings and additive companies, with testing programs either commenced or soon to commence. Sparc has also successfully engaged with several other large end users of protective coatings with a view to conducting field trials and specification testing. Discussions with new and existing collaborators are supported by recent in-house and external data, which validates **ecosparc®** in significantly improving the mechanical and anti-corrosion performance of commercially available protective coatings.





**Figure 3: Customer engagement summary for ecosparc® targeting the US\$43 billion<sup>1</sup> global anti-corrosive coatings market**

## Other Activities

During the quarter, Sparc progressed R&D activities on developing graphene-based additives for water-based coatings, anti-fouling and plastics. Proof of concept testing across each of these projects has delivered encouraging results. A high-level summary of the opportunities being developed by Sparc in these areas is set out below:

- Water-based coatings are gaining increasing interest as a more sustainable alternative to solvent-based coatings, though they typically underperform in anti-corrosion. During the quarter, Sparc demonstrated significantly improved anti-corrosion performance of an in-house developed water-based coating through the incorporation of properly selected, well dispersed graphene. Sparc is discussing these results with coatings and resin companies targeting co-development opportunities.
- Biofouling refers to the unwanted growth of bio-organisms on marine infrastructure including ship hulls, aquaculture and power / desalination plant intakes and outtakes. Sustainable and cost-effective solutions to biofouling remains elusive. Sparc is developing graphene-enhanced coatings and composites which are demonstrating substantial reductions in biofouling growth in both laboratory and marine environments. Sparc is currently pursuing grant funding opportunities and end-user collaborations to support its existing work with Flinders University through the ARC Training Centre (ITTC) for Biofilm Research and Innovation in this area.
- Improving sustainability in the plastics industry is a major societal challenge. Leveraging its deep experience in coatings, Sparc is applying graphene in both bio-based and traditional polymers used in the ~400Mtpa<sup>2</sup> plastics industry. Sparc has delivered proof of concept that graphene can be evenly incorporated within several target polymers, enhancing flexibility, ductility (elongation), thermal and electrical conductivity. Sparc is working with industry collaborators to further develop the commercial potential of graphene-enhanced polymers within the plastics industry.

During the quarter, Sparc's GM Graphene Materials (Dr Denis Wright) participated in a presentation on Sustainable Protective Coatings hosted by the Australian Steel Institute (ASI) and the Australian Corrosion

<sup>1</sup> Estimate of the global anti-corrosion coating market by 2029. Sourced from Exactitude Consultancy <https://exactitudeconsultancy.com/reports/3960/anti-corrosion-coatings-market/>

<sup>2</sup> The Circular Economy for Plastics – A European Analysis | 2024. Sourced from [The Circular Economy for Plastics – A European Analysis 2024](https://www.plastics-europe.eu/publications/the-circular-economy-for-plastics-a-european-analysis-2024) • Plastics Europe.



Association (ACA). This included collaborative discussions between a range of professionals from different aspects of the steel and coatings industry around minimisation of carbon footprint.

Sparc's Innovation, Growth and Sustainability Manager (Paul Baccanello) attended the Tactic Conference and Trade Expo in Port Augusta to discuss the benefits of **ecosparc**® enhanced coatings with a range of Government and private asset owners. This is an annual event designed to connect industry and members to major projects in the Upper Spencer Gulf in South Australia.

## Other Projects – Photocatalyst Coatings

During the quarter, Sparc announced the filing of an Australian provisional patent application in relation to the development of advanced coating systems for photocatalyst materials. The provisional patent application has been submitted on the back of >12 months of work with the University of Adelaide investigating alternate substrates, coating methods and delivery systems within PWS reactors. Initial proof of concept was achieved using an analogue photocatalyst material, demonstrating potential to improve existing methods for coating and delivery of particulate photocatalysts. These improvements are expected to increase solar-to-hydrogen efficiency and lower operating costs by enhancing surface area, durability and handling in PWS reactors.

The techniques and methods described in the provisional patent application have been developed with a view to being relevant to application in Sparc Hydrogen's PWS reactors, albeit not exclusively. Sparc is supporting future R&D work on this project by funding a two-year Masters scholarship at the University of Adelaide which commenced in September 2024. Sparc Technologies owns 100% of the intellectual property developed within this project.

## Corporate

### Cash

As at 30 September 2024, the Company had a reported cash position of A\$1.83M.

Cash expenditure for the quarter was in line with expectations and without any material movements from the previous quarter. Sparc expects to receive ~A\$1.1M from its FY24 R&D tax incentive claim in November 2024, 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 September 2024, pertain to payments to directors for reimbursement of arrears of Directors Fees, salary and superannuation in the amount of A\$132K.

**-ENDS-**

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

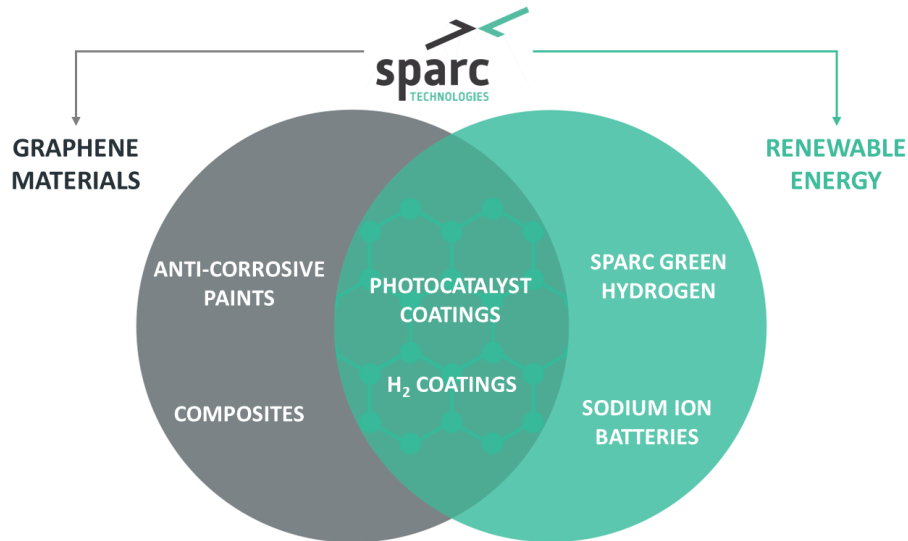
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## About Sparc Technologies



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 is the majority shareholder of **Sparc Hydrogen** which is a company pioneering the development of a **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.
2. Sparc has spent over 5 years developing a **graphene based additive** product, **ecosparc®**, which has demonstrated 40% anti-corrosion improvement in commercially available epoxy-based coatings. Sparc recently commissioned a manufacturing facility to produce **ecosparc®** and is engaging with global coatings companies and asset owners to conduct field trials.
3. Sparc is also developing sustainable **sodium ion battery anode technology** utilising agricultural bio-waste materials.

For more information please visit: [sparctechnologies.com.au](https://sparctechnologies.com.au)

For more information about **ecosparc®** please visit: [ecosparc.com.au](https://ecosparc.com.au)

For more information about Sparc Hydrogen please visit: [sparchydrogen.com](https://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 September 2024

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (3 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	0	0
1.2 Payments for		
research and development	(453)	(453)
product manufacturing and operating costs	(0)	(0)
advertising and marketing	(25)	(25)
leased assets	0	0
staff costs	(187)	(187)
administration and corporate costs	(212)	(212)
1.3 Dividends received (see note 3)	0	0
1.4 Interest received	25	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	0
1.8 Other (provide details if material)	0	0
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(851)</b>	<b>(851)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
entities	0	0
businesses	0	0
property, plant and equipment	(24)	(24)
investments	0	(0)
intellectual property	(2)	(2)
other non-current assets	0	0





Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 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
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(26)</b>	<b>(26)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	0	0
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
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>0</b>	<b>0</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	2,707	2,707
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(851)	(851)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(26)	(26)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	0	0



Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
4.5	Effect of movement in exchange rates on cash held		
4.6	<b>Cash and cash equivalents at end of period</b>	1,830	1,830

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	1,830	2,707
5.2	Call deposits		
5.3	Bank overdrafts		
5.4	Other (provide details)		
5.5	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	1,830	2,707

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	132
6.2	Aggregate amount of payments to related parties and their associates included in item 2	
<i>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.</i>		

7.	Financing facilities <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>	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	<b>Total financing facilities</b>	0	0
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.		



8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(851)
8.2	Cash and cash equivalents at quarter end (item 4.6)	1,830
8.3	Unused finance facilities available at quarter end (item 7.5)	0
8.4	Total available funding (item 8.2 + item 8.3)	1,830
8.5	<b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	2.15

*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 October 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.

