

29 January 2021

Redflow
December 2020 Quarterly Activities Report

Redflow Limited (ASX:RFX) is pleased to provide the following quarterly activities report, together with its Appendix 4C for the quarter ended 31 December 2020 (Q2 FY2021).

Key highlights

- Q2 FY2021 cash receipts of \$314k (Q2 FY2020: \$1.05 million)
- Second Shortfall Placement raised \$1.6 million in October, taking total funds from Entitlement Offer and Shortfall Placements to \$6.9 million
- Receipt of \$1.65m R&D Tax rebate in December 2020
- Cash balance of \$8.7 million as at 31 December 2020 underpins growth initiatives
- Redflow's largest 60 battery energy storage system ordered by WA partner TIEC Electrical for off-grid agricultural site
- Significantly progressed research & development initiatives:
 - Initial Gen3 battery customer trial commenced December 2020
 - Technical developments progressed to optimise pH levels and electrolyte composition
- Increasing recognition of the role of flow batteries in the future energy ecosystem

Commenting on the progress made in Q2 FY2021 and outlook, Redflow CEO and Managing Director Tim Harris said:

"During the quarter we made significant progress on the development of our Gen3 battery, which culminated in the initiation of our first customer trial in December. While international travel restrictions remain in place our focus has been on ensuring our Gen3 battery is optimised prior to large scale deployments and with this objective in mind we made technical upgrades to optimise the pH levels for improved performance.

"We were delighted to have sold a large 60-battery system to a Western Australia-based stock feed provider, which is an important milestone that demonstrates how our new Large Scale Battery design can scale successfully to meet our customers' larger industrial requirements and broader utility-scale deployments.

"We are very excited by the potential for Redflow's energy storage batteries given the ongoing shift to renewable energy sources and more efficient energy delivery systems. Global investment in low carbon energy totalled US\$500 billion in 2020¹, and we expect the investment trend to continue with the recent re-entry of the US to the Paris Agreement.

"Along this ongoing investment, we have also noted the increasing recognition across industry and governments that flow batteries have the potential to form an important part of the renewable energy eco-system. In December 2020, The Australian Renewable Energy Agency [ARENA] announced funding support to the first utility scale flow battery in Australia, using Vanadium, and noted that flow technologies are an emerging technology that has potential to transform the way energy is stored.² The market is increasing its focus on medium term energy storage needs and we strongly believe this is a very positive step forward for flow battery companies like Redflow.

¹ See BloombergNEF, *Energy Transition Investment Trends*, January 2021

² See <https://arena.gov.au/blog/south-australia-goes-with-the-flow-battery/> 23rd December 2020



“Notwithstanding this very positive macro-outlook, we are continuing to exercise prudent cost management across all operations to ensure we are spending our cash reserves appropriately whilst recognising we need a core team and capabilities to progress our growth strategy and deliver on the market opportunity.”

Shortfall placement

Redflow raised an additional \$1.6 million through the placement of 64.2 million new ordinary shares in October 2020, as part of the shortfall under the Company’s Entitlement Offer. The shortfall placement resulted in Redflow receiving a total of over \$6.9 million via its Entitlement Offer and two Shortfall Placements, exceeding the Company’s original target of raising at least \$6.25 million.

First Generation 3 ZBM2 battery trial

In December, Redflow commenced its first customer trial of its new Gen3 battery to support an off-grid system in Mount Tamborine in Queensland. The site will utilise two Gen3 batteries for a number of weeks before returning to Redflow for further analysis and testing. The trial site is up and meeting expectations whilst providing valuable data into performance of the new Gen3 stack design and new Mk12 electronics.

The initial Gen3 trial is a critical milestone that will provide valuable insights into how the battery performs in a live environment. Redflow is aiming to achieve a 30% reduction in manufacturing costs through supply chain and engineering productivity impacts resulting from the Gen3 upgrades. Additional trials are planned over the coming months to ensure the battery is thoroughly field proven, prior to larger-scale deployments. The Redflow product and engineering teams have also commenced work on key design considerations for large and utility scale systems while leveraging the volume scale benefits of the core Gen3 Redflow battery design.

New features and key research

Redflow significantly increased its understanding of battery operations through enhanced analysis of the vast amount of data accumulated from deployments as well as further core chemistry research and testing. A key outcome from field experience and accelerated analysis centred around ensuring pH levels are optimised for managing core battery functionality, long life and cycle performance.

A program was initiated to add small amounts of carbon to batteries currently deployed to maintain battery performance by ensuring pH levels remain at optimal levels. Work in the field also included minor upgrades of some battery elements, including the gas handling unit, to prevent pH level acceleration. The program is expected to be completed by the end of February 2021 and while the cost is not material, it is essential to ensure battery performance is optimised.

Following some recent declines in performance from the Redflow battery at the CIT battery testing programme, a decision has been made to replace the stack and bring this to the Redflow lab for further analysis. Redflow’s field service team will be travelling to Canberra next week to undertake the replacement. All other parts of the battery will be retained and the updated battery is expected to continue participating in the test programme – highlighting a key benefit of the Redflow battery in that servicing can be undertaken for specific components of the battery in the field and without the need to dispose of the whole battery. The efficiency performance and unusual cycle profile observed from the Redflow battery at the CIT programme labs is not currently reflected in other Redflow batteries deployed in the field.

Redflow is also working with its electrolyte supplier ICL on potential core enhancements of the electrolyte to improve pH management in the Gen3 battery.

Operational update

Despite the impacts on international travel associated with the COVID-19 pandemic, the Company continued to pursue business development opportunities and received orders during the quarter.



WA stockfeed supply company Semini Custom Feeds ordered a 60 battery Large Scale Battery (LSB), to cut its fuel and energy costs by 80 percent.

Working with Redflow's WA partner, TIEC Electrical, Semini Custom Feeds expects the 600 kilowatt-hours (kWh) system to cut its costs by about \$120,000 per year based on current expenditure on diesel, maintenance and mains power.

The Redflow LSB is a powerful integrated system for deploying as many as 60 Redflow zinc-bromine flow batteries in large energy storage systems, delivering as much as 600kWh of energy storage capacity and comprehensive redundancy capabilities and will eliminate the need to purchase electricity from the grid.

The order follows the successful deployment of multiple other Western Australia based agricultural sites installed by TIEC in 2020.

In NSW Australia, Redflow batteries were deployed by Redflow Partner Seven20 Electrical in mid-sized solar and battery installations in Wagga and Kiama, under the NSW State Government's Department of Primary Industries like-for-like grant scheme. These agricultural installs supported organic wineries and the Pines, a boutique dairy that anticipates a 5-year payback on its renewable system investment.

As at 31 December 2020, Redflow has orders for 97 batteries for projects in Australia and South Africa. The majority of these orders are expected to be delivered and payments received in the coming months.

Financial update

The Appendix 4C quarterly cashflow report for Q2 FY2021 is attached.

Cash receipts for Q2 FY2021 were \$315k (Q1 FY2020: \$1.05 million), and trade receivables were \$723k. Production continues to be moderated in light of the current COVID-19 impacted economic environment to reduce working capital requirements and minimise expenditure on raw materials, while the Company focuses on its Gen3 battery development.

At 31 December 2020, Redflow had a cash balance of \$8.7 million, this includes the receipt of the \$1.65m R&D Tax rebate in December 2020

The following is a Summary of Receipts and Expenditures for the December quarter 2020 business activities (refer also accompanying ASX Appendix 4C):

A\$'000	December Quarter	Year to date (6 months)
Receipts from customers	314	615
Product manufacturing and operating costs	-452	-874
Research and development	-860	-1,441
SG&A (Corporate Overhead)	-1,087	-2,003
Investing Activities	-109	-139
Financing payments / receipts	1,482	6,650
Other	2,035	2,499

Notes:

¹ Numbers in the table are presented on a cash basis, consistent with the ASX Appendix 4C.



² Numbers exclude the effect of movement in exchange rates on cash held.

³ Expenditures include allocation of staff costs, which are shown as a separate line in the ASX Appendix 4C.

Payments to related parties over Q2 FY21 were \$0.17 million, relating to fees paid to directors over the quarter.

- END -

This announcement has been approved for release by the Board of Redflow Limited.

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About Redflow www.redflow.com

Redflow Limited, a publicly listed Australian company (ASX:RFX), produces small 10kWh zinc-bromine flow batteries that tolerate daily hard work in harsh conditions. Marketed as [ZCell](#) and [ZBM2](#), Redflow batteries are designed for high cycle-rate, long time-base stationary energy storage applications in the commercial & industrial, telecommunications and high end residential sectors, and are scalable from a single battery installation through to grid-scale deployments. Redflow batteries are sold, installed and maintained by an international network of energy system integrators. Redflow's smart, self-protecting batteries offer unique advantages including secure remote management, 100 per cent daily depth of discharge, tolerance of high ambient temperatures, a simple recycling path, no propensity for thermal runaway and sustained energy delivery throughout their operating life.

Appendix 4C

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

Name of entity

Redflow Limited

ABN

Quarter ended ("current quarter")

49 130 227 271

Dec-20

Consolidated statement of cash flows		Current quarter	Year to date (6 months)
		\$A'000	\$A'000
1	Cash flows from operating activities		
1.1	Receipts from customers	314	615
1.2	Payments for		
	(a) research and development	-860	-1,441
	(b) product manufacturing and operating costs	-432	-854
	(c) advertising and marketing	-89	-175
	(d) leased assets	-44	-87
	(e) staff costs	-660	-1,123
	(f) administration and corporate costs	-296	-618
1.3	Dividends received (see note 3)		
1.4	Interest received	4	4
1.5	Interest and other costs of finance paid	-2	-4
1.6	Income taxes paid	-20	-20
1.7	Government grants and tax incentives	2,035	2,499
1.8	Other (provide details if material)	0	0
1.9	Net cash from/(used in) operating activities	-50	-1,204

		Current quarter	Year to date (6 months)
		\$A'000	\$A'000
2	Cash flows related to investing activities		
2.1	Payment to acquire		
	(a) entities		
	(b) businesses		
	(c) property plant and equipment	-51	-70
	(d) investments		
	(e) intellectual property	-58	-98
	(f) other non-current assets		

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
2.2	Proceeds from disposal of:		
	(a) entities		
	(b) businesses		
	(c) property plant and equipment	0	29
	(d) investments		
	(e) intellectual property		
	(f) other non-current assets		
2.3	Cashflows from loans to other entities		
2.4	Dividends received (see Note 3)		
2.5	Other (provide details if material)		
2.6	Net cash from/(used in) investing activities	-109	-139
3	Cash flows related to financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	1,605	6,919
3.2	Proceeds from issues of convertible debt securities		
3.3	Proceeds from exercise of options		
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-123	-269
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	Net cash from/(used in) financing activities	1,482	6,650
4	Net increase (decrease) in cash and cash equivalents for the period	1,323	5,307
4.1	Cash and cash equivalents at beginning of period	7,369	3,390
4.2	Net cash from/(used in) operating activities (Item 1.9 above)	-50	-1,204
4.3	Net cash from/(used in) investing activities (Item 2.6 above)	-109	-139

Consolidated statement of cash flows		Current quarter	Year to date (6 months)
		\$A'000	\$A'000
4.4	Net cash from/(used in) financing activities (Item 3.10 above)	1,482	6,650
4.5	Effect of movement in exchange rate on cash held	-8	-13
4.6	Cash and cash equivalents at end of the quarter	8,684	8,684

5 Reconciliation of cash and cash equivalents		Current quarter	Previous quarter
at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts		\$A'000	\$A'000
5.1	Bank balances	123	384
5.2	Call deposits	8,561	6,985
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)	8,684	7,369

6 Payments to related parties of the entity and their associates

- 6.1 Aggregate amount of payments to related parties and their associated included in item 1
- 6.2 Aggregate amount of payments to related parties and their associates included in item 2

Current quarter
\$A'000
173

Note: if any amounts are shown in 6.1 or 6.2 your quarterly report must a description and an explanation for, such payments

7 Financing facilities

NOTE: The term "facility" included 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	Amount drawn at quarter end
\$A'000	\$A'000

7.1 Loan facilities

7.2 Credit standby arrangements

7.3 Other (please specify)

7.4 **Total financing facilities**7.5 **Unused financing facilities available at the quarter end**

7.6 Include below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include 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)

-50

8.2 Cash and cash equivalents at quarter end (Item 4.6)

8,684

8.3 Unused finance facilities available at quarter end (Item 7.5)

0

8.4 Total available funds (Item 8.2 + Item 8.3)

8,684

8.5 **Estimated quarters of funding available (Item 8.4 divided by Item 8.1)**

173.7

8.6 If Item 8.5 is less than 2 quarters, please provide answers to the following questions:

1. Does the entity expect that it will continue to have the current level of net operating cash flow for the time being and if not why not ?

Answer:

N/A

2. Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operation and , if so, what are those steps and how likely does it believe that they will be successful?

Answer:

N/A

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:

N/A

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 does give a true and fair view of the matters disclosed.

Date: 29-Jan-21

Authorised by: The Audit and Risk Committee

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.