



Redflow

H1 FY2021 Results

26 February 2021

Tim Harris, CEO

Trudy Walsh, CFO

Optus Telco Tower Deployment, Lexton, Victoria



Key Highlights



**Accelerating
underlying demand
factors for long
duration storage
solutions**



**Ready for growth
with ongoing
prudent cost
management**



**Demonstrated
Redflow unique
recycling
environmental
credentials**



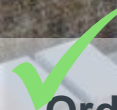
**New customer
innovations
launched with
widespread
potential
application**



**Gen3 battery
program
progressing well -
initiated end
customer trials**



**Partnered with
Optus for
Australian
Government Mobile
Network Hardening
Programme**



**Order for largest
ever system
deployment using
Large Scale
Battery design in
WA**



**Strongest ever
order book with
growing sales
pipeline and
interest across
multiple markets**

H1 FY21 Summary



Ongoing Commercial progress despite COVID headwinds

- ✓ Delivered \$431k revenue, despite impact of COVID-19
- ✓ Received largest single Australian battery order to date from Semini Custom Feeds in WA for a 600 kWh Large Scale Battery.
- ✓ Strong and growing pipeline incl. growing interest in MWh scale systems
- ✓ Redflow batteries deployed by partner Seven20 Electrical in mid-sized solar and battery installations under NSW State Government's Department of Primary Industry grant scheme
- ✓ Post period end, partnership with Optus to deploy Redflow batteries as part of the Australian Government's Mobile Network Hardening Program
- ✓ Over 1 MWh of battery orders for expected H2 delivery (100+ batteries). This excludes batteries for the Optus program



Acceleration of Gen3 and new innovation

- ✓ Commenced initial Gen3 battery customer trial, providing valuable data into performance of the new Gen3 stack design, tank and new Mk12 electronics
- ✓ New innovations launched including Industrial Battery House enclosure & new capability to allow Redflow batteries to work seamlessly alongside lead acid batteries in a single system. Core to Optus solution
- ✓ Unique reuse and recycling capabilities of Redflow battery validated
- ✓ Progressed core chemistry research and testing focused on pH optimisation



Tight cost control and capital raise

- ✓ Secured available government COVID-19 support measures
- ✓ Tightly managed costs during COVID-19 period while investing in key R&D initiatives and Gen3 progression
- ✓ Cash balance of \$8.7m as at 31 December 2020, underpinned by \$6.9m raised from Entitlement Offer and two shortfall placements, exceeding \$6.25m target

Investment Thesis



Market leading flow battery energy storage provider with deep technical competence



Growing diversified blue chip client base with addressable spend in mobile tower market and other industries



One of largest total deployments across all flow battery companies / 100+ active systems



Emerging local and global recognition for medium to longer term energy storage solutions



Over 1.25m cycles / 1.25 GWh energy delivered to customers to date



\$120m invested over 15 years in proprietary technology and commercialisation



Redflow owned ISO 9001 accredited manufacturing facility in Thailand capable of up to 60 MWh p.a.*



New Gen 3 battery will scale from small to multi MWh systems and enable volume/cost down benefits

* Additional capital required to scale facility to this level

About Redflow



Mosman Park, Residential
Deployment, WA

Company Overview

Headquartered
In Brisbane, Australia

Company owned manufacturing
facility in Thailand – ISO9001
accredited

Redflow designs and manufactures zinc-bromine flow batteries

Major Target Markets
Telco
Commercial, Industrial & Utility
Remote Area Power Systems
High end Residential

Key Geographies
Southern Africa
Australia
New Zealand
China and Selected Asia

100+ current deployments across multiple countries*



Redflow is redefining energy storage in our target markets

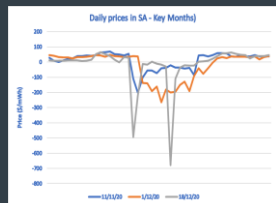
* Deployments with Redflow batteries operational as of 25th February 2021 or active in the last 90 days

The renewable energy landscape is evolving rapidly

RE100

CLIMATE GROUP

Members now **use more electricity than Australia** – all are going 100% renewable with their electricity use



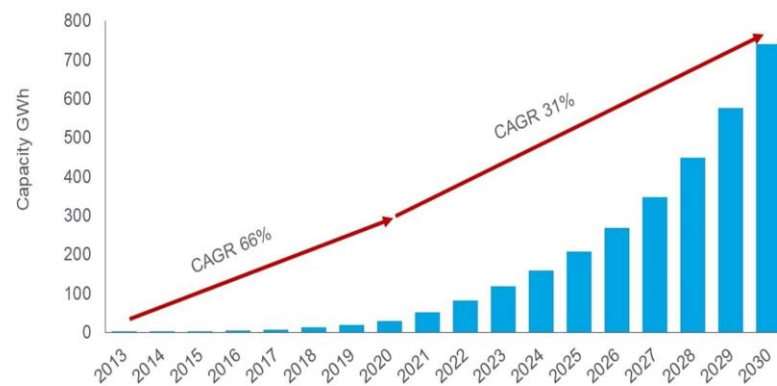
South Australia averaged **4.5 hours per day of negative** prices so far in 2021 – nearly 100% increase from 2020



Government renewed **support for medium duration energy storage** technology solutions

Wood Mackenzie's forecasts by 2030 global energy storage capacity could be 741 GWh of cumulative capacity

Cumulative global energy storage deployments



Source: Wood Mackenzie

*Storage holds the key to strong renewables growth...Low-cost and longer duration storage can increasingly out-compete coal, gas and pumped hydro, enabling higher levels of solar and wind penetration. However, **most lithium-ion energy storage systems economically max out at 4 to 6 hours, leaving a gap in the market.***

*Wood Mackenzie senior analyst Le Xu**

* Source: WoodMackenzie News Release, *Global energy storage capacity to grow at CAGR of 31% to 2030*, 30 September 2020

Fundamental cost benefits of ZnBr over competing chemistries at scale

Zinc Bromine Chemistry Advantages

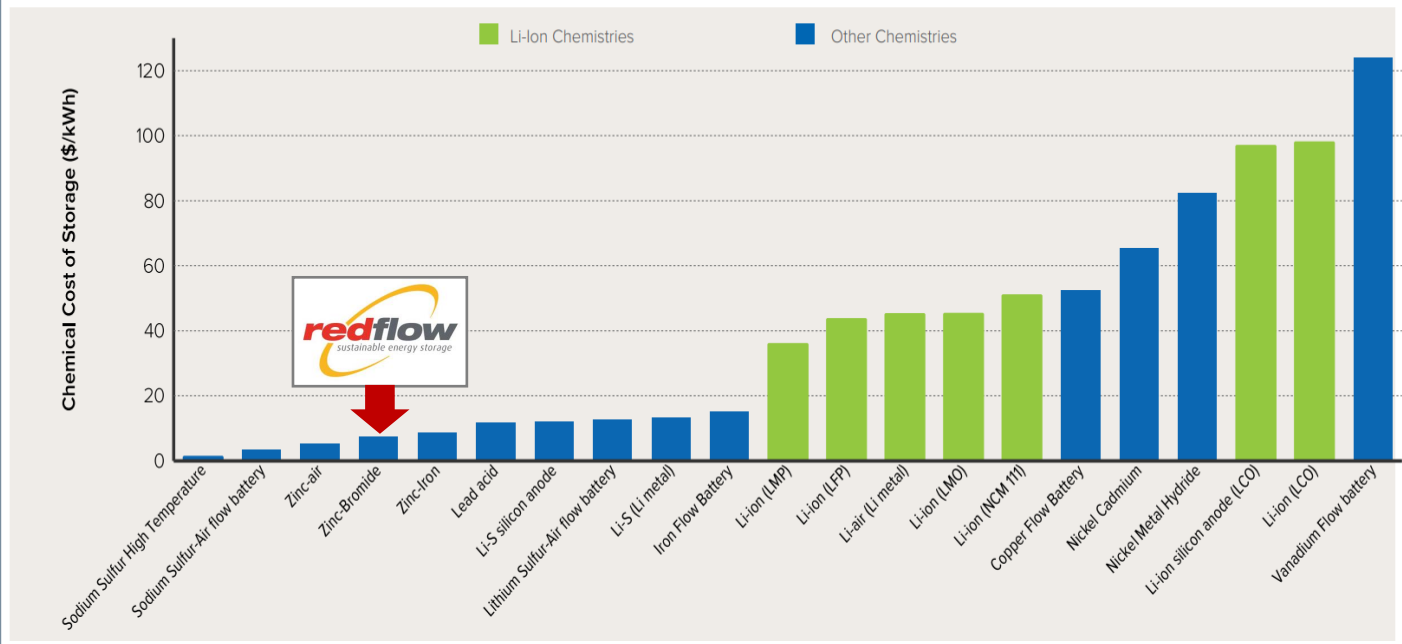
- ✓ Cheap, abundant minerals
- ✓ Higher energy density & low balance of battery costs than other flow chemistries
- ✓ Recyclable and re-processable – no new waste or sustainability challenges

“If you look past lithium ion, probably zinc is the next metal that's the most popular for energy storage, and it does appear to be able to provide performance equal to or better than lithium if given a chance”

Mike Gravely,
California Energy
Commission*

EXHIBIT 20

Estimated Cost of Raw Materials for Different Battery Chemistries²⁴



Source: Rocky Mountain Institute, *Breakthrough Batteries*, 2019

* Source: Forbes, *California Sees Zinc As Likely Successor To Lithium-Ion In Energy Storage*, 6 October 2020

Patent protected technology with unique features



Gen2.5

(Current)



Gen3.0

(Currently in
customer trials)

Competitive position is protected through 10+ years investment in an IP portfolio across multiple countries plus trade secret knowledge



Flow chemistry is like a reversible electroplating process



Unlike conventional batteries, it is **happy to run flat and repeatedly use 100% of its energy capacity**



Excellent tolerance for high ambient temperatures without external cooling



Compact Flow battery; this modular design enables scalability
10kWh → multi-MWh



Smart battery including Battery Management System (BMS) with remote monitoring and diagnostics plus self-protection features



Strong environmental credentials recyclable HDPE plastic and re-usable electrolyte



A number of theft mitigation features, incl. software and hardware innovations



10 years or 36.5 MWh throughput warranty



Not susceptible to thermal runaway

Major Target Markets

Our sweet spots include...

Energy-focused applications

Frequent cycling

Warm climates that rapidly degrade other batteries



Telco

- >4m mobile towers globally
- Power costs a major factor
- Load shedding / weak grids increase demand for long duration batteries
- Increase in infrastructure sharing and tower companies
- Battery theft plus commercial and environmental concerns over diesel use



Remote Area Power Systems (RAPS)

- Battery Energy Storage System crucial to RAPS with renewable energy sources and can improve efficiency of fossil fuel generation.
- Needs high temperature tolerance, and frequent deep cycling. Minimal capacity decline, like ZBM, highly desirable to maintain optimum operation over life



Commercial, Industrial & Utility

- Multiple industries where stable and cost efficient power is critical
- Key issues include intermittent power, high peak demand tariffs and maximising renewable use
- Address solar curtailment
- Sub-station support as demands on grid increase

Provide technical and commercial value proposition across off-grid, weak-grid and back-up power supply applications

Redflow technology is well suited to these applications and offers an attractive commercial proposition

Reduce energy costs by replacing / supplementing grid power and avoiding demand tariffs through storing off peak energy

H1 FY21 Financials



Optus Lexton Site Redflow
installation, Victoria

Profit & Loss

Reported loss after income tax of \$2.9m (H1 FY20: loss of \$3.9m) driven primarily by:

- COVID-19 impact on sales conversion opportunities and delivery of orders
- Other Income up 16% including R&D Tax Claim, JobKeeper support and Australian Federal Government Cash Flow Boost
- Raw materials and consumables used decreased to \$1,641.9k due to moderation of production volume
- Other expenses down 12% mainly due to reduction in business development related costs
- Target delivery of 100 batteries currently ordered in H2 FY21

A\$'000	H1 FY21	H1 FY20
Revenue	431.2	1,436.5
Other Income	2,445.4	2,104.8
Expenses		
Raw Materials and Consumables Used	1,641.9	2,694.9
Other Expenses	4,166.9	4,701.4
Profit/ (Loss) before Income Tax	(2,932.1)	(3,854.9)
Income Tax Expense (Thailand)	17.3	44.3
Profit/ (Loss) after Income Tax	(2,949.5)	(3,899.2)
Other Comprehensive Income	(34.2)	3.8
Total Comprehensive Loss Year	(2,983.7)	(3,895.3)

Balance Sheet

Strong Net cash position of \$8.7m, underpinned by Entitlement Offer and Shortfall Placements raising \$6.9m plus receipt of R&D tax rebate \$1.65m

Current Assets:

Inventories down 15% from pcg

- Raw materials of \$3.34m comparable to 30 June 2020 due to continued moderated production
- Finished Goods down to \$1.44m, due to sales and batteries use for R&D purposes
- Current Finished Goods Inventory can fulfil the orders on hand at 31 December 2020

Current Liabilities:

- Lease liability increased due to re-signing of Thailand Facility lease
- Other current liabilities and Provisions increased due to accrual for payroll tax deferral and various employee entitlement provisions

A\$'000	H1 FY21	FY20
Cash and cash equivalents	8,683.6	3,390.2
Trade and other receivables	39.6	135.3
Inventories	4,787.4	5,603.8
Other current assets	400.7	377.4
Total current assets	13,911.2	9,506.7
Property plant and equipment	687.6	766.9
Intangible assets	586.6	630.4
Right of use assets	165.3	76.0
Total non-current assets	1,439.6	1,473.3
Total Assets	15,350.8	10,980.0
Trade and other payables	520.1	492.1
Lease liabilities	165.4	76.2
Other current liabilities	573.5	417.7
Provisions	1,523.9	1,456.4
Total current liabilities	2,782.9	2,442.4
Provisions	85.8	65.0
Total non-current liabilities	85.8	65.0
Total liabilities	2,868.7	2,507.4
NET ASSETS	12,482.1	8,472.6
Contributed equity	126,533.7	119,670.3
Reserves	4,314.2	4,218.6
Accumulated losses	(118,365.9)	(115,416.4)
TOTAL EQUITY	12,482.1	8,472.6

Cash Flow

Net cash (outflows) from Operations down 79.5% on PCP to \$(1.1)m:

- Decrease in receipts from customers, impacted by delays in customer delivery
- Payments to suppliers and employees down 39.0% to \$4.2m, due to moderation of production and prudent cost management measures
- Grant and other income received include R&D tax incentive, EMDG grant and JobKeeper
- \$6.9m raised from Entitlement Offer and two Shortfall Placements, exceeding Redflow's \$6.25m target

A\$'000	1H FY21	1H FY20
Cashflows from operating activities		
Receipts from customers	615.5	1,390.4
Payments to suppliers and employees	(4,210.1)	(6,898.4)
Grants and other income received	2,498.6	40.0
Interest received	3.6	49.0
Interest and finance charges paid	(4.4)	(4.2)
Income tax paid (Thailand)	(20.4)	(36.4)
Net cash (outflows) from operating activities	(1,117.2)	(5,459.7)
Cashflows from investing activities		
Payment for property plant and equipment	(69.8)	(111.0)
Payments for intangible assets	(98.6)	(123.9)
Proceeds from sales of PP&E	29.2	0
Net cash (outflows) from investing activities	(139.1)	(234.9)
Cashflows from financing activities		
Proceeds from capital raising	6,919.0	0
Transaction costs related to issues of equity securities	(269.3)	(66.2)
Principal elements of lease payments	(87.3)	(93.4)
Net cash (outflows) from financing activities	6,562.3	(159.6)
Net increase/(decrease) in cash and cash equivalents	5,306.1	(5,854.1)
Effects of currency translation	(12.7)	(25.3)
Cash and cash equivalents at beginning of year	3,390.2	10,902.5
Cash and cash equivalents at end of half year	8,683.6	5,023.1

Well placed to drive exponential growth



RBSS Power Cube, Nangeenan,
Western Australia

Semini Grain Project – A Major Milestone for Redflow

- Semini Custom Feeds has established itself as a leading local supplier of various types of stock feed for properties in south-west WA
- Semini Grain system includes a 400 kilowatts-peak (kWp) photovoltaic (PV) solar panel system and 600 kWh Redflow battery system to replace existing diesel generators
- Semini Custom Feeds expects the system to cut its costs by about \$120,000 per year based on current expenditure on diesel, maintenance and mains power.
- Order secured through key WA partner TIEC. Deployment expected by end FY21
- **Upon deployment, it will be Redflow's largest single energy system in Australia**
- **Represents an important milestone for Redflow to demonstrate how our new Large Scale Battery design can scale successfully to meet customers' larger industrial requirements and broader MWh utility-scale deployments**



"I am convinced that a Redflow battery energy storage system can match the performance of diesel generators in providing stable and reliable power – all the while reducing our reliance on fossil fuels"

Semini Custom Feeds CEO and Managing Director Jack Semini, Feb 2021

Validation of Redflow Environmental Credentials

- Only 2 per cent of Australia's annual 3,300 tonnes of lithium-ion battery waste is currently recycled. This waste is growing by 20% p.a. and could exceed 100,000 tonnes by 2036*
- High potential value in Lithium batteries but a viable technical and financial pathway remains challenging
- Some analysis points to disposal costs of lithium-ion battery waste up to US\$60 / kWh**
- Over the past few months Redflow has used a selection of end of life batteries to validate our environmental credentials with a leading Brisbane based recycling company



HDPE



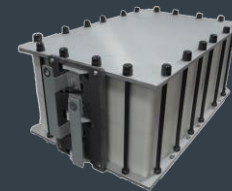
- ✓ Will be used in recycled plastic bottles

Electronics



- ✓ Will follow standard pathway for electronics recycling

Stack



- ✓ Will be repurposed for casting foundry applications

Electrolyte



- ✓ Currently on test for reconditioning to enable reuse/partial reuse

Redflow's validated recycling pathway provide a strong environmental and commercial benefit to end users and the energy ecosystem

* CSIRO, *Lithium battery Recycling in Australia*, April 2018

** Sami Kara, Wen Li, Nikkita Sadjiva, *Life Cycle Cost Analysis of Electrical Vehicles in Australia*, 2017 plus further industry engagement

Significant Cost Benefits targeted through Gen 3 Battery

40% reduction in manufacturing costs achieved to date through move to Thailand (current Gen2.5 battery)

Additional 30% reduction in manufacturing costs targeted in next 12m through Gen 3 battery – supply chain, engineering productivity*

Further Savings targeted through increased production levels of Gen 3 and supply chain benefits with scale



Gen3 battery will allow us to be more competitive in telco and small distributed energy systems. It will also position us for expansion into larger systems over the medium term through a stack designed for volume manufacturing.

* Focus next 12m consisting of (a) Supply chain savings secured agreed end 2019 with supplier; (b) Gen 3 engineering savings assumes engineering changes currently being developed and trialled are successful; and (c) productivity savings assumes engineering changes are successful and result in a reduction in manufacturing working

Optus relationship underpins positive growth outlook

- Optus has used Redflow batteries in the environmentally sensitive Daintree Forest in Queensland since 2019.
- In February 2021 Redflow announced work with Optus to utilise Redflow batteries in mobile base station battery upgrades
- Funded under the Morrison Government's Strengthening Telecommunications Against Natural Disasters (STAND) program
- First Redflow battery system installed at a black spot site in Lexton, Victoria, with plans to deploy Redflow batteries in **at least 56 black spot sites**
- Leverages new IBH housing unit and new ability to work alongside existing lead acid systems
- Redflow is now working with Optus to determine how many Redflow batteries are required per site
- Potential application in other markets such as California



"I welcome the fact that Redflow's innovative Australian technology is being used by Optus in their mobile base station battery upgrades, funded under the Morrison Government's Strengthening Telecommunications Against Natural Disasters (STAND) program."

The Minister for Communications, Urban Infrastructure, Cities and the Arts, the Hon Paul Fletcher, Feb 2021

Announcement highlights Redflow's ability to deploy batteries at scale to extend the battery backup at mobile phone towers

Key Priorities for H2 FY21

- Future sales focus and business development activity focused on key markets and opportunities
- Deliver on key Optus program and Semini Grain projects, South Africa
- Explore and progress large scale pilot project opportunities
- Continued focus on accelerated development testing for Gen3 – target production 1st Half FY22
- Maintain prudent cost management and pursue additional savings measures where appropriate
- Continue to progress strategic investment and partnership discussions



60kWh deployment for Pines Farm as part of NSW DPI Project

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Q&A



60kWh deployment for Pines Farm as part of NSW DPI Project

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