



H1 FY24 results presentation

Thursday 29 February 2024

Presented by **Tim Harris, CEO + Michael Hipwood, CFO**

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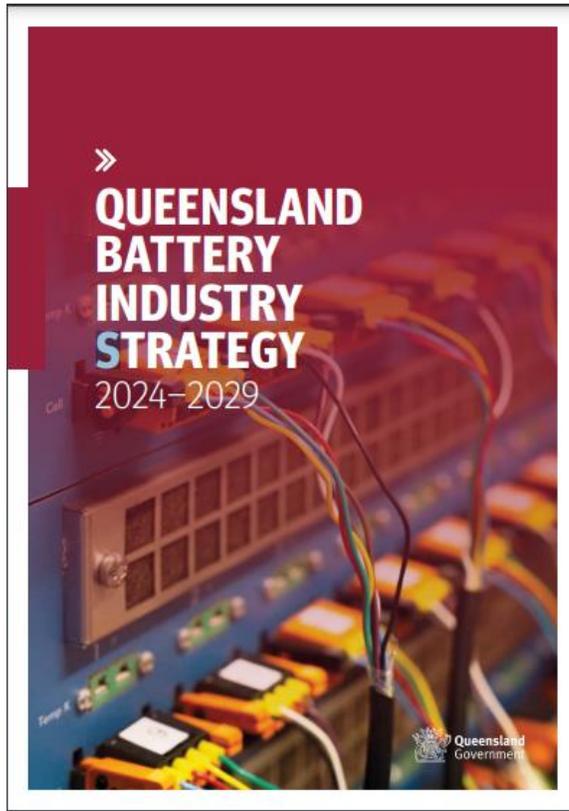
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Major Queensland government announcement in energy storage

\$570 million strategy to supercharge a new industry for Queensland¹



THEME 1

\$275M

INNOVATE AND COMMERCIALISE



THEME 2

\$92.2M

INVEST, INTEGRATE AND GROW



THEME 3

\$202.5M

POSITION AND PROMOTE



*The Queensland Battery Industry Strategy establishes Queensland as a global leader in the **flow batteries** needed to store renewable energy and advanced battery technologies.*

Queensland Premier, Steven Miles²

1. See https://www.statedevelopment.qld.gov.au/_data/assets/pdf_file/0027/87057/queensland-battery-industry-strategy-web.pdf

2. New half-billion-dollar strategy to power Queensland's battery boom, 22 February 2024, <https://statements.qld.gov.au/statements/99768>

Queensland Battery Industry Strategy is a potential gamechanger

Positioning Queensland to become a global leader in the clean energy storage technology



Queensland State Development Minister Grace Grace, at launch of Queensland Battery Industry Strategy, 22 February 2024

Qld Energy and Jobs Plan references BTM and off-grid energy storage needs of **22+ GWh by 2035¹**.

Redflow only **Queensland developed energy storage technology** with global presence.

Genuine industry partnership and consultation to develop strategy and ongoing active Qld gov't engagement.

Long standing and deep commitment to Queensland incl. global HQ, R&D, local supplier ecosystem, reference projects.

Strategy references **significant grant and non-dilutive sources of capital** for scale up, R&D, product development.

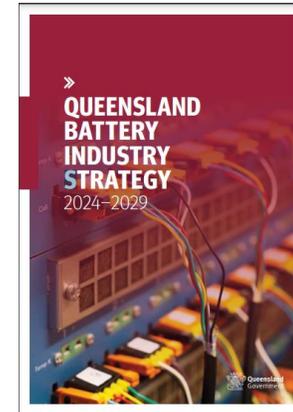
Strategy has **strong cross linkages to further federal initiatives** to develop energy storage industry.



1. Queensland Government State Development, Battery Industry Opportunities for Queensland, 2022. See https://www.statedevelopment.qld.gov.au/data/assets/pdf_file/0029/78581/queensland-batteries-discussion-paper.pdf

Feasibility study for QLD manufacturing announced

- + Redflow customer engagements in Australia and other key markets (such as the US) indicate a growing demand for Redflow systems at multi-MWh scale
- + Our goal is to manufacture globally cost competitive, long-duration energy storage batteries for multi-MWh large-scale system at multi-MWh scale in 2026
- + The Queensland's Government's Queensland Critical Minerals and Battery Technology Fund (QCMBTF) has allocated \$1.12m in grant funding to Redflow. The grant will reimburse Redflow for part of the total \$3.2m project cost.
- + The funding is for the development and construction of a large-scale zinc-bromide flow battery prototype and a feasibility study for the establishment of a fully automated large-scale battery manufacturing facility in Queensland.
- + The \$100m QCMBTF fund provides for initial feasibility funding and scale up financing (debt or equity) of up to \$30m.
- + Anticipated to be completed by the end of CY2024.



Redflow is part of our growing local ecosystem of battery technology companies and we are proud to support them to fast-track the development of their tech and potentially manufacturing their products right here in Queensland.

Deputy Premier, Treasurer and Minister for Trade and Investment Cameron Dick¹



1. See Redflow ASX Announcement Redflow allocated Queensland government grant funding for battery prototype and manufacturing feasibility study, 29 February 2024 <https://wcsecure.weblink.com.au/pdf/RFX/02779404.pdf>

1H FY24 Financial and Operational update



Energy Queensland 4 MWh project,
Queensland

H1 FY24 was a breakthrough inflection point for Redflow



~\$50m revenue target

from projects announced over last 9 months¹ and other revenue



Multi GWh pipeline

Top tier customers with large scale MWh project needs



Large-scale deployments

largest project announced (Valley Children's Hospital) is 17x size of current largest deployment (2 MWh)



Global leadership

Only Australian company selected in high profile CEC and US DOE program

Production update

Redflow Thailand production back on track

- + New injection molded collector in production.
- + Set to moderately exceed initial monthly target for Feb 24.
- + Key engineering projects in final stage of implementation with delivery of molds – March 2024.

Immediate scale up plans proceeding

- + Aligned with customer delivery requirements and recent notice to proceed for 15 MWh Paskenta CEC project
- + Targeting 20 MWh p.a. by June 2024 and 40 MWh p.a. by September 2024.
- + Further scale at Redflow Thailand available beyond current 40 MWh p.a. program. Will be driven by customer demand and contracts
- + Set of productivity and efficiency projects underway.

Accelerated activity to design and business case for large scale facility

- + Queensland feasibility study announced
- + Work already underway – including large scale product



Executing key projects to underpin scale up and productivity

Significant opportunities to reduce cost and increase production throughout and quality



CNC machine optimisation

- + Optimisation of CNC programming
- + Increased throughput

- ✓ Target 30% reduction in CNC machine run time per battery



Spray line upgrades

- + Increased line capacity via larger mixing tanks

- ✓ Target 50% increase in batch volume
- ✓ Significantly improved quality management



Injection molded parts

- + Transition compression molded parts to injection molding

- ✓ Increase in part quality
- ✓ De-risk supply chain
- ✓ Improved productivity

Profit & Loss

- + H1 FY24 revenue was affected by low production in the Thailand factory. This issue has been discussed in previous presentations and is now resolved.
- + Other income is primarily R&D tax rebate.
- + Raw materials and consumables used includes the increase in warranty provision \$3.4m.

A\$'000	H1 FY24	H1 FY23
Revenue	62.8	645.6
Other Income	1,153.5	2,344.3
Expenses		
Raw Materials and Consumables Used	(7,128.3)	(2,555.2)
Other Expenses	(6,967.3)	(6,647.4)
Profit/ (Loss) before Income Tax	(12,879.2)	(6,212.6)
Income Tax Expense	(8.1)	(12.1)
Profit/ (Loss) after Income Tax	(12,887.2)	(6,224.7)
Other Comprehensive Income	73.4	88.2
Total Comprehensive Loss	(12,813.8)	(6,136.5)

Sum of individual items may not equal total due to rounding effects

Balance Sheet

Net cash position of \$9.7m

Current assets

- + The \$11.6m raise contributed to the increase in cash.
- + Received R&D tax rebate 5 months ahead of previous period hence the decrease in trade and other receivables.

Current liabilities

- + The warranty provision was revised conservatively following management's assessment of the number of batteries sold under warranty, battery performance, potential contract exposure and the cost of meeting warranty obligations, based on historical experience and current knowledge.

A\$'000	31 Dec 23	30 June 23
Cash and cash equivalents	9,697.2	5,512.9
Trade and other receivables	1,144.3	2,563.9
Inventories	3,294.3	2,737.5
Other current assets	690.0	706.1
Total current assets	14,825.7	11,520.3
Property plant and equipment	1,333.0	1,633.3
Intangible assets	539.0	501.2
Right of use assets	173.4	249.5
Total non-current assets	2,045.3	2,384.0
Total assets	16,871.0	13,904.3
Trade and other payables	2,450.3	1,701.5
Other current liabilities	1,193.7	572.8
Provisions	5,621.5	2,190.3
Total current liabilities	9,265.5	4,464.7
Total non-current liabilities	200.0	324.2
Total liabilities	9,465.5	4,788.9
NET ASSETS	7,405.5	9,115.4

Sum of individual items may not equal total due to rounding effects

Cash Flow

- + As mentioned above, supplier quality issues impacted production of orders.
- + Payments to suppliers and employees increased in preparation of ramp up.
- + As discussed previously R&D tax grants paid earlier than historical trends.
- + Capital raising activities:
 - \$11.6m raised from successful entitlement offer and placement.

A\$'000	H1 FY24	H1 FY23
Cashflows from operating activities		
Receipts from customers	243.7	779.6
Payments to suppliers and employees	(9,132.7)	(8,081.0)
Grants R&D tax incentive received	2,456.8	36.6
Other	147.7	37.5
Net cash (outflows) from operating activities	(6,284.5)	(7,227.4)
Cashflows from investing activities		
Payment for property plant and equipment	(273.6)	(300.6)
Payments for intangible assets	(56.9)	(99.6)
Proceeds from sales of PP&E	-	9.2
Net cash (outflows) from investing activities	(330.5)	(391.0)
Cashflows from financing activities		
Proceeds from capital raising activities	11,642.7	10,621.6
Transaction costs related to equity issues	(752.8)	(540.3)
Principal elements of lease payments	(84.9)	(84.0)
Net cash (outflows) from financing activities	10,805.0	9,997.3
Net increase/(decrease) in cash and cash equivalents	4,190.0	2,379.0

Sum of individual items may not equal total due to rounding effects

Strategy



Anaergia 2 MWh energy storage system,
California, USA

Clear and consistent strategy

Will continue to deliver growth in FY24 and beyond



ENERGY FOCUSED APPLICATIONS

- + Solar shifting and energy arbitrage.
- + Medium to long duration focus – 4+ hours.
- + Industries and applications where safety paramount (e.g. mining).
- + Leverage hibernation attributes.



COMMERCIAL AND INDUSTRIAL (C&I) CUSTOMERS

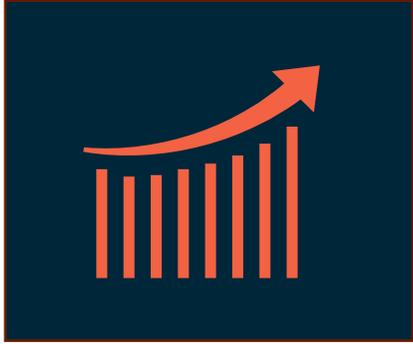
- + Small C&I deployments 1 MWh.
- + Medium to larger C&I deployments – Behind the Meter focus 2 – 20 MWh.
- + Leverage energy density.
- + Position for Grid scale opportunities – 20 MWh+.



US AND AUSTRALIA AS CORE MARKETS

- + US – California and other markets with large LDES energy storage needs & drive for diversification.
- + Continued growth of opportunities in Australian market.
- + Queensland Government energy storage strategy supporting acceleration of ambition.
- + Pursue deals in other markets where opportunity is compelling.

We have successfully positioned Redflow for accelerated growth



Breakthrough projects announced¹ contributing to target revenue of c\$50m

- + ~60 MWh projects announced.
- + **Blue chip customers** with large scale energy storage needs.
- + **Key endorsements** – US DOE, US DOD, CEC, Energy Queensland, Acciona.



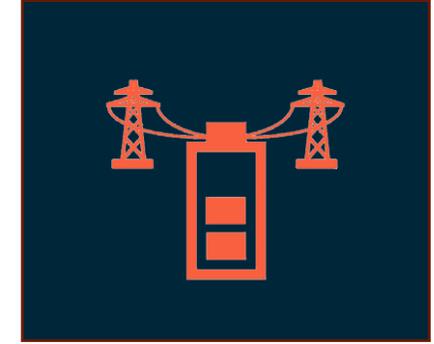
Production outlook full for 2024 and well into 2025

- + **Production scale up on track** to meet customer deliveries.
- + **Scale benefits** to drive productivity and economies of scale.
- + **Key engineering projects** to address stubborn supplier quality challenges.



LDES leadership at multi-MWh scale

- + **High profile US & AUS** government support.
- + **High visibility projects** supporting growing GWh pipeline with target multi-MWh projects.
- + **New experienced exec leadership** – CFO and Chief Engineer joined in 2024.



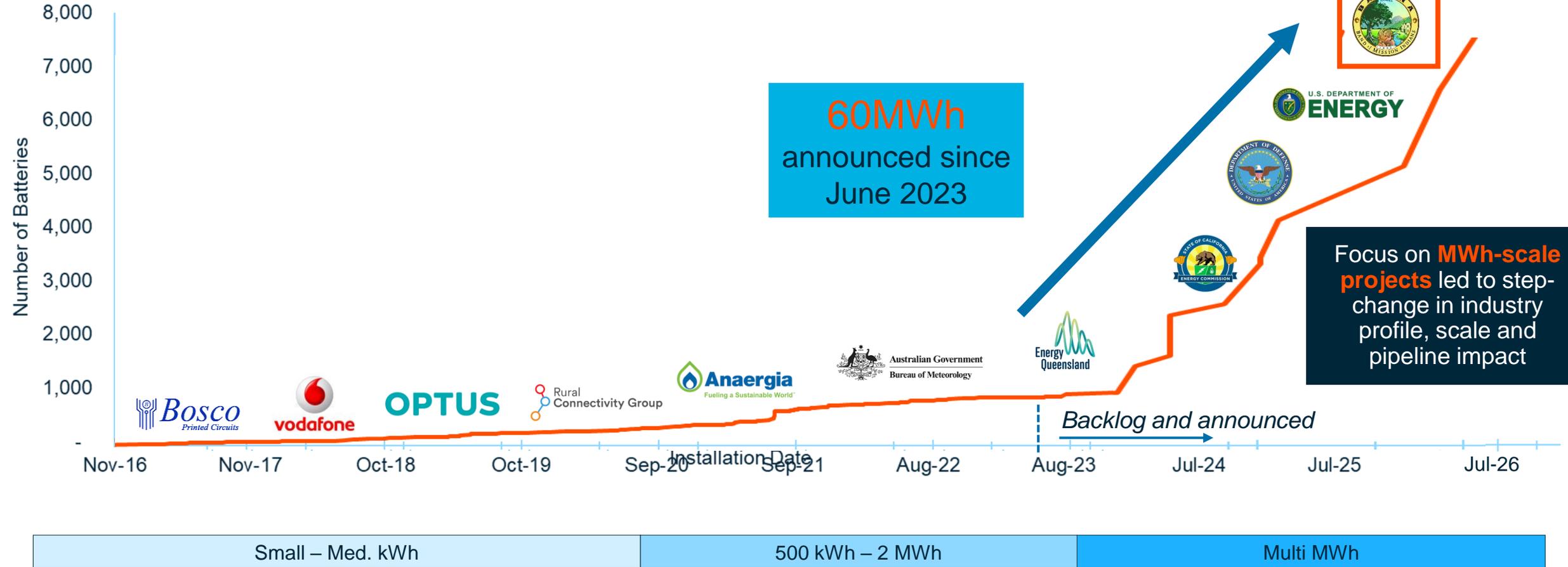
LDES market accelerating

- + **BTM and FTM large-scale operators renewed focus** on proven LDES solutions.
- + **Specific multi-MWh tenders excl. lithium** – moving to formal submissions.
- + **Market regulator and gov't recognition** – AMEO, UK gov't, Queensland Gov't etc.

Our strategy has enabled our transition to a credible multi- MWh technology in some of the most exciting global LDES markets

Redflow Battery Installations 2016 - 2026*

INDICATIVE



Sources: Company information. * Installations based on deployed systems to 30th August 2023 currently active and currently expected deployment schedule of recently announced CEC, EQ, DOD and DOE projects. Note the specific delivery timetable of the CEC and EQ projects is subject to final contracting and implementation timetable and therefore may be subject to change

Key projects on track for delivery and revenue

Financial impact¹

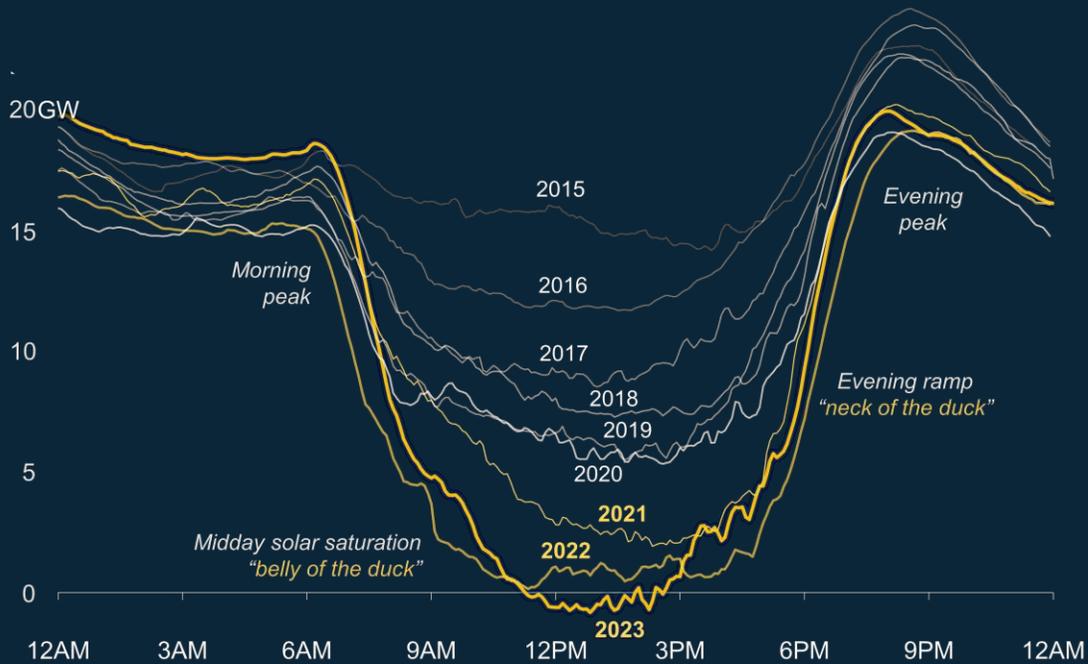
	Paskenta Microgrid project 15.4 MWh	Phase One adjusted based on final budget allocation. Final notice to proceed received Feb 24. Kick off deployment meeting early March 2024	~\$12.5m in FY25 ²	
	Energy Queensland project 4 MWh	Engineering and design continuing with signing of the MSA expected Feb 24. Target installation remains on track to be in H1 FY25.	~\$2.5m in FY24/25 ³	
	Acciona project 200 kWh	Engineering and design continuing with signing of the MSA expected Feb 24. Target installation remains on track to be in H1 FY25.	~\$150k in FY24 ²	
	US DOD Microgrid project 1.2 - 1.4 MWh	Engineering and design on track to meet the US DOD milestones. System delivery and commissioning expected in Q3 2024.	~\$1.7m in FY25 ²	
	US DOE Valley Childrens Hospital project ~34 MWh	Negotiations across all parties continuing. Expect final contracting to be finalised in H1 FY25. Engineering and design is progressing, with the delivery timetable expected over FY26.	~\$25m in FY26 ³	
NEW		Barona LDES project 6.6 MWh	Project team contract negotiation is continuing with CEC. Final contracting anticipated in H1 FY25. Expected delivery timetable FY26.	~\$5m in CY25/26 ³

1. Estimates only. Specific revenue and timing of recognising revenue to be confirmed at time of final contracting, and other factors such as production/delivery milestones.
 2. Expected revenue.
 3. Revenue opportunity..

LDES increasingly seen as crucial to the energy transition

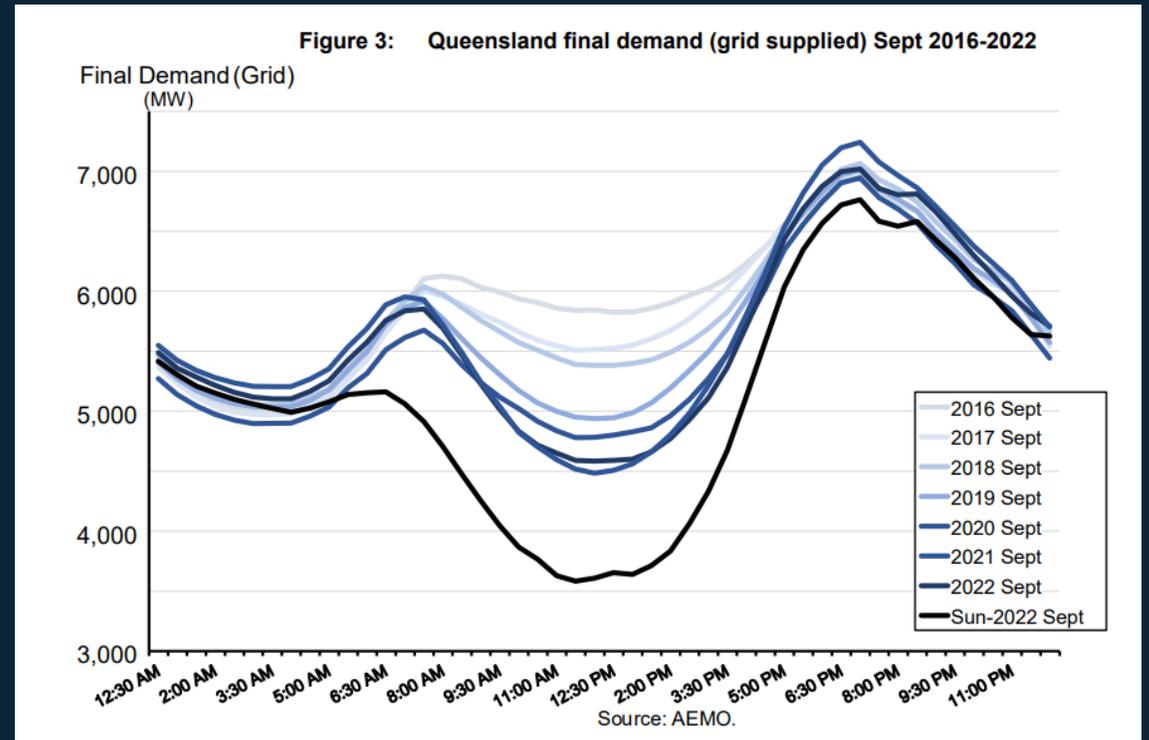
Renewables acceleration generates new storage challenges that are common across key markets

From California...¹



Source: CAISO | @BPBartholomew
Note: Net load shown is demand minus utility-scale wind and solar

...to Queensland²



Source: AEMO.

Broader market trends and industry forces accelerating

Lithium battery warehouse goes up in flames

Blaze raises concerns about storage of components known to spontaneously combust

Vivian Song
18 February 2024 • 3:40pm



US to Ban Pentagon Battery Purchases From China's CATL, BYD

- Rule was included in most recent Defense Authorization Act
- Ban applies to four other manufacturers beginning October 2027



News

Long-duration energy storage could cut industrial emissions by 65% - report

Long-duration energy storage (LDES) offers the option for remote sites to store excess energy generated from localised renewable sources for long periods of time.

Annabel Cossins-Smith | November 15, 2023

NEWS

'Urgent need' for Australia to invest in long-duration energy storage, says AEMO

By [Andy Colthorpe](#)
February 21, 2023

Advantages of Redflow's ZnBr technology

Core chemistry, operational experience and developed features provide strong value proposition



Density

Highest across commercial flow batteries¹



Core Chemistry

ZnBr one of the lowest \$/kWh chemistries²



Modularity

Flexible from 200 kWh to 100s MWh



Hibernation mode

Indefinite standby capability



Supply chain

Mature and abundant zinc supply chain



Deployment

Low cost, rapid drop-in deployment model



*“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,
Californian Energy Commissioner³

Looking ahead



Bureau of Meteorology weather radar emissions
reduction and reliability project
NSW, Australia

Redflow summary

**Our
fundamentals
and outlook
are strong**

- + Production outlook full for CY2024 and well into CY2025
- + Multi-MWh projects announced allow further participation in large scale market – utility scale & C+I customers with huge storage needs
- + GWh scale pipeline with key deals advancing
- + Foundation for further US and Australia expansion – incl. recent Queensland government support
- + Deep engineering experience and expertise plus refreshed executive to drive next stage of growth
- + Visible pathway to rapidly scale capacity and drive profitability
- + Clean balance sheet with avenues for non-dilutive sources of growth capital in progress
- + Participate in the energy transition thematic in a significant way in the rapidly growing LDES market opportunity estimated to be worth US\$4 trillion by 2040¹



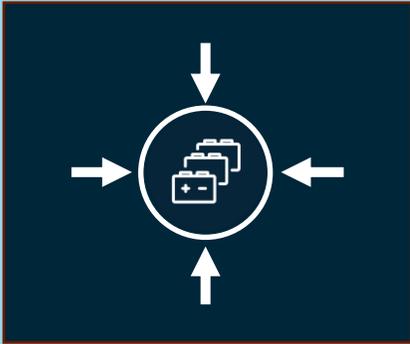
1. Energy Storage News, World needs 'collaborative competition to capture US\$4 trillion long-duration opportunity', March 2023



Artist's impression of the 4 MWh Project for Energy Queensland

Investor strategy presentation – March 2024

Specific date for release to be announced shortly



**Latest on LDES
market and
industry forces**



**Redflow growth
strategy to meet
customer needs**



**Key drivers of
success**

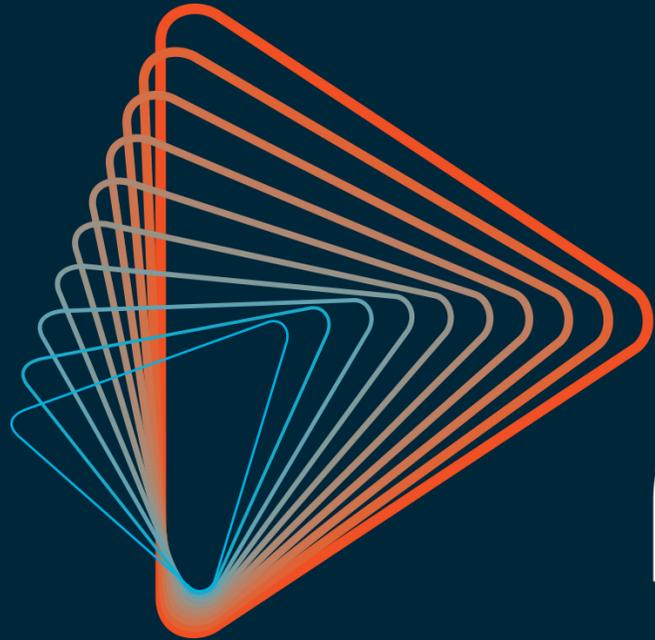


**Pathway to
profitability**

Questions



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



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