



04 Jun 2019

Australian Financial Review, Australia

Author: Luke Housego • Section: Technology • Article Type: News Item
Audience : 38,015 • Page: 21 • Printed size: 488.00cm² • Region: National
Market: Australia • ASR: AUD 9,871 • words: 772 • Item ID: 1129088783



isentia.mediaportal

Licensed by Copyright Agency. You may only copy or communicate this work with a licence.

Page 1 of 2

Finkel backs battery firms to go global

Exclusive

Luke Housego

As investment in energy storage continues to grow around the world, Australia's chief scientist Alan Finkel says a lesser-known technology has the potential to play a significant role in the energy storage market, with Australian companies well positioned to lead the charge.

While lithium-ion technology has gained a high profile in the investor community for use in mobile energy storage applications such as electric cars and smartphones, Dr Finkel said flow batteries, which use an alternative process and materials, were gaining traction and presented an opportunity for Australian providers.

"Flow batteries are potentially going to be a big contributor to the stationary energy storage, like the grid-level stationary energy storage," Dr Finkel, told *The Australian Financial Review* on the sidelines of the APPEA conference in Brisbane last week.

Flow batteries work with the use of a liquid electrolyte stored in two separate tanks on either side of a membrane. The liquid "flows" through the two separate networks past the membrane, driving the chemical process that generates electricity.

Dr Finkel said while flow batteries would work in electric vehicles or electronics, it would be particularly competitive in larger-scale applications.

"If you want to get bigger hours of storage, you basically just have to put in bigger tanks," he said. "Whereas to get more hours for a [lithium ion] battery you have to put in more and more batteries. [In flow batteries] bigger tanks are actually the cheapest part of it."

Last November, Bloomberg New Energy Finance forecast the global energy storage market was expected to attract investment of \$US620 billion

(\$894 billion) in the years to 2040.

With the Indo-Pacific region expected to account for a significant portion

of that investment, the opportunity for Australia is considerable.

The ability to expand flow battery capacity by increasing volume of the electrolyte makes it suitable to energy storage applications such as storing solar or wind power generated during the day. Other attributes are also driving adoption, such as the fact liquid in flow batteries has an indefinite life, so degradation over time is reduced. This means they are expected to last up to 25 years, considerably longer than lithium-ion alternatives Dr Finkel said.

They also present a lower environmental and operational risk as they do not result in the same recycling issues as lithium-ion batteries and are not prone to overheating.

Dr Finkel's words will provide encouragement for those looking to advancement in energy technology to create profitable industry and future job growth in Australia. Local companies responding to the opportunity include Redflow, which is a flow battery manufacturer.

Junior miners Australian Vanadium and Multicom Resources are also in the mix. Vanadium is a key input to flow batteries and both miners produce the metal. They plan to leverage production to support battery storage subsidiaries.

Two recent projects demonstrate the growing interest in the use of flow batteries for grid-scale energy storage.

Last month the Canadian energy storage company CellCube signed an agreement with renewables developer Pangea to install a flow battery system alongside a solar farm in Port Augusta, South Australia. The system will be twice the size of Tesla's lithium-ion system installed in Jamestown for the South Australian government in 2017.

In China the world's largest battery storage system is being developed, more than six times larger than the Jamestown battery. The Chinese energy storage company behind the project, Rongke Power, is also building a manufacturing plant for flow batteries.

The opportunities for Australian business in this area have led the recently established Future Battery Industries Co-operative Research Centre (FBCRC) focusing resources on developing a domestic industry for flow batteries.

Queensland University of Technology's (QUT) Professor Peter Talbot, FBCRC program manager and one of Australia's experts in battery technology, said attention on lithium-ion batteries had allowed the flow battery industry to quietly build in the background.

Last month Australian flow-battery manufacturer Redflow said it would supply one of its systems into a smart-grid pilot program in Qinghai province.

In addition to grid-scale applications, the use of flow batteries in other stationary energy storage areas has seen Australian companies devote attention to the opportunity.

Batteries to support isolated infrastructure that requires off-grid power supply, such as in remote telecommunications towers, is an area where Redflow's batteries are already in use.

Multicom Resources, one of the commercial partners in the FBCRC, is looking to the residential energy storage market. It has established Freedom Energy, which is developing a flow battery to compete with lithium-ion offerings in residential energy storage, such as Tesla's Powerwall.



04 Jun 2019

Australian Financial Review, Australia

Author: Luke Housego • Section: Technology • Article Type: News Item
Audience : 38,015 • Page: 21 • Printed size: 488.00cm² • Region: National
Market: Australia • ASR: AUD 9,871 • words: 772 • Item ID: 1129088783



[isentia.mediaportal](https://www.isentia.com.au)

Licensed by Copyright Agency. You may only copy or communicate this work with a licence.

Page 2 of 2



Alan Finkel says while flow batteries have been around for a while, they have attracted less attention. PHOTO: ATTILA CSASZAR