



Redflow energy storage

“On a sunny week, most of our home’s electricity is provided by solar energy, both directly and indirectly, by using the Redflow batteries to time-shift stored energy”

Simon Hackett



Simon Hackett Redflow battery benefits

Simon Hackett is a man who likes to walk the walk as well as talk the talk, so the technology entrepreneur was an early adopter of the Redflow-designed zinc-bromine flow battery that is at the heart of the ZCell residential energy storage system. At his eastern Adelaide home, Mr Hackett installed two Redflow batteries in early 2016, replacing a pair of ageing lead-acid batteries. As well as slashing energy consumption in his home, Mr Hackett saw the batteries power his household through a state-wide grid blackout in September that year without his family even noticing the power outage.

PROJECT OVERVIEW

- Location: Adelaide, South Australia
- Redflow installation partner: Solar Depot <http://solardepot.com.au/>
- Storage: 2 x Redflow ZBM2 batteries (20 kWh storage capacity) <http://redflow.com/products/redflow-zbm2/>
- Inverter: 2 x 5000VA Victron Energy battery inverter/chargers
- Solar: 10 kWp solar panel array in four strings using 2 x SMA 5000-TL solar inverters
- Redflow batteries automatically power the house when grid power is unavailable
- Redflow batteries timeshift solar energy from daytime to when it’s needed at night
- Redflow batteries reduce electricity costs by prioritising the use of battery-stored energy
- Redflow batteries enable the house to run mostly on solar energy during sunny weeks.



HYBRID
CASE STUDY

ADELAIDE
SOUTH AUSTRALIA

Hackett household powers through state-wide blackout



When 1.7 million South Australians lost power in late September 2016, the family of technology entrepreneur Simon Hackett in eastern Adelaide learned of the state-wide blackout by reading about it on social media.



As the State's electricity grid shut down to protect itself during a fierce storm, two Redflow batteries at the Hackett house kicked in, providing it with electricity, without missing a beat.

Mr Hackett said the two Redflow zinc-bromine flow batteries had worked as intended. "They kept our lights on as the rest of the State was plunged into darkness," he said.

The Hackett home's Redflow energy storage system comprises two 10 kilowatt-hour (kWh) ZBM2 zinc-bromine hybrid flow batteries, the Redflow ZCell Battery Management System (BMS), two 5000VA Victron Energy inverterchargers, a 10 kilowatt peak (kWp) solar panel array in four strings using two SMA 5000-TL inverters and a Victron Energy CCGX configured for solar self-consumption.



In 2016, Simon Hackett – an early adopter of home battery technology – replaced two six-year-old lead-acid battery strings with the two ZBM2 batteries, which store energy using Redflow's unique zinc-bromine flow battery technology. As an early production deployment of Redflow batteries in a home, the system pre-dates the existence of the company's ZCell battery enclosures.



Mr Hackett said the system had performed well since it was installed. "On a sunny week, most of our home's electricity is provided by solar energy, both directly and indirectly, by using the Redflow batteries to time-shift stored energy," he said.



"Like a home rainwater tank saves water, this system acts as an electrical energy buffer, reducing the use of grid energy where possible and prioritising the use of battery energy.

"Of course, in weather conditions with less sunshine, we use more grid energy. The system automatically reverts to off-grid mode if the grid is unavailable, including recharging the batteries from solar energy to help support loads in the home for extended periods during such outages."

Installed by Redflow partner Solar Depot, the Redflow batteries at the Hackett household use the Redflow battery management system, so they can be monitored and managed remotely via the Internet from a smartphone or computer.

About Redflow

Redflow's unique zinc-bromine flow batteries are designed for stationary energy storage applications ranging from its ZCell residential battery to its scalable ZBM2 batteries for industrial, commercial, telecommunications and grid-scale deployment. Redflow Limited, a publicly-listed company (ASX: RFX), produces high energy density batteries that are sold, installed and maintained by an international network of system integrators. Redflow batteries offer unique advantages including 100 per cent depth of discharge, tolerance of ambient temperatures as hot as 50 degrees Celsius and sustained energy storage of 10 kilowatt-hours (kWh) throughout their operating life.

www.redflow.com **sustainable energy storage**



ZBM2