



BEYOND BATTERIES

January 2025



COMPANY OVERVIEW

- A global leader in **non-lithium energy storage systems**
- Standardised, **factory-built** products
- **More than 1,200** flow batteries delivered globally
- **Largest** flow battery installations in Canada, UK, U.S., Australia
- **Joint development & commercialisation partner** GamesaElectric

Global Footprint
175 MWh



EDF Renewables
5 MWh / Oxford, UK



Spencer Energy
8 MWh / South Australia



Elemental Energy
8 MWh / Alberta, Canada



82	175	152	81	15+
PROJECTS	MWH	EMPLOYEES	PATENTS	YEARS
Across 15 countries on five continents	Deployed, contracted or awarded	The most experienced team in flow batteries	Granted or pending, plus trade secrets	R&D investment in product and manufacturing

Invinity's Global Operations



■ **VANCOUVER**
Design & Manufacturing



MOTHERWELL
Manufacturing



■ **BATHGATE**
Design & Manufacturing



■ **SUZHOU**
Manufacturing

■ **SAN FRANCISCO**
Sales & Support



■ **VISTA**
Support



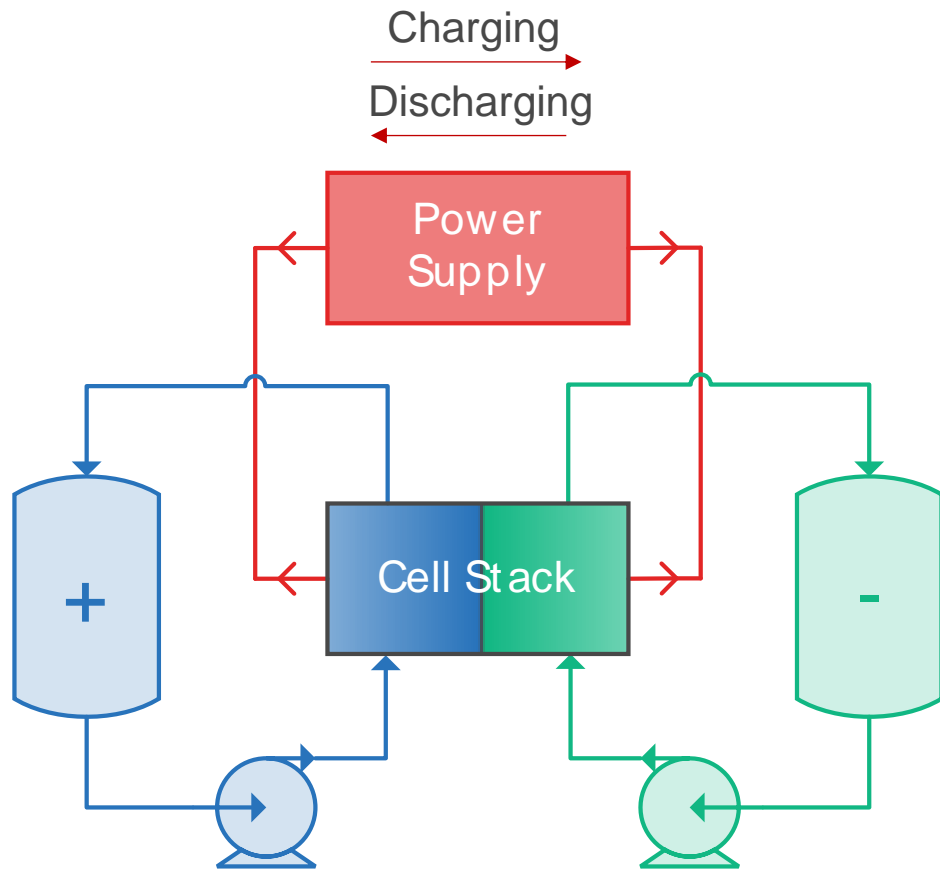
■ **LONDON**
Sales & IR



■ **MELBOURNE**
Sales

TECHNOLOGY OVERVIEW

What is a Vanadium Flow Battery?



A Flow Battery contains two tanks of liquid electrolyte, with metal ions in each tank holding different redox states.

Pumps move the electrolyte through cell stacks, where the electrochemical reaction occurs. This either charges or discharges the battery, depending on the voltage applied across the cell stack.

The maximum power output (kW) of the battery is determined by the stack, and the storage capacity (kWh) by the volume of electrolyte.



SAFE & QUIET

Zero risk of thermal runaway, quiet operation



LONG-LIFE

Zero cycle-driven degradation



SCALABLE

Highly configurable design, suited for 100MWh+



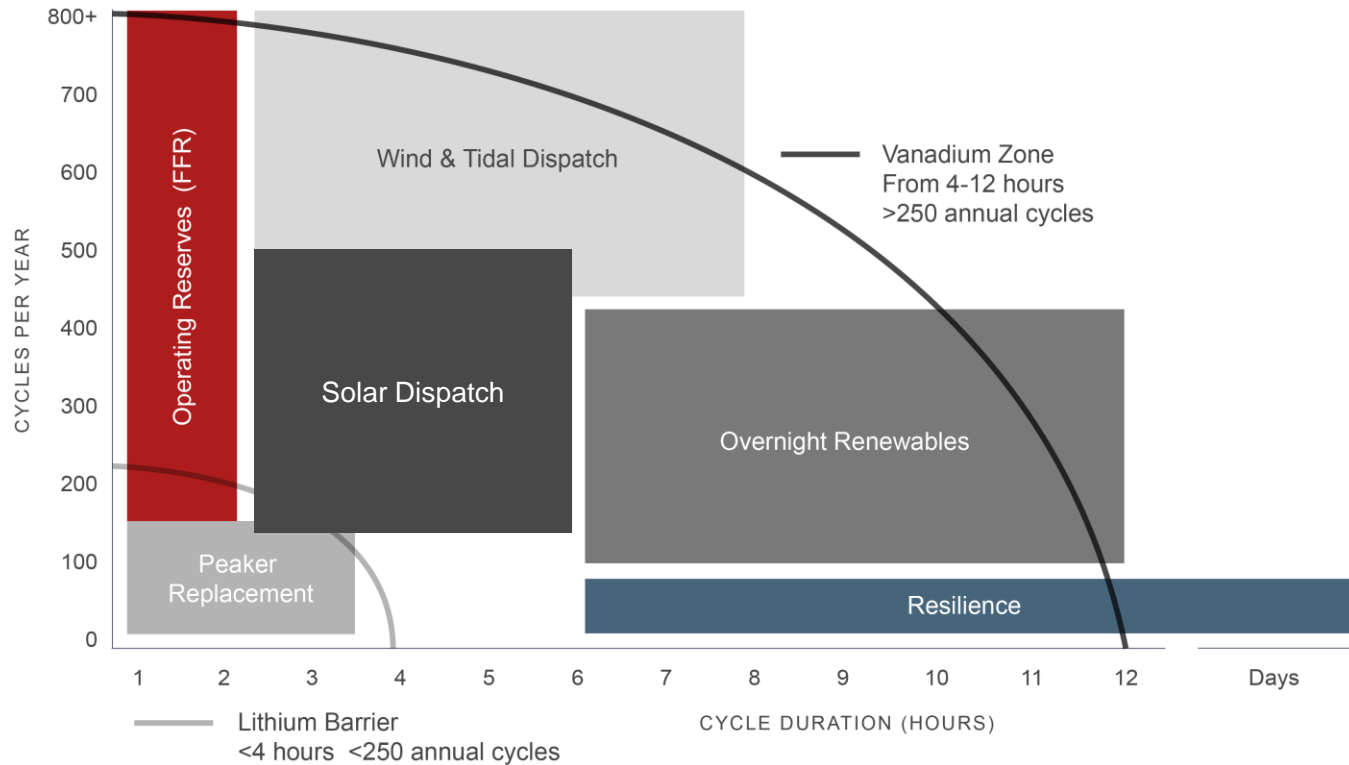
RECYCLABLE

99% recyclable, and electrolyte retains value at end of life

Invinity Products Enable Access to New Revenues

Invinity batteries can scale to longer-duration at a reduced cost. Unlimited cycling and proven safety and durability make them ideal for high-throughput applications that markets are beginning to demand.

Complementary Capabilities



ENERGY SUPERHUB OXFORD
Frequency Response



EUROPEAN MARINE ENERGY CTR
Tidal Dispatch



SPENCER ENERGY
Solar Dispatch



VIEJAS MICROGRID
Resilience



Invinity Products Are In Service Today



SCOTTISH WATER PERTH / Scotland
Overnight 0.8 MWh

Feb 2022



SAN JACINTO FIRE STATION / California
Resilience 0.5 MWh

Jun 2022



ENERGY SUPERHUB OXFORD / England
FFR 5 MWh

Jul 2022



EUROPEAN MARINE ENERGY CENTER / Scotland
Dispatch 1.8 MWh

Aug 2022

Project Highlights 2023-2024



CANADA'S LARGEST VANADIUM FLOW BATTERY
Solar plus Storage 8.4MWh

2023



NORTH AMERICA'S LARGEST VANADIUM FLOW BATTERY / California
Microgrid Resilience 10 MWh

2024



AUSTRALIA'S FIRST DISPATCHABLE SOLAR PLANT
Solar plus Storage 8.3 MWh

2023



HIGH THROUGHPUT DEMONSTRATOR / KEPCO
Grid Services 1.5 MWh

2023

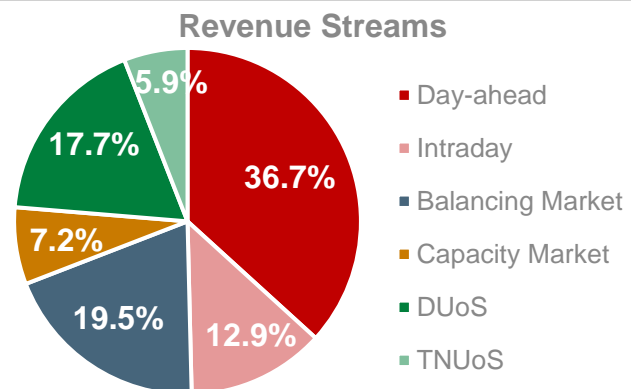
Invinity's Vanadium Flow Batteries can capture revenue from a wide range of streams and battery use cases.

Case Study



GB MERCHANT BATTERY SYSTEM

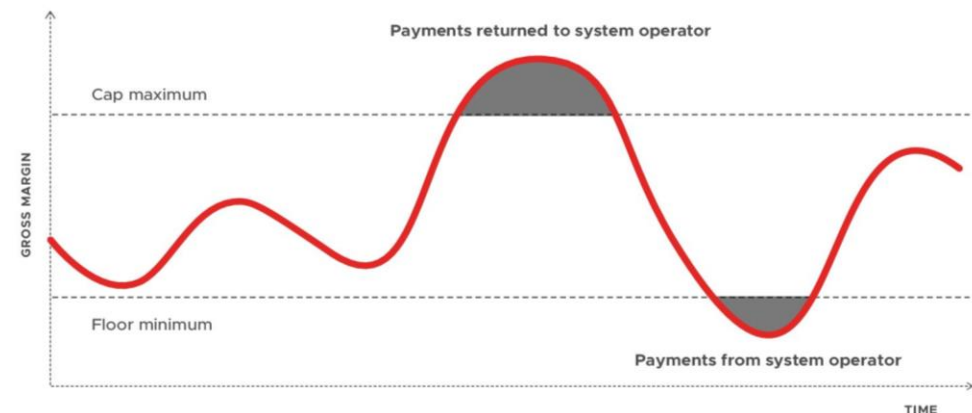
- 4-hour standalone Vanadium Flow Battery system
- Distribution connected in South-East England
- Similar revenue streams possible when system is co-located with Solar
- Also capable of capturing any ancillary services



Support Mechanism

LONG-DURATION ENERGY STORAGE

- UK Government's LDES Cap and Floor Scheme will provide long-term contracted revenues
- Provides **minimum** annual revenue (**floor**) in return for a limit on **maximum** revenue (**cap**)
- Creates commercial viability for LDES projects in UK market
- Guarantees LDES minimum revenues, which are lacking under current market conditions
- Stream 2 is expected to require proven novel technologies (i.e. – non-lithium) capable of delivering 6h 300 MWh systems





Application

- Balancing current vs future market conditions
- High annual cycle count (250-750+)
- 4-18 hour discharge duration



Site

- Network connection agreed or in progress
- Sufficient land to accommodate up to 100 MWh / Acre
- VFBs can address planning challenges around fire risk or noise



Funding

- Equity or debt funding in place
- Accessing funding/grant support for innovative applications
- Higher capex, but low LCOS (mention residual value- not always accounted for)



Execution

- EPC education on non-lithium BESS
- Aligned lead-times for the project from signed purchase order
- Regional partner delivery and maintenance support

 **GET MORE
BATTERY™**

 **INVINITY**
ENERGY SYSTEMS