i-battery — 艾博特瑞

I-BATTERY

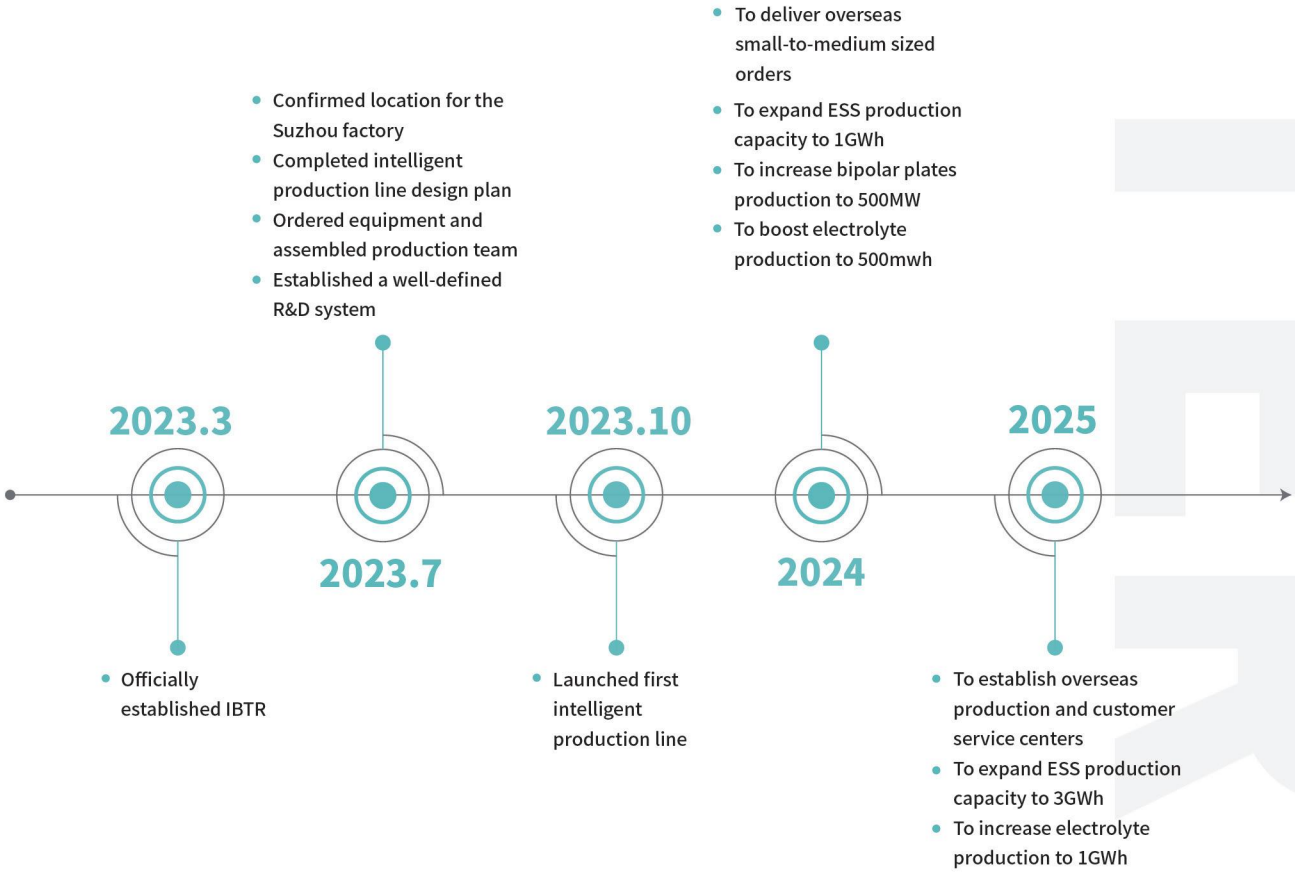
Innovator in Long-Duration Energy Storage

i-Battery Energy Technology (Suzhou) Co., Ltd

01 COMPANY INTRODUCTION

About Us

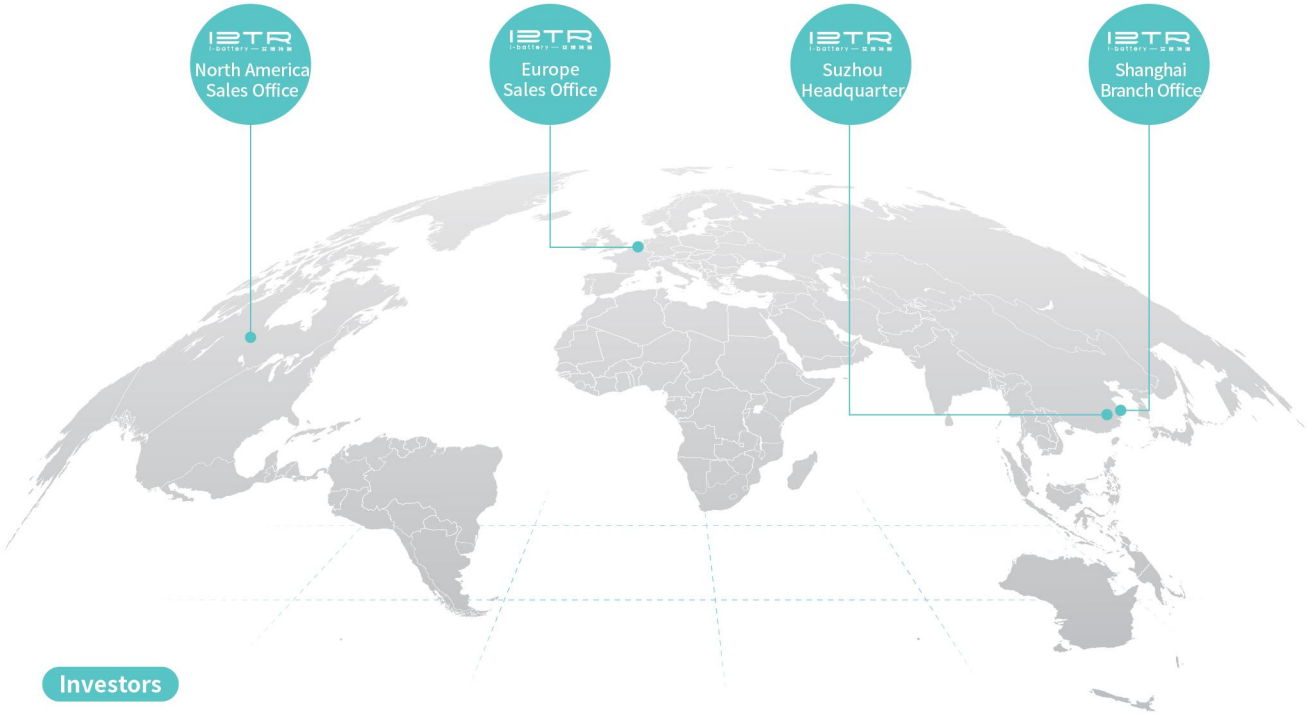
i-Battery Energy Technology (Suzhou) Co., Ltd is at the forefront of long-duration energy storage technologies, specializing in the research, development, and application of Vanadium Redox Flow Battery technologies. Our mission is to drive the transition towards a renewable energy-dominant system and catalyze the transformation of the national energy structure through the industrialization of advanced energy storage technology. With a core team that boasts over a decade of experience in long-duration energy storage, we are committed to developing proprietary products and new materials. Our company has made significant breakthroughs in the core technology of flow batteries, setting high technical standards with innovations like our unique cell stack design, in-house developed electrolyte formulas, and cutting-edge engineering systems integrated with IoT cloud platforms. These advancements not only enhance the quality and performance of our energy storage products but also contribute to cost-effectiveness. Emphasizing the integration of the entire industry chain, from raw material sourcing to production, we are dedicated to the large-scale and intelligent manufacturing of new-generation energy storage products that are long-lasting, cost-efficient, exceptionally safe, and versatile.



Vision, Mission, Values

BEYOND VANADIUM

- **POSITIONING**
  Innovator in Long-Duration Energy Storage
- **VISION**
  To continuously provide zero-carbon electricity for a better world
- **MISSION**
  To diversify the world's electricity supply through long-duration energy storage
- **VALUES**: The 4 'B's
  Better World: Sustainable Development
  Better Product: Innovation-Driven
  Better Service: Win-Win Cooperation
  Better People: Talent-Led
- **CULTURE**
  Inclusiveness and Equality
  Passion for Innovation
  Encourage Adventure
  Commitment to Continuous Learning



Investors

同创伟业 COWINCAPITAL　TRIUM 三合资本 capital　RISING INVESTMENTS

Company Locations

Suzhou | Headquarter/R&D Center/Smart Factory
Shanghai | Branch Office/R&D Center
Europe | Sales Office
North America | Sales Office

Partnerships

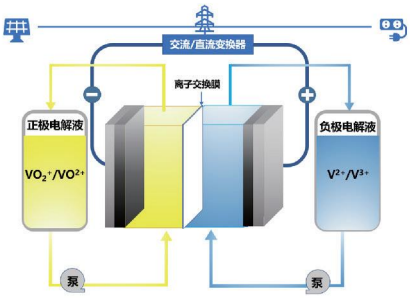
POWERCHINA, SPIC, Beijing Energy Sembcorp, Nanjing Electrical Power, China Telecom, NENGHUI, Super Mind, Petawatts, Dansolar, G-Star

02 TECHNICAL ADVANTAGES

Suitable for energy storage applications requiring high safety, large capacity, long cycle life, and minimal maintenance.

Working Principle

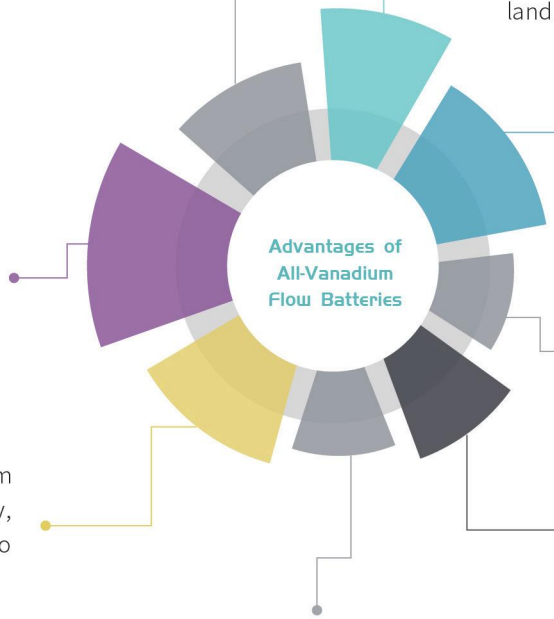
The all-vanadium flow battery is a renewable energy storage technology based on the oxidation-reduction reaction of different valence state vanadium ions in the electrolyte.



Extremely Safe: Water-based electrolyte, no risk of fire or explosion, no volatile toxic substances, can be deployed in various complex work environments, and compact arrangement effectively reduces land usage

Market-Verified: Currently the most technically mature and highly industrialized liquid flow battery technology.

Long Lifespan: Life expectancy 25 years, cycles >16,000 times, can withstand rapid, frequent, and capable of rapid, frequent, and high-current charging and discharging, with a Depth of Discharge (DOD) reaching 100%.



Low Degradation: Can monitor capacity online, 100% recovery at low cost.

Abundant Resources: Rich and controllable reserves of vanadium.

Zero Pollution: Mature vanadium recycling and reuse technology, 100% recyclable electrolyte, no pollutants generated.

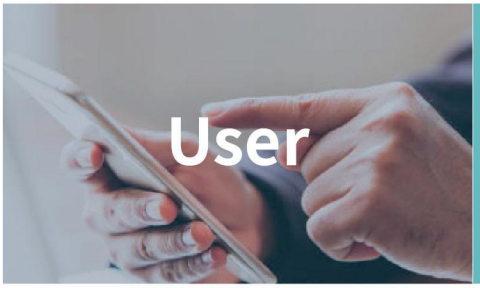
Economical: Low lifetime cost of electricity.

Scalability: Power and energy units are independently decoupled, easily meeting the flexible configuration and rapid construction from kilowatts to megawatts.

Application Scenarios

- Clean Energy Generation Management
- Renewable Energy Grid Integration
- Utility-scale Auxiliary Services
- Dynamic Operation of Auxiliary Units

- Improve Power Quality
- Grid Safety and Stability
- Reduce Investment in Distribution Network
- Reduce Line Losses
- Grid Frequency Regulation and Expansion



- Distributed Power Source Access
- Commercial and Industrial Peak-Valley Power Management
- Energy Arbitrage
- Microgrid Applications
- Power Quality Regulation
- UPS Power Systems

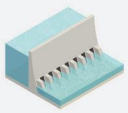
Product Advantages

Higher Efficiency

Unique diversion technology + new dual-polarity plate -Direct current (DC) conversion efficiency > 85%

Greater Stability

Exclusive mixed sealing technology
Prevent leaks
No self-discharge issues



Enhanced Reliability

In-house developed BMS, electrolyte circulation system, automatic rebalancing
Proprietary black start technology

More comprehensive

has mono-acid and mixed-acid electrolyte formulations, and will be involved in electrolyte production in the future to ensure the stable supply of the industrial chain and reduce system costs

Lighter and Smaller

Each individual container can accommodate more power modules

Lower Costs

Our decade of technological expertise, combined with refined structural designs, experience in large-scale production, and the integration of innovative materials, translates into a significant cost advantage of more than 5-10%.

Our Team

Our team is comprised of exceptional scientists, engineers, and professionals who bring a wealth of industry experience and technical expertise. We are dedicated to providing customers with efficient, reliable, and innovative energy storage solutions.

Patent Name	Patent Type	Patent No.
Composite graphite felt material and its preparation method, vanadium redox flow battery	Invention	2023107976822
Vanadium redox flow battery, electrolyte and its preparation method	Invention	2023107976150
Bipolar plates for redox flow batteries and their preparation method	Invention	2023108422814
Flow battery and its bipolar plates	Utility Model	2023218036727
A flow battery energy storage system and its operating method	Invention	202311199070X
An electrolyte tank for a vanadium redox flow battery	Invention	2023112715786
A flow battery stack and flow battery	Invention	2023112262381
An electrolyte storage tank for a flow battery	Invention	2023228955145
A flow battery system	Utility Model	2023230459590
A method for predicting ion distribution in vanadium redox flow batteries	Invention	2023115754674

03 PRODUCT INTRODUCTION

IBTR' s new generation of the lightweight Stack Phoenix 2, launched in 2023 Q4

Phoenix Stack:

At the same power level,
the weight is reduced by 20% and the volume by 15%.

PARAMETERS				
Series	5kW	10kW	16kW	32kW
Voltage	32-52.8 V	64-105 V	32-52.8 V	64-105 V
Rated Current	160 A	160 A	480 A	480 A
Dimensions	630*440*440 mm	630*440*850 mm	1,000*620*430 mm	1,000*620*780 mm
Stack Weight	120 kg	224 kg	480 kg	880 kg
Energy Efficiency	>85% DC，>72% AC			
Features	Single inlet and single outlet Long -term overload:110% Short -term overload:200%			

1.Energy Storage Systems:

Size	Capacity	Lifespan	Discharge Time	Depth of Discharge	Cycle Count
20-foot, 40-foot, customization	50-100 kWh~MWh~GWh	25 years	2-10 hours or more	100%	16,000

The integration of power modules, piping systems and electrolytes into containers and the use of stacking methods can save 30% of the floor space for large-scale centralized energy storage projects

Utility	Commercial and Industrial	Residential
250kW/1000kWh	125kW/500kWh	2.5kW/15kWh

IBATTERY

04 SOLUTION

Mixed storage technology : All-vanadium + X (power energy storage technology)

- **For the overall system:**
  - Improve the efficiency of the energy storage system
  - Improved regulation performance
  - Extend the service life of auxiliary systems
  - Improve overall energy efficiency and increase system uptime
- **For vanadium flow:**
  - Increase the working range of the energy storage system at low temperature or in a wide temperature zone
  - Improve the external response speed of the overall energy storage system
  - Alternate system starting power supply
- **For power batteries:**
  - Reduce costs and extend cycle life

Financial leasing of electrolytes

- The residual value of the electrolyte is high, and the financial lease of the electrolyte part is carried out in cooperation with a financial company, which greatly reduces the initial installation cost

Overall financial leasing

- Provide the overall battery system installment option to solve the customer's financial pressure
- Increase overall company revenue

Building block combination system

- Spliced in a stacked connection combination
- Fixed power module and electrolyte module
- Reduce production costs
- The system can be freely spliced according to the conditions of different sites

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