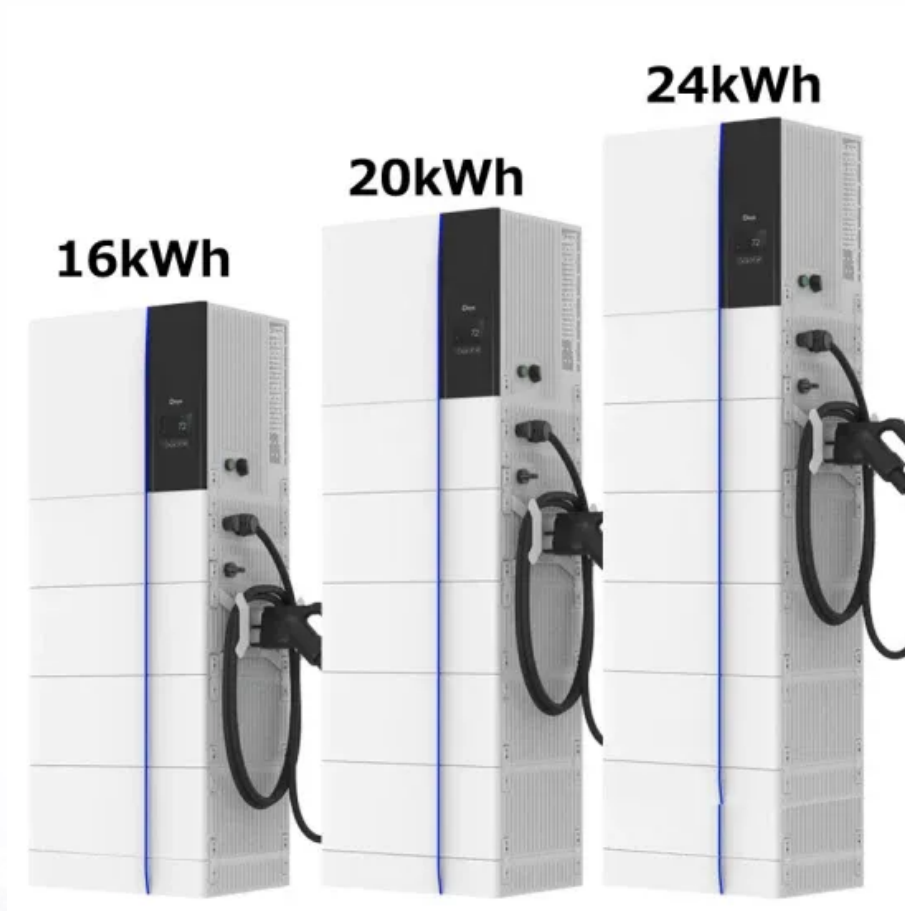


## SolarTech Power Solutions

# Vanadium flow battery in Gothenburg Sweden



## Overview

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Rivus Batteries and Bengt Dahlgren will install Sweden's first organic flow battery in pilot-scale at HSB Living Lab in Gothenburg. Are flow batteries available in Sweden?

Flow batteries are used today in the form of stationary energy storage and are established on the market in many parts of the world, but not yet in Sweden.

Where will Sweden's first organic flow battery be installed?

Rivus Batteries and Bengt Dahlgren will install Sweden's first organic flow battery in pilot-scale at HSB Living Lab in Gothenburg.

Are vanadium redox flow batteries a viable energy storage option?

With a plethora of available BESS technologies, vanadium redox flow batteries (VRFB) are a promising energy storage candidate. However, the main drawback for VRFB is the low power per area of the cell. In this project we will address the mechanism of VRFB operation at both molecular and device levels.

How is Gothenburg shaping the new battery industry?

In Gothenburg we are shaping the new battery industry. In the coming years Gothenburg and West Sweden will have in place two battery gigafactories, with major investments being made by public and private actors, including Volvo Cars and the Volvo Group. The region is set to become an important hub for both battery development and production.

What are organic flow batteries?

Organic flow batteries, on the other hand, are a new type of battery technology that uses organic molecules – made of carbon, hydrogen, nitrogen and oxygen – as energy carriers instead of critical metals such as lithium or vanadium.

Are flow batteries a viable alternative to lithium-ion batteries?

Flow batteries offer a complementary alternative to traditional lithium-ion batteries, excelling in levelized cost of storage for larger systems with durations above 4 hours. They unlock new potentials for energy storage at a pivotal moment marked by rising electricity demand, expanding renewable energy generation, and uncertain power supplies.

## Vanadium flow battery in Gothenburg Sweden



### Development status, challenges, and perspectives of key ...

Dec 1, 2024 · Abstract All-vanadium redox flow batteries (VRFBs) have experienced rapid development and entered the commercialization stage in recent years due to the ...

## Vanadium redox flow batteries: Flow field design and flow ...

Jan 1, 2022 · The process of flow field design and flow rate optimization is analyzed, and the battery attributes and metrics for evaluating VRFB performance are summarized. The focus of ...



### Start of construction for NOVO Energy -- NOVO

Mar 6, 2024 · NOVO Energy, the joint venture between Northvolt and Volvo Cars, celebrated the start of construction for its highly anticipated battery factory in ...

## Fact Sheet: Vanadium Redox Flow Batteries (October 2012)

Dec 6, 2012 · Unlike other RFBs, vanadium redox flow batteries (VRBs) use only one element (vanadium) in both tanks, exploiting vanadium's ability to exist in several states. By using one ...



## Vanadium flow batteries at variable flow rates

Jan 1, 2022 · Vanadium flow batteries employ all-vanadium electrolytes that are stored in external tanks feeding stack cells through dedicated pumps. These batteries can possess near limitless ...

## A flow-rate-aware data-driven model of vanadium redox ...

**A B S T R A C T** The vanadium redox flow battery (VRB) system involves complex multi-physical and multi-timescale interactions, where the electrolyte flow rate plays a pivotal role in both ...



48V 100Ah

## HEAT DISSIPATION

Cold aisle containment,  
making optimal refrigeration effect;

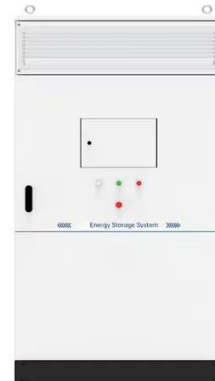


## Rivus Batteries raises half a million Euros to deploy organic batteries

Dec 5, 2023 · Swedish startup Rivus Batteries secures EUR0.5M from xista science ventures, NAVCAP AB, and EIT InnoEnergy to fast-track the deployment of its metal-free battery ...

## Rivus Batteries raises half a million Euros to ...

Dec 5, 2023 · Rivus develops aqueous organic electrolytes for flow batteries. Instead of filling flow batteries with salts of heavy metals, such as vanadium ...



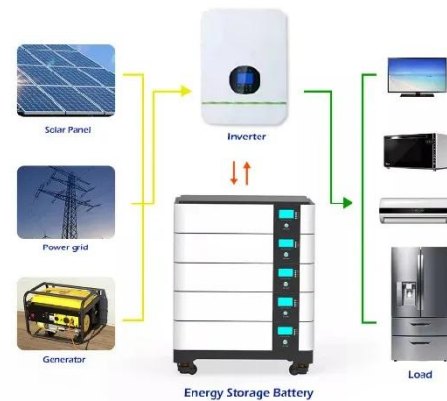
## Vanadium Redox Flow Batteries

Jul 30, 2023 · Introduction Vanadium redox flow battery (VRFB) technology is a leading energy storage option. Although lithium-ion (Li-ion) still leads the industry in deployed capacity, ...

## The Rise of Vanadium Redox Flow Batteries

May 29, 2024 · In recent years, vanadium redox flow batteries (VRFBs)

have emerged as a promising solution for large-scale energy storage, particularly in the renewable energy sector. ...



## Long term performance evaluation of a commercial vanadium flow battery

Jun 15, 2024 · This demonstrates the advantage that the flow batteries employing vanadium chemistry have a very long cycle life. Furthermore, electrochemical impedance spectroscopy ...

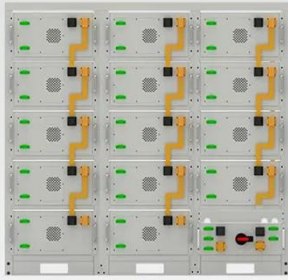
## Environmental assessment of vanadium redox and lead-acid batteries ...

Jul 1, 1999 · The environmental impact of both the vanadium redox battery (vanadium battery) and the lead-acid battery for use in stationary applications has been evaluated using a life ...



## Energy newspaper visits



**Battery String-S224**

- 1C Charge/Discharge
- Easy configuration and maintenance
- Power supply can be single battery string or parallel battery strings

## Rivus' battery lab

Dec 16, 2024 · Today's flow batteries rely on vanadium, a costly, environmentally damaging heavy metal sourced, primarily from China, Russia, and South Africa. At Rivus, we take a ...

## Sweden Vanadium Battery Market Future in Sweden: Insights ...

Jul 13, 2025 · Key Insight: Sweden is poised to add 5-7 GWh of long-duration storage by 2030, with vanadium flow batteries expected to grow at 20% CAGR in industrial and rural applications.



## Testing begins on 20 MWh, 'Europe's largest' ...

Jul 1, 2025 · The Fraunhofer Institute for Chemical Technology (ICT) says it has put Europe's largest vanadium redox flow battery into operation. The battery ...

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