

# Tokyo Vanadium Battery Energy Storage





## Overview

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What is a vanadium flow battery?

Designed for a 20-year lifecycle, Sumitomo Electric Industries, Ltd.'s Vanadium Flow Battery System brings high energy efficiency to large-scale energy storage systems. The vanadium flow battery (redox flow battery), can absorb and stabilize the fluctuations of outputs predicated by renewable energy sources.

What is a vanadium redox flow battery?

Vanadium Redox Flow Batteries (VRFBs) have emerged as a promising long-duration energy storage solution, offering exceptional recyclability and serving as an environmentally friendly battery alternative in the clean energy transition. VRFBs stand out in the energy storage sector due to their unique design and use of vanadium electrolyte.

Are vanadium flow batteries flammable?

Perhaps its most notable point is that it is incombustible, which translates to no fire hazard. With vanadium flow battery, the charge/discharge cycle is unlimited (>100,000 cycles). Also the electrolyte is reusable after decommissioning. The electrolyte used in the battery is non-flammable as it is made of flame retardant materials.

Where is Sumitomo Electric launching a long-duration energy storage project?

In December, the company announced the start of commercial operations at a 1MW long-duration energy storage (LDES) project in Niigata prefecture, further north of the coast of the Sea of Japan. At the time of the announcement, Sumitomo Electric said it had reached a total installed capacity of 50MW/176MWh of VRFBs across Japan.



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**VRFBs: A Sustainable Solution for Long-Duration Energy Storage**

Jul 31, 2025 · Vanadium Redox Flow Batteries (VRFBs) have emerged as a promising long-duration energy storage solution, offering exceptional recyclability and serving as an ...

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**Japan Handles Fluctuations in Renewables With Flow Batteries**

Dec 30, 2024 · The energy industry needs efficient, long-duration, and scalable solutions to maintain grid stability and support the adoption of renewables. Japan has developed a new ...

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**Sumitomo Electric launches vanadium redox flow battery ...**

Mar 3, 2025 · Japanese manufacturer Sumitomo Electric has released a new vanadium redox flow battery (VRFB) suitable for a variety of long-duration configurations. Unveiled at Energy ...

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**The rise of vanadium redox flow batteries: A game-changer in energy storage**

Aug 20, 2025 · This article explores the role of vanadium redox flow batteries (VRFBs) in energy storage technology. The increasing demand for electricity necessitat...

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**Why Japan and China Are Betting Big on Vanadium Energy Storage**

Well, imagine grid-scale energy storage that lasts 20+ years without capacity loss. That's exactly why Japan and China are pouring billions into vanadium redox flow batteries (VRFBs). In 2025 ...

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**VRFBs: A Sustainable Solution for Long ...**

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**Energy efficiency: Vanadium Flow Battery System , United ...**

The vanadium flow battery (redox flow battery), can absorb and stabilize the fluctuations of outputs predicated by renewable energy sources. Essentially, it's a large scale energy storage ...

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**Sumitomo Electric deploys first vanadium flow battery ...**

Mar 31, 2025 · Sumitomo Electric has followed up the US launch of its newest vanadium redox flow battery (VRFB) technology, announcing a deal in Japan.

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**Japan s vanadium battery energy storage development**

The use of vanadium in the battery energy storage sector is expected to experience disruptive growth this decade on the back of unprecedented vanadium redox flow battery (VRFB) ...

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**Sumitomo Electric Completes its First Vanadium Redox Flow Battery ...**

May 30, 2025 · Sumitomo Electric Industries, Ltd., has announced that its vanadium redox flow battery, together with its energy management system SEMSA, has been adopted as the ...

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i-Battery CEO Feng Yong: bullish on vanadium batteries' ...

Feb 8, 2024 · For residential energy storage, the company targets specific market segments with unique application needs. i-Battery is dedicated to the R& D, production, sales, and system ...

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