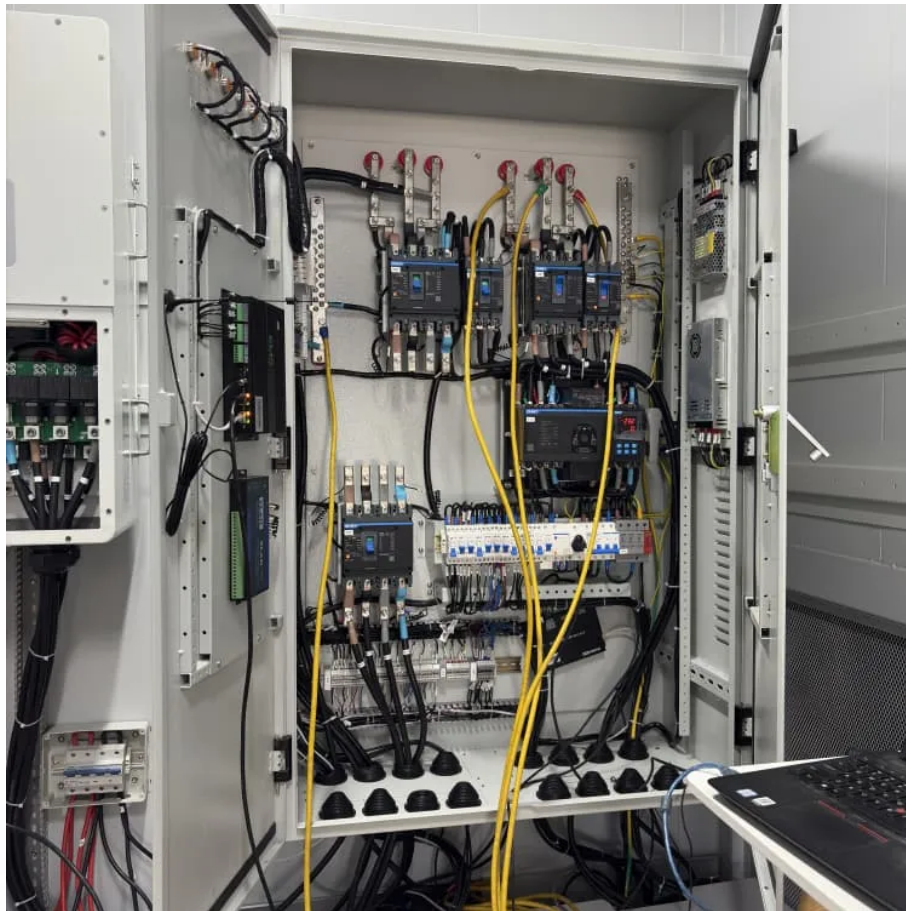


# Iron Fall Flow Battery





## Overview

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What is an iron flow battery?

In the 1970s, scientists at the National Aeronautics and Space Administration (NASA) developed the first iron flow batteries using an iron/chromium system for photovoltaic applications. Over the next decade, these unique systems, which combine charged iron with an aqueous liquid energy carrier, were improved upon for large-scale energy storage.

Are iron-based aqueous redox flow batteries the future of energy storage?

The rapid advancement of flow batteries offers a promising pathway to addressing global energy and environmental challenges. Among them, iron-based aqueous redox flow batteries (ARFBs) are a compelling choice for future energy storage systems due to their excellent safety, cost-effectiveness and scalability.

Can iron-based aqueous flow batteries be used for grid energy storage?

A new iron-based aqueous flow battery shows promise for grid energy storage applications. A commonplace chemical used in water treatment facilities has been repurposed for large-scale energy storage in a new battery design by researchers at the Department of Energy's Pacific Northwest National Laboratory.

Are iron flow batteries a good choice?

"The new iron flow battery is a good candidate for longer duration batteries, with discharge over 10-20 hours," he said. "And we have improved on this old design because of a fundamental understanding of both the battery and the material design. By engaging in a deep dive into the materials, we discovered things we didn't know before."



## Iron Fall Flow Battery

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[Aqueous iron-based redox flow batteries for large-scale ...](#)

**ABSTRACT** The rapid advancement of flow batteries offers a promising pathway to addressing global energy and environmental challenges. Among them, iron-based aqueous ...

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Iron-flow batteries address these challenges by combining the inherent advantages of redox flow technology with the cost-efficiency of iron. Unlike solid-state batteries, flow batteries separate energy storage from power ...

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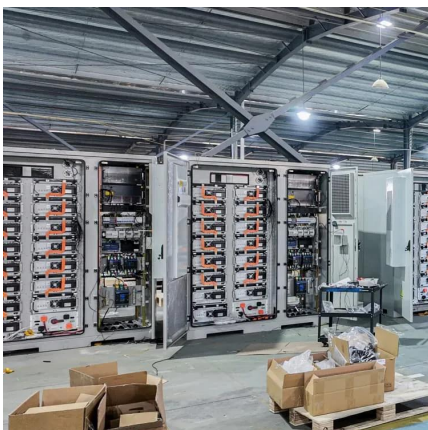
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**A B S T R A C T** Iron redox flow batteries (IRFBs) are promising candidates for large-scale energy storage systems due to their cost-effectiveness, environmental friendliness, ...

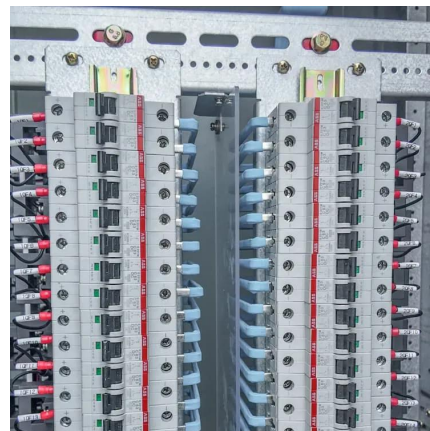
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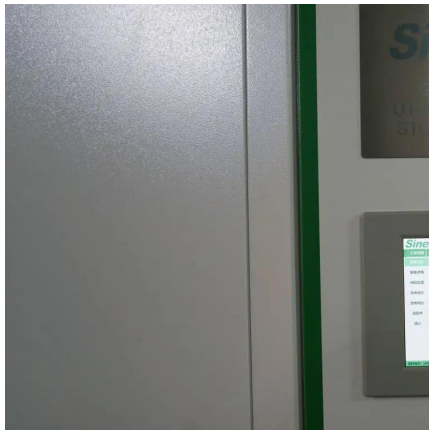
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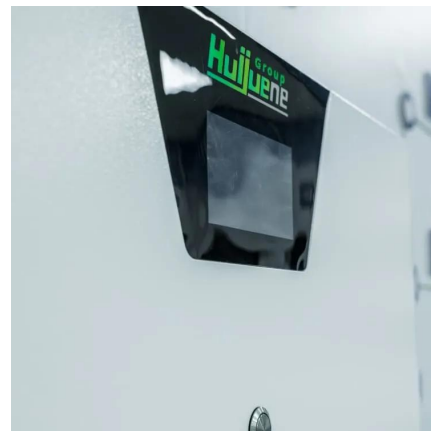
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