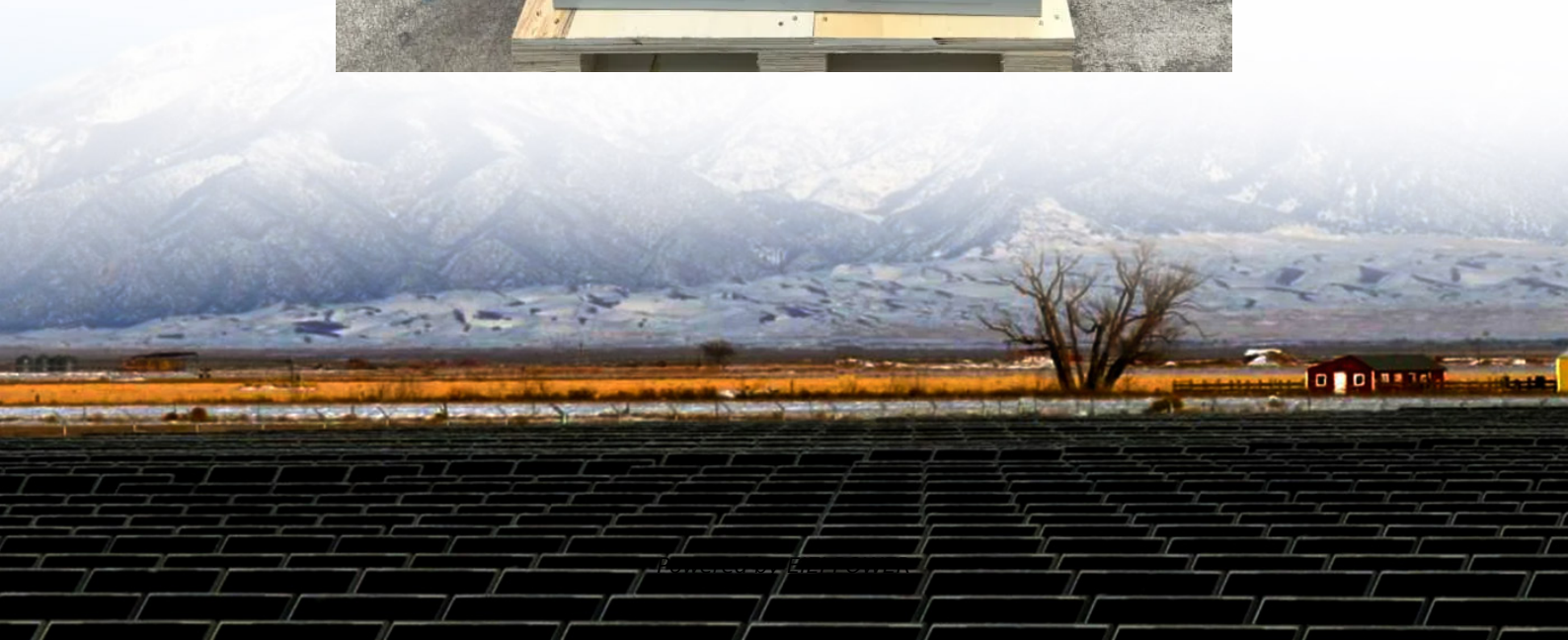


Riyadh All-vanadium Liquid Flow Battery Pump





Overview

Located in Wa'ad Al-Shamal, in western Saudi Arabia, the 1-MW/hour flow battery system is based on Aramco's patented technology and was developed in collaboration with Rongke Power (RKP), a global leader in flow batteries. What is a vanadium flow battery?

Open access Abstract Vanadium Flow Batteries (VFBs) are a stationary energy storage technology, that can play a pivotal role in the integration of renewable sources into the electrical grid, thanks to unique advantages like power and energy independent sizing, no risk of explosion or fire and extremely long operating life.

Where is Aramco Fe/V flow battery located?

This Fe/V flow battery is located in Wa'ad Al-Shamal, in western Saudi Arabia. It can deliver a MW/hour and support up to five wells across its projected 25 year lifespan. Aramco says that the system "offers a robust alternative to existing solar energy solutions and can handle variable power demands efficiently and cost-effectively."

What makes Aramco's flow battery unique?

The flow battery has been specifically engineered to withstand the hot climate of Saudi Arabia and achieve optimal performance under extreme weather conditions. Aramco says that this battery aligns with its focus on renewable investments and energy efficiency.

How do flow batteries work?

Flow batteries store energy in liquid electrolytes held in external tanks. Electrolytes pumped into a battery cell convert chemical energy into electricity. These batteries can be repeatedly recharged and discharged with minimal capacity loss and reduce fire risks compared to other types of batteries.



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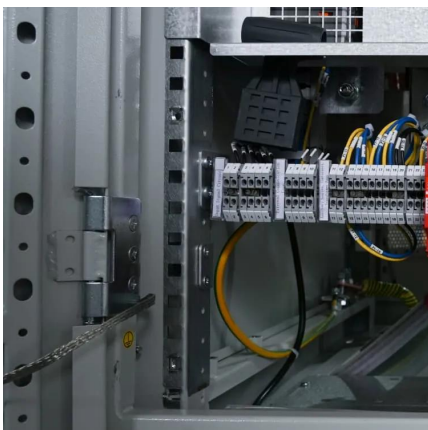
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Therefore, this paper starts from two aspects of vanadium electrolyte component optimization and electrode multi-scale structure design, and strives to achieve high efficiency and high stability ...



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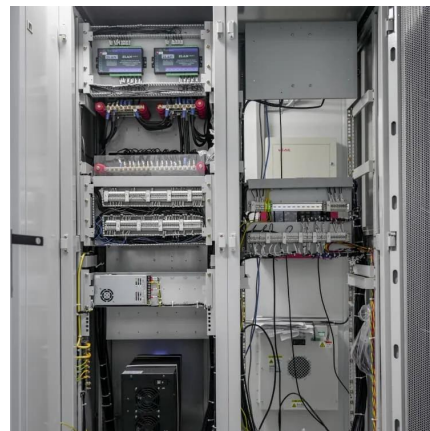


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