

SolarGrid Energy Solutions

Riyadh Flow Battery



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. 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 is Aramco's flow battery system?

The flow battery system is based on Aramco's patented technology and developed in collaboration with Rongke Power. Ali A. Al-Meshari, Senior Vice President of Technology Oversight and Coordination at Aramco, says: "The pioneering flow battery system spearheaded by Aramco's researchers represents a breakthrough for the oil and gas industry."

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.

Can Aramco power remote gas wells with a lead-acid battery system?

"Aramco already powers a large number of remote gas wells with solar panels connected to lead-acid battery systems, but our ground-breaking flow battery technology offers a flexible solution for diverse renewable energy storage requirements, making it an attractive option for a variety of industrial applications."

Riyadh Flow Battery



New Battery Chemistries

New Battery Chemistries Saudi Arabia has ambitious plans for the generation of electricity from solar and wind (~58GW by 2030) and for a robust electric ...

Aramco Becomes First in the World to Operate Advanced ...

The 1-megawatt-hour flow battery system in Wa'ad Al Shamal in northwest Saudi Arabia is based on patented technology developed by Aramco and implemented in collaboration with Rongke ...



Aramco: World First MW-Scale Flow Battery for Solar Storage

May 27, 2025 · Aramco has successfully commissioned the world's first megawatt-scale Iron-Vanadium (Fe/V) flow battery. This battery is set to store solar energy to provide a backup ...

ACWA Power and Saudi Aramco ink

deals to ...

Feb 6, 2025 · RIYADH: Saudi utility giant ACWA Power has signed two agreements with Aramco to accelerate the deployment of renewable energy ...



Aramco Launches First Renewable Energy Storage for Gas

May 23, 2025 · Aramco, one of the world's leading integrated energy and chemicals companies, has achieved a world-first by successfully commissioning a megawatt (MW)-scale renewable ...

Saudi Arabia announces prequalified bidders for ...

Jan 2, 2025 · The Saudi Power Procurement Company has announced its list of 33 prequalified bidders for its massive 2 GW/ 8 GWh BESS tender.



Aramco Launches World's First Iron-Vanadium Flow Battery ...

May 26, 2025 · The newly deployed Iron-Vanadium (Fe/V) flow battery is the first of its kind to be used as a solar backup

power source for gas well operations worldwide. The 1-MW/hour flow ...



Saudi Arabia Flow Battery Market (2025-2031) Outlook

6Wresearch actively monitors the Saudi Arabia Flow Battery Market and publishes its comprehensive annual report, highlighting emerging trends, growth drivers, revenue analysis, ...



Saudi Arabia announces Qualified Bidders for ...

Dec 31, 2024 · Saudi Power Procurement Company (SPPC) announces the list of Qualified Bidders for Group 1 Battery Energy Storage Systems (BESS) having ...

World's Largest BESS Project in Saudi Arabia ...

Jan 4, 2025 · The implementation of the world's largest battery energy system (BESS) project progresses as Saudi Arabia begins qualification tenders. A ...



Rongke Power delivers world's first commercially used FeV flow battery

Rongke Power (RKP), a global leader in vanadium flow battery (VFB) energy storage solutions, is pleased to announce the commissioning of a 1 megawatt-hour Iron-Vanadium (Fe/V) redox ...



Saudi Arabia Battery Industry Research 2024-2029: Market

Sep 18, 2024 · As Saudi Arabia continues to expand its renewable energy capacity, the need for efficient and reliable storage solutions will grow, propelling the Saudi Arabia Battery Market ...



ACWA Power Signs Key Agreements with ...

Feb 11, 2025 · ACWA Power signs agreements with Aramco to advance

renewable energy. Learn about the projects and assessment of vanadium flow ...



ACWA Power and Saudi Aramco Ink Agreements to Advance ...

Aug 1, 2025 · The purpose of the second agreement is to assess the vanadium flow battery technology's longevity and efficiency in the environment of Saudi Arabia. This project will ...



SABIC to build one of the world's biggest mega ...

May 6, 2020 · Saudi Arabia is aiming to install 57.5 GW of renewable capacity by 2030, spurring demand for new battery storage capacity in the Kingdom.



Tdafoq and Delectrik to commercialise vanadium ...

Nov 3, 2022 · Riyadh-based Tdafoq Energy will distribute Indian firm Delectrik Systems' vanadium redox flow battery products in Gulf Cooperation

Council ...



Aramco commissions flow battery , Page 1

May 23, 2025 · Aramco (Dhahran, Saudi Arabia) has achieved a world-first by successfully commissioning a megawatt (MW)-scale renewable energy ...

Saudi Arabia Battery Market By Size, Share and Forecast ...

Saudi Arabia Battery Market By Technology (Lithium-Ion Batteries, Lead-Acid Batteries, Flow Batteries, Sodium-Based Batteries), By Life Span (1-5 years, 5-15 Years, 15-20 Years, More ...



Flow battery energy systems for stationary applications

IEC 62932-1:2020 relates to flow battery energy systems (FBES) used in electrical energy storage (EES) applications and provides the main terminology and

general aspects of this technology, ...



Aramco becomes world-first to deploy flow battery

May 22, 2025 · It is the first deployment globally of an Iron-Vanadium (Fe/V) flow battery as a backup solar power source for gas well operations. Located in Wa'ad Al-Shamal, in western ...



JV plans to set-up a Gigawatt scale

...

Jan 18, 2021 · The facility will have an annual production capacity of 3 GWh and will be among the biggest Flow Batteries production facilities worldwide.

...

Tdafoq Energy, Delectrik Systems Partner for ...

Nov 3, 2022 · Tdafoq Energy of Riyadh, Saudi Arabia has entered into a distribution and manufacturing license with India-based Delectrik Systems. ...



Aramco's World First in Sustainable Energy Storage

May 27, 2025 · Aramco's MW-scale Iron-Vanadium flow battery is storing renewable solar energy to power gas operations in Saudi Arabia's extreme ...

Saudi Aramco Achieves World-First with Flow ...

Dhahran, May 22 (Saudi Arabia Breaking News) -- Saudi Aramco has achieved a global first by successfully operating a megawatt-scale renewable energy ...



Aramco Becomes 1st in the World to Operate Advanced ...

May 22, 2025 · Saudi Aramco has achieved a world-first milestone by successfully operating a megawatt-scale renewable energy storage system to

support gas production operations. This ...



Rongke Power to supply 1MWh flow battery to ...

May 27, 2025 · Rongke Power has collaborated with Aramco to deliver an iron-vanadium (Fe/V) flow battery that can deliver back-up power at gas-well ...



A 3 GWh redox flow battery factory in Saudi Arabia

May 11, 2020 · German production equipment provider Schmid and Saudi chemical group Sabic are planning to begin activities at a new factory in Saudi ...

Aramco's Renewable Energy Breakthrough: Flow ...

May 26, 2025 · Aramco has achieved a global milestone by commissioning a megawatt-scale renewable energy storage system, using an Iron-Vanadium

...



Aramco Deploys First-Ever Iron-Vanadium Flow ...

May 25, 2025 · Aramco, one of the world's leading integrated energy and chemicals companies, launched the first megawatt (MW)-scale renewable ...

Flow Narjis , Explore Our Community & Available ...

Where modern luxury meets community living in Riyadh. Flow Narjis offers fully furnished 2- to 3-bedroom apartments in one of Riyadh's most desirable ...



Aramco Commissions World's First Renewable Storage

May 23, 2025 · Installed in Wa'ad Al-Shamal, a remote region in western Saudi Arabia, the 1-MWh flow battery system utilizes patented technology co-



developed with Rongke Power ...

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<https://www.wf-budownictwo.pl>