

Redox Flow Battery Market Poised to Reach New Heights with Grid-Scale Applications

Growing renewable energy adoption, rising demand for energy storage, long lifespan, and grid-scale applications drive the redox flow battery market growth

WILMINGTON, DE, UNITED STATES, March 6, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research titled, "[Redox Flow Battery Market](#) by Type and Application: Global Opportunity Analysis and Industry Forecast, 2019–2026," The global redox flow battery market size was valued at \$130.4 million in 2018, and is projected to reach \$403.0 million by 2026, growing at a CAGR of 15.2% from 2019 to 2026.

Vanadium redox flow battery is the only developed version of redox flow battery available in the market. Manufacturers are still working on the development of other redox flow batteries; therefore, the market for this battery type is still in its developing phase. Some of the factors that significantly contribute toward the growth of redox flow battery market are low cost associated with this battery type, increase in demand from the utility sector, and rise in adoption of UPS systems. Furthermore, these battery types are effectively used in renewable energy storage, which is expected to offer remunerative opportunities for market expansion during the forecast period.

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Clean and sustainable energy supplied from renewable sources may lead to the requirement of efficient, reliable, and cost-effective energy storage systems in the future. Therefore, after lead-acid batteries, redox flow battery is among those few battery types that store renewable and clean energy, and can be 100% recycled without affecting environmental conditions. In addition, electrochemical energy storage using rechargeable batteries based on redox chemistry can provide a comprehensive solution to the energy storage issues in the renewable energy sector through storing energy in recirculating electrolytes. This is attributed to the fact that redox flow batteries have merits of decoupled energy density along with power generation capability. As a result, along with lead-acid batteries, the demand for redox flow batteries is expected to increase—being a cost-competitive energy storage device. Some of the other factors such as flexibility in system design and competence in scaling costs are expected to favor their adoption in the renewable energy sector, thereby contributing to the global redox flow battery market growth.

On the basis of type, vanadium redox flow battery type dominated the market in 2018, and is anticipated to be the largest battery type by the end of the forecast period. This is attributed to the fact that the vanadium battery is the only developed version of the redox battery type currently, and is used in large-scale energy storage applications. As a result, increase in energy storage needs is fueling the demand for vanadium redox flow batteries across the globe.

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Key Drivers

- Rising Renewable Energy Adoption: Growing integration of solar and wind power systems.
- Grid Modernization Initiatives: Government policies supporting energy storage solutions.
- Longer Lifespan & Scalability: Advantageous over lithium-ion batteries for large-scale applications.
- Decarbonization Goals: Global push for low-carbon energy solutions.

By application, the utility facilities segment acquired the largest redox flow battery market share in 2018, as a result of the highest number of operational flow battery projects. However, the renewable energy integration segment is anticipated to exhibit the highest CAGR during the forecast period on account of increasing mandatory renewable energy targets as a part of the legislative approach and resulting surge in production activities.

Some of the major market players studied and profiled in the global redox flow battery market are Sumitomo Electric Industries, Ltd., Dalian Rongke Power, UniEnergy Technologies., CELLCUBE, Avalon Battery Corporation, HydraRedox, Big power Electrical Technology Xiangyang Inc. Co., Ltd, Pinflow Energy Storage, s.r.o., VRB ENERGY, and Vionx Energy.

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KEY FINDINGS OF THE STUDY

- By type, the vanadium redox flow batteries emerged as a global leader by acquiring around 80% market share in 2018, and is anticipated to dominate the redox flow battery market during the forecast period.
- On the basis of application, the utility services segment generated the highest revenue in 2018.
- Asia-Pacific is the largest regional market for redox flow batteries, and is expected to continue this trend during the forecast period.

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