

Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market 2019 by Manufacturers, Regions, Type and Application, Forecast to 2024

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Abstracts

The vanadium redox battery (VRB) (or Vanadium flow battery) is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store chemical potential energy. The vanadium redox battery exploits the ability of vanadium to exist in solution in four different oxidation states, and uses this property to make a battery that has just one electro active element instead of two. For several reasons, including their relatively bulky size, most vanadium batteries are currently used for grid energy storage, such as being attached to power plants or electrical grids.

Unlike other RFBs, vanadium redox flow batteries (VRBs) use only one element (vanadium) in both tanks, exploiting vanadium's ability to exist in several states. By using one element in both tanks, VRBs can overcome cross-contamination degradation, a significant issue with other RFB chemistries that use more than one element. The energy density of VRBs depends on the concentration of vanadium: the higher the concentration, the higher the energy density.

SCOPE OF THE REPORT:

The global average price of Vanadium Redox Battery (VRB) is in the decreasing trend, from 4505 USD/KW in 2012 to 1916 USD/KW in 2016. With the situation of global economy, prices will be in decreasing trend in the following five years.

The classification of Vanadium Redox Battery (VRB) includes Carbon Paper Electrode and Graphite Felt Electrode, and the proportion of Graphite Felt Electrode in 2016 is about 55%, and the proportion is in increasing trend from 2012 to 2016.

Vanadium Redox Battery (VRB) is widely used for Large-Scale Energy Storage, Uninterruptible Power Supply and other field. The most proportion of Vanadium Redox Battery (VRB) is Large-Scale Energy Storage, and the proportion in 2016 is 52%.

The worldwide market for Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) is expected to grow at a CAGR of roughly 43.7% over the next five years, will reach 2800 million US\$ in 2024, from 320 million US\$ in 2019, according to a new GIR (Global Info Research) study.

This report focuses on the Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) in global market, especially in North America, Europe and Asia-Pacific, South America, Middle East and Africa. This report categorizes the market based on manufacturers, regions, type and application.

Market Segment by Manufacturers, this report covers

Sumitomo Electric Industries

Rongke Power

UniEnergy Technologies

redT Energy

Vionx Energy

Big Power

Australian Vanadium

Golden Energy Fuel Cell

H2, Inc.

Market Segment by Regions, regional analysis covers

North America (United States, Canada and Mexico)

Europe (Germany, France, UK, Russia and Italy)

Asia-Pacific (China, Japan, Korea, India and Southeast Asia)

South America (Brazil, Argentina, Colombia etc.)

Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria and South Africa)

Market Segment by Type, covers

Carbon Paper Electrode

Graphite Felt Electrode

Market Segment by Applications, can be divided into

Large-Scale Energy Storage

Uninterruptible Power Supply

Others

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) product scope, market overview, market opportunities, market driving force and market risks.

Chapter 2, to profile the top manufacturers of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries), with price, sales, revenue and global market share of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) in 2017 and 2018.

Chapter 3, the Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) competitive situation, sales, revenue and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) breakdown data are shown at the regional level, to show the sales, revenue and growth

by regions, from 2014 to 2019.

Chapter 5, 6, 7, 8 and 9, to break the sales data at the country level, with sales, revenue and market share for key countries in the world, from 2014 to 2019.

Chapter 10 and 11, to segment the sales by type and application, with sales market share and growth rate by type, application, from 2014 to 2019.

Chapter 12, Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) market forecast, by regions, type and application, with sales and revenue, from 2019 to 2024.

Chapter 13, 14 and 15, to describe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) sales channel, distributors, customers, research findings and conclusion, appendix and data source.

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