

# 2018 Top 5 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Players in North America, Europe, Asia-Pacific, South America, Middle East and Africa

<https://marketpublishers.com/r/21DFDFC6440EN.html>

Date: July 2018

Pages: 127

Price: US\$ 4,960.00 (Single User License)

ID: 21DFDFC6440EN

## Abstracts

The report requires updating with new data and is sent in 48 hours after order is placed.

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.

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%.

Over the next five years, LPI(LP Information) projects that Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) will register a 43.7% CAGR in terms of revenue, reach US\$ 2800 million by 2023, from US\$ 320 million in 2017.

This report studies the global market, especially in North America, Europe, Asia-Pacific, South America, Middle East and Africa, focuses on the top 5 players in each region, with sales, price, revenue and market share from 2013 to 2018, the top players:

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, this report splits Global into several key Regions, with sales, revenue, market share of top players in these regions, from 2013 to 2018 (forecast), like

North America (United States, Canada and Mexico)

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

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

South America (Brazil, Chile, Peru and Argentina)

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

Split by Product Types, with sales, revenue, price, market share of each type, can be divided into

Carbon Paper Electrode

Graphite Felt Electrode

Split by applications, this report focuses on sales, market share and growth rate in each application, can be divided into

Large-Scale Energy Storage

Uninterruptible Power Supply

Others

## Contents

### **1 VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) MARKET OVERVIEW**

1.1 Product Overview and Scope of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

1.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Segment by Types

1.2.1 Global Sales Market Share of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) by Types in 2017

1.2.2 Carbon Paper Electrode

1.2.2.1 Major Players of Type I

1.2.3 Graphite Felt Electrode

1.2.3.1 Major Players of Graphite Felt Electrode

1.3 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Segment by Applications

1.3.1 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Applications in 2017

1.3.2 Large-Scale Energy Storage

1.3.3 Uninterruptible Power Supply

1.3.4 Others

1.4 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market by Regions

1.4.1 North America Status and Prospect (2013-2023)

1.4.1.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

1.4.2 Asia-Pacific Status and Prospect (2013-2023)

1.4.2.1 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

1.4.3 Europe Status and Prospect (2013-2023)

1.4.3.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

1.4.4 South America Status and Prospect (2013-2023)

1.4.4.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

1.4.5 Middle East and Africa Status and Prospect (2013-2023)

1.4.5.1 Middle East and Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

1.5 Global Market Size (Value) of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) (2013-2023)

## **2 GLOBAL VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE (VALUE) AND MARKET SHARE BY PLAYERS**

2.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Players in 2016 and 2017

2.1.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Players in 2016 and 2017

2.1.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) by Players in 2016 and 2017

2.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Players in 2016 and 2017

2.2.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Players in 2016 and 2017

2.2.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share (%) by Players in 2016 and 2017

2.3 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Average Price by Players in 2016 and 2017

2.4 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Manufacturing Base Distribution, Sales Area, Product Types by Players

2.4.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Manufacturing Base Distribution and Sales Area by Players

2.4.2 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types

2.5 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Competitive Situation and Trends

2.5.1 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Concentration Rate

2.5.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share of Top 3 and Top 5 Players

2.5.3 Mergers & Acquisitions, Expansion

## **3 GLOBAL VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE (VALUE) BY REGIONS, TYPE AND APPLICATION (2013-2018)**

3.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales,

Revenue and Market Share by Regions (2013-2018)

3.1.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales and Market Share by Regions (2013-2018)

3.1.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue and Market Share by Regions (2013-2018)

3.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

3.2.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales and Market Share by Type (2013-2018)

3.2.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue and Market Share by Type (2013-2018)

3.2.3 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Price by Type (2013-2018)

3.3 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

3.3.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales by Application (2013-2018)

3.3.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Application (2013-2018)

3.4 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

#### **4 NORTH AMERICA TOP 5 PLAYERS VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE AND PRICE**

4.1 North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue and Market Share in 2016 and 2017

4.1.1 North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share in 2016 and 2017

4.1.2 North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share in 2016 and 2017

4.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

4.2.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Type (2013-2018)

4.2.1.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

4.2.1.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

4.2.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Type (2013-2018)

4.2.2.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

4.2.2.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

4.2.3 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

4.3 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

4.3.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

4.3.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

4.4 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Country (US, Canada and Mexico) (2013-2018)

4.4.1 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

4.4.2 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

4.5 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

## **5 EUROPE TOP 5 PLAYERS VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE AND PRICE**

5.1 Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue and Market Share in 2016 and 2017

5.1.1 Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share in 2016 and 2017

5.1.2 Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share in 2016 and 2017

5.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

5.2.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Type (2013-2018)

5.2.1.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

5.2.1.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Type (2013-2018)

5.2.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue and Market Share by Type (2013-2018)

5.2.2.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue by Type (2013-2018)

5.2.2.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue Market Share by Type (2013-2018)

5.2.3 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Price by Type (2013-2018)

5.3 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

5.3.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales by Application (2013-2018)

5.3.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Application (2013-2018)

5.4 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Country (Germany, UK, France, Italy and Russia) (2013-2018)

5.4.1 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales by Country (2013-2018)

5.4.2 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Country (2013-2018)

5.5 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Import & Export (2013-2018)

## **6 ASIA-PACIFIC TOP 5 PLAYERS VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE AND PRICE**

6.1 Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue and Market Share in 2016 and 2017

6.1.1 Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share in 2016 and 2017

6.1.2 Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share in 2016 and 2017

6.2 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

6.2.1 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Type (2013-2018)

6.2.1.1 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)



6.2.1.2 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

6.2.2 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Type (2013-2018)

6.2.3 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

6.3 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

6.3.1 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

6.3.2 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

6.4 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Country (China, Japan, Southeast Asia, India, Korea and Australia) (2013-2018)

6.4.1 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

6.4.2 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

6.5 Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

## **7 SOUTH AMERICA TOP 5 PLAYERS VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE AND PRICE**

7.1 South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue and Market Share in 2016 and 2017

7.1.1 South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share in 2016 and 2017

7.1.2 South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share in 2016 and 2017

7.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

7.2.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Type (2013-2018)

7.2.1.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

7.2.1.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

7.2.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Type (2013-2018)

7.2.2.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

7.2.2.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Type (2013-2018)

7.2.3 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

7.3 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

7.3.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

7.3.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

7.4 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Country (Brazil, Argentina, Chile and Peru) (2013-2018)

7.4.1 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

7.4.2 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

7.5 South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

## **8 MIDDLE EAST & AFRICA TOP 5 PLAYERS VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) SALES, REVENUE AND PRICE**

8.1 Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue and Market Share in 2016 and 2017

8.1.1 Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share in 2016 and 2017

8.1.2 Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share in 2016 and 2017

8.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Market Share and Price by Type (2013-2018)

8.2.1 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Type (2013-2018)

8.2.1.1 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

8.2.1.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

8.2.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Market Share by Type (2013-2018)

8.2.2.1 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

8.2.2.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

8.2.3 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

8.3 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Application (2013-2018)

8.3.1 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

8.3.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

8.4 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share by Country (Egypt, Saudi Arabia, South Africa and Iran) (2013-2018)

8.4.1 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

8.4.2 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

8.5 Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

## **9 GLOBAL VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) PLAYERS PROFILES/ANALYSIS**

9.1 Sumitomo Electric Industries

9.1.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors

9.1.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.1.2.1 Product A

9.1.2.2 Product B

9.1.3 Sumitomo Electric Industries Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.1.4 Main Business/Business Overview

- 9.1.5 Sumitomo Electric Industries News
- 9.2 Rongke Power
  - 9.2.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors
  - 9.2.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification
    - 9.2.2.1 Product A
    - 9.2.2.2 Product B
  - 9.2.3 Rongke Power Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)
  - 9.2.4 Main Business/Business Overview
  - 9.2.5 Rongke Power News
- 9.3 UniEnergy Technologies
  - 9.3.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors
  - 9.3.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification
    - 9.3.2.1 Product A
    - 9.3.2.2 Product B
  - 9.3.3 UniEnergy Technologies Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)
  - 9.3.4 Main Business/Business Overview
  - 9.3.5 UniEnergy Technologies News
- 9.4 redT Energy
  - 9.4.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors
  - 9.4.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification
    - 9.4.2.1 Product A
    - 9.4.2.2 Product B
  - 9.4.3 redT Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)
  - 9.4.4 Main Business/Business Overview
  - 9.4.5 redT Energy News
- 9.5 Vionx Energy
  - 9.5.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors
  - 9.5.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.5.2.1 Product A

9.5.2.2 Product B

9.5.3 Vionx Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.5.4 Main Business/Business Overview

9.5.5 Vionx Energy News

9.6 Big Power

9.6.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors

9.6.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.6.2.1 Product A

9.6.2.2 Product B

9.6.3 Big Power Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.6.4 Main Business/Business Overview

9.6.5 Big Power News

9.7 Australian Vanadium

9.7.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors

9.7.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.7.2.1 Product A

9.7.2.2 Product B

9.7.3 Australian Vanadium Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.7.4 Main Business/Business Overview

9.7.5 Australian Vanadium News

9.8 Golden Energy Fuel Cell

9.8.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors

9.8.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.8.2.1 Product A

9.8.2.2 Product B

9.8.3 Golden Energy Fuel Cell Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.8.4 Main Business/Business Overview

9.8.5 Golden Energy Fuel Cell News

## 9.9 H2, Inc.

9.9.1 Company Basic Information, Manufacturing Base, Sales Area and Its Competitors

9.9.2 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Product Types, Application and Specification

9.9.2.1 Product A

9.9.2.2 Product B

9.9.3 H2, Inc. Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

9.9.4 Main Business/Business Overview

9.9.5 H2, Inc. News

## **10 GLOBAL VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW BATTERIES) MARKET FORECAST (2018-2023)**

10.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue Forecast (2018-2023)

10.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Consumption Forecast by Regions (2018-2023)

10.2.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Regions (2018-2023)

10.2.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share Forecast by Regions (2018-2023)

10.3 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share Forecast by Type (2018-2023)

10.3.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Type (2018-2023)

10.3.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share Forecast by Type (2018-2023)

10.4 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Market Share Forecast by Application (2018-2023)

10.4.1 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Application (2018-2023)

10.4.2 Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share Forecast by Application (2018-2023)

10.5 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price Forecast (2018-2023)

## **11 VANADIUM REDOX BATTERY (VRB) (ALL-VANADIUM REDOX FLOW**

## **BATTERIES) MANUFACTURING COST ANALYSIS**

### 11.1 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Key Raw Materials Analysis

- 11.1.1 Key Raw Materials
- 11.1.2 Price Trend of Key Raw Materials
- 11.1.3 Key Suppliers of Raw Materials
- 11.1.4 Market Concentration Rate of Raw Materials

### 11.2 Proportion of Manufacturing Cost Structure

- 11.2.1 Raw Materials
- 11.2.2 Labor Cost
- 11.2.3 Manufacturing Expenses

### 11.3 Manufacturing Process Analysis of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

## **12 INDUSTRIAL CHAIN, SOURCING STRATEGY AND DOWNSTREAM BUYERS**

### 12.1 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Industrial Chain Analysis

- 12.2 Upstream Raw Materials Sourcing
- 12.3 Raw Materials Sources of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Major Players in 2017
- 12.4 Downstream Buyers

## **13 MARKETING STRATEGY ANALYSIS, DISTRIBUTORS/TRADERS**

### 13.1 Marketing Channel

- 13.1.1 Direct Marketing
- 13.1.2 Indirect Marketing
- 13.1.3 Marketing Channel Development Trend

### 13.2 Market Positioning

- 13.2.1 Pricing Strategy
- 13.2.2 Brand Strategy
- 13.2.3 Target Client

### 13.3 Distributors/Traders List

## **14 MARKET EFFECT FACTORS ANALYSIS**

### 14.1 Technology Progress/Risk

- 14.1.1 Substitutes Threat
- 14.1.2 Technology Progress in Related Industry
- 14.2 Consumer Needs/Customer Preference Change
- 14.3 Economic/Political Environmental Change

## **15 RESEARCH FINDINGS AND CONCLUSION**

## **16 APPENDIX**

- 16.1 Methodology
- 16.2 Data Source



## List Of Tables

### LIST OF TABLES AND FIGURES

Figure Picture of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Table Product Specifications of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Figure Global Sales Market Share of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) by Types in 2017

Figure Product Picture of Carbon Paper Electrode

Table Major Players of Carbon Paper Electrode

Figure Product Picture of Graphite Felt Electrode

Table Major Players of Graphite Felt Electrode

Figure Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Applications in 2017

Table Applications of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Figure Uninterruptible Power Supply Examples

Figure Others Examples

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Figure Middle East and Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue (Million USD) and Growth Rate (2013-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Players in 2016 and 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) by Players in 2016 and 2017

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Players in 2016

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Players in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue by Players in 2016 and 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share (%) by Players in 2016 and 2017

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share by Players in 2016

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share by Players in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Average Price by Players in 2016 and 2017

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Average Price by Players in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Manufacturing Base Distribution and Sales Area by Players

Table Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Product Types

Figure Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market  
Share of Top 3 Players

Figure Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market  
Share of Top 5 Players

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales by Regions (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Regions (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Regions (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Regions in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue by Regions (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share by Regions (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share by Regions (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Revenue Market Share by Regions in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales by Type (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Type (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Type (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Type in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue by Type (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue Market Share by Type (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue Market Share by Type (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Revenue Market Share by Type in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Price by Type (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales by Application (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Application in 2017

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Application (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Market Share by Application (2013-2018)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales, Revenue, Price and Gross Margin (2013-2018)

Table North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales in 2016 and 2017

Table North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) in 2016 and 2017

Figure North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2016

Figure North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2017

Table North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue in 2016 and 2017

Table North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share (%) in 2016 and 2017

Figure North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2016

Figure North America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2017

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

Figure 2017 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type in 2017

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application in 2017

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

Figure 2017 North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Figure North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Table North America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

Table Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow

Batteries) Sales in 2016 and 2017

Table Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) in 2016 and 2017

Figure Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2016

Figure Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2017

Table Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue in 2016 and 2017

Table Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share (%) in 2016 and 2017

Figure Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2016

Figure Europe Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2017

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

Figure 2017 Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type in 2017

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application in 2017

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Application (2013-2018)

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales by Country (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Country in 2017

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Country (2013-2018)

Figure Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share by Country (2013-2018)

Table Europe Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Import & Export (2013-2018)

Table Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Sales in 2016 and 2017

Table Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Sales Market Share (%) in 2016 and 2017

Figure Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Sales Share in 2016

Figure Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Sales Share in 2017

Table Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Revenue in 2016 and 2017

Table Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Revenue Market Share (%) in 2016 and 2017

Figure Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Revenue Share in 2016

Figure Asia-Pacific Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox  
Flow Batteries) Revenue Share in 2017

Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow  
Batteries) Sales by Type (2013-2018)

Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow  
Batteries) Sales Market Share by Type in 2017

Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow  
Batteries) Sales Market Share by Type (2013-2018)

Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow  
Batteries) Sales Market Share by Type (2013-2018)

Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow  
Batteries) Revenue by Type (2013-2018)

Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow

Batteries) Revenue Market Share by Type (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type in 2017  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application in 2017  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country in 2017  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)  
Figure Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)  
Table Asia-Pacific Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)  
Table South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales in 2016 and 2017  
Table South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) in 2016 and 2017  
Figure South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2016  
Figure South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2017  
Table South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue in 2016 and 2017  
Table South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share (%) in 2016 and 2017  
Figure South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2016

Figure South America Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2017

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type in 2017

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type in 2017

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application in 2017

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country in 2017

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Figure South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Table South America Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

Table Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-



Vanadium Redox Flow Batteries) Sales in 2016 and 2017

Table Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share (%) in 2016 and 2017

Figure Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2016

Figure Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Share in 2017

Table Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue in 2016 and 2017

Table Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share (%) in 2016 and 2017

Figure Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2016

Figure Middle East & Africa Top 5 Players Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Share in 2017

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Type in 2017

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Type (2013-2018)

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue by Type in 2017

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue Market Share by Type (2013-2018)

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Price by Type (2013-2018)

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Application in 2017

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Application (2013-2018)

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales by Country in 2017

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Figure Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share by Country (2013-2018)

Table Middle East & Africa Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Import & Export (2013-2018)

Table Sumitomo Electric Industries Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Sumitomo Electric Industries Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Sumitomo Electric Industries Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table Rongke Power Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Rongke Power Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Rongke Power Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table UniEnergy Technologies Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table UniEnergy Technologies Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure UniEnergy Technologies Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table redT Energy Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table redT Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure redT Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table Vionx Energy Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Vionx Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow

Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Vionx Energy Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table Big Pauer Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Big Pauer Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Big Pauer Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table Australian Vanadium Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Australian Vanadium Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Australian Vanadium Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table Golden Energy Fuel Cell Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table Golden Energy Fuel Cell Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure Golden Energy Fuel Cell Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Table H2, Inc. Basic Information, Manufacturing Base, Sales Area and Its Competitors

Table H2, Inc. Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales, Revenue, Price and Gross Margin (2013-2018)

Figure H2, Inc. Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Market Share (2013-2018)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales and Growth Rate Forecast (2018-2023)

Figure Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Revenue and Growth Rate Forecast (2018-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Regions (2018-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Application (2018-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Forecast by Type (2018-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Sales Market Share Forecast by Type (2018-2023)

Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)

Sales Forecast by Application (2018-2023)  
Table Global Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Sales Market Share Forecast by Application (2018-2023)  
Table Sales Base and Market Concentration Rate of Raw Material  
Figure Price Trend of Key Raw Materials  
Table Key Suppliers of Raw Materials  
Figure Manufacturing Cost Structure of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Figure Manufacturing Process Analysis of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Figure Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Industrial Chain Analysis  
Table Raw Materials Sources of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Major Players in 2017  
Table Major Buyers of Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries)  
Table Distributors/Traders List

## I would like to order

Product name: 2018 Top 5 Vanadium Redox Battery (VRB) (All-Vanadium Redox Flow Batteries) Players in North America, Europe, Asia-Pacific, South America, Middle East and Africa

Product link: <https://marketpublishers.com/r/21DFDFC6440EN.html>

Price: US\$ 4,960.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/21DFDFC6440EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970

