

# **Vanadium Market Size, Share & Trends Analysis Report By Application (Steel, Non-ferrous Alloys, Chemicals, Energy Storage), By Region (North America, Europe, Asia Pacific, CSA, MEA), And Segment Forecasts, 2025 - 2030**

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## **Abstracts**

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### **Vanadium Market Size & Trends**

The global vanadium market size was estimated at USD 2.74 billion in 2024 and is estimated to grow at a CAGR of 3.1% from 2025 to 2030. Rising crude steel production, driven by growing demand from the construction, automotive, machinery, and transportation sectors, is encouraging the demand for vanadium in the coming years.

Rising crude steel production, driven by growing demand from the construction, automotive, machinery, and transportation sectors, is encouraging the demand for vanadium in the coming years. Vanadium is mainly utilized as an alloying element in steel manufacturing, as it enhances steel's strength, durability, and resistance to wear. The increasing need for high-strength steel across construction, automotive, and aerospace industries continues to propel vanadium consumption. Besides rising global investments in infrastructure and industrial manufacturing is boosting the demand for vanadium. For instance, as reported by the International Energy Agency (IEA), global investment in infrastructure rose from USD 3.2 trillion in 2019 to USD 3.8 trillion in 2023, which in turn is expected to drive the demand for high-strength steel and subsequently propelling the vanadium industry.

The global vanadium market is experiencing steady growth, driven by its essential role

in high-strength steel production, which accounts for approximately 90% of its consumption. Vanadium's ability to enhance the strength, durability, and corrosion resistance of steel makes it indispensable in key sectors such as construction, automotive, and heavy machinery. According to the World Steel Association, global crude steel output increased from 1,878.6 million tons in 2019 to 1,892.6 million tons in 2023, underscoring a stable demand trajectory from steel-intensive industries.

The market is also benefiting from the global shift toward renewable energy, with vanadium redox flow batteries (VRFBs) gaining prominence due to their long operational lifespan, scalability, and suitability for grid-scale energy storage. Projects such as China's 100 MW/400 MWh Dalian VRFB installation highlight vanadium's potential in stabilizing renewable energy supply. Additionally, the nuclear sector presents another avenue for demand, as vanadium-based alloys are increasingly used in advanced reactors due to their low neutron absorption and high resistance to extreme temperatures and corrosion.

Emerging markets are creating momentum, as urbanization and infrastructure development drive steel consumption. Efforts by countries including Australia and the U.S. to develop domestic vanadium sources also reflect growing geopolitical interest in securing critical mineral supply chains. As clean energy and carbon neutrality goals being prioritized, vanadium's role in enabling both energy storage and clean power generation is making it a material of strategic importance.

## Global Vanadium Market Report Segmentation

This report forecasts revenue growth at global, regional, and country levels and provides an analysis of the latest industry trends in each of the sub-segments from 2018 to 2030. For this study, Grand View Research has segmented the global vanadium market report based on application and region.

### Application Outlook (Revenue, USD Million, 2018 - 2030)

Steel

Non-Ferrous Alloys

Chemicals

Energy Storage

## Regional Outlook (Revenue, USD Million, 2018 - 2030)

### North America

U.S.

Canada

Mexico

### Europe

Germany

France

Italy

### Asia Pacific

China

Japan

India

### Central & South America

Brazil

### Middle East and Africa (MEA)

## Companies Mentioned

AMG

Aura Energy Ltd

Australian Vanadium Limited

Bushveld Minerals

EVRAZ plc

Glencore

HBIS Group

Largo, Inc.

Pangang Group Vanadium and Titanium Resources Co., Ltd.

Vanadium Resources Limited

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