# Vanadium battery energy storage trend analysis chart

Is the vanadium redox flow battery industry poised for growth?
Image: VRB Energy. The vanadium redox flow battery (VRFB) industry is poised for significant growthin the coming years,equal to nearly 33GWh a year of deployments by 2030,according to new forecasting. Vanadium industry trade group Vanitec has commissioned Guidehouse Insights to undertake independent analysis of the VRFB energy storage sector.

How much vanadium will be in demand by 2031?
Guidehouse Insights forecasts that the growth of VRFBs will be such that by 2031,between 127,500 and 173,800 tonnesof new vanadium demand will be created,equivalent to double the demand for the metal today.

Is vanadium in a supply deficit?
Vanadium producers have recently benefited from an increase in infrastructure spending. However,the demand for vanadium also continues to increase with other applications,including in the aerospace industry and the production of vanadium redox batteries. Various supply-demand forecasts have vanadium in a supply deficit starting around 2025.

How much vanadium is produced in the VRFB market?
Currently,it is estimated that the VRFB market only accounts for 3%-5%of vanadium production but the continued shift to renewable energy solutions could trigger a surge in vanadium demand and account for 20% of vanadium consumption by 2030. The majority of all vanadium produced is used as an alloying agent for strengthening steel.

Are VRFBs a major source of new demand for vanadium?
Many vanadium industry stakeholders see VRFBs as a major source of new demandfor the metal that has traditionally been used in steel alloys," states Mikhail Nikomarov,Chairman of the Vanitec Energy Storage Committee (ESC) and CEO of Bushveld Energy.

Is vanadium a critical raw material?
The European Commission identified and formally registered vanadium on the 2017 list of Critical Raw Materialsfor the European Union,while the United States,Canada and Australia have also listed vanadium as critical to supporting their economies.

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All-vanadium redox flow batteries (VRFBs) have experienced rapid development and entered the commercialization stage in recent years due to the characteristics of intrinsically safe, ultralong cycling life, and long-duration energy storage. However, VRFBs still face cost challenges, making it necessary to comprehensively optimize the ...

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This study analyzes the development trend of the vanadium redox flow battery. Considering the unit vanadium consumption of the vanadium redox flow battery, it predicts the demand trend of vanadium resources in the energy storage field under three scenarios: high-speed, reference, and low-speed development. The demand for vanadium resources will ...

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