

# **Environmental protection requirements for vanadium mine energy storage projects**





## Overview

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Could Nevada be the first primary vanadium mine in the US?

The Nevada Bureau of Land Management (BLM) has approved the Gibellini vanadium project, completing the federal permitting process for what could be the first primary vanadium mine in the US. The project, near Eureka, is owned by Nevada Vanadium Mining, a subsidiary of Silver Elephant Mining.

Is vanadium a critical mineral?

The US government has designated vanadium a critical mineral of strategic importance. "We're proud that Nevada can be a leader in efficiently permitting the development of critical minerals," said BLM Nevada state director Jon Raby.

How much Vanadium can be produced over 25 years?

The maximum quantity of vanadium product over the 25 year LOM is 481,000 tonnes. The EIS stated that vanadium is a valuable resource used in number of industrial applications, including high-strength steel alloy production, vanadium redox flow batteries (VRFB) and vanadium based compounds in new technologies.

How much vanadium pentoxide can be produced a year?

Up to 15 million tonnes per annum (tpa) of material would be mined disturbing an area of 7454ha to produce up to 20,000tpa of vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) over a mine life of at least 25 years. The processing of the mineral ore would be conducted using an atmospheric leaching method in a hydrometallurgical processing plant.

How much does a vanadium plant cost?

Economic costs associated with the proposed project include an initial construction capital cost of developing the vanadium processing infrastructure of \$400 million and an additional \$250 million for expansion up to the



20,000t/year capacity. Operating costs are estimated to average approximately \$200 million/year during peak production.

Where is vanadium found?

The Toolebuc Formation is the host formation for vanadium and is approximately 25m thick. It outcrops on the site along the Saint Elmo anticline. The Flinders River alluvium is located approximately 20–25km east of MLA100162 and is not located within the proposed mining area.



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### **CRITICAL METALS LTD.**

The aim of the Vanadium Recovery Project (VRP) is to produce high-purity vanadium pentoxide for European industry. Vanadium will be recovered from slag, a by-product of the steel industry ...



### **Gibellini Vanadium Mine Project**

The Gibellini Vanadium Mine Project (Project) is a proposed vanadium mine project located along the eastern slope of the Fish Creek Mountains in Eureka County, Nevada, which would be ...

### Velvet-Wood Mine Environmental Assessment

The Velvet Mine is an existing conventional underground uranium/vanadium mine located





near Lisbon Valley, approximately 10 miles south of La Sal and about 19 miles ...



### [Emerging vanadium project backed by Queensland](#)

Queensland Coordinator-General Gerard Coggan has named QEM's Julia Creek vanadium and energy project a 'coordinated project', ...

## **Vanadium Mining in the USA: From Steelmaking to Energy Storage**

As demand for vanadium for energy storage and infrastructure rises, cleaner, more innovative mining methods will be key to securing supplies without sacrificing ...



### **Environmental Impact Statement (EIS) assessment report ...**

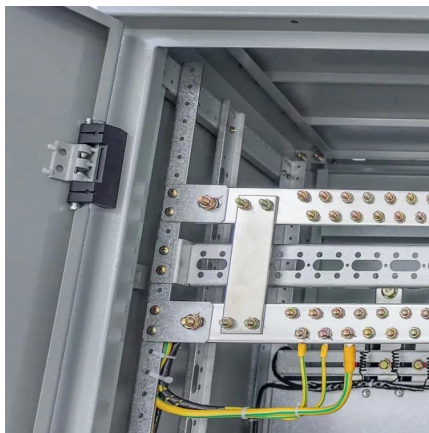
This Environmental Impact Statement (EIS) assessment report ('assessment report' hereafter) for the Saint Elmo Vanadium Project (the project) was prepared by the Department of ...



## Chengde Wai Vanadium Energy Storage 100MW/400MWh Vanadium ...

...

Main construction: This evaluation is the first phase of the project, which involves renting a 12,981-square-meter factory in the park, purchasing a vanadium flow battery energy ...



## 10MW/40MWh all vanadium liquid flow energy storage, bidding ...

10MW/40MWh all vanadium liquid flow+100MW/200MWh lithium iron phosphate energy storage equipment (the design, procurement, installation, civil engineering, construction, and individual ...

## QEM to progress environmental assessment for Julia Creek vanadium ...

Special Report: QEM can progress the environmental assessment for its Julia Creek vanadium and energy project after the Queensland Government finalised the terms of reference for an ...



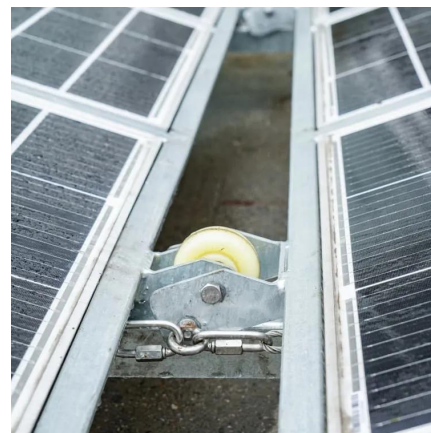
## CleanTech Vanadium Mining - Powering Energy Storage

Together, CleanTech Fluorspar Mining and CleanTech Vanadium Mining build a resilient foundation for the clean energy transition, ensuring that both mobility (EVs) and ...



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### BALASAUQANDIQ VANADIUM MINING AND ...

In addition to the General Guidelines, the Environmental, Health and Safety Guidelines for Mining [A37] are applicable to the site and proposed Project. The Guidelines also contain ...

## **Vanadium**

The metallurgical processes used in extracting vanadium are energy-intensive and can release toxic elements into the environment. However, vanadium mining has been largely under the ...







### [Nevada Vanadium Mining Corp. announces Final ...](#)

Vancouver, British Columbia, September 11, 2023 - Nevada Vanadium Mining Corp. ("Nevada Vanadium" or the "Company") is pleased to report the release of the Final Environmental ...

### **Australian Vanadium namesake project gains Green ...**

Green Energy Major Project status has been granted to Australian Vanadium Ltd's Australian Vanadium Project, which it says will unlock ...



### **Environmental Impact Statement (EIS) assessment report ...**

Section 4 of this assessment report provides a summary of the environmental values, potential impacts and avoidance, mitigation and management measures, commitments and any ...

### **Terms of reference for an environmental impact statement ...**

This document outlines the terms of reference for the proposed Saint Elmo Vanadium Project (SEVP) proposed by Multicom Resources Limited (Multicom) being assessed under the ...





### [Julia Creek Vanadium and Energy Project](#)

According to a factsheet provided by QEM and Epic Environmental, the project involves the establishment of a mine, processing facilities, and infrastructure to produce ...



## **Vanadium Mining: Critical for Clean Energy and Canadian Steel**

Vanadium is a transition metal known for its exceptional strength, corrosion resistance, and emerging role in grid-scale energy storage. Symbolized as V, it is used ...



### [The First User Side 500kW/5MWh Vanadium Flow ...](#)

It has enormous potential to solve the contradiction between power supply and demand, improve energy utilization efficiency, and reduce ...





## Vanadium: A Critical Mineral Catalyst for Grid-Scale ...

A perennial challenge for renewable energy development has been and continues to be long-duration, grid-scale storage. When renewable ...



## Terms of reference for an environmental impact statement

Part A About these terms of reference  
Introduction This document outlines the terms of reference (TOR) for the environmental impact statement (EIS) for the proposed Julia Creek Vanadium ...

## ENVIRONMENTAL ASSESSMENT Advanced Clean Energy ...

applicable national safety regulations, codes, and standards. This responsibility also includes ensuring the construction of the storage caverns, brine evaporation ponds, and wastewater ...



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