

Why do we need to explore for minerals?

Nearly everything we use each day began life as a mineral or was grown. Your car, television, PC, mobile phone and power supply are all made with materials derived from minerals.

Exploration is an essential first step in finding the minerals society needs to meet the increasing demand - not just to maintain our current lifestyle in homes, businesses and industries - but also to achieve our vision for a low-carbon future.

Alternative energy solutions, such as solar and wind farms, for renewable electricity generation require certain strategic minerals including copper. Electric vehicles have four times more copper than an internal combustion engine vehicle and an average windmill contains 4 tonnes of copper.

Victoria's mineral exploration industry has been an important part of our state economy dating back to the gold rush of the 1850s. It continues to boost local towns by providing regional employment and through expenditure on a range of goods and services, accommodation, fuel and much more.

What do we mean by exploration?

Mineral exploration involves the collection and analysis of geological information which can lead to the identification of a mineral deposit on the surface or below ground.

Exploration includes techniques that have no or low impacts on land, such as desktop research, aerial surveying, ground mapping, rock sampling, water and soil testing, and focused drilling.

Exploration activities on Stavely Minerals' projects in southwest Victoria, has progressed from desktop studies and field-based activities, including soil sampling, ground geophysical surveys (gravity, induced-polarisation, electro-magnetics, 2D seismic surveys) to diamond drilling, and has led to the discovery of the 'Cayley Lode' copper-gold-silver discovery at the Thursday's Gossan Prospect. Stavely Minerals is in the post-discovery Mineral Resource definition phase at Thursday's Gossan, which involves close spaced drilling over an area of approximately 1 km².

Stavely Minerals has spent more than \$38 million on exploration since 2013, predominantly on the Stavely Project. The vast majority of that expenditure has been to employees, suppliers and contractors located in Victoria.

Thirteen Victorian-based employees are working at the Stavely Project. The Geology Manager, senior geologists, field supervisors and field assistants are all based out of Hamilton, Willaura, Ballarat and Melbourne. Diamond drilling is conducted by Ballarat-based Titeline Drilling, which currently has 25 drillers and off-siders working on the Stavely Project.

The Thursday's Gossan Project is at a relatively early stage, high-risk point in the pathway to production and there is no certainty that, with further technical evaluation (Mineral Resource definition, metallurgical testwork, geotechnical assessment, environmental monitoring etc.), financial modelling, financing and permitting, that a viable development will ever be established.

New mineral discoveries, if developed, will bring many more local jobs, new investment and other economic benefits to regional communities.



3.6 tonnes of copper for every MW of wind power



4-5 tonnes of copper for every MW of photo-voltaic solar power



4 x more copper in an electric car than one with an internal combustion engine



Heavily regulated industry

Minerals exploration is carefully regulated to ensure exploration activities only occur in areas in which they are allowed and conducted responsibly to safeguard environmental, water, heritage and other features that are important to local communities.

Mineral resources belong to the state of Victoria whether they are on private, commercial or government land. Ownership of the minerals changes hands if, or when, a mining licence is granted to a company.



In Victoria, mineral explorers require a minerals exploration licence or retention licence before they can start any exploration activities. These licences relate to a defined parcel of land, which can be privately owned or Crown land.

Exploration licences are issued and managed by the Victorian Minister for Resources and generally run for five years, with the option to renew the licence for a further five years.

Current legislation requires explorers to consult with the landholders of the ground on which the explorer wishes to undertake exploration work, before any work can start on that land. If the explorer wishes to conduct more intensive exploration such as drilling, they are required to have a land access agreement with the landholder which outlines compensation.

Licensees are also subject to biosecurity obligations in other legislation. For example, licensees must take all reasonable measures to minimise the spread of weeds, pest animals and plant diseases, and to prevent adverse impacts to livestock and crops while undertaking exploration activities.

Does exploration necessarily lead to mining?

An exploration licence does not permit mining or guarantee that a mining licence will be granted.

The odds of a greenfield mineral target ever becoming a profitable mine is 1:1,000 (source: Minerals Council of Australia).

If an economic deposit is found, a licence holder may apply for a mining licence, which is required to build a mine and extract mineral resources. This is a rigorous and lengthy process of approvals requiring a large number of regulatory permits including numerous environmental approvals (air, water, noise, visual impact, flora and fauna), as well as rehabilitation, mine closure plans and extensive consultation with communities.



Further reading: [Victorian Code of Practice for Mineral Exploration](#).

More information

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