



AVL is focused on developing the Australian Vanadium Project in Western Australia.



# Australian Vanadium Project



Australian Vanadium Ltd has a globally significant vanadium resource, with a team of experts experienced in the extraction of vanadium using conventional processing of vanadium magnetite.

**AVL holds tenements covering 260sqkm with a planned vanadium refinery that could produce 22.5Mlb V<sub>2</sub>O<sub>5</sub> (vanadium pentoxide) over an initial 17 year mine life.**

- The company's Pre-Feasibility Study on the project was released in December 2018.
- Maiden Ore Reserve of 18.24Mt at 1.04% V<sub>2</sub>O<sub>5</sub> comprised of a Proved Reserve of 9.82Mt at 1.07% V<sub>2</sub>O<sub>5</sub> and a Probable Reserve of 8.42Mt at 1.01% V<sub>2</sub>O<sub>5</sub>.
- Open pit mining and beneficiation operation producing about 900,000 tonnes per annum of 1.40% V<sub>2</sub>O<sub>5</sub> magnetic concentrate, at an average mass yield of 60% of vanadium over the life of mine.
- Planned V<sub>2</sub>O<sub>5</sub> refinery at site with an estimated production rate of 22.5Mlb V<sub>2</sub>O<sub>5</sub> per annum over an initial mine life of 17 years.

- Capital costs of \$US354m in line with other global vanadium operations. This cost includes owner's costs, contingencies and a partial gas pipeline investment.
- Operating costs of \$4.15/lb V<sub>2</sub>O<sub>5</sub> equivalent, competitive with the world's lowest quartile producers.

AVL plans to produce cobalt, nickel and copper as a by-product of vanadium mining, thereby enriching the project's scope and value.

Opportunities exist to reduce costs further and increase revenue by alternative processing of resources and optimising the processing potential of the mine.

Vanadium is mainly used to strengthen steel. New technology – vanadium redox flow batteries – has the potential to drive future demand for V<sub>2</sub>O<sub>5</sub>.

**X HIGH-GRADE RESOURCE  
96.7MT at 1% V<sub>2</sub>O<sub>5</sub>**

**▲ MINERAL RESOURCE ESTIMATE  
183.6Mt at 0.76% V<sub>2</sub>O<sub>5</sub>**

**⚒ MINE LIFE  
17+ Years**

**↗ OPEX  
US\$4.15/lb V<sub>2</sub>O<sub>5</sub>**

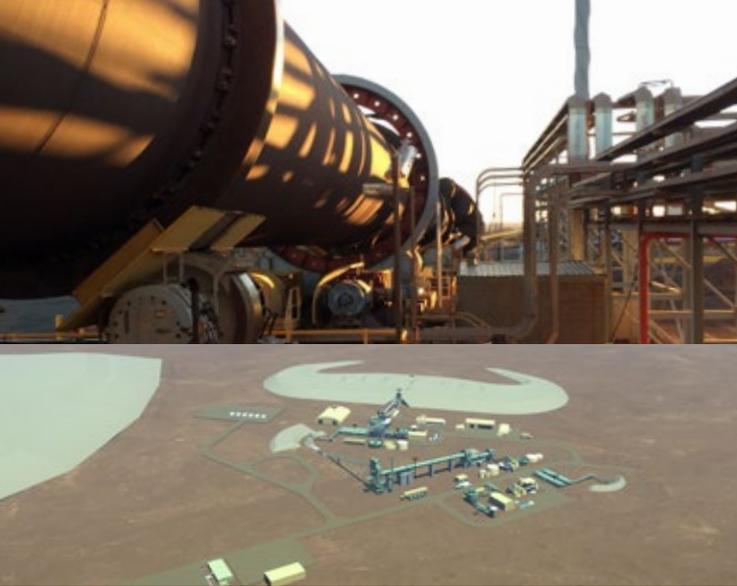
**🛒 VANADIUM PRODUCTION  
22.5Mlbs per Annum**

**🛒 60%  
Average Yield**

**💰 CAPITAL COSTS  
US\$354M**

**✅ PROVED RESERVE  
9.82Mt at 1.07% V<sub>2</sub>O<sub>5</sub>**

**🔍 PROBABLE RESERVE  
8.42Mt at 1.01% V<sub>2</sub>O<sub>5</sub>**



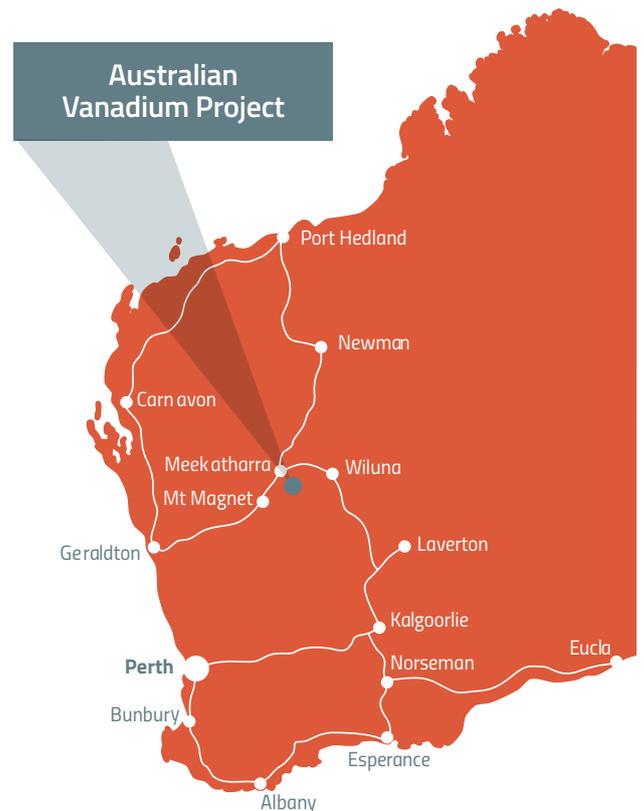
Australian  
VANADIUM  
LIMITED

**AVL's Australian Vanadium Project lies 740km northeast of Perth and 42km south-southeast of Meekatharra in the Murchison area of WA's Mid West.**

The Australian Vanadium Project is a layered mafic intrusion comprised predominantly of gabbro, anorthosite and magnetite layers. The vanadiferous titanomagnetite mineralisation occurs as a stack of magnetite disseminated mafics, thin magnetite layers and a thick magnetite layer. The deposit dips at around 50°-60° and strikes for about 18km toward the south-east, but is part of a much larger complex of igneous rocks that extend over 200km and is recognised for vanadium, titanium, cobalt, nickel, copper and recently PGE mineralisation. The thickness of the deposit is what accounts for its exceptional recovery and economics.

Mass recovery of the concentrate averages over 62%, offering AVL advantages in crushing, milling and beneficiation over similar plants, which often average less than 30% mass recovery.

AVL has heritage agreements with the Yugunga-Nya Native Title Claimant Group, with whom they're negotiating a mining agreement.



**Employment**

The operation estimates for jobs are: 500 construction workers and 240 permanent workers.

**AVL Team**

AVL is led by Managing Director Vincent Algar, Development Manager Todd Richardson and Executive Director Daniel Harris. Mr Harris has previous global experience in large-scale vanadium mines and processing operations and Mr Richardson has produced V<sub>2</sub>O<sub>5</sub> in USA, Australia and South Africa.

**Energy & Infrastructure**

In line with AVL's strategic goals, some of the energy requirements for the project and associated processing will be provided by renewable energy in the form of solar and/or wind and vanadium redox flow batteries.

New infrastructure will be required to support mining and process operations. This includes a natural gas pipeline, a gas-fired power station and an accommodation village for staff.

A purpose-built access road to the site and various road upgrades are included in the PFS. AVL is identifying potential locations for water abstraction. Other infrastructure includes buildings for administration and storage as well as mine and plant workshops.

The AVL team has expertise in process design, start-up and operation of vanadium facilities worldwide. These strengths will enable AVL to undertake efficient vanadium extraction to yield improved returns.