

# Yellow Rock Resources

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**Yellow Rock Resources (ASX:YRR)** has widened the scope of development options at its Gabanintha vanadium project in Western Australia with positive mineralogical testwork indicating favourable processing characteristics.

Results from the study indicated that magnetic separation techniques will be applicable for both high-grade and low-grade ores at the project since magnetite gabbro in the resource contains high amounts of vanadium.

Vanadium grades in magnetite were as high as 3.1% V<sub>2</sub>O<sub>5</sub>, compared to the sample head grade of 0.8% V<sub>2</sub>O<sub>5</sub>.

Mineral chemistry suggests that there is little change in vanadium grade within the massive mineralised layer from fresh to oxide in the profile. This confirms consistent value throughout the pit profile and the ubiquitous stability and presence of vanadium within the magnetite or martite.

These findings suggest that magnetic separation of low-grade ores should be productive and yield a good vanadium grade.

All results and findings are being used in Gabanintha's ongoing metallurgical assessment and will form key components to final process design in 2016.

This plant design work will take place as part of a feasibility study.

### Vanadium market developments

Yellow Rock has continued to advance its opportunities in the Vanadium Redox Battery (VRB) market by forming relationships with key players.

The company has formed a battery focused subsidiary, VSUN Pty Ltd, which will sell vanadium batteries on behalf of two European producers in the Australian market. Opportunities will focus on businesses and off grid opportunities, but due to the scalability of VRBs, many other applications can be envisaged, including domestic, farm production and electric vehicle charging stations.

The rapid acceleration in the development of renewable energy projects on a global scale is being accompanied by rapidly growing interest and need for grid storage technologies. The uptake of VRB technology along with other grid storage technologies could have a significant effect on the vanadium market as the use of V<sub>2</sub>O<sub>5</sub> electrolyte is a large

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component (50% of current cost) of the battery units.

The unique characteristics of VRBs – specifically their scalability, long lifespan cycles and the use of one battery element – make them a strong candidate to earn up to 30% of the growing energy storage market. This market is expected to grow from a current 0.4GW to 40GW in just the next seven years.

In Australia, the company has partnered with a Perth-based commercial solar installer which has an extensive track record of commercial and residential solar system installations.

## Gabanintha progress

Yellow Rock struck some of the highest grades ever recorded at Gabanintha earlier this year, with drilling intersections at up to 2.2% V2O5.

The program confirmed Gabanintha's status as one of the highest-grade projects being advanced globally with assays from the eight drillholes confirming the presence of robust widths of a previously identified high-grade vanadium magnetite layer.

The drilling also returned up to 14 metres at 1.44% V2O5 from 131 metres, including 7 metres at 1.76% from 135 metres.

Gabanintha currently has a high-grade indicated and inferred resource of 60.4 million tonnes at 0.98% vanadium, 11.4% TiO2 and 42.15% iron.

Yellow Rock has also commenced a detailed analysis of the power supply required for the project.

Early planning of a solar-diesel-vanadium battery hybrid power plant for part or all of the project's requirements is underway. The key objective is to ensure long-term and stable low power costs for the project lifetime.

Yellow Rock has also completed requirements for the application for a mining lease to cover the Gabanintha vanadium deposit.

## Analysis

The high-level of vanadium mineralisation in the low-grade magnetite gabbro at Gabanintha opens the door for straightforward magnetic separation techniques of the resource material and bodes well for a more efficient processing flowsheet at the project.

The high quality and high level of detail in the mineralogy gives Yellow Rock a micro-level understanding of the resource, which will better inform upcoming metallurgical assessments and operational designing.

Price catalysts for Yellow Rock include a highly anticipated updated independent resource statement for Gabanintha expected early next month. Near-term improvements in metallurgical understanding of Gabanintha material and flowsheet design optimisations, as well as feasibility study results next year.

Gabanintha is Australia's highest-grade and best located vanadium-titanium-iron deposit.

As a potential vanadium producer, Yellow Rock benefits from marketing opportunities in steel markets as well as the rise of globally significant vanadium battery technology, where it is actively seeking to link the use of its products.

The grid-storage sector alone is estimated to be worth US\$100 billion by 2020. This offers tremendous upside for Yellow Rock's scalable Vanadium Redox Flow Battery, which is well suited to the commercial and grid solutions.

While Yellow Rock's share price has risen 33% since September, with upcoming news flow there are further price

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drivers ahead and the current market capitalisation of circa \$8.3 million does not yet capture the value added at Gabanintha.

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