



Australian  
**VANADIUM**  
LIMITED

# The World's Next **HIGH GRADE** Vanadium Mine

December 2017



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VANADIUM  
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# Gabanintha Vanadium Project

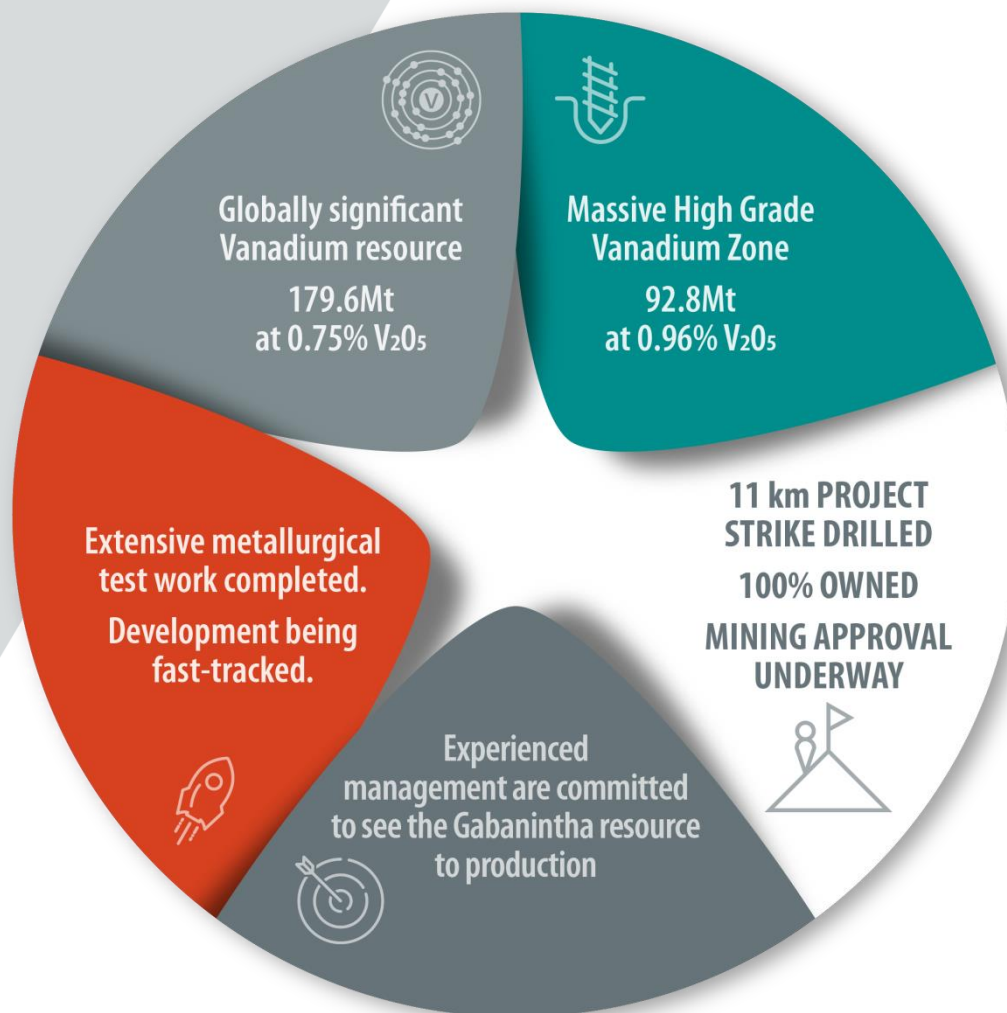
One of the highest grade vanadium deposits being advanced globally,  
with a Mineral Resource of...

- 92.8Mt Massive High Grade Zone at 0.96% - part of total
- 179.6Mt at 0.75% vanadium pentoxide ( $V_2O_5$ )





# Investment Highlights



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### Key Statistics (as at 6-10-17)

Ordinary shares on issue	1,400m
Options on issue (ex at 1.47c expire Dec 2017)	125.6m
Listed Options (ex at 2.c exp Dec 2018) AVLO	402.8m
Share price	AUD \$0.018
Market capitalisation (undiluted)	A\$25.2m (Cash ~A\$3m)
Shareholders	3,798

### Substantial Shareholders

### % holding

Neale Parsons	2.3 %
Management	7 %

### Board of Directors

### Title

<b>Vincent Algar</b> Bsc(Hons) Geol, MAusImm	Managing Director
<b>Leslie Ingraham</b>	Executive Director
<b>Brenton Lewis</b> MBSc., BBSc.(Hons)	Non Executive Chairman
<b>Daniel Harris</b> BSc Chem Eng	Non Executive Director

### AVL Share Price History



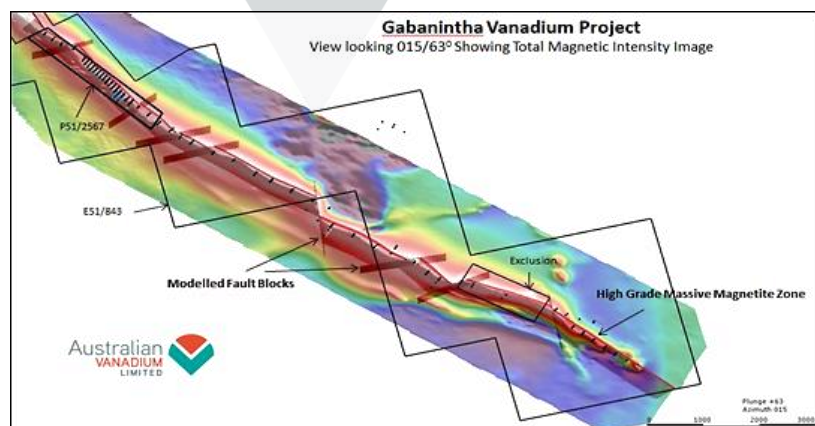


# Gabanintha Vanadium Project

High grade resource in favourable mining jurisdiction - Murchison, Western Australia

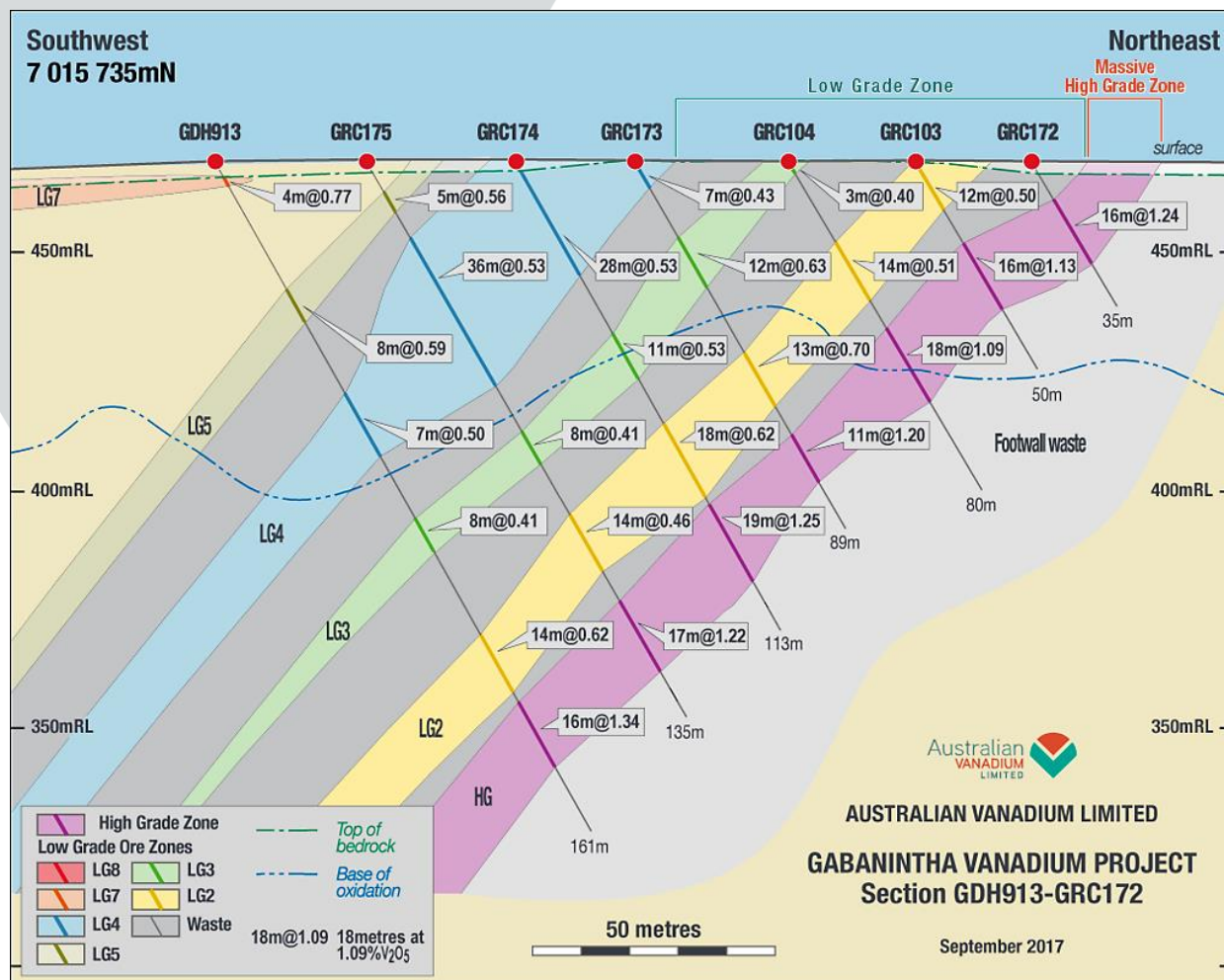
One of the highest-grade vanadium deposits being advanced globally;

- Mineral Resource 179.6Mt at 0.75% vanadium pentoxide ( $V_2O_5$ ) consisting of:
  - Measured Mineral Resource of 10.2Mt at 1.06%  $V_2O_5$ ,
  - Indicated Mineral Resource of 25.4Mt at 0.62%  $V_2O_5$ , and
  - Inferred Mineral Resource of 144.1Mt at 0.75%  $V_2O_5$ .
- The Mineral Resource includes a distinct massive magnetite high-grade zone of 92.8 Mt at 0.96%  $V_2O_5$  consisting of:
  - Measured Mineral Resource of 10.2Mt at 1.06%  $V_2O_5$ ,
  - Indicated Mineral Resource of 4.8Mt at 1.04%  $V_2O_5$ , and
  - Inferred Mineral Resource of 77.8Mt at 0.94%  $V_2O_5$ .
- Deposit is at surface suitable for open pit operation and open at depth
- Resource suitable for mine commencement. 15 years @ 1Mt per year. High-grade ore feed.



# Gabanintha Vanadium Project

Discrete high-grade zone, simple geometry, suitable for open pit mining



# Vanadium Resource

## Large high-grade resource



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Material	JORC Resource Class	Million Tonnes	V <sub>2</sub> O <sub>5</sub> %	Fe%	TiO <sub>2</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	LOI%
High grade	Measured	10.2	1.06	41.6	12	11.6	8.6	4.2
	Indicated	4.8	1.04	41.9	11.5	12	8	3.6
	Inferred	77.8	0.94	41.2	10.7	12.7	7.9	3.3
Subtotal High Grade		92.8	0.96	41.3	10.9	12.6	8	3.4
Low grade	Indicated	20.5	0.52	24.3	7.1	27.9	17.6	8.4
	Inferred	61.8	0.52	26.2	7	26.9	16.1	7.2
Subtotal Low grade		82.4	0.51	25.7	7	27.2	16.5	7.5
Subtotal Measured	Measured	10.2	1.06	41.6	12	11.6	8.6	4.2
Subtotal Indicated	Indicated	25.4	0.62	27.7	7.9	24.9	15.8	7.5
Subtotal inferred	Inferred	144.1	0.75	34.4	9	19.2	11.7	5.2
TOTAL		179.6	0.75	33.8	9	19.6	12.1	5.4

**Note:** Mineral Resource estimate by domain and resource classification using a nominal 0.4% V<sub>2</sub>O<sub>5</sub> wireframed cutoff for low grade and nominal 0.7% V<sub>2</sub>O<sub>5</sub> wireframed cut-off for high grade (total numbers may not add up due to rounding)

### Comment

It is common practice for a company to comment on and discuss its exploration in terms of target size and type. In addition surface sampling assays and drill sample results may also be discussed in the context of information describing the presence of anomalous metal content. The information relating to an Exploration Target should not be misunderstood or misconstrued as an estimate of Mineral Resources or Mineral Reserves. Hence the terms Resource (s) or Reserve(s) have not been used in this context. The potential quantity and grade is conceptual in nature, since there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource.

### Competent Person Statement — Mineral Resource Estimation

"The information in this report that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Barnes and Mr Davis are members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits.

Mr Barnes and Mr Davis consent to the inclusion in this report of the matters based on their information in the form and context in which they appear. tes to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Barnes and Mr Davis are members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits. Mr Barnes and Mr Davis consent to the inclusion in this report of the matters based on their information in the form and context in which they appear."

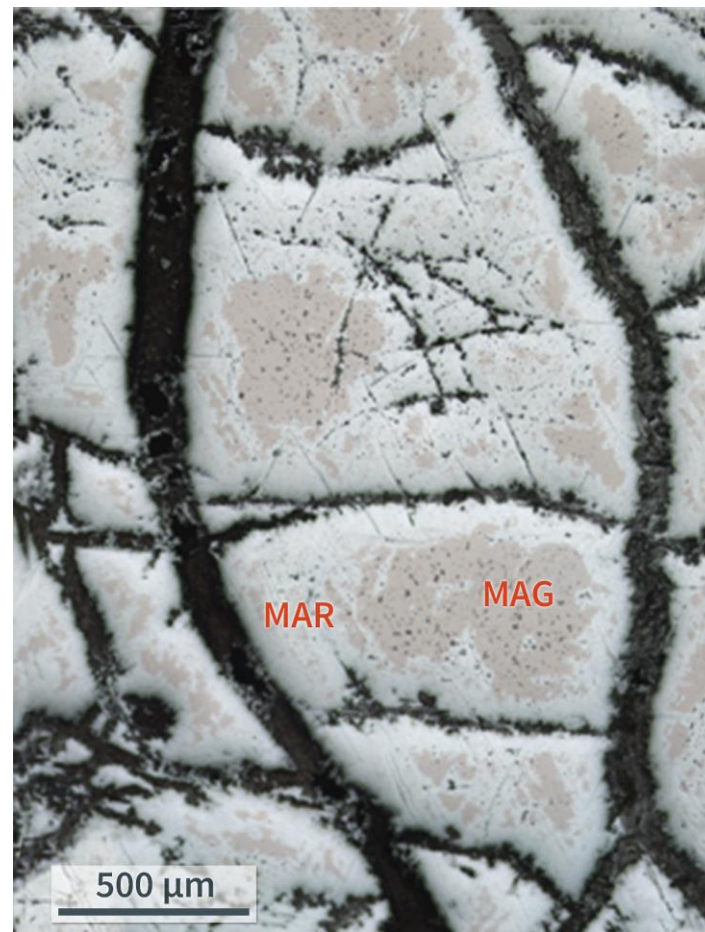




## Metallurgical Test Work

Prior studies support further work

- High recovery rates from all ore types, including oxidised materials
- Strong recoveries achieved from coarse grind sizes, scope to maintain low operating costs
- Concentrate grades up to 1.5%  $V_2O_5$  achieved from high grade ores
- High vanadium content (+2%  $V_2O_5$ ) in magnetite identified in all ore types
- Opportunities to lower Silica content easily, benefiting both capex and recovery.
- Titanium readily recovered to concentrates demonstrates potential for additional revenue options
- Mineralogy and Petrology analysis completed at UWA. Findings complement Met studies



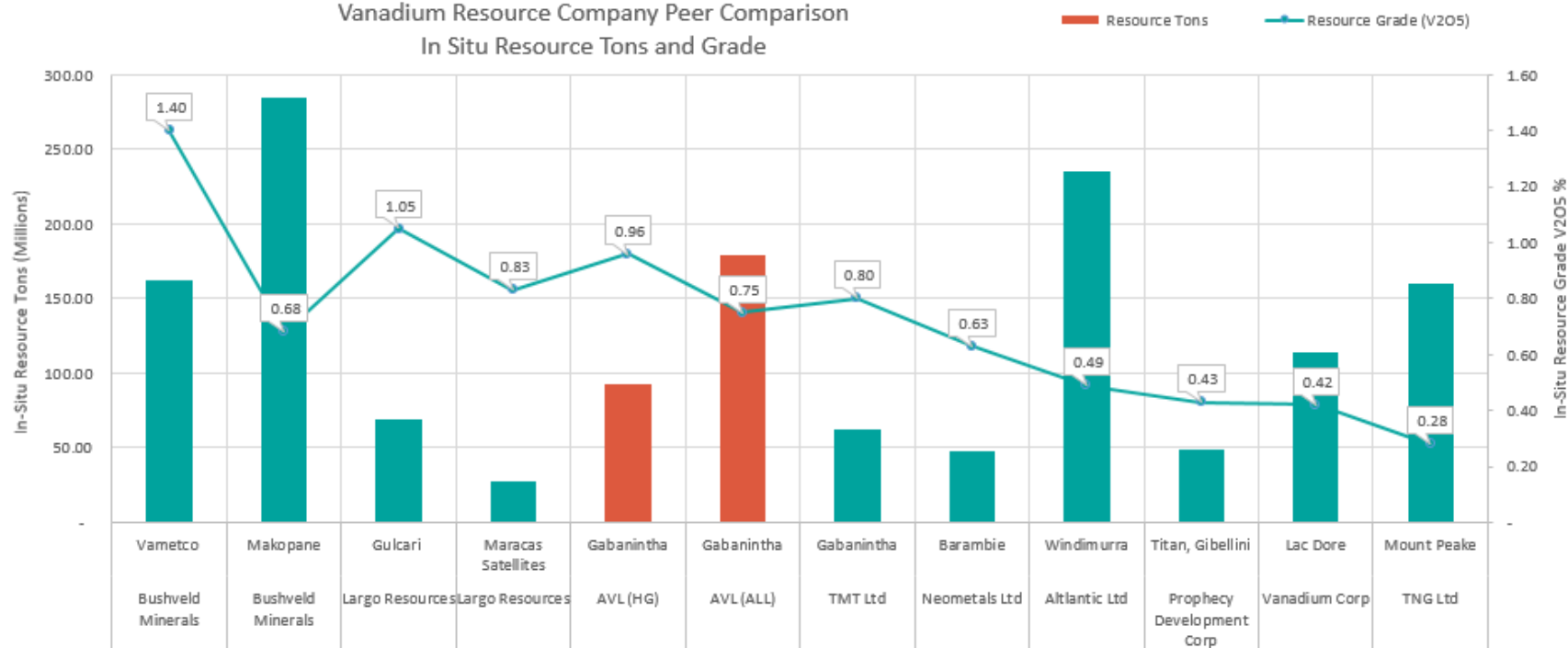
*Weathered high-grade ore showing un-oxidised magnetite grain cores*



# Vanadium Peer Comparison

Gabanintha a globally significant deposit on grade and tonnage basis

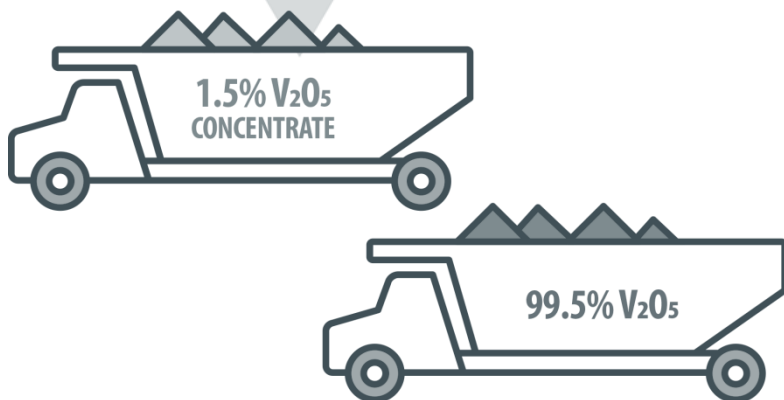
Vanadium Resource Company Peer Comparison  
In Situ Resource Tons and Grade





## Mine to Market

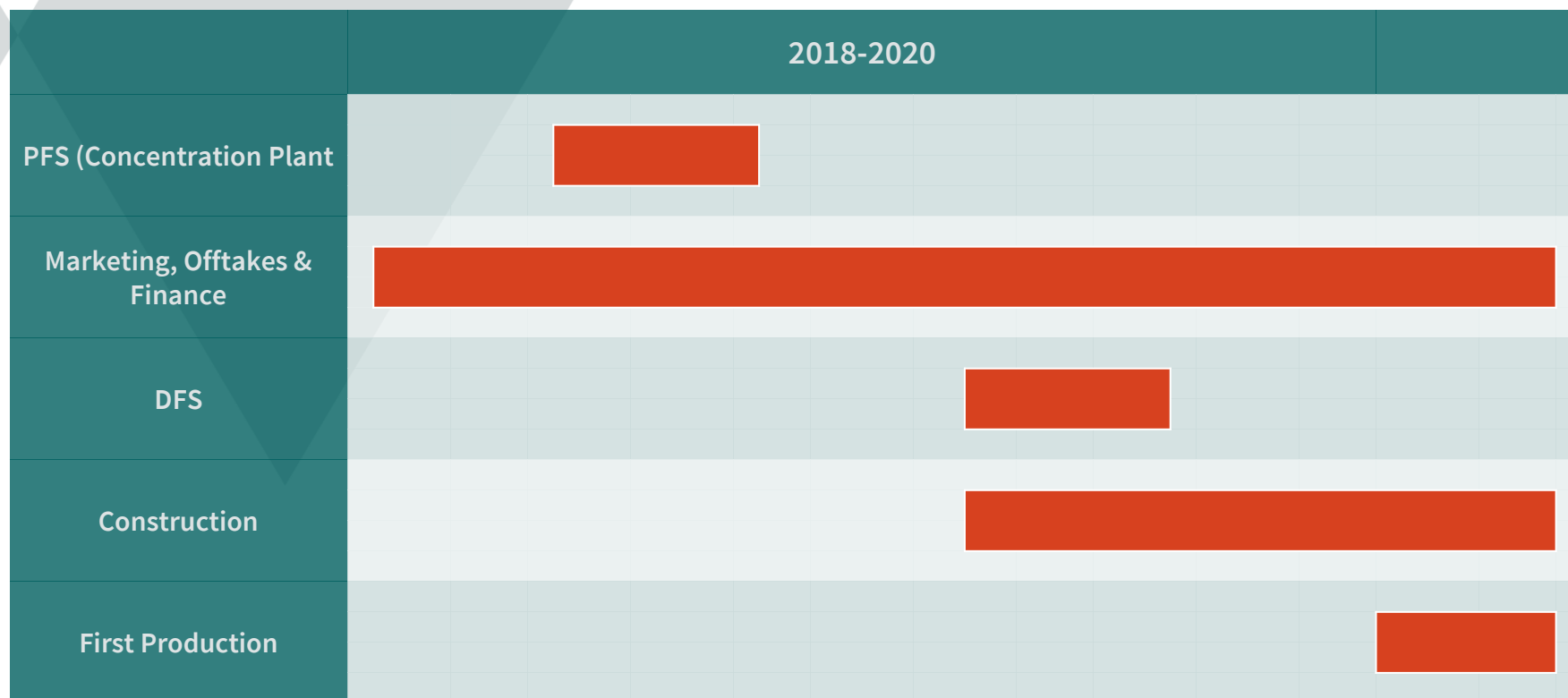
- Simple, safe and reliable transport from our Australian fully owned vanadium resource
- Road transport from Gabanintha to Geraldton Port
- Possibility for initial shipment of 1.5%  $V_2O_5$  ore concentrate
- Possibility to further process in-country and value add to 99.5%  $V_2O_5$  and reduce shipping costs





## Timelines

- Project feasibility study due 2018
- Mine construction planned for 2019
- First production of 1.5% V<sub>2</sub>O<sub>5</sub> concentrate planned for 2019/20 (Subject to approvals funding and market conditions)



\* Timelines are heavily dependent on external consultants and variables and should be considered an estimate only.



## Management

At Australian Vanadium our management are committed to fast-track this significant global resource.

Our team brings together experts in geoscience, mining, chemical engineering, marketing and corporate governance and an extensive vanadium network.

Within a reliable Australian Mining jurisdiction, we believe we have the team to develop the world's next high grade vanadium mine.



*Vincent Algar (left) and Daniel Harris (right)*

### Vincent Algar

#### Managing Director

Mr Vincent Algar BSC (Hons) Geology, MAusIMM, is a geologist by profession with over 25 years' experience in the mining industry spanning underground and open cut mining operations, greenfields exploration, project development and mining services in Western Australia and Southern Africa. He has significant experience in the management of publicly listed companies, which includes the entire compliance, marketing and management process and encompasses the development of internal geological and administrative systems, exploration planning and execution, plus project acquisition and deal completion.

### Leslie Ingraham

#### Executive Director

Mr Leslie Ingraham has been in private business for over 26 years, he has worked successfully as a consultant for private companies and public companies listed on the Australian Securities Exchange.

Core competencies are in Corporate advisory, Investor relations, Capital raising, prospecting and exploration in Australia, building long lasting relationships with high end investors in Australia and overseas.

### Daniel Harris

#### Non-Exec. Director

Mr. Daniel Harris has a vast amount of expertise in the vanadium industry and an understanding of the resource sector from both a technical and financial perspective. Recent roles include interim CEO and Managing Director at Atlas Iron; Chief Executive & Operating Officer at Atlantic; Vice President & Head of Vanadium Assets at Evraz Group; Managing Director at Vametco Alloys; General Manager of Vanadium Operations at Strategic Minerals Corp, and acting as an independent technical and executive consultant to GSA Environmental Limited in the United Kingdom.

### Brenton Lewis

#### Non-Exec. Chairman

Mr. Brenton Lewis BBSC (Hons) MBSC was a Senior Academic having spent the past 20 years in the tertiary education sector. He has held management positions including Head of Department and Head of Post Graduate Studies and chaired Boards of Management in both academia and community organisations. He has taught, published and researched in areas including Ethics and Psychopathology.



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## Expertise

### Metallurgical Consultants

As Australian Vanadium moves closer to production, management has ensured that the best consultants are assisting.

Wood Group has been appointed as metallurgical consultants to the Company. Their work will focus on vanadium concentrate quality.

Using test results Wood Group will assist in determining the preferred option which will feed into the upcoming PFS report.



### In-house VRB Electrolyte Testing

*Quality vanadium electrolyte supply critical to Chinese VRB expansion*

At AVL we believe that understanding the requirements of our customers today is crucial to mutual success tomorrow.

The Company has installed a vanadium electrolyte pilot plant and successfully produced electrolyte suitable for vanadium redox flow batteries (VRB).

The pilot plant is being used to test and verify that the AVL vanadium resource is suitable for use by third parties specializing in VRB energy storage.



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# Summary

## The World's Next High Grade Vanadium Mine

At Australian Vanadium we believe we have the capacity to be the world's next vanadium mine. Our Gabanintha project is world class and in the top few deposits for size and high grade.

Located in what's considered one of the world's best mining jurisdictions, Gabanintha has the best potential to fill any future shortages.

We believe we have the best combination of management and specialist consultants guiding this world class resource. As we move closer to production, AVL will look to develop strong partnerships that bring mutual success and opportunities to all parties.







## Disclaimer

The views expressed in this presentation contain information derived from publicly available sources that have not been independently verified.

No representation or warranty is made as to the accuracy, completeness or reliability of the information.

## COMMENT

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## COMPETENT PERSON REFERENCES

### Competent Person Statement – Metallurgical Results

The information in this statement that relates to Metallurgical Results is based on information compiled by independent consulting metallurgist David Pass B.Sc (Hons), Mr Pass is a Member of The Australian Institute of Mining and Metallurgy. David Pass is employed by Battery Limits Pty Ltd Mr Pass has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr. Pass consents to the inclusion in the report of the matters based on the information made available to him, in the form and context in which it appears".

### Competent Person Statement – Mineral Resource Estimation

The information in this report that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Barnes and Mr Davis are members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits. Mr Barnes and Mr Davis consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The information is extracted from the report entitled "Substantial high-grade vanadium resource highlights Gabanintha's world-class potential" released to ASX on 10 November 2015 and is available on the company website at [www.australianvanadium.com.au](http://www.australianvanadium.com.au). The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resource or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the competent person's findings are presented has not been materially modified from the original market announcement.

## FORWARD LOOKING STATEMENTS

This announcement may contain certain "forward-looking statements" which may not have been based solely on historical facts, but rather may be based on the Company's current expectations about future events and results. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward looking statements are subject to risks, uncertainties, assumptions and other factors which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to Resource risk, metal price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks in the countries and states in which we sell our product to, and government regulation and judicial outcomes. For more detailed discussion of such risks and other factors, see the Company's Annual Reports, as well as the Companies other filings. Readers should not place undue reliance on forward looking information. The Company does not undertake any obligation to release publicly any revisions to any "forward looking statement" to reflect events or circumstances after the date of this announcement, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.



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**Mastermines**

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