Investing in the energy storage future

Resources Rising Stars 2017

Vincent Algar
Managing Director

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

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 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 relating to the Gabanintha Project 2015 Mineral Resource estimate reported in this announcement is based on information compiled by Mr John Tyrrell. Mr Tyrrell is a Member of The Australian Institute of Mining and Metallurgy (AusIMM) and a full time employee of AMC (AMC Consultants Pty Ltd). Mr Tyrrell has more than 25 years' experience in the field of Mineral Resource Estimation. He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and in resource model development 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. Tyrrell 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.

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. 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.

Competent Person Statement – Blesberg Exploration Programme

The information relating to the Blesberg Lithium-Tantalum Project exploration programme reported in this announcement is based on information compiled by Mr Vincent Algar. Mr Algar is a Member of The Australian Institute of Mining and Metallurgy (AusIMM) and a full-time employee of the Company. Mr Algar has more than 25 years' experience in the field of mineral exploration. He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration 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. Algar 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.

Forward Looking Statements

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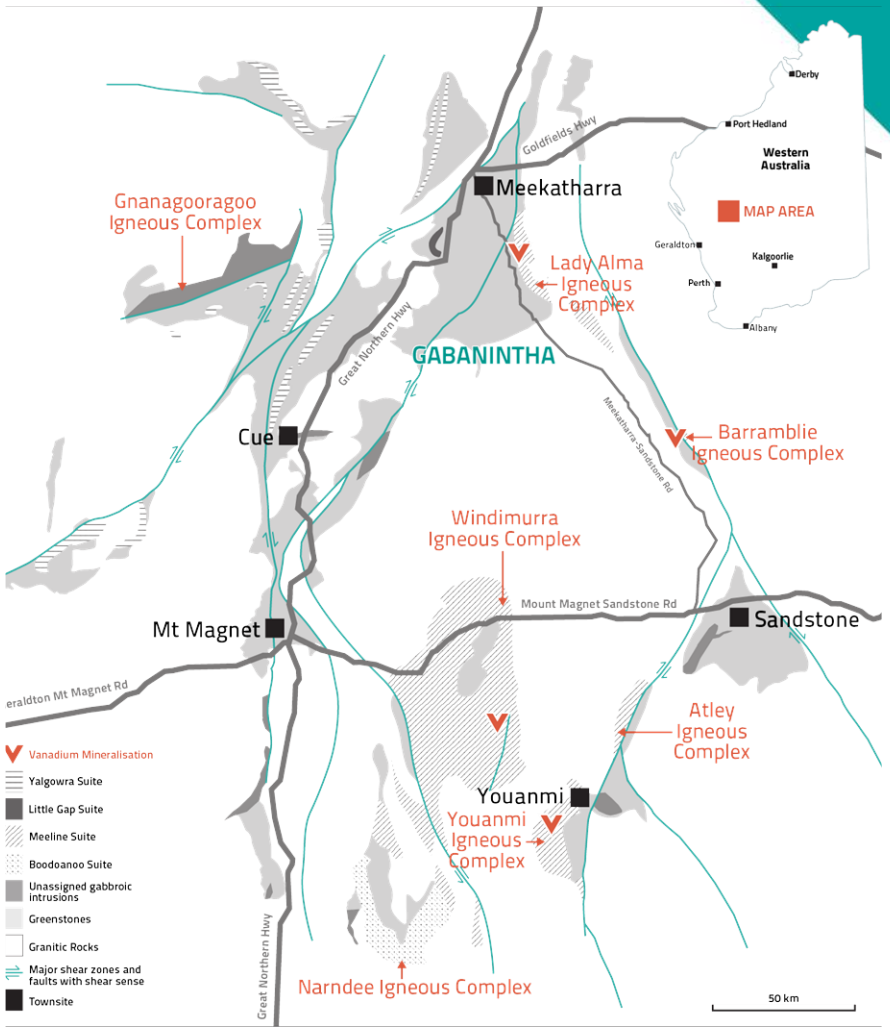
AVL is an integrated Battery Metals Company

- Battery metals company listed on ASX
- Active evaluation of a new, long-life vanadium project (Gabanintha) in Western Australia
- Significant project with large, high-grade Measured, Indicated and Inferred resources
- Gabanintha cobalt by-product opportunity
- Vanadium energy storage market will disrupt traditional global vanadium supply
- Key agreements with battery suppliers and renewable energy installers to develop local market
- AVL offers investors exposure to entire vanadium energy storage value chain
- Focus offers leverage to rising vanadium prices and new applications in energy storage
- South African Lithium project option offers further leverage to energy storage strategy



Corporate Snapshot (ASX:AVL)

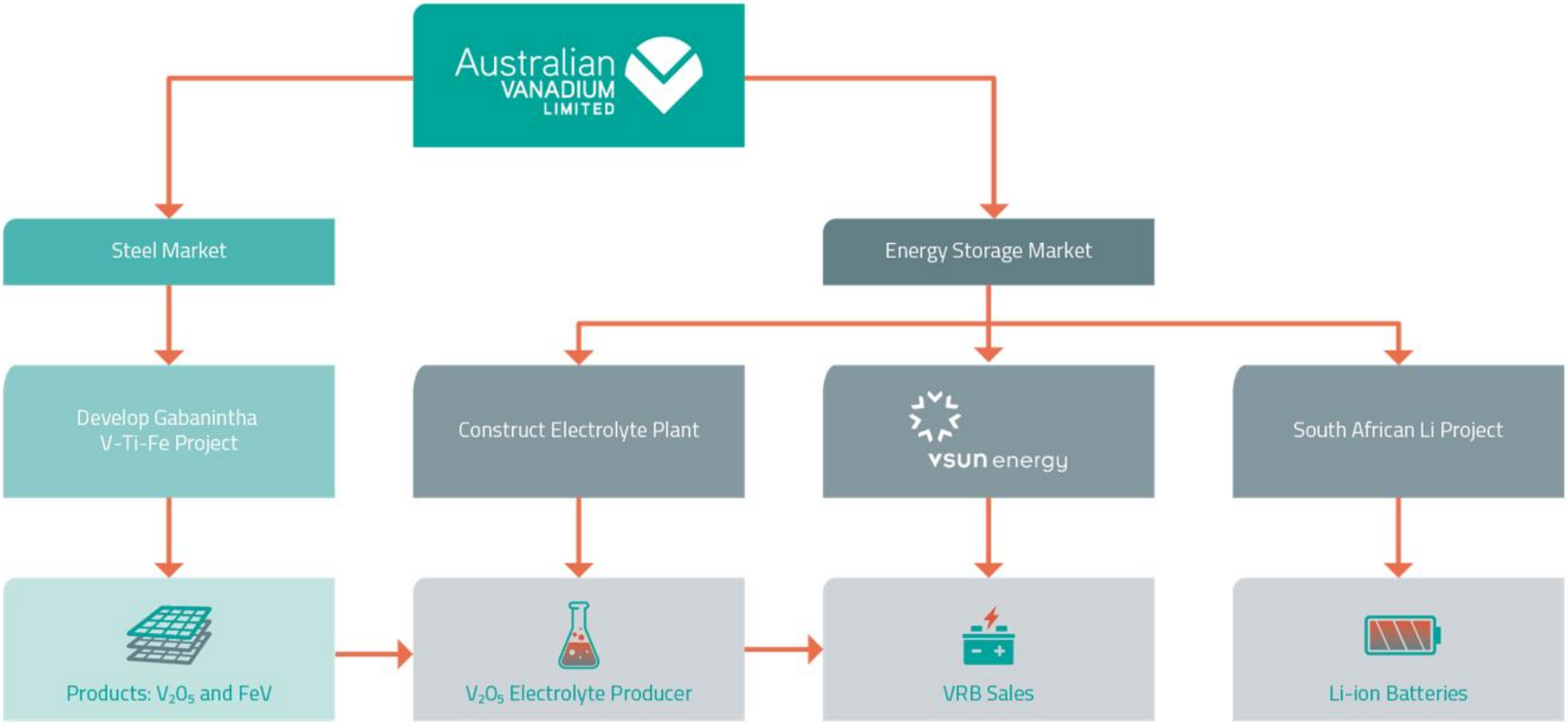
Continuous Listing on ASX since February 2007

Key Statistics (as at 25-05-17)	
Ordinary shares on issue	1,215m
Options on issue (ex at 1.47c expire Dec 2017)	142.9m
Listed Options (ex at 2.c exp Dec 2018) AVLO	235.8m
Share price	AUD $0.016
Market capitalisation (undiluted)	A$19.5m (Cash ~A$2.1m)
Shareholders	3,250

Substantial Shareholders	% holding
PET FC Pty Ltd	4 %
Management	7 %

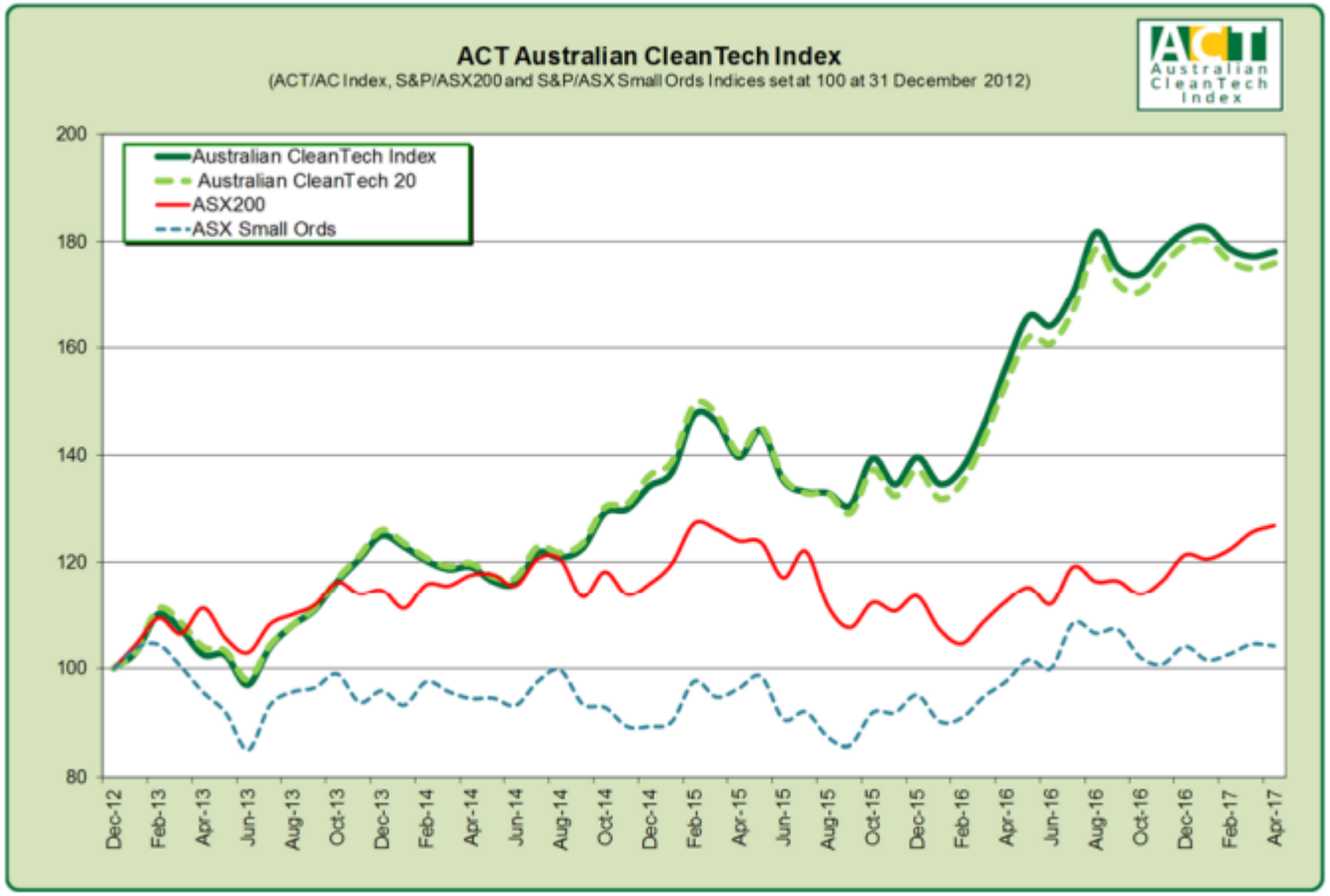
Board of Directors	Title
Vincent Algar Bsc(Hons) Geol, MAusImm	Managing Director
Leslie Ingraham	Executive Director
Brenton Lewis MBSc., BBSc.(Hons)	Non Executive Chairman
Daniel Harris BSc Chem Eng	Non Executive Director

AVL Vertical Integration Strategy



AVL part of Australian CleanTech Index

"The Australian CleanTech Index provides a measure of the performance of the Australian listed stocks in the Cleantech sector. With over 60 companies falling under the coverage of the index and with a combined market capitalisation of over $18Bn"*

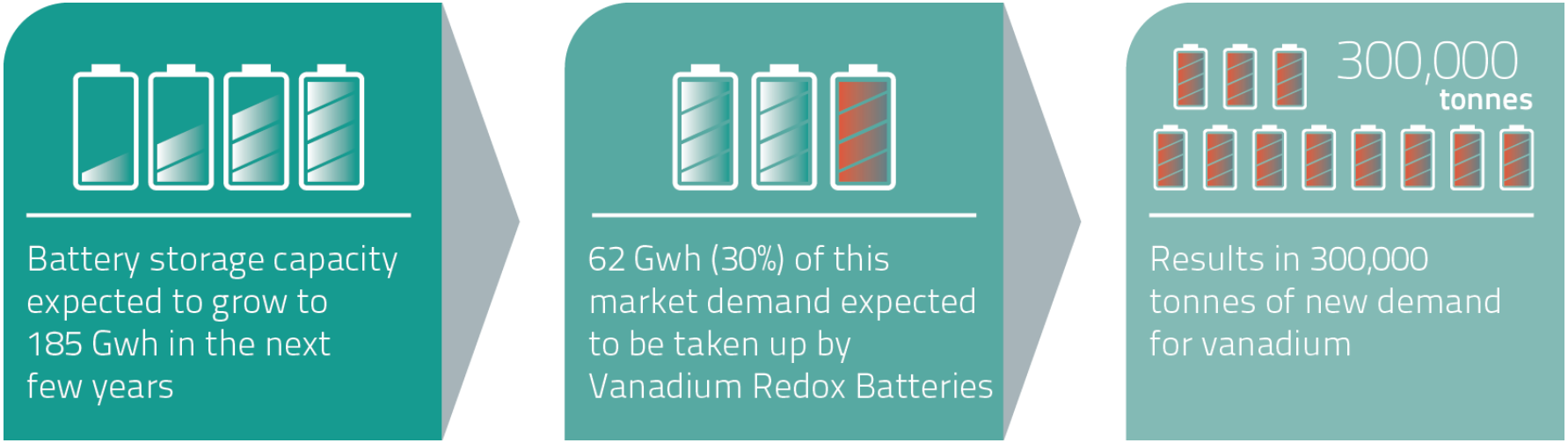


* http://www.auscleantech.com.au/pages/ACT_Australian_Cleantech_Index.php

Vanadium Markets
Steel and Energy Storage

Vanadium in Energy Storage

"Energy storage has the potential to transform our entire energy system." - Clean Energy Australia

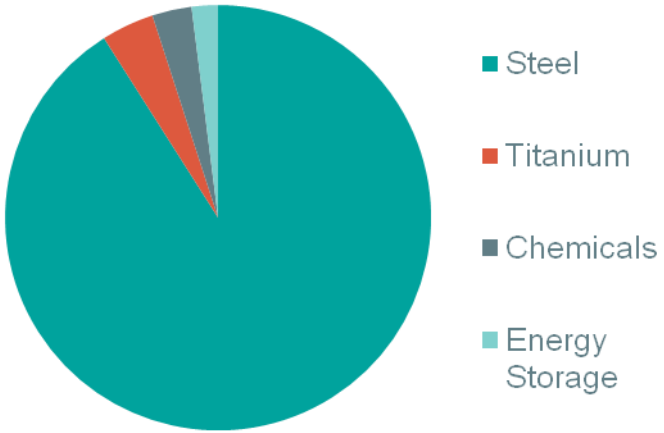


vsun energy

Vanadium Markets - Steel

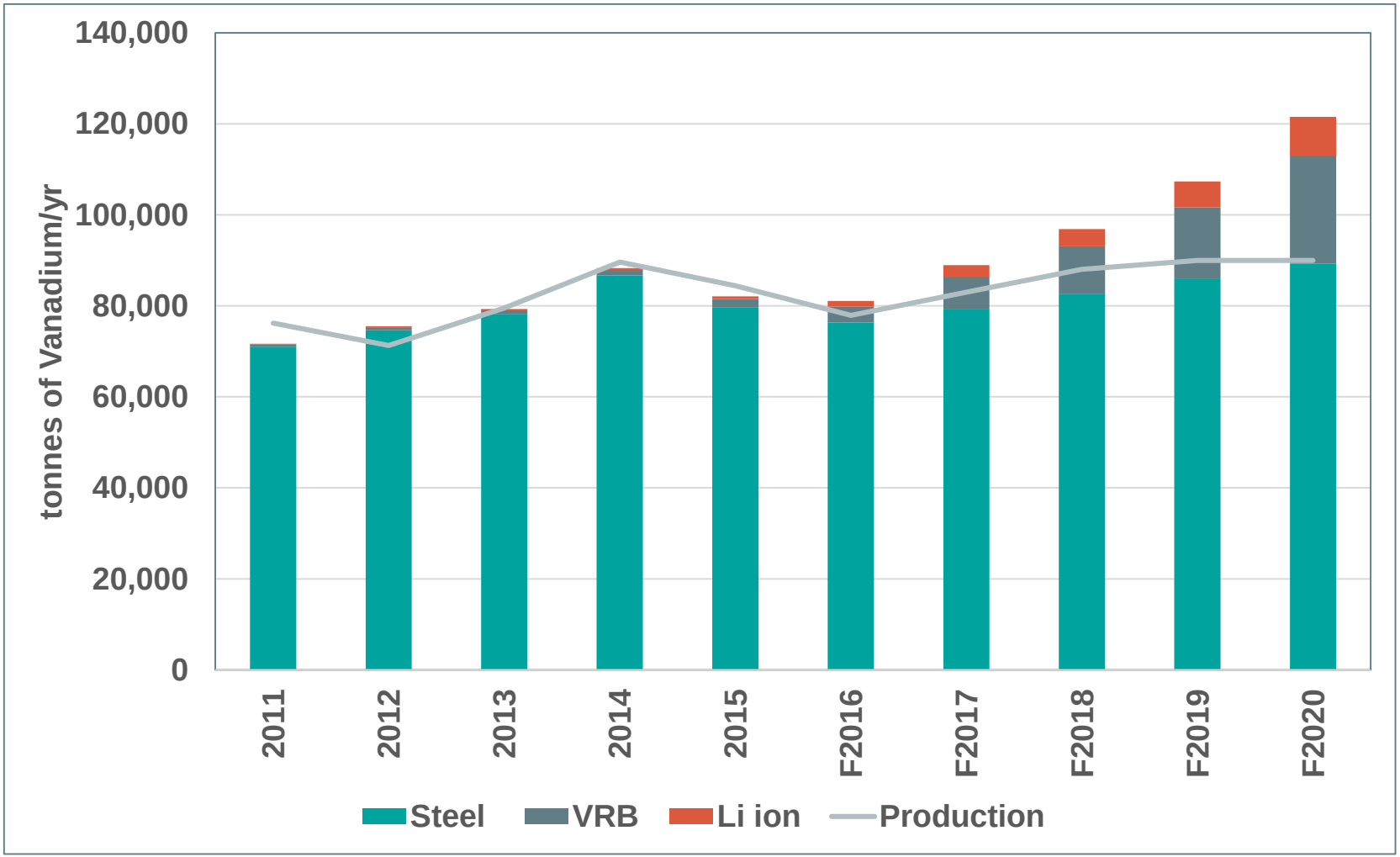
Demand for vanadium continues to grow, with steel remaining a price driver.

- Steel - 92% of vanadium consumption
- 0.2% vanadium added to steel increases strength and reduces weight up to 30%
- Demand for use in rebar continues to increase at 6% annually (TTP Squared)
- New markets in steel will increase demand such as;
  - Materials for automotive, aviation and aerospace
  - Power lines and power pylons
  - High-strength steel structures
  - V in Li-Ion cathode and other energy applications



Vanadium Markets - Overview

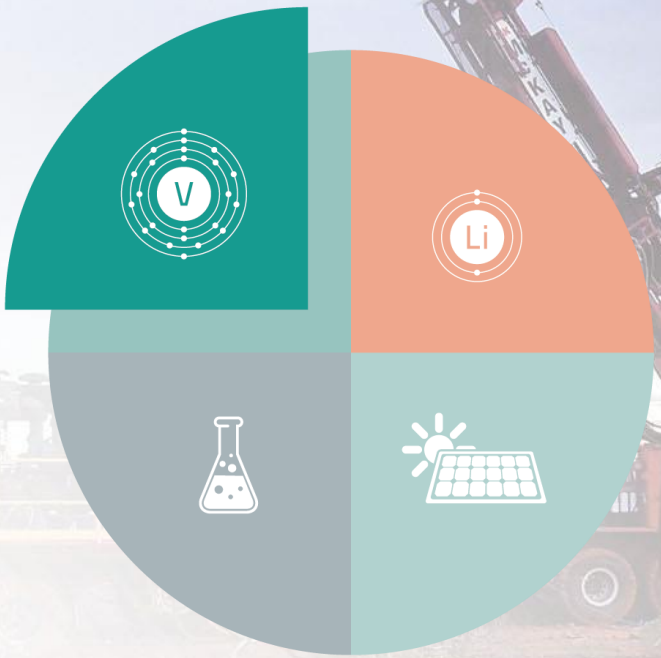
Rising prices give immediate improvement to Gabanintha Project economics due to its higher resource grades



Graph data source: Vanitec ESC

Vanadium Markets - Overview

Ferro Vanadium Price over past 6 months - Ferro Vanadium is leading price marker for Vanadium supply and demand



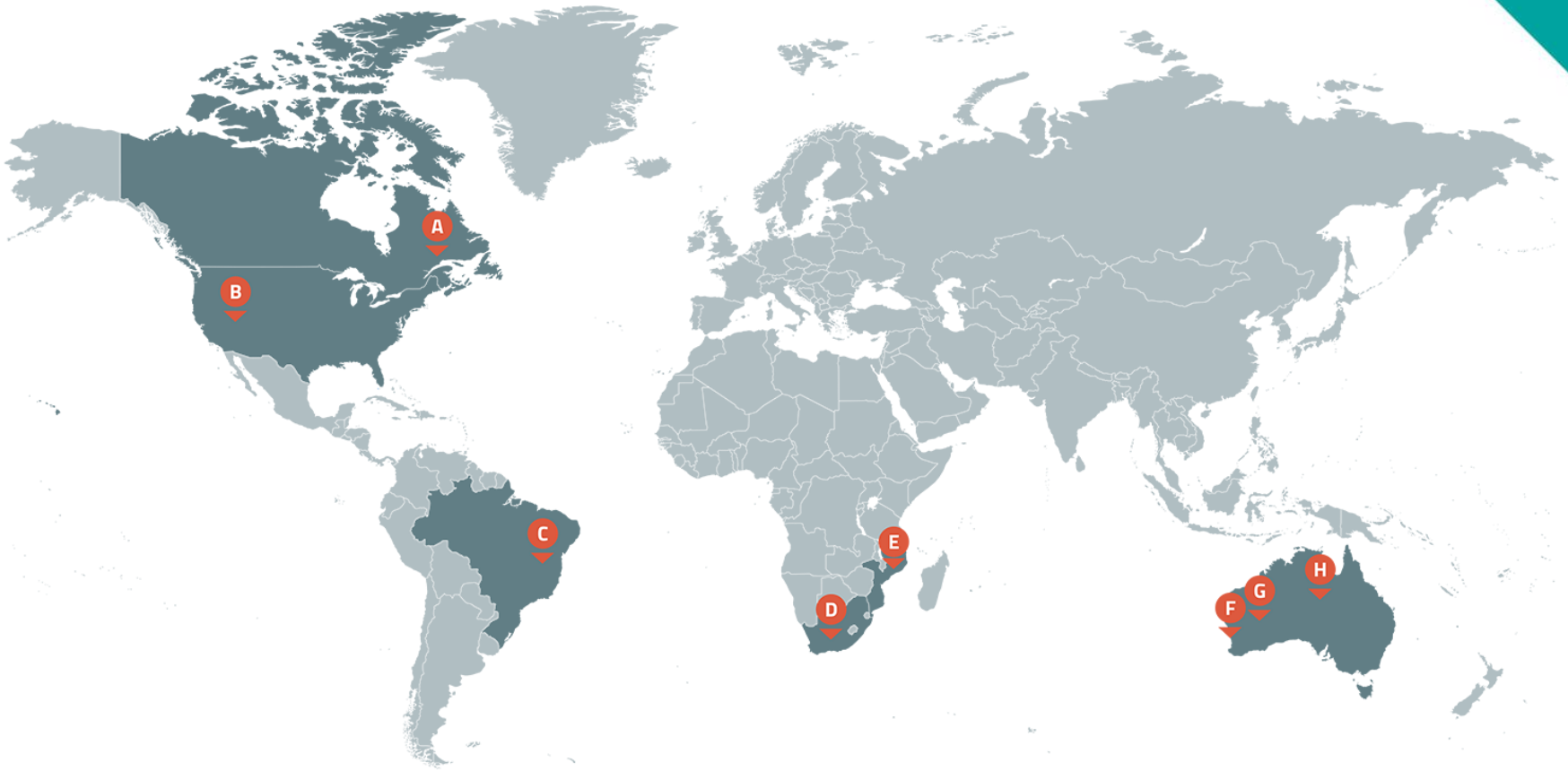
Australian VANADIUM LIMITED

Globally Significant Project

Gabanintha Vanadium Project in Western Australia

Global Player

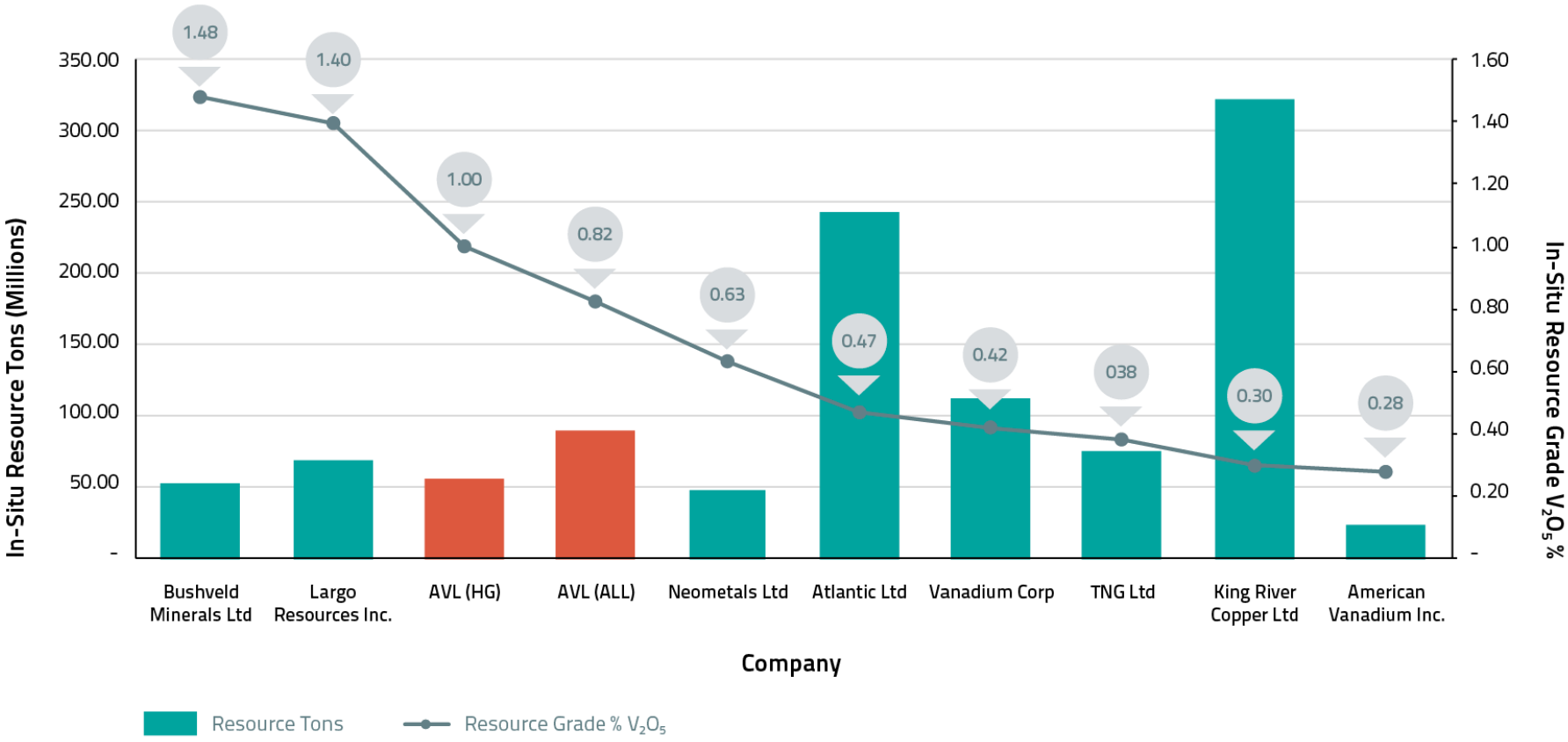
Gabanintha project is a significant development project on a global scale in grade and size



A Vanadium Corp
B American Vanadium
C Largo Resources
D Bushveld Minerals
E Syrah Resources
F Australian Vanadium
G Neometals
H TNG Limited

Vanadium Peer Comparison

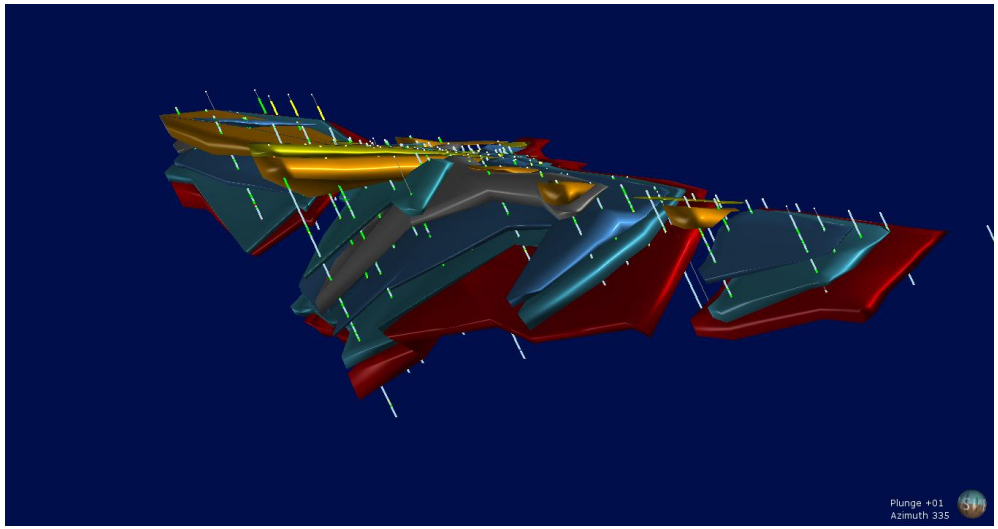
Gabanintha a globally significant deposit on grade and tonnage basis



Gabanintha Vanadium Project

High grade resource in favourable mining jurisdiction in Murchison of WA

- One of the highest-grade open pit vanadium deposits currently being advanced globally;
- Measured Resource of 7Mt, Indicated Resource of 17.8Mt and Inferred Resources of 66.7Mt, a total of 91.4Mt, grading 0.82% V_2O_5 and containing a discrete high-grade zone of 56.8Mt, grading 1.0% V_2O_5 reported in compliance with the JORC Code 2012
- High-grade Measured Indicated & Inferred Resource of 56.8Mt @ 1.0% V_2O_5, 11% TiO_2 and 42% Fe



Gabanintha Vanadium Project

Drilling review adds new cobalt opportunity – Critical Battery metal

- Significant cobalt mineralisation identified in review of the Gabanintha data
- 1,270 samples report above 200ppm Co, at an average of 275ppm Co
- Maximum assay of 0.18% (1828ppm) Co recorded in GRC102 (42m-43m)
- Earlier metallurgical testwork results indicate potential to produce cobalt by-product
- Opportunity to extend Gabanintha as a unique battery metals source
- Additional evaluation of cobalt potential underway

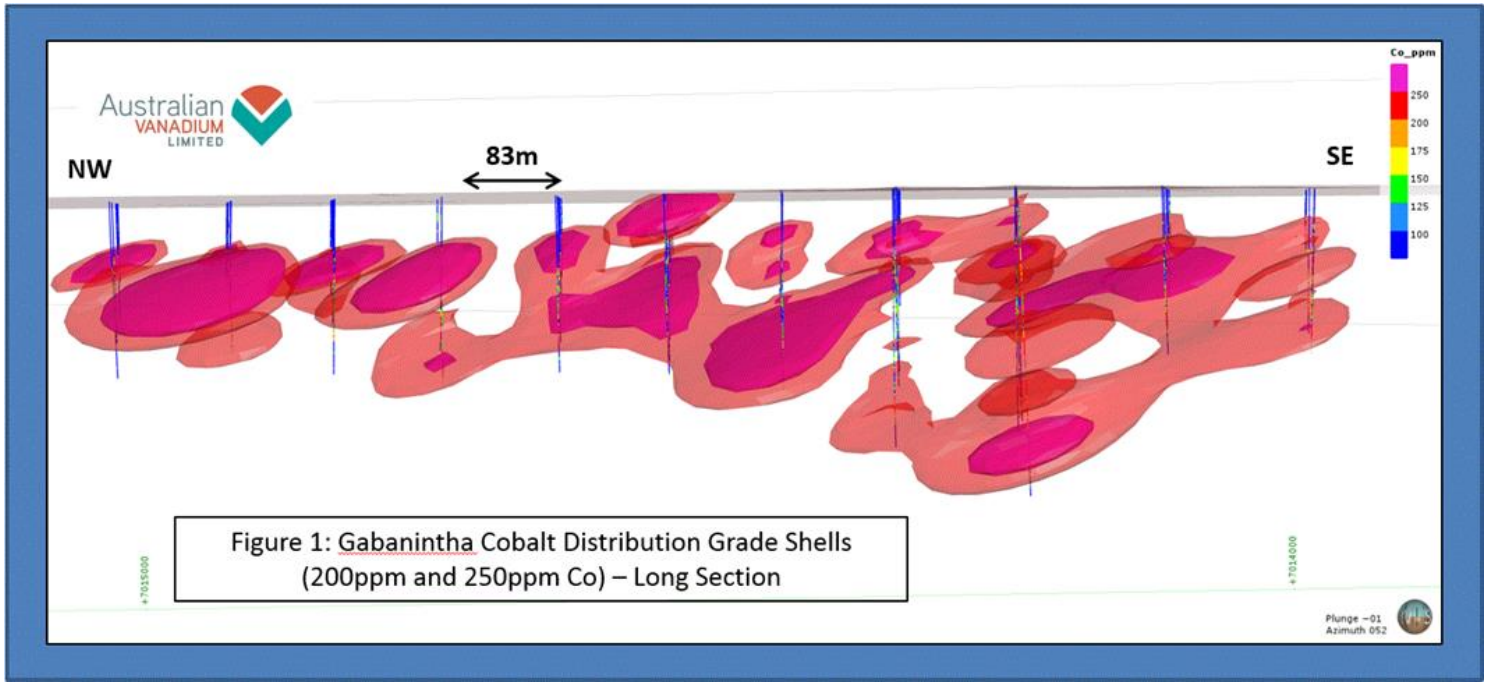
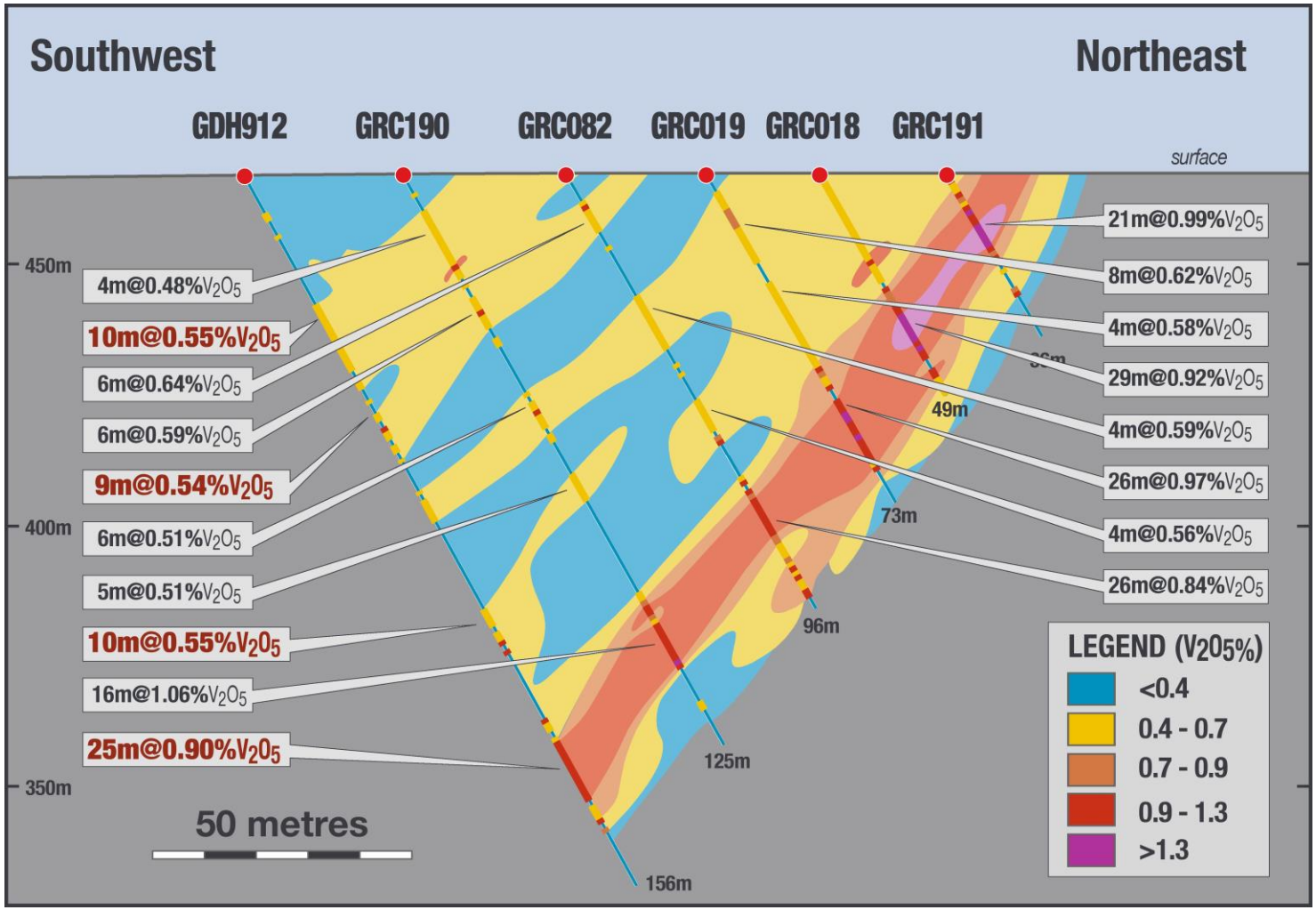


Figure 1: Gabanintha Cobalt Distribution Grade Shells (200ppm and 250ppm Co) – Long Section

Gabanintha Vanadium Project

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



Vanadium Resource

Large high-grade resource

Material	JORC Resource Class	Million Tonnes	In situ bulk density	V_2O_5 %	Fe%	TiO_2 %	SiO_2 %	Al_2O_3 %	LOI%
High grade	Measured	7.0	3.73	1.09	43	12	10	8	3.4
	Indicated	4.3	3.29	1.07	41	12	12	9	4.6
	Inferred	45.5	3.67	0.97	42	11	12	8	2.8
Subtotal High Grade		**56.8**	**3.65**	**1.0**	**42**	**11**	**12**	**8**	**3.0**
Low grade	Indicated	13.4	2.39	0.55	24	7	27	19	8.7
	Inferred	21.1	2.48	0.53	25	7	27	17	7
Subtotal Low grade		**34.6**	**2.45**	**0.53**	**25**	**7**	**27**	**18**	**7.6**
Subtotal Measured	Measured	7.0	3.73	1.09	43	12	10	8	3.4
Subtotal Indicated	Indicated	17.8	2.61	0.68	28	8	23	16	7.7
Subtotal inferred	Inferred	66.7	3.29	0.83	37	10	17	11	4.1
	TOTAL	**91.4**	**3.19**	**0.82**	**35**	**10**	**18**	**11**	**4.8**

Note: density values quoted here are weighted average values. The Mineral Resource was estimated as a block model within constraining wireframes based upon logged geological boundaries and grade cut-offs of 0.30% V_2O_5 for Low Grade (LG) and 0.70% V_2O_5 for High Grade (HG). Tonnages have been rounded to reflect that this is an estimate.

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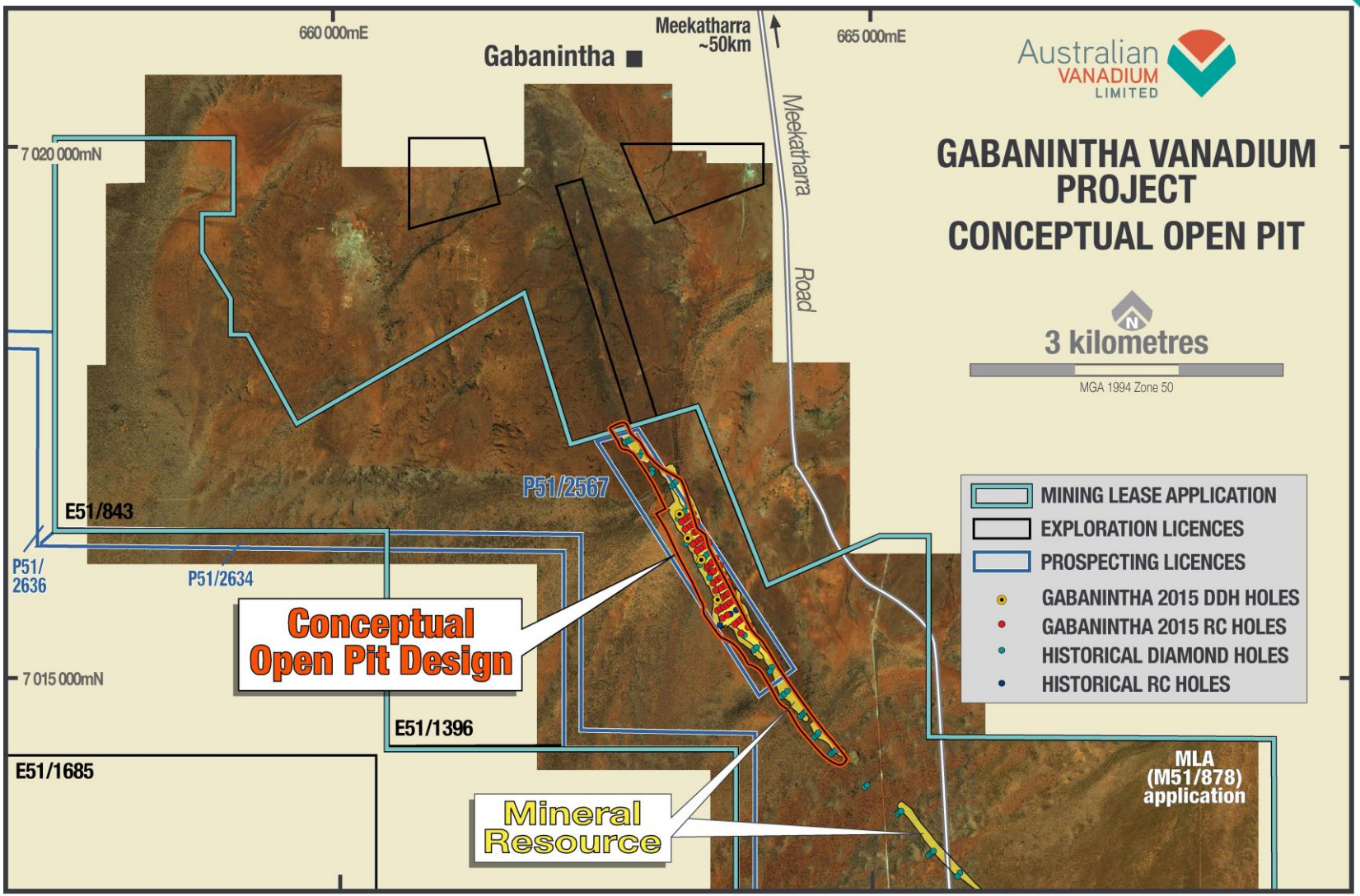
Gabanintha Vanadium Project

First pass internal optimisation shows significant potential



Gabanintha Vanadium Project

Updated Concept Engineering Study

CONCEPT STUDY PARAMETERS – CAUTIONARY STATEMENT

The Concept Study in this presentation (nominal +/- 50% accuracy) is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the current conclusions of the Concept Study will be realised. While there is a high level of geological confidence associated with Measured and Indicated Mineral Resources, there is no certainty that further exploration and development work will result in the estimation of Ore Reserves.

The Company advises the Concept Study results reflected in this presentation are highly preliminary in nature as conclusions are drawn from the average grade of Measured, Indicated and Inferred Resources. A generic mining cost per tonne of material moved and an average resource grade has been used to determine overall mining and processing costs as opposed to a detailed mining block model evaluation to produce a detailed mining schedule.

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Gabanintha Concept Study

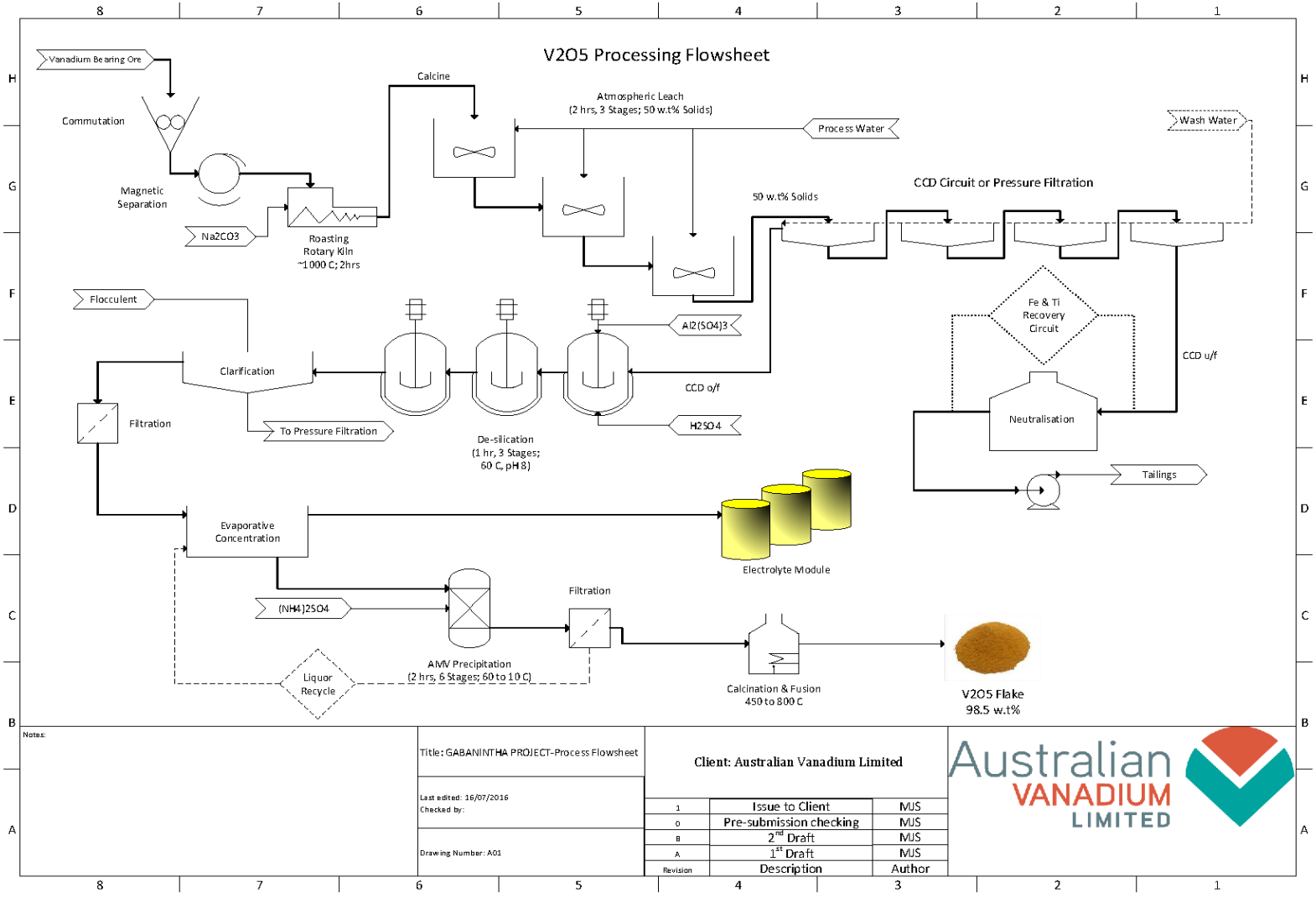
Updated Concept Engineering Study supports move forward

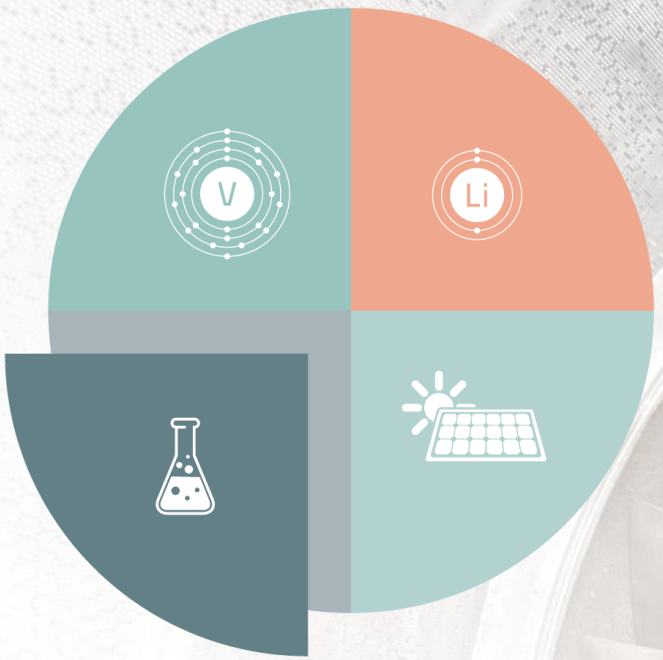
Results of study have satisfied the Board to advance the Project with further key studies.

- New metallurgical beneficiation test work underway – focus on Fe-V-Si concentrate optimisation
- Resource update near completion, detailed mining study to follow in June
- Hydrology study, environmental field baseline studies for EIA nearing completion.
- Review of commercial production of vanadium electrolyte undertaken.
- Modelling of pit optimisation for management purposes recorded very positive results
  - Contains 45.3 Mt mineralised material for processing and 86.8 Mt waste material.
  - Shell contains 45.3Mt @ 0.80% V_2O_5 representing 49.6% of the total 2015 Mineral Resource Estimate (100% of the Measured and 99% of the Indicated)
  - Represents 54% of the total Mineral Resource material within the pit shell
- Production cases considered were potentially economically viable while treating feed material containing up to 50% oxide and low grades (0.5% V_2O_5) with beneficiation pre-treatment.
- Tailings residue contains high Ti and Fe values and has the potential to be reprocessed to produce saleable titanium oxide and iron oxide products.
- A review of existing data has revealed significant cobalt assays at the Gabanintha project site. Additional specific test work is being undertaken.
- Proposals are currently being considered for a PFS study focusing on early startup concentrate production

Gabanintha Concept Study

Proposed Process Flowsheet





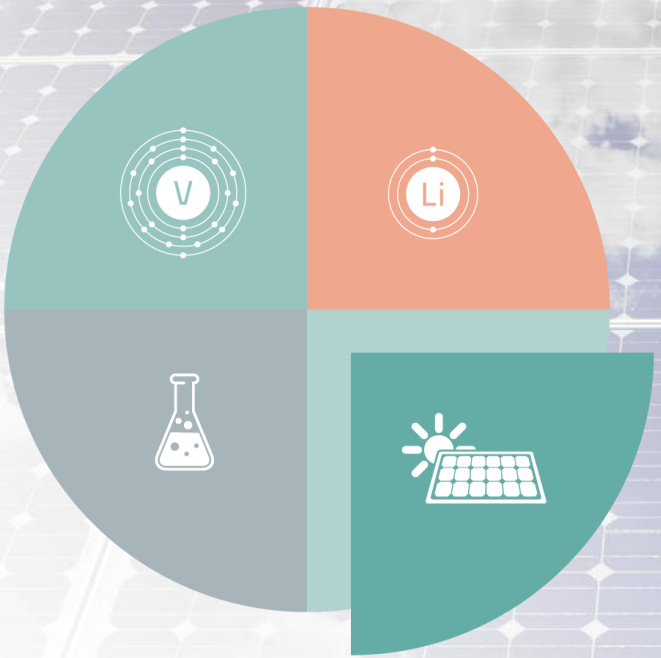
Vanadium Electrolyte

Integration from vanadium resources directly to energy storage products

Value Addition in V-electrolyte

Vanadium electrolyte production at the source de-risks and adds options

- Vanadium electrolyte is battery “fuel”
- Mild acid solution of V_2O_5 with all oxidation states available for electron transfer
- Can be produced in stand-alone plant or as part of mine process
- Offers unique opportunity to value-add at source location for low cost
- Local production leads to all-important reduction of battery total cost of ownership
- Benefits target market by having local “supply” for imported battery units
- High recycle potential for vanadium units
- Company evaluating economics of development of commercial plant or mine attached electrolyte facility
- Pilot plant located in a lab at the University of Western Australia in Perth, commissioned in November 2016

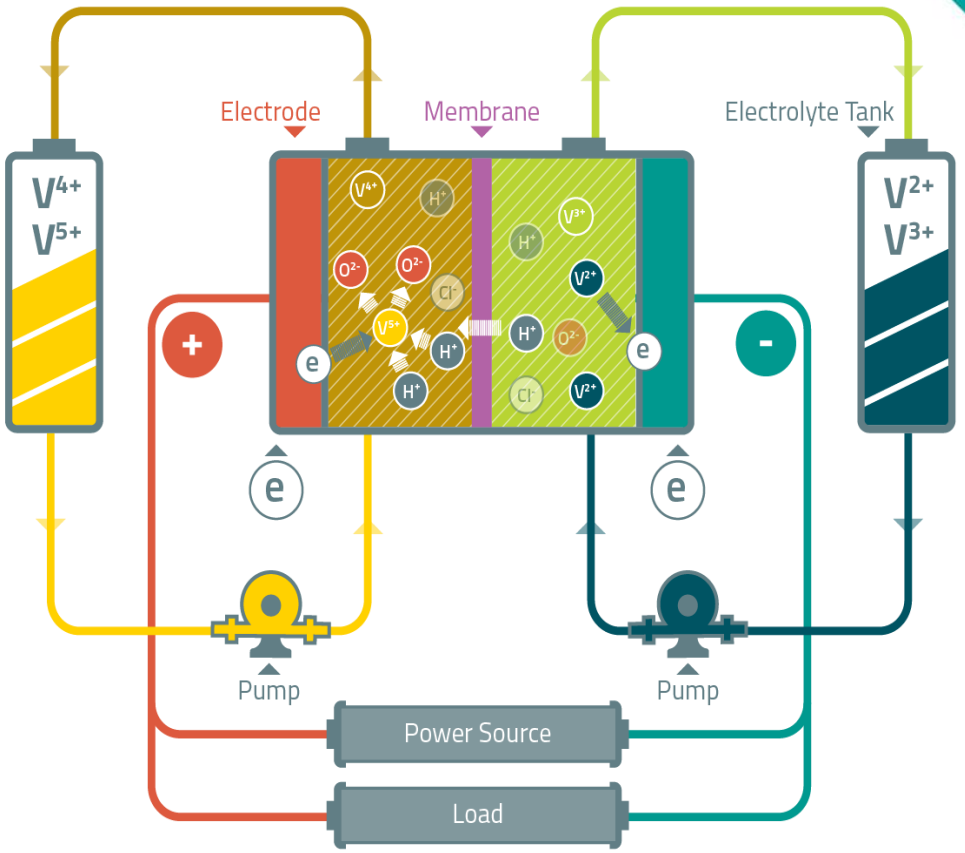


Vanadium in Energy Storage

Vanadium in Energy Storage

Unique characteristics of Vanadium Redox Batteries (VRBs)

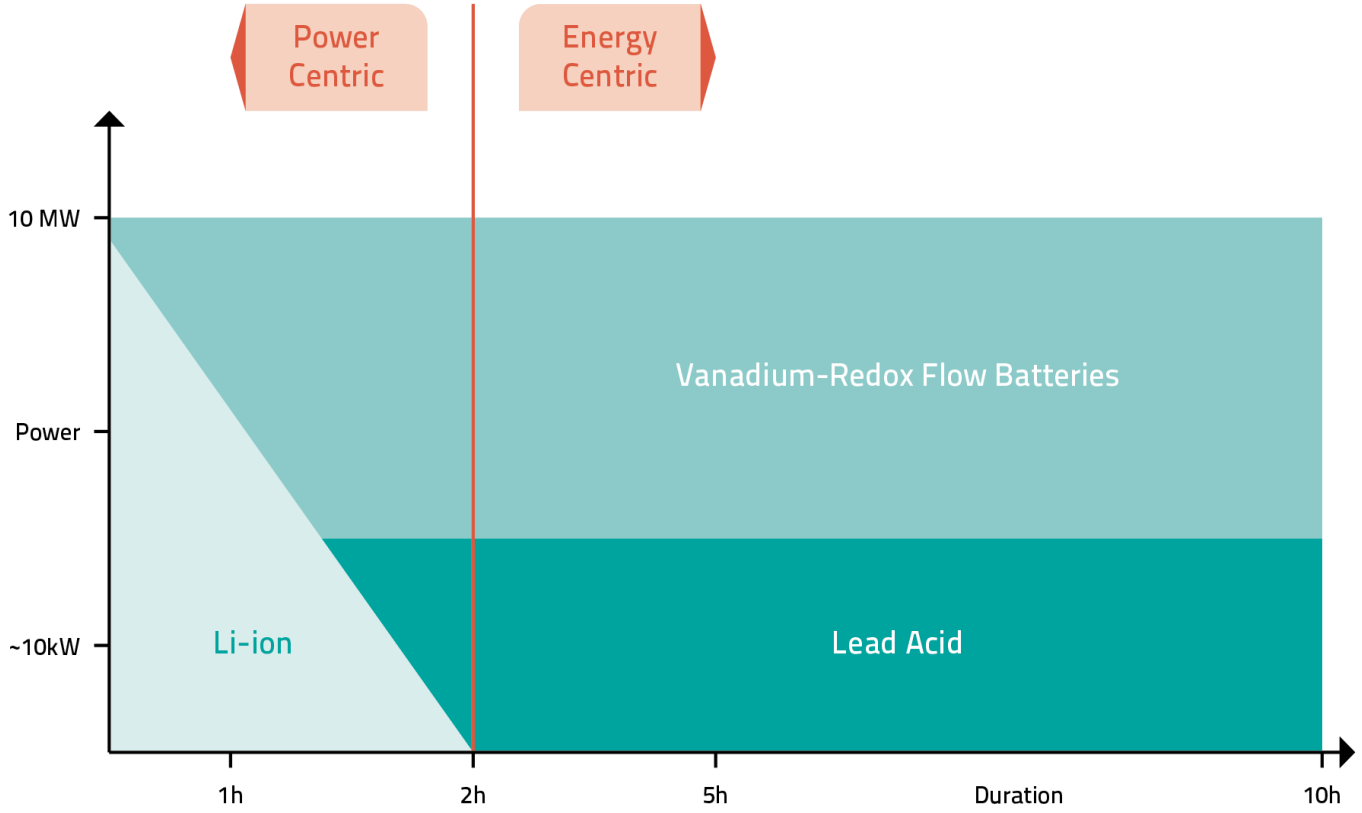
- VRBs provide a way to store and re-supply renewable energy. Ideal for large-scale energy storage applications, unlocking the full potential of renewables while maintaining grid security.
  VRBs have unique advantages over other batteries;
  - Easily scaled into large MW scale solutions
  - Lifespan of 20+ years with very high cycle life and no capacity loss over time
  - Only one element in electrolyte, V_2O_5 which can be re-cycled
  - Immediate and rapid energy release
  - Excellent charge retention (up to 1 year)
  - Suitable for grid connection
  - Can discharge 100% with no damage
  - Improved safety and low replacement rate compared to Li-ion (lower lifetime LCOE)
  - Commercially available and competitive with Li-Ion at larger scales



Vanadium in Energy Storage

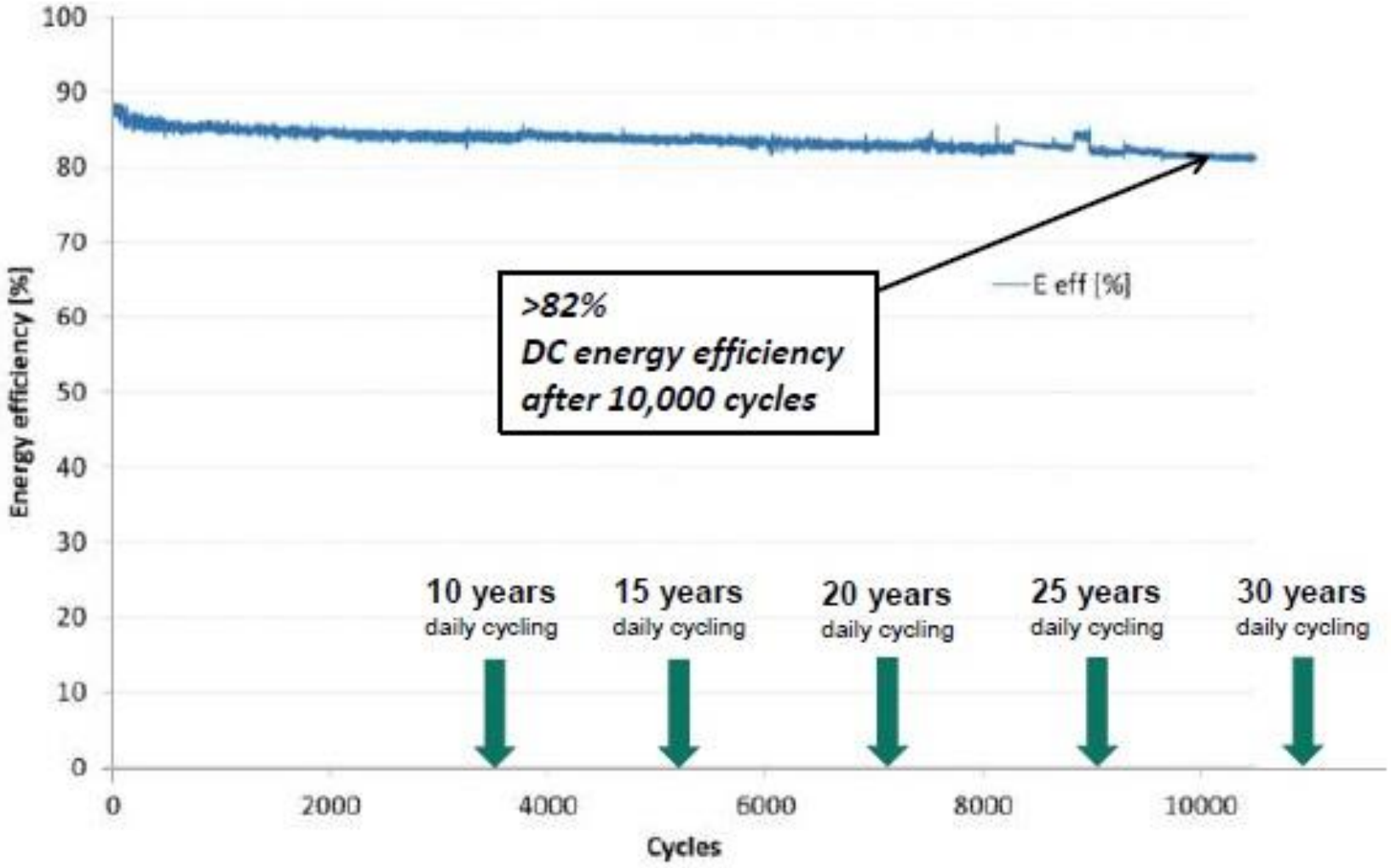
Defining the space for flow battery technology

Vanadium Flow Batteries are Energy Storage devices



Vanadium in Energy Storage

Maintaining performance levels over time – no need to oversize to compensate for inherent battery degradation of other systems



Vanadium vs Lithium: Key Comparisons

Vanadium Flow Battery	Lithium (Li-ion)
Energy Battery – store large amounts of energy for later use	Power Battery – ideal for shorter term high power application
Energy stored in electrolyte tanks	All energy stored in cell
Stable – non-flammable	Flammable (prone to thermal runaway)
Long lifespan (20 years) due to very high cycle life. No degradation during cycling. (20,000 cycles)	Short lifespan (5-10 years) due to physical changes induced in charge discharge cycle (6000 cycles)
Vanadium electrolyte can be re-used, does not degrade (30% residual value)	Recycling difficult due to multiple components (no residual value)
Scalability – as modules or by introduction of larger tanks – fewer control systems	Multiple small batteries required – Complexity of control increases
100% depth of discharge with no lifetime capacity loss	Limited to 80% depth but with increasing capacity loss in high cycle environment

Redox Battery Market Beckons in Australia

Can the VRB be the ultimate grid energy storage solution for Australia?

- Rising power costs: VRBs can reduce power bills by peak/off-peak shifting and demand management
- Australia has world's most extended networks: many fringe-of-grid and off-grid opportunities
- Battery storage on political agenda: efforts to reduce power price rises and carbon dependency
- VRB rollout can assist with Australian networks primary goal – capital cost deferment
- Australian storage market expected to grow to 3000MWh by 2030 (CEC Report 2012)
- VSUN Energy actively identifying multiple large (+10kW to 250kW power, 100kWh to 2MWh and multiples) commercial storage opportunities

vsun energy

Residential VRB

- VSUN Energy has been approached by more than 100 people seeking a residential VRB.
- The VRB offers a large amount of energy storage, providing a home's real energy requirements during the evening, night and early morning.
- Individual confidence in energy storage at home should translate to the workplace, where those commercial decision makers are.
- Many States are interested in promoting new manufacturing and associated jobs.
- A unique selling point of a non-flammable product, safe for residential settings.
- The smaller size of VRB would also be suitable for telecommunication settings.
- Analysis of market underway, due to be completed late May 2017.
- Partner selection underway

First CellCube Installation Completed

Rural site benefitting from solar PV plus CellCube has shifted to 100% renewable energy self consumption. First opening into large Australian market.

Key Partnerships in Place to Grow Strategy

AVL is on track to achieving vanadium storage market objectives with excellent market and technology companies

GILDEMEISTER energy solutions

SUNCONNECT Kill Your Power Bill ™

C-Tech INNOVATION

GENUX

THE UNIVERSITY of ADELAIDE

UNSW AUSTRALIA

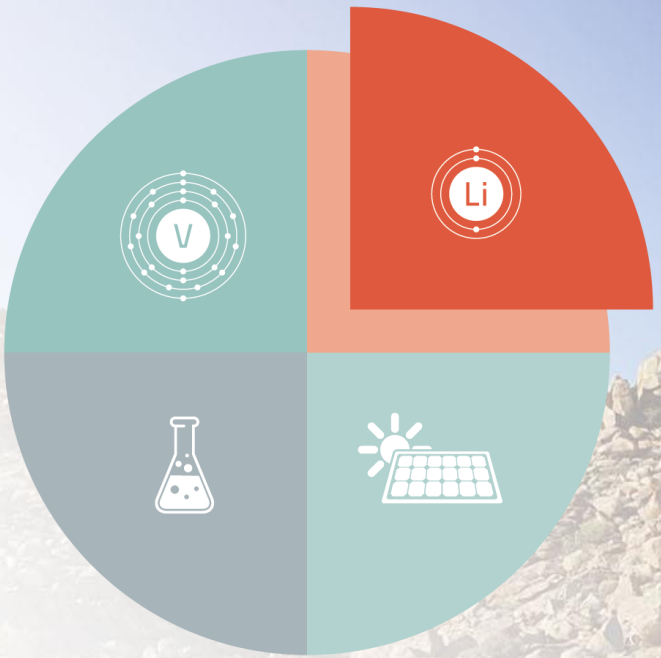
BuildingIQ

EPC Technologies Smarter Energy

eq+ towards equilibrium

PRAXIS SYSTEMS

SMART ENERGY CHOICES SPECIALIST IN ENERGY EFFICIENCY SOLUTIONS



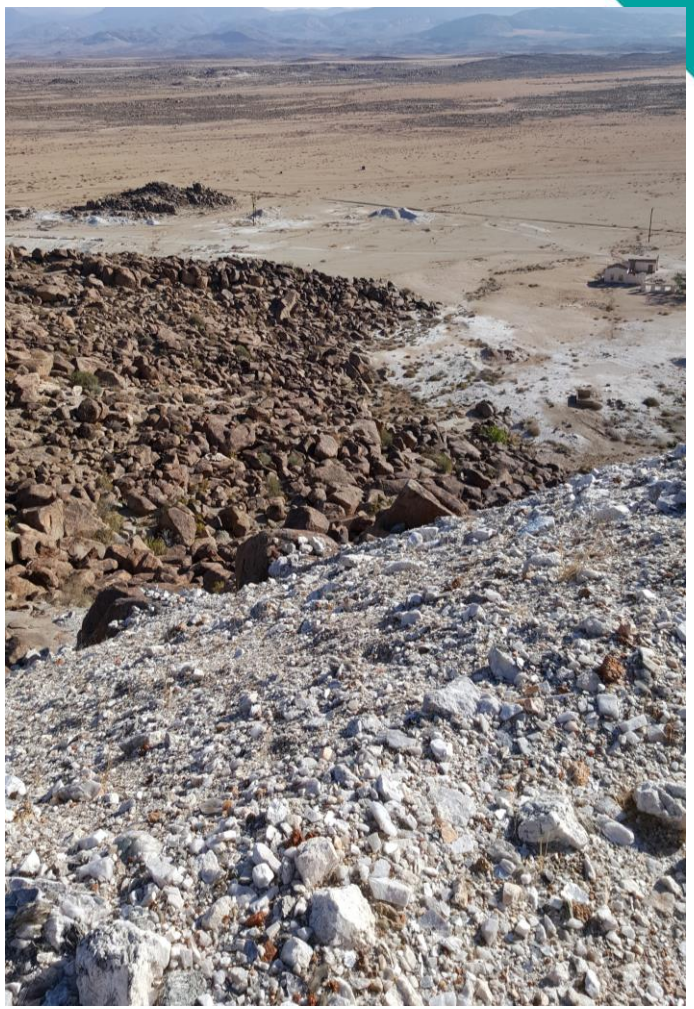
Lithium-Tantalum Project

New project to add diversity to AVL and extend battery metal focus

Blesberg Lithium-Tantalum Project Acquisition

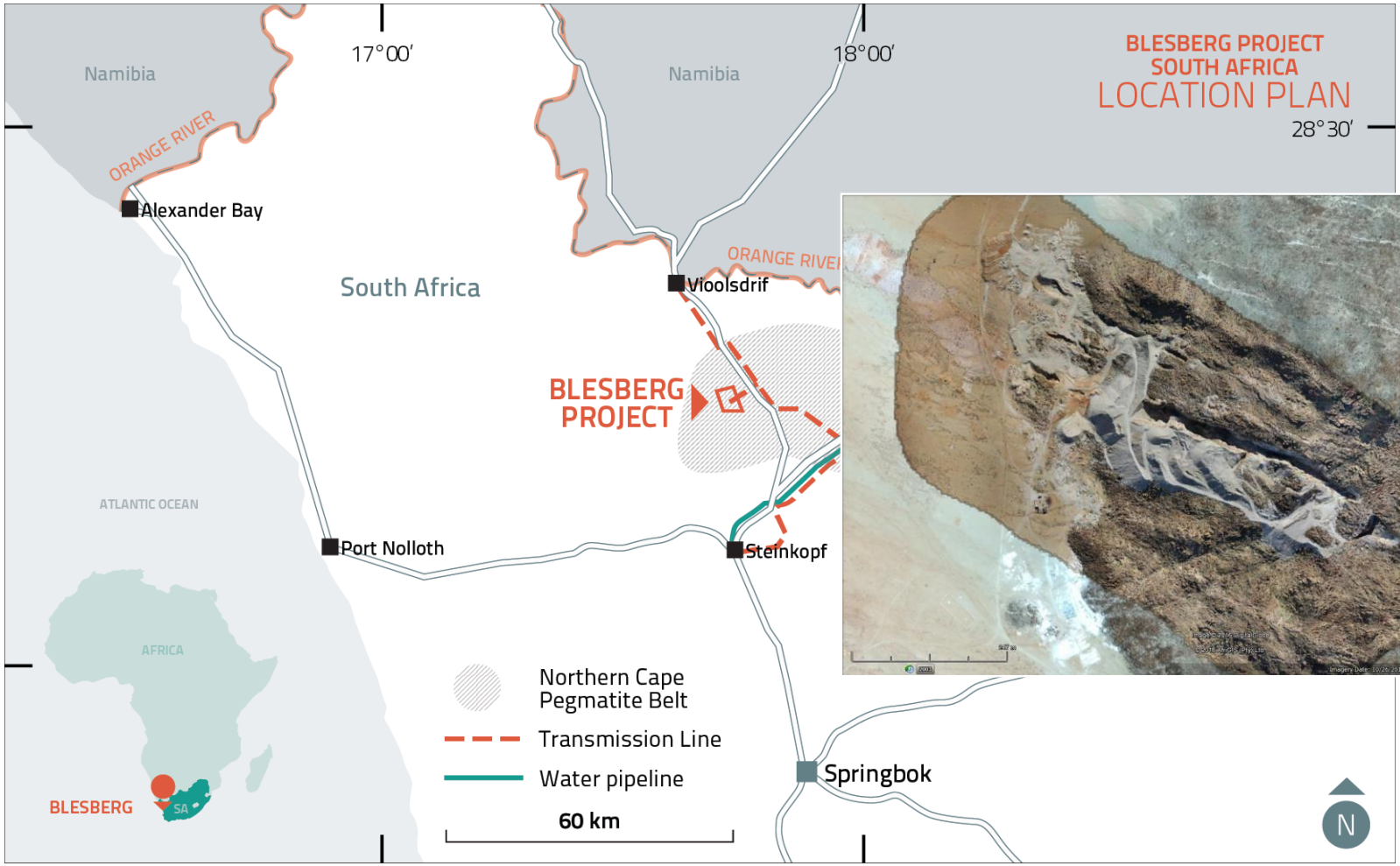
AVL broadens its focus on energy storage minerals

- AVL has secured option to acquire a minimum 50.03% interest in the Blesberg Lithium-Tantalum Project in South Africa. Interest in the project may be increased to 74%.
- Project acquisition includes the historic Blesberg Mine, one of the largest known mineralised pegmatite deposits in the Northern Cape pegmatite belt.
- Historic production from Blesberg Mine includes spodumene concentrate (containing lithium), tantalite, feldspar, bismuth, beryl and mica.
- Sampling of Blesberg Mine historical stockpiles highlights Spodumene (Lithium) and Feldspar exploration potential.
  - +20kg Spodumene samples graded between 2.86% and 4.76% Li_2O
  - Feldspar sample meets technical specifications of local customers in ceramic and glass industry.
- Mine is located close to sealed highway access & is connected on-site to grid power.
- First drilling programme at Blesberg Mine commenced in March 2017.
- Preparation for additional targets underway.



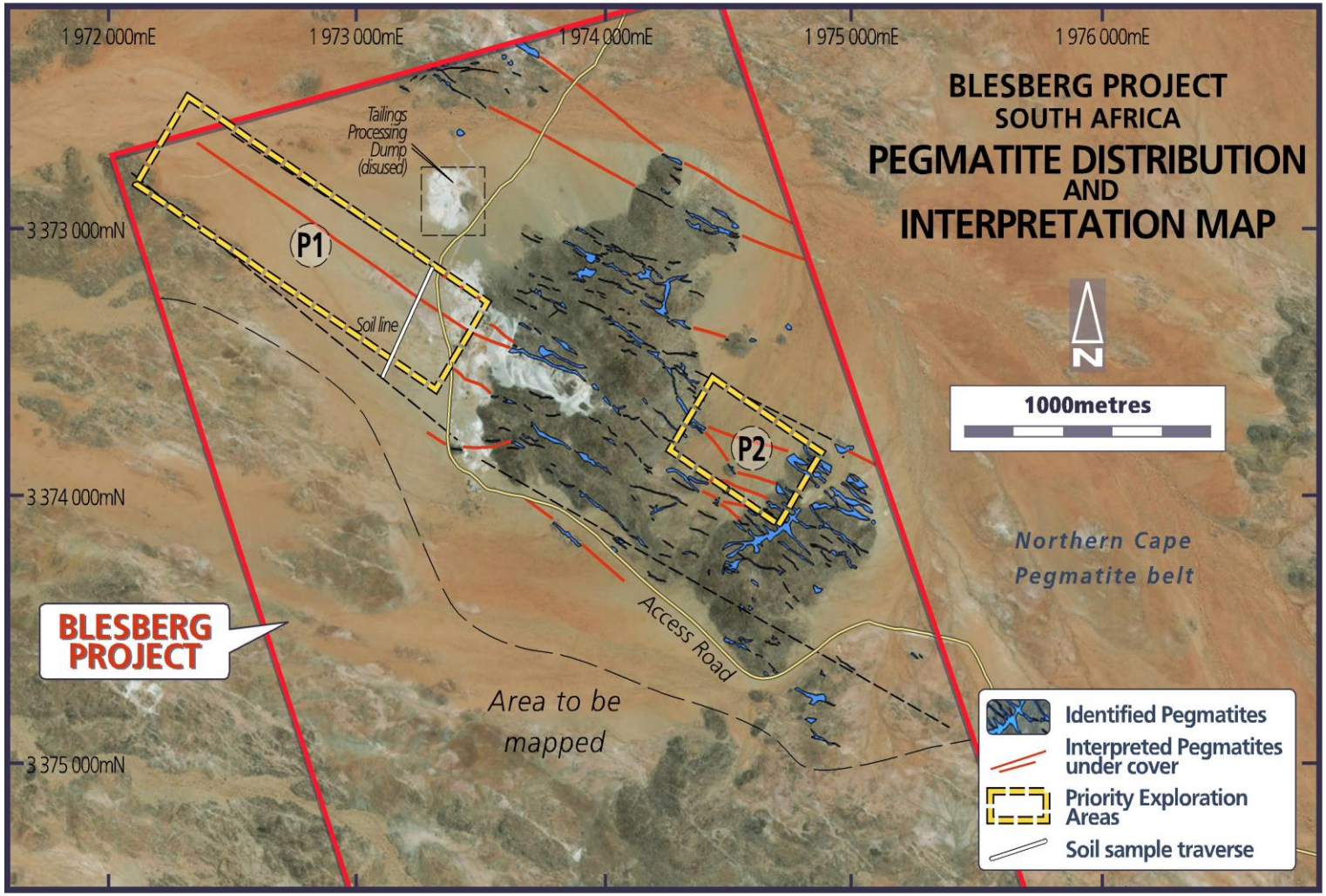
The Blesberg Project

AVL broadens its focus on energy storage minerals



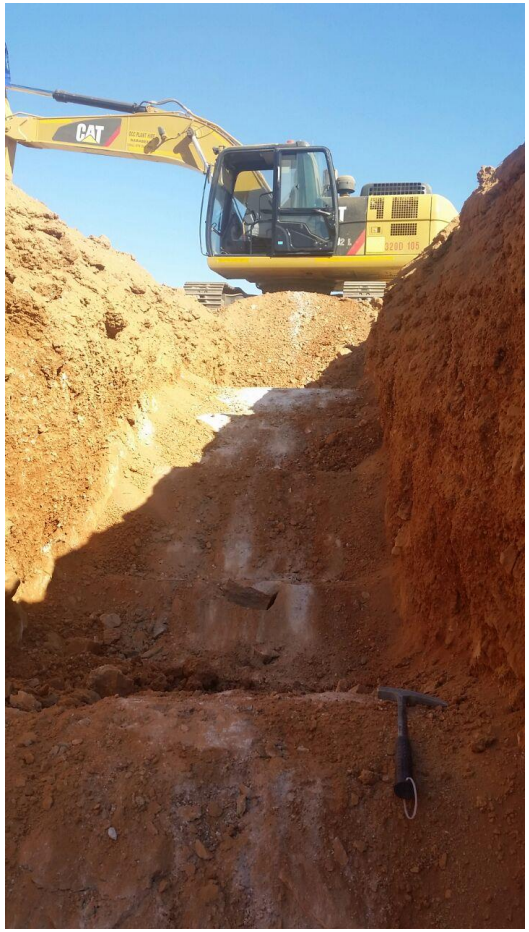
The Blesberg Project

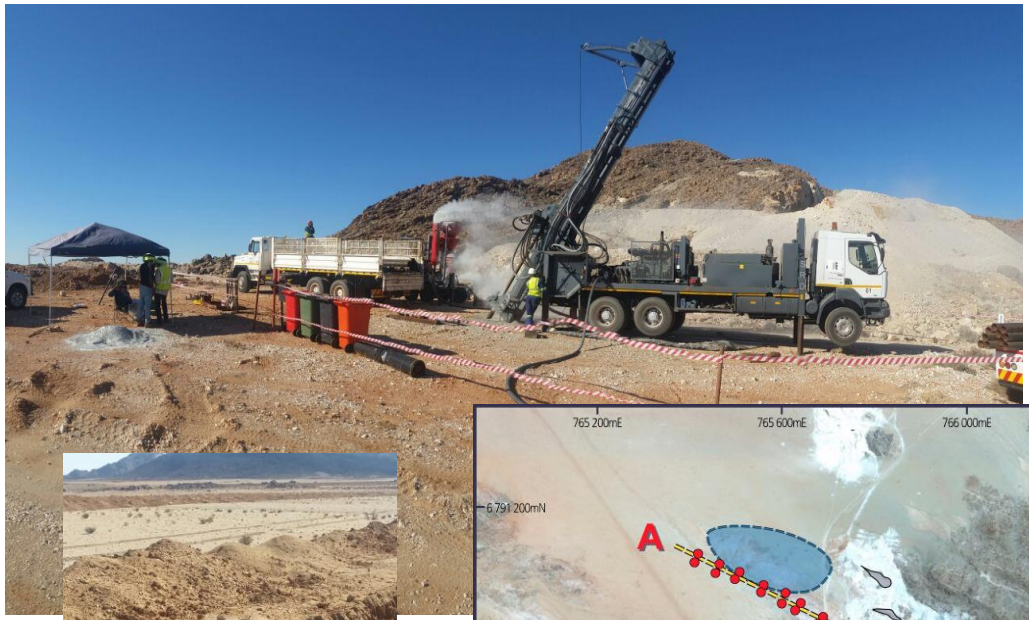
Significant Exploration Upside – Pegmatite extensions identified over 3km strike – no modern exploration outside historical excavation

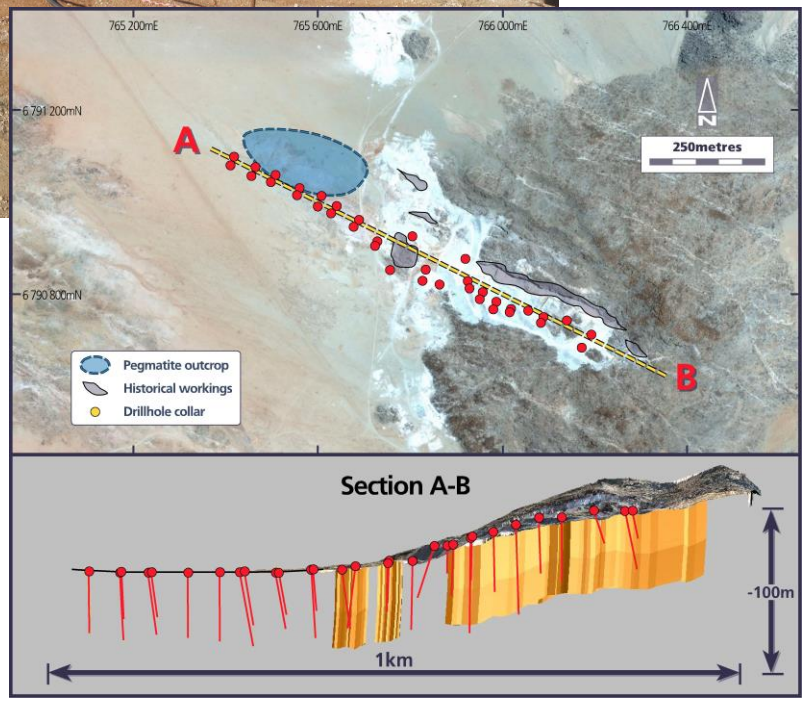


The Blesberg Project

4,000m RC and 500m Diamond drill program currently underway

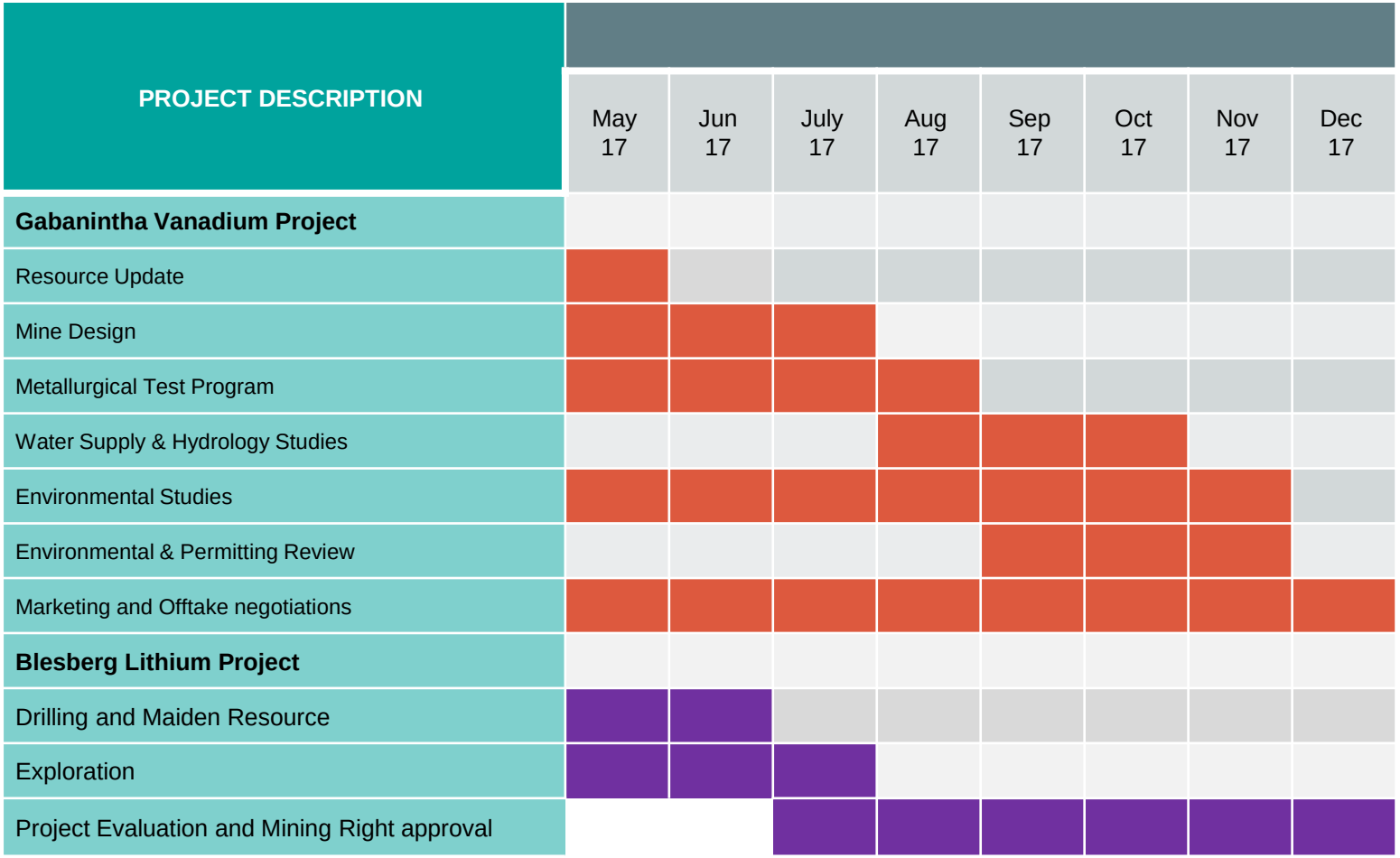






AVL project Timelines

Studies and Exploration to advance Lithium and Vanadium Projects in 2017



Australian Vanadium summary

An active company advancing a unique integration strategy focused on energy storage metals

Highlights

- Quality, grade and tonnage of Gabanintha resource moving towards project development.
- Detailed concept engineering study shows outstanding results to support project advancement. Key studies underway.
- Targeting vanadium steel producers and battery manufacturers for offtake and project involvement.
- Significant cobalt by-product opportunity at Gabanintha underway.
- Ongoing evaluation of vanadium electrolyte opportunities. Pilot plant commissioned in November 2016.
- Sales agreement executed with global leader vanadium battery manufacturer – GILDEMEISTER Energy Storage GmbH.
- Significant interest and demand identified for commercial and residential scale solar and vanadium battery storage solutions in Australian urban and rural environments.
- Acquisition of Li project in South Africa an extension of energy storage strategy
- Lithium focused drill program on highly prospective Blesberg project currently underway.

Bryah Resources Ltd

Current copper and gold IPO

- Bryah Resources is an exploration company focussing on discovery of copper and gold deposits
- AVL is a vendor of precious and base metal rights to the Bryah Resources IPO, currently underway
- Bryah holds the rights to approximately 500km^2 within the highly prospective Bryah Basin
- AVL will have a significant equity position in Bryah, meaning that the Company will benefit from any success Bryah Resources in their highly prospective Exploration Programs
- Neil Marston, Managing Director of Bryah Resources, is at the conference – please come to the AVL booth if you would like to find out more

BRYAH RESOURCES
LIMITED

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