



BUSHVELD MINERALS

# CORPORATE PRESENTATION

February 2021

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The technical information contained within this presentation has been reviewed and approved by Professor Richard Viljoen. Professor Richard Viljoen has more than 30 years' experience in the mining industry, including 15 years as chief consulting geologist for Gold Fields of South Africa. Notable past experience includes the development of significant mines including Northam Platinum and the Leeudorn and Tarkwa gold mines, identifying and developing a significant platinum deposit in the Bushveld Complex for Akanani Resources as well as acting as consultant for exploration and mining companies in Canada, Mexico, Venezuela, India and China in the fields of base metals, gold and platinum. Professor Richard Viljoen has extensive experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined under the JORC Code (2012). Professor Richard Viljoen consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

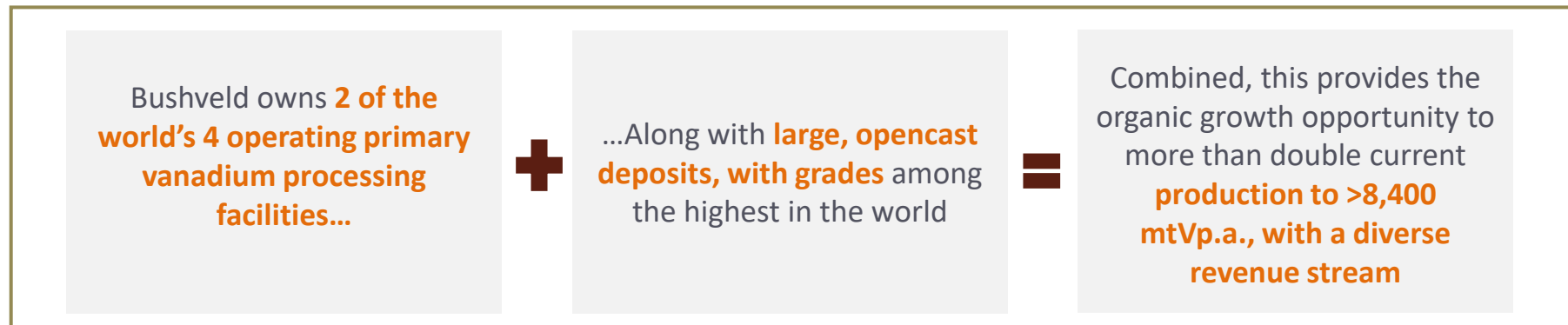
Presentation of data unless specified otherwise: variance analysis relates to the relative performance of Bushveld Minerals and/or its operations during the 2020 operational results.

# Investment proposition

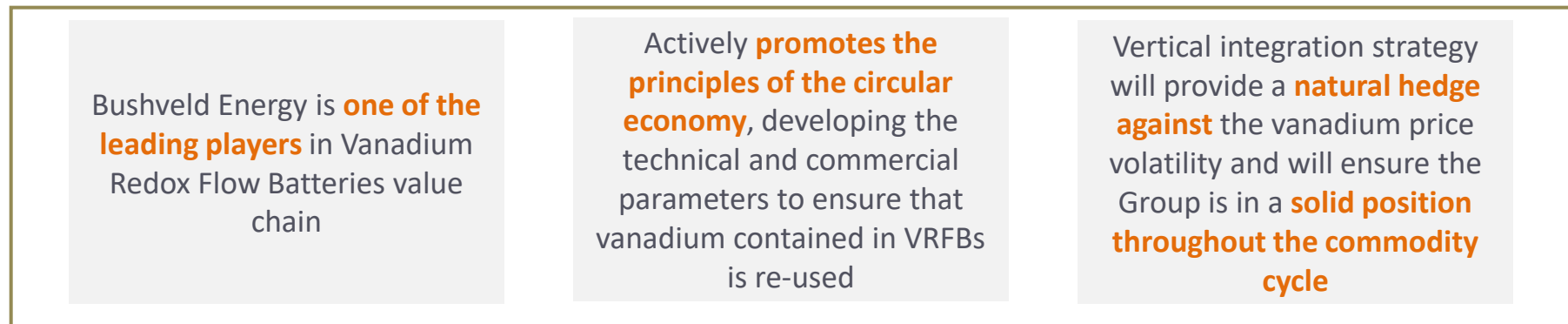
## Why Vanadium?

Vanadium is **a compelling commodity anchored to steel** with attractive fundamentals with burgeoning demand from **energy storage**

## Why Bushveld Vanadium?



## Why Bushveld Energy?



# Bushveld Minerals' shareholders and share price

<b>BMN Share Price (26 February 2021)</b>	<b>18.80p</b>
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**Basic Ordinary Shares** **1,191,561,543**

**Market Capitalisation** **£224 million**

<b>Bushveld Minerals Top Shareholders</b>	<b>% ownership</b>
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1 Hargreaves Lansdown Asset Mgt	19.78
2 Interactive Investor	15.49
3 Halifax Share Dealing	9.98
4 Orange Trust	5.28
5 Acacia Resources Limited	5.11

## Strategic Investor

Orion Mine Finance: US\$35million convertible loan and US\$30 million production financing

<b>Bushveld Minerals Top Institutional Shareholders</b>	<b>% ownership</b>
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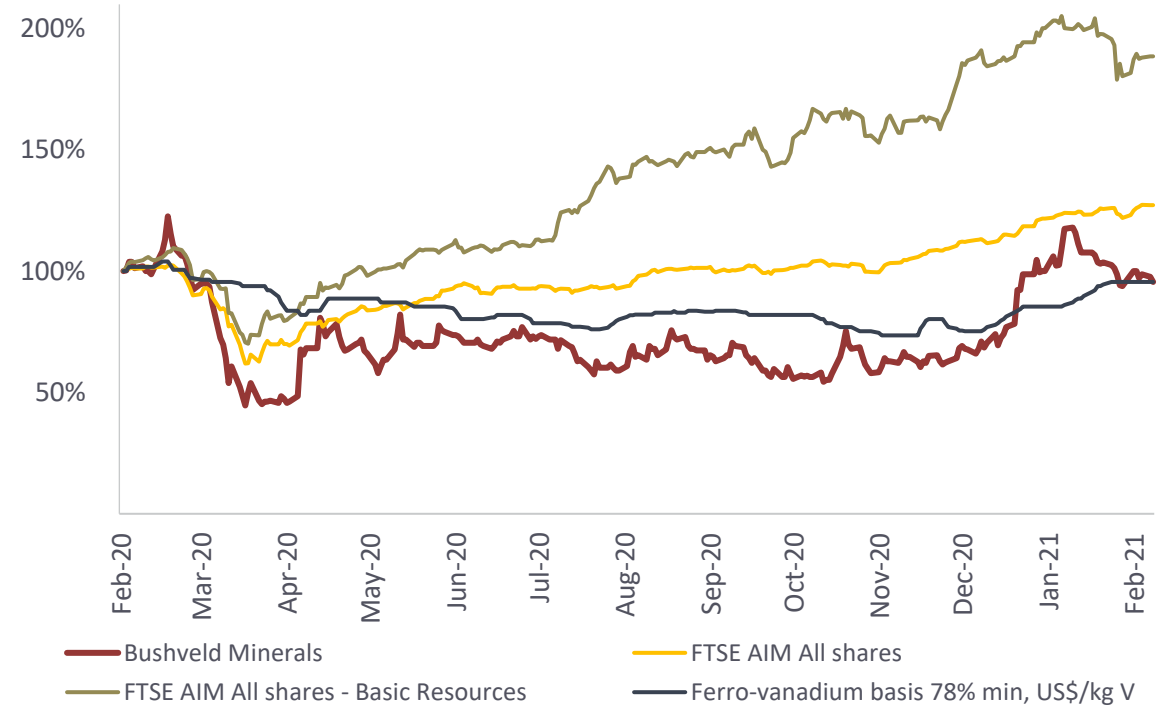
1 Fidelity Investment International	1.62
2 Premier Miton Investors	1.14
3 Invesco	1.01
4 Canaccord Genuity	0.18

<b>Bushveld Minerals Ownership</b>	<b># shares</b>	<b>% ownership</b>
1 Bushveld Minerals Ltd Director & Related Holding(s)	26,365,089	2.21

Source: Bloomberg, Orient Capital as at 26 February 2021

## L12M Share Price Performance (Indexed)

AIM: BMN



## Bushveld Minerals Coverage

PEEL HUNT

Buy

SPANGEL

Buy

Alternative  
Resource  
Capital



# Bushveld Minerals' structure



A low cost, vertically integrated primary vanadium producer

An energy storage solutions provider, focused on VRFBs<sup>1</sup>

## MINING



- Large, high-grade, primary vanadium assets and JORC compliant resource base ~550 Mt grading ~1.6%-2.0% V<sub>2</sub>O<sub>5</sub> in magnetite
- 3 deposits, well serviced with logistics infrastructure

## PROCESSING



- Low cost, flexible and scalable primary vanadium processing facilities
- Owns 2 of the world's 4 operating primary vanadium production processing facilities
- Aiming to be the leading primary vanadium producer

## ELECTROLYTE



- Developing 200MWh capacity electrolyte manufacturing facility
- Leverages processing capacity and knowledge for low-cost production
- Scaling up vanadium electrolyte rental product

## MANUFACTURING



- Invested in two OEMs<sup>2</sup> Invinity<sup>3</sup> and Enerox<sup>4</sup>
- Support of local VRFB assembly in South Africa

## DEPLOYMENT



- MW scale energy storage project development including core solar PV and long duration storage mini-grid IPP<sup>5</sup> offering
- Self generation opportunity of >125MW of solar PV and 180MWh of battery ESS<sup>6</sup>
- Direct sales into large mandates/tenders

Vertically integrated business delivers across the upstream and downstream value chain

# Bushveld Vanadium

## 1. Vametco

- Mine and processing facility
- JORC compliant 184.2 Mt indicated and inferred resource, including 46.4 Mt of reserves at a grade of 2.0% V<sub>2</sub>O<sub>5</sub> in magnetite
- Ownership interest of 74%
- Life of Mine of >30 years (ore reserves)
- 2020 production of 2,654 mtV and production cash cost (C1) of US\$18.30/KgV
- 2021e production of 2,700 mtV – 2,850 mtV and cash cost of US\$20.0/kgV – US\$21.30/kg
- Current products: Nitrovan, Modified Vanadium Oxide (“MVO”) and Ammonium Metavanadate (“AMV”) and Ferrovandium (“FeV”)

## 2. Brits

- Outcropping, strike extension of the Vametco mine
- JORC compliant 66.8 Mt indicated and inferred resource of 1.6% V<sub>2</sub>O<sub>5</sub> in magnetite
- Ownership interest of 51 -74%
- Provides the potential for additional ore feed for Vametco and Vanchem

## 3. Vanchem

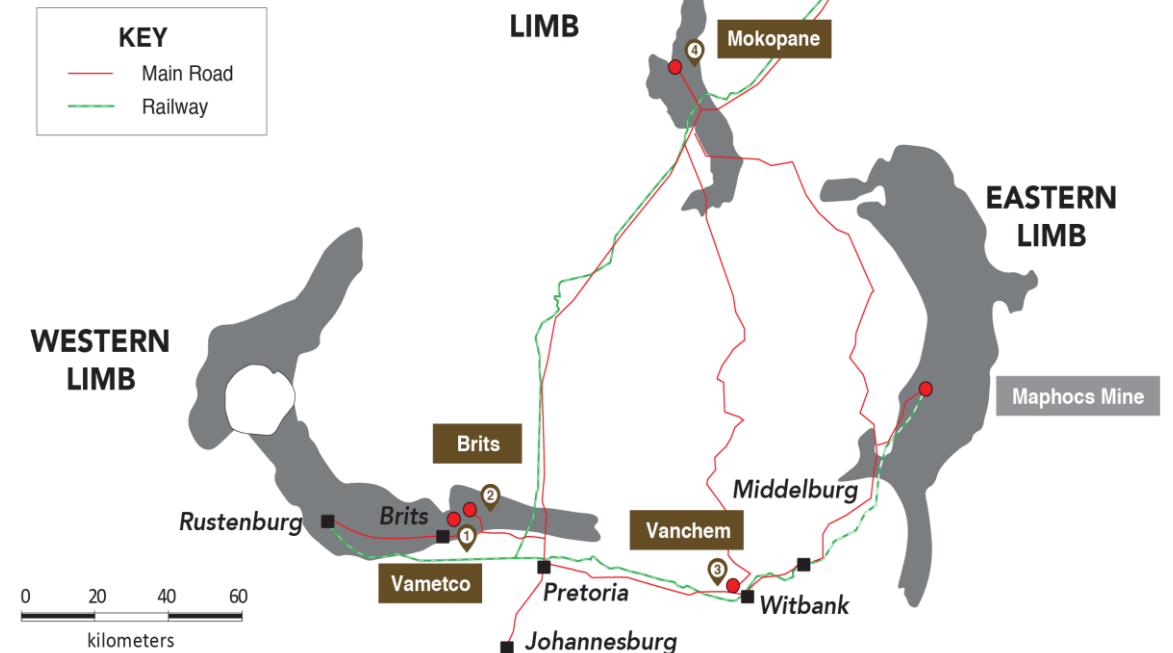
- Primary processing facility
- Ownership interest of 100%
- 2020 production of 990 mtV and production cash cost (C1) of US\$22.40/KgV
- 2021e production of 1,400 mtV – 1,500 mtV and cash cost of US\$26.20/kgV and US\$26.70/kgV
- Current products: Vanadium Pentoxide (“V<sub>2</sub>O<sub>5</sub>”), FeV, Chemicals
- Future products: Vanadium Trioxide (“V<sub>2</sub>O<sub>3</sub>”)

## 4. Mokopane

- JORC compliant 298 Mt resource, including 28.5 Mt reserves with grade of 1.75% V<sub>2</sub>O<sub>5</sub> in-magnetite.
- Ownership interest of 64%
- 30-year Mining Right executed in January 2020
- Mokopane to become a primary source of feedstock for Vanchem and supply dry magnetic separated ore
- Commence DFS<sup>1</sup> in 2021

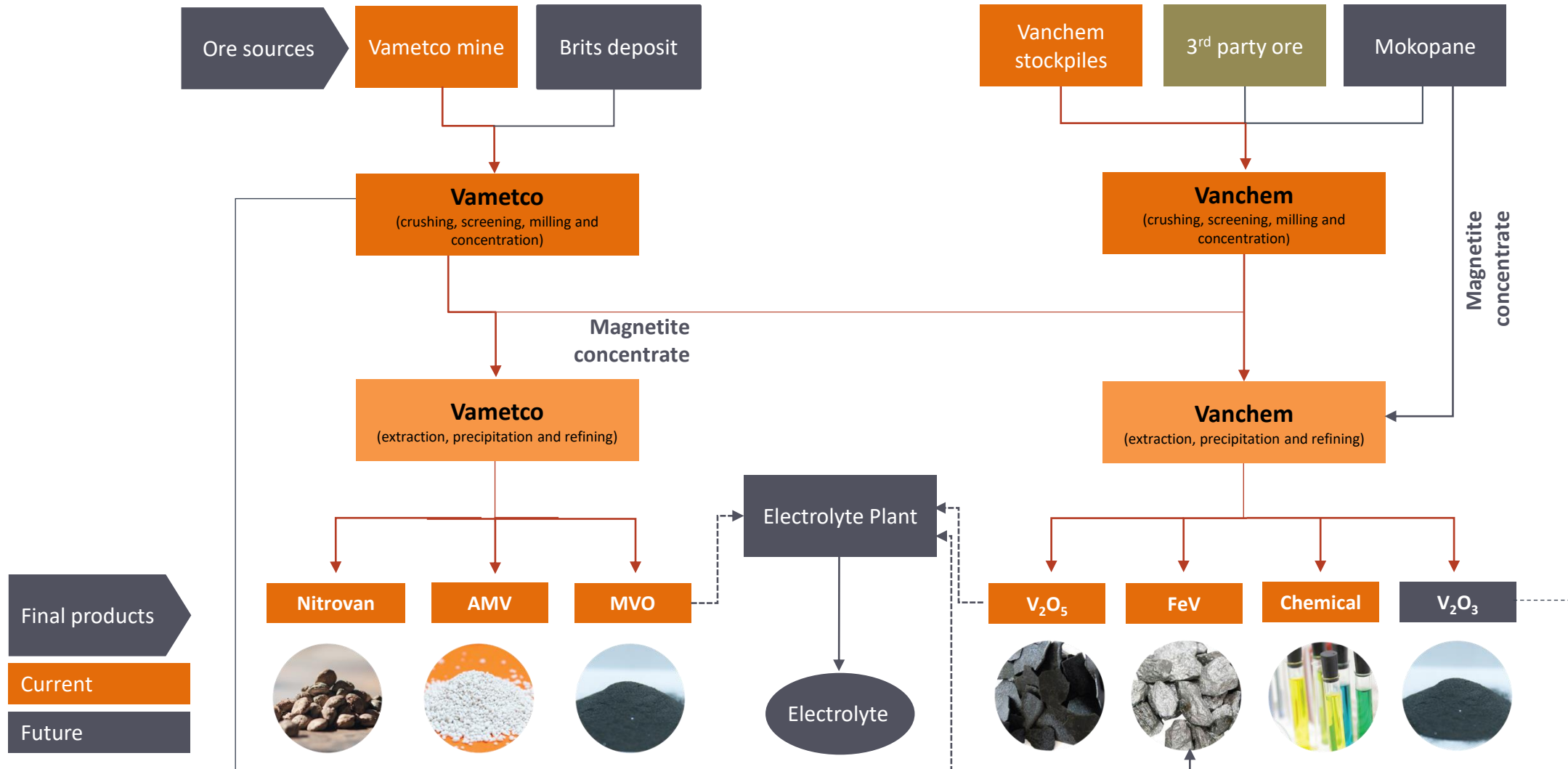
1. DFS: Definitive feasibility study

## Map of operations



- Assets are located in South Africa, host to the largest high-grade primary vanadium deposits in the world
- Vametco, Brits and Mokopane comprise a total JORC-compliant resource base of at least ~550 Mt (100 % basis), including ~75 Mt (100 % basis) of JORC-compliant reserves, with some of the highest primary grades in the world

# Bushveld Minerals' flexible and integrated asset base





## Electrolyte

Developing the production and sales of the most expensive VRFB<sup>1</sup> component

- Building a 200 MWh vanadium electrolyte production facility to supply to local and international VRFB projects, together with the IDC<sup>2</sup>
  - Bushveld Minerals commitment of ZAR68 million through to 2022. The IDC also approved the investment for its share of equity and all the debt funding for the project
- Creating a financial structure to rent vanadium electrolyte and ensure a circular economy for vanadium in energy storage

## Deployment

Megawatt scale energy storage project development and direct sales into a large-scale mandates

- Developing a commercial solar plus storage mini-grid product, including building a 3.5 MW of solar PV and 1 MW / 4 MWh VRFB mini-grid at the Vametco mine as a funded independent power producer
- Participating in the 2,000+ MW energy storage allocation in South Africa's Integrated Resource Plan, as well as other African projects, such as those supported by the World Bank's 17.5 GWh energy storage roll-out programme

## Manufacturing

Investment into global VRFB manufacturers with significant "CleanTechnology" upside potential and local assembly of VRFBs

- ~5% interest in Invinity<sup>3</sup>, the AIM-listed Original Equipment Manufacturer, appreciating by over 250% in value during 2020
- Acquisition, as part of a consortium, of Enerox<sup>4</sup>, the Austrian VRFB original equipment manufacturer





## 2020 Performance

# 2020 Operational and financial highlights

- Group vanadium production **3,631 mtV ↑ 24%**
  - Production loss of ~380 mtV due to Covid-19
- Group sales of **4,264 mtV<sup>1</sup>** (includes intercompany sales of 422mtV) **↑ 78%**
  - Sales to China: **21%** vs 10% in 2019
- Unaudited Cash and cash equivalents as at 31 December 2020 **~US\$50.5 million** (2019: US\$34.0million)
- Completed and drew down the **US\$65 million** financing package with **Orion Mine Finance** to fund capital projects as well as partially retire existing debt facilities
  - US\$30 million production financing agreement and US\$35 million convertible loan note





# Vametco's 2020 operational performance and 2021 guidance

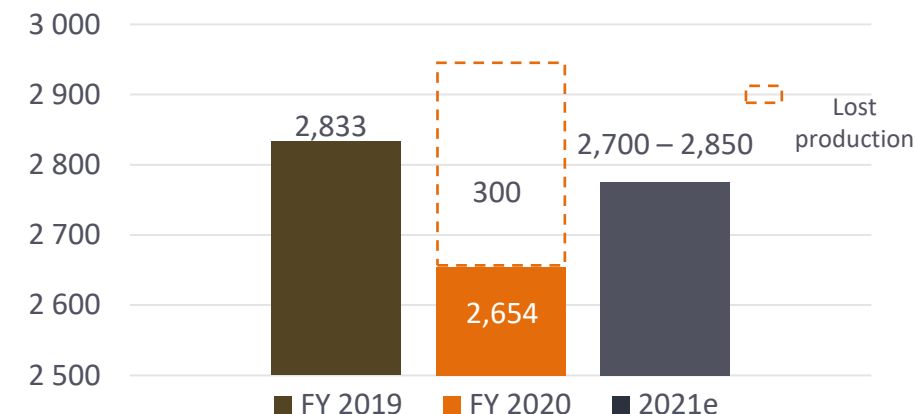
## Vametco

- FY 2020 Production of **2,654 mtV**
  - Lost production of ~300 mtV due to the Covid-19 nationwide lockdown in SA during H1 2020
  - Low production volumes in Q4 2020 due to heavy rainfall affecting overall throughput
- Production cash cost (C1) of **US\$18.30/kgV**
- Commissioned the kiln off-gas project to comply with environmental regulations

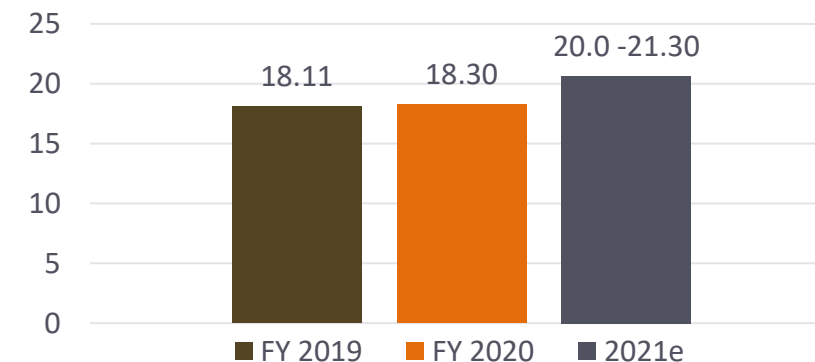
## 2021 Guidance

- 2021 production guidance: **2,700 mtV and 2,850 mtV**, up to 7 % ↑ relative to 2020 production, with volumes weighted towards H2 2021
  - Includes a 35-day maintenance shutdown during Q1 2021, as well as further debottlenecking
- 2021 production cash cost (C1) guidance: **US\$20.0/kgV - US\$21.30/kgV (ZAR320/kgV - ZAR340/kg)**
  - A 9% -16% ↑ relative to 2020, due to higher maintenance cost to improve operational stability, increase in raw materials and statutory electricity increase

## Production (mtV)



## Production cash cost (C1) (US\$/kgV)



# Vanchem's 2020 operational performance and 2021 guidance

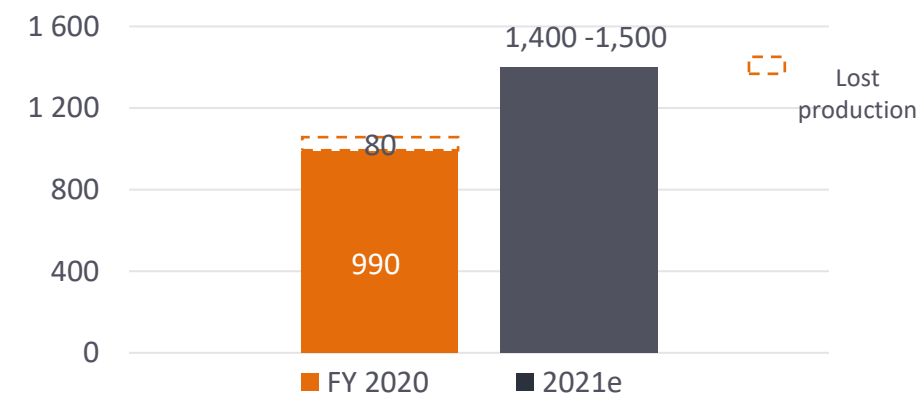
## Vanchem

- FY 2020 production of **990 mtV**, in line with 2020 guidance of 960 mtV to 1,100 mtV
  - Lost production of ~80 mtV due to the Covid-19 nationwide lockdown during H1 2020
- Production cash cost (C1) of **US\$22.40/kgV**

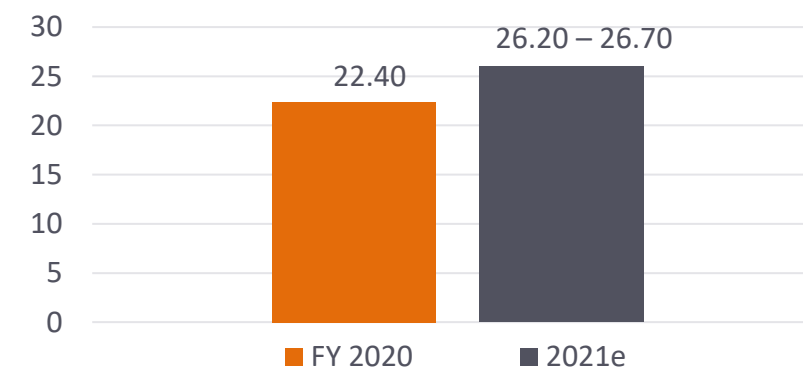
## 2021 Guidance

- 2021 Production guidance: **1,400 mtV and 1,500 mtV** 2021, an increase of between 41% and 52% relative to 2020 production
  - Production increase as a result of kiln-3 commissioning in H2 2021
- 2021 production cash cost (C1) guidance: **US\$26.20/kgV - US\$26.70/kgV** (ZAR419/kgV and ZAR427/kgV), representing a 17% - 19% ↑ relative to 2020
  - Increased costs due to higher maintenance, labour and raw material costs associated with the refurbishment and commissioning of kiln-3
  - Full production benefit of kiln-3 will be realised in 2022

## Production (mtV)



## Production cash cost (C1) (US\$/kgV)



# Bushveld Energy's 2020 progress

## Bushveld Energy

### Electrolyte / chemicals

- BELCO<sup>1</sup> established as separate operating entity and construction fully funded, with Bushveld Energy holding a 55% share (and IDC<sup>2</sup> at 45%)
- EPC<sup>3</sup> process started in H1 2020 and basic engineering of the plant completed in Q4 2020
- Signed electrolyte rental contract with Pivot Power, part of EDF Renewables, via the VERL<sup>4</sup>

### Investment

- Successfully completed its investments in two VRFB<sup>5</sup> OEM<sup>6</sup> Invinity<sup>7</sup> and Enerox<sup>8</sup>
  - Invinity share price ↑ >250% in 2020, with first profits realised on investment
  - Invinity announced sales totaling 18.6 MWh during 2020
  - Under a separate agreements Bushveld secured rights of first refusal to supply vanadium oxide, electrolyte and electrolyte rental products to Invinity and Enerox

### Deployment

- Received environmental authorisation and awarded the EPC for the construction of a hybrid mini-grid at Vametco
  - Enerox will supply the 1MW / 4MWh VRFB for the project and Abengoa will manage the EPC of the project, including the integration of 3.5 MW of solar PV
  - Procurement to commence in 2021, followed by construction
- Started developing self-generation options for all of Bushveld's existing and future electricity needs of up to 125MW of solar PV and 180MWh of storage



1. BELCO: Bushveld Electrolyte Company 2. IDC: Industrial Development Corporation 3. EPC: Engineering, procurement and construction; 4. VERL: Vanadium Electrolyte Rental Limited, a UK-based JV leasing company; 5. VRFB: Vanadium Redox Flow Battery 6. OEM: Original Equipment Manufacturer 7. Invinity: Invinity Energy Systems 8. Enerox: Enerox GmbH





## 2021 Objectives

# Bushveld Minerals' 2021 targets

## Bushveld Vanadium

- Production of between 4,100 mtV and 4,350 mtV in 2021, a 13% to 20% ↑ increase relative to 2020
- Improve operational stability

## Bushveld Energy

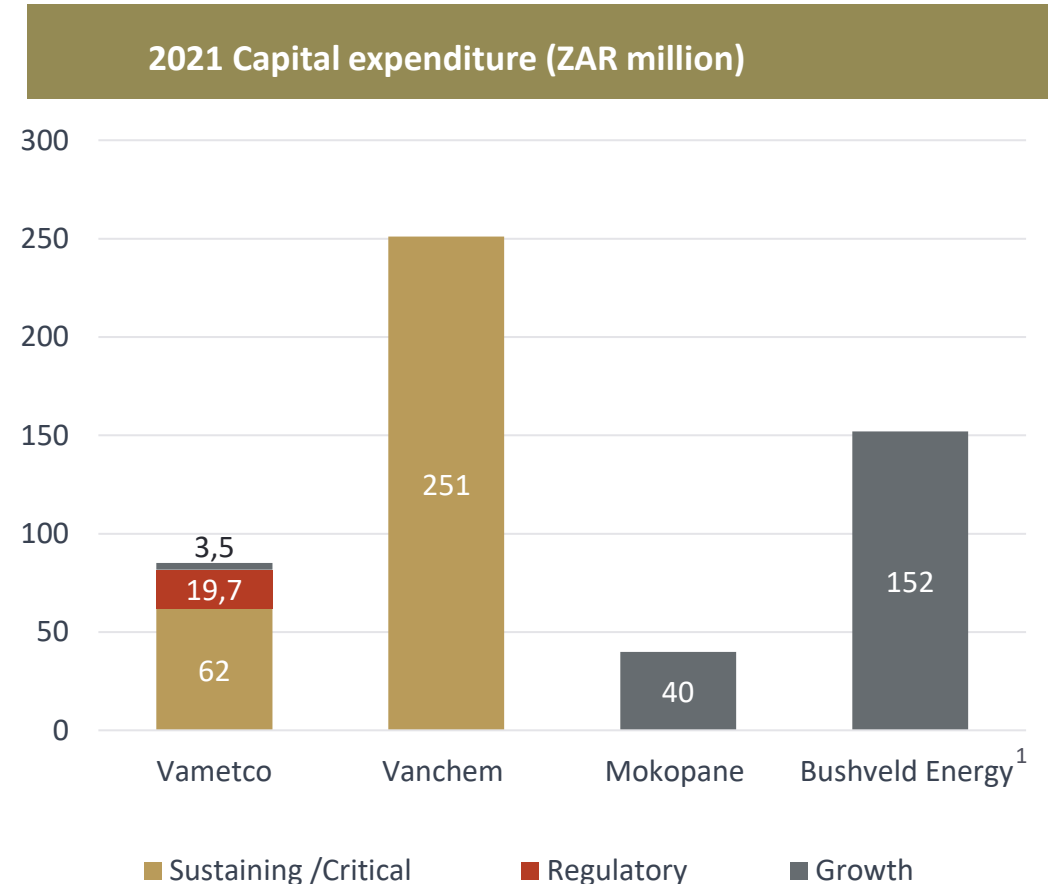
- Progress procurement and construction of the electrolyte plant
- Attaining financial close and commence construction of the hybrid mini-grid at Vametco
- Self-generation options for all of Bushveld's existing and future electrical energy needs
- Scale up of the vanadium electrolyte rental product with new contracts, comprising the rental contract with Pivot Power, part of EDF Renewables
- Supporting and funding the growth of Enerox, together with the other EHL5 shareholders

## Group Capital Expenditure

- Capital expenditure of approximately ZAR540 million (~US\$33.7 million), with most of the cost being Rand-denominated
- Disciplined capital expenditure to deliver our projects on time and within budget

Investing now to deliver future cash flows

1. Includes Bushveld's share of BELCO (Bushveld Electrolyte Company)





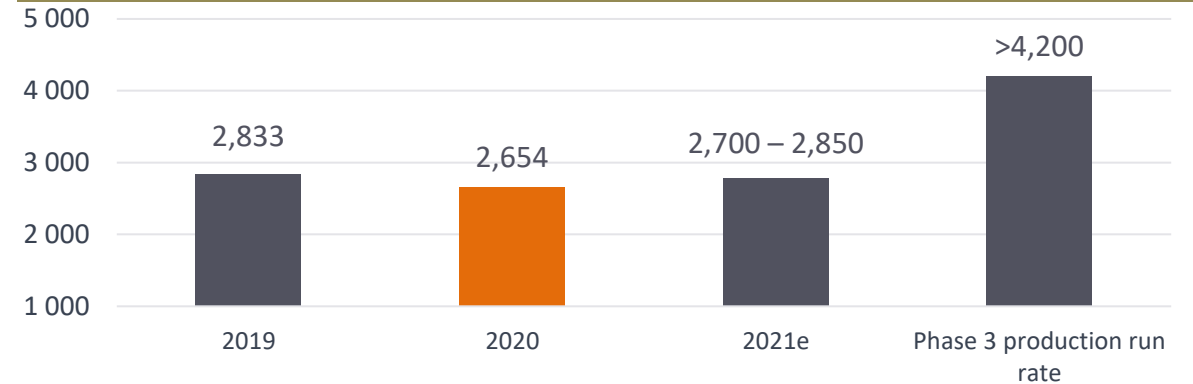
## Medium-term Growth Plans

# Growth path to >8,400 mtV per annum

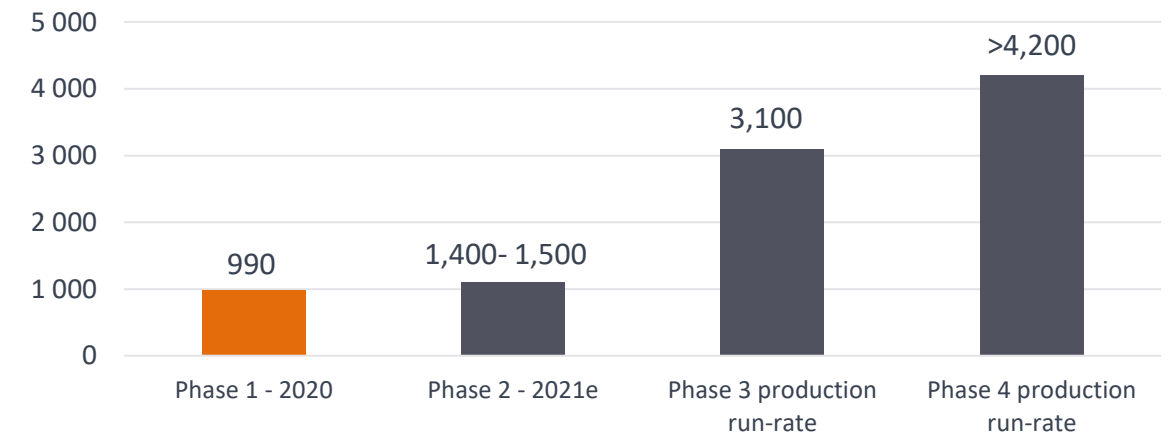
- US\$24 million to complete Phase III of Vametco's expansion project and to attain a production >4,200 mtV per annum
- Technical studies associated with the Vametco Phase III PFS<sup>1</sup> are expected to conclude during H1 2021
  - Details on the ramp up profile and capital expenditure will be announced on completion of the PFS
- 2021 capital expenditure of ~ZAR85.2 million (~US\$5.3 million)
- The total capital expenditure for the refurbishment programme estimated at ~ZAR750 million (~US\$45 million). Details on the ramp up profile and capital expenditure will be provided once studies have been completed
  - Phase 1:** critical refurbishment including: extending the calcine dump facility, replacement of heavy moving equipment, upgrade of the electrical reticulation system and construction of a storm water treatment facility
  - Phase 2:** comprises the refurbishment of kiln-3 and increase capacity at the chemical plant, and refurbishment of some downstream processing plants. Kiln-1 will be taken offline for refurbishment
  - Phase 3:** includes the refurbishment of: kiln-1, MVR salt recovery plant, construction of AMV Plant, V<sub>2</sub>O<sub>3</sub> plant, the V<sub>2</sub>O<sub>5</sub> plant and other associated infrastructure
  - Phase 4:** consist of the refurbishment of: kiln-2, milling and concentrate, ore offloading, the deammoniator and flake plants, FeV smelter and completion of electrical system upgrade
- 2021 capital expenditure of ~ZAR251 million (~US\$15.7 million)

1. PFS: pre-feasibility study 2.MVR: mechanical vapour recompression 3. AMV: Ammonium metavanadate

**Vametco production ramp-up profile (mtVp.a.)**



**Vanchem production ramp-up profile (mtVp.a.)**





## Vanadium Market Fundamentals and VRFB Deployments

# Vanadium characteristics and uses

- Vanadium is a grey, soft, ductile transitional metal, that does not occur in native form but as a component of minerals and as an impurity amongst hydrocarbons and bauxites
- It readily forms several stable oxidation states (II, III, IV, and V)

## Characteristics



- Fabricability
- High strength-to-weight ratio
- Corrosion resistance
- Weldability
- Ability to exist in 4 different oxidation states
- Water-soluble
- Resistant to attack by alkalis, hydrochloric acid, sulphuric acid, and saltwater

## Steel



Construction steel - rebar



Alloys for aerospace industry

The steel industry accounts for **92%** of total vanadium consumption in 2019

## Chemicals



Long duration utility scale batteries



Electrolyte accounted for **~3%** of 2019 global vanadium consumption, but could grow up to **44% by 2027** as VRFB's gain momentum

Vanadium's unique characteristics as a key element of rebar production and energy storage technology ensure it will form part of stimulus plans in order to revive economies and accelerate the transition to a low-carbon energy future

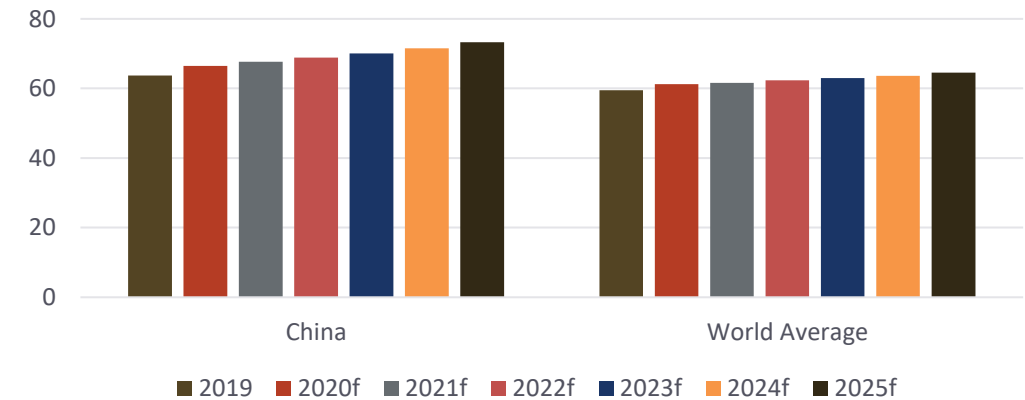


# Demand anchored to steel and increasing deployments of VRFBs

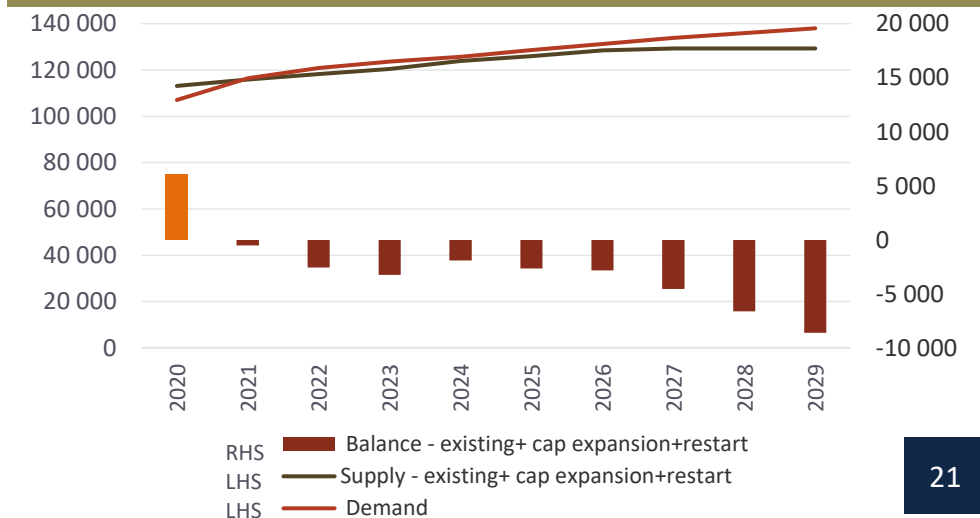
## Vanadium Outlook

- China is expected to reach its steel production peak by the middle of the decade
  - Output may hit another all-time high in 2021, driven by infrastructure and domestic consumption<sup>1</sup>
- Roskill forecasts a 2% y-o-y increase in 2021, with a gradual recovery in the rest of the world
- Vanadium demand in the steel market expected grow at a CAGR ~2.7% through to 2029<sup>1</sup>
- Supply forecasts show a deficit ~8,600 mtV by 2029<sup>2</sup>
- Rising demand of VRFBs likely to rise as governments accelerate the energy transition to a low-carbon energy future
- Vanadium demand from VRFBs is expected grow at a CAGR ~ 6% through to 2027<sup>3</sup>
- Co-producers operating at full capacity with no hematite-blending incentives implies limited/no capacity to increase supply in the short term
- Low vanadium price environment of 2019/2020 implies limited price incentive for greenfield vanadium projects
- Year to date average vanadium price is ~US\$29/kgV LMB, ~US\$27/kgV Asia Metals and ~US\$30/kgV for CRU Ryan's Note as at 26 February 2021

## Vanadium Intensity of use (2018-2025) (g/t)<sup>1</sup>



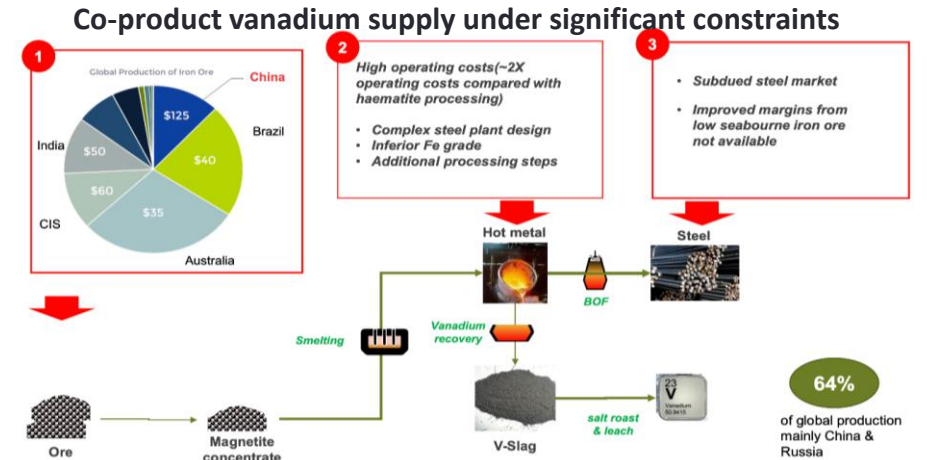
## Vanadium market balance<sup>3</sup>



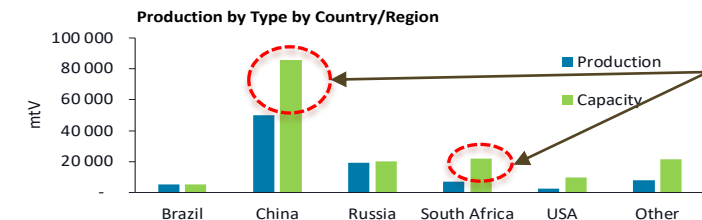
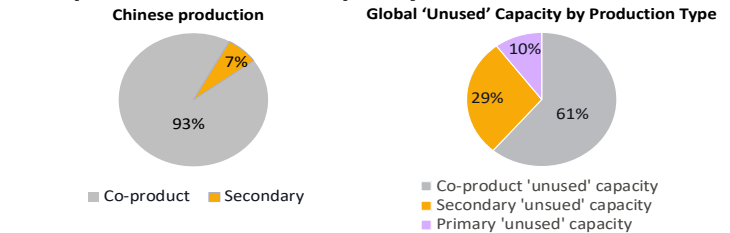
# Vanadium market supply dynamics

## Supply drivers

- Co-production accounts for 61% of global production
- High input costs and operating costs => economics constrained during times of low steel prices
- Incentive to blend with high grade seaborne hematite ores during times of low hematite ore
- Excess latent capacity as a consequence
- However:
  - Iron ore prices have been rising
  - Steel production and prices have been rising
  - Resulting in co-producers operating at near/full capacity



## Co-production latent capacity



**What of this excess capacity?**

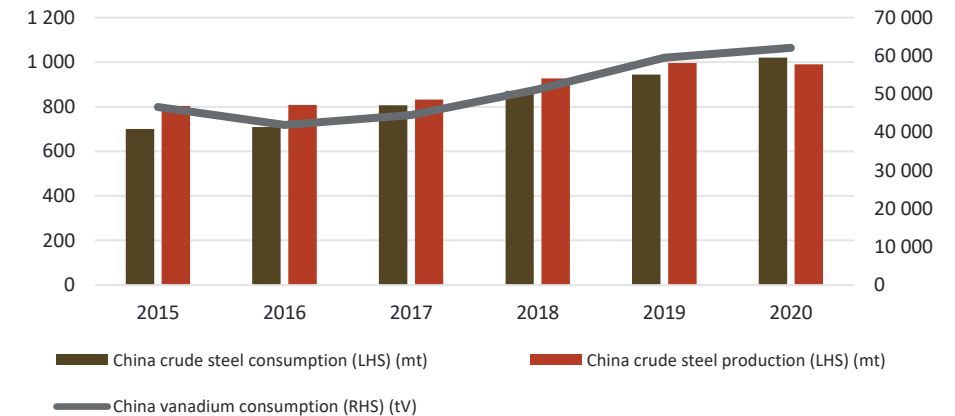
# Vanadium market dynamics – Improving global demand

## 2020 / 2021 trends

- Rising vanadium prices seen at the end of 2020 and into 2021, across all key markets
- Global steel production fell by < 1% to 1,864 Mt (2019: 1,880 Mt) <sup>1</sup>
  - China's steel production 1,053 Mt 5.2% higher than 2019 (2019: 1,001Mt) ~56% of the global steel production <sup>1</sup>
- Global vanadium production increased by ~ 2% to 113,360 mtV (2019: 111,225 mtV) <sup>2</sup>
  - China's 2020 vanadium production ~ 69,000 MtV, (2019: ~66,000 mtV) <sup>2</sup>
  - China was a net FeV importer in the months of June, July, August, October and November 2020 <sup>2</sup>
- In 2021, western economic recovery is starting to take hold and demand is getting back to pre-Covid levels
- Prices are expected to remain robust for the rest of Q1 2021
  - The recovery is driven by higher steel mill capacity utilisation rates and low warehouse stocks
- Growing iron ore prices, reaching >US\$160/t
  - Chinese co-producers producing at peak at near full capacity
  - North American steel capacity utilisation at ~ 78% ( previously ~60% in H2 2020)
- Acceleration in the energy transition to a low-carbon energy future, increasing future demand for renewable energy generation and energy storage. Significant events in the VRFB industry include:
  - Increased deployment of VRFBs (51 MWh VRFB awarded to Sumitomo in Japan and 400MWh VRFB project announced by Shanghai Electric in China, requiring 300 mtV and 2,200 mtV, respectively)
  - Announcement of giga factories for VRFB production in China by Shanghai Electric and in Saudi Arabia by Schmid
  - Large, multinational power companies, such as EDF and Enel, started deploying VRFB technology

Source: 1. World Steel Association; 2. Roskill

## China Crude Steel & Vanadium



## Iron Ore Australian Fines 62% Fe CFR North China



# Recent VRFB deployments

## China



Shanghai Electric announced plans for another **100MW / 400MWh** VRFB in Yancheng, China



Rongke Power's **200 MW/800 MWh** is due for initial commissioning this year



Sichuan Xuteng Battery Energy Co., Ltd. is a newly introduced enterprise in Panzhihua successfully signed the R & D and industrial park projects of VRFB energy storage.

Jiangxi Yinhui New Energy Co., Ltd. plans to build a new project with an annual output of **66,000 cubic meters** of vanadium electrolyte in Yichun

Yichun Jin Kong Group issued ~US\$1.5 million to support the demonstration production base project of vanadium battery industrialization

## Rest of the world



Joint venture established to build a VRFB facility “an annual production capacity of **3 GWh**”

**51MWh** VRFB system awarded to Sumitomo for a wind farm in Hokkaido, Japan



M&A activity is picking up, including a “**\$70 million merger of vanadium redox flow battery start-ups**”. The new company just announced 7.8MWh of orders from the California Energy Commission in the USA

Developer and maker of home VRFB energy storage systems, raised **€6 million (US\$7.1 million)** in July 2020.



Large, multinational power companies are deploying VRFB technology, including **ENEL in Majorca, Spain** and **EDF in Oxford, UK**

Increased deployment of VRFBs and demand is likely to rise as governments focus on accelerating the energy transition to a low-carbon energy



## Supplementary Information

# Guidance

Vametco	2021e	Medium-term	
Production (100% basis)	2,700 mtV – 2,850 mtV	>4,200 mtV	<ul style="list-style-type: none"> <li>▪ Increase of up to 7% relative to 2020 production, with volumes weighted towards H2 2021</li> <li>▪ Includes a 35-day maintenance shutdown during Q1 2021</li> </ul>
Production cash cost	ZAR320/kgV - ZAR340/kg (US\$20.0/kgV - US\$21.30/kgV)	-	<ul style="list-style-type: none"> <li>▪ Increased cost relative to 2020 due to higher maintenance cost to improve operational stability, increase in raw materials and statutory electricity increase</li> <li>▪ Excludes depreciation, royalties and selling, general &amp; administrative expenses</li> </ul>
Capital expenditure	~ZAR85.2 million (~US\$5.3 million)	US\$24 million	<ul style="list-style-type: none"> <li>▪ Capital expenditure of ~ZAR85.2 million, with most of the cost being Rand-denominated, includes: <ul style="list-style-type: none"> <li>– ZAR62 million (~US\$3.8 million) of sustaining capital;</li> <li>– ZAR19.7 million (~US\$1.2 million) of environmental capital; and</li> <li>– ZAR3.5 million (~US\$219,000) required for the Vametco Phase III Prefeasibility study</li> </ul> </li> <li>▪ US\$24 million Phase III expansion programme</li> </ul>
Vanchem	2021e	Medium-term	
Production	1,400 mtV -1,500 mtV	>4,200 mtV	<ul style="list-style-type: none"> <li>▪ 2021 Guidance an increase of between 41% and 52% relative to 2020 production</li> </ul>
Production cash cost	ZAR419/kgV and ZAR427/kgV (US\$26.20/kgV and US\$26.70/kgV)	-	<ul style="list-style-type: none"> <li>▪ Increased cost relative to 2020 due to higher maintenance, labour and raw material costs associated with the refurbishment and commissioning of kiln-3, which is expected to be commissioned in H2 2021. The full production benefit of kiln-3 will be realised in 2022</li> <li>▪ Excludes depreciation, royalties and selling, general &amp; administrative expenses</li> </ul>
Capital expenditure	~ZAR251 million (~US\$15.7 million)	~ZAR750 million (~US\$45 million)	<ul style="list-style-type: none"> <li>▪ Capital expenditure of ~ZAR251 million, with most of the cost being Rand-denominated. Includes critical refurbishment of Kiln-3, to be commissioned in H2 2021. Kiln-1 will be taken offline</li> <li>▪ Refurbishment capital expenditure of ~ZAR750 million. Details on the ramp up profile and capital expenditure will be provided once studies have been completed</li> </ul>
Mokopane	2021e	Short-term	
Capital expenditure	~ZAR40 million (~US\$2.5 million)		<ul style="list-style-type: none"> <li>▪ Capital expenditure of ~ZAR40 million with most of the cost being Rand-denominated. Entails the commencement of a DFS to mine the Main Magnetite Layer, with a focus on Mokopane as a primary feedstock supplier to Vanchem, among other things, update resources and reserves assessment</li> </ul>
Bushveld Energy	2021e	Short-term	
Capital expenditure	~ZAR152 million (~US\$9.5 million)		<ul style="list-style-type: none"> <li>▪ Capital expenditure of ~ZAR152 million, includes: BELCO procurement and construction costs; Scaling the electrolyte rental product, including the rental contract with Pivot Power, through the VERL and the rental contract for the Vametco mini-grid; Development of energy self-generation and storage solutions; Supporting and funding the growth of Enerox, together with the other shareholders of EHL</li> </ul>



# US\$65 million Orion financing arrangement

## US\$30 million Production financing agreement terms

Issuer	Bushveld Vametco Alloys (Pty) Ltd ("Vametco")
Maturity	<ul style="list-style-type: none"> <li>Amortises over the life of mine and will be serviced through quarterly repayment amounts (comprising repayment of principal and payment of interest)</li> </ul>
Payments	<ul style="list-style-type: none"> <li>The quarterly repayment amount will be determined as the sum of the below 2 constituents: <ul style="list-style-type: none"> <li>Gross revenue rate of 1.175% for years 2020 and 2021 and 1.45% from 2022 onwards, multiplied by Vametco's gross revenue for the quarter</li> <li>Unit rate of US\$ 0.443/kgV multiplied by Vametco's aggregate vanadium sales units for the quarter</li> <li>Once Vametco reaches life of mine vanadium sales of approximately 132,020 mtV during the term of the facility, the gross revenue rate and unit rate will reduce by 75%</li> </ul> </li> </ul>
Repayment	<ul style="list-style-type: none"> <li>On each of the first 3 loan anniversaries, the Vametco has the option to repay up to 50% of both constituent loan parts. If Vametco utilises the loan repayment option, the gross revenue rate and the unit rate will reduce accordingly</li> </ul>

## US\$ 35 million Convertible loan note instrument terms

Issuer	Bushveld Minerals
Maturity	<ul style="list-style-type: none"> <li>3 Years from drawdown date</li> </ul>
Coupon	<ul style="list-style-type: none"> <li>10% Capitalised</li> </ul>
Conversion features	<ul style="list-style-type: none"> <li>Between drawdown and the Instrument's maturity date, Noteholders may, convert an amount of the outstanding debt, including capitalised and accrued interest <ul style="list-style-type: none"> <li>First six months: Up to 1/3 of the outstanding amount. Second six months: Up to 2/3 of the outstanding amount</li> <li>From the anniversary of drawdown until the maturity date: the outstanding amount under the Instrument may be converted</li> <li>Bushveld also has the option to convert all, but not some, of the amount outstanding under the Instrument if its volume weighted average share price is more than 200% of the conversion price over a continuous 15 business days period</li> </ul> </li> </ul>
Convertible price	<ul style="list-style-type: none"> <li>17p</li> </ul>

## Use of proceeds (Gross amount)

- Vametco Phase III expansion project – US\$24 million
- Vanchem Phase I refurbishment – US\$20.3 million
- Pre-payment of Nedbank term loan – US\$15.7 million
- Pre-payment of Duferco convertible – US\$5 million

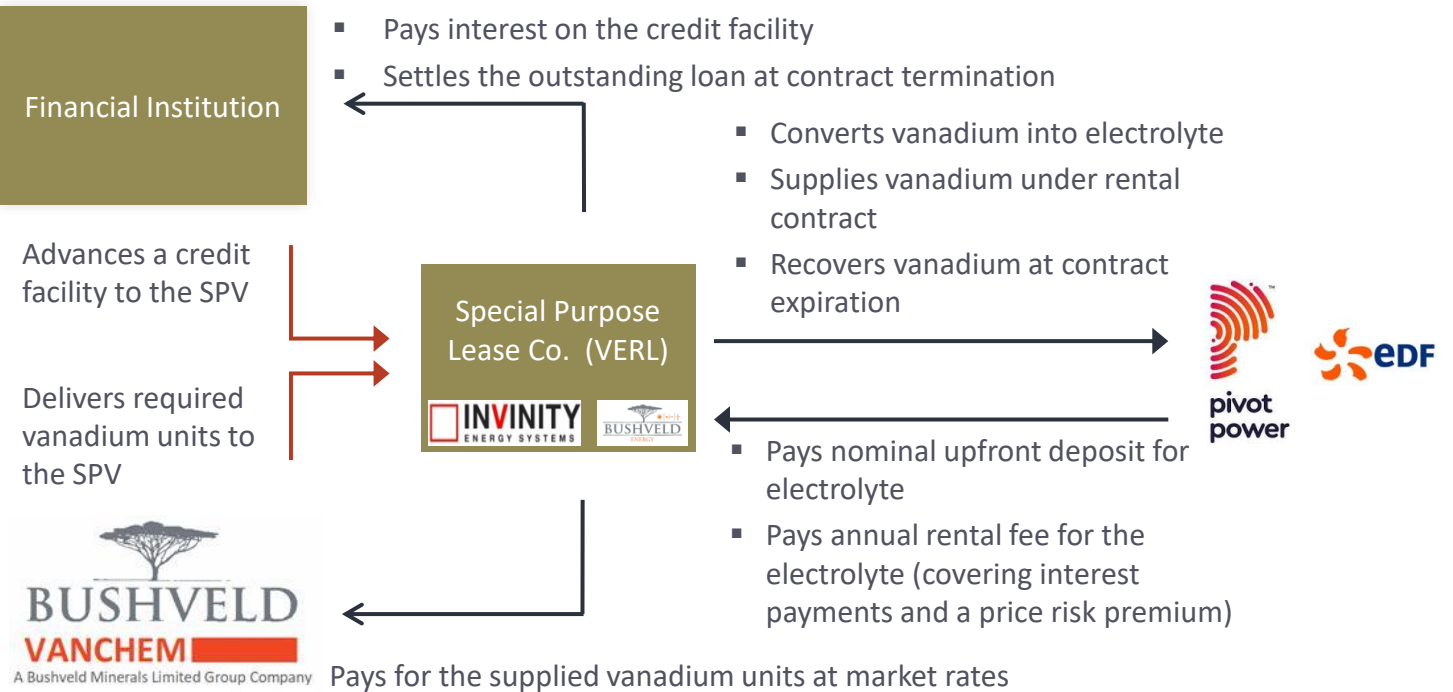
# Vanadium electrolyte rental brings mineral financing to energy storage

## VRFB design is conducive to a rental model



- In both very large and very small VRFBs, the vanadium is stored in special purpose tanks, separated from other equipment
- This makes legal ownership and collateral tracking much easier than for minerals in other products
- Vanadium recovery at end of life is relatively inexpensive when compared to its market value

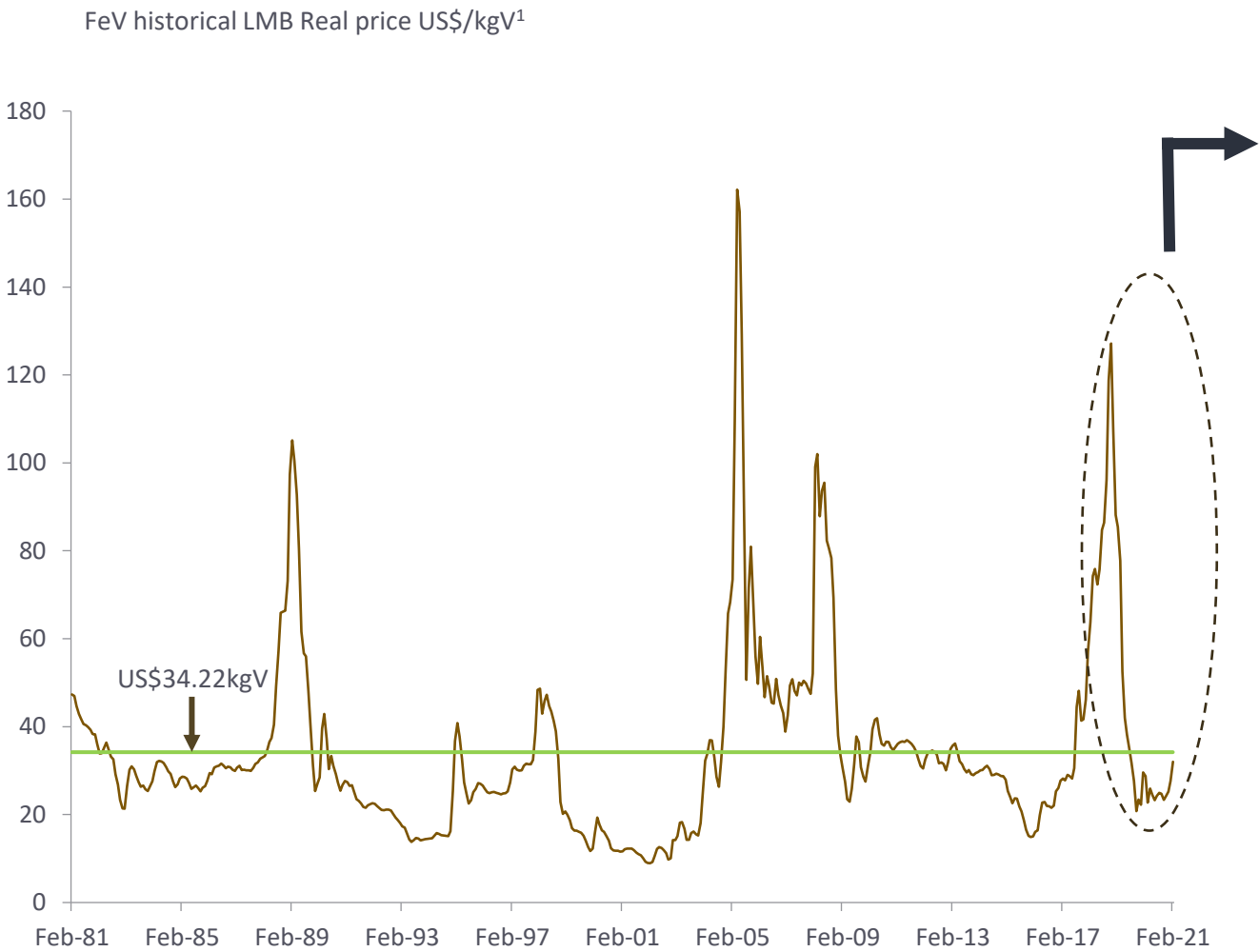
## Electrolyte rental design in the recently announced contract with Pivot Power, UK



## Benefits of vanadium rental for VRFB include:

- Significantly lower and predictable CAPEX for VRFBs in favor of a manageable annual fee, thereby reducing the overall total cost of ownership / levelized cost of the battery
- Develops the circular economy of vanadium, increasing the sustainability of both mining and energy storage

# Ferrovanadium price chart



Source: Metal Bulletin 26 February 2021

